



## **3<sup>rd</sup> INTERNATIONAL SUMMER SCHOOL OF ASECU YOUTH**

KNOWLEDGE ECONOMY – IMPACT ON SUSTAINABLE DEVELOPMENT OF THE COUNTRIES FROM EAST AND SOUTH EAST EUROPE

> July 15-20, **2013** Kotor, **Montenegro**





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# KNOWLEDGE ECONOMY – IMPACT ON SUSTAINABLE DEVELOPMENT OF THE COUNTRIES FROM EAST AND SOUTH EAST EUROPE

Organized by Faculty of Economics, University of Montenegro in cooperation with ASECU YOUTH July 15-20, 2013 Kotor, Montenegro

#### **IMPRESSUM**

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#### FOREWORD

Faculty of Economics, University of Montenegro has had pleasure of organizing the third international summer school of ASECU YOUTH, on **Knowledge Economy – impact on Sustainable development of the countries from East and South East Europe**.

Our selection of the topic was motivated with fact that empirical evidence shows that, in long term, economies with high level of investment in scientific and technological knowledge, education and training of labour force, achieves sustainable positive growth rates. East and South East European countries strategic goal is better quality and standard of life of their citizens, so discussion on knowledge, human capital, information society and sustainable growth was found extremely important.

Asecu Youth summer school is organized in manner that combine presentation of students research and lectures by prominent professors, giving possibility to both to enjoy high quality academic discussion and gain new knowledge.

3rd ASECY YOUTH international summer school has attracted participants from thirteen different countries, with more than 50 research papers. Topics analysed and perspectives problems have been seen from by different authors will provide fruitful discussion.

More than hundred participants coming from different countries with different culture and social and economic environment will provide exchange of experience, knowledge and unforgettable time. Atmosphere in Kotor, old city with rich history and culture, will provide beautiful environment for academic discussion and social events.

We are extremely proud on number of research papers submitted this year, and decision of so many young people to join us in Kotor.

Wishing you great and fruitful time in Montenegro,

Sincerely yours,

Faculty of Economics University of Montenegro

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# HUMAN CAPITAL AND ECONOMIC GROWTH

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#### **HUMAN CAPITAL AND ECONOMIC GROWTH**

#### Abstract

It is argued that human capital is the fundamental source of economic growth, becuase it is a source of both increased productivity and technological cathing-up. One of the major differences between the developed and developing countries is the rate of progress in human capital. The under developed countries need human capital to staff new and expanding government services to introduce new systems of land use and new methods of agriculture, to develop new means of communication to carry forward industrialization and to build an education system which will provide more human capital. The idea that human capital plays an important role in explaining income differences has been present in economists' thinking for a long time. Unfortunately, mainly due to problems of data availability and measurment errors, the empirical cross-country research has been limited to studying the impact of formal education on economic growth. Another problem is reverse effect, larger economic growth also ensures higher education possibilities and the development of human capital. Regardless of the model adopted at the aggregate level, the relationship between human capital and the indicators of the material resources is theoretically and empirically shown which will be further examined in this paper.

Key words: Human capital, Education, Human Development Index, Economic growth

#### **INTRODUCTION**

In order to be successful in the long-term, a company should upgrade its resource and capability base. In this modern society based on knowledge, recognizing the importance of human capital and promoting the investment in its development is an essential premise of the overall social and economic evolution.

The world is facing complex problems, especially in terms of natural evolution of the knowledge based society and human capital exploitation. That is why the knowledge society puts a special emphasis on human capital as a factor of production and intelligent support of knowledge itself, but also in the position to supply consumer knowledge based economy. Human capital is the instrument with which contribute to the building of the new economy.

The presence of a well-educated human resources determines better results in high labor productivity, better organizational economic activity, higher production and higher incomes. That is why society is aware that human capital is one of the engines of development at both the social and individual level.

The purpose of this paper is to breifly address the impact that human capital has on economic growth and the importance of this impact. We will do so by starting with discription of the concept of human capital and its development. Then we will present some theoretical approaches to human capital and economic growth through history of economic thought, and finally we will discuss empirical research and the importance of human capital for Montenegro.

#### **ABOUT HUMAN CAPITAL**

The idea that human capital plays an important role in explaining income differences has been present in economists' thinking for a long time. It can even be traced back to the work of Adam Smith and Alfred Marshall, although it was not until the middle of the 20th century that Gary Becker<sup>1</sup> and others developed a theory of human capital.

Knowledge in an organization begins and ends with people. The knowledge and experience that employees bring to their work is one of the greatest, if not the greatest, drivers of an organization's success. What employees know helps to build an organization as well as to preserve, maintain and improve it. People are part of productive capacity of every organization, because the future of company depends on what they know rather than what they own. Human capital, what people know and that they can do, is directly connected with what company knows, the performance of the organization and with its competitiveness on the market. Without people and their potential there can be neither organization nor its successes. Gary S. Becker says that "the basic resource in any company is the people. The most successful companies and the most successful countries will be those that manage human capital in the most effective and efficient manner."

Human capital is a complex theoretical concept and there is no unified definition of it. In its most general form, it refers to the resources in people. It has been defined by the OECD as "the knowledge, skills, competences and other attributes embodied in individuals that are relevant to economic activity". This is a broad definition because it is not restricted only to the education only. It also includes all the other investments in people made to improve their skills and broad their knowledge, like schooling, parental education, on-the-job training, learning-by-doing etc. Adam Smith defined human capital as follows: "The acquisition of such talents, by the maintenance of the acquirer during his education, study, or apprenticeship, always costs a real expense, which is a capital fixed and realized, as it were, in his person. Those talents, as they make a part of his fortune, so do they likewise that of the society to which he belongs. The improved dexterity of a workman may be considered in the same light as a machine or instrument of trade which facilitates and abridges labor, and which, though it costs a certain expense, repays that expense with a profit."

As we can see, there are different definitions of human capital, but there is something similar to all of the- they are all emphasizing the role of capabilities and skills of the people. Those skills and knowledge are contributing significantly in creating of added value in the organization and the aggregated value in the whole economy. Some experts are broadening the basic definition of human capital and besides knowledge, skills and experiences they are adding some individual characteristics such as: creativity, innovativeness, motivation, responsibility, critical thinking etc.

There are different sides of human capital. Becker distinguishes "specific" and "general" human capital. Specific human capital refers to skills or knowledge that is useful only to a single employer or industry, whereas general human capital (such as literacy) is useful to all employers. Some experts imply that human capital consists of educational capital (skills acquired by people both empirical and school environment) and biological capital (physical abilities of people, most often synthesized like health). Because of these features, human capital has succeeded to establish itself as a concept in economics. We can say that human capital is an intangible asset - it is not owned by the firm that employs it and is generally not replaceable. That is why human resources do not appear on the firm's balance sheet- the firm purchases their services under employment contacts but they don't own them. The reason for including human resources as part of the resources of the firm is their stability although employees are free to move from one firm to another.

<sup>&</sup>lt;sup>1</sup> Gary S. Becker was awarded the Nobel Memorial Prize in Economic Sciences in 1992

#### KNOWLEDGE ECONOMY - IMPACT ON SUSTAINABLE DEVELOPMENT OF THE COUNTRIES FROM EAST AND SOUTH EAST EUROPE

Although all the resources the company or country possesses are important, human resources are the most important. Human resources are specific and their significance consists of: human resources can put into function all mental and physical potentials together with all the other potentials they dispose with; they make the results of the work greater than those made individually; man is the only one who can shape the vision; they have a long term impact on the business; they are connected with all the aspects of the business; investing into human resources is more cost-effective than investing in any other resource.

Human resource can be transformed into human capital with inputs of education, health and moral values. The transformation of raw human resource into highly productive human resource is the process of human capital formation. Scarcity of tangible capital can be resolved by accelerating the rate of human capital formation with both private and public investment in education and health sectors. The tangible financial capital is an effective instrument of promoting economic growth of the nation but the intangible human capital is an instrument of promoting comprehensive development of the nation because human capital is directly related to human development, and when there is human development, the qualitative and quantitative progress of the nation is inevitable.

The human capital at a regional level can also contribute to local economy. Regions with higher levels of human capital show greater amounts of economic activity, more rapid economic growth, and their workers tend to be more productive and earn higher wages. That is why building regional human capital is an increasingly important component of local economic development strategies. At the European level, for example, investment in human capital is a desideratum proclaimed by the Lisbon strategy, recent measures for growth and employment having the purpose to provide better consistency to funding in this area.

At the end, for any nation, human capital is considered a strategically resource that can generate positive economic phenomena and the human capital investment are studied as being necessary and socially important.

#### THEORETICAL APPROACH TO HUMAN CAPITAL AND ECONOMIC GROWTH

As an economic concept human capital is at least two centuries old, but its place in the mainstream of economic analysis and research is a new and lively development of the past few decades. The need for this development became apparent in the 1950's. Many theoretical models of economic growth, such as those of Nelson and Phelps (1966); Lucas (1988); Becker, Murphy, and Tamura (1990); Rebelo (1992); and Mulligan and Sala-i-Martin (1992), have emphasized the role that human capital has in educational attainment.

The idea that human capital plays an important role in explaining income differences has been present in economic thought for a very long time. By some accounts, it can even be traced to the work of Adam Smith and Alfred Marshall, although it was not until the middle of the 20th century that Becker and others have developed a theory of human capital.<sup>2</sup> This theory, according to which a person's level of education and experience determines his/her income, was originally envisaged in a microeconomic framework, but has subsequently been applied to macroeconomics as well. However, it was the emergence of 'new growth theory' and, in particular, the important contribution by Lucas that really sparked interest in the relationship between human capital and economic growth. The past decade has seen a wide spread of cross-country regressions which have attempted to reveal the determinants of growth differences across countries. While countless variables have been included in these regressions, one of the most researched possible sources of economic growth is indeed human capital.

<sup>&</sup>lt;sup>2</sup> F. Schütt, *The Importance of Human Capital for Economic Growth*, http://www.iwim.uni-bremen.de/publikationen/pdf/W027.pdf

Recent theoretical contributions to the growth literature emphasize the role of human capital in the process of economic growth. Meanwhile, the empirical literature on the link between human capital and growth has changed course several times over the last decade. empirical studies of growth for a broad cross-section of nations, have used varies proxies for human capital. These studies have been challenging to conduct because of the limited educational data that were available. Human capital analysis deals with acquired capabilities which are developed through formal and informal education at school and/ or at home, and through trainings, experience, as well as mobility in the labor market. On balance, the evidence now seems to indicate that educational expansion does indeed contribute to output growth. There also appear to be justifed to argue that human capital has a substantial impact on technological catch-up, possibly through improving a country's capacity to adopt new technologies. However, the literature is subject to many methodological and conceptual weaknesses, such as the inadequacy of empirical human capital proxie and reverse causality, so the results should be interpretated with care.

A number of theoretical approaches to inclusion of human capital in models of growth have been presented, ranging from the augmented Solow model to the endogenous growth models of Lucas (1988) and Romer (1990). Although it is difficult distinguish between empirical predictions of these models, they tend to agree that human capital should matter for the growth. The channels through which it may affect output growth include direct productivity effects and more indirect effects such as externalities, facilitated technological adoption, or enhanced productivity of R&D.

Neoclassical growth model includes human capital as a factor of production and assess the accumulation of human capital as an element of the growth process while examinig the implications of theories that allow for imbalances between human and physical capital. The assumption in models, that are extensions to the neoclassical growth model, is that the education sector is relatively intensive in human capital: it takes human capital embodied in teachers to produce human capital in students. Mankiw in an influential paper, extends the neoclassical growth model by human capital as an additional accumulable factor and provide an empirical test for the OECD countries, concluding that changes in human capital translate into significant changes of growth rates. Yet there are other channels how human capital can influence the growth rate. First, human capital is a central prerequisite for innovation activity as set out in Romer (1990).<sup>3</sup> Second, human capital influences the capacity to adapt technological advances from abroad. Empirical country studies on the growth effect of human capital, however, provide rather mixed results which is largely due to the variety of different, often problematic indicators for human capital and measurement problems. Human capital is also proven to be important in models that allow for international capital mobility and in theories of the diffusion of technology.<sup>4</sup>

Just as accumulation of personal human capital produces individual economic growth, so do the corresponding social or national aggregates. At the national level, human capital can be viewed as a factor of production together with physical capital. This implies that its contribution to growth is greater the larger the volume of physical capital and vice versa. The framework of an aggregate production function shows also that the growth of human capital is both a condition and a consequence of economic growth. Human capital activities involve not only the transmission and embodiment in people of available knowledge, but also the production of new knowledge which is the source of innovation and of technical change which propels all factors of production. This latter function of human capital generates worldwide economic growth regardless of its initial geographic location.<sup>5</sup> One finding stressed by Mulligan and Sala-i-Martin (1992) concerns imbalances between human and physical capital, that is, departures of the ratio of human to physical capital from the ratio that prevails in the long run. The key result is that a higher ratio of human to physical capital and hence, a higher ratio of human capital to

<sup>&</sup>lt;sup>3</sup> H. Badinger; G. Tondl, *Trade, Human Capital and Innovation: The Engines of European Regional Growth in the 1990s*, http://epub. wu.ac.at/964/1/document.pdf

<sup>&</sup>lt;sup>4</sup> J. Barro, Human Capital and Economic Growth, http://www.kansascityfed.org/Publicat/Sympos/1992/s92barro.pdf

<sup>&</sup>lt;sup>5</sup> J. Mincer, Human capital and economic growth, http://www.nber.org/papers/w0803.pdf?new\_window=1

output raises the growth rate. A country with an abundance of human capital tends also to focus its investment on physical capital; that is, a high ratio of human to physical capital results in a high ratio of physical investment to gross domestic product. The conclusions about imbalances between human and physical capital are reinforced if the accumulation of human capital involves adjustment costs that are much higher than those applicable to physical capital.

In this brief exposition of the main theories about human capital and economic growth, it was not possible to do more than sketch the theoretical models and allude to some of the results of the conducted empirical researchs based on those models. It is fair to conclude that even if substantial levels of human capital may not be a prerequisite for an acceleration of economic growth at a certain time and place, the concurrent growth and diffusion of human capital appear to be necessary to provide sustained economic development.

The view of human capital as a factor of production together with physical capital implies that its contribution to growth is greater the larger amount of physical capital. This relation is symmetric: the contribution of physical capital is larger the higher the average level of human capital.

Nonetheless, understanding the economic benefits of education, and human capital in general, is undoubtedly significant, if only because human capital accumulation is one area in which government policy can truly make a difference.

#### **EMPIRICAL APPROACH TO HUMAN CAPITAL AND ECONOMIC GROWTH**

The empirical literature on the relation between human capital and economic growth is differentiated by the specification of the estimating equation, the way human capital is defined, the time frame considered, and the countries included in the sample. In practice the various empirical approaches share several common features and there is overlap between them.

Both intuition and various theories of endogenous growth a priori, toward a positive effect of human capital on economic growth. Empirical evidence on this issue has been mixed. To provide a flavor for the various approaches discussed we note that early contributions proved quite successful in establishing a robust link between enrollment rates (the proportion of adults enrolled in secondary education) and growth of GDP per worker (for example, the influential work of Mankiw, Romer, and Weil). Subsequent studies have questioned this result by broadening the definition of human capital (to include education at different levels) as well as alternative measures of human capital. They find that human capital explains a much smaller proportion of the variation in income per capita than claimed earlier. The early studies tended to emphasize the use of enrollment rates (flows) for primary or secondary education. More recent studies have used stock measures, that is, mean years of schooling of a country's adult population. Some researchers have differentiated measures of human capital, not only by level of education (primary/secondary/tertiary), but also by sex.

Most of the empirical literature on growth and human capital takes as a starting point the dual question of, first, whether the quantity of education (the empirical measure most closely associated with the concept of human capital) has a positive impact on the rate of economic growth and, second, the magnitude of any such effect. One of the most popular ways of modeling empirically the macroeconomic contribution of human capital emphasizes the process of convergence to the steady state. In its general form (e.g., Barro 1991), it claims that the deviation of the rate of growth from its steady-state level depends on the distance between the initial and steady-state level of output per worker.<sup>6</sup>

<sup>&</sup>lt;sup>6</sup> Andreas Savvides, Thanasis Stengos, Human Capital and economic growth, Stanford University Press, 2009

United Nations publishes Human Development Report on human development in different nations with the objective of evaluating the rate of human capital formation in these nations. The statistical indicator of estimating Human Development in each nation is Human Development Index (HDI). HDI is a composite statistic of life expectancy, education, and income indices to rank countries into four tiers of human development. It is the combination of "Life Expectancy Index", "Education Index" and "Income Index"<sup>77</sup>. The latest report was released on 14 March 2013 and compiled on the basis of estimates for 2012. It covers 185 member states of the United Nations. It is shown on the graph which continents have the highest HDI:



Countries with the highest HDI are Norway, Australia, United States, Netherlands and Germany. Our country Montenegro is 52th on this list. It is really significant that there is increase compared with HDI in 2012.

#### **MALE VS. FEMALE HUMAN CAPITAL AND ECONOMIC GROWTH**

Several studies have investigated whether the impact of human capital on growth differs by sex. The most common method is to introduce two separate explanatory variables for human capital (male and female) and to test for a significantly differential effect on growth. All contributions in this area, however, maintain the linearity assumption between different types of human capital and growth. A series of papers (e.g., Barro and Lee 1994; Barro 1997, 2001; Barro and Sala-i-Martin 2004) finds a significantly different growth effect for male and female education at the post-primary level measured by mean years of secondary plus tertiary schooling. More importantly, the general conclusion from these studies is that the impact of post-primary male education on growth is positive and significant whereas that for female education is negative and significant. One possible explanation for these findings, according to Barro (2001), is that "many countries follow discriminatory practices that prevent the efficient exploitation of well-educated females in the formal labor market". When it comes to education at the primary level, the results are ambiguous. Male schooling at the primary level is generally an insignificant determinant of growth; on the other hand, a significant contribution for female education at the primary level depends on whether fertility is held constant or not.

#### **IMPORTANCE OF HUMAN CAPITAL IN MONTENEGRO**

Increasing global competition means that Montenegro, as well as all European countries have to offer high quality products and services. This is possible only if there is improvement in human capital of the country. Well educated and trained population is a goal itself, but also the crucial factor contributing to the rapid socio-economic development. Montenegro has made progress in recent years, as measured by Human Development Index (HDI). As it is said before, HDI is a summary measure for the assessment of long-term progress in three basic dimensions of human development: a long and healthy life, access

<sup>7</sup> http://en.wikipedia.org/wiki/Human\_Development\_Index

<sup>&</sup>lt;sup>8</sup> https://en.wikipedia.org/wiki/List\_of\_countries\_by\_Human\_Development\_Index

to knowledge and a decent standard of living. Measured by the HDI, Montenegro belongs to the group of countries with high human development and is on the 52th place in the World (2013). From 2005. to 2011, the value of HDI for Montenegro increased from 0,757 to 0,771, an increase of 2.0%, or an average annual growth rate of approximately 0.3%. From 1980 to 2011, the average life expectancy at birth in Montenegro increased by 0.9 years. Gross National Income (GNI) per capita in Montenegro increased by approximately 24.0% from 2005 to 2011.

Human capital plays a crucial role in achieving the goals of human development. Human development refers to the expansion of choice. These choices are varied, but the most important are those choices that lead long and healthy life, education and enjoyment of a decent standard of living. Other choices could include freedom of expression, association and movement, and social justice and protection from discrimination based on race, religion or ethnic origin, ability to influence decision-making and social life contributions.

At the level of society, human development leads to greater ability of a country to absorb modern technology, better quality and productivity of the workforce, which inevitably leads to greater productivity and economic growth that are of fundamental importance for human development. At the individual level, it is the key to a successful career in the modern economy based knowledge. Improved knowledge and skills of individuals are becoming increasingly important to individual human development by helping the realization of the needs and aspirations of individuals, maintaining social networks, choosing healthy life choices and achieve a range of other goals. Economic growth was achieved through improved human capital not only results in increased disposable income of households, but also increases the budget revenues may seek important social priorities that extend possibility of human development for all.

Human capital should become a strategic priority for the company. Government and the private sector should invest in strategic development human capital that will create new jobs, develop new skills and competencies, and help people in Montenegro to live and work better in Europe in XXI century.

#### **CONCLUSION**

Significance of the concept of Human capital in generating long-term economic development of the nation cannot be neglected Corporations are recognizing the importance of investing in their employees now more than ever before. They understand that staying on top in the global economy, requires more and more emphasis on developing and retaining people.

Many theories about how human capital affects growth existed over the mechanisms through which human capital enhances the growth. Although does models can be quite different which the one thing they all have in common is that they found that human capital does indeed affect economic growth. It is also argued that human capital enlarges growth if there is a large volume of physical capital, and vice versa is true as well. Even though due to limited data and measurement errors these results should be considered carefully, the fact that human capital affects economic growth is an important ground for policy makers to act in order to insure greater growth rates.

In contrast to the prediction of the knowledge-based economy, empirical findings show that there is not any significant association between the existing stock of research workers and economic growth. Instead, economic growth is found to be associated with accumulation of research workers. This suggests that a key to economic growth is continuous development of high-order human capital. Given the increasingly fast pace of technological change that makes human capital obsolete, a concerted effort needs to be made to facilitate continuous development of high-order human capital. Today, human resource and its use, are placing the human capital in the center of the development policies, regardless the profile of the companies. The entire society evolution is in direct correlation with the dynamics and structure of the employees, which proves the importance of human capital. The evolution of the economy can be connected with the human factor involvement. It is expected that the Macroeconomic policies of all the nations will focuss towards promotion of human development and subsequently economic development. Human Capital is the backbone of Human Development and economic development in every nation.

#### Literature

- 1. A.. Savvides; T. Stengos, Human Capital and economic growth, Stanford University Press, 2009
- 2. F. Schütt, *The Importance of Human Capital for Economic Growth*, University of Bremen, http://www. iwim.uni-bremen.de/publikationen/pdf/W027.pdf
- 3. H. Badinger; G. Tondl, *Trade, Human Capital and Innovation: The Engines of European Regional Growth in the 1990s*, http://epub.wu.ac.at/964/1/document.pdf
- 4. http://ljudskikapital.blogspot.com/2012/05/sto-je-ljudski-kapital.html
- 5. http://saif113sb.hubpages.com/hub/ROLE-OF-HUMAN-CAPITAL-IN-ECONOMIC-DEVELOPMENT
- 6. http://www.cedefop.europa.eu/EN/Files/BgR3\_lzushi.pdf
- 7. http://www.i-capitaladvisors.com/2010/06/17/the-central-importance-of-human-capital/
- 8. https://en.wikipedia.org/wiki/List\_of\_countries\_by\_Human\_Development\_Index
- 9. J. R. Abel and R. Deitz, Human Capital, Local Economic Development, & the Importance of Colleges & Universities, Federal Reserve Bank of New York, New York Minute isue 47, November 2011
- 10. International journal for human capital development, issue 1/2013
- 11. J. Barro, Human Capital and Economic Growth, http://www.kansascityfed.org/Publicat/Sympos/1992/s92barro.pdf
- 12. J. Mincer, *Human capital and economic growth*, http://www.nber.org/papers/w0803.pdf?new\_window=1
- 13. R. M. Grant, Contemporary strategy analysis, 7th edition, Published by John Wiley & Sons Ltd
- 14. The importance of human capital, http://www.altaassociates.com/docs/06-AUG-CC.pdf

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# THE FUNCTION OF KNOWLEDGE AS A FACILITATOR OF HUMAN CAPITAL - A CATALYST IN THE ATTAINMENT OF SUSTAINABLE DEVELOPMENT IN EAST AND SOUTHEASTERN EUROPE

#### Abstract

This paper will analyze the condition in which human resource management is found in selected countries from East and Southeastern Europe (Slovenia, Bulgaria, Serbia, Hungary, the Czech Republic, Greece, Romania and Macedonia). Accordingly, through the analysis of the status of human resources in East and Southeastern Europe, it will focus on its impact on the sustainable growth of firms and of national economies from this region as a whole. The diagnosis of the condition of needed changes in the human resource management will be supported by an empirical analysis conducted by the EAPM and MHRA on the basis of which several important conclusions will be drawn. This paper will attempt to recognize the need and the attempt of firms to create a sustainable competitive advantage through the usage of knowledge in today's turbulent environment.

*Keywords:* human resource management, East and South-eastern Europe, knowledge, talent management, organizational learning, sustainable competitive advantage

#### **INTRODUCTION**

The challenges of the 21<sup>st</sup> century constituted a necessity of firms to re-evaluate their views on the development of human resources and their subsequent impact on the global economy as a whole. The evolution of the importance of human resources has brought along a change in the way the organization's workforce is treated, from one of the factors of production that adds a new economic value to products and services of the firm on a micro-level, to one of the main catalysts of future economic growth on a macro-level. The management of human resources is no longer limited to the environment inside of a firm, instead, it is just as much needed for the economic prosperity of the country as a whole. This approach to human resources functions well in theory, but it is fairly seen in practice. In the words of the global head of HR of Rio Tinto (Strack et al. 2009), human resource management is "still seen as a service rather than a business enabler".

In order for one to be able to understand and grasp the issues that contemporary human resource management faces, there ought to be an analysis of the social, political, cultural and historical setting of the country in question. In line with that argument, the interpretation of the progression of human resources in the realm of developing countries should take in consideration the context in which this economic asset has created its value. Accordingly, the purpose of this paper is to analyze the status of human resources in East and South-eastern Europe, focusing on their impact on the growth of firms and of national economies from this region.

### 1. GLOBAL ENVIRONMENTAL DETERMINANTS FOR THE DEVELOPMENT OF HUMAN CAPITAL IN EAST AND SOUTH-EASTERN EUROPE

#### 1.1 HRM in the ETEs (Economies in transition)

Human resource management has been studied in many countries of Europe, out of which the East and South-eastern part have received little attention so far. The countries that this paper will analyze are defined by Zupan and Kase (2005) as *economies in transition* which include "Central and Eastern European countries which started their transition from centrally-planned (Soviet Bloc) or labor-managed economies (ex-Yugoslavia) to market economies". The defining term itself implies that within these economies there are some remains of the previous political system which continuously influence their treatment of human resources. According to Koubek and Brewster (1995), the fundamental feature of the Soviet Bloc was "strict centralization". In this political system, the management of human resources was divided among several departments. Some of these departments according to Koubek and Brewster(1995) were: department of personnel policy, department of human resource planning, department of labor and wages and other special departments; although what the HR function was split in various functions performed by different departments; although what the HR function does represent today is not the same as what it did represent in the past. In contrast to the Soviet Bloc, ex-Yugoslavia was more "market-oriented and open to the West" (Zupan and Kase, 2005). Nonetheless, these political systems played a central role in the birth of HRM in the countries from this region.

One of the most important issues that this region faces is not the mere existence of the HR function, but the connection of this function with the rest of the business processes in the firm. According to Zupan and Kase (2005), in general, this region faced the following problems: 1) consistent HR strategies are rarely designed; 2) HR managers are not members of the top management; 3)HR practices supporting business needs are not effectively implemented. It is needless to say that the HR function should be embedded in the core functioning processes of the firm. The integration of the HR function with the decision-making process of the firm will not only improve organizational performance; it will also create a symbiotic relationship in which both will be stimulated to develop further as a whole.

Why is it important to identify the political environment of the East and South-eastern Europe? In order for one to be able to understand the situation in which human resource management is found in these countries, one must first look at their previously-existing political systems and within these, find the reasons why this part of Europe is far behind the other developed Western European countries. This approach should lead to contextualization of current HR practices, meaning that these should adapt to the existing environment of the economies in transition.

#### 1.2 Knowledge as an HR facilitator in the conceptual model of Zupan and Kase for ETEs

Zupan and Kase (2005) have developed a conceptual model for economies in transition (ETE):

Figure 1.1 Strategic human resource management in European transition economies: Building a conceptual model on the case of Slovenia



Source: Zupan & Kase. (2005). Strategic human resource management in European transition economies: building a conceptual model on the case of Slovenia, International Journal of Human Resource Management. Vol. 16 (6), p882-906

The most intriguing part of this model is the existence of the HR facilitators, which according to Zupan and Kase (2005) contain the following: knowledge, information and financial resources. In my opinion, out of these three HR facilitators, knowledge is presumably more important than the other two, as no coordination of information and financial resources can be done without it. The global movement of the "new" or "digital" economy to a "knowledge-economy" firmly proves this point.

#### 1.3 The function of knowledge for the economy of a country

According to Timothy Hogan (2011) "anything that increases the quantity or quality of the factors of production available to the economy or improves the technology available to the economy contributes to economic growth". In that manner, the accumulation of knowledge increases the standards of living with "new or improved products and services". This means that through knowledge (as an HR facilitator), human resources can contribute to the economic grown of a country.

Knowledge primarily is formulated within universities and colleges. In a research published by the Canadian Center of Science and Education (2012) it is explained that Etzkowitz and Leydesdorf have produced a triple-helix model comprised of universities, businesses and the government. They also insist upon the inter-relationships of these three sectors which will drive the economy of any country forward. The possible missing links between the sectors of the triple helix model can create a distortion in the country in question and inhibit sustainable development in the economy.

#### 2. BUSINESS AND COMPETITIVE ANALYSIS OF HRM IN EAST AND SOUTH-EASTERN EUROPE

#### 2.1 Strategic work force planning as a factor of a firm's growth

While in the previous political systems of the countries from East and South-eastern Europe, full employment was one of the most important goals, in the 21<sup>st</sup> century strategic work force planning has taken on the central role. It is undeniable to say that the financial crisis of the 2008 has had its effect on the European economy as well, which resulted in a massive cut of employee costs and many workers have been laid off. A characteristic that most of the firms in Europe share (including those from East and South-eastern Europe) is that they are trying to adapt to the current turbulent environment without envisioning the future.

The Boston Consulting Group and the European Association for People Management (2008) insist on the fact even in times of economic uncertainty, firms should concentrate on strategic work force planning, so that in the future they can ensure their growth. The BCG and EAPM (2008) have also unified the major future challenges of the economies of Europe: 1) talent and leadership are becoming even scarcer resources; 2) the work force, on average, is growing older and people are having fewer children; 3) companies are becoming global organizations and 4) the emotional well-being of employees is more important than ever. This means that firms should take care of their employees even during recessions as they might not be able to find an adequate substitution in times of economic expansion.

#### 2.2 Empirical analysis of the state of HRM in East and South-eastern Europe

In order to be able to analyze the situation of HRM in some of the countries of East and South-eastern Europe, it is necessary to include an empirical analysis of the region. For that purpose, three surveys will be used: two done by the European Association for People Management (2008 and 2009) and one done by the Macedonian Human Resource Association-MHRA (2012). The results obtained in the survey done by the MHRA will be compared to those of the other countries of East and Southeastern Eu-

rope done earlier due to the un-availability of another, more recent survey of the EAPM. In accordance, the situation of the human resource management in Macedonia will be compared to the summary of the results of the rest of the selected countries of East and South-eastern Europe.

In the survey done by the MHRA, 112 responses were obtained from many types of organizations (telecommunications, energy, automotive industry, banking and finance, food etc). A company's representative was asked to identify several challenges and practices that the company faces/ conducts.



#### Figure 2.1 Challenges and practices of HR in future

Source: Adopted according to MHRA (2012): The current status of HR development in Macedonia

Macedonian companies were asked to identify special types of challenges that they've encountered such as: annual assessment, talent management, remuneration and benefits, implementation of strategic HR, integration of separated HR processes, training and development and restructuring the organization (Figure 2.1).



#### Figure 2.2 Sustainability of HR functions

Source: Adopted according to MHRA (2012): The current status of HR development in Macedonia

According to Figure 2.2, as sustainable HR functions were considered: *personnel administration and development, recruitment, training and development, performance evaluation, management development, strategic planning, evaluation of all stages, retention, internal communication and corporate culture.* Some of the HR challenges faced by the Macedonian companies truly confirm the view of Zupan and Kase (2005) about the most important issues in the realm of HRM (mentioned earlier in this paper) in the economies in transition.

In comparison, in a similar survey done by the EAPM (Creating People Advantage 2008 and 2009), the companies from Bulgaria and Slovenia (2008) and Romania, Serbia, Hungary, Greece and the Czech Republic (2009) were asked to order HR functions according to their future importance and current capability.



Figure 2.3 Adopted according to: Strack et al.(2008) Creating People Advantage: How to address HR challenges worldwide through 2015. Boston: The Boston Consulting Group and World Federation of Personnel Management Association. p121-135. and Strack et al.(2009). Creating People Advantage: How to tackle the major HR challenges during the crisis and beyond. Boston: The Boston Consulting Group and The European Association for People Management. p58-65

According to the responses obtained (Figure 2.3), as HR functions marked with a high future importance and low current capability relevant for the purpose of this paper are the following: 1) managing talent (Romania, Hungary, Serbia, the Czech Republic, Greece, Bulgaria and Slovenia) and 2) improving leadership development (Romania, Hungary, Slovenia and the Czech Republic).

In Figure 2.4 HR functions with a low future importance and high current capability relevant for the purpose of this essay are: 1) *delivering on recruiting (Slovenia, Greece, the Czech Republic, Serbia and Bulgaria) and 2) mastering HR processes (Slovenia, Greece, the Czech Republic, Serbia and Bulgaria).* It appears that in the countries such as Slovenia, Greece, the Czech Republic, Serbia, Bulgaria and Macedonia the process of recruitment is considered as a sustainable issue of high current capability. Companies in these countries benefit greatly from a well-established recruitment system.



*Figure 2.4* Adopted according to: Strack et al. (2008). *Creating People Advantage: How to address HR challenges worldwide through 2015*. Boston: The Boston Consulting Group and World Federation of Personnel Management Association.p121-135. and Strack et al. (2009). *Creating People Advantage: How to tackle the major HR challenges during the crisis and beyond*. Boston: The Boston Consulting Group and The European Association for People Management. p58-65

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*Figure 2.5* Adopted according to: Strack et al. (2008). *Creating People Advantage: How to address HR challenges worldwide through 2015*. Boston: The Boston Consulting Group and World Federation of Personnel Management Association.p121-135. and Strack et al. (2009). *Creating People Advantage: How to tackle the major HR challenges during the crisis and beyond*. Boston: The Boston Consulting Group and The European Association for People Management. p58-65

According to Figure 2.5, HR issues of low future importance and low current capability relevant for the purpose of this paper are: 1) managing demographic ageing (Romania, Hungary, Greece, Serbia and the Czech Republic) and 2) providing shared services and outsourcing HR (Slovenia, Hungary, Greece, Serbia and the Czech Republic). The survey showed that the aforementioned countries do not consider managing demographic ageing (with the exception of Slovenia and Bulgaria) and providing shared services and outsourcing HR (with the exception of Romania and Bulgaria) as HR issues that should be a top priority today or in the future.



*Figure 2.6* Adopted according to: Strack et al. (2008). *Creating People Advantage: How to address HR challenges worldwide through 2015*. Boston: The Boston Consulting Group and World Federation of Personnel Management Association.p121-135. and Strack et al. (2009). *Creating People Advantage: How to tackle the major HR challenges during the crisis and beyond*. Boston: The Boston Consulting Group and The European Association for People Management. p58-65

An HR issue that is currently held as important and will continue to be so in the future (Figure 2.6) common for Romania, Hungary, Greece, Serbia and Bulgaria relevant for the purpose of this paper is transforming HR into a strategic partner.

From the results obtained, the first, perhaps, the most important conclusion would be that in all of the countries subjected to analysis talent management appears to be an issue (EAPM) and a challenge (MHRA) with a high future importance.

#### 2.3 Talent Management as an important HR challenge in the future

According to an investigation done by *Manpowergroup* (38077 employers from more than 40 countries interviewed) 45 % of the employers in Romania, 34 % of the employers of Hungary, 26% of the employers in Slovenia and 24 % of the employers in Greece and an overall of 34 % of employers as a global average had a difficulty in filling job positions. Undoubtedly, there are talent supply and demand issues which may be the reason why talent management appears to be a top priority for companies originating from the region of East and South-eastern Europe. The undeniable shortage of talent allows talented individuals whose competencies match the requirements of companies to be noticed and be selective about the choice of their employer.

The need for talent management can transform this HR function as one of the core business functions in diverse organizational settings. According to the Capitalent (2012), talent management can be seen as "an activity comprised of distinct components: business anchor, talent culture, talent organization as the three pillars and talent's view in the middle of their model".



Figure 2.7 Talent Management

Source: Adopted according to Capitalent (2012) : The real impact of talent: How Europe's small businesses drive future success, p.7

Business anchor essentially means that talent must be incorporated in the business strategy; talent organization requires a designated talent leader along with the processes, methodologies, capabilities and tools to assure the process; talent culture refers to the promotion of an environment that drives performance and overly values talent and finally, talent view is a component that actually represents the needs and interests of the talented individuals.

The model for talent management suggested by the Capitalent (2012) shows that this HR function is a simultaneous process where both the demands of the employer and the talents should be complementary and incorporated within the business strategy of the firm. As a result, companies that engage themselves in practices and activities dedicated to talent management can witness the creation of their competitive advantage on the market through the creativity and innovation of their talented employees.

In order to build talent, the EAPM (2012), suggests a model of six important steps: 1) develop a talent strategy; 2) form an adaptive leadership model; 3) enable talent sourcing; 4) focus on talent development acceleration; 5) establish a culture of talent engagement and affiliation and 6) create a talent magnet culture.

The six-step model for talent management suggested by the EAPM can be used as a guide in the process of dealing with the ultimate issues of talent supply and demand in companies from East and South-eastern Europe. It is a form of recommendation for those companies that have already evaluated the importance of talent management in the battle for recovery from the global recession and a remainder for those that still neglect the extensive difference that talents can make in the process of constant re-building of their business and competitive advantage on the market in the future.

### **3. THE IMPORTANCE OF A SUSTAINABLE COMPETITIVE ADVANTAGE FOR BUSINESSES AND THE ECONOMY**

#### 3.1 The constitution of a sustainable competitive advantage in a turbulent environment

Along with an everlasting incentive to earn profit, firms are undoubtedly also interested in their survival and development in an ever more turbulent environment. The need of firms to secure their existence (Bojadjioski and Blazheska, 2009) is classified as a secondary goal, following their primary motive-profit maximization. It is in this context that the ever more obvious need for organizational development has appeared (Nakov, 2010), who stated that "organizational development focuses on planned and continuous developmental organizational changes." In that manner, if profit-seeking organizations do intend to ensure organizational development, they should dedicate themselves to creating an organizational structure that supports the constitution of a sustainable competitive advantage that would ensure the fulfillment of their secondary goal.

The PP4SD-Professional Practice for Sustainable Development launched in 1999 intended to establish a partnership with 14 professional institutions to create *a common curriculum framework for sustainable development* (Martin et al. 2005) and subsequently initiated a workshop during which relevant issues were discussed. Based on the results obtained from the workshop, it was emphasized that *organiza-tional change based on principles of sustainability is not a steady-state process, but a dynamic and complex state of affairs.* 

#### 3.2 Organizational learning as a catalyst of change

The ways in which a change can be embedded within an organization is through the process of systemized organizational learning according to Martin et al. (2005). Several authors (Nag and Gioia, 2012) pointed out the relationship between the "processes of knowledge creation, acquisition and dissemination as important means by which learning occurs". However, there are divided views on the subject: certain authors claim that learning is a process that occurs on the individual level and in that sense organizations cannot undergo such a process, but another stream of authors recognize the existence of collective learning processes. Nevertheless, research is also done to investigate the possible means by which the learning of an individual can become part of a collective learning process.

According to PP4SD (Martin et al. 2005), "many organizations in transforming the way they work will also have to transform the way they learn in order to sustain their competitive advantage". Accordingly, it is quite possible to assume that organizational learning can lead to the establishment of a sustainable competitive advantage which should present a primary concern for firms operating in a economically and politically unstable environment. Hereby it is also necessary to mention that this approach is imperative for developing countries that intend to pursue economic growth and development as part of the emerging markets of the 21<sup>st</sup> century.

The countries from East and South-eastern Europe are not just defined as mostly developing countries, but also as economies in transition (Zupan and Kase 2005) which means that their adoption of sustainable business practices should take in consideration other specific factors as relevant as well. One important aspect of the economies of these countries is the presence of foreign direct investment (FDI) which may be a channel through which these ETEs get closer to the leading Western approach of organizational learning. According to André P. Czeglédy (1996), professor at the department of social anthropology at the University of Cambridge, "the general idea of organizational learning in FDI situations is that an imported "top management" becomes the fount of wisdom for a managerial elite of local employees". In addition, André P. Czeglédy (1996) identifies the success of organizational learning as a variable dependent upon the participation of the majority of the members or more specifically, participation present at all corporate levels of an organization. Through his investigation done in the realm of economies of East Europe, he concluded that most of the organizational learning that truly takes place in this region is predominantly guided by the ability of indigenous workers to apply their skills to a current situation. This essentially means that it is not just necessary to transfer the knowledge that advanced and successful companies use, but it is even more necessary to construct an approach through which economies that can represent possible emerging markets can adapt this knowledge to specific situations in which they are found. In addition, "organizational learning generally requires successful communication between at least two parties, one giving and one receiving information as the basis of the learning process" (André P. Czeglédy 1996). This view defines learning as a process of social interaction through which participants exchange and debate about meaningful information which then can be applied to organizational practices.

#### 3.3 Existing challenges of a learning organization in East and South-eastern Europe

Frequently, the main issues that arise in the process of reception of knowledge in the Republic of Macedonia, lie in the realm of social interaction and this "activity", unfortunately, incorporates many perception distortions which are inevitable when any conversation between a foreign practitioner of organizational knowledge and a domestic worker is taking place. In that context, it is important to recognize that the process of learning is to be seen as a responsibility of both parties engaged in the process, not just of those that receive the information relevant for their development of a sustainable competitive advantage.

What Zupan and Kase (2005) noted in Slovenia is the transformation of contemporary HR practices from foreign-owned companies established in Slovenia to domestic companies. The Western HRM models that foreign-owned companies use are then "disseminated to the domestic sector". Although the influence of foreign-owned companies on the domestic ones is significant, Zupan and Kase (2005) have concluded that in the companies with "a majority of domestic ownership, centralized and administrative practices prevail."

As much as this discussion is focused on large-scale organizations, it is also quite important not to neglect the role of small businesses and their contribution to the development of a country. As one of the negative aspects of small businesses is a high market risk, meaning that these small-scale organizations would more than need to devise a sustainable competitive advantage that would ensure their existence in the years to come. According to the Macedonian Institute of Statistics, in the year of 2011 around 91.3% of the companies are micro-companies, which only underline the importance of organizational learning that takes place in these companies. In the words of André P. Czeglédy (1996), it is essential to create "assistance programs specifically geared to smaller-scale businesses" that would help them in the "processes by which they identify, search for, and use knowledge as a basis for attempting to create a competitive advantage".

According to the survey done by the MHRA, 60 % of the companies in the Republic of Macedonia do not plan to undertake any structural changes within their organizations. In times when companies are found in a highly turbulent environment, it is necessary that their approach to their current issues includes willingness for the introduction of organizational changes. In contrast, companies from Bulgaria, Slovenia and Romania (EAPM 2008 and 2009) believe that restructuring the organization is an issue of high current capability, but low future importance. Thereby, it is also important to mention that it is not just important for a company to be willing to accept structural changes in the present as a way through which a sound structure of the organization can be built, but also recognize the need for constant evaluation of current structure and readiness for meaningful structural changes. As organizational learning was already mentioned as a channel through which a change can be embedded within an organization, it is needless to explain why companies should strive to learn at every stage of their process of development. Again, in the survey done by the MHRA (2012) almost all of the companies interviewed identified discussions and working in groups as the most significant form of learning for their HR professionals along with new training modules and practices (60 %) and new information sources - professional studies, periodical issues or internet forums (60 %) as other, relevant ways of learning.

In some of the companies from East and South-eastern countries such as Bulgaria and Slovenia, becoming a learning organization was an HR function with a medium current capability and a medium future importance (Creating People Advantage, 2008). In the second survey done by the EAPM (Creating People Advantage 2009), companies from Hungary, the Czech Republic and Serbia have identified the same HR function as one with a high future importance. This is a positive signal that some of the countries that come from East and Southeastern Europe have identified the *importance* of becoming learning organizations and would be expected to improve this HR function in the future. Furthermore, by recognizing the need for becoming a learning organization, a company can constitute a sustainable competitive advantage that will not only ensure the survival of itself in the emerging markets of the 21<sup>st</sup> century, but will also fuel the development of the economy of its developing country as a whole.

#### **CONCLUSION**

Along with defining the general state in which HRM in selected countries from East and South-eastern Europe is found, the purpose of this paper was to identify how HRM can contribute to the creation of a sustainable business and competitive advantage which will further drive sustainable economic development in these countries. The following statements were proven within this paper:

- 1. If knowledge is considered as an HR facilitator, than the management of human resources both on the micro and on the macro level, with the aid of knowledge, can contribute to the development of the knowledge economy as a whole;
- 2. Strategic work-force planning is more than essential for companies as they would face scarcity of talent and leadership, demographic ageing, globalization and a need for a balanced emotional well-being of employees in the future. In countries such as Macedonia and Hungary, strategic work-force planning is considered as a sustainable HR function with high current capability;
- 3. According to the survey done by the EAPM (2008 and 2009) companies in Romania, Hungary, Greece, Serbia and the Czech Republic consider managing demographic ageing as an HR issue of low future importance and low current capability. This can indicate that companies may not be fully aware of the challenges that the future brings and thus may hinder the importance of strategic work-force planning;
- 4. In the countries such as Slovenia, Greece, the Czech Republic, Serbia, Bulgaria and Macedonia the process of recruitment is considered as a sustainable HR issue of high current capability;
- 5. The fact that there are talent demand and supply issues may be the reason why talent management is considered as a top HR priority for the companies in all of the countries taken in consideration in this paper (Slovenia, Bulgaria, Serbia, Romania, Hungary, the Czech Republic, Greece and Macedonia);
- 6. Companies that engage themselves in practices and activities dedicated to talent management can witness the creation of their sustainable competitive advantage on the market through the creativity and innovation of their talented employees;
- 7. As a secondary goal of a firm is securing its existence, the creation of a sustainable competitive advantage in a turbulent environment is identified as more than necessary;

- 8. Companies that opt for the creation of a sustainable competitive advantage should be ready to embrace organizational change which may happen through the process of organizational learning;
- 9. The transfer of knowledge through FDI should be further developed to include a phase of adaptation in which domestic companies can learn how to adapt foreign practices to their surroundings;
- 10. The companies in Bulgaria, Slovenia, Hungary, the Czech Republic and Serbia have already noted the importance of becoming learning organizations. Organizational learning is done through working in groups, training modules, practices and new information sources in the companies in Macedonia according to the survey done by the MHRA.
- 11. Any organization that strives to become a learning one, can expect to be prepared for the challenges that the future brings and be responsible for the creation and support of sustainable economic development in its respective country.

#### **Bibliography**

- 1. Abramo et al. (2012). *The Real Impact of Talent: How Europe's Smaller Businesses drive future success*. Available: http://www.eapm.org/publications/2012. Last accessed 20th March 2013.
- 2. Bojadjioski and Blazheska (2009). *Economics of enterprise*. Skopje: Ss. Cyril and Methodius, Faculty of Economics, Skopje
- 3. Brewster, Bennett. (2010). Perceptions of business cultures in eastern Europe and their implications for international HRM. *International Journal Of Human Resource Management*. 21 (14), p2568-2588
- 4. Czegiédy (1996). New Directions for Organizational Learning in Eastern Europe. Organization Studies (Walter De Gruyter Gmbh & Co. KG.). 17 (2), p327
- 5. Hogan (2011). An overview of the knowledge economy, with a special focus on Arizona. Tempe: W.P Carey School of Business and Arizona State University.
- 6. Koubek, Brewster. (1995). Human resource management in turbulent times: HRM in the Czech Republic. *International Journal Of Human Resource Management*. Vol. 6 (2), p223-247.
- 7. Macedonian Institute of Statistics. (2012). *Structural Business Statistics*. Available: http://www.stat. gov.mk/OblastOpsto.aspx?id=39. Last accessed 26th April 2013.
- 8. Manpowergroup. (2012). *Talent Shortage Survey*. Available: http://www.manpowergroup.us/campaigns/talent-shortage-2012/pdf/2012\_Talent\_Shortage\_Survey\_Results\_US\_FINALFINAL.pdf. Last accessed 26th April 2013.
- 9. Martin et al. (2005). Sustainability, Systems Thinking and Professional Practice. *Journal of Geography in Higher Education*, Vol. 29 (1), p79-89
- 10. Nag, Gioia. (2012). From Common to uncommon knowledge: Foundations of a Firm-Specific Use of Knowledge as a Resource. *Academy of Management Journal*. Vol. 55 (2), p421-457.
- 11. Nakov Leonid (2010). *Management of Changes*, Ss. Cyril and Methodius, Faculty of Economics Skopje:
- 12. Shah Md. Atiqul Haq. (2012). Knowledge-based Development and Its Relation to Economic Prosperity in Developing Countries. *Asian Social Science*. Vol. 8 (12)
- 13. Strack et al. (2008). Creating People Advantage: How to address HR challenges worldwide through 2015. Boston: The Boston Consulting Group and World Federation of Personnel Management Association.
- 14. Strack et al. (2009). *Creating People Advantage: How to tackle the major HR challenges during the crisis and beyond*. Boston: The Boston Consulting Group and The European Association for People Management.
- 15. Strack et al. (2012). *Creating People Advantage: Mastering HR challenges in a two speed world*. Boston: The Boston Consulting Group and The World Federation for People Managemet.
- 16. Zupan, Kaše. (2005). Strategic human resource management in European transition economies: building a conceptual model on the case of Slovenia. *International Journal Of Human Resource Management*. Vol. 16 (6), p882-906.

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#### **AGING POPULATION AND HUMAN CAPITAL**

#### **Summary**

The aging population is a problem faced by most countries. It appeared as a consequence of reduced fertility and birth rates and mortality due to longer life expectancy of the population. While reducing the number of young people, baby boom generation already belongs to the category of the older population. Aging of the population causes a number of mostly negative effects related to expenditures caused by the aging population, but it also refers to the reduction in labor supply. Reducing the supply of labor, and could lead to lower quality of the workforce. However, this problem can be surpassed by implying that a greater number of older people also implies greater opportunities for investment in young people. So despite a number of adverse effects caused by the aging of the population, can be extracted and a positive effect, and it is able to increase investment in human capital.

Keywords: aging population, workforce, human capital

#### **INTRODUCTION**

Various economic growths in most countries have affected different demographic dynamics and development in these countries. Most of the developed countries are facing the problem of population aging, but there are growing tendencies that those less developed and underdeveloped countries will face this problem as well.

In this paper, causes of population aging and its possible consequences are going to be explained. When we talk about population aging, we may note that there are three categories within the limits of the age structure of the population. The first category represents young people under 14, the second category are people of working age from 15 - 64, and the third category are 65+ who are withal reviewed in this paper.

What are the causes of aging? Studies have shown that in most countries increasing number of elderly people due to falling fertility rates, increasing longevity and aging baby boom generation. Percentage of elderly population means greater burden of pension funds. Older people are often sick, so they need more health care services and medicines. It causes far greater health care costs. Also, people over 80 mostly need nursing, which causes additional expenses for those taking care of them, that is to say for those able to work. Increased expenditures have a negative impact on the standard of living of the workforce.

Another consequence of the increase in the percentage of population aging is the reduction in labor supply, which can affect overall production capacity. However, in order to overcome these problems, one of the positive effects of population aging is the greater opportunity to invest in human capital. Although the number of working age is decreasing, there is a tendency to increase overall human capital. Younger people are more motivated to learn from the older and therefore there is a possibility of increasing the level of education as an important component of human capital. Increasing human capital has a positive impact on overall economic growth. Some studies have shown it, so it will be exposed in this paper.

#### 1. POPULATION AGING - A PROBLEM FACED BY MANY COUNTRIES

Economic and demographic country development, are interrelated, but a propitious development of one does not always imply the development of the other. One of the most dominant processes that characterize modern society is aging.

When we talk about the population structures, one of the most important is the age structure, since it affects the socio - economic development of a particular population. It is a review of the development of the population over a long period of time. There are several classifications of the population by age, but one of the roughest divisions is into three age groups, the first of which implies the population under 14, the second from 15 to 64, and the third 65 and older.<sup>1</sup>

One of the most important processes that marked the world population, especially the population of developed countries and developing countries is the aging of the population. There are several definitions of population aging, and according to one of them the term population aging refers to an increase in the number of people older than 60 or 65 years in the total population. In contrast to the first definition, which relates old people and the total number of population, the second definition puts old age in relationship with working age population (15 - 64 years old) in defining the aging process. Sometimes it takes into account the number of elderly population in relation to the contingent of young people (aging index).

It can be concluded that the aging of the population has a negative impact on economic development. In demographic terms, the process of aging affects both the total motion, and the structure of the population. In economic terms, population aging affects the reduction of the working age population, as well as the activity level of the population. Due to the negative effects caused by the problem of population aging, it has become a topic of various discussions and contemplations of the professional and general public.

What are the causes of aging? The most important demographic determinants that cause aging of the population is decreasing fertility (fertility = number of live births compared to the female population of childbearing age, ie. aged 15-49 years)<sup>2</sup> and mortality and emigration. The population aging in the developed countries of Western Europe has begun in the 18-th century due to the prolonged decrease of fertility. After 1960, together with low fertility further reduction of mortality has an increasingly important role, especially in older age groups, induced by the advancement of medicine and living conditions, which affects the prolongation of life.

#### 2. THE CONSEQUENCES OF POPULATION AGING

In most countries in the region live 70 percent more elderly people than 10 years ago. Countries that are in this situation, where the overall age structure of the percentage of the elderly and the less ablebodied participation, always maintains a negative on the country, especially in its economic and political development. All this leads to a load of pension funds as well as a large health burden. So, these are the countries that will have serious economic, social and health problems in the near future, in simple terms, the number of elderly people is growing expansively, whereas the number of young people, who are supposed to earn for their health insurance and pensions, rapidly decreases.

According to the UN definition, it is considered that a particular nation is in an advanced phase old age if the number of people younger than 14 is decreasing, if the number of people older than 65 is increasing, if the number of able - bodied (15 - 64 years) is decreasing, and the number of people over

<sup>&</sup>lt;sup>1</sup> Mladenovic D. Djolevic V. Soskic D., (2010), Economic Statistics, CID Faculty of Economics, Belgrade, p.43

<sup>&</sup>lt;sup>2</sup> Breznik D., (1980), Demography, Scientific Book, Belgrade, p. 471

80, that is to say of those in the fourth life cycle, most of whom requires enhanced care of others, is growing expansively.

Some of the consequences of increasing the number of older people in the overall age structure are:

- Reducing the young or working-age population
- · Increase in the elderly population with their own source of income

#### 2.1. Reducing the number of young or working-age population

So, the problem in most countries in recent decades is primarily the reduction of the total working-age population. There are many causes that have led to a reduction in the working-age population. Among the causes are primarily listed: reduced fertility or birth rate of the population and the reduction of mortality due to the longer life expectancy of the population. The average life expectancy of the population has increased in recent decades compared to 50-60 years ago, but also demographic projections show that in the coming decades, life expectancy has extended population. Reducing the number of working-age influences the reduction of labor supply. Again, a weakening labor supply may entail the weaker quality, because it is less choice.

Reducing the number of young, entails the problem of aging nation. Is it possible to stop the aging of the nation and how? One logical answer is that the nation's aging can be prevented by increasing the number of young people. Again, the number of young people can be increased in two ways: by birth or immigration policy. History has shown that the increase in birth - rate, that is to say a good target population policy is always more efficient and discovered to be much cheaper than the immigration policy.

Although its results will take twenty years to come to existence, because a newborn will only then enter the labor market, it is a much more efficient solution. If immigration, or the import of young workers was an appealing solution, then Germany for example would be a European country with the best demographic picture, when we consider the fact that it has received hundreds of immigrants during the 20-th century. And the reality is just the opposite: together with Italy, it has the worst ratio of young and olds. Every fifth person in the country is over the age of 65.

The only developed countries with a decent birth - rate and relationship between old and young people are northern European countries and France, as an exception. These are countries with very strong population policy, which is based on the provision of basic material needs of young people and excellent service to working parents.

When the Scandinavian countries 20 - 30 years ago discovered that despite the material prosperity, the number of newborn babies begins to decrease, they launched an offensive policy with the aim to create a climate in society where being a parent will not necessarily represent an end to life which was led so far. They began to encourage parents to come to work with children, prescribe mandatory kindergarten opening in the larger firms in terms of employment equated his father and mother, worked out in detail and parental options - provide services for the care of older people, because studies have shown that some of younger people do not decide on a second or third child solely because of obligations to the older members of the family.

#### 2.2. Increasing the number of older people with their own sources of income

Reducing the number of people who are in working order, has caused an increase in the number of elderly people on the other side. The increase in number of elderly people entails higher burden of pension funds, as well as health insurance. Population aging, that is to say, the increase in their total

number and relative share in population is related to the rise in demand for health services, and thus the total health expenditure, which is getting more and more difficult for the system. Increased participation in the total elderly population age structure entails a number of negative effects. First of all, elderly people are very little or never involved in the production process, which has a negative effect on the total income. Also, according to an analysis, members of the population older than 65 are generally not inclined to saving, but mostly spend the previously accumulated.

So, a small number of young and working ages from 15 to 64 need to earn for themselves, for those under 15, and for those over 65, and that causes great difficulties for them. The difficulties are reflected in the growing deficit in the pension system finances. In addition to the pension system, a growing problem is the financing of health care costs, which increase almost proportionally with the increase in the average age of the population. In most countries, the analysis of demographic trends indicates clearly and continuously aging population. The population aging process has begun during the 20-th century, intensified in its last decades and has continued in this century.

Based on the projections of population trends, it can be concluded that there will be no population growth in the following decades, but that it will decline until it reaches zero, which means that a phase of depopulation and population aging will set in. Depopulation is primarily caused by the natural movement (low birth and death rates), but also due to mechanical movement (there are an increasing number of people who migrate for better life).

Along with the increasing number of older persons will increase the total expense of their livelihood. These expenses increased mainly carried out active members of the household, which may adversely affect their standard of living and high living standards of the population. From all the above it can be concluded that aging causes a lot of problems for a society, from the burden of pension funds, health insurance and the direct impact on productivity, economic growth and general quality of life.

One of the positive effects of aging and reducing the number of active inhabitants is the possibility of greater investment in human capital per capita because the available capital is allocated to a small number of people. As already noted, population aging has many negative, but some positive effects, too.

The negative effects of aging have an impact on economic development, especially due to:<sup>3</sup>

- Increased expenses of dependents (mainly people older than 65 years), which is financed by tax
  revenues or from direct or indirect income earned by productive members of society, or directly
  from the productive members of the household income. The ultimate effect of increasing the ratio
  of dependents and productive people to a reduction of the standard of living, if not offset by increased productivity producers, at least to the extent that the per capita income is not reduced;
- · Increase health expenditure as a result of rising health care costs aging population;
- Reduction in national savings, because older people generally have a negative savings (income earned is spent in productive age);
- · Reduction of the potential labor force, due to reduced inflow of young people;
- Reduction in demand due to population decline, and thereby reduce the supply (production)
- Reducing the motives for technological innovation, due to reduced volume of the domestic market.

In addition to negative effects, depopulation and population aging have positive effects as well, which are reflected in:

- Increasing investment in human capital per capita because the capital available is allocated to a small number of people;
- Reduction in fiscal expenditures intended for investments in the infrastructure (e.g., schools) because of a reduced number of users.

<sup>&</sup>lt;sup>3</sup> Bacovic M., (2012), Population and Economic Development of the XXI century, Entrepreneur, Faculty of Economics, Podgorica, p.18

These are some of the factors which are affected by population aging, but they are not and do not have to be final.

Given that the topic of this work is population aging and human capital, more attention will be dedicated to human capital in the following lines.

#### 3. HOW DOES AGING AFFECT THE HUMAN CAPITAL?

The aging of the population as a result has a number of negative effects. However, reducing the number of working - age population there could be greater possibilities of investments into the human capital by individuals, and thus it can be concluded that after all population aging and depopulation can have a positive effect. Individuals, businesses and society as a whole enjoy the benefits that are the result of investment in human capital. Benefits may occur in the material and non-material form. Material form is reflected in the increase in wages, productivity gains and economic growth. In terms of intangible benefits, it is related to the decrease in mortality rates, reduction of crime, greater social cohesion and the like.

Population aging leads to slower growth of labor supply, which can lead to a reduction in productivity and has a large impact on overall production capacity. Also, the aging population could lead to a reduction in national savings, increase in physical capital and to influence the amount of total earnings.

Several factors can compensate for the fall offers the total workforce. First, since the return to human capital is the discounted sum of future wage revenues, future young cohorts might be inclined to invest more in education. Second, a greater participation of middle-age and older workers may arise as a consequence of the increase in real wage pressures. Third, current cohorts of young adults are better educated than older cohorts (young women in particular).<sup>4</sup>

The aging of the population raises new incentives for young people, with rational expectations, to invest more in the education of young people in order to provide a better qualified workforce later during their life. By spending more time in education, initially reducing the workforce and therefore this leads to a reduction in production capacity and the deterioration of the economic costs of an aging population. However, present and future cohorts of middle-aged workers are trained and work harder, which in turn will lead to increase production capacity and reduce the economic costs of population aging. Thus, the accumulation of human capital is a powerful smoothing mechanism, ignoring it will lead to a significant overestimation of the economic costs of aging. It should also be noted that in recent years has increased the participation of older workers.

In order for young people not to underestimate the value of future earnings, it is very important to have complete information before they make a choice between higher education and the labor market. If you make the right choice, the economic cost of population aging may be modest, but if there is no real choice, the cost will be much higher and will lead to lower living standards for future generations.

#### 3.1. The role of human capital in economic growth

According to the theory, human capital can affect economic growth in two ways. The first way is that human capital has a direct impact on production as a productive factor and that capital accumulation has a direct impact on the growth of output. This is the so-called level effect. Another way is that human capital contributes to technological progress through innovation, expansion and adoption of new technologies. Based on this, it can be concluded that human capital indirectly influences growth through increased productivity.

<sup>&</sup>lt;sup>4</sup> Fortin N., Lemieux T., (2005) Population aging and human capital investment by youth, University of British Columbia, Final Draft, p.2-3

Many scholars have conducted research to determine whether there is a link between human capital and economic growth, or whether human capital affects economic growth. To explain the impact of human capital, its kind of testing is devised to Solow growth model.<sup>5</sup> Starting from the evidence of accumulation of human capital we were able to explain the differences in standard of living between countries. As human capital has a direct impact on economic growth, we are starting to explain cross-country regression.

To provide greater insight into the positive impact of human capital on economic growth, it is necessary to improve the quality and data collection methodology. With their improvements, the results led to the conclusion that human capital is an important determinant of economic growth.

#### 3.2. Population aging and the accumulation of human capital

In the last decade education as an important component of the human capital has significantly increased. This can be seen in the increased percentage of graduates from the last 15-20 years.

However, with the aging of the population contribution of human capital to economic growth could change in future. On the one hand, as the baby boom generation ages, older workers are expected to have greater experience as an important component of the human capital. On the other hand, the net contribution of education to the growth of the human capital is wise, as the key factors may move in opposite directions. Firstly, younger population will continue to represent a small part of the workforce and, as such can reduce the contribution of education to human capital. Secondly, increasing relative deficit when workers are in question may lead to increase in real wages and so ensure the return of the human capital. Thirdly, the stock growth of human capital related to experience may lead to a decline in wages, and thus reduce the return to education. Based on this, it can be determined that the only way to arrive at a solution quantitative research.

Quantitative study of this problem is aimed at evaluation of the contribution of human capital to economic growth in the context of population aging. The results of this study show that population aging might, for future generations, to create more opportunities to invest in human capital, which would further stimulate economic growth and significantly reduced the fall in real GDP per capita.

In Japan, many studies were conducted to determine the long-term by consequences of population aging. According to these studies, there are conclusions to which they believe that young individuals have a greater incentive to devote his time to education in the decline stage of population growth and endogenously determined growth of human capital can not compensate the negative growth rate of labor force growth. Also, some studies have estimated that the stock of human capital used to examine the relationship between changes in demographics and changes in stocks of human capital. So, with the increased supply of human capital, even though the population is aging, there is a possibility of a positive impact on economic growth.

#### **CONCLUSION**

Population aging is a problem many countries are already facing, and demographic projections indicate that in the future many countries will face the problem of elderly population and depopulation. Population aging was primarily caused by decrease in fertility, low birth - rates, so as the reduction of mortality or the prolonged lifetime of the population due to better conditions for living and the

<sup>&</sup>lt;sup>5</sup> One of the earlier growth model developed by Robert Solow in 1956 year. Another name for this model is the Solow - Swanov model. In this model, the product is determined by three factors: the number of employees N, capital K and the state of technology A. Model assumes that the economy is closed, it only produces a complex good use of labor and capital, and that the technological progress and the savings rate is exogenously determined. If it is assumed that technological progress in Harrod sense, the aggregate production function will have the form: Y = F (K, AN), where the variable is called AN effective work.

development of medicine. What are the consequences of an aging population? There are many consequences of population aging that my cause a number of adverse effects.

As for the adverse effects caused by the aging of the population, which are primarily increased health insurance costs, higher costs of dependent which entails a lower standard of living. It also increased the percentage of the elderly population impact on reducing the supply of labor, reducing overall demand and reducing incentives for technological innovation.

However, although there are a number of negative effects caused by the aging population, it is possible to extract some positive effects. Among these positive effects is the possibility of increased investment in human capital. So, even though the population is aging, reduces the supply of labor, it is possible to compensate for the lack of increase in investment in human capital. By investing in education as an important component of the human capital, it is possible to have a positive impact on economic growth, despite the reduced supply of younger workforce.

Many studies have been performed in the leading countries, such as Japan to determine the relationship between aging and human capital. It has come to a conclusion that greater investment in education (younger people are more motivated to learn), despite the decreased number of young people will result in higher levels of education, and hence in increased human capital. Increased human capital has a positive effect on overall economic growth.

#### References

- 1. Mladenovic D., Djolevic V., Soskic D., (2010) *Economic Statistics*, CFP Faculty of Economics, Belgrade.
- 2. Breznik D., Demography, (1980), Scientific Book,
- 3. Bacovic M., (2012), *Population and Economic Development of the XXI century*, Entrepreneur, Faculty of Economics Podgorica ,(9-20)
- 4. Fortin N., Lemieux T., (2005), *Population aging and human capital investment by youth*, (Final draft), University of British Columbia
- 5. Joanne W. Hsu, (2011), Essays on Aging and Human Capital, The University of Michigan
- 6. Fougère M., Harvey S., Marcenier J., Mèrette M., (2007) *Population Ageing, Time allocation and Hu*man Capital: a General Equilibrium Analysis for Canada (Project)
- 7. http://www.wren-network.net/resources/2005-11.solow.contribution.pdf
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# HUMAN CAPITAL, ILLUSION OR PERSPECTIVE DEVELOPMENT OF BOSNIA AND HERZEGOVINA

## **Abstracts**

In the time of new economy, the economy of knowledge, the development of a country depends on existence of human capital and its structure. Main characteristic of human capital is its abstractness; the basic and the most important factor of human capital creation is labour force, that is, education. Does the abstractness the development of Bosnia and Herzegovina should be based represent a real ground or just an illusion?

Keywords: human capital, labour force and education

## **INTRODUCTION**

BIH is a country with a specific state organization. It's composed of two entities, The Republic of Srpska and Federation of Bosnia and Herzegovina. Apart from the two, there is, also, a District- The District of Brcko. This country has had a very "tough" and stormy history which, of course, influences social, economic, political state etc. like nowhere else in the region. BIH politicians are trying to keep up with the standards of the time being using their political, economic and social strategies and to be, if nothing else, comparable to foreign developed countries. BIH is still in a period of transition, still develops and attempts build up and fulfil the conditions for becoming a EU member.

BIH economy is transitional, and is still at the turn from socialistic understanding of economic thoughts to capitalistic understanding and ideas. Now, it's turning from the sphere of industrial trade into the new economy. The former economy was in an industrial era the basic condition of which was the existence of material facilities and their distance from raw materials. In industrially motivated economy, material possession meant more than anything else and men as physical workers-the main initiator. The new economy is founded on a new structure of companies and entire economy, based on an immaterial possession such as information and knowledge.

Human capital represents cumulative knowledge, skills, values, strong personal relationships and other resources a society can possess. It is developed by country investments in life quality improvement of people through the public education system, sanitary and social programs, employment programs and additional education for already employed people, which contributes to creating economically stronger and socially better society.

It is highly significant to explain important characteristics of intellectual capital, human capital succinctly, in order to begin proving the hypotheses of the influence of human capital on economic development of BIH.

## **INTELLECTUAL CAPITAL**

Intellectual capital represents a group of people with all their knowledges, abilities, creativities, inventiveness, skills, experiences, cultures, motivations; informatical networks for transmission of knowledge and information, softwares, databases, patents, licenses, companies cultures, rights and information.

New economy entered a so-called post-industrial phase at the end of the last century. It, certainly, affected the entire economy (civilization), job, apprehension and characteristics of working itself. (Đerić, 2007)

Development phase	Economic activities	Production factors	Main resource
Agrarian economy (before 1800.)	Agronomy	Land	Natural raw materials
Industrial economy (XVIII-XX cent.)	Industrial production	Machines Raw materials	Energy
New economy (XX cent. and further)	Mediation in knowledge and services	Knowledge Human capital	Information

Table 1: Production factors dependant on the social development phase

Source: Krstevska, G: "Savremeni tržišni tretman radne snage: od resursa do humanog kapitala", Škola biznisa, 4/2010, 2010.

Intellectual capital is a fundamental characteristic of post-industrial stage draws more and more attention, since it promises the increase of welfare and prosperity in the future. In favor of this goes the fact that the ratio between material and immaterial possession drops off as the time passes, which means that the immaterial possession is more and more valuable. The key resource of development is the information which derives from human capital, and provides business processes i.e. structural capital, which results in preferable services for consumers and increases their loyalty, consumer capital, that is.

One of the most significant attributes of intellectual capital is its abstractness. Intellectual possession is intangible possession, does not have solid shape unlike real estates and does not have obvious financial value. Intellectual capital is often described as "hidden possession." Therefore, it is often hard to identify it or determine its economic value.

BIH is still a country in a state of transition into the new economy. It is trying to follow the world trends in the range of the new economy through investment in human capital. Is this trend of development and transition into the new economy i.e., post-industrial stage real in BIH? Is it based on existing factors or is it all just a soap bubble that only superficially offers us promised land? One of the problems of new economy, especially in transitional economies like that in BIH, is inability of measuring of intellectual capital, and therefore, its most important factor, human capital. As Leif Edvinsson says: "the invisible hand of economy, being told of by Adam Smith, has become even more uncatchable."

## **HUMAN CAPITAL**

According to OECD, human capital comprises knowledge, skills, competence another attributes of individuals, relevant for economic activities.

Human capital is reflected through immaterial possession which has the capacity to initialize or support production activities, innovations and employment and is formed through the process of learning. It, also, represents a combination of knowledge, skills and capability that is not uniform for every individual. In the same learning conditions, different individuals achieve different results. All books "speak" the same language but not everyone understands them in the same way, which testifies about the very complexity of human capital. The human capital analysis, and of its creating and use, must consider the influence of various social institutions: schools, organizations, labour market, societies, national organizations, culture, religion, etc. The level of skills, knowledges and abilities an individual has at his disposal, in any time interval, can be taken, as an indicator of human capital level. The entire stock of on entire economy level, aggregate volume of human capital influences prosperity, economic position and international competitive power of economy. Diffusion, dispersion, and the possession of knowledge and skills highly influences the social status of an individual, the employment level and the income made in economy. Quantification of human capital and the influence of certain aspects of human capital and social and economic categories are the subject of interest at a micro level. The human capital range is heterogeneous dimension. There is no a unique property of human capital to represent its influence on quantity and quality of economic activities in an adequate way.

Another thing, it is important to emphasize that human capital is not simply a sum of all its components, and that quantification some or of majority of its components does not enable complete and accurate measuring of this category. The exact number of attributes ascribed to human capital is practically impossible to determine, and taking into consideration their significance and their influence on economic categories, one must realize that quantified human capital affects certain level of unquantified and unexplained elements. This is especially important for certain components which form a component part of the so-called "social capital", and which, in the context of human capital, refer to the ability of individuals to group their knowledges, skills and capabilities and use in the productive purposes.

Although it is extremely difficult to precisely measure the human capital stock, three approaches (methodologies) providing the quantification of this category have been developed. The methodologies are set so as to quantify country human capital having population capable of working as its base. (Baćović)

- 1. **Achieved education level** analyses the highest level of individuals' formal education presenting it as an approximation of human capital range.
- 2. **Direct individuals' abilities testing** is a methodology which, by a direct research, quantifies individuals potentials and their contribution to the range and quality of economic activities.
- Human capital components market value is a methodology that defines human capital range on the basis of the market value, i.e. analyses the ratio between incomes of individuals and their personal and professional abilities.

Special attention should be paid to human capital, human capital being the fundamental characteristic and the supporter of all activities in the range of intellectual capital. Although the human capital is only a part of intellectual capital, it generates the ideas by which a new business process is built known as structural capital. Further, through the structural capital, thanks to human capital, consumer capital is created. All of this is developed from the idea of human capital. In the new economy, human brain-not human hand –has become the most important element used for economic growth and development. Human capital is said to be the driving force of intellectual capital; the generator of entire initial values in the business systems innovative potential. Human capital is "an intelligent factory" producing ideas, innovations, programs, project, information, strategies, kwowledges, theories, laws, legalities...

### **HUMAN DEVELOPMENT INDEX**

Human development index represents a combination of standardized extents of life expectancy at birth, of education and of life standard. According to a new index measuring concept, the education concept is given more precisely but it does not indicate education quality. Human Development index is to be calculated in this way:

$$HDI = \sqrt[3]{I_{\text{exp}ected life-length} \times I_{\text{education}} \times I_{BND}}$$





Human capital index represents geometric mean of tri-pod index, life expectancy at birth index, education index and income index. In the following section the working will be based on education taken as the most significant factor that, among other, is a part of human capital index calculating.

Bosnia and Herzegovina, in the period from 2007 to 2012. in UNDP human development rank list fell from the position 76. to the position 81. BIH best position in the rank list was in 2010., position 68. Of all the examined country only Slovenia is at a superior position (21); besides, Croatia, also, belongs to the group of highly ranked countries according to the human development index. The trend in UNDP rank list of human development index is shown in the following chart:





Source: Human Development Report 2007-2013 United Nations Development Programme, New York

This trend of BIH is the reason of slow human capital development comparing it to the countries with similar or identical human capital development. Human capital index value trend, according to UNDP, is presented in following table:

Country	2007	2010	2011	2012
Albania	0,737	0,746	0,748	0,749
Bosnia and Herzegovina	0,729	0,733	0,734	0,735
Croatia	0,798	0,804	0,804	0,805
Montenegro	0,775	0,787	0,791	0,791
Serbia	0,760	0,767	0,769	0,769
Slovenia	0,888	0,892	0,892	0,892

Table 2: Human development index in countries of the region in the period from 2007-2012.

Source: Human Development Report 2013 – The Rise of the South: Human Prgress in a Divese World, United Nations Development Programme, New York 2013

In the mentioned period, Slovenia has distinctly large HDI in comparison to the rest of the countries compared in the table. Countries with distinctly large HDI are Slovenia and Croatia, whereas the countries with high level of HCI are Serbia, Montenegro, Albania, and BIH. The table shows the all the countries compared have the same tendency, i.e. the same trend in the surveyed period. Montenegro has largest HDI increase from 2007. to 2012., 15.48‰, followed by Albania with 12.21‰; the lowest HDI increase have Slovenia 4,5‰ and BIH 5,49‰. Considering very high HDI value, Slovenia is a high-level country and every improvement to perfection requires additional effort. As such, BIH cannot be equally compared to Slovenia. The chart 1 shows that BIH, even besides its advancement, i.e. achieving larger HDI value took worse position in the UNDP rank list. This leads to the conclusion that BIH achieved low, insufficient growth compared with the similar HDI level. But, of course, the fact that BIH according to HDI 0,735 belongs to group of countries with large HDI, on the position 81. Life expectancy at birth of a BIH citizen is 75,8 according to UNDP rank list. Only Montenegro 74,8 and Serbia 74,7 of all the compared countries have lower life expectancy at birth then BIH. Expected years of schooling in BIH is 13,4 and only Albania has lower standard with 11,4. Gross national income per capita is 7.713 which is the lowest of all the examined countries. In the further text, we will pay attention to the education as human capital most significant characteristic and to the indicators connected to the education.

## **EDUCATION AS A FACTOR OF HUMAN CAPITAL**

According to the following chart, it is notable that the labour force in the examined period drops to the extent of 6,12%, and that, seeing all the characteristics explored its trend is falling. Secondary education has the same (similar) trend with the fall of 6,61% and primary education has negative trend of 24,46%. Only high education has positive trend of 21,43%, in the period from 2007 to 2011. the number of high educated people (college, university, masters, doctoral degrees) increase for 36 000 which increases the level human capital in BIH.



Chart 2: Labour force by highest level of education attained in BIH for the period from 2007-2011.

Source: Labour force survey, Agency for Statistics of BIH, 2011.

Employed labour force has the same characteristics; actually similar, since fall in the employment in all characteristics except from high education, which has growth of 16,90%, is noticed, which is presented in chart 3. Entire labour force according to employment drops for 4,17%.





Source: Labour force survey, Agency for Statistics of BIH, 2011.

After all relevant indicators of labour force drop and labour force employment, unemployment trend dropped for 9,97%, which is positive, as presented in the chart 3. But taking in to consideration the previous drop results, it is not, actually, very satisfactory. Only those with high education level have unemployment increase if 46,15% for the examined period. This quite noticeable increase is not so negative after-effect since high-educated labour force brought about greater rate of high-educated employees. The very increase of highly educated employees and the entire labour force of highly educated people contribute to the quality and increase of human capital in BIH.



Chart 3: Unemployed persons by the highest education level attained in BIH for the period from 2007-2011.

Source: Labour force survey, Agency for Statistics of BIH, 2011.

For such a trend, it is added that the birth-rate is negative in the previous period, and that in 2012. the result is -3.620. These facts lead to the conclusion that labour force of secondary and primary education is lower and lower, and that the country produces more and more high-educated people who enhance life standard using their knowledges and skills, through the increase of production efficiency, as stated in the following table 3.

	ent prices in	ine peniou i	101112007 2	01111110111	
	2007	2008	2009	2010	2011
Nominal GDP (in KM milion) current prices	21.836	24.759	24.051	24.773	25.666

Table 3: GDP trend in nominal current prices in the period from 2007-2011. in BIH

Source: Buillten, Cenral Bank of Bosnia and Herzegovina, 4, 2012.

Owning competences, that is, higher education level influences individual to take a larger role in group working. They are more able to work in groups, and in that way group work increases newcreated value more than individual work does. The correctness of this proposition is supported by UNDP researches committed in 2009. in BIH, and the results are given in chart 4. The high-educated, as the main supporters of human capital are members of a group two times made often, by which the stimulation for creating ideas, is committed. Two men are smarter than one man. Human capital value is larger when well-organized and in the collaboration of two individuals than when the individuals work separately.

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Chart 4: Group working and education level in BIH

Source: The Ties that Bind - Social Capital in Bosnia and Herzegovina, United Nations Development Programme, New York 2009

However, the transition process that followed the citizen war opened doors for malversetions which stopped progress in BIH to a large degree. In favor of this go UNDP charts 5 and 6.



Chart 5: Corruption level in public institutions (%) in BIH

Source: The Ties that Bind - Social Capital in Bosnia and Herzegovina, United Nations Development Programme, New York 2009

Developed countries created a concept that should provide all the consumers who accept it to develop their education system at approximately similar level. This should provide these counters with production of equally quality potential human capital. The very labour force does not represent human capital. Labour force with its competences, relations and values is the human capital. The basic factor that influences human capital in education. BIH, like other countries, accepted Bologna educational process. On the grounds on everything that is said, if this education process of future labour force, actually, enables creating of quality that will increase real value in the production process. Even besides the implementation of Bologna educational system in BIH, this country, at the moment, does not still produce quality enough potential human capital for there is no enough practical work of real work in period of studies; although it is proved that the most efficient and most productive way of learning is learning by the direct experience.

Big problems are caused by migrations, or more precisely migrations abroad. Most young people, successful people leave searching better living conditions. This has very negative influence on the stat of human capital, and that means, negative influence on the country prosperity. One of the biggest problems in BIH non-existence of public data, that is non-existence of population register and data which could, in details, show the actual conditions in BIH. So, all the information owned by statistic colleges Republic and Federative are mere estimations on the basis of questionnaires.

## **CONCLUSION**

Human capital is the foundation for the development of BIH. Human capital is the key factor of development in new economy, which doubtlessly leads to prosperity and future welfare. BIH development gores in a positive direction and, although it progresses slowly, it most important that it goes in the right direction. Education, as one of main characteristic of human capital development is more and more frequent. Human capital of a country is very precious since it is the initiator of all other economic activities-directly or indirectly. The preciousness of human capital is in the fact that no one is ready to renounce it, not even its smallest part because of complicated knowledge transmission. Every individual is unavoidable and necessary in human capital with all his skills, abilities and knowledges. So explained, human capital represents competitively advantage for BIH which propels this country to keep up with the world trends. Considering everything said, BIH belongs to the group of countries with high level of human development.BIH produces more and more high-educated labour force which increases the power of human capital in making new ideas and the future progress. Human capital in BIH does not, in any way, represent an illusion. On the contrary, human capital is a real foundation of economic development of Bosnia and Herzegovina.

## References

- 1. Đerić, B.: Intelektalni kapital i razvoj "Društva znanja", Zbornik radova, 2, Centar za izdavačku djelatnost Ekonomski fakultet Istočno Sarajevo, 2007.
- 2. Krstevska, G.: Savremeni tržišni tretman radne snage: od resursa do hmanog kapitala,4/2010, Škola biznica, 2010.
- 3. Baćović, M.: Humani kapital i ekonomski razvoj: kvantifikacija humanog kapitala i utica investicija humani kapital na ekonomsk efikasnost,
- 4. Human Development Report 2013 The Rise of the South: Human Prgress in a Divese World, United Nations Development Programme, New York 2013.
- 5. Labour force survey, Agency for Statistics of BIH, 2011.
- 6. Buillten, Cenral Bank of Bosnia and Herzegovina, 4, 2012.
- 7. The Ties that Bind Social Capital in Bosnia and Herzegovina, United Nations Development Programme, New York 2009.
- 8. Edvinssson, L.: Korporacijska longituda Navigacija ekonomijom znanja, Differo, Zagreb, 2002.
- 9. Krstevska, G.: Bolonjski proces i njegov uticaj na razvoj hmanog (ljudskog) kapitala u R. Makedoniji, XVI skup trendova razvoja: Bolonja 2010 stanje, dileme i perspektive, Kopaonik 2010.
- 10. Milanović M: *Human capital and sustainablility of rural development*, 113th EAAE Seminar "The role of knowledge, innovation and human capitalIn multifunctional agriculture and territorial rural Development", Belgrade 2009.
- 11. Singer, A: *Investing in the Hman Capital of Immigrants Strengthening regional Economies*, Brookings Metropolitan Policy Program,
- 12. Mladenović D., Djolević V. and Šoškić D.: *Ekonomska statistika,* Centar za izdavačku djelatnost Ekonomski fakultet, Beograd 2010.
- 13. Breznik D.: Demografija analiza, metodi i modeli, Naučna knjiga, Beograd 1980.

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# WAR CONSEQUENCES ON HUMAN DEVELOPMENT AND HEALTH CONDITION OF THE POPULATION IN BOSNIA AND HERZEGOVINA

## Abstract

Consequences of any war are immeasurable, they are reflected in all aspects of life of the population. Considering that war consequences on material resources in Bosnia and Herzegovina are immeasurable, when we talk about consequences on human life generally, the situation is also not explored enough. Because the census has not been done since 1991, it is impossible to speak of the exact number of human lives that were lost in Bosnia and Herzegovina. Because material resources have been destroyed, the situation has been worse for the individual and the whole society of Bosnia and Herzegovina. Every external factor affects the individual and his or her mental and physical health and so the war has changed life and health of the society in Bosnia and Herzegovina to a large degree. Progress in any country as well as Bosnia and Herzegovina that has been devastated by war is not in an enviable situation. It cannot be said that the countries in the region have a high level of human development, considerning that they are in a surronding area of Bosnia and Herzegovina, so that they also experienced consequences of economic, political and law failure that indubitably affected the development of the whole region.

Keywords: human potential, human development, war consequences, health of the population

### **INTRODUCTION**

War in Bosnia and Herzegovina in 1992 devastated its natural and material resources, factories, infrastructure and total dwellings. In connection to that, every individual in Bosnia and Herzegovina felt some sort of a loss, they lost their job, a family member or had to move somewhere else. In a situation like that, a country and its people need decades and decades to reach prewar stage of development. After Dayton Agreement Bosnia and Herzegovina was dependent on international help, but considerning that in time they were less helpful, BiH is almost the only one responsible for the development process today.

To achieve rightful economic progress it is necessary to mobilize all the resources that Bosnia and Herzegovina disposes of: physical, social and human potentials. Progress in Bosnia and Herzegovina is necessary not only for achieving country's own goals but also to draw closer to Europe and membership of the European Union.

## **HUMAN POTENTIAL BOSNIA AND HERZEGOVINA**

Seen from a global perspective Bosnia and Herzegovina is a relatively small country with 3.842.566 citizens (estimation made on June 30, 2009), that does not have any outstanding natural resources that could secure simple and rich life for its people. However, as a historically confirmed multicultural

society, it gave relatively important contribution to its human potential in different areas and in different parts of the world<sup>1</sup>.

One of the most important concerns for the territory of Bosnia and Herzegovina is how to prevent loss of young personnel and to keep young available human resources only as a 'potential human capital' taking into account that there is no premise for using that capital, and there are no mechanisms for retaining biologically and intellectually most productive part of the population in the 'transition countries' that include Bosnia and Herzegovina. Lack of accurate data and census (that has not been made since 1991) reduces accuracy of the results of any research done in Bosnia and Herzegovina. That is the reason why we can rely only on the data given by statistics agencies and evaluations.

In the developed world there is Human resource management – HRM as a strategy for using human potential. It is one of the most important segments of every society which includes review of the national strategy of demographic movement of population, strategy for the development of school system, health services, industrialization, urbanization, approaching to new techniques and technologies and the strategy for management of human resources in concrete local and regional communities. All human resources come down to common denominator – human capital, which emphasizes the importance of knowledge, education and competency of the personnel for economic development.

The concept of human capital has been used since democratization and reinforced presence of International community in Bosnia and Herzegovina. It is used most often instead of former term 'personnel' or 'personnel potential', whereas the term 'human resources' in BiH can only refer to the employed part of the population which affects the level of human capital the most. For example about people who want to leave Bosnia and Herzegovina, on the occasion of making of 'Human Development Report (HDR) - Bosnia and Herzegovina 2000 – The Young'it has been discovered that 62 % wants to leave the country, and the most recent researches do not show that the situation is better in this respect. Reasons for 'brain drain' even 20 years after war are unemployment, political instability and stagnation in development in every sense.

## **POPULATION IN BIH SINCE CENSUS MADE IN 1991 UNTIL THE POSTWAR PERIOD**

Until 1992 BiH was a complete economic and social community, equal with the other five republics in Socialist Federal Republic of Yugoslavia (SFRY), and as such it was classified as moderately developed European country. Its public services, especially health services, education, social welfare and culture had extremely developed infrastructure. Because of excessive development of infrastructure people in Bosnia and Herzegovina lived better than their economic circumstances could allow them. According to the census made in 1991, Bosnia and Herzegovina had 4, 4 million inhabitants. War that followed and lasted four years has brought enormous losses, both in mankind and in system of education and health services... Taking into account war developments, the fact that Bosnia and Herzegovina is impoverished for the great part of its population is not surprising.

War consequences are reflected in the fact that the great number of people has moved from Bosnia and Herzegovina, about half of the population of Bosnia and Herzegovina has changed their place of living, 17 % went abroad and stayed there, and about 6% based on the census made in 1991 has died (United Nations High Commissioner for Refugees - UNHCR, 1995., 1998.). According to data of the International Red Cross 19000 persons are considered missing, and according to the National Comission on Missing Persons, there is 273700 missing persons registered.

<sup>&</sup>lt;sup>1</sup> Ibrakovic, Dz., Ljudski resursi – "kolateralna šteta" ratnih razaranja Yearbook of the Faculty of Political Sciences (5-6/2010/2011), Sarajevo, page 134.

Data of the International Red Cross show that between 1992 and 1997 of about 1 500 people that died of mines 16, 5% are children and young people up to 18 years old. There are also other spanless consequences, such as: destruction of administrative system, stagnation in economic development, 'brain drain', family ruin. 'Brain drain' is undoubtedly one of the most difficult and most specific war consequences, because many of the emigrants are highly qualified or young people who continued their education in other countries, where most od them settled. It should also be mentioned that these highly gualified people did not leave the country alone, but with their families.

Present evaluation of the number of people living in Bosnia and Herzegovina is around 3, 8 million (Statistics agency in Bosnia and Herzegovina), separated into two entities: Federation of Bosnia and Herzegovina and Republika Srpska and because of the lack of census since 1991 this number has to be taken carefully when estimating any indicators for Bosnia and Herzegovina.

## HOW DID WAR AFFECT THE HEALTH CONDITION OF THE PEOPLE IN BIH

War conditions led to the changes in demographic structure and health conditions generally and the need for reforms in the health system in Bosnia and Herzegovina. War consequences are most visible in the increase of disability and posttraumatic stress.

In the following chart there are some of the comparable indicators from 1991 (before war) and 1997 (after war).

Chart 1.								
Indicators	1991	1997						
Birth rate (%)	16,9	12,9						
Overall mortality rate(%)	6,8	7,6						
Life expectancy (age)	69	73						
General fertility rate (%)	64,1	59,8						
Infant mortality rate (%)	14,5	12,9						

Data in the chart are taken from the Human Development Report in the year of 1998. They indicate that the situation concerning birth rate, mortality rate, general fertility rate is worse after war. In contrast to that, expected life span and infant mortality rate of the infants are in better situation than they were in the period before war.

Data from the Institute for Public Health Federation of Bosnia and Herzegovina, and the Public Heath Institute of Republika Srpska indicate that every 173rd citizen is a war-invalid. There is also 5000 amputations, about 2200 peripheral nerve injuries, 10000 fractures and similar injuries registered. Among the disabled there is the greatest number of young people in their most productive age.

When we speak of mental health, we have to mention that 15% of population has suffered psychological traumas, mostly posttraumatic stress disorders (data from the Institute for Public Health Federation of Bosnia and Herzegovina, and the Public Health Institute of Republika Srpska). In connection to that, the number of neurotic disorders related to stress and also mortalitety rate related to mental diseases increased. Right after war, taking into account all circumstances, the fact that there were not any data about number of murders, suicides, domestic violence and other kinds of violence as consequences of mental disorders is justified.

Data obtained from 503 persons – victims of war show the economic status of the victims torture<sup>2</sup> (people with psycho traumatic consequences). Comparing the two periods (before and after war) it can be said how their economic status has changed: 63% of the people questioned lived well and very well, and in 2003 only 3%. 3, 2% of the people questioned lived badly and very badly before war, and in 2003 86% (data of the Centre for Torture Victims (CTV), Sarajevo, 2003).

In the Human Development Report – Millennium Development Goals 2003.godine, done by UNDP there is an indication that health care is still of a lower quality comparing to other European countries. The report suggests the causes for a relative deterioration of health situation:

- · heritage of conflict (stress, impoverishment),
- influence of the transition on the socialized health sector,
- modern society diseases (alcoholism, drug addiction, smoking, unhealthy diet).

Birthrate that decreases is a consequence of general social and economic insecurity. Morbidity as one of the most important issues in Bosnia and Herzegovina increases as a consequence of a bad way of living. Likewise, there is an increase in all kinds of mental disorders and behaviour disorders and simultaneously there is an increased number of suicides. Depression and a great number of neurosis are more typical of women than of men and even 2-3 times more. Alcoholism, lack of attention and behaviour disorders are typical of men.

In the Human Development Report in Bosnia and Herzegovina done in 2003 the situation of a few especially threatened groups is reviewed:

- 1. children and the young way of life of the adolescents largely influences their health. What most affects their health are smoking (42% are regular smokers), alcoholism (21% of the surveyed), and the use of psychoactive substances (17% consumes soft drugs),
- women research done in the year of 2000 shows that fertility rate decreases. Contraception is
  used confinedly, unwanted pregnancy rate increases, number of abortus does not decreases,
  number of sexually transmitted diseases increases.
- 3. elderly people and disabled persons --- research indicates that there is a problem of not providing protection and support to the mentally disabled persons and children with special needs. It is estimated that this category includes about 10% of the population.

The last research of the Institute for Public Health of Federation of Bosnia and Herzegovina and Public Institute of Republika Srpska showed very high level of exposure to the risk factors in adults. Hypertension in about 40% of the population is highly correlated to smokers, people who consume alcohol, and also to people that are overweight. Their population researches confirmed unfavourable trends of a life style, and habits of the population whereby addiction, inadequate diet and lack of physical activity dominate. These are all risk factors that affect the health of the population in Bosnia and Herzegovina. New researches will be aimed to analyze trends of main health risk factors so as to improve health and measures of health protection. Bosnia and Herzegovina has relatively good mortality rate, both for young children and infants, but that is not good enough on The European level.

Mortality rate of mothers in Bosnia and Herzegovina are far above the ones registered in the adjacent countries, so it is necessary to improve mothers' health in which UN greatly assists. Environmental pollution threatens to impair the quality of life. Great number of untreated mines and other unexploded lethal devices requires great effort for securing safer future of Bosnia and Herzegovina.

<sup>&</sup>lt;sup>2</sup> "Socijalni i psihološki uticaj traumatskih događaja i torture na civilnu populaciju u Bosni i Hercegovini"Centar za žrtve torture, Sarajevo, 2003.

## HDI OF BIH AND THE COUNTRIES OF THE FORMER SFRY

Human Development Index is a combined index that measures assessment of a long-term progress in three primary dimensions of a human development, namely: long and healthy life, access to knowledge and a decent standard of living. Long and healthy life is measured against duration of an expected life span. Access to knowledge is measured against the average years of schooling for adults and expected years of schooling for school children. Standard of living is a measure BDP per person – expressed in PPP – purchasing power of US\$.

To cipher out Human Development Index HDI, index for each of these three dimensions should be formed and that process is simplified with the help of minimal and maximal values of these dimensions.

Index = (actual value – minimal value)/(maximal value – minimal value).

For providing better comparability among countries HDI is primarily based on the international data from United Nations Population Division, the United Nations Educational, Scientific and Cultural Organization (UNESCO) Institute for Statistics (UIS) and the World Bank.

Human Development Index for Bosnia and Herzegovina as well as for countries of the former SFRY which are near Bosnia and Herzegovina, and for countries that bordered with former SFRY is presented in chart 2.

For the sake of comparison to other countries Norway and Switzerland (European countries with the highest HDI) are also listed.

	1980	1990	2000	2005	2006	2007	2008	2009	2010	2011	2012
Norway (1)	0,804	0,852	0,922	0,948	0,951	0,952	0,950	0,950	0,952	0,953	0,955
Switzerland (9)	0,818	0,840	0,882	0,898	0,901	0,901	0,900	0,906	0,912	0,912	0,913
Austria (18)	0,747	0,797	0,848	0,867	0,874	0,879	0,885	0,888	0,892	0,894	0,895
Slovenia (21)			0,842	0,876	0,882	0,888	0,892	0,889	0,892	0,892	0,892
Italy (25)	0,723	0,771	0,833	0,869	0,874	0,878	0,879	0,878	0,881	0,881	0,881
Greece (29)	0,726	0,772	0,810	0,862	0,868	0,865	0,866	0,866	0,866	0,862	0,860
Hungary (37)	0,709	0,714	0,790	0,820	0,825	0,826	0,828	0,827	0,829	0,830	0,831
Croatia (47)		0,716	0,755	0,787	0,792	0,798	0,801	0,800	0,804	0,804	0,805
Montenegro (52)				0,756	0,765	0,775	0,784	0,784	0,787	0,791	0,791
Romania (56)		0,706	0,709	0,756	0,763	0,772	0,784	0,784	0,783	0,784	0,786
Serbia (64)			0,726	0,751		0,760	0,765	0,766	0,767	0,769	0,769
Albania (70)		0,661	0,698	0,729	0,733	0,737	0,741	0,743	0,746	0,748	0,749
FYR Macedonia (78)				0,711	0,715	0,719	0,734	0,734	0,736	0,738	0,740
Bosnia and Herzeg.(81)				0,724		0,729	0,734	0,733	0,733	0,734	0,735

Chart 2. HDI

\* in brackets are specified positions of the countries ranked among 127 countries

Source: UNDP, Human Development Report, 2013

HDI value for BiH in 2012 is 0, 735, which means it is placed in the category of high human development, in the 81st place out of 187 countries and territories that were observed.

In the period between 2005 and 2012 in BiH the value of HDI increased from 0, 724 to 0, 735, which is about 2%.

BiH had a better position in previous years than in 2012. However, this information is not proper since both basic data and methods are changed.

Even though it is placed at the position of the high human development, Bosnia and Herzegovina has the worst position among all its neighbouring countries observed.

The following chart shows position of HDI in Bosnia and Herzegovina and the world.



Chart 3. Position HDI in Bosnia and Herzegovina and the world

Source: Picture (chart) is taken from the website UNDP

As it was already said, Bosnia and Herzegovina is placed in the category of a high human development and somewhat lower than the average of the European countries and the countries of Central Asia.

Next figure shows the contribution of each index to Bosnia and Herzegovina's HDI.



Chart 4. HDI, Health, Education and Income in Bosnia and Herzegovina

The report done in 2013 indicates that individual progress in health care, education and income, even though it is essential, does not guarantee progress in human development, if social conditions are limited and if perceptions of progress differ.

Source: Picture (chart) is taken from the website UNDP

## LIFE EXPECTANCY AT BIRTH

The expected number of years of life of an infant if prevailing patterns of age-specific mortality rates at the time of birth stay the same during infant's lifetime. Source: UNDESA (2011).

	1980	1990	2000	2005	2006	2007	2008	2009	2010	2011	2012
Switzerland (9)	75,7	77,6	79,9	81,3	81,5	81,7	81,9	82,1	82,2	82,3	82,5
Italy (25)	74,1	76,9	79,5	80,9	81,1	81,3	81,4	81,6	81,7	81,9	82,0
Austria (18)	72,5	75,5	78,1	79,6	79,9	80,1	80,3	80,5	80,7	80,9	81,0
Greece (29)	74,5	77,1	78,5	79,3	79,4	79,5	79,6	79,7	79,8	79,9	80,0
Slovenia (21)	71,0	73,1	75,9	77,7	78,0	78,4	78,7	78,9	79,2	79,3	79,5
Albania (70)	69,7	71,6	74,2	76,0	76,2	76,3	76,5	76,6	76,8	76,9	77,1
Croatia (47)	70,5	71,9	74,8	75,4	75,6	75,9	76,1	76,3	76,5	76,6	76,8
Bosnia and Herzeg.(81)	70,5	66,7	74,5	74,8	74,9	75,1	75,2	75,4	75,5	75,7	75,8
FYR Macedonia (78)	69,6	71,4	72,9	73,8	74,0	74,1	74,3	74,5	74,7	74,8	75,0
Montenegro (52)	73,7	75,5	74,9	74,1	74,0	74,0	74,1	74,2	74,4	74,6	74,8
Serbia (64)	70,3	71,6	72,7	73,6	73,8	73,9	74,1	74,2	74,4	74,5	74,7
Hungary (37)	69,3	69,3	71,8	73,2	73,4	73,6	73,8	74,0	74,2	74,4	74,6
Romania (56)	69,6	69,4	70,5	72,4	72,7	73,0	73,3	73,5	73,8	74,0	74,2
Bulgaria (57)	71,2	71,3	71,4	72,4	72,6	72,7	72,8	73,0	73,2	73,4	73,6

Chart 5. Number of years a newborn infant could expect to live

\*In brackets there are positions of the countries according to HDI Source: Human Development Report UNDP

We can see in the chart that concerning expected years of life of an infant in 1990s Bosnia and Herzegovina experienced decline from 70,5 (from 1980) to 66,7, but has recovered in time and in 2000 reached countries in the region. In 2000 it even had longer expected age of life than Serbia and Macedonia, as well as Albania, Hungary, Romania and Bulgaria. In 2012 the expected age of life of an infant is slightly longer compared to Montenegro and Serbia.

## CONCLUSION

As well as anywhere in the world, when a terrible disaster happens, years have to pass until traces of the ufortunate events disappear.

Considering the extent of the destruction that affected whole Bosnia and Herzegovina and ruined the life of its population, war that lasted from 1992 to 1995 nevertheless provoked the greatest damage to people. Thus, the whole society of Bosnia and Herzegovina is impoverished in every way.

Consequences for man, as a primary initiator for the development of a country are enormous. They are reflected not only in killing and banishing from the country, but also in bad health condition of the great number of the surviving, displaced and people that have not left their homes. Influence of the International Community that is very active in many ways in BiH after war in many ways, makes a balance among people. It also helps to overcome the stagnation of a country within the boundaries of its realistic economic possibilities.

Underrated attitude to human potential in Bosnia and Herzegovina is visible both in the world and surrounding countries, but it is also not insignificant within the borders of Bosnia and Herzegovina. Bosnia and Herzegovina has the worst position concerning HDI compared to its neighbouring countries.

## **References:**

- 1. Zdravlje stanovnistva i zdravstveni status u tranziciji Bosna i Hercegovina; Izvjestaj za 2001., 2002., Zavod za zdravstvenu zastitu BiH, 2002
- 2. Mit I stvarnost civilnog drustva, uloga civilnog drustva u jacanju socijalne ukljucenosti I smanjenju siromastva, IBHI and FSU In Bosnia and Herzegovina
- Izvjestaj Bosne I Hercegovine za sudjelovanje na UN konferenciji o odrzivom razvoju (UNCSD), Sarajevo, 2012
- 4. Ibrakovic, Dz., Ljudski resursi "kolateralna steta" ratnih razaranja Yearbook of the Faculty of Political Sciences (5-6/2010/2011), Sarajevo, page 134.
- 5. Human Development Report, 2013. The Rise of the South, UNDP, 2013
- 6. Human Development Report for Bosnia and Herzegovina 2009, UNDP, 2009
- 7. Human Development Report, Millennium Development Goals Bosnia and Herzegovina, UNDP Bosnia and Herzegovina, 2003.
- 8. http://www.phi.rs.ba/
- 9. http://www.zzjzfbih.ba/
- 10. http://www.un.ba/bih/

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## **THE LOST GENERATION AND HUMAN CAPITAL POLICIES**

### Abstract

Recently Martin Schulz, the President of the European Parliament made the statement that European Countries during their effort save banks from collapse they sacrifice one generation. He refers especially about Greece and Spain, about their well trained young generations and the difficulty to work these new incomers in market as they trained to do. In this article we will try to find how these people have more chances to be employees or employers in this developing new era and what the policies to this direction are. The reason is that young people and their human capital is the key for the future economic development.

Key words: human capital policies, unemployment, European crisis

## **INTRODUCTION**

The unemployment is the main problem nowadays in the most south states of Europe. Greece, Spain, Portugal, Italy and Cyprus are countries that have to fight during next years the "monster" of unemployment that dominate in their economies due to low or negative growth rates. Millions young people face huge difficulties in their first efforts to insert into work market. In Greece almost 59.1% of young workers until 25yo cannot find a job when at the same time total unemployment is about 27.2%. At the same in Spain (55.9%, 26.7%), Portugal (38.3%, 17.5%), Italy (38.4%, 11.5%) and Cyprus (32.3%, 14.2%) numbers follow this trend. Euro crisis and dept crisis in these members of E.E. left behind the "gift" of unemployment, and questions about what will have to do next generations in order to keep Europe under economic development and social prosperity. Is not a lie that a lot of well train young people that living in European South planning or thinking to immigrate in North Europe, in order to take job and carrier opportunities.



Eurostat: Eurostat news release, euro indicators 70/2013 - 30 April 2013

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EII27	22.5	24.1	24.0	24.0	10.0	10.9	10.0	40.0	10.4	11.0	12.2	44.0	
	22.0	23.5	20.0	20.0	10.2	10.0	10.9	10.9	10.4	7.4	7.4	11.0	
DE	19.9	21.3	22.3	22.4	1.2	0.0	42.5	42.5	10.7	1.4	1.4	44.5	
67	29.1	20.0	29.1	29.2	13.5	13.4	13.5	13.5	10.7	11.0	11.5	11.5	
	19.2	10.9	19.2	19.0	0.0	0.2	0.3	0.0	0.1	0.3	0.4	0.0	
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	0.1	24.2	21.0	1.0	3.0	3.7	0.0	5.7	0.0	0.1	5.0	5.0	
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FI	51.0	50.4	JU.0	30.3	10.0	22.0	10.0	10.0	26.2	21.4	10.7	10.0	
FS	52.5	55.1		55.0	13.4	20.9	26.4	26.2	20.2	20.4		27.2	
FD	22.4	26.0	33.8	26.5	23.0	20.0	20.1	10.0	24.3	20.0	21.0	11.2	
1175	25.1	20.0	20.3	38.4	0.5	10.0	10.0	10.5	11.2	10.9	12.6	12.7	
CV°	25.2	30.0	37.0	30.4	9.5	13.6	13.8	14.0	9.8	12.0	14.0	14.3	
11/8	20.0	34.0***	32.3	32.3	10.5	45 0***	10.0	14.0	44.2	10.0	14.0	14.5	
11	28.3	24.0	24.8	24.8	15.3	14.7	14.6	14.4	14.2	12.0	117	11 7	
111	18.9	18.8	10.3	49.7	4.5	4.8	4.0	4 9	5.7	62	6.4	6.6	
HU	27.0	28.8	29.7	194	11.1	11.5	11.6		11.1	10.8	10.7	0.0	
MT	14.1	14.6	14.7	14.7	5.9	6.4	6.3	6.3	7.0	72	7.0	6.9	
NI	9.3	10.3	10.4	10.5	5.0	6.4	6.6	6.8	5.0	5.6	57	6.0	
AT'	9.2	9.3	84	7.6	3.8	5.0	4.9	4.7	4.6	47	4.8	4.7	
PI	25.9	28.1	28.1	28.0	92	9.9	10.0	10.1	10.8	11.4	11.0	11.4	
PT	35.7	38.3	38.1	38.3	15.1	17.4	17.5	17.5	15.2	17.6	17.6	17.6	
RO	23.7	22 2***		:	7.9	6.9	7.0	6.9	6.5	6.2	6.3	6.4	
SI	17.0	24.4	24.4	24.4	7.8	9.4	9.4	9.4	8.4	9.8	10.1	10.6	
SK	32.0	34.8	34.8	34.5	13.1	14.3	14.4	14.3	14.2	14.8	14.8	14.7	
FI'	19.0	19.7	19.8	19.8	8.2	8.6	8.7	8.7	6.9	7.4	7.5	7.6	
SE	22.2	23.6	24.6	25.1	7.9	8.3	8.5	8.4	7.0	7.7	7.9	8,3	
UK	21.6	20.7			8.6	8.2			7.5	7.4		:	
1S7	15.9	9.9	97	:	72	5.4	53	:	6.6	4.8	4.8	:	
NO	7.9	9.7		:	3.5	3.9			2.5	3.3			
US	16.4	16.8	16.3	16.2	8.3	8.0	7.8	7.6	8.1	7.8	7.7	7.6	
JP	8.6	7.3	6.6	:	4.8	4.6	4.6	:	4.1	3.8	3.9	:	
	0.0		0.0	•						0.0	0.0	•	

#### SEASONALLY ADJUSTED UNEMPLOYMENT RATES (%)

Source: Eurostat : Data not available \*\*\* Q4 2012

These people are the most important long term investment for these countries and the most risky at the same time, because no one can predict the results of education and training after many years. We cannot know exactly which their return rate is and there is the "brain rain effect" that reduce this return from the member state that make the investment (cost) and give that to another or even to a third country. At the same time there are active European policies in order to boost that human capital that growths during these years in E.U. and is one of the most important recourses. So the key question of this article is the relation between unemployment and lost capital (generation), and the policies that includes strategies that lead to economic development by using this high skilled young people.

## **THE LOST GENERATION**

Martin Shultz calls like this a number of people well educated and even well trained and possible the best that these countries have until now. These people are young and have dreams for the future but at the same time have fewer opportunities to work and less income. They all dreamed that after finishing studies they will be able to start a job or a carrier but most of them realized after crisis that this will not happen easily.

QC1. Some analysts say that the impact of the economic crisis on the job market has already reached its peak and things will recover little by little. Others, on the contrary, say that the worst is still to come. Which of the two statements is closer to your opinion?



Source: Standard Eurobarometer 77, Spring 2012

At the table below we can see the results of Eurobarometer 2012, that in 22 of the 27 Member States, a majority of respondents believe that the impact of the crisis on the job market is still to come. The Member States in which citizens are most emphatically pessimistic are Portugal (78%), Greece and Cyprus (both 77%), the United Kingdom (73%) and Spain (72%). In the same analysis if we search more we can see the reports by age group for EU: 15-24(53%), 25-39 (59%), 40-54(62%) and 55+ (62%). People feel that future will be worst that today and especially the youngest of them. They feel like that because of their own difficulties in job market in order to work or even to keep their finances stable. In microeconomic analysis, happiness data has been used to better establish the current psychological cost and longer-run scarring effects of unemployment (e.g. Clark and Oswald, 1994; Clark et al., 2001; Winkelmann and Winkelmann, 1998). In terms of the causes of happiness, two topics have arguably attracted more interest than most: the relationship between income and happiness; and the relationship between labor market status (and especially unemployment) and happiness. While it is now widely accepted that unemployment reduces well-being, even after controlling for the associated fall in income, the relationship between income and happiness remains more contentious (Clark, Frijters, Shields, 2006).

The research goes further by asking individuals to tell their opinion about the strategies that can give us growth and new jobs again.



Initiatives to improve the performance of the European economy:

Source: Standard Eurobarometer 77, Spring 2012

In this point we have to think about this lost generation. Are they only the people that cannot find a job or includes also all these that want to establish new business bud they cannot? In my opinion all these young people are together this generation, both of them want to go a step further in their lives by improving their skills, their productivity, their income and starting a carrier as employees or as employers. Between them possible we can find future inventers, managers, stake holders or simple well performing workers. These are the people that will give the next boost to the economy by creating innovation, new ideas, new technology, new skills and products. So in many countries of the south most of this generation cannot ender in job market and in this case the states will lost the multiplying economic effect of their productivity as long as we felt reduce unemployment.

## **HUMAN CAPITAL POLICIES**

Let's see what the human capital policies are, and why we call them like that. These policies are all the actions and investments that target to increase human capital. "The many forms of such investments include schooling, on-the-job training, medical care, migration, and searching for information about prices and incomes." "But all these investments improve skills, knowledge, or health, and thereby raise money or psychic incomes." (Becker 1964) For this analysis we include in human capital policies all these investments that increasing knowledge, skills, heath and connectivity (social and job networks) from private and public sector. Public sector investments come for each country from the member-state and its social policy and from E.U. and the European Programs and the Cohesion Policies. Private investments come for people that pay to increase their capital or companies that invest to their employees.

## **Education and Mobility policy**

European Council held a special meeting on 23-24 March 2000 in Lisbon to agree a new strategic goal for the Union in order to strengthen employment, economic reform and social cohesion as part of a knowledge-based economy. The Union has set itself a new strategic goal for the next decade: "to become the most competitive and dynamic knowledge-based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion". (Lisbon European Council 2000) Political cooperation within the EU has been strengthened through the "education and training 2010 work program" which integrated previous actions in the fields of education and training. The follow-up to this program is the strategic framework for European cooperation (known as ET 2020) which was adopted by the Council in May 2009.

	Public expenditure (% of GDP)		Private ex (% of	penditure GDP)	Expenditure on educational instituti (PPS for full-tir	public & private ons per pupil/student ne equivalents)
	2003	2008	2003	2008	2003	2008
EU-27	5.14	5.07	0.64	0.75	5414	6.459
Euro area (EA-15)	5.03	4.97	:	:	:	:
Belgium	6.03	6.46	0.35	0.37	6343	7866
Bulgaria	4.23	4.61	0.67	0.58	1692	2840
Czech Republic	4.51	4.08	0.37	0.57	3354	4520
Denmark	8.33	7.75	0.32	0.55	7133	8701
Germany	4.70	4.55	0.92	0.70	6005	6953
Estonia	5.29	5.67	:	0.30	:	4226
Ireland (?)	4.38	5.62	0.31	0.34	5279	7 172
Greece	3.56	2	0.20	2	3778	1
Spain	4.28	4.62	0.54	0.66	5042	6941
France	5.90	5.58	0.56	0.60	6038	7031
Italy	4.74	4.58	0.40	0.41	6118	6.609
Cyprus	7.29	7.41	1.35	1.35	5968	8461
Latvia	5.32	5.71	0.83	0.60	2258	4332
Lithuania	5.16	4.91	0.46	0.52	2183	3622
Luxembourg ( <sup>a</sup> )	3.77	3.15	:		:	:
Hungary (*)	5.89	5.10	0.56	0.54	:	3 995
Malta (?)	4.70	6.01	1.40	0.31	4272	6220
Netherlands	5.42	5.46	0.94	0.92	6881	8069
Austria	5.57	5.46	0.31	0.50	7604	8836
Poland	5.35	5.09	0.66	0.74	2524	3 781
Portugal	5.57	4.89	0.09	0.49	4287	4979
Romania (º)	3.45	4.25	:	0.50	:	:
Slovenia	5.82	5.22	0.83	0.63	5021	6529
Slovakia	4.30	3.59	0.45	0.70	2325	3 5 2 3
Finland	6.44	6.13	0.13	0.15	5858	6988
Sweden	7.30	6.74	0.19	0.17	6825	8067
United Kingdom	5.24	5.36	0.95	1.72	6097	7942
Iceland	7.71	7.57	0.70	0.71	6727	8290
Liechtenstein (2)	2.46	2.11	:		5851	7 788
Norway	7.54	6.51	0.10	0.09	8275	10.084
Switzerland	6.00	5.37	0.62	0.56	:	:

#### Public-private sector expenditure in Europe

Source: Europe in figures, Eurostat yearbook 2012

Also the lifelong learning program has been a flagship program of the European Commission in the field of education and training since 2007, covering all learning opportunities from childhood to old age. It is made up of four sub-programs that focus on the different stages of education and training, each with quantified targets: **Comenius** for schools should involve at least 3 million pupils in joint educational activities over the period of the program. **Erasmus** for higher education should reach a total of 3 million individual participants in student mobility actions since the program began. **Leonardo da Vinci** for vocational education and training should increase placements in enterprises to 80 000 persons per year by the end of the program. **Grundtvig** for adult education should support the mobility of 7 000 individuals involved in adult education each year by 2013. There has been a large concern with promoting mobility of workers across Europe. Such mobility may be essential for achieving an efficient allocation of human resources across Europe and for the success of economic policy set at the European level. This mobility is impaired by institutional differences and language disparities across countries. There also has been preoccupation with increasing the skill level of the population: both endowing our economies with university educated workers and reduce the ranks of low skilled workers in Europe, which are still of substantial size (Carneiro 2004).

There is the Mincerian wage regression model that sown us the relationship between wage, growth, education and training. The Mincerian model has the form:  $lnWj = \beta_0 + \beta_1 \text{Sj} + \beta_2 Xj + \beta_2 (Xj)^2$ , lnWj: the natural algorithm of wage for j years, Sj: years of study, Xj: years of job experience,  $(Xj)^2$ : knowledge through on the job training, and  $\beta_0$ : the lowest wage,  $\beta_1$ : the return rate of studies,  $\beta_2$ : the rate of return of years of experience,  $\beta_2$ : rate of return of adaptability and skills from "on the job training" section. The part:  $\beta_2 Xj + \beta_3 (Xj)^2$ , represent the endogenous part of growth (Mincer 1974). The returns to education measure can be used to see the productive performance of education which is believed to increase productivity and monetary gains not only at individual level but to enhance the economic growth at macro level as well (Bhatti, Bourdon, Aslam 2012). The main engine of growth is the accumulation of human capital—of knowledge—and the main source of differences in living standards among nations is a difference in human capital (Lucas 1993). The endogenous models have general form Y = Ef(K, L, E), when E = f(Y) and represents the general level of education between education, training, wage and Gdp.

### **Innovation policy**



#### Source: http://epp.eurostat.ec.europa.eu/statistics

The European Research Area (ERA) was launched at the Lisbon European Council in March 2000. ERA aims to ensure open and transparent trade in scientific and technical skills, ideas and knowhow. Europe's research efforts are often described as being fragmented along national and institutional lines. Indeed, individual Member States may find it difficult to play a leading role in important areas of scientific and technological advance as research is increasingly complex, interdisciplinary and expensive. In May 2008 the ERA was re-launched as part of what has become known as the Ljubljana process. As a result, in the years through to 2020 the ERA will aim to establish a single European labor market for researchers, as well as single markets for knowledge and for innovative goods and services.



#### EU patent citations (EPO), 1997-2007 (number)

Source: Europe in figures, Eurostat yearbook 2012

## **Health policy**

Set up at the Lisbon European Council of March 2000, the open method of coordination (OMC) on social protection and social inclusion provides a framework of political coordination without legal constraints. The health and long-term care strand of the OMC is structured according to three objectives: access to care and inequalities in outcomes; quality of care; healthcare long-term sustainability of systems. Total current healthcare expenditure (both in relative and absolute terms) varied significantly among the EU Member States in 2009 (2). As shown in Figure the share of current expenditure exceeded 11 % of gross domestic product (GDP) in four EU Member States (France, the Netherlands, Germany and Denmark), which was almost double the share of healthcare expenditure relative to GDP recorded in Romania and Cyprus (below 6 % of GDP). The disparity was even bigger when comparing the level of total healthcare spending per inhabitant, which varied from PPS 608 in Romania to PPS 4286 in Luxembourg. Notwithstanding the differences in organizing and financing healthcare systems, these comparisons suggest that individuals living in those Member States with a higher average level of income per capita generally spend more on purchasing healthcare goods and services.



#### Expenditure (pps per inhabitant)

- (!) Countries are ranked on the total (public + private) health expenditure in PPS per inhabitant; ireland, Greece, italy, Malta and the United Kingdom, not available.
- (\*) 2008.
- () 2007.

Source: Europe in figures, Eurostat yearbook 2012

## **Social inclusion policy**

Social inclusion has long been a key part of the European Union's (EU) policies. The overriding goal is to reduce substantially the number of people at-risk-of-poverty or social exclusion, thereby creating a socially inclusive society. In 2009, 16.3 % of the EU-27 population was assessed to be at-risk-of-poverty, with this share ranging from 25.7 % in Latvia to 8.6 % in the Czech Republic. Social protection systems impact upon the share of the population that is considered to be at-risk-of-poverty and different groups in society are more or less vulnerable to monetary poverty.



#### At-risk-of-poverty rate before and after social transfers, 2009 (%)

Source: Europe in figures, Eurostat yearbook 2012

## Labor market policies

Economic theory suggests three possible reasons for the different unemployment experience. The first is that the size of the negative demand shock might have varied across these economies. A second possible explanation for the different unemployment experiences are different macroeconomic policy responses. And the final possible explanation for the different international unemployment experience in the downturn is the structure of labor markets (Schmitt 2011). In European South the austerity measures was aggressive and labor market had the same form for many decades so employees wasn't ready to response in that new flexible market. In broad terms, labor markets can adjust to macroeconomic demand shocks in some combination of three ways. Either employment can fall: fewer workers working the same number of hours as before (at the same number of workers spends fewer hours per week to produce the new output level. A third possibility is that total employment and average hours remain constant, but the hourly wage falls. The wage bill (B) is equal to the total number of employees (E), times the average number of hours they work (H/E), times the average hourly wage (W): B = E \* (H/E) \* W. Assuming that average productivity remains constant, however, the wage cut alone doesn't lower output to match the new lower level of demand facing the firm (Schmitt 2011).

This subchapter gives an overview of annual job vacancy statistics in the European Union (EU), notably the job vacancy rate (JVR). Eurostat also collects quarterly job vacancy statistics. EU policies in the area of job vacancies aim to improve the functioning of the labor market by trying to match more closely supply and demand. In order to enable job seekers to consult all vacancies publicized in each of the Member State's employment services, the European jobs and mobility portal (EURES) was set up. Labor

market policy (LMP) interventions are generally targeted at providing assistance to the unemployed and other groups of people who face particular difficulties to enter the labor market. In most European Union (EU) Member States the primary target group is people who are registered as unemployed by national public employment services.



Public expenditure on labor market policy interventions, 2009 (% of GDP)

## CONCLUSIONS

As we see in previous chapters there is a lot of concern in EU about human capital development and social policies. European leaders often agree to apply policies in this direction but often stuck on local differences and interests. R&D policy for example did not even close to its goal. Recently, European Leaders disagree many times about implemented measures. Austerity ideology conquers versus social prosperity more than 4 years in Europe due to high deficits and depts., and South States are these that sacrifice their growth rates and prosperity levels in order to balance their deficits. After continuum hits in total demand, these economies felt in recession. Economic growth is our major problem now but with this high unemployment rates will not come without public spends.

Human capital policies was planed and designed inside an environment that support a model of sustainable development, and that in a Monetary Union which its Currency was the only that was really competitive to Dollar after decades and threaten its global conquer first time after Breton-Woods agreement. This is the construction of this advanced and developed society that testing right now. So the reason that written all these pages is what we have to do to keep it like this. For sure Europe after crisis will not be the same again. But the E.U. without economic Growth and prosperity for the population has not any reason to exist. Difficult decisions was taken against the majority of population in the south in order to save states from collapse and few actually told that the difficult wasn't the austerity policy but the day after that.

Every country took benefits from huge common market, from common agricultural policy and all of them participate in growth rally, and the same way all take costs of tight monetary policy. Now crisis has an impact on job markets in most countries, industrial production, consumption and growth rates are all associated and at the end there are all parts of common market. Recently a lot of European commissionaires make statements that Union have to spend money to endorse policies. It is not a lie that sort-term unemployment cannot decreases without Union creates more jobs, maybe by using new ideas like "employer of last resort appeal" by Rania Antonopoulou. Of course there are a lot of active policies but "Today in Europe 16 months are needed to someone to find a job, so understands that many citizens to not take the risk to seek for job in another European country, especially when most of contracts are sort-term (Reding, Rehn, and Andor 2013)".

## References

- 1. Eurostat news release, euro indicators 70/2013 30 April 2013
- 2. www.newsbeast.gr, 11/03/2013: http://www.newsbeast.gr/world/arthro/501443/sosame-tis-trapezes-alla -kinduneuoume-na-hasoume-mia-genia/
- 3. European Commission, LLP Guide 2013 Part II a, Sub-Programmes and Actions, http://ec.europa.eu/education/Ilp/doc/call13/part2\_en.pdf
- 4. LISBON EUROPEAN COUNCIL 23 AND 24 MARCH 2000 PRESIDENCY CONCLUSIONS, http://www. europarl.europa.eu/summits/lis1\_en.htm#,
- 5. Becker Gary S., Human Capital, National Bureau of Economic Research, 1964, ISBN: 87014-080-9
- 6. Standard Eurobarometer 77, Spring 2012-TNS Opinion & Social, THE CRISIS REPORT, Fieldwork: May 2012, http://ec.europa.eu/public\_opinion/index\_en.htm
- 7. Pedro Carneiro, Human Capital Policy for Europe, University College London and Institute for Fiscal Studies, October 10, 2004
- 8. Europe in figures, Eurostat yearbook 2012 Luxembourg: Publications Office of the European Union, 2012, ISBN 978-92-79-22085-2
- Sajjad Haider Bhatti, Estimation of the Mincerian Wage Model Addressing its Specification and Different Econometric Issues, UNIVERSITE DE BOURGOGNE, Dijon, 03 December 2012, tel-00780563, version 1 - 24 Jan 2013
- 10. Schmitt John, Labor Market Policy in the Great Recession: Some Lessons from Denmark and Germany, Center of Economic and Policy Research, Washington D.C. May 2011, 202-293-5380
- 11. Andrew E. Clark, Paul Frijters, Michael A. Shield. Income and happiness: Evidence, explanations and economic implications, PARIS-JOURDAN SCIENCES ECONOMIQUES, WORKING PAPER N° 2006 24, halshs-00590436, version 1 3 May 2011
- 12. Viviane Reding, Olli Rehn, Laszlo Andor, Mortality of Labor Force, article, The Kathimerinh news, 08/05/2013
- 13. Antonopoulou Rania, Papadimitriou Dimitris, Taun Toay, Programs of direct job creation in a crisis in Greece, INE Labor Institute, Athens 2011, ISBN: 978-960-9571-25-8
- 14. Daniel J. Rankin, The social side of Homo economicus, Trends in Ecology and Evolution January 2011, Vol. 26, No. 1
- 15. Jo Blanden, Paul Gregg and Stephen Machin, Intergenerational Mobility in Europe and North America- A Report Supported by the Sutton Trust, Center of Economic Performance, April 2005
- 16. Leslie Hannah, Human Capital, Oxford Review of Education, Vol. 13, No. 2, 1987
- Bradley A. U. Levinson, Margaret Sutton, Teresa Winstead, Indiana University, Education Policy as a Practice of Power, Theoretical Tools, Ethnographic, Methods, Democratic Options, Educational Policy, Volume 23 Number 6, November 2009 767-795

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# HUMAN CAPITAL CHARACTERISTICS' INFLUENCE ON THE KNOWLEDGE ECONOMY SUSTAINABLE USTAINABLE STAINABLE DEVELOPMENT: SOME ECONOMETRIC EVALUATION RESULTS

## Abstract

In the article innovation-reproductive function of characteristics of human capital is exposed, complex analysis of the results of system parametristic indication of the influence of characteristics of human capital on the regional innovation economic growth.

Key words: human capital; regional innovative economic growth.

## **INTRODUCTION**

In modern conditions competitive advantages of economy and possibility of its modernization substantially are defined saved up in society and the human capital realized in production. People with their education, qualification and experience define today borders and possibilities of technological, economic and social modernization of society. In the foreseeable future a role of the human capital as a factor on which dynamics of development of economy depends will increase only.

Innovative activity is understood as a kind of activity connected with transformation of ideas (usually results of scientific researches and development or other scientific and technical achievements) in technologically new or advanced products or the services introduced in the market, in new or advanced technological processes or ways of production (transfer) of the services, used in practical activities. Innovative activity assumes the whole complex of scientific, technological, organizational, financial and commercial actions, and in the set they lead to innovations.

Innovation of the region is defined by its activity in innovative activity which finds display in the economic activity concretized in the form of production and use of innovations. One of the main problems is the assessment of the factors determining level of innovative development of the region. In modern conditions competitive advantages of economy and possibility of its modernization substantially are defined saved up in society and the human capital realized in production. Therefore identification of interrelations of characteristics of the human capital and level of innovative development of regional economy – extremely actual research task, which decision will form a basis of development of effective measures of regional innovative policy, including in the sphere of increase of a role of social institutes in the solution of economic problems of innovative orientation of trends of regional development.

Initial structural representation of system of characteristics of the human capital influencing level of innovative development of the region, its functional structure is. The basic structurally functional elements of this system are: health, education, conditions and possibilities of creative activity, ecology (nature, clean air, water, earth, healthy food), etc. If earlier, in a context of economic development, the main emphasis was placed on production of goods, today it becomes on production of the condi-

tions providing worthy human life, its level and quality. Broad understanding of human factors as to a combination of characteristics of the human capital and objective living conditions forms an objective basis of allocation in functional structure of system of characteristics of the human capital, important from the point of view of activization of innovative activity of regional subjects, such aggregated components as (fig. 1):

- the quality of the population integrating in its such properties as an education level, qualification, etc.;
- the standard of living of the population integrating in the main indicators of material well-being and reflecting degree of satisfaction of needs of the person (the real income, their differentiation, etc.);
- the quality of the social sphere reflecting working conditions, level of safety of members of society, etc.;
- the quality of the ecological environment accumulating data on pollution of air space, water, about quality of the soil, biodiversity level, etc.

Figure 1 – Hierarchical structure and functional properties of the human capital as resource innovative the focused development of economy



## THEORETICAL, METHODICAL, AND EMPIRICAL BASIS OF RESEARCH

Theoretically the research is based on system approach and conceptual propositions grounded on it which in the innovative economics and innovation economic policy, theories of institutional changes - based policy strategies scientific works are presented and substantiated.

Empirical basis of research is formed on the ground of state statistics federal service, innovative economic orientation documents official data as well as on the materials of native and foreign scientists monographic researches, author's long-term theoretically-empirical researches experience received during the process of international and native projects in this sphere working out.

Methodical set of instruments combines various theoretical and practical methods of scientific research – methods of system, functional and comparative analysis and synthesis, methods of mathematical statistics and sample investigations, mathematical modeling. Instrumental tools Microsoft Office Excel, ASP STATISTICA 8.0 were used.

## **INTERMEDIATE RESULTS OF STAGES OF RESEARCH**

The indicators which have been selected for modeling of an assessment of influence of characteristics of the human capital on level of innovative economic development of territorial subjects of the Russian Federation are presented in table 1.

Table 1	- Indicators	determinant	of the level	of innovative	economic	development	of the region

Determinants	Indicators
The results of inno- vation activities	• Gross Regional Product, million rubles (y)
The quality of hu- man capital	<ul> <li>The share of employees of organizations with a degree in the total number of employees of organizations engaged in scientific research and development, % (x<sub>4</sub>)</li> <li>Number of students in educational institutions of higher education per 10,000 population, pers (x<sub>3</sub>)</li> <li>The ratio of accepted students to institutions of higher education to released by specialist (x<sub>2</sub>)</li> <li>The number of employees engaged in research and development, pers (x<sub>1</sub>)</li> </ul>
The standard of living of the popula- tion	<ul> <li>Per capita average money income (per month), thousand rubles (x<sub>s</sub>)</li> <li>The ratio of the average wage to subsistence minimum, % (x<sub>s</sub>)</li> </ul>
The social determinants	<ul> <li>The unemployment rate, % (x<sub>7</sub>)</li> <li>Coefficient of funds, times (x<sub>8</sub>)</li> </ul>
Ecological determinants	• Caught and defused of pollutants emitted from stationary sources, % ( $x_9$ )

The indicator of a gross regional product is suitable for definition of result of innovative activity. It is obvious that the major factor influencing innovation of development and characterizing welfare of the region is GRP. The Gross Regional Product (GRP) represents again created cost of goods, and the services made in the territory of the region and is defined as a difference between output and intermediate consumption. If to consider the schedule of distribution of regions on this indicator, it is possible to see significant differentiation of regions (fig. 2). The maximum value of a gross regional product is reached in Moscow and makes 8 401 858,90 million rubles, the minimum value - in the Republic of Ingushetia is 21 536,70 million rub.



Figure 2 - Distribution of a gross regional product on territorial subjects of the Russian Federation

The human capital can be characterized by an indicator a share of employees of the organizations having a scientific degree in total number of employees of the organizations, carrying out scientific researches and development. This indicator directly influences level of innovation of the region as the bigger volume of experts increases innovative orientation of development of regional economy (fig. 3). The maximum value is observed in the Chechen Republic (1990 – including the Republic of Ingushetia) (58,98), the minimum value – in the Nenets Autonomous Area (1,33). Thus, on this indicator, considerable regional differentiation is observed, and the most part of regions the low indicator taken in scientific researches and development is observed.

Ecological the determinant can reflect such indicator as "it is caught and neutralized the polluting substances departing from stationary sources". This indicator indirectly influences level of innovative development of regional economy as in what to more uncontaminated zone the person lives, that his health is better and ability to any productive activity is higher (fig. 4). Among subjects of the Russian Federation in 2010 the volume of the caught polluting substances departing from stationary sources, differed in hundreds times (the minimum – the Chechen Republic (0%), maximum – in the Republic of North Ossetia-Alania (3583,33%). This fact, in particular, can be explained with a level of development of the industry and, respectively, number of emissions of polluting substances in the atmosphere of regions. Figure 3 - Distribution of a share of employees of the organizations having a scientific degree in total number of employees of the organizations, carrying out scientific researches and development on territorial subjects of the Russian Federation



Social a determinant the coefficient of funds can be expressed through an indicator. It characterizes social stratification that directly influences the human capital (fig. 5). So maximum value among regions on this indicator is observed in Moscow – 28,44, minimum – in the Ivanovo region – 10,4. Thus, on this indicator considerable regional differentiation (almost by 3 times between regions with the highest and low rate of coefficient of funds) is observed.

The standard of living of the population is expressed through an indicator a ratio of the average monthly added salary with the size of the living wage defining possibilities of his inhabitants to satisfy the spiritual and material needs (fig. 6). The maximum value - Chelyabinsk region (538,8), the minimum value - the Altai territory (213,9). This indicator has a pronounced variation on regions of Russia.



Figure 4 – Distribution of the caught and neutralized polluting substances departing from stationary sources on territorial subjects of the Russian Federation

Figure 5 – Distribution of coefficient of funds in regions of the Russian Federation







So, the specification of model of multiple linear regression on information base of 2010 in a look (7) and in the standardized look (8) I showed that the most significant indicator influencing level of innovative orientation of regional economic trends is the coefficient of funds, on the second for extent of influence a place – the number of the personnel occupied with researches and development, on 10000 taken in economy, and the ratio with the size of a living wage of an average monthly salary has the smallest impact. That is characteristics of the social sphere and quality of the population have the greatest impact on level of innovative economic development of territorial subjects of the Russian Federation.

$$\begin{split} \hat{y} &= -1809674 + 1626x_1 - 149544x_7 + 208x_9 \quad \mbox{(1)} \\ \hat{t}_y &= 0,149t_{x_1} - 0,773t_{x_7} + 0,018t_{x_9} \quad \mbox{(2)} \\ \hat{y} &= -2542711 + 3097x_1215159x_7 + 592x_9 \\ \hat{t}_y &= 0,22t_{x_1} - 0,742t_{x_7} + 0,036t_{x_9} \\ \hat{y} &= -2754516 + 2803x_1 - 210190x_7 + 501x_9 \\ \hat{t}_y &= 0,229t_{x_1} - 0,642t_{x_7} + 0,03t_{x_9} \\ \hat{y} &= -3054270 + 3472x_1 - 231015x_7 + 561x_9 \\ \hat{t}_y &= 0,241t_{x_1} - 0,633t_{x_7} + 0,033t_{x_9} \end{split}$$

 $x_{1}$  - the number of the personnel occupied with researches and development, on 10000 taken in economy;

x7 - coefficient of funds

2007

2008

2009

2010

 $x_9$  - ratio with the size of a living wage of the average monthly added salary.

(3) (4)

(5) (6)

(7) (8)

Indicators of regression	2007	2008	2009	2010
Constant A (B)	-1809674	-2542711	-2754516	-3054270
Standavrd mis- take	242405,3	351058,1	419334,6	464297,6
Coefficient α (B)	1626	3097	2803	3472
Standavrd mistake	773,2	1007,8	1005,4	1196,9
Coefficient α (Beta)	0,149	0,220	0,230	0,241
Standavrd mistake	0,071	0,072	0,083	0,083
Coefficient β (B)	-149544	-215159	-210190	-231015
Standavrd mistake	13488,6	23246,7	30686,4	32020,9
Coefficient β (Beta)	-0,773	-0,742	-0,642	-0,633
Standavrd mistake	0,070	0,080	0,094	0,088
Coefficient γ (B)	208	592	501	561
Standavrd mistake	722,8	1256,3	1459,5	1357,2
Coefficient γ (Beta)	0,018	0,036	0,030	0,033
Standavrd mistake	0,063	0,076	0,087	0,080
R <sup>2</sup>	0,757	0,727	0,653	0,651
F	75,989	64,892	45,772	45,436
Number of re- gions	77	77	77	77

Table 2 – Results of calculation of indicators of regression for 75 regions of Russia for 2007, 2008, 2009, 2010 years.

This conclusion is confirmed with the calculated values of private coefficients of correlation according to which the most close connection with GRP is characteristic for coefficient of differentiation of the income of the population (fig. 7) and average coefficients of elasticity proceeding from which values with reduction of coefficient of funds by 1% from the average level, GRP will increase by 15,03% from the average level (tab. 3).
	Variables currently i					
	Beta in Partial					
Variable		Cor.				
X1	0,241394	0,321514				
X7	-0,633125	-0,645158				
X9	0,033034	0,048323				

Figure 7 – Particular coefficients of correlation

Thus, into model entered: two factors stimulators reflecting two important characteristics of quality of the human capital and a standard of living of the population; and one factor-destimulator characterizing quality of the social sphere, influence on which measures of a state policy will make, judging by results of the modeling, the greatest influence on innovative orientation of trajectories of economic development of territorial subjects of the Russian Federation (fig 8).

Table 3 – Average coefficients of elasticity

<u>y</u> =212112,6	x,	x <sub>7</sub>	x,	
$\overline{x}_{j}$	59,5	13,8	313,9	
$\overline{\overline{\mathcal{P}}}_{yx_j}$	0,9739	-15,029	0,8302	





The evident illustration of dynamics of change of a contribution of each of factors in a variation of GRP of regions of Russia is shown in figure 9.

For more detailed analysis of a situation in regions of Russia we will consider these tables where results of calculation of the regression equations on the following groups of regions are presented:

- a. all regions (without autonomous areas, the Chechen Republic and the Ingush Republic);
- b. the same regions, but with an exception of megalopolises Moscow and St. Petersburg;
- c. regions of the European part of Russia (without autonomous areas, the Chechen Republic and the Ingush Republic);
- d. regions of the Urals, Siberia, the Far East (without autonomous areas).

Figure 9 – Dynamics of change of a contribution of factors characteristics of the human capital in GRP variation on 2007, 2008, 2009, to 2010



Table 4 – Results of an assessment of parameters of the equations of regression for 2010 on groups of regions

Indicators of regression	All regions	All regions with- out Moscow and St.Petersburg	All regions of European part of Russia	Regions of the Urals, Siberia and Far East	
Constant A (B)	-3054270	-1731795	-1003614	-2866769	
Standavrd mistake	464297,6	303968,7	286741,4	720892,3	
Coefficient α (B)	3472	909	2916	-1544	
Standavrd mistake	1196,9	815,6	673	2363,1	
Coefficient α (Beta)	0,241	0,102	0,486	0,096	
Standavrd mistake	0,083	0,091	0,112	0,147	
Coefficient β (B)	-231015	-127295	-74076	-242782	
Standavrd mistake	32020,9	21085,4	20412,1	48013	
Coefficient $\beta$ (Beta)	-0,633	-0,578	-0,406	-0,778	
Standavrd mistake	0,088	0,096	0,112	0,154	
Coefficient γ (B)	561	1145	710	23	
Standavrd mistake	1357,2	805,7	739,4	231753,6	
Coefficient γ (Beta)	0,033	0,135	0,110	0,002	
Standavrd mistake	0,080	0,095	0,115	0,158	
R2	0,651	0,454	0,574	0,597	
F	45,436	19,677	17,529	9,879	
Number of regions	77	75	42	24	



Figure 10 – Dynamics of change of a contribution of factors characteristics of the human capital in GRP variation on groups of regions

Differentiation of parameters of the equations of regression on different groups of regions is obvious and statistically significant. From table 3 it is visible that the equations of regression are statistically significant for all groups of regions, except for group all regions without Moscow and St. Petersburg. In group "European regions" the smallest values of dependence of GRP from a social component of the human capital, the highest value of dependence of GRP from quality of the human capital are reached. The highest value of degree of dependence of GRP from a standard of living of the population is reached in groups "all regions without Moscow and St. Petersburg", in group "regions of the Urals, Siberia and the Far East" this coefficient is statistically we mean, that it is possible to explain with a small number of regions (24) and their big variety (heterogeneity), and also that GRP in these regions substantially depend on development of infrastructure of the region and existence of stocks of mineral raw materials, instead of on quality indicators of life of workers.

Regions of the European part of Russia, on the contrary, are rather poor natural resources, their main resource are the population and high qualification of workers. As a result, in this group of regions the highest coefficient of dependence of GRP from quality of the human capital, rather high coefficient of dependence of GRP from a standard of living and the lowest – on a social indicator.

From this it is possible to draw a conclusion that in group of east regions the leading role innovative orientation of economy is played by social indicators, and the contribution of characteristics of the human capital is statistically little significant. On the contrary, quality of the human capital plays a crucial role in GRP variation in group of regions of the European part of Russia, i.e. in the most thickly inhabited regions.

Thus, in groups of regions with different population density parameters of the regression equations considerably differ.

#### **CONCLUSIONS**

- 1. The social determinant has greatest impact on innovative economy, the state needs to reduce a social inequality of the population by creation of workplaces, increases in expenses of the public expenditures connected with growth at overcoming of socially negative processes.
- 2. The second place on extent of influence on innovative economy is taken by quality of the human capital, that defines need of improvement of quality of the human capital by development of education systems and science.
- 3. The smallest contribution is made by the population standard of living, a necessary measure for increase of a standard of living is the guaranteed monthly income to all segments of the population providing, at least, comfortable existence of the people.

The constructed model shows that for development of innovative economic development in regions it is necessary to conduct the policy improving quality of life of the population. After all the more the population income, the more it puts in development of the human capital of future generations to what communication of a ratio of the average monthly added salary with the size of a living wage and a gross regional product testifies. As and with the state, at increase in a gross regional product investments into the branches reproducing the human capital increase also.

The external impulse which source has to be not only the state and business, but also society, the people who have been personally interested in increase of efficiency of innovative processes in the sphere of economy of regions of Russia is necessary for strengthening of innovative processes in economy of the Russian Federation. This incentive already exists today. It is confirmed by that for years of reforms purposes of the people who are personally carrying out change of a level of quality of the human capital, influencing innovations essentially changed.

It confirms dependence of number of the busy population with the higher education and average per capita salaries. Firms will invest in education of the future workers, in the social sphere, in the ecological sphere, knowing that it will bring in them a certain income and competitiveness in the future. The individual invests in the higher education, knowing that it guarantees itself a demand on a labor market and the highest earnings in the future.

The same and with inverse relationship from number of the unemployed in the region, after all if in the region branches - consumers of the human capital, neither the state are badly developed, nor private investors won't want to invest in branch of innovative development of such region. Therefore the governments of subjects of federation need to supervise a situation on a labor market and not to allow unemployment rate increase.

The package of measures, connected with decisions in the field of increase of an education level of various segments of the population is necessary, for an intensification of scientific researches and improvement of technological processes. Adoption of such decisions closely depends on a state policy on development and realization of strategic objectives. Expansion of the global competition for the human capital designated a boundary between industrial and post-industrial economy. The ratio between real production and production non-material changed: competitiveness of real production depends on the offer of the human capital. Not isolated actions, however, radical they didn't seem, and implementation of the system state policy which is actively influencing reproduction of the human capital are necessary.

From the point of view of the concept of the human capital the greatest economic effect education will give in case knowledge and the skills received in professional educational institutions, meet objective requirements of a labor market and are put into practice. The human capital realizes the functions as a factor socially - economic development in case in national production there are conditions for formation and the maximum use of educational and qualification level of the population.

At the level of state regulation it is necessary to increase standard of profitability on an investment into the human capital, to motivate owners of the human capital with progressive rates of the salary which is directly proportional to efficiency of work, qualification and an education level. Are important as favorable tax conditions for stimulation of investment activity in the market of the human capital. As a whole by the state the tendency to decrease in a share of investments from means of the federal budget and growth of influence of territorial budgets and private investors has to be supported.

#### **References:**

- 1. Gimpelson V. E., Kapelyushnikov R. I. (2007). Salary in Russia: evolution and differentiation. M: GU HSE. 2007.
- 2. Lazareva *E.I.* (2009). National Welfare as the Integrated Innovation-oriented Economic Growth Resource-factor. Rostov-on-Don, South Federal University.
- 3. Lazareva E.I. Strategy of activization of the human capital in system of innovative and regional clusters//Problems of modern economy. 2008. No. 1 (25).
- 4. Novokshonova L.V., Leonov N. G. Assessment of level of innovative development of the region: foreign experience and Russian practice//Statistics Questions. 2012. No. 10.
- 5. Regions of Russia. Socio-economic indexes. 2011. M: Federal State Statistics Service. 2011.
- 6. Econometrics: The textbook / Under the editorship of I.I.Eliseeva. M: Finance and statistics, 2002.
- 7. Official site of «Rosstat»: http://www.gks.ru

# KNOWLEDGE Economy

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### **IMPACT OF GLOBAL LEADERSHIPS**

#### Abstract

Knowledge economy is the use of knowledge technologies such as knowledge engineering and knowledge management to produce economic benefits as well as job creation. The knowledge economy is also seen as the latest stage of development in global economic restructuring. Computer networking and connectivity – developments such as the Internet bring the "global village" ever nearer. Existing knowledge becomes much easier to access as a result of networked data-based which promote online interaction between users and producers. Knowledge economy needs leadership as a process. Freedom of mind has taken us to the next level of living. We must believe in the impact of leadership on the improvement of our lives.

*Keywords:* knowledge economy, globalization, leadership, decision making, computer networking Introduction of knowledge economy

#### 1. INTRODUCTION OF KNOWLEDGE ECONOMY

Knowledge economy represents the economy based on creating, evaluating, and trading knowledge. In a knowledge economy, labor costs become progressively less important and traditional economic concepts such as scarscity of resources and economies of scale cease to apply. The knowledge economy is the use of knowledge technologies such as knowledge engineering and knowledge management to produce economic benefits as well as job creation.<sup>1</sup> Other than the agricultural-intensive economies and labor-intensive economies, the global economy is in transition to a knowledge economy, as an extensions of an information society int the information age. The transition requires that the rules and practices that determined success in the industrial economy need rewriting in an interconnected, globalized economy where knowledge resources such as know-how and expertise are as critical as other economic resources.

A key concept of the knowledge economy is that knowledge and education, often referred to as human capital, can be treated as one of the following two<sup>2</sup>:

- A business product, as educational and innovative intellectual products and services can be exported for a high value return.
- A productive asset which can be defined as the concept that supports creation of knowledge by organizational employees and helps and encourages the to transfer and better utilize their knowledge that is in line with company goals.

The knowledge economy is also seen as the latest stage of development in global economic restructuring. Thus far, the developed world has transitioned from an agricultural economy to industrial

<sup>&</sup>lt;sup>1</sup> Drucker P. The Age of Discontinuity, Harper and Row, New York, Chapter 12

<sup>&</sup>lt;sup>2</sup> ftp://ftp.cordis.europa.eu datum preuzimanja 22.05.2013

economy, then mass production economy to knowledge economy. This latest stage has been marked by upheavals in technological innovations and the globally competitive needfor innovation with new products and processes that develop from the research community.

#### 2. GLOBAL NETWORKING AS A DRIVING FORCE OF KNOWLEDGE ECONOMY

Computer networking and connectivity – developments such as the Internet bring the "global village" ever nearer. As a result, goods and services can be developed, bought, sold, and in many cases even delivered over electronic networks. As regards the applications of any new technology, this depends in how it meets economic demand. It can remain dormant or make a commercial breakthrough.

Intensity – efficient production relies on information and know-how. Over 70 per cent of workers in developed economies are information workers. Many factory workers use their heads more than their hands. Markets and products are more global.

New media increases the production and distribution of knowledge which in turn, results in collective intelligence. Existing knowledge becomes much easier to access as a result of networked data-based which promote online interaction between users and producers.

#### 3. EXAMPLES OF LEADERSHIP AND DECISION MAKING PROCESS

Leaders are persons who have strong influents on behavior, the way of thinking or emotions of individuals. They can lead organizations and companies through such a turboulent environment, we live today. Business leadership and changes are synonyms. Dilemma about two different explanations of success is very popular. There are people with an attitude that leaders are born with special characteristics. The other believes that becoming a leader strictly means working on qualities and powerty of taking responsibilities. What is Your opinion?

Knowledge economy needs leadership as a process. Freedom of mind has taken us to the next level of living. We must believe in the impact of leadership on the improvement of life. Coming examples should convince us in potencial of business knowledge.

In following paragraphs readers can see how to solve very difficult business situation with good decisions<sup>3</sup>:

Toyota recently announced that it would have to recall 2,3 million vehicles for faulty brakes. Outrage ran rampant across the media and public. Complaints were filed and lawsuits were made. It appears as if the Toyota brand has been tarnished for many years to come.

Instead of letting a PR team hable the issue with only press statements and interviews, Toyota turned quickly and offered a live conversation on one of the most popular communities on the web: Digg.

The community behind the social news site Digg is generally wuite hostile to corporations. So it came as a shock to many that the Toyota CEO Jim Lentz would appear on a Digg Dialogg to be asked all sorts of questions about the company and the recall. More than a thousand hard questions were submitted from consumers and even from past employees, and Mr. Lentz answered as many as possible in the given time. The questions were prioritized by votes, and none were filtered. It was a completely transparent interview.

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While the fallout from the recent recalls are massive, Toyota's openness will greatly help with minimizing the damage to the company's reputation.

Competitivnes in aerospace is very high and according to that, it is very tough to do something which can distinct your company from all others.

Turkish Airlines Global Affiliate Marketing Program allows you to advertise Turkish Airlines flights on your website and earn a commission from flight bookings.<sup>4</sup> So, if you own a website you can earn money by becoming an affiliate partner.

Tradedoubler which is Turkish Airlines Affiliate Network can provide you with all you need to promote its products, including static and dynamic banners, search box, xml links and copy to redirect traffic to the Turkish airlines website. It is very easy: you will be paid a percentage commission on bookings made from a visitor arriving from your website.

The Affiliate Marketing Program is based on CPA (cost per acquisition) model. If the traffic converts info sales, you will be paid commission. Joining the Affiliate Marketing Program is completely free.

This idea has brought position of absolutely leader on this market.

We can conclude that the part of leadership and good decision making in modern business is very important and can provide crucial benefits in todays tourbulent markets. Knowledge economy, with a power of networking will be the next evolutionary step, where the relatively localized knowledge will be shared among and across various networks for the benefit of the network members as a whole, to gain economic of scale in a wider, more open scale.

#### **Bibliography:**

- 1. Drucker, P. (1969). The Age of Discontinuity, New York, Harper and Row
- 2. Porter, M.E. (1998). Clusters and the New Economics of Competition, Harvard Business Review
- 3. Rooney, D., Hearn, G., & Ninan, A. (2005), Handbook on the Knowledge Economy, Cheltenham: Edward Elgar.
- 4. ftp://ftp.cordis.europa.eu
- 5. www.openforum.com
- 6. www.turkishairlines.com

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#### **TERMS AND SPECIFICITIES OF SUSTAINABLE TRANSPORT**

#### Abstract

At the beginning of the 21st century, lots of questions about sincerity of the national developing models in the globalization process have been contemplated. Europe is the most urbanized continent in the world. Currently, over 80% of the European population lives in cities, leading to a sustained increase in car use. Citizens are often concerned about the chaotic situation in which is found the traffic of today. Adjustment of traffic areas on behalf of environmentally friendly traffic is technically challenging and politically sensitive in urban areas that already have congestion problems. Civic education from an early age is very important to raise awareness of the significance of sustainable transport, as a part of the sustainable development ideology. In that ages people acquire main habits which define the future behaviour.

#### THE CHARACTERISTICS OF TRANSPORT ACTIVITIES

Humans' first means of transport were walking and swimming. Nowadays, they are various modes used for a movement and for each of them, there are several means of transport. These means are: a. inland surface transportation (rail, road, and inland waterwa; b. sea transport (coastal and ocean); c. air transportation; and d. pipelines. Each mode has its advantages, as well as bad sides, and will be chosen for a trip on such basis as cost, route and speed.

#### The concept of sustainable development is based on three key principles:

**The principle of environmental sustainability,** which ensures that development is compatible with the vital ecological processes, biological diversity and biological resources

**The principle of social and cultural diversity,** which ensures that development is compatible with the cultural and traditional values of human communities, contributing to their integrity

**The principle of economic sustainability,** which ensures that development is economically efficient with the possibility of using resources by future generations

#### **SUSTAINABLE TRANSPORT - CONCEPT AND PRINCIPLES**

Europe is the most urbanized continent in the world. Currently, over 80% of the European population lives in cities, leading to a sustained increase in car use. Half of private car traffic in urban areas occurs on a route no longer than 5 km. Increased volume of transport in those areas causes constant noise and air pollution, which has negative effects on the quality of air and most certainly a strong influence on climate change. Parking areas are not well allocated, and are usually found in the city centre, which can consume natural habitat and agricultural lands. These are just some of the negative aspects of traffic that require strategies for the development of sustainable transport.

As the purchase and usage of cars expanded over the last 30 years, the problems caused by additional increase in traffic became accordingly bigger, and they were usually solved by trying to provide new roads. This has led to further congestion, where new roads are not contributing to the reduction of traffic, but rather to its increase.

One of the ways of solving the existing problems can be found in the principles of sustainable transport. Larger, spacious cities should promote forms of transport other than automotive, such as pedestrian, bicycle and public transport. To reduce the number of parking spaces all over the cityit is advised to park in public garages. Solving traffic problems in central city areas includes solving suburban traffic problems, which implies dislocating the cars from the central areas)such as building highways or a ring road, and construction of Park & Ride system. Park & Ride system intends the construction of parking lots, where drivers from peripheral areas leave their cars and continue their way to the urban areaby public transport. There was an attempt in Belgrade with the parking at the Hyatt Hotel, which ended up a failure as it wasn't used as much as it was hoped.

Citizens are often concerned about the chaotic situation in which is found the traffic of today. Faced with this reaction, the authorities in charge must educate the drivers and involve them in the implementation process. Some ways of encouraging citizens to engage and accept sustainable forms of transport are the abolition of taxing eco vehicles and increase in fuel prices, or charging cars entering the urban area. It is also very important to establish close cooperation with the media and to allocate sufficient funds to finance an effective marketing strategy. A variety of means could be used: leaflets, broadcasting, web sites, so that the whole public is well informed of this growing problem. Citizens often forget the traffic difficulties that existed prior to the implementation of a project, so it is good to document every stage of implementation, in order to monitor improvements achieved by the project. That type of marketing can help to win the support of citizens for some future projects. Advantages that sustainable transport brings are primarily healthier life for the whole community, less noise, less pollution, and a greener city. And we all know that a green city is a happy city. It is clear that people are initially worried with the changes, but continuous information about the benefits of the results lead to the establishment of healthier life habits of citizens and acceptance of sustainable transport development as a common good.

## EDUCATION AS AN ESSENTIAL PRECONDITION FOR THE DEVELOPMENT OF SUSTAINABLE TRANSPORT

Adjustment of traffic areas on behalf of environmentally friendly traffic is technically challenging and politically sensitive in urban areas that already have congestion problems. It is necessary to develop a comprehensive communication strategy and consultation at the very beginning, because the adaptation of traffic areas can be rejected by the public opinion. It would be useful to show the link between the objectives of the future projects, and national and European policy guidelines for sustainable development. Civic education from an early age is very important to raise awareness of the significance of sustainable transport, as a part of the sustainable development ideology. In that ages people acquire main habits which define the future behaviour.

Copenhagen in the 60-ies of XX century went in realization of the project, which included reducing traffic congestion in the city center and the conversion of parked vehicles clogged squares in spaces for pedestrians. Initially, the project was met with open discontent of citizens. Ten steps that followed the implementation of the project led to its achievement and Copenhagen is now called "The pedestrian city". The city turned its traditional main street, Stroget, into a pedestrian zone in year 1962. After Stroget street, they gradually added more pedestrian streets, linking them to the streets that were previously converted into a pedestrian or cyclist. To preserve a stable volume of traffic, the city has reduced

the number of cars by eliminating cars in the parking lots at the rate of 2-3% per year, so that in 10 years they could have managed to reduce the number of parking spaces for 600 vehicles. City has formed a new bike paths and extend existing ones. Currently, 34% of Copenhagen residents who work in the city, use a bicycle to come to work. The city ,in 1995., presented "City – bicycle system" that allows anyone to borrow a bike from one of the stations in the city for a small deposit in the form of change. Upon completion of the route, the bike is simply left on a 110 bike - stations located around the city center and then the money is returned. The key for success of the transformation of the city center lies, with no doubt, in the gradual introduction of a drastic changes and continuous education of people about the benefits of this system. This approach gave residents time to adjust and to change their habits, and to start to walk, ride bike and use public transport, instead of driving a car park.

This is the positive example that many of the countries from East and South Eastern Europe should emulate on their path to sustainable development.

#### **Bibliography**

- 1. Sustainability and Cities: Overcoming Automobile Dependence, Island Press, Washington DC, 1999. Newman P and Kenworthy J,ISBN 1-55963-660-2.
- 2. Introduction to Sustainable Transportation: Policy, Planning and Implementation, Earthscan, London, Washington DC, 2010. Schiller P Eric C. Bruun and Jeffrey R. Kenworthy, ISBN 978-1-84407-665-9.
- 3. Sustainable Transport, Mobility Management and Travel Plans, Ashgate Press, Farnham, Surrey, 2012, Enoch M P. ISBN 978-0-7546-7939-4.
- 4. http://en.wikipedia.org/wiki/Sustainable\_transport

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## INNOVATION IN THE FIELD OF KNOWLEDGE ECONOMY-IMPACT ON SUSTAINABLE DEVELOPMENT OF THE COUNTRIES FROM EAST AND SOUTH EASTERN EUROPE

#### Abstract

Our paper consists of four sections, all dealing with creative ways in using Knowledge Economy on sustainable development of the countries from East and South Eastern Europe.

First part is introduction which will be exploited to show the need for development and ways to obtain it in the best way possible.

Second part is named "Part I" and will elaborate the main ideas of Knowledge Economy, never neglecting the tremendously important role of Innovation in it. Reading this section will provide one with some basic definitions, graphs and diagrams, making it easy to see the idea standing behind it.

Third part deals with a real-life problem/situation being solved by applying the principles in the field of Knowledge Economy. This is due to the need to show how important Innovations in this section could be.

Last but not the least, authors shall suggest a conclusion by summing up some of the highlights of the previous work and point-out the basic idea at the very end.

#### **INTRODUCTION**

The heart and soul of Knowledge Economy is the constant striving for innovation, and the source of its strength is education. In the present-day, the comparative advantage one country holds over the other lays in the knowledge-level competitiveness.<sup>1</sup>

Currently we are all witnessing a collision of two worldwide movements: on one part there is an irrefutable presence of globalization and internationalization; whereas on the other one there are both financial<sup>2</sup> and world economic crisis. In such times, for a problem such as insufficient development in parts of East and South Easter Europe, a solution is being offered: investments into innovations in the field of Knowledge Economy.

#### PART I

Human knowledge represents a dynamic category, evolving alongside both science and technology each day. As a direct consequence, existing knowledge is easily becoming outdated; in other words even useless. This is the main reason for the emerging importance of the Innovation in the field of Knowledge Economy.

The very idea of "Knowledge" was familiar to many philosophers. One of the first to deal with trying to explain it was Plato. He perceived it as the existence of provability, truthfulness and a subjective belief.<sup>3</sup> Today, the definition is slightly different. In the Knowledge Economy, under the term mentioned above, we usually consider not only the collection of useful information, but part of the services (product), as well. Knowledge, on the other hand, represents the result of the learning process. It is a significant element of the organizational structure. It also represents the critical factor of sustainable development. When learning is purposeful, creativity blossoms. When creativity blossoms, thinking emanates. When thinking emanates, knowledge is fully lit. When knowledge is lit, economy flourishes.<sup>4</sup>

In society the term "knowledge" appears as an asset, but compared to the physical asset, it could come up in two manners: in the shape of an input (competence, skill, etc.) or as an output (Innovation, patent etc.). Knowledge Economy uses knowledge as a highest-class commodity; as a main mean of production and a source of competitive advantage in every market.. In this sence it could be:

- Used (manufacturing process)
- Purchased on the market (employing workers, buying-out the patents etc.)
- Archived (libraries, data bases etc.)<sup>5</sup>

For us, all three types are equally important. Why? It is simply because in each there is room for improvement by enchasing its value while innovating it. Innovations are based on multidisciplinary, synthetized and complex knowledge. They come to life as the results of RD<sup>6</sup> projects, which usually have scientific character. Strategic innovations, as the one we will present bellow, are characterized by its capability to change previously established behaviors in certain industry branch, specific environment or some segment of the market.

Strategy of stimulating innovational ideas consists of three phases:

- 1. <u>Generating the ideas</u> (defining the searching area; coming up with the ideas; forming, browsing and testing the ideas)
- 2. <u>Accepting the ideas</u> (examining and verifying the ideas; bringing decisions regarding accepting them)
- 3. <u>Realization of the ideas</u> (distribution of the ideas to the person interested in it; realization of the ideas, noting the effects)<sup>7</sup>

It has been widely perceived that well-combined: intuition, experience, knowledge and reality, generate a high-profile realization of entrepreneurial ideas and Innovations. All of these components must work jointly; without one another- the chance is not being made, problems are not being solved, dangers are not being anticipated and most importantly, Innovations are not being created. Therefore, Economic growth is being held back.

#### **Knowledge Society**

The structure of the "Knowledge Society" was firstly presented to the world by the World Bank Institute, as a part of the "Knowledge for Development" program. It consists of: long-run investments in education, development of innovational capabilities, modernization of the informational-communication structure and efficient legal-economic framework that is supposed to stimulate Innovation, entrepreneurship and sustainable economic development.

Technological changes, at first slow, in latest years managed to improve the capacity for innovation in the computerized areas of all kind. They made the information flow possible and easier than ever. Now the information is, as mentioned many times nowadays, the main resource and the most valuable one, yet available instantly to everybody. Before such days would come, managers fought strongly to control information, as their authority was based upon them. The main advantage of the "New Economy", which is another name for the Knowledge Economy, is that: by making the information flow possible for larger amount of people, everybody gains. By exchanging information, the multiplication process is being set in mode. The time has come for less developed countries (such as Montenegro, aside from the others in East and South Eastern Europe) to take advantage of this situation.

"Weightless" economy could our main goal when making development strategy:



Figure 1, diagram: "Knowlegde revolution"

In the following text, we are about to explain some of the latest trends in exploiting "weightless economy" for the benefit of the economy of development on the sample of Montenegro, as one of the countries of the region specified in the topic.

#### **PART II**

The emergence of the Internet into a full-blown international communication system has drastically reduced the costs of operating and transacting on a global scale. By 2005, journalist Thomas Friedman wrote an influential book declaring the world was now "flat", by which he meant that the Internet and global communications had greatly reduced the economic and cultural advantages of developed countries.<sup>8</sup>

Information becomes the most important resource in the data driven societies of the 21<sup>st</sup> century. Efficiency and reliability made the Internet become a vital medium of economic and societal activity and development. Therefore, the countries of East and South Eastern Europe need to realize the potential of this type of use of information and communication technologies.

In order to address the structural weaknesses in Europe's economy, the European Union (EU) has developed the Digital Agenda strategy for a flourishing digital economy by 2020. The overall aim of the Digital Agenda is to deliver sustainable economic and social benefits from a digital single market based on fast and ultra fast internet and interoperable applications.

Along these lines, South East Europe (SEE) has identified establishment of Information Society as a key regional development priority. The Regional Cooperation Council (RCC) has recognized it in its Strategy and Work Programme 2011–2013.

RCC's ultimate goal is to support advancement of ICT development in the region. To this end, the organisation provides a platform for enhancing cooperation between the eSEE initiative and other relevant economic and social development regional initiatives.

When it comes to Montenegro, information and communication participated in the GDP for 2011 with 5,1% which is more than financial and insurance activities with 4,1%, as well as manufacturing with 5% in the GDP structure in that year.

On the other hand Montenegro has shown an excellent example of achieving benefits of information technologies, through identifying opportunities for global success of its Country code top-level domain (ccTLD) – domain .Me.

Bearing in mind multitude of meanings and word combinations that can be formed with .Me, thereby creating attractive and innovative web site names, the Government of Montenegro has made use of the domain available to all interested users worldwide. The project started in November 2007, and a Montenegrin joint venture doMEn, d.o.o was chosen for Registration agent of the project. From the very beginning, it was evident that this was a great move, which is best illustrated by the fact that domain. Me was the fastest growing in Europe, among others ccTLDs. Rapidly it became one of the most desired domain extensions on the Net.

Furthermore, it is not only in great demand, but many of domain names also reach a very high price. Some domains were sold at the price of tens of thousands of dollars, such as Interst.me, Date.me, Insure.me etc. This is so called Premium Domain name program, created to enable sending of striking and memorable brand messages for its users, worldwide successful businesses, as well as start-ups. On the other side, even the most popular web sites such as FaceBook, Yahoo and Word Press, are using the advantage of domain .Me for shortening URLs.

As a result, domain .Me has shown to be one of the most successful exporting products of Montenegro.



Figure 2, map: "Domain names under the national ccTLD – Market Penetration"

This map represents European countries according to the number of domain names registred under the national ccTLD per hundred residents in the country.

Furthermore, the owners of .ME come from more than 200 countries. Users are able to create personalized and authentic names, with the vast use of the word "me" in English, so it is not surprising that more than a half of the registrants are from the USA, and about 8% live in the UK.

#### **CONCLUSION**

Social and economic development in recent years is characterized by the abandonment of some of the old forms of business, and it turns towards the enduring values - information, knowledge, technology development. "Knowledge society" represents a society where knowledge becomes the main factor for explaining economic growth along with the capital and labor. Innovation arises from ongoing circles of exchange, where information is not just accumulated or stored, but created.

Good implementation of these postulates is characteristic of developed countries. However, it is very important that this is one of the fields in which developing countries can be equal competitors, and achieve the intended level of development. Therefore, East and South Eastern Europe countries can take the advantage of it, by planning its sustainable development on the basis of these guidelines, because "Never before in history has innovation offered promise of so much to so many in so short a time."<sup>9</sup>

#### References

- 1. Drašković V., Jovović R., Drašković M. "Pragmatičnost znanja", Podgorica 2013.;
- 2. Jonas Riderstrale i Kjel Normdstorm, "Funky busine\$\$" (Beograd, 2004.)
- 3. Laudon C. K., Laudon P. J., "Managing Information Systems", 11th ed., Prentice Hall 2010.
- 4. Petrović, 2000. Pag.44, "Upravljanje inovacijama-bitan element strateskog menadzmenta" Poslovna politika; (translation of the title) "Managing innovations-important element of the strategyc management", Business Policy

#### Web links

- 1. http://www.southeast-europe.net/en/about\_see/programme\_priorities/ seen on May, 18. 2013.
- Research on Innovation in the Knowledge Economy, http://www.oecd.org/innovation/research/1825633.pdf seen on May, 5. 2013.
- http://web.worldbank.org/WBSITE/EXTERNAL/WBI/WBIPROGRAMS/KFDLP/0,,menuPK:461238~p agePK:64156143~piPK:64154155~theSitePK:461198,00.html ("Knowledge for Development" program, World Bank official website)
- 4. http://domain.me/ seen on May, 19. 2013.
- http://www.rcc.int/articles/0/90/south-east-europe-needs-to-maximise-the-social-and-economic-potential-of-information-and-communication-technologies#\_ftn1 (Regional Cooperation Council for European integration of South East Europe) seen on May 19. 2013.

#### **Endnotes**

- <sup>1</sup> Li Tein, the president of the Social Science Academy, China
- <sup>2</sup> The one from 2008. onwards
- <sup>3</sup> Drašković V., Jovović R., Drašković M. "Pragmatičnost znanja", Podgorica 2013.;
- <sup>4</sup> A.P.J. Abdul Kalam, Indomitable Spirit, 2011.
- <sup>5</sup> Drašković V., Jovović R., Drašković M. "Pragmatičnost znanja", Podgorica 2013.;
- <sup>6</sup> RD-Research and Development
- <sup>7</sup> Petrović, 2000. Pag.44, "Upravljanje inovacijama-bitan element strateskog menadzmenta" Poslovna politika (translation of the title) "Managing innovations-important element of the strategyc management"
- <sup>8</sup> Laudon C. K., Laudon P. J., "Managing Information Systems", 11<sup>th</sup> ed., Prentice Hall 2010.
- <sup>9</sup> Bill Gates, the chairman of Microsoft.

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## DEFINING KNOWLEDGE ECONOMY AND ITS EFFECT ON ECONOMIC DEVELOPMMENT

#### Abstract

This paper presents the definition of Knowledge Economy, highlighting its four critical requisites (four pillars), Education and Training, Information Infrastructure, Economic Incentive & Institutional Regime, Innovation Systems, as well as actions that can be put into effect to develop them. The paper also presents the Knowledge Assessment Method (KAM) and refers briefly to the criteria on which it assesses the subject countries. Finally, the paper presents empirical examples and studies that prove that the development of knowledge positively affects economic growth.

#### **KNOWLEDGE ECONOMY**

The knowledge economy is the use of knowledge technologies to produce economic benefits as well as job creation. The phrase was popularized by Peter Drucker as the title of Chapter 12 in his book, "The Age of Discontinuity", and with a footnote in the text, Drucker attributes the phrase to economist Fritz Machlup and its origins to the idea of "Scientific management" developed by Frederick Winslow Taylor. If we try to define Knowledge Economy we come across definitions like:

"... one in which the generation and exploitation of knowledge has come to play the predominant part in the creation of wealth. It is not simply about pushing back the frontiers of knowledge; it is also about the most effective use and exploitation of all types of knowledge in all manner of economic activity"

(DTI Competitiveness White Paper 1998).

" economic success is increasingly based on upon the effective utilization of intangible assets such as knowledge, skills and innovative potential as the key resource for competitive advantage. The term "knowledge economy" is used to describe this emerging economic structure" (ESRC, 2005).

"the idea of the knowledge driven economy is not just a description of high tech industries. It describes a set of new sources of competitive advantage which can apply to all sectors, all companies and all regions, from agriculture and retailing to software and biotechnology" (New measures for the New Economy, report by Charles Leadbeater, June 1999).

"the knowledge society is a larger concept that just an increased commitment to R&D. It covers every aspect of the contemporary economy where knowledge is at the heart of value added – from high tech manufacturing and ICTs through knowledge intensive services to the overtly creative industries such as media and architecture" (Kok Report, 2004)

As we can see there are numerous definitions for what came to be called Knowledge Economy. Defining the knowledge economy though (or knowledge-based economy) is a fairly difficult task: Such a definition implies several levels:

- production of knowledge by steady innovation;
- dissemination of knowledge to all members of society;
- intensive use of scientific knowledge in every area of life (in technology and organization more particularly);
- society training for this type of economy through an education and training system based on innovation and research;
- · emergence of dynamic, internationalized markets

Science, technology and industry policies have to be formulated to maximize performance and wellbeing in a 'knowledge-based economy', which is directly based on the production, distribution and use of knowledge and information. There are many economies that make use of knowledge, but only few 'knowledge-based economies'.

Knowledge and information are no scarce resources. Once the information is used, it is available to others to do likewise. What is, however, scarce is the capacity to use it in meaningful ways. A lot of information brought together may be more than just a sum-total, it may generate new ideas and knowledge. Some kind of knowledge can easily be reproduced and distributed, but some other (tacit knowledge) cannot be transferred from one organization to another or from one individual to another. Knowledge can also spill over from one firm or industry to another, with new ideas being used repeatedly at little extra cost. Such spillovers can ease the constraints placed on growth by the scarcity of capital.

#### **KNOWLEDGE ECONOMY FOUNDATIONS**

#### **Education and training**

Actions that could boost education and consequently lead into the formulation of a Knowledge Economy would include:

- Introduction of internet connections to all schools and correct training regarding its use.
- Educational software development.
- eLearning virtual lessons for university and pre-university classes.
- Investment into state databases with access for every student.

#### **Information Infrastructure**

A dynamic information infrastructure-ranging from the radio to the internet is required to facilitate the effective communication, dissemination and processing of information. Some possible ways to strengthen the country's infrastructure would include:

- Development of digital transmission means (optic fibers), and technical upgrades of the existing network.
- Guaranteed safety of the data transmission throughout the country's network.
- Lower data transmission costs.
- Issue free wireless network access in central areas.
- Force communication companies to buy the license for zonal telephone services through an auction to decrease the cost.
- University networks being able to support multimedia communication.
- · Integration of a national campus network into the European virtual campus.

#### **Economic Incentive & Institutional Regime**

A regulatory and economic environment that enables the free flow of knowledge, supports investment in Information and Communications Technology (ICT), and encourages entrepreneurship is central to the knowledge economy. Actions taken in that direction would be:

- A legal framework favoring e-commerce development in accordance with EU legislation.
- Strict application of the intellectual property laws to protect the information society.
- Strict legislation regarding electronic payment fraud.
- Development of laws protecting private data and data transmission.
- Consider policies which attempt to pro-actively adjust the structure of production in the economy, in pursuit of social and economic development. Policy proposals and intervention should be judged against the criteria of structural impact before implementation, to ensure that they contribute positively to shifting the structure of production towards more knowledge intensive activities.

#### **Innovation System**

A network of research centers, universities, think tanks, private enterprises and community groups is necessary to tap into the growing stock of global knowledge, assimilate and adapt it to local needs, and create new knowledge. Actions that point to that direction:

- Participation in research networks, virtual laboratories/teams, virtual institutes.
- Development of partnerships between the public and private sector to better utilize the IS technology.

#### THE KNOWLEDGE ASSESSMENT METHODOLOGY

The transition to a knowledge economy requires long-term strategies to develop the four Knowledge Economy pillars mentioned above. This means that countries need to act upon developing appropriate policies and investments to give direction to their ambitions. To ease this process the World Bank Institute's Knowledge for Development Program has developed the **Knowledge Assessment Methodology** (KAM) which is an online tool that provides a basic assessment of countries' and regions' readiness for the knowledge economy.

The KAM consists of 148 structural and qualitative variables for 146 countries to measure their performance on the 4 Knowledge Economy (KE) pillars: **Economic Incentive and Institutional Regime**, **Education, Innovation, and Information and Communications Technologies**. Variables are normalized on a scale of 0 to 10 relative to other countries in the comparison group. The KAM also derives a country's overall **Knowledge Economy Index** (KEI) and **Knowledge Index** (KI).

The **Knowledge Economy Index** (KEI) is an aggregate index that represents the overall level of development of a country or region in the Knowledge economy. It summarizes performance over the four Knowledge Economy pillars and is constructed as the simple average of the normalized values of the 12 knowledge indicators of the basic scorecard. The basic scorecard can be thus seen as a disaggregated representation of the **Knowledge Economy Index**.

#### KNOWLEDGE ECONOMY - IMPACT ON SUSTAINABLE DEVELOPMENT OF THE COUNTRIES FROM EAST AND SOUTH EAST EUROPE

				Economic			
Rank	Country	KEI	КІ	Regime	Innovation	Education	ІСТ
17	Austria	8.61	8.39	9.26	8.87	7.33	8.97
27	Hungary	8.02	7.93	8.28	8.15	8.42	7.23
28	Slovenia	8.01	7.91	8.31	8.50	7.42	7.80
30	Italy	7.89	7.94	7.76	8.01	7.58	8.21
33	Slovak Republic	7.64	7.46	8.17	7.30	7.42	7.68
35	Cyprus	7.56	7.50	7.71	7.71	7.23	7.57
36	Greece	7.51	7.74	6.80	7.83	8.96	6.43
39	Croatia	7.29	7.27	7.35	7.66	6.15	8.00
44	Romania	6.82	6.63	7.39	6.14	7.55	6.19
45	Bulgaria	6.80	6.61	7.35	6.94	6.25	6.66
49	Serbia	6.02	6.61	4.23	6.47	5.98	7.39
57	Macedonia, FYR	5.65	5.63	5.73	4.99	5.15	6.74
69	Turkey	5.16	4.81	6.19	5.83	4.11	4.50
70	Bosnia and Herzegovina	5.12	4.97	5.55	4.38	5.77	4.77
82	Albania	4.53	4.48	4.69	3.37	4.81	5.26

The data presented on the above table were exported from the online KAM tool on the World Banks website. It presents the ranking of south-eastern European countries based on their **Knowledge Economy Index** and **Knowledge Index**. KAM can make comparisons between 148 countries (KAM 2012) and as we can see the targeted countries are ranked between 17 and go all the way down to 82, although most countries' rankings are concentrated between 27 and 49.

#### **KNOWLEDGE AND ECONOMIC DEVELOPMENT**

In this section we are trying to prove that economic development derives from the aspects of Knowledge Economy through empirical examples.

#### **Population Education**

Since we are studying the effect of **Knowledge** Economy on economic development, as the word knowledge implies, having an educated society definitely affects the overall development of the countries production. Education is what makes people able to assimilate Knowledge, whether it is technical education which affects technological innovation or a broad spectrum education which will in turn result in demands for more sophisticated products. This in turn will drive the producing companies to design more sophisticated goods to match their target groups demands.

Long-run studies started including a measure of the so called "human capital" in the past few years. Barros research serves as an example. Barro (1991) used cross section data for 98 countries, regarding school enrollment rates in primary and secondary levels, from 1960 to 1985, and concluded that both enrollment rates had significant effect on growth of per capita real GDP. Hanushek and Kimko (2000) approached the subject from a different angle. They focused on education quality rather than enrollment rates and, they as well, using international test scores as a proxy, concluded that education quality does affect economic growth.

#### **Innovation System**

As indicated by economic theory, technical progress is a key aspect of productivity growth. Technical progress though, is achieved with innovations. An innovation system is consisted of a network of institutions and rules that influence the way by which a country acquires, creates, disseminates and uses knowledge. Such institutions are the universities as well as public and private research centers. When regarding the production of knowledge, the government plays the part of such an institution as well.

How effective an innovation system is depends on the rise of research and development (R&D). R&D is the driving force of the creation of new products hence new knowledge. The OECD defined R&D to "comprise of creative work undertaken on a systemic basis in order to increase the stock of knowledge and the use of this stock of knowledge to devise new applications". There have been numerous studies that proved that innovation and the generation of technical knowledge positively affects economic growth (Lenderman and Maloney 2003, Guellec and van Pottelsberghe 2001 and more).

Currently more than 60 percent of patenting takes place in industrialized countries. The difference in production of technical knowledge between the developed and developing countries is even bigger than the difference in their income. That alone indicates the positive effect that R&D has in economic growth.

#### **Information Infrastructure**

Information and communications technologies (ICTs) are the foundations of knowledge economy, since due to their low usage cost they allow the transfer of knowledge bypassing geographical boundaries. Therefore, international buyers and sellers are able to share information and increase competitiveness which in turn results in a more efficient global marketplace. The level of ICTs infrastructure not only affects the performance of manufacturers and consumers, but also individuals and the way they work, acquire knowledge or even communicate.

Numerous studies, over the past decade, have shown that both ICT production and ICT usage contribute to economic growth. ICT producing sectors have experienced major technological advancements which resulted in increases in total factor productivity. For the non-ICT producing sectors, investments in ICT have resulted in an increase in labor productivity.

#### **Economic and Institutional Regime**

The Economic and Institutional Regime needs to provide the economic agents with incentives for the creation and use of knowledge, so transparent competition and regulatory policies are necessary. The regime should be open to international trade, promoting competition and in turn encourage entrepreneurship. For such a regime to exist, corruption in the legal system and the government must be extinct. Only this way can proper commerce and property rights protection rules be set. These rules will provide scientists with the incentive they need to create new technological knowledge and thus aid in the country's economic growth.

#### References

- 1. Ian Brinkley, "Defining the Knowledge Economy"
- 2. John Houghton and Peter Sheehan, "A Primer on the Knowledge Economy"
- 3. L. A. Ogunsola, "Developing Countries and The Need For Knowledge-Based Economy: The Problems And Challenges Ahead"
- 4. Overseas Development Institute, "Eastern Europe and the developing countries"
- 5. The World Bank, "The four pillars of Knowledge Economy"
- 6. The World Bank, "Romanian Position Paper on Knowledge Economy"
- 7. Madalina Tocan and Stefan-Gabriel Duduman, "Sustainable development- strategic goal of the Knowledge Based economy"
- 8. Barro, Robert J. (1991). "Economic Growth in a Cross-Section of Countries." Quarterly Journal of Economics. Vol. 106, No. 2, pp. 407-443.
- 9. Barro, Robert J. (1999). "Human Capital and Growth in Cross-Country Regressions." Swedish Economic Policy Review. Vol. 6, No. 2, pp. 237-277.
- 10. Hanushek, Eric A. and Dennis D. Kimko (2000). "Schooling, Labor-Force Quality, and the Growth of Nations." American Economic Review. Vol. 90, No. 5 (December), pp. 1184-1208.
- 11. Derek H. C. Chen and Carl J. Dahlman, "Knowledge and Development A Cross-Section Approach"
- 12. Derek H. C. Chen and Carl J. Dahlman, "The Knowledge Economy, The KAM Methodology and World Bank Operations"
- 13. Lederman, Daniel and William F. Maloney (2003). "*R&D and Development.*" Policy Research Working Paper No. 3024, The World Bank.
- 14. Guellec, Dominique and Bruno van Pottelsberghe de la Potterie (2001). "*R&D and Productivity Growth: Panel Data Analysis of 16 OECD Countries.*" STI Working Papers 2001/3. Organisation for Economic Co-operation and Development.

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## SOME QUANTITATIVE ASSESSMENTS ON THE ROLE OF CREATIVE INDUSTRIES IN EAST AND SOUTH EASTERN EUROPE - THE KEY TOWARD A SUBSTAINABLE KNOWLEDGE ECONOMIES

#### Astract

Nowadays, the roles of creative industries areincreasingly important for the knowledge-based economy as it produce knowledge, cultural goods with very high export value. Considering the official definition of the creative industries are those industries which have their origins in individual creativity, skills and talent and which have potential for wealth and job creation through the generation and exploitation of intellectual property. Moreover, their sub-sectors range from software, architecture, design, game, film, advertising, to any form of knowledge and arts. Obviously, those countries in East and South Eastern Europe should explore the potentials of creativity as a new, major driver of competitiveness in the new economic era. In fact, studies regarding the emerging creative industries in this region have been developing since the beginning of the 2000s. The result of the increased awareness on the importance of the Creative Industries for the development of their economies has grasped so much attention from policy makers and key players to build a healthy and substantial Creative Economy. In conclusion, the impact of the creative industries on the base of the Knowledge Economy is so clear, thus, the quantitative assessment on the role of creative industries is a key foundation for policy outcome toward the sustanable Knowledge Economy. Therefore, the research paper aims to use the quantitative methodstatistics with software SPSS to produce the essential assessment for the development of Knowledge Economy in East and South Eastern Europe.

*Key worlds:* creative industries, the substantial Knowledge Economy, Creative Economy, the quantitative method.

#### **1. INTRODUCTION**

The role of creativity and of creative people in the knowledge economy is gaining increasing attention. Moreover, data gathered by various agencies in the countries from East and South Eastern Europa (EE and SEE) suggests that sectors which produce symbolic and provide employment to a growing number of people (European Commission, 2009). Most often these sectors called "creative industries". My research is based on measuring contribution of creative industries to capture growing role of creativity in driving economic and social development, especially, the knowledge economy for the Eastern and South Eastern Europe countries.

The papers provide "a picture" about what these countries have made in the process of building the creative industries in 2001-2011, in addition, quantifiable contribution to the national economies. This includes how much the creative industries contribute to Gross Domestic Product (GDP); Productivity and Profitability; value of export by sector creative industries.

According to UNCTAD's definition, the creative industries:

- are the cycles of creation, production and distribution of goods and services that use creativity and intellectual capital as primary inputs;
- constitute a set of knowledge-based activities, focused on but not limited to arts, potentially generation revenues from trade and intellectual property rights;
- comprise tangible products and intangible intellectual or artistic services with creative content, economic value and market objectives;
- · stand at the crossroads of the artisan, services and industrial sectors and
- · constitute a new dynamic sector in world trade.

Figure 1. Classification of creative industries in Eastern and South- Eastern European countries from UNCTAD definition



#### 2. METHODOLOGY AND DATA

The papers proposes an approach for the measurement EE and SEE creative potential for determining its capacity to attract and develop creative human capital. We define contribution of the creative industries to national countries prin indexs: value added to Gross Domestic Product; Productivity and Profitability by Creative indutries; total export value of creative goods – added to GDP:

- Value added to Gross Domestic Product (% of GDP) is the net output of creative industries after adding up all outputs and subtracting intermediated inputs. It is calculated without making deductions for depreciation of fabricated assets or depletion and dgradation of natural resources.
- Productivity of creative industries is defined by the ratio which between value added and employment costs. It is considered as an average measure of the efficiency of production of the creative indutries.
- Profitability of creative indutries is defined as operating margin, also known as operation income margin, operating profit margin and return on sales- is the ratio of operating income divided by net sales, in percent. That is the way to look at the net profits of the business in the creative indutries.

As the final steps in the analysis, looking at the relationship between how a country scores on the ECI and its recent performance or trend. To do so, developing the Euro- Creativity Matrix (apply with software SPSS). The Euro-Creativity Matrix is essentially a two-by-two chart that compares the ECI score to the Euro- Creativity Trend Index. It enables us to position the EE and SEE nations in European context and also postion them in the future. The classification of the countries analysed in four different categories: *Leaders*, which are countries with developed creative economies and with high growth rates in creative potential; *Up and Coming*, which are countries with lower European Creativity Index scores, but with higher growth rates; *Losing ground*, which are countries with relatively high European Creativity.

ity Index scores, but cannot sustain the growth of their creative capabilities; and *Laggards*, which are countries with low scores for their European Creativity Index and with low rates of creative growth.

The resulting indexes establish a quantitative base of policy makers in their efforts to prove the value of the creativity industries in EE and SEE countries.

#### 3. KEY EVENT IN THE EVOLUTION OF THE CREATIVE INDUSTRIES IN THE COUNTRIES FROM EAST AND SOUTH EASTERN EUROPE

In most EE and SEE countries, the task of developing creative industries policies has been assigned to the division of the national administration that is responsible for the protection and development of culture. The potential discovered and the increasing need to find new economic alternatives, found fertile ground in their brand new government structures for whole new policy developments. Oviously, the governments have begun to measure the size and scope of the creative industries as an important index of economic health. Studies regarding the emerging creative industries in EE and SEE countries have been developing since the beginning of the 2001s'. Additionally, mapping creative industries documents were developed and have been carried out in EE and SEE countries, as a result, increasing awareness on the importance of the creative industries for the development of their economics, has reached policy and key players; first step in the builiding of a healthy creative economy. On the other hand, yet in fact, subsequent to the mapping endeavour have brought no considerable progress, and the creative industries sector's position in the national economy is still largely undefined. Besides, the creative industries concept is very cautiously received in transitional countries. Moreover, conflation of market and consumer oriented creative industries with traditionally elitist cultural policy can create a rather conflicting mix. Therefore, it is difficult to generalize about these states of the creative industries in economies in trasition.

From the reasons above, it is neccesary to determinate pariticular indexes with aim to find and resolve the problem from EE and SEE countries in process of developing the creative industries.



Figure 2- Key event in the evolution of the creative industries in the countries from East and South Eastern Europe 2001- 2009

#### 4. CONTRIBUTION OF CREATIVE INDUSTRIES (CI) TO ECONOMY OF EE AND SEE COUNTRIES

#### 4.1. Value added to national GDP

Table 1- Value added of creative indutries to national GDP in EE and SEE countries , 2003

	Value add to national GDP (%)					
Bulgaria	1.2					
Cyprus	0.8					
<b>Czech Republic</b>	2.3					
Greece	1.0					
Hungaria	1.2					
Poland	1.2					
Romania	1.4					
Slovakia	2.0					
Slovenia	2.2					

Source: Economy of Culture in Europe, prepared by KEA European Affair, Turun Kauppakoreakoulu Turku School of Economics for the European Commission, Directorate-General Education and Culture, 2006.

In terms of the respective national economies, the value added to their GDP by the creative industries is highest in Czech Republic, Slovenia, Slovakia in EE and SEE countries which all above 2.0%. Meanwhile, value added in Cyprus and Greece is lowest which under 1.0%. In comparison to other industries sectors, the creative industries contribute significantly in economies, this is particular true for the economy as Czech Republic, Slovenia, Slovakia or Romania. There are few other sectors which contribute more than 2.0% to the national GDP.

#### 4.2. Contribution of creative industries to other industry sectors

The effect of creative indutres on other sectors has differrences among those countries. In fact, Greece, CI doesn't affect on others. However, CI in Czech Republic's economy, has a strong influence on Food, beverages and tobacco with the high point – 2.8% and also in Poland with a highest contribution 4.7%, besides, in Slovenia, on Chemical, man-made fabrics with 3.4%. Therefore, creative industries also have the substantial contribution to other sectors in economies of EE and SEE countries.

	Food, beverages & tobacco	Textiles	Chemicals & man-made fabrics	Rubber & plastic	Machinery & equipment	Real estate	Computer	Cultural & creative sector
Bulgaria	2.2	2.0	1.1	0.4	1.3	0.4	0.3	1.2
Cyprus	2.7	0.4	0.5	0.3	0.2	0.0	0.6	0.8
Czech Republic	2.8	1.0	1.3	1.5	2.3	1.4	1.2	2.3
Greece	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
Hungary	2.9	0.0	1.9	0.9	1.2	1.8	0.8	1.2
Poland	4.7	0.8	1.4	0.9	1.2	1.3	0.6	1.2
Romania	1.9	2.1	0.8	0.5	1.0	0.5	0.5	1.4
Slovakia	1.5	0.7	0.6	0.9	1.5	0.5	0.6	2.0
Slovenia	2.0	1.3	3.4	1.4	2.2	0.4	0.8	2.2

Tabel 2- Contribution of creative indutries to other industry sector in SEE and EE countries, 2003

Source: Economy of Culture in Europe, prepared by KEA European Affair, Turun Kauppakoreakoulu Turku School of Economics for the European Commission, Directorate-General Education and Culture, 2006.

#### 4.3. Productivity and Profitability

#### 4.3.1. Productivity



Figure 2 - Productivity of creative indutries in EE and SEE countries, 2003

From the figure above, although the value of creative indutries to national GDP in Romania and Hungary and is low but these countries have high productivity, even Romania has productivity index- 3.06% which is highest in European countries in which include western countries that have creative industy development. Moreover, others in EE and SEE also have high produtivity index. This demonstrates that EE and SEE, especially, Romania have potential creative industries. If these countries have the policies in developing creative industries, definitely, CI will be one of the most important in EE and SEE countries.

#### 4.3.2. Profitability

Figure 3 - Profitability of creative industries in EE and SEE countries, 2003 (%)



Source: Economy of Culture in Europe, the European Commission, Directorate-General Education and Culture, 2006.

Profitability is proportional to Productivity, thus, Romania also have highest operating margin that is not only in EE and SEE countries but also in European countries. As we can see that IC brings a high net revenue for business owners in EE and SEE countries.

Source: Economy of Culture in Europe, the European Commission, Directorate-General Education and Culture, 2006.

#### 4.4. Export of creative industries

In recent years, creative industries have been among the most dynamic sectors in global trading systems. The average growth rates of creative services are increasing faster than those of other more convenitional services. Obviously, we can see that from figure.4 below, export of creative industries contribute significant to their GDP, the highest is 1.88% GDP in Czech Republic, Slovenia with 1.33%.



Figure 4 - Contritubtion export of creative indutries to GDP (% of GDP) in EE and SEE countries, 2011.

Considering with the period from 2002 to 2011, creative industries is also sensitive to the crisis period, in which, in those countries, values of creative industries in export dropped down, especially in lowest point in 2009. However, Monternegro starts measuring value of creative indusries in export with low growth rate. On the other hand, in 2011, showing signs of growing again with the highest growth rate is 20% in Bosnia, Moldova and Hungary, on the contrast, Greece, Monternegro, Albania, Armenia continue declining but this is with low rate.

Source: calculate based on UNCTAD available at: http://unctadstat.unctad.org/TableViewer/tableView.aspx?ReportId=14773

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Source: calculate based on UNCTAD available at: http://unctadstat.unctad.org/TableViewer/tableView.aspx?ReportId=14773

#### 5. THE COUNTRIES' MOVEMENT IN THE SHORT-RUN TRENDS ON THE WAY OF BUILDING CREATIVE INDUSRIES



Figure 6 -The Euro - Creativity Maxtrix - database on 2006

Source: calculate based on "Creativiy and Prosperity: The Global Creativity Index"

In the next years, EE and SEE's position are:

- Leaders are Hungary. Their competitive position overall is as good, are proving successful and are likely continue to do well.
- Up and Comers- most EE and SEE countries in this case- have lower ECI scores but relatively high rates of creative growth. Their position is improving.
- Poland , the country in Laggards, have low ECI and low rates of creative growth. Poland will find it hard to compete in the European context and also Global context. It means that the nation appear to be in a difficult position.

Most nations from Western Europe are in Losing Ground- they have relatively high ECI scores but are falling to sustain growth in their creative capabilities. They are falling behind in competitive terms.

 $\rightarrow$  EE and SEE have a huge potential in the future in process of developing the creative indutries based on avantage competiveness with countries in Western Europe.

#### 6. CONCLUSION

By promoting creative industries as major development in the region, the countries in EE and SEE have value significant of CI in economies. Especially, Romania have a potential development of CI meanwhile. Hungary, Czech Republice, Slovenia, Slovakia have high value of CI in all indexes considered. If these countries have the right policies in developing creative industries, definitely, CI will be one of the most important in EE and SEE countries. From analysing indexes, CI have their origins in individual creativity, skills and talent and which have potential for wealth and job creation through the generation and exploitation of intellectual property. In addition, to realize this latent advantage that stems for their underlying attitudes and values, these nation will have to liberalize their policies to increase value of export in this sector. More than that, it is important to note that these countries are just beginning to develop the most rudimentary strategies to actually attract and retain talent, bolster their underlying creative capabilities and develop their people climates. Much more research is needed on the nature, extent and efficacy of these emerging efforts. Therefore, there is no doubt that at the EU level, creative industries will drive EE and SEE nations on an accelerated growth map.

#### References

- 1. Caroline Chapain, Phil Cooke, Lisa De Propris( 2010)- Creative clusters and innovation: Putting creativity on the map, NESTA, UK.
- 2. Caves, Richard E. (2000), *Creative Industries: Contracts between Art and Commerce*, Havard University Press, Cambridge, Massachusetts.
- 3. Charles Landry (2008), *The Creative City: A Toolkit for Urban Innovators*, Earthscan Publications Ltd, London.
- 4. Cunningham, Stuart D., Potts, Jason (2008), *"Four models of the creative industries"*, International Journal of Cultural Policy.
- 5. Howkins, John (2001), *The Creative Economy: How people make money from ideas, Penguin*, London.
- 6. Klaus Schawab (2011)- "Global Competitiveness Report 2010- 2011", World Economic Forum Editor, US available at http://martinprosperity.org/media/GCI%20Report%20Sep%202011.pdf,
- 7. p.2-14.
- 8. Richard Florida, Charlotta Mellander, Kevin Stolaride( 2006)- *Creativiy and Prosperity: The Global Creativity Index*, Martin Prosperity Institute, US.
- 9. Richard Florida, Irene Tinagli (2004), *"Europe in the creative age"*, Carnegie Mellon Software Industry Center.
- 10. Susan B.Gerber, Kristin Voelkl Finn (2005), *Using SPSS for Windows: data analysis and graphics*, Springer, New York.
- 11. Peter Sanfey and Simone Zeh (2012)," *Making sense of competitiveness indicators in South-Eastern Europe*, European Bank for Reconstruction and Development.
- 12. The European Commision (2006)," The economy of culture in Europe", KEA European Affairs.
- 13. UNCTAD (2010), *Creative Economy Report 2010*, United Nations, Geneva available at http://unctad. org/en/Docs/ditctab20103\_en.pdf
- 14. UNESCO (2006), Understanding Creative Industries Cultural statistics for public policy marking, UNESCO Publications.
- 15. United Nations (2008), Creative Industries and Development, Report at United Nations Conference on Trade and Development, Sao Paulo.

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## THE ROLE OF RUSSIAN UNIVERSITIES IN SHAPING THE KNOWLEDGE ECONOMY

The article is devoted to the influence of higher education on the establishment and development of innovative economy in Russia. Important part of the work is concerned with the role of different types of higher education institutions to manage this problem. The article focuses on SWOT-analysis of Russian universities. In conclusion, the role of "Skolkovo" in the formation of innovative economy is considered.

#### Keywords: innovative economy, education, high school, competitiveness.

We all know the basic economic contradiction about epy scarce of resources and the immensity of human needs. The further is society in its development, the more subtle ways of meeting the needs it creates. Thus, each country looks for the way to use its absolute and comparative advantages more efficiently. Many scientists (E. Toffler, Fukuyama, D. Bell, J. Naisbitt and others) believe that in today's world economic dominance of most developed countries is provided by innovative economy of a country which creates such economy. So, human capital has become a major factor in leadership which includes the educated part of the labor force, the knowledges, the tools of the intellectual and administrative work and other components. It should be noted that the system of education in general and higher education in particular play a key role in it, so creation of innovative economy is directly related to increasing local and international competitiveness of the national system of higher education.

Today, Russia is in the process of establishing innovative economy. What do we mean by innovative scenario of development? And why is higher school so important? From Joseph Schumpeter's point of view innovation economy is an economy in which productivity is constantly being improved, increase in total factor productivity is observed, etc.[23] In my opinion, any processes that will lead to higher productivity, accelerating the growth of the Russian economy, increasing GDP per capita - is a process which could easily be called innovative.

Universities play an important role in development of economy, government, civil society, providing knowledges, skills, ideas and basic research needed to assure country's economy, social and political development and growth. Almost all universities recognize their mission in being the centers of education, science and culture.

Implementation of work on organizing, planning and managing innovation activities requires proper staffing. Due to this fact it is necessary to establish a system of training and retraining the staff in the field of economics and management of innovation activity. The growing interest in the highly competent human capital, providing leadership of countries and companies in R & D, forms the establishment and development of close cooperation and collaboration in the system «science-education-business», which determines the complexity of the structure of educational institutions and design public and private forms of such relationships.

To understand the mechanism of interaction between education, science and business, firstly we consider the «nested doll» model of the university, which defines the university in terms of the processes occurring in it, and then we trace the extent of the relationship between education, science and business.

There are four options of gathering «dolls» and, accordingly, four types of universities: project, research, pedagogical and «disintegrating» university. (Fig. 1)

In project universities all 4 processes are implemented, the base of which - the projecting process. Taking into account the need for projecting research data (both empirical and theoretical), the research process is implemented as a providing one. Reflection of the way of work both in projecting and studying as well as transferring these methods in training technology sets the third - educational process. Moreover, the structure combining tried and tested educational technology, project and research work, time, space, students, teachers, and movement in the educational services, sequence, rhythm of training, etc. - is the curriculum, which regulates teaching and work processes.





In research universities the basic process is researching (both theoretical and applied). There are three processes in it: researching, pedagogical and the curriculum.

A modern Pedagogic University is characterized by development of technologies for teaching and curriculum. And the universities, where there is only the curriculum, are classified as "disintegrating".

Leading universities of the world are either a project type or research, or they synthesize both of them. This is not surprising, because modern society requires technologies that can assure sustainable development of the country in the market conditions, and this is possible only by extensive and diversifield research topics. Thus derived technology without practical application is of little value (except that which can be sold). Much more important is to use it in practice, in this case the most essential becomes the relationship of education, science and business. This link can be discovered by using a classification matrix of educational institutions (Fig. 2).
Fig. 2. Classification matrix of educational institutions, based on the degree of interaction with science and business [10;43]



Shown on Fig.2 types of educational institutions should be explained.

Thus, the peculiarity of the classical university is education based on fundamental researches. Direct faceto-face contact of the teacher and students remains there, and the teacher is the support of scientific knowledge and he is simultaneously engaged in scientific activities. In such universities there is no close relationship between education and business, relationship of science and education dominants there.

As educational brokers there can be coordinating and moderating educational centers.

Multinational corporations are focused on "growing-up" and constant development of human capital for their needs. The economic reason for the creation of corporate universities is tendency of companies to increase their competitiveness. Such schools can solve a number of problems associated with the appropriate training level of staff to meet the needs of companies and its subsequent employment. This is possible because the requirements of employers are integrated into the curriculum, at the company there are organized internships for students, professional experts are involved in the learning process; they teach what is necessary to implement the strategy of the company. At the same time corporate university is the final stage of staff's learning process in the company. The key objectives of these institutions are generalization of experience and knowledges, creating a unified corporate culture and unique value system, establishing a united company's ideology. Everything mentioned above gives us the opportunity to conclude that corporate universities have a close relationship with business and less close with science.

According to data from CUX (Corporate University Xchange), the number of corporate universities in the world has increased over the last 10 years from 400 to 1600. The largest of them are the «Disney University», «Federal Express Leadership Institute», training centre «Crotonville» of «General Electric», University of «Motorola» and others. [15] The greatest number of corporate universities is in the U.S.A., it is not by accident because not only do visionary Americans understand the benefits of this type of universities, but they act in the direction of active implementation as well, and the results are not forced to be waited for.

One of Innovative approaches in education field of developed countries is developing new forms of higher education such as Open Universities, educational structure of different types of distance learning, virtual universities etc. as well as new forms of learning environment designed to minimize the distance and develop high-quality education system.

This becomes possible in the presence of unified information and educational space, the integral part of the global information network is the Internet. With this tool, you can organize and manage the learning process from a single center in any country. This helps to solve the problem of shortage of the qualified personnel and funds to maintain students, classrooms. This way of education reduces allocating resources for the printing of textbooks, its delivery to the Universities, etc.

Thus, the national University of Distance Education in Spain (UNED), assigns an equivalent qualification as in classical universities. «Euro PACE 2000" is a European network of universities, which uses telematics and multimedia for education and training internationally.[3]

The most powerful educational tool of creating an innovation-based economy is innovative university complexes which are characterized by the strongest links in the "science-education-business". Innovative university complexes suggest:

- allocating innovative activity (in addition to the scientific and educational)
- activities related to the creation (based on high school and with its participation) of network of small high-tech business enterprise;
- forming the system of introducing and applying the results of innovation in educational and scientific processes;
- creating research laboratories and research centers of high-tech innovation clusters and business enterprises in the real sector of the economy together with regional level;
- creating coordinating infrastructure elements (boards, working groups, etc.) for integrating innovation activity;
- establishing permanent institutions needed to promote innovative products (exhibitions, contests, fairs and associative organizations to protect the interests of innovative business).[13]

Thus, we have traced the influence of the higher educational institutions on the formation of an innovative economy and we can make the conclusion that from the point of view of the process approach the most effective tool is project universities, and in terms of the relationship of "science-educationbusiness" it is innovative university complexes.

Now we turn to the Russian system of higher education and first of all we identify which of its competitive advantage can be used in the creation of innovation economy in our country.

For this we will conduct SWOT-analysis of the Russian system of higher education with regard of it effect on the formation of knowledge economy, the results of which are presented in Fig. 3.

Fig.3. SWOT-analysis of the Russian system of higher education with regard of it effect on the formation of a knowledge economy

Strengths	Weaknesses
<ul> <li>scientific education, its solidity and polyhistory;</li> <li>the presence of internationally recognized disciplines (mathematics, natural sciences, information technologies, etc.);</li> <li>cheap education (2-5 thousands \$ per year);</li> <li>liberalization of higher education;</li> <li>an increase in funding of universities;</li> <li>the historical significance of Soviet higher education for students from developing countries;</li> <li>active development of educational franchising (MBA, LINK);</li> </ul>	<ul> <li>a inappropriateness of education and the labor market;</li> <li>low salaries of teaching staff;</li> <li>lack of experience in commercializing research in Russian universities;</li> <li>weak infrastructure (libraries,hostels, computers, Internet access, etc.);</li> <li>increasing of commodification in educa- tional services and education;</li> <li>lack of training cycles in English, poor language skills;</li> <li>unresolved problem of international rec- ognition of Russian diplomas and credit transfer;</li> <li>poor integration into the European edu- cational networks;</li> </ul>
Opportunities	Threatening
<ul> <li>an effective contract with the teachers (salary increase to a twice level of salary for the region);</li> <li>Bachelor of Applied;</li> <li>program of applied qualifications;</li> <li>transparency of educational institutions;</li> <li>the introduction of a minimum threshold of knowledge quality of applicants to get a budget financing;</li> <li>development of research universities;</li> <li>student loans;</li> <li>increase of scholarships;</li> <li>ensuring competition between universities;</li> <li>harmonization of quality and content standards, of the educational programs in accordance with international standards (ECTS);</li> <li>the development of transnational education;</li> <li>the development of transnational education;</li> <li>the growth of the integration processes in the field of higher education;</li> <li>strengthening the interaction of higher education and business, focus on the real needs;</li> </ul>	<ul> <li>increasing competition on international education market;</li> <li>"brain drain" from higher education, both internal and external;</li> <li>the loss of higher education academic values, the growing influence of Western culture;</li> <li>the loss of university research function;</li> <li>unsystematic support leading universities.</li> </ul>

Firstly, the major competitive advantage for higher education in Russia is its scientific character, its solidity, its polyhistory. The fundamental nature of the educational programs that provide a deep theoretical background, organic combination of academic and scientific activity encourages training a specialist to the occupational mobility throughout their working life within rapid technological changes.

Secondly, the Russian mathematical and science education is recognized as the best one all over the world. The proof of this is the fact that many universities, research institutions, companies, corporations from the United States, Germany and other countries are trying to attract our physicists, mathematicians and programmers. According to the academician V. Zakharov, 10-15% of mathematicians and physicists who teach at universities in the U.S., come from Russia.[10;86]

The third competitive advantage is the low cost of education. Thus, education in Russian universities costs 2-5 thousand dollars per year, one order less than in other countries.[10;88]

Liberalization of relations in vocational education has allowed educational institutions to provide paid knowledge-based service that has become a reason for increasing a number of students. By the year 2000 compared to 1990 the number of students has increased by 67.8%, by the end of the 2000s – in more than 2 times. Thus, mass higher education emerged in response to growing demand for paid training program, especially from the families whose children in the Soviet era are unlikely to get a higher education.[12]

Thus, academically Russian higher school has the necessary initial conditions to increase competitiveness in the global education market and increase their positive impact on the formation of knowledge economy.

These conditions are intensified by the state policy aimed at solving problems in the field of vocational education. The final report of the "Strategy of socio - economic development of the country 2020" provides for the following measures:

- 1. Increasing salaries of teaching staff to the level of twice salary in a region;
- 2. Using applied bachelor for effective combinations of getting fundamental knowledge and skills for work;
- 3. Introducing the programs of applied qualifications which provide training at workplace;
- 4. Providing availability of higher education for the "poor", i.e. increasing scholarships for cashstrapped students to the level of a living wage, affordable student loans;
- Promoting competition between universities, based on their financing in accordance with the quality of training of graduates. This measure requires changes in the accreditation of educational programs, procedures of finals. This measure is aimed at increasing the reliability of assessing the quality of education;
- 6. Implementing the rating system of educational institutions and training programs;
- 7. Extending a number of research universities at expense of the industry-leading university of transport and agriculture;
- 8. Increasing the standards of financing for research universities per student to attract and retain teachers of international level;
- 9. Implementing the monitoring of career and income of graduates;
- 10. Supporting the programs for developing national research universities;
- 11. Supporting training of young researchers, engineers in leading international centers and companies;
- Organizing the exchange programs with leading countries in the field of innovative business (training managers and specialists of innovative firms, workshops of leading international experts);
- 13. Supporting the complex projects for developing high-tech industries organized by companies in cooperation with universities.[12]

These measures if they do not completely solve the problems will significantly reduce their negative impact.

It is important that not only does the government tend to match the structure of vocational education and the labor market, to develop the necessary infrastructure, to increase funding and supporting for research programs and universities but the state encourages international cooperation in researching, projecting and commercialization of research. Such cooperation in the future could be the basis for the international recognition of Russian diplomas.

The implementation of the project of establishing and operating the Skolkovo Innovation Centre has great importance in the development of the knowledge economy. [21]

The main objectives are promotion of researches, development and commercialization of its results. [21]

The mission of the "Skolkovo" is to create a favorable ecosystem for innovation. Scientists, designers, engineers and business people together with the participants of educational projects will work towards competitive knowledge-based world-class developments in the five priority areas:

- · Energy efficiency and energy conservation;
- Nuclear technology;
- Space technology and telecommunications;
- Biomedical technology;
- Strategic computer technologies and software. [20]

The striking example of introducing radically new in the Russian system of higher education is establishment of the Skolkovo Open University (SOU).

Skolkovo Open University began its work on 21 April 2011. SOU is a part of the ecosystem of Skolkovo Innovation Centre.

SOU is Educational Program of Skolkovo Foundation which purpose is to spread the modern science and technology and business knowledges, and to develop creativity and to set up a network of active and talented young people in Skolkovo Innovation Centre.

Although SOU is called "university», SOU is not an educational institution and does not issue certificates of completion of training. It is an educational program. This program prepares students (graduate and post-graduate students) for The Skolkovo Institute of Science and Technology (Skoltech), interns to partner companies of Skolkovo Innovation Centre. SOU is a source of projects for business incubators.[22]

The example of the Russian innovation university complex is the Skolkovo Institute of Science and Technology (Skoltech). Skoltech is a joint project of "Skolkovo" and the Massachusetts Institute of Technology. Skoltech is an example of international cooperation in the field of innovative education.

Skoltech is a private, non-profit research institution of higher education operated by independent international board of trustees. When it starts operating at full extent, up to 1,200 graduates and postgraduate students will graduate per year, and the number of teachers and researchers will be 500 people. It is expected that by 2020, Skoltech will be recognized as a world research institute.

The main objectives of the Skolkovo Institute of Science and Technology is education, advanced knowledges and promotion of technological progress in order to develop new opportunities and solve the major issues faced by Russia and the world. [22]

Recognizing that world's leading research universities are dedicated to solve not national but global issues Skolkovo Tech is planning to establish its 15 Research Centres as collaborative and multi-university research partnerships. Each Centre will have Skolkovo Tech faculty as the lead, and will involve at least one Russian and one non-Russian institutional partner, thereby opening new avenues of knowledge exchange between Russian institutions and universities worldwide. Funding for the Centres will initially flow from Skolkovo Tech, and will be at levels comparable to those at world-leading research universities. The Research Centres will be developed through a competitive proposal process involving workshops, white papers, requests for proposals, peer review, and selection.

To integrate Skolkovo Tech research and education components with its emphasis on innovation and entrepreneurship, the university will establish a Centre for Entrepreneurship and Innovation (CEI). Integrating the three pillars for entrepreneurship and innovation—education, research, and commercial-

ization—the CEI will develop mechanisms that will help Skolkovo Tech students, professors, alumni, and researchers to take their scientific and technology discoveries from the level of abstract ideas to successful products and processes in the commercial marketplace. [22]

Active interest of our state in developing the knowledge economy allows to solve the existing problems and to set ambitious goals. The Skolkovo Innovation Centre is the basis of integration of education, science and business, both at the national and international level. Thus, it is clear that the creation of innovative economy is directly related to increasing local and international competitiveness of the national system of higher education.

#### References

- 1. Bell D. The Coming of Post-Industrial Society. A Venture in Social Forecasting.- N.Y.: Basic Books, 1973. V.XII. 507p.
- Батоврина Е.В. Роль вузов в подготовке инновационно-ориентированных кадров. Материалы 2-й Международной научно-практической конференции. – Пермь: Изд. Пермского национального исследовательского политехнического университета, 2012. – 382 с.
- Де-Йонге А.М. Противостояние университетов проблемам изменяющегося мира //Развитие стратегического подхода к управлению в российских университетах. – Казань: Унипресс, 2002. – с.18-27.
- 4. Корчагин Ю. А. Перспективы развития России. Человеческий капитал и инновационная экономика. Воронеж: ЦИРЭ.
- Образование в Российской Федерации: 2012: стат. сб. М.: Национальный исследовательский университет «Высшая школа экономики», 2012. – 444 с.
- Орехов В.Д. Инновационный процесс и его роль в развитии человечества. Материалы 2-й Международной научно-практической конференции. – Пермь: Изд. Пермского национального исследовательского политехнического университета, 2012. – 382 с.
- Решетникова К.В. Общественные механизмы поддержки инноваций в России в конце XIX начале XX века. Материалы 2-й Международной научно-практической конференции. – Пермь: Изд. Пермского национального исследовательского политехнического университета, 2012. – 382 с.
- Харлампиева С.С. Факторы, повышающие инновационную активность страны. Материалы 2-й Международной научно-практической конференции. – Пермь: Изд. Пермского национального исследовательского политехнического университета, 2012. – 382 с.
- Шумпетер Й. Теория экономического развития. Капитализм, социализм и демократия. М.: Эксмо,2007. – 864 с.
- Яровая Н.С., Пузакова Е.П., Воронкова О.Н. Направление интеграции российских вузов в международный объмен образовательными услугами в условиях глобализации: монография. – Ростов н/Д: РГЭУ (РИНХ), 2011. – 200 с.
- 11. http://2020strategy.ru/data/2012/03/14/1214585998/1itog.pdf
- 12. http://2020strategy.ru/documents/32710234.html
- 13. http://ecsocman.hse.ru/text/17042473/
- 14. http://ecsocman.hse.ru/text/17042473/
- 15. http://www.business-education.ru
- 16. http://www.hse.ru/primarydata/orf2012
- 17. http://www.i-russia.ru/all/articles/5193/
- 18. http://www.i-russia.ru/innovations/results/6042.html
- 19. http://www.minfin.ru/ru/budget/federal\_budget/08-10/
- 20. http://www.sk.ru/Model.aspx
- 21. http://www.sk.ru/Model/Documents/FZ244.aspx
- 22. http://www.sk.ru/ru-RU/~/link.aspx?\_id=62E0C4A05FF54B80A7BFE09A0750F66F&\_z=z
- 23. http://www.sr.pstu.ru/files/SchumpeterianReadings2012.pdf#page=12

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## **KNOWLEDGE AS COMPETITIVE ADVANTAGE**

#### Abstract

Increasingly, knowledge has been seen as important resource but also as subject of various areas. Enviroment nowadays is highly competitive and companies resort to different methods for use of knowledge as advantage. Experts believe that recipe for success is in emprovement of employees ' knowledge, skills, experience and creativity. This leads to the fact that more and more companies decide to invest in higher education of their staff. This paper presents investment in knowledge as competitive advantage of East and South East European countries.

Key words: knowledge, competitiveness, competitive advantage, knowledge economy, learning organization

#### **1. TRADITIONAL ECONOMY VS. ECONOMY NOWADAYS**

Global economy today is developing fast so it can't be explained by traditional theories. If we look back to the traditional economy, we'll find theories based on the material basis where only equipment, money and land were considered as value. Classical economy considered land, work and capital as main factors of production. However, today in new modern economy, 50% of GDP is based on knowledge or intelectual property.

The competitiveness is now focusing of all the countries that are looking for long-term sustainable development. Countries are looking for new modalities of strengthening productivity, and strong support the aspirations of the knowledge and innovation, known as human capital. Knowledge is recognized as main key for productivity and economic growth, which has put a new focus on information, technology and learning in strengthening economic performance.

This leads to the following facts:

- Nowadays, new economy has been considered as knowledge economy
- Researches have shown significant correlation between investment in education and GDP growth. These researches have shown that those countries that have invested in education and improvement of skills, achieved GDP growth
- More and more "Learning organization" represents synonym for successfull organizations that have recognized importance of knowledge and investment in it
- "Knowledge management" as a discipline is constantly developing and there are more and more novelty in this area each day
- Increasment of the use of non-formal education and its recognition in economy. Each company
  that has an aim to be successfull works on the capacity building of employees. To gain that aim it
  has to promote and invest in teambuilding, information exchange, leadership, innovation, creativity etc

Russell's claim that knowledge is real meassure brought many economists in state of thinking about knowledge as competitive adventage. Knowledge is one of the main topics today and it brought to the increase of investments in education. It can't be spoken about education and not mention globalisation and informative technologies. Since massive education and compulsory primary education have been brought in, there has been noticed the economic growth and the rise of the global economy. Data have shown that global economic development has been twice higher in 20<sup>th</sup> century then in 19<sup>th</sup>. Also, the average real annual GDP growth has been around 1,5%.

One of the argument that education and life long learning has been considered as advantage is the fact that more and more countries are developing e- learning program. This is related to the development and use of informatic technologies in management and production.

Companies want not just a worker, but worker with high knowledge. Today, knowledge is considered as main tool to gain fortune and profit.

Today is hard to be and stay competitive. World economic crisis made the most successful companies to question their management.

Countries from East and South East Europe, that have gone through inflation and now are affected with economic crisis, have to follow world trends and tend to be competitive.

In global economy nowadays, competitiveness takes the center position in economic thoughts.

#### 2. COMPETITIVENESS AND KNOWLEDGE

According to definition of OECD, competitiveness is a measure of country's advantage or disadvantage in selling its products in international markets.

Competitiveness is "top theme" of today's economic science. Michael E. Porter developed theory of competitiveness which has been accepted worldwide.

According to him, competitiveness can be defined as productivity that country or company uses their human resources, capital and natural resources.

The most important thing in competitive advantage of countries is various role of government. Government policy, in positive or negative form, affects on company strategies, structure, rivalry, norms, capital market, tax policy etc.

According to Michael Porter, the most important role of country in economy is to achieve macroeconomic and political stability. The second role is to promote microeconomic capability of the economy in general and the third refers to establishment of general microeconomic rules and encouragement for leading the competition which leads to growth in productivity.

Investment in capital is not enough for achieving economic growth. There are other mechanisms that are important: education and training (human capital), improvement of technologies, macroeconomic stability, good public administration, the rule of law, lack of corruption, market orientation, responsible government, sophistication of companies, demand conditions, size of the market etc.

The Global Competitiveness Index is advanced and detailed index for measuring the competitiveness of countries.

There are 12 parameters of competitiveness:

- 1. Institutions
- 2. Infrastructure
- 3. Macro economy
- 4. Health and Primary education
- 5. High education and training
- 6. Efficiency of market of goods
- 7. Efficiency of labor market
- 8. Sophistication of financial market
- 9. Technological readiness
- 10. Size of the market
- 11. Sophistication of business
- 12. Innovations

In these 12 it can be recognized six, related to education, research and science. These are: Health and Primary education, High education and training, Efficiency of labor market, Technological readiness, Sophistication of business and Innovations which indicates the great importance of investment in education, research and science and improvement of technologies, because that kind of investment has a great impact in the improvement of productivity and efficiency, innovation and competitiveness.

Disposal of investments in knowledge and measurement of these investments is one of the main topics addressed by knowledge economy.

"The knowledge economy is the use of knowledge technologies (such as knowledge engineering and knowledge management) to produce economic benefits as well as job creation." The phrase was popularized by Peter Drucker. Other than the agricultural- intensive economies and labor- intensive economies, the global economy is in transition to a "knowledge economy", as an extension of an information society in the Information Age. The transition requires that the rules and practices that determined success in the industrial economy need rewriting in an interconnected, globalized economy where knowledge resources such as know-how and expertise are as critical as other economic resources.

A key concept of the knowledge economy is that knowledge and education (often referred to as "hu-man capital") can be treated as one of the following two:

- A business product, as educational and innovative intellectual products and services can be exported for a high value return.
- A productive asset

The initial foundation for the knowledge economy was introduced in 1966 in the book *The Effective Executive* by Peter Drucker. In this book, Drucker described the difference between the manual worker and the knowledge worker. The manual worker, according to him, works with his or her hands and produces goods or services. In contrast, a knowledge worker works with his or her head, not hands, and produces ideas, knowledge, and information.

Investment in knowledge that increases economic efficiency and economic growth will make possible development in technology and lay founds for rise in employment. That is investment that can be as a lever to social development and it can be investment that can reduce social inequality.

Data shows that (within the countries of OECD):

- Countries that invest more in education have bigger GDP and vice versa. (Denmark, Island, Switzerland, Finland, Norway, Sweden, Canada, Great Britain, Belgium, SAD, Austria, Australia)
- Countries that invest less in education have less wealth(Czech Republic, Slovakia, Spain, Turkey)

\* Special attention makes GREECE which is relatively wealthy, but it gives the least amount of funds for education. The big amount of investment from EU has made a big impact on development of Greece, so as comparative advantage of Greece in tourism development.

\*IRELAND is one of the wealthiest countries in world, and it is the country that reduced investment in education. Ireland, during its development, has invested a large amount of funds in education, and today it deals with qualitative investment in research and high education.

But, the dynamic development of economy of the East and South East countries, is not possible without structural changes, which will primarily depend on the pace of three factors:

- · An increase in investment,
- · Reform of the education system, and
- Improving the business climate, as well as government investment, especially in infrastructure.

In order to create conditions for the development of knowledge-based society, it is necessary to carry out structural reforms in the labor market, public finance, health, welfare and pension policy.

Priority development areas should definitely be:

- 1. Information society,
- 2. Teaching, research and development as so as innovation.

The role of education in countries of East and South East Europe, as a lever of economic growth and social progress, is to develop the ability to understand and think critically, to encourage initiative, creativity and entrepreneurial spirit and the teamwork as so as positive social values. Vision of development in this decade should be the emergence in society where educated and creative people create high-quality innovative goods and services. Emphasis must be placed on raising competitiveness and increased productivity and better utilization of all available resources, as well as the transformation of the economy towards areas with high productivity, and supporting the growth of the creative potential of the economy. Creating a new group of young people, well-educated, creative, energetic, with values of individual freedom and social responsibility, which is characterized by a commitment to work rationally to achieve profits, healthy competition, and competition in the market, savings and investments, will be determinant of future economic growth.

Strengthening knowledge and innovation as drivers of future "smart" growth means:

- · improving the quality of education at all levels,
- free movement of people,
- · the greater mobility of students and working practices,
- · foreign language learning,
- · gaining experience through studying and living abroad,
- building networks,
- raising research infrastructure and quality research,
- · promoting innovation and knowledge transfer,
- · maximizing the practical benefits of research for small and medium enterprises,
- · the development of public private partnerships,
- · encouraging career development,
- · access to affordable loans for innovative products,
- Quality of Internet access, etc.

Increasingly influence takes creative industries in the field of high technology, which have intensive knowledge (for example, computational programming, engineering, commercial research and development, medicine and biotechnology, chemical industry, power industry, university education and research, etc.)

### 3. CONCLUSION

Knowledge as an intellectual capital became the main source of creating sustainable comparative advantage of the organizations and countries and it satisfies dynamically growing demand.

In the condition of globalization, economy competitiveness of the countries depends on the level on which society and economy are based on creating the new and applying the existing knowledge.

Without changing the economic structure, in which new industries with high content of knowledge gain in importance, East and South East countries would remain in the long-run in the so- called trapped middle development without being able to move to a higher stage of development.

Countries of East and South East Europe should improve quality of education at all levels, work on mobility of students and working practices, foreign language learning, promotion of innovation and knowledge transfer, promotion of non formal education and raise awareness about importance of knowledge.

#### Literature

- 1. Intellectual Capital: Realizing Your Company's true value by finding its hidden brainpower, Edvinsson
- 2. "Knowledge as competitive advantage", Miroljub Albijanic , University Singidunum, Faculty of economics, finance and administration
- 3. Porter M.E. "The Competitive Advantage of Nations" (1990)
- 4. www.fefa.edu.rs
- 5. www.weforum.org

# DIGITAL Economy

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# THE INFLUENCE OF THE INTERNET TECHNOLOGIES ON THE TOURISTIC SPHERE

Impact of the Internet on the modern world has no historical analogs. The invention of the telegraph, telephone, radio and computer led to an unprecedented integration of all these tools in the global information hypermedia system, which was called the Internet. This system is also a sphere for collaboration and communication among people, a mean of global broadcasting and dissemination of information as well as a powerful tool for business without any temporal or spatial limitations.

According to the statistical data, the quantity of Internet users increases every year, due to this fact the number of Internet users in Russia in 2007 accounted for to 32 million people, and up 34% by 2009. Since the autumn of 2010 the audience has grown by slightly more than 17%. According to the investigations of Public Opinion Foundation, in the autumn of 2011 the monthly Internet audience in Russia was equaled to 55 million people. Relating to the results in 2012, there were registered more than 67.5 million people in Russia, representing 47% of the population. Therefore, as we can see in the graph (Figure 1) there is a steady increase in the use of the Internet in Russia.



Figure 1. The amount of Internet users in the period from 2007 to 2012<sup>1</sup>

At the same time, according to the statistics, the number of Internet users in the world had reached 2.27 billion in 2012, so in comparison with 2007 their quantity doubled. The largest users of Internet services are the United States - 245.2 million people or 78.1% of the population, China- 538.0 million, 40.1% of the population and Germany - 67.4 million people, 73% of the population.

In connection with such significant expansion of the Internet, e-commerce opens great opportunities for development of any enterprise. This is a new form of market relations, based on the use of the latest telecommunication technologies and the Internet. This trading system is suitable both for buyer and sellers, including the tourism sphere.

Thus, the aims and objectives of this work are to study the consumer market of Internet services in the tourism industry, which is crucial for the development of Internet communications and high technology.

Public Opinion Foundation http://corp.fom.ru/

The tourism industry is one of the largest consumers of telecommunication technology and has one of the highest levels of computer equipment in the business world. This is partly a consequence of the nature of the information used in the travel industry and it is substantiated by the following factors:

- This information is very sensitive to the time because different dates change very often: the events, schedules and etc.
- Information about the tourism products must be timely available from various points of the globe.
- Tourism product consists of the huge variety of components: transportation, accommodation, entertainment which also requires rapid delivery of information to coordinate their satisfactory supply.

Organizations of tourism and hospitality industries are especially interested in the next areas of using the Internet:

- · communications and telecommunications;
- advertising and promotion of a tourism product;
- marketing research;
- · electronic presentation of the company and its tourist product;
- using the capabilities of the international tourism fairs and exhibitions;
- the use of booking and reservation systems;
- independent organizing a tour;
- · the use of electronic catalogs of tourist product about countries and destinations;
- getting country information, operational weather forecasting in different countries and flight timetables;
- · receiving information about the rates and prices of hotels, restaurants and carriers;
- the use of the Internet for calculations.

Development of the Internet changes the tourist business in the world so rapidly that many companies hardly have time to accustom to the new technologies. Although the turnover on e-commerce is not fully analyzed yet and some experts express their doubt relating to the involvement of travel agencies in the electronic world, especially in the U.S. and Western Europe, it is booming.

Companies, which have their own websites or pages on the Internet and use the Internet reservation system, get new high-marketing channels to promote their services. For example, in Western Europe and the U.S. travel services take the first place in terms of sales on the Internet. According to analytic firm PhoCus Wright, during the next two years the European tourist online market will grow by 300%, reaching \$ 10.9 billion, while in 2000 it amounted to 2.9 billion dollars.

In the first place there is the UK - 38% of the total tourist operations, then Germany - 22%, France - 12%, Finland, Iceland and the Scandinavian countries - 11%. In other European countries the volume of online operations accounts for 8 - 9%. (Figure 2)



Figure 2. The volume of online operations in the different countries

The Internet is still playing a minor role in the Russian tourist business. Today, the majority of Russian tourist companies use the Internet as a large billboard for advertisement of their capabilities to organize tourist services.

The Internet allows tourism organizations to get access to large groups of consumers without heavy expenses in order to send specific information about the products and the organization of their sales; securely distribute full and detailed information on their activities; quickly and effectively take customer orders and book necessary services; to reduce the expenses of production and distribution of printed materials; to accelerate and simplify the cooperation with partners in the market.

Nowadays, in the travel industry online technology programs are widely used in an electronic booking and designing tours packages. The appearance of such new program of this type doesn't not only reduce the costs of communications, but also provides the opportunity to work with all participants of the tourism market as a unified office. The work with such programs allows agencies to obtain operative and reliable information on the prices and quantity of empty seats at any time, and also gives an opportunity to follow the order for all stages of its implementation. There are various reservation systems with a different set of services and technology of their work. For example, the most popular programs in the world are Galileo, Amadeus, Sabre, Worldspan and others.

Using online operations allows agencies to acquire new tourist audience and to cover much larger areas, as well as to save significant time working with clients.

If not so long time ago the online orders were small experimental stream, but now they have become a powerful stream, which brings a quarter of total revenues. This information sounds for tourism even more optimistic as figures characterize the state of affairs in the conservative Europe. According to the European Commission, the possibility of online order of services is provided by 36% of all tour operators and 62% of hotels. Almost a third of them get more than 25% of all orders from web users.

	2009	2010	2011	2012	2013
<b>Online Travel Agencies</b>	445	944	1,787	2,760	3,917
Airline Website	589	950	1,431	2,113	2,807
Hotel Website	303	454	774	1,135	1,483
Car Rental Website	1	2	4	5	9
Rail Website	84	258	442	566	687
Tour Operator website	133	322	518	905	1,532
Total Online	1,555	2,930	4,956	7,486	10,436

Figure 3. Russian Online Travel Market, 2009-2013

Experts highlight that the market of online booking travel services is quite actively developing. As a result, on the Internet there was made more than 10 million bookings - in 2011 it was 5 milliard USD, and in 2012 - more than 15 million bookings for a total of 7.5 milliard USD.

Giants of the European tourism industry acquired online service for booking tours, hotel rooms and tickets long time ago, however the high efficiency makes them invest new tools for the development of online destination. Among the advantages the heads of agencies mention 24-hour access to online booking, saving the time for trips to the office, the ability to compare several alternative proposals and reduction of expenses for the participants of the market. Currently, if you want to relax it is enough just to surf on the Internet, to type the desired name of the travel agency and see the services they offer.

But in Russia selling tours is still realized by personal visit of a buyer to a tourist company. Complete movement of the Russian tourist business to online technology is unrealistic now due to the lack of clear legislation in this area, the low level of development of the market, inexperienced consumers and inability to pay for services with credit card and to protect clients from the fraud.

The obstacles for the development of online sales systems are a small number of Runet users, low standard of living, low level of the development of payment systems, payment mechanisms on bank cheques and credit cards.

And, despite the fact that non-cash payment instruments for individuals are actively developing, online travel companies do not hurry up to implement payment technologies, because there is still a certain amount of risk to incur unnecessary high expenses: in particular, the credit cards are used by a small percentage of Russian travelers.

Moreover, Russian tourists are used to buy tickets and tours in the office, preferring to pay to an "alive" manager, not the virtual machine and at the same time make sure that nobody cheats them. In addition, in most cases, a client will still need to communicate with a person for the final confirmation of the order. This factor is already related to the feature of the tourist product.

Impact of the Internet concerns not only the relations between travel companies and their partners or customers, but also influences the process of purchasing travel services.

Traditionally, suppliers of tourism services (hotels, restaurants, transportation companies, museums, etc.) cooperate with customers through middlemen: tour operators, travel agencies, hotel chains. Today there are virtual mediators - sites of hotels, airlines, travel companies, computerized reservation network. This allows tourists to get information immediately without travel companies and order services in any combination of producers and mediators.

The results of the research confirm that demand in the tourism industry is highly dependent on the price, and operational search for necessary information often plays a crucial role because more and more consumers prefer to search and book tickets and hotels on the Internet as more convenient source of information.

Currently, the number of independent travelers is increasing. According to both travel agencies and tourists, the most popular destinations for travel are the U.S and Europe. It is better to organize the trips to Asia, Egypt, Turkey, especially in high season by contacting a travel agency. This distinction is caused that the tour operators book entire hotels, rent aircrafts for organizating charter flights, furthermore independent booking of hotels and purchase of tickets to Asia, such as Thailand, India, China, and the most popular destinations among Russians - Egypt and Turkey is very difficult.

The Internet has finally penetrated into all spheres of our lives, and a large number of modern and high quality online services, such as reservation systems for flights, hotels and car rentals, significantly simplify the process of organization of tourism and business travel. Moreover, social networks, which blew up the whole world in 2010 help to develop independent tourism. Here people share their travel experiences with millions of users on the network from anywhere in the world. The information about tourist objects and opportunities of a region is reliable and available to all users on the Web. This has led to the fact that many travelers has already begun to refuse the services of travel agencies and started to organize traveling themselves, including business trips, according to the latest research in the field of business travel.

The appearance of services providing the opportunity to book hotels and tickets online has shown the customers that independent tourism can be more interesting and more profitable than buying a tour

package. Experts say that expensive tour packages and standard excursions offers of travel agencies repel tourists.

The share of independent travelers in Russia is now 10%, and this figure is growing rapidly. Among the most popular destinations where independent travelers went at the January weekend were: Russia - 20%, Estonia - 10%, Finland - 10%, Latvia - 10%, Italy - 5%, France - 5%, Czech Republic - 5% Germany - 5%, Thailand - 5%, Lithuania - 5%.

Nowadays, there are the following proportions in tourist flows: groups of tourists constitute to 25-35% of the total number of people traveling abroad and individual tourists equal to 65-75%, who in most cases travel to neighboring countries.

New strategic approach to forming a tourism product is more flexible and attractive to consumers.

Direct sale of tourist services for individual tourist is characterized, first of all, by flexibility in time, secondly, by the independence from the preferences of travel agents and thirdly, by the ability to compare the price and quality of the offered services.

Appeal of direct selling services for service suppliers, bypassing the travel agents and tour operators, is to reduce the operating expenses connected with the sale of the tourist product.

Tour operators provide tourist products, which consist of several types of services: accommodation, flight, car hire. A consumer can buy it directly from the service suppliers - airlines, hotels, car rental firms. However, it is important to highlight that the provision of services directly by travel agencies also has their positive aspects, such as:

- The combination of few services into a unified tour package
- Providing access to information;
- Providing reservation, payment and formalization of necessary documents;
- Offer the best prices, due to wholesale purchasing;
- Providing certain guarantees in the case of a conflict with the service suppliers.

In conclusion, we can say that today tourism is a global computerized business, which involves the largest airlines, hotel chains and tourist corporations around the world to provide its services to the consumer directly or via the Internet.

#### Sources

- 1. Novikov VS Innovation in tourism Moscow EC "Academy", 2007. 208
- 2. All about tourism, travel library site http://tourlib.net/statti\_tourism/milinchuk.htm
- 3. Association for the Tourism Technologies site-http://www.astt.ru/magazine\_1.shtml
- 4. http://rudocs.exdat.com/docs/index-77931.html
- 5. http://www.atorus.ru/press-centre/new/20326.html Interactive stuff
- 6. http://webmilk.ru/2009/05/13/v-2009-godu-chislo-polzovatelej-runeta-uvelichitsya-na-34/
- 7. PhocusWright's Eastern European Online Travel Overview https://docs.google.com/file/ d/0BzQy9ZwUn-JeTHNaWXczVjlwVzg/edit?pli=1

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## FUNDAMENTALS OF KNOWLEDGE-BASED ECONOMY: INFORMATION SOCIETY AND INNOVATION ACTIVITIES SUBCARPATHIAN ENTREPRENEURS

#### **INTRODUCTION**

The knowledge economy is based on four sections. The first is education, the other conditions of institutional, third and fourth are the information society and innovation activities. About the last two will be saying the article. A specifying about their formation in the Subcarpathian region. In the first part of the information society will be defined, its features, characteristics, and the fact that its development and future operation. They will then be referred to the directions of economic development and changes taking place. The second part will discuss the innovative activities, the definition of innovation and innovative activities considered. At the end will be checked the use of information technology and innovation in companies in the region Subcarpathian

#### **INFORMATION SOCIETY**

Information Society is changing. Ceased to be merely a combination of technology and science. It has become part of many aspects of life. Also, there have been changes in companies in this area. Both in everyday life and in business enterprises hard to do without appropriate technological solutions.

The term comes from Japan. *Joho shakai* - the Civilization of Information, was understood not only as a simple spread of computer technology, but as a transformation of all aspects of life.

Of the many available definitions of the information society the best in my opinion is the one given by Polish authors Kazimierz Krzysztofek and Marek Szczepański. I think that the multidimensionality of this definition may help to see what is most important in the topic.

[...] A society in which information is extensively used in economic, social, cultural and political life; this society, which has extensive communications and information processing, underlying the formation of most of the national income and to ensure the livelihood of most people.[...]<sup>1</sup> The key to this concept is the fact that society turns on the latest Technologies to most areas of life. Annother of the definitions in the literature is that given by the OECD (Organisation for Economic Cooperation and Development) in 1999:

"Information Society can be found at the intersection, once separate industries: telecommunications, electronic media and information, based on the paradigm of digital information. One of the driving forces is steadily increasing computing power available on the market, accompanied by falling prices. Another element is the ability to connect computers on a network, allowing them to share data, applications and even power, for distances as small as an office or as large as the planet. This basic model of distributed computing and high-speed network is the core of the information society.<sup>2</sup>

Krzysztofek K., Szczepański M., Zrozumieć rozwój. Od społeczeństw tradycyjnych do informacyjnych. Wydaw. Uniwersytetu Śląskiego, Katowice 2002, s. 170

<sup>&</sup>lt;sup>2</sup> Organisation for Economic Cooperation and Development – www.oecd.org

By definition, stem bases of the information society:

- Technology access to facilities and technology
- · Economics share the information sector in GDP
- · Social the percentage of users of information technology
- Cultural the level of information culture the acceptance of information as a good strategy, ability to use ICT equipment

Hallmarks of the information society are:

- Developed service sector, mainly modern, such as banking, R & D, IT and telecommunications
- Development of local community
- High level of education of the society
- The economy is based on knowledge<sup>3</sup>

The modern economy is one in which they operate businesses using ICT. Its characteristic feature is the development of computer, remote management and labor. Through the use of telecommunications networks to work flexible manufacturing systems. However, these systems are not only the management and production, is also a control, contact with clients, contractors and public administration - the whole communication network. Faster contacts enable us to effectively manage operations. Due to the transformation of the demand for professional workers. The challenge of the modern economy to adapt to changes in the structure of the staff.<sup>4</sup>

Major changes also occurred in the office and the banking sector. Some of the offices are large changes, or even lose their physical location, replaced by telecommuters. But even among workers in the office seeks to fully computerize the circulation of documentation. <sup>5</sup>

Knowledge and creativity are key factors of development, their use in the conduct of economic and social processes is to transform the economy in which the chief place of stand out items such as job creation, lifelong learning community, partnership, propensity for risk taking and exploration new solutions, active participation in social life, and - which calls for special attention - the protection of intellectual property.

#### **INNOVATION**

Increasing changes in markets and business operations caused by the use of knowledge in innovation fosters knowledge-based economy. Competitiveness of enterprises is determined as a result of innovations implemented by them. These inventions have the effect of different types of research and development, application of new technologies, especially teleinformation. Lead to the acquisition by the company of new markets as well as improvements in the same business.

A source of development in the knowledge economy is considered the value of knowledge. It finds many applications in the enterprise. It can be seen growth trend in terms of participation of the knowledge-based sectors in the GDP. Especially in highly industrialized countries.

Innovation has become a concept that appears extremely common not only in scientific but also in everyday language. However, it is understood intuitively - perhaps this is due to the fact the lack of single commonly used definition of this phenomenon. Commonly, however, it is considered a major factor

<sup>&</sup>lt;sup>3</sup> Hales C., Społeczeństwo informacyjne. Stan i kierunki rozwoju w świetle uwarunkowań regionalnych, Kędra J., Wybrane aspekty funkcjonowania społeczeństwa informacyjnego Wydawnictwo UR, Rzeszów 2008, s. 54-55

<sup>&</sup>lt;sup>4</sup> UNDP Polska, Polska w drodze do globalnego społeczeństwa informacyjnego. Raport o rozwoju społecznym: Cellary W., Przemiany społeczne, Program Narodów Zjednoczonych ds. Rozwoju, Warszawa 2002, s.14-15

<sup>&</sup>lt;sup>5</sup> Goban-Klas T., Stankiewicz P., Społeczeństwo informacyjne: Szanse, zagrożenia, wyzwania, Wydawnictwo Postępu Telekomunikacji, Kraków 1999, s. 78-85

for the development of countries and companies when it comes to socio-economic development. This term, however, the importance of multi-dimensional, and the individual authors point out the various features of this phenomenon.

The creator of the discipline called Schumpeter considered innovation - he drew attention to the exchange of creativity in creating innovation in material reality. Recognized for innovation: the practical application of new ideas, and creative use of the instantiated to inventions and discoveries. It is a broad understanding of innovation - it is not only restricted to technical solutions, includes an economic project like getting a new market. Therefore, Schumpeter does not consider it an innovation or invention only physical effect, but the procedures if they meet the so-called the condition of novelty: that is not previously known or used in any company in the industry<sup>6</sup>. Similar views expressed by Robbins and DeCenzo that the innovation should be "a process of creative transformation of an idea into a useful product, service or course of action<sup>47</sup> Pomykalski and Abramovitz and Solow start from a more general definition - they think that innovation should be focused on explaining the processes of production and productivity and growth in the scale of their business. Innovation is a complex process, from creating the concept to its implementation and the institution should have a solid ability to search for and implementation of these processes. Drucker draws attention to the innovation of the changes. Change is the cornerstone of innovation - as it leads to the creation of something new, be it a product or service.

Drucker also introduces a definition of innovation systematic. It involves "purposeful and structured search for changes, and a systematic analysis of the opportunities that these changes might offer for economic or social innovation." He also gives the seven sources of motivation, which should be monitored at regular innovation:

- 1. the unexpected,
- 2. discrepancy between what is and what should be,
- 3. need for success,
- 4. changes in industry structure or market structure,
- 5. demographics,
- 6. changes in perception, trends, importance,
- 7. new scientific knowledge and scientific<sup>8</sup>.

#### **INFORMATION SOCIETY AND INNOVATION ACTIVITIES IN THE SUBCARPATHIAN REGION**

The definition of Information Society shows the importance it has the information, and thus gives the company an advantage that the use of appropriate solutions. No wonder that businesses adapt to this trend in the economy and attach more importance to information technology. It is no different is happening in Poland, Subcarpathian region. Suffice it to say that, according to Central Statistical Office, nearly 95% of enterprises used computers and 94% had access to the Internet in 2011. The use of computers in business is below the Polish average, of 97.93%, is similar to that used in small businesses 94.7% but less than medium and large (respectively 99.3% and 99.8%).

Below is a chart showing the speed of the Internet in companies in Subcarpathian region that benefit from it. Easy is noticeable that the first two categories are nearly 80%. This means that most companies are using the slower transmission. This translates into the distribution of firms in terms of volume - in all segments of the largest companies in the second group uses the connection, but with increasing size of the larger is the share of the category faster connections.

<sup>&</sup>lt;sup>6</sup> Bachnik K., Innowacyjność jako jeden z kluczowych elementów polityki Unii Europejskiej, [w:] Innowacyjność w teorii i praktyce, red. Strużycki M., SGH w Warszawie, Warszawa 2006

<sup>&</sup>lt;sup>7</sup> Podstawy zarządzania, red. Robbins S. P., DeCenzo D. A., PWE, Warszawa 2002

<sup>&</sup>lt;sup>8</sup> Drucker P. F., Natchnienie i fart, czyli innowacja i przedsiębiorczość, Wyd. Studio Emka, Warszawa 2004



Graph 1. Speed Internet connections in companies in Subcarpathian region 2011.

Source: Central Statistical Office

The biggest challenge is to bring other, more modern technology to business operations. Efficient operations of companies, is based largely on adapting to new trends. Faster and stronger growth is needed in terms of communication. For example, only 32% of companies use automated data exchange technology within the company in Subcarpathian region. Not better in the field of external data exchange, to which the appropriate data communications technology is used 39% of companies.

It is interesting also is the development which has taken place in the field of Internet contacts with the public administration. It was extremely intense in 2009 - caused by the that was the introduction of a special program to encourage entrepreneurs.



Graph 2. Companies using the Internet to interact with public administrations

To remain competitive, companies Subcarpathian region must to be more inventive and invest more in innovation, research and technological development. In this way they can adjust their business models to the challenges of the global economy and better prepare for the development of new products or services, and to sell them.

Expenditure on innovation activities of enterprises are increasing steadily. since 2009 - the year the impact of the crisis.

Source: Central Statistical Office



Graph 3. Expenditures on innovation activities of enterprises in Subcarpathian region.

Source: Central Statistical Office

Expenditure on innovation activities differ depending on the segment in which the firm operates. Most abundant in innovation are always industrial sectors, so it can not therefore surprising high value investment. In Subcarpathian region in 2007-2011 about 17% of all enterprises showed investments in innovation. For the service sector is a much lower value, about 10%.



Graph 4. The percentage of companies in the sector exhibiting expenditures for innovations in Subcarpahian region.

#### Source: Central Statistical Office

#### **SUMMARY**

The changes in society affect the company and the whole economy. The development of information technologies will have a significant impact on the trends followed in the companies. Become changed needs of both employers and the economy, and thus change the company. Continued to grow the technology is more modern. Not without significance are the investments made in the company's innovation. Both of these parts of the knowledge economy are interconnected, and therefore the company to achieve and maintain a high position in the market has to pay attention to them. The knowledge economy is the future of all businesses - the next stage of the evolution of the economy, companies and their managers need to accept it and adapt to it.

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# ECONOMIC CRISIS: ONLY WAY OUT – IMPROVING HUMAN PSYCHOLOGY, DEVELOPMENT OF HUMAN EXPERTISE, ELECTRONIC REVOLUTION OF THE MARKET

## **ECONOMIC CRISIS – PRODUCTION OF EUROZONE**

In this presentation we will not try to explain what economic crisis is, or to develop the negative consequences. Also, we will not spend much time to analyze of the European Union "works" as a Union, and the stronger supports the weaker, or if each country is just alone. We believe that from the latest developments in Cyprus it is clear that members are not "friends" but there are economic games. When Cyprus was on the verge of a decision to enter or not in the EU at that point everyone knew what was going on and everyone was smiling! But it is certain that in the 'troubled' countries priority was not given to humanity but to economic factors.

Greece was in the bottom of Europe in suicide records, but now it 'climbed' to one of the **highest position**. A survey which was conducted by the University of Athens indicated that the phenomenon of suicide is associated with prolonged unemployment and that there is an increase in the number of suicides between the ages of 15-35 years. The Greek Orthodox Church does not accept people who commit suicide and therefore refuse to perform the appropriate funeral ceremony.

What we must do is to develop as individuals and then as a society by extension.

## **PSYCHOLOGY**

The change must start from ourselves, by changing our emotions and our dream, our way of seeing thing and our perspective of our society. Once we realize that we are humans and our life has value we should try to figure out **how to proceed**. We must believe in ourselves, love ourselves and form a person who will not have the need for dependence. Through **individual personalization**, individuals of society will have the opportunity to support themselves and one another.

Furthermore, people should **stop 'losing' themselves**. We have to move forward, in a society that someone's (economic) death will not benefit someone else's life. Otherwise we will belong to the animal kingdom and not in a society. Man is the only creature on the planet that evolves society to go ahead! It's true, that there might have been large setbacks reflecting revolting societies of the past, but in general, **balanced societies go ahead**.

Introducing the *parameter* '**Future**'. People should learn to **plan**, **program** and **feel responsible** for themselves and for others. With our spirit we must plan our future, hope and work for it and of course make it happen. We have to depend on our character (Honesty, accountability & authenticity of people), with the desire to make current plans for our future.

And we are not talking only about biological realization! We believed that through the loss of values, the means (money, house, managing position) can bring human completion, but **these are just tools**! Man is not completed through tools but through the **soul**! And the society is not completed through tools but through the soul. When all of the above are not in effect, even a person with vast knowledge & specialization is unable to be established in the society! But when all of the above are in effect, we can **solve all technocratic deficits** (trade, fiscal, high inflation) and make a **real society** where private investment is for man an **area of creation** and planning for tomorrow **fulfills our confidence**.

#### **EDUCATION - SPECIFICATION**

**Expertise** or **specialization** is man's attempt to learn in depth, a particular area of science, technology or engineering with a view to better quantitative and qualitative performance. Thus, protecting one from imperfect knowledge and obtaining vast knowledge in specific area.

The **reason for expertise** is the need for quantitative and qualitative increase in output that arises from the consumer trend of man. Increasing knowledge in all areas of scientific and technological discoveries in gigantic quantity, but also quality of knowledge, imposed specialization.

There are various **positive results** from expertise:

- Increase in Productivity
- Solution to basic everyday problems
- · Better knowledge in the scientific field and thus improving knowledge
- Better performance of human resources

But also a great deal of negative aspects:

- Unilateralism in the sense that one knows only the object of his work.
- Monotony, in the sense that one is engaged continuously in same thing.
- Losing freedom of establishment and art. Work is planned and thus identical.

In conclusion, specialization is definitely 'a must' in our days. It would be foolish to support the view that it should be allayed. Besides, the advantages are beneficial to man, whereas any negative aspect can be broadly anticipated. Intellectual interests, sports and everything else can soothe unilateralism and the monotony and give back to man what was deprived through specialization.

#### **ELECTRONIC EVOLUTION**

Technology has a **huge impact** to how businesses and people **react to economic crisis**. Even in harsh times, technology has to offer some great advantages, or sometimes it can even hold back a crisis or smoothen it.

First of all, we will mention some of the **advantages** technology has to offer in a modern business society.

Technology **makes automation possible**, outside the business (Bureaucracy is reduced), or inside the business (business effectiveness is increased). Thus, resulting in a much more valuable time for the entrepreneurs that is not spent in pointless procedures. Vast increase of productivity.

During a crisis you need new customers, you might even need to discover new areas where your business can expand, change your direction or even your market (if your branch is the one that suffers more). Technology makes it possible! How? Simple... **SOCIAL MEDIA**!

When your business is open to social media, it is open to the world. New people, new markets, new ideas. Everyone sharing all this information with each other. International markets and customers now come to your computer. Economic crisis is something regional, at least those who are affected more, if your market is international, instantly is **more secured**, or at least the damage is controllable. The **more markets your business is open to**, the less vulnerable it is to economic crisis from one country!

Technology creates opportunities. Not only for simple jobs, but also to become millionaires! A great example -> **applications for smartphones**. You don't need to have assets or a huge business or how to make an application! All you need is a good idea, and a good implementation.

In time of crisis most business branches are reduced, but not the branch of technology. Most of the business innovations are implemented using technology! And the thousands of applications right now being used by millions of people! Most radical inventions at the business world come from technology, and if not, then still, technology is the way they are implemented!

What could YOU do without technology?

In conclusion, either you like it or not, if you want to survive in the modern society of information, you **can't (& shouldn't) stop using technology**. We live in a very competitive business society, even the small advantage your opponent might have because he makes use of technology could make a difference. The economic crisis will 'kill' the old fashioned businesses, just because they won't be able to compete with the modern ones any more.

#### Don't be afraid of technology.

Embrace it.

Learn it.

Use it as your ally.

Use it inside your company.

#### References

- 1. Psychology book "the misery of the one" by Stelios Ramfos and others
- 2. Interviews with psychiatrists
- 3. Wikipedia.com
- 4. Various blogs & articles through the internet

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## **CREATING A DIGITAL ECONOMY OF MONTENEGRO**

#### Abstract

One of the most thriving elements which push the economy forward is definitely technology. Nowadays, countries have realized that so they invest great amounts of resources to buy, implement and use the most sophisticated and modern technology in order to achieve greater income. Usage of technology, on the other hand, requires certain level of knowledge to be used on the most productive way. In order to create a digital economy, the economy of knowledge, workers and citizens in generally, have to be familiar with the latest ICT technologies. This paperwork is primary based on the definition of digital economy which recognizes theory, than it shows the usage of ICT technologies in enterprises in Montenegro, and after that there is a part which deals with further efforts in order to create better digital society of Montenegro.

Keywords: digital economy, digitalization, ICT, enterprises, citizens

#### **1. CHARACTERISTICS OF DIGITAL ECONOMY**

The digital economy is characterized by numerous phenomena in the global business environment, which include but are not limited to globalization, digitization, virtualization, and disintermediation. The phenomenon that is globalization has internationalized the economy by expanding market reach, scope and speed. Boundaries have given way to electronic borders that allow millions of businesses to carry out online transactions in a seamless fashion. Likewise, digitization has removed the need for a human interface, meaning that goods and services no longer need to be tangible, leading to the development of e-books, digital music and the like. Other than this, virtualization has made physical location and proximity irrelevant, with business transactions able to take place in a virtual environment involving many to many or one to many communications. Finally, disintermediation has made it possible for consumers to bypass middlemen, retailers and other intermediaries and directly reach producers.

The digital economy has information and knowledge as its main commodities for production and consumption. Consequently, sound information and knowledge management (KM) are critical for organizations wishing to improve their performance. Information management centers on a number of different tasks, including the creation and maintenance of meta-information, searching for documents and other data objects, and viewing and retrieving information. Further tasks include information uploads; data extraction, publication and distribution; and providing access to information. Like information management, effective knowledge management (KM) is critical for the growth of the digital economy. From the viewpoint of KM, human ingenuity is the most important feature in the emerging digital economy. Constant technological innovation makes success in the marketplace increasingly dependent on the skills of the workforce. In the digital economy, nothing is more precious than human ingenuity, and the promise of the digital economy therefore lies in this new type of worker.

The digital economy is essentially a knowledge-intensive economy where goods and services are increasingly being produced in the form of intangible capital, making knowledge an important measure of the competitiveness of an organization. Organizations increasingly compete with each other for the use and provision of knowledge-intensive products, such as human capital and new technologies. The importance of KM in organizations is now increasingly acknowledged when it is realized that pressures of the knowledge economy on organizations compel them to consider knowledge management as a way to enhance productivity and efficiency. A study of knowledge management practices in the public sector in OECD's countries found that one of the main motivations centers on concerns around efficiency and productivity. The knowledge economy in which governments and entire societies now find themselves is founded on a structural transformation in which the rapid creation of new knowledge, and the improvement of access to knowledge bases, is factors that are believed to increase efficiency, innovation, the quality of goods and services, and equity.

The digital economy is also characterized by economic activities that are now possible without the physical movement or involvement of people, things, money, etc. rapid developments in the globalization of economic activities; the transfer of value and accumulation of assets via digitized networks; ICT's current situation as the foundation of the digital economy; e-commerce and digital information's encroachment into all aspects of people's lives; the 'dumping' of previous (economic) rules in favor of new ones more suited to the digital economy; and dramatic increases in business opportunities for SMEs through the effective application of IT.

The new economy, also known as digital economy, is considered to be a knowledge and idea-based economy where the key to higher standards of living and job creation is the extent to which innovative ideas and technologies are embedded in services, products, and manufacturing processes. Moreover, it is an economy where risk, uncertainty, and constant change are the rule rather than the exception - an economy where hierarchical organizations are being replaced by networked learning organizations, and where there is a progressive drive for increased productivity and higher incomes, more knowledge-based jobs, an expanded number of stakeholders, and greater access to information by citizens. Comparatively, in the old economy information was a valuable commodity, often only available to those who had the means to pay for it. Now with the Internet economy, information is and continues to become more ubiquitous.

#### 2. USAGE OF ICT IN ENTERPRISES IN MONTENEGRO

There are numerous reforms which are undertaken in order to increase the usage of ICT in Montenegro. The usage of ICT is on significant level, but there is still space for improvements. Number of people with the age between 16 and 74 who had used PC in 2011 amounts 53,2% while the percentage of other who hadn't used the computer ever amounts 46,8%. When the use of the internet comes to consideration 49,9% of surveyed people declared positive, and 76,6% of them use internet every day or almost every day. 17,5% of surveyed people use internet at least once a week.

When it comes to enterprises there the target populations are enterprises with 10 employees and over interviewed by the phone in period from 1 to 15 April 2012. The survey on ICT usage in enterprises was conducted on the representative sample of 617 enterprises at the territory of Montenegro.

In Montenegro, 88.3% of surveyed enterprises reported on the use of computers in their activities during January 2012. All other data in this release refers only on enterprises which were used computers during January 2012. Results of survey showed that 53.3% of enterprises allowed their employees remote access to e-mail system, enterprise application or documents, in January 2012. When it comes to the Internet, the results of survey show that 96.1% of the enterprises, who use computers, have access

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to the Internet in January in 2012. This is increase of 1% referred to previous year. Of the enterprises that had access to the Internet, 53.1% enterprises responded that they had Web Site/Home Page, in January 2012.



On the question about employment ICT/IT specialists in January 2012 20,8% enterprises answered that they employed ICT/IT specialists, persons whose main job is ICT. By sectors/areas, the most of enterprises from financial sector were employing ICT/IT specialists 56.7%.





Source: Monstat, 2012



#### Chart 3 – Use of computers and access to the Internet in enterprises by sectors

#### 3. FURTHER IMPROVEMENTS IN CREATING DIGITAL SOCIETY

ICT sector is directly responsible for 5% of GDP in Europe, with market value of 660 billion EUR a year, but it contributes far more to productivity growth (20% directly from the ICT sector and 30% from the investments in ICT). The reason for this situation lies in a high level of dynamism and innovation which are inherent to this sector and the role this sector has in changing the way in which other sectors operate.

Based on consultations with all interested parties and insight into the Declaration of Granada and the Resolution of the European Parliament, the Commission has identified seven major barriers:

- Fragmented digital markets;
- · Lack of interoperability;
- · Increased cyber crime and low confidence in networks;
- · Lack of investments in networks;
- Lack of research and innovation;
- Lack of digital literacy and skills.

Individually or in combination, these barriers seriously undermine the efforts to use ICT, and it is clear why a comprehensive and unified response at the European level is needed. This is also indicated by the fact that 30% of Europeans have never used the Internet!

As a source of long-term economic growth since the time of industrial revolution, knowledge arises as a new "growth driver." Under the influence of the development of ICT and the development of qualitatively different social relations, a multiplicative effect of the application of new knowledge accelerates transformation of modern societies. Contemporary economic flows are based more on the use of new ideas, information and acquiring new knowledge and skills, rather than on material resources. Knowledge-based production seems to be "intangible," "easier" and "more moveable," making it more competitive in the global goods and services market (service economy).

For a small country such as Montenegro in order to increase competitiveness of society it is necessary to put more emphasis on the development of inclusive society focused on citizens, knowledge-based economy and more efficient public administration. Participation of citizens in a knowledge-based society implies access to the Internet and ICT-based services.

Public administration is tasked to assist in the creation of conditions for greater participation of citizens through ICT, which will improve and increase efficiency and effectiveness of operations of all government bodies and services and will facilitate access to them. Also, it will contribute to the improvement of social welfare and quality of life, facilitating communication and networking, which will all affect the efficiency and productivity in all spheres of social life.

#### 3.1. Strategic Importance of ICT to Montenegro

The Government of Montenegro and the Ministry for Information Society and Telecommunications recognize ICT as a sector of crucial importance for the country's economic development, social welfare and competitive position of the country in the region and Europe in the same way as they recognize the importance of ICT for the implementation of other national development priorities:

- **Economic development**: actively contributes to the development of GDP, directly facilitating the development of other economic sectors by attracting foreign direct investments (FDI) and by creating new jobs and new pathways for sustainable development;
- **Social development**: by ensuring safety, security, stability and equal opportunities for everyone, actively encourages all citizens of Montenegro to participate and contribute to the development of digital society.
- *Human development*: improvement of citizens' skills and knowledge through training and educational services with creation of high value jobs and increasing skills and productivity of employees in all economic sectors.

The ICT development:

- · Contributes to the strengthening of national competitiveness at the European level;
- · Introduces creativity and encourages entrepreneurship, enabling new business models while add-

ing value directly to economy;

- · Creates attractive employment opportunities by developing base of talents and skilled labor;
- Increases productivity and efficiency in all businesses via the automated processes, enables easier access and dissemination of information;
- · Provides social equality by providing greater accessibility to the rural population and social cases;
- · Improves access to education and enables lifelong learning for all citizens;
- Facilitates healthcare services through more accurate and prepared information for patients;
- Increases availability through electronic communications, improves efficiency and minimizes time for decision making.

ICT as a mechanism which encourages national economy was recognized in the Strategy for the Development of Information Society 2012-2016. But in order to contribute to the development, it must be a Strategy and platform for all government bodies in Montenegro and its services. In this sense, implementation of the Strategy requires collective efforts of all stakeholders: national authorities, agencies and services, private sector, all users and the overall community.

#### 3.2. Obstacles to the development of ICT in Montenegro

Aware of the importance of the development and application of ICT, in the previous period Montenegro has made significant steps in this direction. This is very clearly identified in the World Economic Forum ranking - the Network Readiness Index (NRI), where it is ranked to the 44<sup>th</sup> position of a total of 138 countries, far above other European countries in the region. With penetration of mobile network users of nearly 200% and penetration of Internet users which is continuously growing, it is evident that the ICT sector in Montenegro is undergoing rapid growth.

As presented in the digital Agenda for Europe, the growth of broadband market must be a national priority for all developed markets, because it is widely recognized as a key platform for the overall socio-economic development. High-speed broadband access enables citizens and companies to communicate and produce faster and more efficiently.

According to the research conducted by OECD increase in investments in the field of electronic communications of 8% conditions gross domestic product growth of 1%, and based on the World Bank Group research the increase in penetration of broadband connections by 10% enables gross domestic product growth of 1.38% in developing countries, that is, 1.21% in the developed countries.

Despite a significant increase in mobile sector, broadband market, according to the European standards, has not reached its full potential yet. The analysis of the development of broadband access in Montenegro shows lagging behind when it comes to the number of broadband access connections in relation to the average of the European Union member states. There is a considerable unevenness in the density and the number of broadband connections in the areas/regions, which is caused by unfavorable demographic structure, lack of knowledge about the ways of how to use information and communication technologies by some citizens and the lack of availability of broadband access infrastructure in all regions. Analysis of the current technological representation shows the dominance of one type of access associated with the existing communication network of copper wires, which meets current options, but does not enable relevant qualitative step forward in accessibility to the broadband Internet that is high-speed Internet access.

Currently, broadband market in the country, regardless of the access to technology used, is far from the European average of 27%. The lowest rate among the EU-27 countries is 14%. Parallel to this, in Montenegro, the ratio between the mobile sector and broadband use is 17:1, whereas the average in EU-27 countries is about 4.5:1. This shows that broadband market in Montenegro is not sufficiently devel-

oped, particularly in relation to other services that are provided in electronic communications market. In contrast to this, citizens of Montenegro undoubtedly show great interest in broadband connecting and the use of modern and in terms of capacities demanding multimedia applications.

As shown before, it is of great importance for Montenegro to direct all its strengths towards the development of broadband market. In this way, faster development of ICT sector will be enabled, and then the socio-economic development. While analyzing the way of using ICT in Montenegro in a recently published Study (Research of the Use of ICT in Montenegro, April 2011), the following reasons were identified as key reasons for not using the Internet:

- Lack of education and understanding of the necessity and advantages of using the Internet lack of unique digital literacy;
- High cost of access to the Internet and related equipment lack of effective competition in the broadband market;
- Lack of Internet/broadband technology lack of broadband infrastructure.

#### **CONCLUSION**

ICT are improving the companies businesses because they are making it easier and less risky. They qucikly provide correct information, so management can respond timely with good decissions. Advanced softwares make company more efficient because they ensure cost savings, and the final product or service in such a business becomes better and therefore better accepted by consumers or users.

However, for purchasing of adequate ICT solutions there are a numerous factors that complicate the issue. Sometimes it is to the business owner who is not familiar enough with all the benefits that may derive from installation and development of information systems within the company. Often the problem is and to employees who are not professional enough to do their work operations in a new and modern way, and sometimes the funds that imposed restrictions on the desirable ICT solutions and one that you can really afford. From this point of view, ICT in the enterprise require some cost to purchase and maintain and improve, but for all the major benefits brought about by this type of investment in the Company should not be considered ultimately cost, but an investment in a better future for the company.

Ussage of ICT in Montenegro is on a solid level, but should continue to strengthen efforts for the larger their application, especially in enterprises and in households. The public sector is the one that the self has to take this action in order to spread the use of ICT in enterprises of all economic activity, as endusers to report and individuals. One of the strategic priorities of Montenegro is the use of ICT in all their development strategies because they provide great opportunities and have a broad impact on the national economy and global competitiveness.

In order to promote the use of ICT in Montenegro should be more attention directed towards addressing the security issues in terms of online payments, and legal regulations to consumers who use the service are protected and to gain greater confidence in a functioning system. These include issues which hamper the application of ICT and global companies simply because no matter how things were arranged but there is room for regulation even better. One thing that would certainly encourage greater use of ICT in Montenegro, especially by the people is the introduction of PayPal, which eventually benefited the company, and the society would made a major step towards modernization.

### References

- 1. Ministry for Information Society and Telecommunications, *Strategy for the Development of Information Society 2012-2016*, December 2011
- 2. Monstat, ICT usage in enterprises 2011
- 3. Monstat, ICT usage in enterprises 2012
- 4. Stephen M. Mutula, *Digital Economies: SMEs and E-Readiness*, University of Botswana, Botswana 2010
- 5. [online] www.gov.me
- 6. [online] www.monstat.org
- 7. [online] www.mid.gov.me
- 8. [online] www.mf.gov.me
- 9. [online] www.skupstina.me
- 10. [online] www.europa.eu

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# DIGITALIZATION: IS THIS A SOLUTION FOR THE SME'S IN SEE

#### Abstract

The digital economy introduces a new age, the digital age. During this age digital network and communications are the needed infrastructures to provide a global platform, not only for people but also for companies, to conduct business. This paper describes and explains the necessity of investing in digital economy for small and medium enterprises (SME's) in the South East Europe (SEE). This paper also discusses the nature, the advantages and disadvantages of the digital economy. Moreover several programs of the past will be analyzed, which aimed to introduce SME's to the digital age. In addition to all the above, there will be presented future projects, regarding the further transition of the SME's to the digital age and the possible results these may have at the SEE economies.

Key Words: SME, digital economy

JEL Classification: D83, M38, O16, O52

#### **INTRODUCTION**

The Digital Economy can be described as one in which the means of production, distribution and exchange have been converted with the use of advanced information and communication technologies. These technologies extend from the telegraph, to the telephone and the internet. As it is showed this "digital" evolution is not sudden. It covers more than 150 years, and it's still happening around the globe.

Moreover, the digital age has to do with the production of new goods and services and not with the rise of productivity. The more appliances a new technology has, the higher the possibility of generating new combinations.

In addition, economic infrastructures are used to support electronic business processes and conduct electronic commerce. These infrastructures can include:

- · Computers, routers, and other hardware
- · Satellite, wire, and optical communications and network channels
- System and applications software
- Support services, such as web site development and hosting, consulting, electronic payment, and certification services.
- Human capital, such as programmers.
## ADVANTAGES AND DISADVANTAGES OF DIGITAL ECONOMY FOR SME'S

This chapter deals with both the positive and the negative side of the digital economy, regarding the SME's.

Nicholas Negroponte (1995) explained that digital economy is a "bit business". That's because bits are just like atoms, but they are weightless, travel at an enormously high speed and when they are collected they don't take any physical space. This can be difficult to understand, considering how we did business or even economic transactions before the "bit business" (we traded in atoms before the "bit business"). We always took account of the distance, weight, time or the energy that should be utilized in order for example to send a letter in the other side of the world. The digital world is so different from the real one, that has changed everything. Not only because computers were used in order to conduct business more efficient, but also because people started in invested in that kind of business. Now we experience the movement from atoms to bits.

In the "old" economy we merchandised using physical means, like cash, checks, personal meetings and analog telephone calls. In the digital economy the information in all its forms flows via the computer networks. The new world of possibilities thereby created is as significant as the invention of language itself, the old paradigm on which all the physically based interactions occurred (Tapscott, 1995, p. 6).

Despite the positive side effects that this new age offers, some drawbacks can also be recognized.

Due to the properties mentioned above, it becomes clear that the measurement of the digital economy seems unclear due to its high speed, in which economic transactions are conducted. In order for statistics (considering not only the size of digital economy, but also its impact on the real economy) to be precise, there is need of a more open-minded approach or even a nontraditional (compared to present standards) if necessary. Furthermore in order, for a company or a person, to acquire digital economy infrastructures a substantial initial capital investment is needed. Although these infrastructures become cheaper with each new invention or development, they still depend on invested money for R&D and of course implementation.

Naturally, in order for SME's to enter digital economy, is to go on-line, by creating their own websites. Web presence is needed for an SME, but is not enough. Millions of websites on the net compete for visibility and for attracting possible costumers. Simultaneously, industrial value chains tend to become all the more sophisticated and global. As a result, new business trends are emerging. The antagonism of SME's progressively depends on their potentiality to connect better and do business with larger enterprises, to integrate global value chains and thus become international business partners. Possibly the clever use of ICT can support SME's fulfill this.

But there are also weaknesses in industrial value chains, due to the gap of the regulatory and technological perspective, especially across borders. The augmentation of different business models and standards results in absence of interoperability between different technological solutions and disjoints efficient information flows along value chains. SME's are in particular risk of being "ignored" from global value chains, due to the fact that there is lack of applicable, manageable and interoperable ICT solutions to connect them with large business partners. As it can be understood the huge potential of intelligent use of ICT in value chains, notably by SME's is still largely underexploited.

A digital economy is efficient, cost effective as well as convenient, because technology continues to develop rapidly. As a result the tools of digital economy become easier to handle, with faster software, at a lower cost. But in order for all these to materialize, the interest of the companies as well as their funds are fundamental.

#### HARMONIZATION WITH DIGITAL ECONOMY

In this chapter programs and projects, that existed till nowadays, are going to be presented with their aims with reference to the introduction of the digital age to the SME's in SEE region.

SEED (South Eastern Europe Digital Economy) was a European Commission two-year project (2000-2002) under the IST (Information Society Technologies) Program, Project Code: IST-1999-29060(International).

SEED aimed to develop and promote digital business and e-commerce among the SEE countries, that showed the acknowledgement that the development of the region as a group was a shared responsibility. The changeover to the digital economy was the most promising development path for SEE countries to follow, while progress to this end is highly promoted by joint and collaborative efforts than individual ones.

SEED had as objectives to raise awareness of electronic commerce, supporting the SEE industry and co-operation among the SME's of the region.

In order for SEED to meet its objectives the participants would use guidelines and methodologies to promote awareness. Also a study would be conducted in which all the needed environments (such as legal, business or technical) for the digital economy would be analyzed. Along with this study, several questionnaires and case studies would be framed. Their results would give a better composition of the e-commerce environment not only for individual countries but also for the whole region.

Another program was opened by the European Union (still ongoing) in Greece, "Society of Information". This program has set as major objectives:

- The application of actions and projects to augment the administrative capacity of the Greek government as part of the "Administrative Reform" and support for the application of similar actions and projects aimed at empowering the administrative efficiency of public administration.
- The accomplishment of works in fields like computing, communications and new technologies in order to improve public administration in the implementation of the "Information Society" and "Digital Convergence".
- Foundation and / or management of operating systems and communication of public administration.
- Taking enforcement actions and deeds technical support, funded by the Operational Program "Information Society", "Administrative Reform" and "Digital Convergence".
- Systematic records and supervise characteristics, problems and development of administrative capacity of the public administration, in order to evaluate the upshots of the programs and activities designed to empower and facilitate the transfer and adaptation of foreign experience and good practices in Greek administrative environment.
- Implement State Aid Action under the "Digital Convergence".
- Support Intermediary Management.
- Implementing acts regarded to information and communication technologies that appeal to citizens or businesses, either as owner or as Intermediate Body.
- To identify, highlight and communicate the practical benefits of ICT.

Although digital economy is something new, efforts have been made in order to familiarize the SME's, across the EU, with this new kind of transactional economy.

#### **CURRENT SITUATION - PREDICTIONS ABOUT THE FUTURE**

This chapter pictures the ongoing situation of the digital economy in addition to some "prophecies" about the future, thus it is divided in subsections, each dealing with a respective matter.

The need for a more effective use of ICT (information and communications technology) to improve the efficiency and competitiveness of enterprises and entire sectors has been fully recognized and features at the top of the political agenda of the EU:

- The EU initiative "Small Business Act" for Europe, recognized the importance of promoting ICT related innovations, through a series of sectoral demonstration actions to help SME's participate in global digital supply chains.
- The Commission's Communication "Adapting e-business policies in a changing environment: the lessons of the Digital Agenda so far and the challenges ahead" recognized the need for a better collaboration among Member States and regions on promoting e-business policies for SME's, and encouraged the creation of a eBSN (European E-business Support Network for SME's), as a platform for open policy coordination and exchange of good practices. eBSN analyses the evolution of eBusiness policies and shapes policy action at the European level: eBusiness policies for SME's have evolved as they tried to adapt to the changing needs of enterprises. Starting from general ICT awareness raising and financing basic ICT investments and Internet connectivity, eBusiness policies have matured towards personalized eBusiness coaching, and more recently towards a more holistic, sector oriented, policy approach promoting smart use of ICT and the integration of SME's in industrial value chains.
- The Commission's Communication "Reaping the benefits of electronic invoicing for Europe" stresses the need to achieve mass market adoption of elnvoicing by reaching SME's, through the development of interoperable processes and standards along the supply chains, including e-invoicing. It recognizes the merits of the large-scale demonstration actions launched to increase the participation of SME's in digital supply chains in different industry and service sectors, and announces the continuation and expansion of such initiatives.

The EU took the initiative to promote the smart use of information technologies and the integration of SME's in global industrial value chains. The objective is to modernize industrial value chains through the smart use of ICT and help notably SME's better connect to larger enterprises and become fully integrated international business partners. The focus of these actions is on SME's, notably how to help them get connected and offer them a better position in the globalised world. The initiative will have as result in simplified business processes, common data communication standards, better return on ICT investments, and efficiency gains, notably for the smallest enterprises. While it is conceived and designed for the smallest enterprises, the ultimate beneficiaries will be the entire European economy. This initiative is complementary to the actions included in the Digital agenda and a key step towards the implementation of the Digital Single Market. This initiative consists of a series of demonstration actions, with the objective to catalyze the creation of interoperable eBusiness frameworks that would help link SME's to larger enterprises in an efficient way.

The broader tangible and intangible benefits for the different types of stakeholders are expected to be:

#### For SME's:

- facilitating the entry into the market of new, dynamic players.
- strengthening business relations between SME's and big companies.
- helping SME's become fully integrated international business partners.
- streamlining business processes.
- increasing returns on investments in ICT.
- improving business transactions.
- reducing administrative overheads or errors;

#### • For the economy and society:

- promoting a more dynamic and competitive economy.
- facilitating the market entry of new players, on fair terms.

First results are exceptional, with significant efficiency gains, speedier and affordable integration of SME's in global value networks, broad participation of SME's, involvement of reference names in the sectors and prospects for mass market adoption through the European standardization organizations and consortia. Altogether some 20.000 small enterprises have been involved in all of these projects. The added value is not limited to the number of direct beneficiaries, but lies also in the creation of new models that can be adopted to have a major impact in the real market.

The demonstration action for the fashion industry figured significant business benefits and SME's involvement:

- The costs related to order management dropped by 65% in one year.
- The average response time for an order dropped by 50%.
- The rate of errors in order processing dropped from a 10% average to zero.
- Speeded up SME's integration to large logistics networks from 35 days to 3 days, through offering web-based switch-on-off services, user-friendly and affordable for SME's.
- Facilitated and accelerated co-modal transport organization notably for smaller businesses and reduced transport costs.
- Increased effectiveness and speed of billing to customers and eased working capital requirements.
- Active association has been established with the standardization bodies and consortia, with a view to ensure its further maintenance, extension and industry uptake through the standardization processes.

More demonstration actions are foreseen in the future to form a strategic framework for smart use of ICT and integration of SME's in industrial value chains in Europe and stimulate mass market adoption.

The objectives are to:

- Deploy a critical number of large-scale demonstration actions in different industry and services sectors and demonstrate the concrete business benefits.
- Develop and implement strategic framework for smart use of ICT and integration of SME's in industrial value chains in Europe, triggering pan-European action and including appropriate mechanisms to monitor roll-out and mass market adoption.
- Encourage follow-up and appropriate governance, maintenance and extension of the results by industry-led initiatives, through standardization bodies and industrial consortia.
- Promote European awareness raising actions and training to sensitize enterprises on the strategic importance of the smart use of ICT.
- Further valorize such demonstration actions and give them appropriate visibility as part of the EU industrial policy, as well as in the frame of relevant EU industry-specific policy context.

The digital economy can be described as a global network of economic and social activities that is enabled by platforms such as the internet, mobile and sensor networks. A successful digital economy is essential for EU's economic growth and its ability to maintain in its international standing. It offers new opportunities for businesses to a larger, potentially global, audience and for individuals to connect and collaborate.

## CONCLUSION

It has been sufficiently indicated that digital economy is not only a well established concept in our minds and world, but also a phenomenon of the future. In other words, there is still a lot of scope for digital technologies to bloom and break their own records. Despite the fact that some parts of the EU are heavily ensconced in their digital lives, there are still other countries that struggle to see the light as far as digital technologies are concerned. Efforts are being made in order to make digital technologies and tools easier to access to the public that is still unaware of this technological revolution. The ascent of this digital economy has not been smoothly spread across the countries. Such large dissensions in the outreach of a digital economy need to be addressed.

The digital age is here and shows a fast paced growth and development that can help all kind of business, especially a SME. It reveals new horizons and fresh openings, because as we know we tend to see a SME as a small company with little chances of success. Now this can change with digital economy. It has invaded the world and taken everyone and everything in its stride. The future seems bright and the present, cheerful. The age of the digital economy is here to stay.

There should be more efforts in order to remove obstacles against innovation (like fragments that reduce the effectiveness of mass marketing techniques and erode brand loyalty), slow standard-setting and skills shortages (these currently prevent ideas getting quickly to market). In general these efforts should ensure that innovative ideas can be turned into products, services and business models that create growth and jobs.

# **Bibliography**

- 1. Brooks Bredan, 2012. "OPINION: Get smart or get left behind: it's up to us", The Newcastle Herald, from http://www.theherald.com.au/story/1155282/opinion-get-smart-or-get-left-behind-its-up-to-us/
- Carlsson Bo, 2004. "The Digital Economy: what is new and what is not?", from http://www.lingue. uniba.it/dag/pagine/personale/falco/MATERIALE%20DIDATTICO%202009\_2010/Digital\_Economy.pdf
- 3. European Commission, "Information and communication technologies Integration of SME's in global digital value chains", from http://ec.europa.eu/enterprise/sectors/ict/ebsn/digital\_supply\_ chains/index\_en.htm
- 4. Havyatt David, 2011. "The Digital Economy: promise or problem?", from http://www.digecon.info/ docs/0038.pdf
- 5. IST lab. "SEED South East European Digital Economy", from http://istlab.dmst.aueb.gr/content/ projects/p\_seed.html
- 6. IST projects, from http://cordis.europa.eu/fetch?CALLER=PROJ\_IST&QF\_EP\_SPF\_A=(1.1.2.-2%24)+or+(2000-2%24)&USR\_SORT=EP\_PJA\_A+CHAR+ASC&DOC=181&QUERY=011f3b25776b: 3f2d:0e443658
- 7. Information Society, Visions and Goals, from http://www.ktpae.gr/index.php?option=com\_conten t&&view=article&&id=562&&ltemid=41&&template=amea\_ktp
- 8. Mesenbourg Thomas L. "Measuring the digital economy", from http://www.census.gov/econ/estats/papers/umdigital.pdf
- 9. Negroponte Nicholas, "Bits & Atoms", from https://www.phoenix.edu/lectures/nicholas-negroponte/bits-and-atoms.html
- 10. Open Journals Publishing, 2009. "HARVARD Reference Style Guide", from http://files.ithuta.net/ OpenJournals/HTS/Author/HTSREF.pdf
- 11. Tapscott, D., 1995. Digital Economy. Promise and Peril in the Age of Networked Intelligence. McGraw-Hill, New York.

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# CAN A NEW TECHNOLOGY AFFECT THE MARKET? A CASE STUDY OF NFC TAGS

#### Abstract

The recent international financial crisis is intertwined with the impressive spread of financial innovations, and largely attributed to the weaknesses of financial institutions to effectively manage the assessment and evaluation of risks for the modern international financial environment. Andrew W. Lo, economist at MIT and chief investment officer for hedge fund AlphaSimplex Group. said "The financial technologies are developing, such as information technology, often beyond our ability to use innovation responsibly."

The purpose of this paper is to identify and analyze financial innovation in Greece. Additionally, we will try to find out if NFC technology could have a positive impact on financial markets.

Keywords: Financial development, Innovation, Economic growth, M-commerce, Mobile payments

JEL: 016, 032

# **1. INTRODUCTION**

**Financial innovation is necessary to achieve a high and stable rate of growth.** Financial innovation is normally defined as the act of creating and then popularizing new financial instruments as well as new financial technologies, institutions and markets. Financial innovations occur because market participants are constantly searching for new ways to make greater profits. Whenever monetary authorities restrict the operations of the market participants (commercial banks, financial companies, co-operatives, thrift institutions, pension funds, and others), new financial instruments come into the market. This is called financial innovation which assists market participants to minimize risk and to maximize return. For the past few decades, there has been a tremendous technological improvement taken place in computer chips, hardware and software. All these seem inherently more liable to affect the financial innovation.

A payment system is a collection of technologies, laws and protocols that make it possible for people and companies to pay money to each other. Some examples of widespread payment systems are cash, credit card, etc. One of the most important concepts of any payment system is money.

An interesting development is the introduction of mobile payments. But what is mobile payment? mobile payments is a new-generation SIM (Subscriber Identification Module) based payment services. The m-payment service's clients can enjoy the convenience of performing various financial operations from their mobile phone, such as: account balance inquiries, mobile money transfers, payments of monthly bills, purchases of goods and services both online and in stores, purchase of electronic tickets, top-up of mobile vouchers, creation of electronic pockets, receive and pay microfinance loans. **Mobile payments are not the same as mobile banking**. Mobile banking is the process by which, financial institutions deploy technology that allows customers to review accounts and perform banking transactions on their handsets.

The development of new technology can stimulate financial innovation by lowering the cost of providing new financial services and instruments by using computers and telecommunication. The rapid development of technology in the financial sector, the introduction of new communication and transmission systems also speeds up information flows. Via wireless technology, the delivery of electronic commerce capabilities directly into the consumer's hand anywhere. Mobile, such as NFC technology, has dramatically changed the dynamic between buyer and seller.

The most revolutionary technology and the one that seems closer to becoming the industry standard is the field of Near-Field-Communication (NFC) for proximity payments with cards and mobiles. Near Field Communication (NFC) is a new, short range wireless connectivity technology that evolved from a combination of existing contactless identification and interconnection technologies. Products with built in NFC will dramatically simplify the way consumer devices interact with one another, helping people speed connections, receive and share information and even make fast and secure payments.

# 2. WHAT IS FINANCIAL INNOVATION?

Financial innovation can be broadly thought of as the introduction of new financial instruments or services, or the discovery of new ways to deliver those services to the community. **Innovations can benefit users in two ways: first, by increasing competition among providers and second, by broadening the range and convenience of financial products.** The man has proven that he wants to constantly evolve, to try new things and create. So the different payment systems we spent the banknotes, credit cards, and electronic payments and now slowly the next stage which is the use of technology Near Field Communication (NFC). Innovation in transaction and payment systems has been historically driven by the convergence of new technologies, a shift in consumer behavior, and the development of enabling infrastructure. The history of payment form factors provides a useful benchmark by which to assess the potential impact of new technology on existing transaction channels.



Figure 1: Evolution of Payment Products

Source: Booz & Company NFC Scenario Model, 2011

As seems in Figure 1, the evolution from magnetic strip payment cards to EMV chip represents one phase of payment evolution focused on enabling a common infrastructure for secure transactions.

Transitioning to mobile, the focus has been on developing new platforms that can enable a new range of products and services. Stemming from the transition from real to virtual payments, this shift towards mobile is indicative of broader trends. The recent growth in mobile commerce is driven by the exponential increase in smart-phone penetration and the growing demand for third party applications. Identifying and addressing these needs, private sector players can enable product innovation and structure new business models that take advantage of shifting market conditions. These new models oftentimes alter the nature of existing value chains, as well as, the roles of prevailing market actors. New payments initiatives, such as those announced by Google and Facebook, illustrate the degree to which the role and position of a specific market actor can be redefined to encompass a new set of behaviors and systems, thereby challenging the predominance of existing value chain players." Technology innovation in the payments space creates the foundation for new systems, services, products and user experiences. One technology that has emerged as a potential game changer in the payment and transaction space is Near Field Communication (NFC). In markets such as Hong Kong and Japan, NFC has gained increasing prominence in recent years. Combined with increased security and significant growth in the penetration, as well as, sophistication of smart-phones, NFC is seen as providing a potential alternative to current smart card schemes.

Despite these constraints, the disruptive potential of NFC is significant. Particularly when taken in the context of broader shifts in consumer behavior, this potential stands at the center of a mobile-oriented ecosystem. Buttressed by an exponential growth in mobile commerce (m-Commerce), NFC represents not simply an extension of existing transaction channels but a new and intrinsic ability to connect online and offline commerce in a single form-factor: the mobile handset. Additionally, NFC carries the potential for unlocking substantial socio-economic benefits and lowering costs across market stakeholders. The core of the consumer NFC experience is defined by an application-based mobile wallet (m-Wallet). The m-Wallet in this context refers not just to payment application, but to a broader array of functionalities that are linked to a single wallet-based interface. At the highest level, these functionalities focus on specific transaction environments – such as transportation, ticketing, and loyalty. At a more granular level, the m-Wallet application enables different tokens to be loaded onto the handset. These tokens can represent individual companies or products. Seen as complementary to existing smart- and contactless cards, NFC will have to not simply recreate a transaction experience but provide additive value to the consumer.

There are not a lot of studies researching the factors affecting the mobile payment. One very important, albeit geographically limited to the Finish market is the research by Niina Mallat<sup>2</sup>. The results suggest that the relative advantages of mobile payments include time and place independence, availability, possibilities for remote purchases, and queue avoidance. There are, however, several barriers to the adoption of mobile payments, including premium pricing of the payments, complexity of payment procedures, a lack of widespread merchant acceptance, and perceived risks. We present the results of the study by mapping each contributing factor to on desired characteristic of a successful m-payment solution:

<sup>&</sup>lt;sup>1</sup> Booz&co. http://www.booz.com/

<sup>&</sup>lt;sup>2</sup> Exploring Consumer Adoption of Mobile Payments - A Qualitative (2006)

Adoption determinant	Contributing factors	Proposed effect on adoption	Effect dynamic depending on use situation
Palativa	<ul> <li>Time and place independent purchases</li> <li>Oneme avoidance</li> </ul>	+ +	
advantage	<ul> <li>Enhanced navment instrument availability</li> </ul>	+	yes
	<ul> <li>Complement to cash</li> </ul>	+	
	<ul> <li>High with digital content and services</li> </ul>	+	
Compatibility	<ul> <li>High with small value purchases at POS</li> </ul>	+	no
	<ul> <li>Low with large value purchases</li> </ul>	-	
	<ul> <li>Complex SMS formats, codes, service</li> </ul>		
0	numbers	-	
Complexity	<ul> <li>Management of separate accounts</li> </ul>	-	no
	Complex registration procedures	-	
Costs	<ul> <li>Premium pricing &amp; high transaction costs</li> </ul>	-	10
cons	<ul> <li>Lack of wide merchant adoption</li> </ul>	-	
Network ext.	<ul> <li>Proprietary devices / services</li> </ul>	-	no
	<ul> <li>In merchants</li> </ul>	+	
Trust	<ul> <li>In telecom operators</li> </ul>	+	no
	<ul> <li>In financial institutions</li> </ul>	+	
	<ul> <li>Unauthorized use</li> </ul>		
	<ul> <li>Transaction errors</li> </ul>	-	
	<ul> <li>Lack of transaction record and</li> </ul>	-	
Perceived	documentation	-	no
security risks	<ul> <li>Vague transactions</li> </ul>	-	
	<ul> <li>Concerns on device and network reliability</li> </ul>	-	
	Concerns on privacy	-	
	- Concerns on privacy		

Table 1: Factors affecting consumer adoption of mobile payments

# 2.1. Repercussion on the economy from financial innovation

Innovations affect microeconomic behavior and, where their use becomes widespread, may have quite wide ranging macroeconomic implications as well. There is some recent evidence, for instance, suggesting that financial innovations have been associated with more stable real growth while also supporting the longer-term growth prospects of the economy. **It has been observed in many markets that both microeconomic and macroeconomic benefits flow from financial innovation.** 

Financial innovation enables us to make real economy more efficient through making financial services more available and reducing their prices. Financial products of high quality promote savings, increase investment profits and lower the risks related to the usage of financial services.

The benefits that financial innovation can provide are:

- 1. Avoiding regulations and optimizing taxes.
- 2. Reducing transaction costs and increasing liquidity of market based products.
- 3. Reducing agency costs between executive management and shareholders and between shareholders and creditors.
- 4. Reducing informational asymmetry between corporate insiders (Majority shareholders / executive management) and outsiders (creditors, Minority share holders).
- 5. Increasing risk sharing opportunities (derivatives, investment funds).

The benefits of financial innovation enable us to make risk-sharing and capital intermediation more efficient and cheaper for clients.

Finally, financial innovation can promote **economic growth** in two ways:

- 1. By improving the efficiency of investment, and
- 2. By strengthening the discipline on governments and central banks to pursue sound policies.

#### 3. THE RISK AND ADVANTAGES OF NFC TECHNOLOGY

The use of NFC technology will influence the customer's buying experience. The wallet is to become superfluous, the mobile device is a much more compact and easy to use device. Combined with the fact that, the NCF technology is going to allow the storage of personal identification data will make the content of the much more immune from stealing and counterfeiting. The NFC technology, similarly to other e-commerce technologies, is going to make the relation between customer and store much more personal. The store will finally be able to tailor its offers to the customer needs, resulting in higher volume of sells and in lower prices for each customer.

Firstly, we will analyze lapidary how costumers, merchants and banks and financial institutions benefit from the new technology.

#### 3.1. Key benefits for costumers

- Greater flexibility to transfer / receive funds, pay bills and make purchases.
- Dramatic reduction of financial costs and time spent on fund transfers and commerce purchases.
- · Increased accessibility to traditional banking and money transfer services.
- Simplicity and ease of use using a common device and intuitive interfaces to perform familiar purchase and money transfer transactions.
- A secure method for personal financial management (especially compared to carrying cash around or sending money using other popular unconventional channels).

#### 3.2. Benefits for Merchants :

Merchants have much to gain from joining as they can extend a new access channel to their customers for purchasing goods and services, anytime and anywhere. By enabling payment by mobile they can include customers that previously could not purchase their goods for lack of means, such as youths without credit cards. Merchants gain exposure to a large local and potentially international community, and can assume new revenue opportunities with a reliable source of income, for example by selling mobile bill payment services. Working with an MNO's customer base gives the merchant customer information and knowledge they otherwise could not obtain, and uniquely positions merchants to increase customer loyalty through loyalty point programs.

#### 3.3. Benefits for Banks and Financial Institutions

NFC technology allows partnering banks and financial institutions to tap in to a large segment of new customers and money that are typically not in the banking system. Revenues are increased by increasing cash float, transaction revenues and foreign exchange revenues. The new customer base can potentially be offered more services down the line, such as credit accounts and loans. And the existing customer based can be stimulated through offerings of advanced mobile banking services. Other benefits include:

- Cost-saving from small-value payment transactions.
- Increase in additional liquidity from small-value payments, currently performed with cash, through electronic pocket like services.
- New corporate clients attracted by modern financial services.

Recent reports have highlighted some major concerns about the security and reliability of near field communications, specifically surrounding the technology's use in mobile phones. The risks become particularly worrisome in instances where NFC technology is used in conjunction with an app, or other downloadable software, as a means of mobile payment.

With this new technology set to become part of our lives, people have some valid and understandable security concerns. When using new technologies, the best way to be protected against potential pitfalls is to know the risks associated with them. One of the most common concerns with NFC technology is that of eavesdropping. Eavesdropping occurs when a third party intercepts the signal sent between two devices. They might also pick up other personal information passed between two smart-phones. The last of the security comes in the form of viruses. While smart-phone viruses are currently few and far between, they are growing. Security companies have pointed out that when smart-phones provide little financial gain for hackers, they are targeted less. NFC technology would allow users to store valuable bank account and credit card information on their smart-phones, thus making them a target. The new technology can transfer sensitive financial data as NFC's short read range (maximum of 20 cm) provides some security against transaction interference, there is still concern that it may be possible to steal data from an NFC system from a greater distance, with the use of an antenna.

Also, NFC is an expensive technology and smaller companies may not want to risk investing in NFC because it is hard to measure the additional profit with NFC. It might be costly for businesses to change the way they run their company, for example hiring NFC technicians. The cost would vary depending on the size of company and the size of integration. For example, Starbucks invested \$25 million in 2011 alone. According to Wired Magazine, by 2016 only 1/4 of Americans will have NFC smart-phones. Unfortunately this is not enough incentive for most businesses to incorporate NFC.

Perhaps the biggest risk in NFC technology is a lack of consumer education. "Studies indicate that most consumers do not understand current risks and are not diligent about the security of their phones." cites a survey by Ponemon Institute that indicates that less than half of consumers protect their mobile devices with passwords or key locks and less than a third have considered installing anti-virus software.

Finally, regarding Greece appear two concerns about the acceptance of NFC technology. The first one shows that the Greek consumer perceives the security of mobile payments as unsatisfactory. The second one shows that one in 3 Greek consumers would be interest in paying their bill via mobile.<sup>3</sup>

# 4. THE APPLICATION OF THIS INNOVATION IN GREECE

According to penetration of mobile phone technology in Greece is very high. The penetration in terms of population is around 90% although connections exceed 11 millions. However, the result because of economic crisis for the first semester of 2010 has seen the reduction of the numbers of connections by 2.57 million. **Smart phones are gaining more and more popularity in Greece.** The smart-phone sales value already accounts for 40% of the total mobiles sales value. Mobile phone owners have overtaken Greeks owning conventional fixed line telephones. A significant proportion of these mobile users correspond to young people. Almost 70% of users have at least 1 mobile phone; around 25% own at least 2. Usage of the mobile phone is high in almost all age groups, and it reaches almost the 100% in younger age groups. Usage of the mobile phone is mostly for personal reasons and the users seem to value more the usefulness, the ease of use and the speed in their mobile phones. Digital and hard goods are what most users prefer buying hard via their mobile. It is however, worth mentioning, that only a quarter of all participants have used other services. This is caused probably by the fact that, mobile service providers have displayed too many new value added services over the last few years (games, dating, news etc.) (Vangelis Souitaris (2001), Charis Pontida ( 2009)).

<sup>&</sup>lt;sup>3</sup> The risks and advantages of NFC technology, http://tech.co/risks-advantages-nfc-technology-2012-09.

There's no data on NFC shipments in Greece. But there's reason to believe that Greek consumer will have access to a fairly low price.

According to findings by Greece is a laggard country in relation to usage of ecommerce services:

- 1 in 10 Greeks has used the internet to order or buy goods.
- 1 in 20 Greeks uses web-banking service.
- Just 1 % of Greeks has sold goods online.



On the other hand, this lag alone cannot explain such a low level of online payment transactions. One very important inhibitor is the low level of confidence that Greek consumers have for on-line payment transactions. According to Visa Europe the preferred payment method for the Greeks, especially for low value transactions, is cash. In detail, 7 out of 9 Greeks pay cash in supermarkets. The figure reaches 92% when paying for entertainment. To make a comparison in UK transactions involving cash make up for the 63% of the entire volume (down from 74% 10 years ago). According to a recent report by IEMR mobile payment users will increase 5 fold in the next 5 years. Right now the mobile payments market is in its embryonic phase although there are some promising developments especially in music selling market and ticketing.

**Despite the promise of NFC, commercial adoption is still in very nascent stages.** While there have been a substantial number of trials globally, full scale market implementation has thus far been limited to high density urban environments in a select few countries – most notably Japan and South Korea. Challenges to adoption are centered on the difficulty in both implementing and effectively scaling NFC infrastructure across different market sectors.

#### 4.1. Challenges for NFC mobile payments to succeed

Several challenges related to technology, implementation, and consumer adoption must be resolved. Few mobile phones are currently enabled for use with either SIM or embedded NFC secure element chips, although more handset manufacturers are beginning to embed NFC chips in their mobile phones or on SIM cards as a basic component. Globally, forty-five handset manufacturers have announced plans to add NFC/SIM cards to their mobile phones 16 available by the end of 2012. More merchants must invest in upgrading their POS terminals to enable two-way NFC, a long-standing barrier to adoption. Work still needs to be done to develop an agreed upon set of technology standards for mobile phones, chips, and secure elements, and standards for provisioning and maintaining mobile payment credentials. Yet the number of cross-industry participants engaged in the mobile payment process/value chain continues to grow, further complicating business models and customer-ownership. Finally, need to remember that many consumers are still unfamiliar with NFC technology and require not only incentives, but also education regarding its safety and security when used for mobile payments, particularly with a mobile wallet.

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# 5. CONCLUSION

Today, we are entering a new period of innovation, driven by the near universal penetration of the mobile handset and its ability to become a focal point of daily interaction. NFC, in particular, is at the forefront of enabling an environment where the handset can replace plastic cards as a single, secure mechanism for transactions and interaction.

In assessing the potential costs and benefits of NFC, the key question that arises is how different private and public sector entities can collaborate to accelerate the societal and economic benefits resulting from this innovation. At a fundamental level, broad-based NFC adoption will require cross industry collaboration and regulatory engagement in order to enable and incentivize service providers to innovate and create new NFC services. Lacking clear commercial incentives, many relevant market players have simply foregone the necessary investment required to drive consumer adoption and usage. Despite positive indicators on consumer demand, this lack of common market infrastructure is curtailing the widespread adoption of NFC across market sectors.

However, NFC is a great technology; parts of Europe, China and U.S are using it for public transport transactions and the sharing of content between devices. Compatibility with users' existing services and common standards between different services providers could facilitate adoption and advance this technology in emerging market.

#### References

- 1. Androulakis I, Basios Chris, Androulakis Nikos (2008).Surveying Users' Opionions and Trends towards Mobile Payment Issues.
- 2. Androulidakis, "Security Issues in Cell Phones", article-interview into Magazine "Defence and Diplomacy", Issue 187, pp 100-102, November 2006.
- 3. Androulidakis, I"This is how hackers hack into our cell phones", article-interview into Sunday Newspaper "To proto thema", Issue 90, pp 40-41, November 12, 2006.
- 4. Bartzokas Anthony (2000). *Financial markets*, Industrial restructuring and Technological investment in Southern Europe. Maastrich
- 5. Darrell Duffie, Rohit Rahi (1994). Financial Market Innovation and Security Design: An Introduction.
- 6. Hartmut Hirsch-kreinsen (2010). Financial Market and Innovation. TU Dortmund
- 7. Nejad, J. B. (1997). Technological innovation in developing countries: Special reference to Iran. Ph.D. Thesis, University of Bradford
- 8. Niina Mallat (2006). Exploring Consumer Adoption of Mobile Payments A Qualitative *Study*. Helsinki School of Economics, Finland
- 9. Pierzchala Stephen. The Revolution Is Over, and M-Commerce Is Here to Stay. E-commerce Times, 2013
- 10. Pontida Charis, The Greeks buy music first via mobile, The News, December 2009
- 11. Rosanna Garcia, Roger Calantone (2001). A critical look at technological innovation typology and innovativeness terminology: a literature review. *The journal of product innovation management* (2002) 110-132
- 12. Souitaris Vangelis (2000) .Strategic Influences of Technological Innovation in Greece, British Journal of Management. Vol. 12, 131–147 (2001).

Web information

- 1. Booz&co. http://www.booz.com/ . 28/04/2013
- 2. Trends in capital markets and financial innovations. http://tcmfi.blogspot.gr/. 28/04/2013
- 3. The risks and advantages of NFC technology. http://tech.co/risks-advantages-nfc-technology-2012-09.28/04/2013
- 4. *Ryan Kim. Consumers need to be sold on benefits of mobile payments.* http://gigaom.com/2011/08/02/ consumers-need-to-be-sold-on-benefits-of-mobile-payments/. 28/04/2013

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# THE IMPACT OF DIGITAL AND KNOWLEDGE ECONOMY ON ECONOMIC GROWTH

#### Abstract

Economy in the past was simpler mainly because of the lack of technology and information. People could adapt faster to changes because they happened more gradually. These changes were at some level predictable. With the rise of competition and the appearance of globalization, emerged the need to decrease functional cost and develop new products that would help each company adapt to these changes and survive. The past decade has witnessed a renewed interest in the main factors driving economic growth. Today in the 21st century with the lightning fast development of technology and the evolution of economy and management competition has grown even more. Today every company has some level of access to the new technology and can find any information considering their business. The effect of location is either diminished, in some economic activities: using appropriate technology and methods, virtual marketplaces and virtual organizations that offer benefits of speed, agility, round the clock operation and global reach can be created. Communication is increasingly being seen as fundamental to knowledge flows. Social structures, cultural context and other factors influencing social relations are therefore of fundamental importance to knowledge economies. The economy of the 21st century is inseparable with technology and its evolution. It is the so called Digital economy. The everchanging global marketplace, fuelled by fast-growth economies and new technology, has accelerated the speed of most business activities, from product development to customer response. Real-time business intelligence and predictive analysis will be required not only for faster decision-making, but to cope with unexpected market risks and opportunities.

Keywords: Economic growth, Digital economy, Research and development, Information Technology

#### INTRODUCTION: EVOLUTION AND IMPACT OF DIGITAL AND KNOWLEDGE ECONOMY

Alongside technology, digital economy is evolving dramatically as technology never stopped evolving. Nowadays everyone can access the internet easily. Anybody can find any information throughout the world at any time he wants. This makes customers more rational and informed and companies more competitive towards each other. Digital economy is able to affect and transform every consumer or business activity. These changes of the digital economy can be forcing organizations to grow and adopt strategies that help them adapt to their fast changing environment. This is the way competition is growing and wealth is created in the economy. It also gives the opportunity to new or developing companies that are developing their technology or e-business communities to grow and create wealth like never before.

The importance of economic growth is difficult to overstate. The more than tenfold increase in income in the United States over the last century is the result of economic growth. So is the fact that incomes in the United States and Western Europe are at least thirty times greater than incomes in much of

Sub-Saharan Africa. Economic research has clearly identified technological innovation as the engine of long-run economic growth.

Recent studies on growth also assume that formal skills and experience embodied in the labour force represent a form of (human) capital. On the one hand, it could be argued that human capital is subject to some kind of diminishing returns so that a more highly trained and skilled workforce would enjoy higher levels of income in the long term, but not necessarily permanently higher growth rates of income. On the other hand, investment in human capital (e.g. expenditures on education and training) could have a more permanent impact on the growth process if high skills and training go hand-inhand with more intensive research and development and a faster rate of technological progress, or if the adoption of new technologies is facilitated by a highly skilled workforce. As in the case of physical capital, only empirical evidence can shed some light on social returns to investment in human capital and, thus, help in discriminating amongst competing theories.

As the economy moves from initial recovery to more sustained expansion, one of the key policy issues is whether more investment in technology will boost the growth rate. The issue takes on increased importance because the expansion has been anemic so far. Looser fiscal and monetary policies successfully stimulated a recovery from the 2008–2009 recession, but an increase in the rate of technological advance is needed to propel the economy into a more lasting expansionary phase.

#### **INFORMATION AND COMMUNICATION TECHNOLOGY DEVELOPMENT IN OTHER COUNTRIES**

The United Nations Commission on Science and Technology for Development concluded that for developing countries to successfully integrate Information and Communication Technologies (ICT) and sustainable development in order to participate in the knowledge economy they need to work collectively and strategically. Such collective work suggested would be in the development of effective national ICT policies that support the new regulatory framework, promote the selected knowledge production, and use of ICTs and harness their organizational changes to be in line with the Millennium Development Goals. The commission further suggests that developing countries to develop the required ICT strategies and policies for institutions and regulations taking into account the need to be responsive to the issues of convergence.

ICT for Education is a subset of the ICT thrust. Globalization and technological change are one of the main goals of ICT. One of its main sectors that should be changed and modified is education. ICTs greatly facilitate the acquisition and absorption of knowledge; offering developing countries unprecedented opportunities to enhance educational systems, improve policy formulation and execution, and widen the range of opportunities for business and the poor. One of the greatest hardships endured by the poor, and by many others, who live in the poorest countries, is their sense of isolation. The new communications technologies promise to reduce that sense of isolation, and open access to knowledge in ways unimaginable not long ago.

In the past two decades American businesses have invested heavily in information technology (IT). Managers often buy IT hardware to enhance customer value in ways that can't be fully measured by conventional statistics. Furthermore, because of competition, firms may be unable to capture the full benefits of the value they create. This undermines researchers' attempts to determine IT value by estimating its contribution to industry productivity or to company profits and revenues. An alternative approach estimates the consumers' surplus from IT investments by integrating the area under the demand curve for IT. This methodology does not directly address the question of whether managers and consumers are purchasing the optimal quantity of IT, but rather assumes their revealed willingness-to-pay for IT accurately reflects their valuations. Using data from the U.S. Bureau of Economic Analysis, we

estimate four measures of consumers' surplus, including Marshallian surplus, exact surplus based on compensated (Hicksian) demand curves, a "nonparametric" estimate, and a value based on the theory of index numbers. Interestingly, all four estimates indicate that in our base year of 1987, IT spending generated approximately \$50 billion to \$70 billion in net value in the United States and increased economic growth by about 0.3% per year. According to our estimates, which are likely to be conservative, IT investments generate approximately three times their cost in value for consumers.

#### **ECONOMIC GROWTH IN GREECE**

Over the past quarter century the Greek economy has had a very disappointing rate of economic growth. After a rapid expansion in the years following the end of the civil war, the growth of real GDP slowed to only 1.5 percent annually in the period of 1973-95. Much of the popular discussion has attributed the poor performance to deteriorating economic policy conditions in the period after 1973 -- particularly during the 1980s. Beginning in the mid-1970s the government ran large and sustained budget deficits and monetary policy accommodated a sharp acceleration of inflation. High rates of wage inflation led to a squeeze of profit margins and a weakening of investment incentives.[5]

The economic policies in Greece have changed many times in the last years. In the table below we can see that inflation has been reduced from double digit rates to a 3 percent rate in the last years. The fiscal deficit has dropped too from the 12 percent of the GDP in 1995 to 2 percent in the early 2000 and finally to a surplus in 2001.

These economic gains have translated in an improved growth performance in Greece when compared to the prior century. However, the current rate of economic growth implies little or no convergence with average living standards in the rest of Europe. Unless Greece can begin to do better, it will continue to languish at the bottom of the European income distribution. Having stabilized the macroeconomic environment, the next stage for Greece is to find the means to significantly accelerate the rate of increase in living standards. And, although in the short run Greece has a pool of unemployed labor, the longer-term task is fundamentally one of raising the rate of growth in labor productivity.

Period	Growth of GDP	Inflation CPI	Unemploy- ment Rate	Budget Balance (a)	Current Account Balance (a)	Real Exchange Rate
1960-70	8.5	2.1	5.1	0.7	-2.6	na
1970-80	4.6	14.3	2.2	-1.6	-3.9	91.3
1970-80	0.1	20.7	6.7	-8.7	-5.5	102.3
1985-90	1.2	17.3	7.4	-12.1	-3.1	95.7
1990-95	1.2	13.9	9.1	-11.7	-1.4	106.5
1995-98	3.1	6.1	10.2	-6.1	-3.3	113.7
1999e	3.4	2.7	10.3	-1.8	-2.9	114.9
2000e	4.0	3.1	10.2	-0.8	-3.7	113.2

Source: Central Bank of Greece, International Monetary Fund

a: As share of GDP e indicates estimate

#### **RESEARCH AND DEVELOPMENT**

Data on Research and Development (R&D) are from the OECD *Main Science and Technology Indicators* (MSTI) database. A few missing observations were obtained by interpolation.

Expenditure on research and development (R&D) can be considered as an investment in knowledge that translates into new technologies as well as more efficient ways of using existing resources of physical and human capital. Indeed, in the case of R&D, there seems to be stronger consensus that it may have a persis- tent effect on growth, that is, higher R&D expenditure would, *ceteris paribus*, be associated with permanently higher growth rates.

The amount of resources that are devoted to R&D can be influenced by government intervention. In particular, the potential benefits from new ideas may not be fully appropriated by the innovators themselves due to spillover effects, which imply that without policy intervention the private sector would likely engage in less R&D than what could be socially optimal. This can justify some government involvement in R&D, both through direct provision and funding, but also through indirect measures such as tax incentives and protection of intellectual property rights to encourage private-sector R&D (see Nadiri, 1993 and Cameron, 1998, for reviews).

Overall expenditure on R&D as a share of GDP has risen since the 1980s in most countries (Figure 3), mainly reflecting increases in R&D activity in the business sector that accounts for the majority of expenditure in this area in most OECD countries. Indeed, the share of publicly financed R&D has declined over the past decade in most countries as a result of reductions in military R&D budgets.

Several issues have to be considered in assessing the role of R&D on growth.

First, the relationship between public and private R&D could be one of complementarily or substitution. Second, public-sector R&D is often directed at making improvements in areas not directly related to growth, such as defence and medical research, and any impact on output growth could be diffused and slow to come about (see OECD, 1998). These considerations suggest that any quantitative analysis of growth must take R&D activity into account as an additional form of investment and differentiate between various types of R&D expenditures. Given data availability, we consider total R&D expenditure (as a share of GDP) and its components, public and business sector R&D expenditure.

The analysis of the determinants of growth can be further extended to include R&D activities, even though the sample is smaller and inference the tentative.

In particular the analysis is restricted to 14-17 countries depending on the specification and to the period 1981-98 (and for some countries the period is shorter). The shorter time-series significantly restrict the number of variables that could be considered in the regressions. These include, in addition to the R&D variables, the basic controls and trade exposure, whenever possible.27. The indicators of R&D activity used here are expenditures on R&D as collected in national accounts expressed as a percentage of GDP and are thus indicators of the "intensity" of R&D within each country. The results (Table 5) support previous evidence suggesting a significant effect of R&D activity on the growth process.28 Furthermore, regressions including separate variables for business-performed R&D and the R&D performed by other institutions (mainly public research institutes) suggest that it is the former that drives the positive association between total R&D reforemore intensity and output growth.29 The results also indicate that the coefficient on business-sector R&D is somewhat lower in the regression with the indicator of trade exposure. This suggests possible interactions between R&D and international trade: the estimated impact of R&D on growth may be overestimated if no proper account is taken of the degree of market openness of a country. Nevertheless, the R&D coefficients remain largely significant in this augmented regression.

The negative result for public R&D needs some qualification. Taken at face value they suggest publicly performed R&D crowds out resources that could be alternatively used by the private sector, including private R&D. There is some evidence of this effect in studies that have looked in details at the role of different forms of R&D and the interaction between them.30 In particular it is found that defence research performed by the public sector does indeed crowd out private R&D, partly by raising the cost of research. However, there are avenues for more complex effects that regression analysis cannot identify. For example, while business- performed R&D is likely to be more directly targeted towards innovation and implementation of new innovative processes in production (leading to improvement

in productivity), other forms of R&D (*e.g.* energy, health and university research) may not raise technology levels significantly in the short run, but they may generate basic knowledge with possible "technology spillovers". The latter are difficult to identify, not least because of the long lags involved and the possible interactions with human capital and associated institutions.31 Bearing these caveats in mind, the coefficient on business-performed R&D intensity, if interpreted structurally, suggests that a persistent 0.1 percentage point increase in R&D intensity (about 10 per cent increase with respect to average R&D intensity) would have a long-run effect of about 1.2 per cent higher output per capita under the "conservative" view that changes in R&D do not permanently affect output growth. However, in the case of R&D it is perhaps more appropriate to consider a permanent effect on GDP per capita growth (*i.e.* a fall in R&D intensity is not likely to reduce the steady-state level of GDP per capita but rather reduce technical progress). If the R&D coefficient is taken to represent growth effects, a 0.1 percentage point increase in R&D could boost output per capita growth by some 0.3-0.4 per cent. These estimated effects are large, perhaps unreasonably so, but nevertheless point to significant externalities in R&D activities.

As the economy moves from initial recovery to more sustained expansion, one of the key policy issues is whether more investment in technology will boost the growth rate. The issue takes on increased importance because the expansion has been anemic so far. Looser fiscal and monetary policies successfully stimulated a recovery from the 2008–2009 recession, but an increase in the rate of technological advance is needed to propel the economy into a more lasting expansionary phase.

Recent estimates indicate that, since the late 1940s, about two-fifths of growth can be attributed to technology. The standard, broad measure of technological advance is total factor productivity (TFP), which is the residual calculated by subtracting the contributions of labor and physical capital from GDP. In the short run, TFP is volatile, but the fluctuations average out over long periods of time. At lower frequencies or over longer periods, the trend in TFP measures the rate of technological advance. Using the Bureau of Labor Statistics estimates, technical advance has contributed to 38% of growth since 1948.

Clearly, technological advance was speeding up. The causes had to do with computers and software. The reason computers and software had such a powerful influence was that their effect was not limited to a single industry. Information technology (IT) could generate substantial spillover effects into other sectors. Examples include local area networks, computer-aided design (CAD-CAM), electronic banking, Internet retailing, statistical quality control, computerized inventory control, and faster communication of ideas. Industrial firms could use computers to reduce cycle times, achieve fewer defects, control inventory, and do specialized production runs tailoring manufacturing to demand. Computers not only made industrial processes more efficient, they made research itself more efficient, since R&D could now be performed with advanced software, leading to faster development and better products.

The contribution of technical progress in economic growth is one of key question of modern economic growth theory, based on the different development of economy, this question has been studied by economists all over the world.

The latest OECD estimates on Gross Expenditures on R&D (GERD) indicate that the modest recovery initiated in 2010 continued into 2011.

For the whole OECD area, total R&D expenditures grew in real terms by 1.3% in 2010, mainly driven by the higher education and government sectors, while business R&D only increased by 0.5%.

For 2011, a complete picture is not yet available for the entire OECD area. OECD's own preliminary estimates indicate an overall real growth rate for GERD of 1.8% between 2010 and 2011. It is possible to note a sustained growth in research in higher education, a slowdown in government R&D and a gradual recovery in R&D performed in the business sector.

Total GERD in the EU27 area grew in 2011 by 2.7%, driven by the business sector (+3.5%), mainly Germany's (+4.3%). In contrast, US R&D fell by 0.5% in real terms, with growth in higher education offset by lower government and business R&D. After a 2.5% drop in 2010, US business R&D declined by 0.4% in 2011.



## **RESEARCH AND DEVELOPMENT RESULTS**

The analysis of the determinants of growth can be further extended to include R&D activities [2], even though the sample is smaller and inference therefore more tentative. Because in many cases extreme observations produce disastrous results on the statistical analysis of a sample, we must first filter them and isolate them with MCD (Minimum Covariance determinant)[1] and so we can produce the following table.

Dependent variable:∆InY	With total R&D	With distinction between business and non-business R&D	With business R&D only
Long-Run Coefficients LnSk	0.31*** (0.03)	0.28*** (0.02)	0.34*** (0.02)
LnH	1.13*** (0.16)	1.76*** (0.05)	0.82*** (0.18)
ΔInP	-12.15*** (1.64)	-33.19**2 (13.94)	-16.43*** (2.02)
LnR&Dtot	0.14*** (0.03)		
LnBERD		0.26*** (0.01)	0.13*** (0.02)
LnR&Dpub		-0.37*** (0.04)	
Ln(Trade expadj)–1	0.33*** (0.05)		0.32*** (0.05)
Convergence coefficient LnY–1	-0.22*** (0.05)	-0.23** (0.11)	-0.18*** (0.04)
No. of countries	16	15	16
No. of observations	252	236	251
Log likelihood	860	831	849

#### Table: Regressions including R&D intensity

- 1. All equations include short-run dynamics and country-specific terms. Variables are defined in Box 1. Moreover, they control for outliers. Standard errors are in brackets. \*: significant at 10 % level; \*\* at 5% level; \*\*\* at 1 % level.
- 2. The Hausman test rejected the hypothesis of common long-run coefficient and thus the coefficient was estimated without cross-country restrictions.

#### CONCLUSION

From the study that has been conducted in this paper we can conclude that in Greece and in other countries the development of Digital and Knowledge economy and the evolution of Research and Development are very important for the growth of the economy. This is an area where countries and enterprises need to invest heavily for their economic development but also its benefits to grow aided by the technological progress.

Special mention must be done to a very important factor of Research and Development and Digital economy which is computers and software.

#### References

- 1. Driessen, K. V. and Rousseeuw, P. J. (1999) "A Fast Algorithm for Minimum Covariance Determinant Estimator", *American Statistical Association and the American Society for Quality tehnometricks Vol.* 41, N.3
- 2. Bassanini, A. and Scarpetta, S. (2001) " The driving forces of Economic Growth: Panel data evidence for the OECD countries" *OECD Economic Studies*
- 3. AmstatNews (2011) "Stimulating Economic Growth through Technological Advance" *The Membership magazine of the American Statistical Association*
- 4. Statistics Canada, "Data quality, concepts and methodology: Data sources and methodology"
- 5. Bosworth, B. and Kollintzas, T. (2001) "Economic Growth in Greece: Past Performance and Future Prospects"
- 6. Tapscott, D. "TheDigital Economy: Promise and Peril in the age of the Networked"

# INNOVATION AND RESEARCH

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# **EDUCATION IN KNOWLEDGE-BASED ECONOMY: CASE OF RUSSIA**

#### Abstract

This paper gives a general overview of the knowledge-based economy - modern step of post-industrialism in economically developed countries. The special attention is given to the methods created by OECD and World Bank in order to calculate and estimate the possibility of country to fully participate in knowledge-based economy. Specific features of Russian educational system, the role of knowledge in modern Russian economy, and current challenges of educational reforms in Russia are provided.

*Keywords:* Knowledge-based economy, education, KEI, KE, KAM, Russian system of education, educational reforms

## **1. INTRODUCTION**

Knowledge-based economy, even though being treated as modern phenomena, has emerged since the birth of human civilization and, due to rising importance of knowledge over the time, evolved to what we witness today.

People have learned how to transform knowledge into goods and services; knowledge has incorporated into production functions in the form of human capital; economists begun to realize its importance. New technologies, including those in electronics, revolution in software applications, and expansion of telecommunication infrastructure, which emerged in the late 1950s, remade the nature of work and the economy. Different scholars argued that in developed countries new economy is driven by technologies, based on knowledge and information production. One of the first economist who examined knowledge as an economic resource was Fritz Malchup (1962). His work was devoted to the rise of new science based industries and their role in social and economic change. Scholars who continued to work on this new economic model were Porat (1977), Stanback (1979) and Noyelle (1990), Kochan and Barley (1999), Brynjolfsson and Hitt (2000).

At the end of XX century a lot of economists begun to research knowledge based economy as the last stage of development in global economic restructuring<sup>1</sup>. A jump from post-industrial to knowledge economy became possible through the development in the following areas: education, science and technology; information and telecommunication technologies; globalization and the new level of economic growth. They are the key factors of knowledge economy formation. During the last decades knowledge intensive service sectors, such as education, communications and information, are growing very fast, today more than 50% of GDP in the major OECD economies is knowledge-based<sup>2</sup>.

The aim of this article is to determine evolution and distribution of the knowledge-based economy and highlight the role of education in this new economic system. Major emphasis is dedicated to the analysis of educational issues in Russia by investigating the history of its development since XX century and evaluation of main "educational" indicators, developed for assessment of knowledge-based economy.

P. Drucker. The Age of Discontinuity: Guidelines to Our Changing Society

<sup>&</sup>lt;sup>2</sup> The knowledge-based economy, OECD, Paris 1996

We find that:

- 1. Knowledge-based economy is the most advanced stage of global economic development and it is an object of investigation and assessment for major international economic organizations and associations, including World Bank and OECD.
- 2. The main pillars of knowledge-based economy are education, training and research, information infrastructure, innovation system, etc. The main concern when defining these pillars are connected with complexity (and in some cases impossibility) of their assessment.
- 3. Countries have different initial level of participation in knowledge-based economy, still available statistics show that developed countries have better level of assessed indicators while developing countries (including Russia) suffer from poor economic incentives, institutional regime and insufficient innovation output that lower their rank.
- 4. 10-century history of Russian education has gone through many severe changes especially during the last 100 years and is on the crossroad at the current stage. It suffers from criticism both from "consumers" and "providers" which negatively influences its image and is an obstacle for search of "development path" consensus.

# 2. MEASURING KNOWLEDGE-BASED ECONOMY

The term "knowledge-based *economy*" results from a fuller recognition of the role of knowledge and technology in economic growth.<sup>3</sup> A knowledge-driven economy is the one where the generation and exploitation of knowledge play predominant part in the creation of wealth.<sup>4</sup> In economies, four important features characterize the functions of knowledge:

- 1. Knowledge ages rapidly and new knowledge is constantly replacing the old;
- 2. Scientific (including social scientific) knowledge is highly valued, and the scale and economic penetration of scientific knowledge increases through subsequent economic development phases;
- 3. Knowledge economies are especially characterized by the exploitation of new knowledge in order to create more new knowledge;
- 4. Knowledge is used in the production of goods and services, and to enhance the social welfare of its citizens<sup>5</sup>.

OECD uses "knowledge based economy" term in order to describe trends in advanced economies towards greater dependence on knowledge, information and high skill levels, and the increasing need for ready access to all of these by the business and public sector.<sup>6</sup> With this regard OECD has developed methods for defining the possibility of country to participate in knowledge economy. Thus, principal knowledge indicators include:

- · Measuring knowledge inputs;
- Measuring knowledge stocks and flows;
- Measuring knowledge outputs;
- · Measuring knowledge networks;
- Measuring knowledge and learning.

The World Bank has also contributed to elaboration of estimation methods by picking out 4 required pills for fully participation in knowledge economy (fig. 1). Investments to the following pillars will lead to the availability of knowledge and its effective use for economic production.

<sup>&</sup>lt;sup>3</sup> The knowledge based economy, OECD, Paris 1996

<sup>&</sup>lt;sup>4</sup> Nicholas S.Vonortas. STI Policy for Knowledge based economy. Center for International Science and Technology policy and Department of Economics. The George Washington Universitiy.http://www.issp.uottawa.ca/eng/pdf/bromley/vonortas/Presentation.pdf

<sup>&</sup>lt;sup>5</sup> Hanas A. Cader. The Evolution of the Knowledge Economy. South Carolina State University – USA. http://www.jrap-journal.org/ pastvolumes/2000/v38/F%2038%202%203.pdf

<sup>&</sup>lt;sup>6</sup> http://stats.oecd.org/glossary/detail.asp?ID=6864

#### KNOWLEDGE ECONOMY - IMPACT ON SUSTAINABLE DEVELOPMENT OF THE COUNTRIES FROM EAST AND SOUTH EAST EUROPE

Fig 1 Pillars	required for full	narticination	n in the knowl	ledae hasec	leconomy <sup>7</sup>
119.1.1 111013	required for run	participation	THE KHOW	euge basec	economy

Education and training	•Well-educated and skilled population is essential to creation, acquisition, dissemination and utilization of relevant lnowledge which tends to increase total factor productivity and hence ecnomic growth
Information infrastructure	• A Modern and adequate information infrastructure that can facilitate effective communication, dissemination, and processing of information and knowledge
Economic incentive and institutional regime	<ul> <li>An economic incentive and institutional regime that provides good economic policies and institutions that permit efficient mobilization and allocation of resources and stimulate creativity and incentives for efficient creation, dissemination, and use of existing knowledge.</li> </ul>
Innovation system	•An <i>effective innovation system</i> of firms, research centers, universities, consultants, and other organizations that can keep up with the knowledge revolution and tap into the growing stock of global knowledge and assimilate
	and adapt it to local needs

Source: Derek H. C. Chen and Carl J. Dahlma. The Knowledge Economy, the KAM Methodology and World Bank Operations. The World Bank October 19, 2005. Washington DC 20433

To measure a country's ability to generate, adopt and diffuse knowledge World Bank has developed a Knowledge Economy Index (KEI) and Knowledge Index (KI). The KI is an indication of overall potential of knowledge development in a given country. The KEI takes into account whether the environment is conductive for knowledge to be used efficiently for economic development. It is an aggregate index that represents the overall level of development of a country or region towards the Knowledge Economy<sup>8</sup>.



Fig. 2. Indicators of KEI and KE

Source: www.worldbank.org

Both OECD and World Bank indexes have sub-indexes, which are based on key variables for the purpose of calculating.

The KEI is constructed as the simple average of the normalized values of those indicators, from 0 to 10. A KEI score that is close to 10 implies relatively good development of the four knowledge economy pillars as compared to other countries, while a score close to 0 indicates relatively poor development.

<sup>&</sup>lt;sup>7</sup> http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/ECAEXT/EXTECAREGTOPKNOECO/0,,contentMDK:20422383~menuP K:921081~pagePK:34004173~piPK:34003707~theSitePK:677607,00.html

<sup>&</sup>lt;sup>8</sup> http://web.worldbank.org/WBSITE/EXTERNAL/WBI/WBIPROGRAMS/KFDLP/EXTUNIKAM/0,,contentMDK:20584278~menuPK:143 3216~pagePK:64168445~piPK:64168309~theSitePK:1414721,00.html

Indicator	Key variable	Characteristics		
		OECD index		
Knowledge inputs	Expenditures on re- search and develop- ment (R&D)	Based on data from informal professional exchanges, users ex- periences and suggestions from the shop floor		
	Patents	Quantity of the patents registered		
	International balances of payments for tech- nology	Measuring international movements of technical knowledge through payments of licensing fees and other direct "purchases" of knowledge		
Knowledge stocks and	Stock of knowledge capital	Can be based on current science and technology indicators if techniques were developed for dealing with obsolescence.		
flows	Flows of knowledge	Measuring the introduction into production processes of ma- chinery, equipment and components that incorporate new technology; and the transmission of knowledge, technical expertise or technology in the form of patents, licenses or know-how		
	Flows of embodied knowledge	The proportions of R&D stock which flow to other industries		
	Flows of disembodied knowledge	Measured through citation analysis		
Knowledge outputs	R&D intensity	Estimating high, medium-high, medium-low, and low tech- nologies		
	Social and private rates of return	Estimating by computing the benefits <i>vs</i> . the costs of innova- tion		
Knowledge networks	Innovation surveys	The factors affecting the propensity of firms to innovate and how knowledge and innovation are diffused in the economy		
	Knowledge distribution power	Analyzing two main flows: the distribution of knowledge among universities, public research institutions and industry; and the distribution of knowledge within a market between suppliers and users		
	Institutional capabili- ties to transfer knowl- edge	Interactions between the public, private and academic sec- tors		
	Capabilities of the pri- vate sector	Measuring market interactions through: research co-opera- tion within the enterprise sector; participation of firms in in- dustry-wide standardization activities and informal research networks; rates of mobility of researchers across firms and sec- tors; methods of access of firms to findings of other firms and sectors, degree of internationalization		
Knowledge and	Social rates of return	Measuring the impact of education expenditure and attain- ment levels in society at large on economic growth		
learning	Private rates of return	Measuring changes in human skills and competencies at the individual or firm level and the impacts on firm performance		
	Micro-level indicators	Assessing firm expenditure on training by type of training (general, technical, management), by staff category (worker, researcher, manager) and by type of firm (sector, size)		

Chart 1 - Key variables of KEI, KE and OECD indexes

#### KNOWLEDGE ECONOMY - IMPACT ON SUSTAINABLE DEVELOPMENT OF THE COUNTRIES FROM EAST AND SOUTH EAST EUROPE

Indicator	Key variable	Characteristics	
		KEI and KE indexes	
Economic and Insti-	Tariff and Nontariff Bar- riers	Based on the Heritage Foundation's Trade Policy index ar measures the degree of economic freedom	
tutional Regime	Regulatory Quality	Measures the incidence of market-unfriendly policies such as price controls or inadequate bank supervision	
Index	Rule and Law	Measures the extent to which agents have confidence in and abide by the rules of society.	
Education Index	Average years of schooling	Used as an aggregate measure of the educational stock in a country	
	Secondary Enrollment	Secondary education completes the provision of basic educa- tion that began at the primary level and is treated as a founda- tion for lifelong learning and human development	
	Tertiary Enrollment	Tertiary education as a minimum condition of admission, suc- cessful completion of education at the secondary level	
Innovation Index	Royalty Payments and Receipts	An absolute number of royalty payments and receipts	
	Patent Count	Patents granted by the official bodies	
	Journal articles	Number of scientific and engineering articles	
ICT Index	Telephones	Sum of telephone mainlines and mobile phone; per 1,000 people	
	Computers	personal computer penetration and use; per 1,000 people	
	Internet Users	per 1,000 people	

Source: compiled data from www.worldbank.org, www.oecd.org

Usage of these indexes and indicators helps to estimate the possibility of the region or country to move from post-industrial economy to the knowledge-based economy, define existing problems of transition and better understand economic performance with regard to indicators of growth in the knowledge base.

## 3. "MAPPING" KNOWLEDGE-BASED ECONOMY

Comparing the KEI by regions, it is evident that the North America, Europe and Central Asia had and still have the biggest KEI, meanwhile South Asia and Africa show the lowest level of indicators (fig. 3).



#### Fig.3. Distribution of KEI by regions, from 0 to 10

Concerning the Knowledge Economy Index (KEI) 2012 rankings for 146 countries Sweden retains its first-place position as the world's most advanced knowledge economy, with a 2012 KEI of 9.43. Sweden is followed by: Finland, Denmark, Netherlands, Norway, New Zealand and Canada. At the same time within different KEI pillars we can see different leading countries (see chart 2).

Rank	EIR	Innovation	Education	ICT
1	Singapore	Switzerland	New Zealand	Bahrain
2	Finland	Sweden	Austria	Sweden
3	Denmark	Finland	Norway	Luxemburg
4	Sweden	Singapore	Korea, Rep	United Kingdom
5	Hong Kong, China	Denmark	Greece	Netherlands

$C_{11}$ $C$	Chart 2 – TOP 5	Economies in	each KEI pillar
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Source: KAM 2012

Comparison of KEI pillars among ASECU Youth country-members showed that Slovak Republic, Greece and Poland take the leading positions in this rank while former CIS countries suffer poor performance (fig. 4). In KEI ranking 2012 the USA occupied the 12 place with the biggest KEI among all AY countries.





Source: compiled data from www.info.worldbank.org

Thus it can be seen that different countries have different initial level of full participation in knowledgebased economy, however the most developed countries by KEI and KE are from North America, Europe and Central Asia. Thereby, predominantly developed countries show deeper "knowledge-based" orientation of their economy while developing countries of South and Eastern Europe mainly suffer from poor economic incentives and institutional regime and insufficient innovation output.

## 4. ROLE OF EDUCATION IN KNOWLEDGE-BASED ECONOMY

The belief that there is a causal relationship between the "excellence" of a school system and the economic success of the country in a global competition has revived the interest to the relationship between education systems and national productivity. When measuring national productivity we can use standard economic indicators such as GDP. Traditional indicators have never been completely satisfactory, however using them we can identify the level of economic development in the world community. At the same time it's very hard to estimate or measure the knowledge, because it is stored only in individual's minds. Today we have very indirect and partial indicators of growth in the knowledge base itself.<sup>10</sup>

<sup>&</sup>lt;sup>9</sup> http://info.worldbank.org/etools/kam2/KAM\_page8.asp

<sup>&</sup>lt;sup>10</sup> Knowledge Based Economy. OECD 1996.

Today education carries out many key functions in the knowledge-based economy, e.g. knowledge production, transmission and transfer of knowledge and its "material" results. This especially true when talking about higher professional education and research facilities which is more and more closely connected with labor market and industrial sector.

What might be even more important is that changes in the structure of work in the last decades have increased the demand for higher education and high-skilled workers. Majority of population in developed economies and in the leading developing economies tend to obtain education beyond high school, including university education. Education has been a major source of productivity growth in the United States during the post-war era, and because education increases productive human capital (education is one of the assessment components of Human Development Index (HDI)), it contributes to overall increases in economic growth. Thus, during the postwar years from 1948 to 1973, it is estimated that education and the innovation that arose from it accounted for two-thirds of the increase in U.S. economic growth.<sup>11</sup>

#### 5. SPECIFIC FEATURES OF RUSSIAN EDUCATIONAL SYSTEM AND THE ROLE OF KNOWL-EDGE IN MODERN RUSSIAN ECONOMY

# 5.1. History of Russian Education

Even though development of education system in Russia started later than it did in many countries of Western Europe, it plays very important role in Russian society. The first law on education in Russia dates back to 988, period of Russia's Baptism, so for many centuries Christian religion had a great influence on education. The first professional schools had appeared during the reign of Peter the Great in the beginning of the 18-century. He had studied a lot abroad in Germany and Holland and upon his return initiated creation of modern education system in Russia. He instituted mass education (not only for children of noble men as it was before but also for all talented children); created schools in shipbuilding, military science, navigation science and engineering; established the first Russian Academy of Science and Academic University in St. Petersburg.

Under Ekaterina's II system the aim and score of the education were not only education, but also good breeding. All punishments were forbidden, philosophical idea of school was "respect for human rights and freedoms". The next ruler, who changed the Russian system of education, was Alexander I. During his epoch were created "The Rules of Public Education" that divided all educational institutions into 4 groups: parish schools, district schools, provincial high schools and universities. According to the law, since 1804 every town had to have at least one gymnasium and 2 schools. The first educational authority – the Ministry of Education was established at the same time. Thus, from the end of XVII till the beginning of XIX century dominated a tendency of liberalization of education system.

After the Revolution of 1917 the education became public, free and obligatory which lead to fast growth of education level and coverage. Even the Second World War didn't stop country's orientation on education. From 1950s till the collapse of USSR there were built many schools, universities and institutes, including research ones, and many of them are still highly prestigious today.

The new socio-economic and political context of the Russian Federation required a radical transformation of education system, a process that started at the beginning of the 1990s. In 1992 Russia adopted a law that proclaimed the following principles of state educational policy:

<sup>&</sup>lt;sup>11</sup> Edward F. Denison. 1984. Trends in American Economic Growth, 1929-1982. Washington, DC: Brookings Institution Press; Robert J. Shapiro. 1998. "The Economic Power of Ideas." In Jerry J. Jasinwoski, ed., The Rising Tide: The Leading Minds of Business and Education Chart a Course Toward Higher Growth and Prosperity. New York: John Wiley & Sons, Inc.

- humanistic nature of education, priority of human values, human life and health, free development of personality;
- accessibility of education and adaptability of education system to the levels and characteristics of development and training of students and pupils;
- · secular nature of education in the state and municipal educational institutions;
- freedom and pluralism in education;
- democratic, public nature of education management, and autonomy of educational institutions.

This law set the basic foundations for a radical change of the education system. One of the most important provisions of this law was the elimination of state monopoly on education. Within 10 years the number of private higher educational institutions rose from 0 to 417. The reform of system and government's educational policy was mainly aimed at strengthening and development of democracy, consolidation of national identity, facilitation to transition towards a market economy. The most important goal of the reform was to create basic conditions for a transition from a unified and standardized education system to a versatile and open one.

However in spite of strong orientation on the best European and U.S. practices in education the results of reformation didn't show great results. Many analytics and, what is more important – consumers (= pupils, students) and producers (= school and university teachers, researches, senior managers) noted deep problems in the quality and satisfaction with education.

#### 5.2. Current Challenges of Educational Reforms in Russia

The new stage of the educational reform started with the adoption of "The National Concept of Education in the Russian Federation" in 2000 which stated the objectives and main directions of educational development up to 2025.<sup>12</sup> A few years later, in 2003, Russia has joined the Bologna process which main objectives are to increase the mobility and employability of European higher education graduates thus ensuring competitiveness of European higher education in the world. Following its obligation under "Bologna declaration" in 2011 Russia has finally switched to two-cycle degree system, namely 4-year bachelor's and 2-year master's degree, while keeping its traditional "specialist degree" (a minimum of 5 years study) for a limited number of programs, specified by the government regulations.

Within these 10 years of reforms Russia has changed the duration of basic and general education, list of obligatory subjects, rules of final state exams at secondary schools and rules of enrollment in universities, grading system at universities, etc. Obviously, all these changes have seriously influenced "the face" of modern Russian educational system and its perception by population.

Governement level	<b>Education institution level</b>	Pupils' level
<ul> <li>Insufficient budgetary financing;</li> <li>Tendency to imitate foreign systems of education without taking into account specific features of economic, political and cultural peculiarities of Russia;</li> <li>Decrease of quality of Russian educational system;</li> <li>Brain-drain;</li> <li>Poor connection between educational institutions and labor market.</li> </ul>	<ul> <li>Difference between market needs and current educa- tional program;</li> <li>Deterioration of the pres- tige of Russian universities;</li> <li>Corruption;</li> <li>Poor quality of educational and academic literature;</li> <li>Poor level of facilities and technical basis.</li> </ul>	<ul> <li>Low level of motivation;</li> <li>Poor ability of choosing profession;</li> <li>Tendency to gain the diploma, not knowledge;</li> <li>Lack of possibility to choose "right" subjects in high school.</li> </ul>

#### Chart 3 – The most significant problems in Russian system of education

<sup>12</sup> World Data on Education. IBE/2011/CP/WDE/RU http://unesdoc.unesco.org/images/0021/002145/214565e.pdf

In 2011 was adopted the "Federal Target Program for the Development of Education in 2011-2020" which is to ensure access to quality education that meets the requirements of innovative socially oriented development of the Russian Federation. The main objectives of the Program are: modernization of general and preschool education as a support to social development; bringing the content and structure of vocational education in line with labor market needs; development of system of education quality and relevance of educational services.

It is possible to define specific futures of Russian system of education analyzing the data provided by the Global Competitiveness Report. In 2008/09 and 2012/13 Russia took 36 and 86 places respectively. It is necessary to mention that in 2008/09 the World Economic Forum created the Report using information about 134 countries and in 2012/13 – 144. Despite this fact, according to the Report there are clearly seen negative changes in the whole educational field<sup>13</sup>.



#### Fig. 5. Development of Russian "educational field", Global Competitiveness Report

Source: The Global Competitiveness Report 2008/09, 2012/13. World Economic Forum.

As for the Knowledge Economy Index (KEI) 2012 rankings for 146 countries, Russia took 55 rank. Over the last 17 years KEI in Russia has changed significantly: the index plummeted to 2,28 in 2000 and increased to 5,78 in 2012. Simultaneously, the KE index didn't show big changes over the same period of time (see Fig. 6).





Concerning the 4 pillars of the Knowledge Based Economy in 2000 to 2012, it can be clearly seen that grew only 'education' indicator, meanwhile the economic incentive and institutional regime, innovation system and ICT decreased slightly over the 12 years.

<sup>13</sup> https://members.weforum.org/pdf/gcr08/gcr08.pdf

Source: www.worldbank.org



Fig. 7. KEI, KE and 4 pillars of knowledge based economy in Russia in 2000 and 2012, from 0 to 10

Presented data reflect deterioration in the economic sphere, however modern government program aimed to the modernization and development of current system of education and to rise the relevance of educational services.

Basic directions of development of Russian education system were stated in the "Russian Innovation Strategy 2020"<sup>14</sup>. According to strategy there are 2 scenarios: conservative and reformative.

Conservative approach assumes that the government will take care about reducing social risks and minimize involvement in the current system of higher education. Budget funding of the sector will increase to 1.15 % of GDP. This will increase level of salaries and scholarships, meanwhile the disproportion between labor market and economic development will remain.

Reformative scenario assumes active changes in the education system, relying on families and employers. The scenario may change the existing disparities between education and the labor market. An important condition for the success of this scenario is abandonment of compulsory army practice. This will reduce the demand for higher education programs in favor of programs of secondary education for at least 20-25 %.

Russian government still didn't decide which way will be chosen, however on the whole, Russian education system will be based on the following principle changes:

- Broad adaptation of modern methods and technologies, aimed to continuous development and further improvement.
- Creation of actual educational content for professional, general and further education, according to the modern world-class scientific and technological level of development.
- Widening collaboration between high-tech business and education institutions.
- Intensive training of the new generation of managers in higher education.
- Additional tax incentives for small innovative companies will be provided in order to enhance innovation in higher education.
- Formation of the modern educational standards in educational field<sup>15</sup>.

Overall strategy realization will be coordinated by the Governmental Comission for Hi-Tech and Innovations. Its results are presented on figure 8.

<sup>&</sup>lt;sup>14</sup> Russian Innovation Strategy 2020 http://2020strategy.ru/data/2012/03/14/1214585998/1itog.pdf

<sup>&</sup>lt;sup>15</sup> Russian Innovation Strategy 2020 in Brief http://www.finnode.fi/files/173/Russian\_Innovation\_Strategy\_2020\_in\_brief.pdf



Fig 8. Key indicators in the Russian education sphere, targeted according to the Russian Innovation Strategy 2020.

Source Russian Innovation Strategy 2020 in Brief

# 6. CONCLUSION

With the spread of modern information and communication technologies, the world economy has become more competitive. Based on new technological opportunities developed countries jumped from post-industrial to knowledge economy. In a long-term for the new economy the most important role plays knowledge – the main engine of economic growth.

Our attempt to assess development of educational system in Russia as one of the pillars of modern knowledge-based economy showed that unfortunately over the last 20 years Russia had witnessed deterioration in these field (influenced by deep economic and political changes of these years) that led to severe disputes concerning the future of Russian education.

However education is still one of the strongest pillars of Russia when assessing possibilities of country in transition to the knowledge economy. This confirmed by KAM ranking 2012, where Russia took 6,79 from 10.

## References

- 1. Hanas A. Cader. The Evolution of the Knowledge Economy. South Carolina State University USA.
- 2. Ian Brinkley. Defining the knowledge economy. The knowledge economy report. The work foundation. London 2006.
- 3. KAM 2012 http://siteresources.worldbank.org/INTUNIKAM/Resources/2012.pdf
- 4. Loet Leydesdorff. The Knowledge-Based Economy and the Triple Helix Model University of Amsterdam, Amsterdam School of Communications Research (ASCoR)
- 5. Nicholas S.Vonortas. STI Policy for Knowledge based economy. Center for International Science and Technology policy and Department of Economics. The George Washington Universitiy.
- 6. P.Drucker. The Age of Discontinuity: Guidelines to Our Changing Society.
- 7. The Global Competitiveness Report 2008/09. World Economic Forum.
- 8. The Global Competitiveness Report 2012/13. World Economic Forum.
- 9. The knowledge-based economy, OECD, Paris 1996
- 10. World data on education. VII ed 2010/2011
- 11. www.oecd.org
- 12. www.weforum.org
- 13. www.worldbank.org
- 14. http://www.russia.edu.ru/edu/description/history\_edu/965/
- 15. http://www.muh.ru/content/niipo/081201\_statya\_bershadskaya.pdf

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# THE PARTICIPATION OF WOMEN IN THE KNOWLEDGE ECONOMIES OF EASTERN AND SOUTHEASTERN EUROPE

#### Abstract

The countries all over the world try to achieve the transition of their economy into a knowledge economy since they directly depend on knowledge. Knowledge is power and this power should be allocated equally to men and women. Before this transition, the countries have to solve the issues about gender equality in the economic development. Even today, women do not have equal access to the productive means and they do not participate sufficiently to the economic activities. Gender equality, except for a human right, it is also necessary for economic advancement. At this article, we are going to examine the notion of the knowledge economy so that we can understand the meaning and its importance about the economy, the welfare and the reduction of poverty globally. After this, we are going to present the situation of women in the knowledge economy worldwide, so that we can have a general view of the role of women in the economic activity, the sectors in which they are underrepresented and the reasons why this happens. Continuously, we are going to focus on the specific region of East and South East Europe, where the problem of the gender inequality is more intensive in all sectors.

#### 1. KNOWLEDGE ECONOMY

Over the last decades, national economies are been developing in knowledge economies. This term means that the production and the services are based on knowledge activities and innovations which make the physical resources more efficient and lead to economic growth.

Not only the developed countries, but also the developing ones try to gain a comparative advantage by access to information and knowledge in order to be considerable. Knowledge is produced by research and development (R&D). The proportion of R&D expenditure in countries GNP has been increasing since 1950 and this is considered an investment of great value. Also, knowledge is managed by learning in educational settings and it is acquired through experience. By this way, the workforce of the country can be productive and consequently contribute to national economy efficiently. In fact, the value of knowledge to an economy comes from sharing with others<sup>1</sup>. As it happens to firms, knowledge is shared internally with the effort to avoid diffusion. Thus, information is a commodity, which can be bought or sold and then belonged to any reasonable mind<sup>2</sup>.

A question, although, that occurs, except the acquisition of information, is the effective use of it in all sectors of economic activity. Knowledge and innovation can be applied from agriculture to biotechnology, including industries and enterprises. In the view of the growing contribution of the creative industries to national economic output, most countries are seeking to adopt policies to develop their

<sup>&</sup>lt;sup>1</sup> Ian Brinkley, Defining the knowledge economy, The Work Foundation, 2006.

<sup>&</sup>lt;sup>2</sup> UNESCO world report, towards knowledge societies, UNESCO publishing, 2005, page 19.
creative industries and strengthen their competitiveness<sup>3</sup>. So, certain policies have to give incentives to invest in innovative products and new processes. Science and high technology (such as ICT) are some other important fields where knowledge is applied. Furthermore, knowledge is important for humans if they are about to be active in their workplace, in the means of information and in politics.

At this point, we must not forget that knowledge, except for a means to achieve economic development; it is also a means to achieve social goals. Knowledge societies are not only concerned with information, technology and innovations, but also with sustainable and human development. Knowledge societies are parts of the global context of limited resources. So, the issues of limitation and environmental protection should have to deal with sustainable development with the use of technology. Moreover, the potential workforce, as human beings, benefits through the acquisition of knowledge and its right use for themselves and for the whole society.

# 2. THE PARTICIPATION OF WOMEN IN THE KNOWLEDGE ECONOMY WORLDWIDE

A knowledge economy should integrate all the available human capital and provide access to knowledge. An economy benefits from this combination as also the sectors of science and technology are well developed.

Women are a group of society and simultaneously a part of the workforce which can contribute to economic growth, to technological advancements and to a better quality of life. Due to the dominant gendered division of labor, much of the daily work done by women involves scientific and technological knowledge that is implied. For instance, women carry out 60-90% of agricultural production activities in the developing world. Women are mostly responsible for the provision of energy for cooking: women often cater for community water and sanitation needs and family healthcare<sup>4</sup>.

According to a study conducted in 2012 and assessing gender equality in knowledge societies of the EU, South Africa, India and other countries, the knowledge gender divide continues to exist in all countries<sup>5</sup>. Even in the developed countries, the proportion of women's participation in the sectors of technology and innovation is very low. In some of the countries, women do not represent more than 30% in the fields of engineering and computing. Additionally, in the countries where a woman confronts a very low social status and constrains to participation in economy, like South Africa or India, these rates are much lower<sup>6</sup>.

In the following table, there are the countries with the higher percentages of female researchers (over 50%) as a percentage of total researchers.

	Fer	nale researd	chers as a pe	ercentage o	f total resea	archers in 20	010	
Argentina	Romania	Russian Federation	Singapore	Chinese Taipei	Turkey	Czech Republic	Finland	Korea
52,2%	44%	41,7%	29,3%	20,9%	35,8%	28,1%	31,9%	16,7%

#### Source: OECD

<sup>&</sup>lt;sup>3</sup> Robin Mansell and Gaetan Tremblay, Renewing the knowledge societies vision: towards knowledge societies for peace and sustainable development, Report February 2013, page 3.

<sup>&</sup>lt;sup>4</sup> UNESCO Expert Group meeting: Gender, Science and technology, Women's and girl's access to and participation in science and technology, September 2010, page 2.

<sup>&</sup>lt;sup>5</sup> www.wisat.org

<sup>&</sup>lt;sup>6</sup> www.wisat.org, National assessments on gender equality in the knowledge society.

Even today, women in various domains that usually refer to research positions and new technologies are under-represented, not only in less developed countries but also in the leading economies. The knowledge gap between genders continues to exist in developed countries, while women do not have access to the production<sup>7</sup>.



#### Women's participation in science, technology and innovation

Source: Women in Global Science and Technology

At the level of education, while women get educated in the fields of technology, this is not reflected in the workforce of each country. But even the number of female students is very low. It has been observed that:

- Women tend not to make studies n the fields of engineering and technology, while they prefer other sciences like medicine.
- It is usual female studies at a Bachelor and Master level but not in a higher one.

Consequently, the number of female researchers becomes low. Given a sample of 89 countries in 2010, it has been concluded that the share of women researchers globally is almost 29%, with regional differences: in Europe 32%, in Latin America 46% and in Asia 15%<sup>8</sup>.

The tendency of women to be absents from decision making positions affects their participation in knowledge economy. Females take part in the process of economy, using ICTs, but not in a satisfying level. Also, sometimes women face lower wages due to the fact that there have not been developed equal policies.

#### Why do we want women to participate in knowledge economies?

Although the situation of women's participation is aforementioned, we have to understand why females need not to be excluded from knowledge economies. Women are active agents in development. The participation in knowledge economy will enable them to improve their incomes, health, food production and well-being.

Except the individual benefits, there are also many gains for knowledge economies. An economy can take advantage of women's creativity and abilities and therefore boost its macro-economic elements

<sup>7</sup> www.wisat.org

<sup>&</sup>lt;sup>8</sup> UNESCO Expert Group meeting: Gender, Science and technology, Women's and girl's access to and participation in science and technology, September 2010, page 4.

and the sustainable development. Fewer women scientists correspond to fewer intellectual resources that can be used for attracting jobs and for the national productivity. Furthermore, it is essential the equal access to the education and to the productive use of resources, at the same time that gender gaps harm a country's economic performance.

It is a fact that women compose almost the half world population and 40% of global workforce, but they only possess 1% of global wealth<sup>9</sup>. On the contrary, increasing women's representation in SET (Science, Engineering and Technology), all the available human capital is used to lead to the nation's competitiveness in the technology sector, in businesses and in national innovations.



#### THE GENDER GAP IN SCIENCE

SOURCE: CHARTBIN

# 3. GENDER ECONOMY IN THE AREA OF SOUTHEASTERN EUROPE

# **3.1 GLOBAL GENDER GAP REPORT**

The region of South-eastern Europe was through big economic, political and social changes at the decade of 90'. Almost all countries selected their passage in the economy of market, with the fall of centralized scheme. This process was very painful for all countries and their citizens, because through their transition from a centrally controlled economy, they were found in the uncertainty and the competition of free market without being prepared for these new conditions. For Albania, which was years isolated from the rest of the world, this change was more traumatic. The large losses of jobs, the instability, the hunger, the social unrest, were some of the characteristics of that era. Job losses influenced two sexes to a big degree. However, women were more influenced because in the closed economy they had an ensured place to work, since in this form of economy the phenomenon of unemployment does not exist. After the fall of the socialist regime, women found themselves without work and without any opportunity to participate in the new system because they were lack in the necessary skills and appropriate education. Two decades afterwards, the role of women in the society and in the economic process has been improved considerably. These changes helped women to be independent financially

<sup>&</sup>lt;sup>9</sup> www.econ.worldbank.org.

and to better assert their rights. However, although women have made great strides, there is still a significant gap between men and women regarding their participation in the production process and in decision-making, their access to inputs, their support from political institutions and the equal opportunities in professional careers.

Basically, the new bet of these areas is to go through another transition. These countries must pass on the knowledge economy, which would not exclude women and integrate them equally in the production process. Women are a productivity factor which has remained unexploited and this fact may causes losses in the competitiveness of economy and in the overall production. The whole society will gain from the complete integration of women in the economy of knowledge. Several empirical studies show that women distribute their income differently than men. Women give priority in meeting the needs of the household and the education of their children. So this means a better educated next generation which will contribute more effectively in the economic growth. The countries that want to invest in sustainable development should understand the importance of women in economic development. As it stresses the World Bank, investing in women is smart economy since women constitute half the world's workforce and researchers. According to OECD, from 1995 the restriction of the gap between men and women is the cause for the half increase of employment in Europe and for the one quarter of annual economic growth of particular region.<sup>10</sup>

Many studies show that women's participation in economic development will only positively affect society and the GDP. According to Booz & co almost one million women will join the labor market in the coming years and the full exploitation of this fact will lead to great results. According to the survey conducted by Booz & co if the employment rate of women was the same as men, then the total GDP of the U.S. would increase 5% while the GDP of Japan would have an increase of 9%.<sup>11</sup> The impact on GDP is higher in countries where the employment rate of women is low. The last decades, the attendance of women in the all sectors of economic activity was increased considerably. According to an article of the Economist, women are behind 80% of consumer decisions.<sup>12</sup>

Countries	Percentage of women population (2011) %	Countries	Percentage of women population (2011) %
Albania	49.9	Macedonia FYR	49.9
Croatia	51.9	Montenegro	50.9
Bosnia –Herzegovina	51.9	Poland	51.8
Bulgaria	51.7	Romania	51.5
Georgia	52.9	Russia	53.7
Greece	50.5	Serbia	50.5
Kosovo	48.5	Ukraine	54.0

In most countries of the South-eastern Europe, women make up nearly half the total population as shown in the following table.

SOURCE: The World Bank Data 13

However the corresponding governments have not utilised the factor women as much as they could. As a result, women are more disadvantaged than men in employment opportunities. The following ta-

<sup>&</sup>lt;sup>10</sup> http://www.oecd.org/social/40881538.pdf

<sup>&</sup>lt;sup>11</sup> http://www.booz.com/media/uploads/BoozCo\_Empowering-the-Third-Billion\_Briefing-Report.pdf

<sup>12</sup> http://www.economist.com/node/6802551

<sup>13</sup> http://data.worldbank.org/indicator/SP.POP.TOTL.FE.ZS

ble shows the places taken by these countries according to the Global Gender Gap Report 2012.<sup>14</sup> This report shows how the countries share equivalently their inputs without bothering about the quantity of those inputs.

	0\	verall	eco parti	nomic cipation	po empo	litical werment	educ atta	ational inment
	rank	score	rank	score	rank	score	rank	score
G.G.G data 2012								
Albania	91	0,6655	63	0,6663	105	0,0753	76	0,9890
Bulgaria	52	0,7021	50	0,6960	67	0,1409	64	0,9924
Georgia	85	0,6691	57	0.6766	109	0,0711	89	0,9790
Greece	82	0,6716	80	0,6329	99	0,0858	55	0,9940
Croatia	49	0.7053	61	0.6691	47	0.1779	46	0.9950
FYROM	61	0,6968	65	0,6650	45	0,1789	22	0,9997
Poland	53	0,7015	72	0,6503	46	0,1786	34	0,9981
Romania	67	0,659	54	0,6815	97	0,0885	52	0,9943
Russia	59	0,6980	39	0,7197	40	0,0951	35	0,9580
Serbia	50	0,7037	50	0,7037	40	0,1921	67	0,6599
Ukraine	64	0,6894	34	0,7251	119	0,0535	22	0,9943

Source: Global Gender Gap Report 2012<sup>15</sup>

Serbia entered for the first time in these studies, so we can not make comparisons with past performance. Ukraine is in the same position as in the last year. However, Ukraine is among the 20 countries that have the worst performance in political empowerment. Albania had a great fall, almost 13 places due to the reduction of women representatives in the parliament. According to other studies, there is no equality regarding to wages, apart from some cases where higher education does not exist, wages vary at the same rate while there is a mismatch of skills and jobs.<sup>16</sup> In the case of Albania, it is observed that generally women are more educated than men but usually do not have work experience. This fact is an important disadvantage for the employment and their wages. This absence is related to the fact that they are occupied with the raise of their children. Later, they find it difficult to rejoin the labor market. Croatia went up a place because there was an improvement in the representation of women in ministerial positions. Russia lost certain places in the scale because the levels of attendance of women in the economy and political empowerment were low. Bulgaria lost only a place. Greece lost enough places mainly due to the reduction of feminine representatives in the parliament, from 31% in 2011 fell in the 6% in 2012. Macedonia FYR fell 8 places because of the wage gap between man and women. The performance of Albania and Macedonia FYROM on health and survival was below average performance.

Undoubtedly, the economic development is important for all countries, particularly the Southeastern countries. The European Union is the largest market for these countries' products; therefore they are directly affected by economic developments. Southeastern economics have problems with productivity and competitiveness, which do not allow long-term economic growth and reduce of unemployment. According to Global Competitiveness Index 2012-2013<sup>17</sup> the performances of the countries under study are presented in the following table.

<sup>&</sup>lt;sup>14</sup> Some countries are not included in the index due to lack of data

<sup>&</sup>lt;sup>15</sup> http://www.weforum.org/issues/global-gender-gap,( health index is excluded from the table because doesn't directly concern the subject of the article).

<sup>&</sup>lt;sup>16</sup> http://www.unifem.sk/uploads/doc/GenderWageGapReport\_Albania\_EN.PDF

<sup>&</sup>lt;sup>17</sup> http://www3.weforum.org/docs/WEF\_GlobalCompetitivenessReport\_2012-13.pdf

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Countries	rank/144	score (1-7)
Albania	89	3,91
Bulgaria	62	4,27
Croatia	81	4,04
Romania	78	4,07
Bosnia -Herzegovina	88	3,93
Greece	96	3,86
Serbia	95	3,87
Ukraine	73	4,14
FYROM	80	4,04
Russia	67	4,2

The main problems of these countries are access to finance, corruption, bureaucracy, political instability, government instability, inflation, inefficiency of government bureaucracy and inadequate infrastructure. Bulgaria had the best performance in the competitiveness index of the Balkan countries arriving in position 62 with a score of 4.27. In the worst position is Greece that confronts debt crisis and low trust on part of investors. Greece ranks in 96 positions with a score of 3.86 and the valuation for corruption and government efficiency is ranked in111 position.

The lack of enough investment in innovation is the main reason for non-competitiveness of these countries. According to data from the World Bank 2012, spending on research and technology is under 1% of GDP for all the countries of the Western Balkans except Montenegro that is 1.1% of GDP. Moreover, the quality of education in these countries is low and affects the quality and value of the products they export.

# **3.2 GENDER PAY GAP**

It is the difference between wages received by men compared to women's wages. Usually this difference in wages is explained by differences in education, work experience and skills of workers in the labor market. However, it's observed that women are paid less than their male counterparts doing the same job. The women's presence is most pronounced in specific occupations that historically have been identified with women including teachers, nurses, cooks etc. Moreover women work many times part-time jobs in order to care their family. This choice has a negative impact on their careers.

The inequality in wages is a very important problem for the countries under study. Several of these differences are very noticeable and the states should face these problems if they want their integration in the European Union, which strongly supports gender equality.

FYROM is making efforts to accede into the European Union, and this means various reforms in many areas, such as in the economic and political fields and reforms in the sector of justice. One of the European Union's requirements is equality in wages for both sexes. Although, gender equality legally is protected by law, in practice there are many obstacles that do not allow women to achieve equality both in terms of opportunities in labor market and in the elevation of their social status. The employment rate of women in FYROM in 2010 according to studies was 37.5%, compared to the employment rate of man which was 58.40%<sup>18</sup>. Moreover, according to the World Labor Organization, there is a notice of distinction in specific groups of women, such as new mothers and older women in age.

<sup>&</sup>lt;sup>18</sup> (http://www.crpm.org.mk/wp-content/uploads/2013/03/Gender-equality-in-EU\_How-does-Macedonia-compare.pdf )

The wage inequality essentially reflects the inequalities in various economic sectors. According to a study that was realised in 2013 Gender pay gap in the Western Balkan countries<sup>19</sup>: Evidence from Serbia, Montenegro and Macedonia") the women in Serbia, in general, have more qualifications than men while they are not paid the same .Women in Serbia are paid 11% less than men for the same work while Montenegro percentage rises up in the 16.1% and Macedonia FYROM percentage reaches 17.9%. According to the research, this means that the women in Serbia work without payment for 40 days.

According to data from UN Women, Serbia's profile in 2010, 50% of women's population, who are eligible to participate in the labor market, (15-64) was economically active. The corresponding figure for men was 2/3. One third of entrepreneurs and self-employed were women in 2009 and 20% of women were in managerial positions.

In the case of Albania, in 2011 women earned 17.4% less than men. According to the survey results (Gender Inequalities in Pay - an Albanian Case) <sup>20</sup>the difference in wages widened over the years. For example, at the ages that are close to retirement, men earn 40% more than women. Also, women work less hours than men and choose part-time jobs in order to take care of their children or other people who need help at home. This contributes to the widening of the wage gap between the two sexes. The periods when women are not in the labor market with the aim to care their children, are considered by employers as a sign of non-productivity. Moreover, researches show that the wage gap is lower for people with higher education (university degree and higher degrees.).This percentage is 15.40%<sup>21</sup>.

Croatia, from July 1, 2013, will be the new European Union member. After years of efforts Croatia managed to reach the requirements for integration into the European Union. For Croatia the wage gap, according to the Central Bureau of Statistics to 2009, the average gross wage for men was 11% higher than that of women's. Such differences exist for several reasons: level of education, hours worked, position and professional experience. In 2010, the Average Monthly Gross Earnings for men was 8 044 kuna, while for women it was 7 223 kuna. This means that Women's salaries as a percentage of man is 89.5%

Finally, for Bulgaria, according to data from Eurostat 2011, the wage gender gap is greater at ages 35-44 at about 19.2%. The smallest gap occurs at ages under 25. In Romania, the largest gap occurs at the ages of 45-54, where the rate reaches 11.2% and the lowest at the ages below 25 years with 1.7%<sup>22</sup>.

The gender differences are observed in the rural sector too. Women do not have equal access to factors of production. According to a study by FAO 2011 if women had the same access to inputs as men's, productivity would be increased almost 20-30%. Overall production in developing countries would have a 2.5-4% increase and that would effect on reducing hunger in the world from 12 to 17%.<sup>23</sup>

# 3.3 THE ROLE OF WOMEN IN THE DECISION MAKING SECTOR

The percentage of the participation of women in the political life of the South-eastern European region is smaller compared with the levels of other European countries, although most countries have made efforts to increase gender equality. In Serbia, for example, a law was passed requiring the parties to include women in their ballots at a rate of 30%. The Montenegro has its first female Minister of Defence.

<sup>&</sup>lt;sup>19</sup> http://www.fren.org.rs/node/209?lang=en

<sup>&</sup>lt;sup>20</sup> Gender Inequalities in Pay – an Albanian Case, GADC Publication , 2012.

<sup>&</sup>lt;sup>21</sup> iluka Juna, Gender wage gap in Albania, Sources and recommendations, Pegi, 2011

<sup>&</sup>lt;sup>22</sup> http://epp.eurostat.ec.europa.eu/statistics\_explained/index.php?title=File:Table1\_Unadjusted\_gender\_pay\_gap\_by\_ age,\_2011.png&filetimestamp=20130228140907

<sup>23</sup> http://www.fao.org/docrep/013/i2050e/i2050e00.htm

Even in Macedonia FYROM there is an increasing pressure for greater participation of women in the political life<sup>24</sup>. In Kosovo, after the 2010 elections, women were represented in parliament in the proportion of 30%. In fact, the Prime Minister of Kosovo and 2 deputies prime ministers are women. In Serbia, by mid-July 2011, only 5% of mayors were women. In Macedonia FYROM at the elections of 2009, no woman was elected as a mayor. In the case of Montenegro and in the Council of Ministers, in the years 2006-2009, women held 6% of jobs and there was one woman of the 21 mayors. The positions occupied by women in the parliaments of the Balkan countries are presented in the following table.

Countries	Female	Total
Albania	22	140
Montenegro	13	81
Bosnia and Herzegovina	9	42
Bulgaria	50	240
Croatia	36	151
Greece	63	300
Romania	37	330
Russia	61	450
Serbia	81	250
Ukraine	36	450
Macedonia FYR	38	123

Source : http://w3.unece.org/pxweb/dialog/Saveshow.asp?lang=1

As seen from the above table, women are not well represented. In the majority of the countries, women do not exceed the rate of 30% of total seats, with the exception of FYROM and Serbia where women are represented slightly more than 30%. There is no doubt that there is an improvement compared to the past years, but these countries must make more steps to meet the standards of the European Union. In a world that changes with a rapid way, Balkan countries can not afford to proceed with baby steps<sup>25</sup>.

# 3.4 THE ROLE OF EU POLICIES FOR GENDER EQUALITY

All Balkan countries aimed at the accession to the European Union. Greece, Romania, Bulgaria are already members of the European Union and from 1 July 2013 the union will add a new member, Croatia. In order to obtain the member status, all countries are required to have certain economic, political and social standards. Balkans is a region with many problems such as weak political institutions, political instability, xenophobia, nationalism and lack of political culture as the countries of Western Europe. The new Member States face many economic problems such as corruption. Also, the privatization of enterprises still has not finished so there are many inequalities affecting mostly vulnerable social groups. One of these groups are women. The European Union supports and promotes gender equality in the candidate countries through policies that will improve the position of women in society at all levels. For example, in the case of Croatia and Macedonia FYROM, the Union helped voting a law concerning the establishment of institutions for racial equality and protection of gender equality. In Croatia was founded the Parliamentary Gender Equality Committee (2000), County and municipal commissions for gender equality (2003) while in Macedonia FYROM was founded a Women's Parliamentary Club

<sup>24</sup> http://www.setimes.com/cocoon/setimes/xhtml/en\_GB/features/setimes/features/2013/03/11/feature-02

<sup>&</sup>lt;sup>25</sup> All data were found in UN Women, at the country profiles.

(2003) and Municipal Councils (2000). Moreover in Macedonia FYROM was passed a Law on Equal Opportunities between Men and Women (2006), the Labor Relationship Law (2005) and in Croatia the government passed a law for Act on maternity and parental benefits (2009), Gender equality Act (2008) and Law on Domestic Violence (2003). Although laws exist, they are not sufficient. Especially, there is no political will to implement them while corruption complicates the process of implementing the laws. Gender equality is not a priority for the governments of these countries after focusing mainly on economic and political issues.

# 3.5 WAYS OF ENCOURAGING WOMEN'S PARTICIPATION IN THE KNOWLEDGE SOCIETIES

There is no single obstacle that leads to women's less participation in knowledge economy. The actions that could be taken are classified in different fields:

- a) Decision-making leaders can adopt policies and programmes that aid women to strengthen their participation in knowledge –based sectors. Policy measures should address to the full integration of the available female labour force, for example through non-formal education and capacity development programmes<sup>26</sup>. Moreover, it is essential that women activate in decision-making positions so as to promote positive female role models. Via the media, there could exist many ways for the promotion of a positive image for women about their further contribution to economy.
- b) It is a real fact that women are usually undereducated compared with male education level. The latest statistics show that 60% of countries have not reached gender parity in primary and second-ary education<sup>27</sup>. At this point, there is the issue for appropriate teaching methods and high-quality science and technology programmes. By this way, there could be feasible the creation of an attractive image for technology. Science and technology literacy are very important for a country that seeks to develop a knowledge economy.
- c) While many women enjoy successful and rewarding careers in various areas of science and technology, much more progress needs to be made<sup>28</sup>. Women should be encouraged to follow careers related to science and technology through career guidance and support from the state. There should be more access to information and more opportunities for the women who are interested in pursuing a career like this.
- d) At last, in the field of research, there is a lack of female researchers and women scientists in top managerial positions. This is observed almost in every country. It happens due to a series of factors; approach to productivity, performance measurement and the work-life balance. Such issues have to be examined because the people who have been educated and they have obtained certain qualifications have a lot to give to a country's advancement and to the economy.

# **Examples**

#### THE CHALLENGES OF TRANSITION IN BOSNIA-HERZEGOVINA'S ECONOMY

For Bosnia and Herzegovina understanding the impact of ICTs upon women and men is far behind others in the Central and Eastern Europe. This is because of a series of some factors.

- The country could not follow the development of ICT technologies because it was interrupted by the war in the early 1990s.
- Secondly, Bosnia and Herzegovina is a whole decade behind the time when development of ICTs
  was at its peak. Since this time, the country has been struggling with post-conflict reconciliation
  and reconstruction for shaping development
- <sup>26</sup> UNESCO Expert Group meeting: Gender, Science and technology, Women's and girl's access to and participation in science and technology, September 2010, page 11.
- <sup>27</sup> UNESCO Expert Group meeting: Gender, Science and technology, Women's and girl's access to and participation in science and technology, September 2010, page 5.
- <sup>28</sup> UNESCO Science, technology and gender: an international report, 2007.

It seems that technology instructors and educational system operate on the same principle, which greatly diminishes the potential and interest of young Bosnian women in technology. If we are to change this situation, one of the core tasks is to institute and develop capacity of female technology experts within primarily male-dominated Bosnia and Herzegovina ICT-provider organisations.

Despite the critical issues surrounding ICTs, such as a slow pace in technological development due to economic reasons, and lack of women's groups' involvement in ICTs networks, the country did achieve certain steps that could count as initially productive when it comes to the national ICT policy.

One world platform for South East Europe, a non-profit foundation based in Sarajevo, is one of those rare organisations in BiH that is already actively engaged in the promotion of gender equality and of women's empowerment through gender and ICT advocacy. OWPSEE began to tackle the question of gender and ICT in 2004, and just recently, together with their partner, Foundation for creative development, started with the project "Network for change". The project focuses on capacity building of women's and youth associations through training in policy and advocacy using new technologies, and stands as a unique opportunity for rising awareness of necessity to include gender dimension in the BiH ICT policy.

#### THE PROMOTION OF WOMEN'S PARTICIPATION IN THE FIELD OF INNOVATION AND TECHNOL-OGY IN THE CZECH REPUBLIC

In the Czech Republic, women are grossly under-represented in the higher ranks of decision-making posts and in the fields of IT. In 2007, there was organized a project by the Association of Progressive Communications (APC Europe) in order to promote an attractive image of the ICTs. The project aimed at secondary-school leavers, women willing to return to workplace after maternity leave and women attracted to Innovation and Technology but unconfident about the idea of pursuing such a career. This project included training sessions and discussions about the female stereotypes. Some women in high-level positions talked about their work and the diversity of professions in this sector<sup>29</sup>.

#### **EXAMPLES OF WOMEN BUSINESS IN THE CHANGING ECONOMY OF SLOVENIA**

Slovenia has changed its legislation in certain fields of economy, for instance in services and companies. This happened especially after 2004 when the country harmonized the legislation with EU. In addition with the previous situation when only the big companies functioned to the Slovenian economy, small private companies and entrepreneurs appeared. This resulted in the need for fiscally and legal counseling and advice. Finera Ltd was one of these new companies that provided this kind of services. Finera Ltd is a small family business that is female led and owned. The firm has managed to sustain and develop participating in law network. Cooperating with specialized suppliers and associated institutions, this company managed to contribute to the topical economic growth. After the year of 2000, due to the increasing competitiveness, Finera Ltd expanded its activities with the introduction of new services and the enlargement in other regions. This example, also, shows the risk that a small female company can handle and continue to be important actors in economy<sup>30</sup>.

#### **PURSUING RESEARCH CAREERS IN HUNGARY**

The "Harmonizing Child Rearing and Scientific Career "started in 2009 and based to the Hungarian Academy of Sciences. The initiative was to improve the work-life balance of researchers by helping women with children<sup>31</sup>. The effort was to promote the reconciliation of research and child care responsibilities by providing extra time for parents. This is important for women who are devoted to the rais-

<sup>29</sup> www.apc.org

<sup>&</sup>lt;sup>30</sup> Gill Scott, Women, Innovation and the Knowledge Economy, March 2011.

<sup>&</sup>lt;sup>31</sup> Gill Scott, Women, Innovation and the Knowledge Economy, March 2011.

ing of children and do not have the time to consider their work. Young researchers with a child, they get extra two years to apply for a HAS (Hungarian Academy of Science) fellowship/grant per child. Also, this is combined with better conditions of home working by providing outside computer access.

# 4. CONCLUSION

In a world that is constantly changing everybody need to adapt to the new challenges. Every country has to follow these trends if the aim is to be a player at the international economic development. The achievement of this goal can be augmented by the further contribution of women in economy. It is undeniable that women are important actors in development. Their consuming behavior, their social contribution and their participation in some other different aspects (education, politics) help the society and the economy to make great leaps of development.

According to the South East Europe Regular Economic Report that was released in December 2012, Albania, Bosnia and Herzegovina, Kosovo, the Former Yugoslav Republic of Macedonia, Montenegro, and Serbia are faced with a deep crisis, with a significant increase in unemployment and decline production. Unemployment rates reach more than 25% in 4 of 6 countries. These countries need to become more productive to activate dynamically in exports and to increase their competitiveness and of course creating new jobs. All these prerequisites are easier to achieve with the further participation of the total available workforce in the economy and better use of the skills of workers, namely the right people in the right positions. Women have much to offer in the economy. Although great improvements have taken place, governments should put fully the knowledge economy and the female workforce high on their agenda.

#### References

- 1. Handbook of the knowledge economy, David Rooney-Greg Hearn-Abraham Ninan, MPG Books Ltd, Bodmin, Cornwall, 2005.
- 2. An introduction to sustainable development, Peter P.Rogers-Kazi F.Jahal- John A. Boyd, Harvard University and Glen Education Foundation, 2006.
- 3. Science, technology and innovation policy: opportunities and challenges for the knowledge economy, Pedro Conceicao-David V.Gibson-Manuel V.Heitor-Syed Sharia. Greenwood Publishing Group Inc, 2000.
- 4. Gender wage gap in Albania, Sources and recommendations, Miluka Juna, Pegi, 2011.
- 5. Gender Inequalities in Pay an Albanian Case, GADC Publication, 2012.

#### Websites

- 1. www.unesco.org
- 2. www.wisat.org
- 3. www.worldbank.org
- 4. www.oecd.org
- 5. www.booz.com
- 6. www.economist.com
- 7. www.crpm.org
- 8. www.eurostat.org
- 9. www.apc.org
- 10. www.weforum.org
- 11. www.fao.org
- 12. www.unifem.sk

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# INNOVATIONS AS A FACTOR OF ECONOMIC DEVELOPMENT OF EUROPEAN COUNTRIES WITH EMPHASIS ON MONTENEGRO

#### Abstract

In the modern business environment, the need for creative and innovative activities is permanent. Innovations significantly affect effectiveness and efficiency of a company, its capacity, as well as the quality of goods and services. Actually, innovations are requirement of economic success and development of modern enterprise, and therefore they have the key impact on welfare of a whole society. In the conditions of fierce competitions and saturated market, companies that do not innovate are faced with stagnation. If we have in mind the fact that a healthy economy is the most important factor of economic development of a country, we can see how lack of innovation could negatively affect the whole society.

This paper analyzes innovativeness of European countries, and correlation that exists between their investments in R&D and their income. Precisely, it is explained how innovations effect the economic development of European countries.

Special consideration is given to Montenegro, as a country where, unfortunately, importance of innovations is still not completely understood. There is no significant investment in R&D by the government, or by the private sector, but situation is expected to improve in the future.

Key words: innovation, economic development, investements in R&D, creativity

#### **1. INNOVATION AND PRODUCTIVITY**

There are a lot of definitions of innovation. One of them says that innovation is something new that creates value. Peter Drucker, leading management guru, defines innovation as "a change that creates a new dimension of performance". He identifies seven sources of innovation: the unexpected, incongruities, process needs, industry and market structure, demographics, changes in perception and new knowledge. Michael Poter defines innovation as "a new way of doing things that is commercialized". Joseph Schumpeter defines innovation as "the doing of new things or the doing of things that are already being done in a new way." But, there is something that all definitions contain: the fact that innovation is of crucial importance for both economic growth and the growth of a firm. Moreover, modern growth theory identifies three key determinants of productivity growth: accumulation of physical capital, accumulation of human capital and a rate of innovation and technological change. The difference between "invention" and "innovation" is that invention is the creation of a new idea, and innovation is turning the new idea into commercial success or widespread use.

Globalization, growing international competition, the information revolution and technological changes is something that describes today's environment. In that situation, innovations became more and more important because they offer a chance for firms and countries to be different and better. In-

novating firms can increase their efficiency and improve the goods and services they offer, and on the other side they can reduce the costs of production. Countries that create innovative environment are those that are experiencing high growth rates of GDP. A lot of studies prove that those variables are positively related.

Evolution in models of innovation can be observed. In the period 1950-1960, the largest number of innovations was created as a result of research and development. That model was called science-push. In the period 1960-1970, dominant model was demand-pull what means that innovations were created as a result of identifying problems in demand. From 1980s the main model was combination of science, technology and market. From 1990s dominant model was integration model and after that net-model. Net-model means that there is a connection between organizations, development of multifunctional teams in organization or between organizations and combination of individual and group creativity.

Today, innovation is regarded as one of the key factors of competitiveness, both at the level of the national economy, and that of the business system. From the standpoint of the national economy, the importance of innovation is reflected in the fact that improves the national productivity. Productivity is a measure relating a quantity or quality of output to the inputs required to produce it. It means an effort to deal with a given quantity of inputs and achieve the maximum amount of outputs. Productivity measures the efficiency of production. Measuring productivity depends on the available data and the purpose of analysis. There are several aims of productivity measurement: national assessments and international comparisons, understanding the dynamics of standards of living, change of multifactor productivity is an important element in modeling the production capacity of a country. The most commonly used measures of productivity are: labor productivity based on gross value added, productivity of labor and capital, multifactor productivity (capital-labor-energy-materials-services). At the level of the total economy, gross domestic product (GDP) is the generator for the calculation of productivity.

Labor productivity is the most important factor of economic growth. Economic growth involves examination of the causes and consequences of the continued growth of gross domestic product. Economic development includes the process of development in which GDP per capita of a country increases and countries become more industrialized. The values of these indicators will be high, if countries put emphasis on their competitiveness. Countries should try to improve their competiveness which means the ability to achieve success in the markets in order to increase the standard of living over time. Countries can become more competitive by improving their achievements in a wide range of factors that affect productivity growth. This applies to innovation, creating a favorable legislative environment, and transfer or adoption of a new technology, education, entrepreneurship, or new businesses.

The lack of innovation in the use of new technologies and a new product development, high costs, and a lack of information about the needs of the market affect the poor productivity and economic growth of Montenegro measured by low level of GDP per capita. Accordingly, enhancing the productivity and competitiveness of Montenegro can be achieved by strengthening the SMEs (small and medium enterprises), with the main focus on the key actors of development - innovation and technological development.

#### 2. INNOVATION INDICATORS OF EUROPEAN COUNTRIES

There are a lot of ways of measuring how innovations contribute to the economic growth and development. Before we move on to the Global Innovation Index, which is the central section of this paper, we will try to display the innovativeness of European countries using some separate indicators, in order to get general overview which countries are leaders in this area. Firstly, the most frequently used measure of innovativeness- **Gross domestic expenditure on R&D**, also known as **GERD** is being discussed. GERD is defined as current and capital expenditures on creative work undertaken systematically to increase knowledge, including knowledge of humanity, culture and society, and the use of knowledge for new applications.<sup>1</sup> Main advantage of this indicator is its universality, which originates from the fact that GERD is the sum of the R&D expenditures of the four economic sectors- business enterprises, government, private non-profit organizations and higher education industries.<sup>2</sup> Figure 1 shows the GERD as a percentage of GDP for 28 European countries in the 2010.



Figure 1: GERD as a percentage of GDP for 28 European countries. 2010<sup>3</sup>

As we can see from the figure above, according to this indicator the leading countries are Scandinavian countries- Finland, Sweden and Denmark (above 3%), followed by Germany, Austria and France, which belong to the group of most developed European countries. It is interesting to note that Slovenia (former Yugoslav republic) is above average of European Union, while the United Kingdom is below average. This data, in general confirms the hypothesis that countries with high investments in R&D are at the same time the most developed countries, with few exceptions mentioned above. Another data marked on the chart 1 is the Europe 2020 target. As it has already been mentioned, Europe 2020 is the EU's growth strategy for the coming decade in order for EU to become a smart, sustainable and inclusive economy. One of the five objectives of this program is the innovation, which includes objective mentioned above- EU countries should achieve GERD at the level of 3% of the GDP. This shows the importance of investments in R&D for the whole community.

Another interesting indicator is **the number of patent applications** submitted by the countries in one year. Data refers to the applications filed directly under the European Patent Convention or applications filed under the Patent Co-operation Treaty and designated to the EPO (Euro-PCT). Figure 2 shows the number of patent applications per country submitted in 2010.

<sup>&</sup>lt;sup>1</sup> http://data.worldbank.org/indicator/GB.XPD.RSDV.GD.ZS (accessed on May 16, 2013)

<sup>&</sup>lt;sup>2</sup> http://epp.eurostat.ec.europa.eu/statistics\_explained/index.php/Glossary:Gross\_domestic\_expenditure\_on\_R\_%26\_D\_(GERD) (accessed on May 16,2013)

<sup>&</sup>lt;sup>3</sup> http://epp.eurostat.ec.europa.eu/portal/page/portal/science\_technology\_innovation/introduction (accessed on May 16,2013)



Figure 2: Number of patent applications per country submitted in 2010<sup>4</sup>

This data also confirms the fact that countries which are investing a lot in R&D are the ones which are the leaders in economic development in Europe. Again, at the top of the ladder are Scandinavian countries as well as some of the most developed countries from the West and Central Europe. However, elusive leader is Lichtenstein, country from the Central Europe.

All in all, every indicator that is related to innovations points, more or less, at the same conclusion- the more countries invest in R&D, the more they are developed. Finally, the analysis moves on to the Global Innovation Index, which is the overall indicator of the country's innovativeness.

# 3. INNOVATION AS DETERMINANT OF ECONOMIC DEVELOPMENT

The Global Innovation Index (GII) is the result of cooperation between one of the world's leading and largest graduate business schools, INSEAD and World Intellectual Property Organization (WIPO), a specialized agency of the United Nations. Economic growth is determined by a lot of factors, and one of them is innovation, which has become very important in the period of globalization and growing international competition. Importance of the Global Innovation Index is in the fact that it helps creating an environment in which innovation factors are under continual evaluation and provides a key tool for refining innovation policies. The report pays attention to what companies and countries are doing and what they should be doing in order to stimulate and support innovation. This Index is one of the many research studies that build a ranking of countries related to innovation. The top three countries among all different indexes are Switzerland, Sweden and Singapore. The last Global Innovation Index Report was published for the year 2012 and the analyses are based on this Report.

The Global Innovation Index is a simple average of two sub-indexes: Innovation Input Sub-Index and Innovation Output Sub-Index. Both of them consist of several pillars. Innovation Input Sub-Index is a simple average of five pillars which presents enablers of innovative activities in one national economy: Institutions, Human capital and research, Infrastructure, Market sophistication and Business sophistication. Innovation Output Sub-Index measures results of innovative activities and it is also a simple average of two pillars: Knowledge and technology outputs and Creative outputs. Although the Output Sub-Index includes only two pillars, it has the same weight in calculating the overall GII scores as the Input Sub-Index.

<sup>&</sup>lt;sup>4</sup> http://epp.eurostat.ec.europa.eu/portal/page/portal/product\_details/dataset?p\_product\_code=TSC00032 (accessed on May 16,2013)

The Figure 3 presents the structure of Global Innovation Index:



Figure 3: The structure of Global Innovation Index<sup>5</sup>

Whereas the aim of this analysis is to indicate the connection between innovation and economic growth (measured by GDP/pc) in this chapter will be given the comparative review of the GII level in several European countries. Analysis is based primarily on comparison between Montenegro and countries of the region (Serbia and Croatia), Estonia (which is often used as a benchmark when we talk about economic development of Montenegro)<sup>6</sup>, Switzerland (as the country with the highest level of GII), the most developed countries of the EU (Germany, France and the United Kingdom) and countries with lowest GDP/pc in the EU (Bulgaria and Romania).

In table 1 is given the review of GDP/pc in 2012 as the measure of economic development of above mentioned countries and the score and rank on the Global Innovative Index list for the 2012:

		Global Innovative Index	
	GDP per capita (US\$)	Rank	Score
Montenegro	7,317	45	40.1
Serbia	6,081	46	40.0
Croatia	14,457	42	40.7
Estonia	16,583	19	55.3
Switzerland	81,161	1	68.2
France	44,008	24	51.8
Germany	43,742	15	56.2
United Kingdom	38,592	5	61.2
Bulgaria	7,202	43	40.7
Romania	8,863	52	37.8

Table 1: Com	parative revie	w of 10 selecte	d countries
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6 Montenegro and Estonia are both former socialist, small and open economies. They both have intensive cooperation with countries in the region. Difference is in the fact that Estonia had revolutionary transformation to the market economy, but Montenegro had evolutionary approach to market economy and the result of that process is different.

<sup>5</sup> http://www.globalinnovationindex.org (accessed on May 16, 2013)

Analysis shows a high degree of correlation between GDP/pc (which represents the level of economic growth) and the score of Global Innovative Index (which represents the level of innovation in one country). The correlation coefficient between the GDP/pc and the score of Gll is 0.89<sup>7</sup>, which means that there is a very strong linear relationship between these two economic indicators, as can be seen from the graph below.



Figure 4: Relationship between the GDP/pc and the score of the GII

It means that those countries which recognize the importance of innovation and invest in it benefit from this activity in form of economic growth. But, it is understandable that situation with less developed countries is different. Those countries are faced with a lot of obstacles and they often do not have enough resources to innovate. They can benefit from innovation only after they reach certain level of development. So, in those early phases of economic development it is very important for them to be able to understand the importance of innovations and to be open for them. For those countries is very important the support of government in the field of innovation.

Switzerland has the highest level of GII in the world which makes it the most innovative country. In almost every pillar it has one of the top 10 positions. Its only weakness is the Institutions pillar rank (13<sup>th</sup>), because of poor showing in the ease of starting a business and of resolving insolvency. But, the fact that its economy is based on knowledge and that Switzerland has one of the highest GDP/pc makes it a friendly environment for innovation and makes easy transformation of innovation input to innovation output.

# 4. THE IMPORTANCE OF INNOVATION FOR MONTENEGRO

According to the same index (GII 2012) Montenegro is the 45<sup>th</sup> most innovative country in the world. Being a country in transition, Montenegro has had various challenges in improving its economy. Unlike many other developed countries of the world, there is no significant investment in R&D by the government, or by the private sector. But still, Montenegro shows openness to innovations and changes which has been recognized by the EU and Montenegro has often been praised for being an open economy and for its willingness to make changes. Montenegro is the EU candidate country and has a lot to work on prior to becoming a member country. One of the things that are preventing the growth and development of Montenegrin economy is the lack of support for R&D activities. Studies show that private sector in developed countries is the main generator of innovation. In Montenegro there is no much expendi-

<sup>7</sup> Coefficient calculated using the statistical package EViews 5.0

ture on R&D in the business sector, due to global financial crisis, but also poor economic conditions in the country. In 2010 the GERD in Montenegro was 6.5 million EUR, which makes 0.21% of GDP.<sup>8</sup>

One of the main factors of innovation is expenditure on R&D and on education. In Montenegro most of expenditure on R&D goes to basic research, which is theoretical work undertaken primarily to acquire new knowledge of the underlying foundations and phenomena and observable facts, without any particular application or use in view. Montenegro is also limited by the country size, but as it can be seen from the previous chapter, Switzerland is the most innovative country in the world, regardless its size.

Innovation outputs are the results of innovative activities within the economy. There are two output pillars: Knowledge and technology outputs (this pillar was labelled 'Scientific outputs' in the 2011 GII) and Creative outputs.

The pillars of GII show that Montenegro is among the top countries in the world when it comes to Knowledge Impacts and Creative outputs, which are the most relevant for measuring innovation output. Montenegro has the score of 71.3 in Online Creativity, which makes it the 10<sup>th</sup> best country by this criterion. Montenegro is ranked as the 1<sup>st</sup> country in sub-pillars *Generic top-level domains (TLDs)/th. pop. 15-69* and *Country-code TLDs/th. pop. 15-69*. These two sub-pillars focus on creation of internet sites. That is really important for generating innovations, since the Internet itself has been a great innovation, and it is a place where many innovations take place nowadays.

Montenegro has a good score in *Human Capital & Research* pillar, being ranked 29<sup>th</sup> in the world. It has a really good score in Tertiary education, which is mostly because of increased number of college graduates in recent years. But still, even though education is the most important input for R&D, Montenegro does not have a good score in *R&D* sub-pillar; it is ranked as a 45<sup>th</sup> country in the world. Problems that Montenegro has are visible from the GII's sub-pillar on *Knowledge diffusion*, which reveals how good country is in diffusing knowledge. On the other hand, the country is ranked as 32<sup>nd</sup> in the world in knowledge absorption.

It has already been said that investing in education is the input for R&D activities, and therefore the input for innovation. Table 2 shows the number of finished scientific papers in Montenegro for the period from 2000 to 2010.

Year	Number of Scientific papers
2000	60
2001	70
2002	84
2003	192
2004	216
2005	47
2006	62
2007	44
2008	59
2009	72
2010	87

Table 2: Number of scientific papers (2000-2010)9

<sup>8</sup> http://www.gov.me/ResourceManager/FileDownload.aspx?rld=112145&rType=2 (accessed on May 17, 2013)

<sup>9</sup> http://www.monstat.org/cg/page.php?id=77&pageid=77 (accessed on May 18, 2013)

The table shows that there are very few scientific papers in Montenegro per year, but in the last 5 years, the number of published scientific papers has increased and there is a positive trend.

WIPO ranks Montenegro as the 161<sup>st</sup> country by Intellectual Property activity for 2011. Data from the 2012 report shows that there have been 1,179 patent applications in Montenegro since 2008.<sup>10</sup> That is a small number, but that has been a significant growth in patent applications when compared to the period prior to 2008.

Overall, there is little R&D activity in Montenegro which is due to many factors. But in the coming period, period of Montenegro's integration to the EU, there will be more expenditure on education, R&D and support towards creating an innovation friendly environment. In the last few years, even though by a small percentage change, there has been an increase in R&D as percentage of GDP. As it has been presented before, it is not easy for a less developed country to invest in R&D, and therefore generate innovations, so that becomes a *circulus vitiosus*. But Montenegro should put emphasis on supporting the small and medium enterprises (SME) in order to encourage the SMEs to make small innovations since that it also really important for one country's innovativeness, and therefore economic growth.

# **SUMMARY**

Innovation is often defined as "new ideas that add value", so this automatically means that innovation is a driving force behind growth. There are various ways to measure innovation and innovativeness, and this paper presented the methodology of the Global Innovation Index, which was used to explain Montenegro's position compared to countries in the Balkans and in the EU. One way to measure how innovation affects the economic growth and development is by presenting the Gross Expenditure on Research and Development as a percentage of GDP. Studies have shown that the more countries invest in R&D, the more innovations there are, and higher the economic growth.

# References

- 1. Baćović M., and group of authors, **Inovacije i ekonomski rast**, paper for the 3<sup>rd</sup> Conference on Employment through Entrepreneurship, Podgorica
- 2. Drucker P., Inovacije i preduzetništvo: praksa i principi, PS Grmeč, Beograd (1996)
- 3. Hippel E., The sources of innovation (2007)
- 4. Ivanović P, Strategijski menadžment, Ekonomski fakultet, Podgorica (2007)
- 5. Jones R. G., George M. J., Essentials of Contemporary Management, 4th ed. (2011)
- 6. Lajović D., Vulić N., Vulić N., Nikolić N., **Osnove biznisa**, Ekonomski fakultet Podgorica, Podgorica (2008)
- 7. OECD, Innovation and Growth Rationale for an Innovation Strategy (2012)
- 8. OECD (2008): Science and technology industry outlook, OECD, Paris
- 9. Petković M., Janićević N., Bogićević M. N., **Organizacija**, Centar za izdavačku delatnost Ekonomskog fakulteta, Beograd (2010)

<sup>&</sup>lt;sup>10</sup> http://www.wipo.int/ipstats/en/statistics/country\_profile/ (accessed on May 17, 2013)

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# ANALYSIS OF POTENTIAL OF THE KNOWLEDGE ECONOMY FORMATION IN UKRAINE: INTERNATIONAL EXPERIENCE AND NATIONAL PRIORITIES

#### Statement of the problem

In modern society the ability to generate, use and spread new knowledge is the basis of national competitiveness and the basic precondition for accelerated socio-economic growth. The strategy of the development of information-knowledge society is today the priority of socio-economic policy of the developed countries, allowing them to take full advantage of opportunities that are opening before them through the transition to a new type of post-industrial society – information society. A special type of economy – the knowledge based economy – serves as an economic foundation for this society. Current problems of economic development are connected with intellectualization of labor, prioritizing the processes of production of new knowledge that can provide steady development and socioeconomic progress for the Ukrainian society.

One of the key factors in accelerating the pace of technological development is the availability of knowledge that is one of the most important conditions for the participation of a state in the global competition. In times of crisis, knowledge is the resource that becomes important not only as the level of intellectual abilities, but also as an economic resource, which becomes a means of innovation creation and implementation.

Keywords: knowledge economy, potential, Knowledge Economy Index.

#### **ANALYSIS OF RECENT RESEARCHES AND PUBLICATIONS**

In recent years the term "knowledge economy" can be found in many international and national scientific works; as a rule, it is used to define such type of economy in which knowledge plays crucial role, and the production of knowledge is a key factor of economic growth. In the context of economic theory, special attention deserve such representatives of neoclassical economics as G. Becker, E. Denison, P. Drucker, L. Edvinsson, F. Machlup, T.Sakaiya, T.Stewart and many others.

Significant contribution to the study of the knowledge economy problems made Russian scientists: O. Gaponenko, V. Gluhov, V.Inozemtsev, V.Makarov, B. Milner and others.

The problems connected with the development of the knowledge economy in Ukraine were researched in the works of Yu. Bazhal, A. Halchynskyi, V. Heyts, G. Zadorozhnyi, L. Musina, L. Fedulova and others.

Despite a large number of scientific works and substantial achievements in the knowledge economy, there still remain questions regarding the use of the experience of other countries that consider themselves to be the ones with knowledge economy and identifying by Ukraine the priorities of innovation development. The goal of the article is to identify the key factors of knowledge economy formation using the examples of several countries that consider themselves the countries with the economy in which most of the gross domestic product is provided by production, processing, storage and spreading of information and knowledge.

#### **THE MAIN MATERIAL**

The problem of improving the competitiveness of the Ukrainian economy is extremely important, taking into account the fact that in its quantitative and qualitative macroeconomic parameters and business environment it remains considerably behind not only the developed countries but also the former Soviet Union republics. Under globalization, Ukraine remains poorly connected to global flows of capital, innovation and information. Not perfect institutional regime and lack of economic incentives that give rise to innovation generate weak ability for absorption of new technologies, innovative ideas and attributes of civil society. In other words, while the leading countries of the world are transiting to the innovative society, Ukraine remains the country of raw materials with extremely high inertia not only in generation, but also in spreading knowledge, turning it into innovation and using foreign innovative decisions [4].

The term "knowledge based economy" or intellectual economy reflects the recognition of the fact that scientific knowledge and unique skills of its carriers are the main source and key factor in the development of material and non-material production ensuring in such a way sustainable economic development.

The concept of the knowledge economy was formed in the process of analytical generalization of economic development patterns of the world community over the last 15-20 years. This period is characterized by unprecedented growth of influence of science and new technologies on socio-economic development of all countries. The information revolution technologies got the most prominent place in these processes that led to perception of post-industrial society as information one; biotechnology, medicine, technologies of creation and spreading of new materials, transportation, astronautics, communication, financial intermediation, etc. were no less successful. So, the tendency of the formation of modern society is clearly defined: the transition from the raw-materials and industrial economy to the knowledge economy based on intellectual resources and science intensive and information technologies [10].

There appears a situation where services play a major role in economic and social life, creating in the developed countries up to 70% of workplaces. It becomes possible due to the formed and developed national innovation system which includes four components of innovation potential (the potential of learning, the potential of knowledge generation, the potential of knowledge spreading and the prospective demand for knowledge). The potential of learning refers to the ability to acquire new knowledge and adapt imported technologies.

The research potential is important not only for generation of new knowledge, but also as a mechanism for knowledge introduction and learning. Spreading of knowledge is the main mechanism by which economic benefits from investments into research design-development work and from the increasing potential of knowledge learning is realized. The demand for innovation is the key economic mechanism that initiates processes of wealth generation and learning and spreading of knowledge.

The important condition is also the provision of sufficiently high volume of financial resources for innovation support from the country's budget and incomes of entrepreneurs, well-organized domestic market and favorable conditions for exporters [9]. Such an approach creates overall positive climate for innovation development and introduction, which is also assisted by a wide network of innovation support institutions among small and medium enterprises at both national and regional levels.

Industries that produce not goods but services are getting bigger. These were the latter that have become the main object of sale in the post-industrial society, and information and knowledge are becoming main production resource. Radical changes connected with replacement of labor by knowledge lie in the fact that in the context of globalization, when knowledge is involved into practical processing of resources, it is knowledge, not labor, that is the source of value [8].

The essence of the knowledge economy concept is the use of knowledge to produce globally competitive new products and technologies.Development of the knowledge economy serves as the essential condition for the formation of information society. The knowledge economy is the economy that creates, spreads and uses knowledge to ensure its growth and competitiveness. In such economy, knowledge enriches all branches, all sectors and all participants of the economic process. It not only uses knowledge in various forms, but creates it in the form of scientific and high-tech products, highly qualified services and education [2].

The main factor of economic development in most European countries is the intellectual component – human knowledge that eventually causes growth of labor productivity and acts as a determinant of economic growth under the current circumstances. If intelligence is becoming the main resource and the driving force in the knowledge economy, then the innovation system is the medium that provides transformation of the intellectual activity results into profitable production activity and further development. From the effective organization of innovation activity depends how efficiently scientific and education institutions work in order to improve national competitiveness, economic growth and structure [6]. Synthesis of the international organizations approaches, proposed by global and European practice of views on the components of the knowledge economy allows to determine the five key elements:

- Economic incentives and institutional regime that encourage effective use of national and global knowledge in all sectors of the economy;
- Quality and uninterrupted education for the entire population in order to create highly qualified society of mobile and creative individuals;
- Effective innovation system that combines business, scientific and other research centers and educational institutions into a single complex;
- Dynamic information infrastructure that provides information and communication services to economic agents, government institutions and all segments of the population;
- State as the initiator and coordinator of the knowledge economy formation and development.

The high competitive status of countries is formed, first of all, by knowledge (educational) and research factors and technological innovations. Education development and personnel training, human resources, labor markets and financial system significantly affect the state of the system; the level of importance of investment into scientific potential is increasing.

According to the Organization for Economic Cooperation and Development (OECD), at the present stage of social development, investment in knowledge increases much faster than investment in fixed assets. In order to study the processes that occur in the process of knowledge economy development, OECD proposed the following indicators:

- · Development of high-tech sector of economy, innovation activity;
- The size of investments in the knowledge sector: the costs of higher education, scientific research, experimental development, as well as software development;
- · Development and production of information and communication equipment, software and services;
- · Growth of employment in science and high technology fields;

- · Volume and structure of venture capital;
- Participation of private capital in financing research and development activities and experimental development;
- The structure of costs for research and development work and experimental development according to the stages of research (basic and applied ones);
- International cooperation in science and innovation;
- · Increased cooperation between the business community, research organizations and universities;
- Interstate exchange of results of inventions;
- · Mobility of researchers, highly qualified experts and students;
- · Increased amount of financial transactions;
- · Distribution of information and communication technologies;
- The share of high-tech manufacturing and high-tech services and more.

In its turn, the World Bank proposed to assess the level of readiness of countries for transition to the knowledge economy through Knowledge Economy Index (KEI). The calculation of this index is based on the definition of arithmetic mean of four aggregate indices:

- economic incentive and institutional regime (EIIR)
- innovation system (IS)
- education and human capital (EHC)
- information and communication technology (ICT).

The normalized rate for each country is calculated as the ratio of the number of countries the performance of which is worse than that of the given country, to the number of all the countries concerned. The calculated index ranges from 0 to 10. Information on the Knowledge Economy Index, calculated according to the data of 145 countries, is posted and perpetually updated on the official website of the World Bank since 1995 [1]. Table 1 presents the summary data of these indices for Ukraine compared to other countries.

Table 1 – Raiting of the	countries according	to the Knowledge	Economy Index	(2012) [1]
5	<u> </u>	<u> </u>	,	

Raiting	Country	KEI	EIIR	IS	EHC	ICT
1	Sweden	9,43	9,58	9,74	8,92	9,49
2	Finland	9,33	9,65	9,66	8,77	9,22
3	Denmark	9,16	9,63	9,49	8,63	8,88
4	Netherlands	9,11	8,79	9,46	8,75	9,45
5	Norway	9,11	9,47	9,01	9,43	8,53
6	New Zealand	8,97	9,09	8,66	9,81	8,30
7	Canada	8,92	9,52	9,32	8,61	8,23
8	Germany	8,90	9,10	9,11	8,20	9,17
9	Australia	8,88	8,56	8,92	9,71	8,32
10	Switzerland	8,87	9,54	9,86	6,90	9,20
14	Great Britain	8,76	9,20	9,12	7,27	9,45
22	Japan	8,28	7,55	9,08	8,43	8,07
55	Russia	5,78	2,23	6,93	6,79	7,16
56	Ukraine	5,73	3,95	5,76	8,26	4,96
59	Belarus	5,59	2,50	5,70	7,37	6,79
110	India	3,06	3,57	4,50	2,26	1,90

Analysis of the data indicates that Ukraine is close to the developed countries only in terms of education and human capital. What draws attention is the very low level of institutional regime. This is connected, according to the expert opinion, with poor quality of such institutions as protection of property rights, including intellectual ones, independence of the judicial system, public confidence in politicians, transparency of government decisions, the burden of government regulation, effectiveness of corporate governance, organized crime [7].

It should be mentioned that our state inherited from the former Soviet Union powerful production and scientific and technical base, significant reserves of natural resources, skilled workforce. This allowed Ukraine to remain for a long time the world leader in mechanical engineering, metallurgy, chemical industry, production of military equipment, aircraft building and space technology. But over the years, factors that provided competitive advantages are gradually running out. There is a need for support of strategic sectors of the economy by the state, because it is the state that plays the leading role in the innovative development of the national economy.

Unfortunately, the innovation component in the Ukraine's economy is reduced each year, and today it is less than 6%, while in the EU the component makes up more than 60%, and in the U.S. it accounts for 78%. In the developed countries, over 90% of the GDP increase is provided by the introduction of new technologies. Ukraine's share in the high-tech products market, which is estimated at 2.5-3 trillion US dollars, is approximately 0.05-0.1% [5].

According to the State Statistics Committee, the number of organizations that performed scientific research and development increased in 2012 compared to 2000 by 23.3%. The number of researchers over the same period fell by 32.1%, despite the fact that the number of Doctors of Philosophy in economics increased by 44.1% and candidates of science, by 44.6%.

Every year, innovation activity of enterprises is reduced. In 2000, the share of enterprises engaged in innovation was 18.0% and in 2012 it made up 17.4%. The share of technological innovation funded by the state at the end of 2012 was only 1.9%. The own funds of enterprises are still the main source of technological innovation funding. [3]

The main problems that hinder Ukraine's transition to innovative development model are as follows:

- 1. At the national level, priority strategies of science and technology development are not defined. As a result, the state budget aimed at scientific research is used inefficiently as the research is performed at the discretion of the customer and the executor.
- 2. The national industry is not ready for introduction of modern technology because of the need of substantial re-equipping.
- 3. Issues of the core funding of basic research are not regulated by law. The priority is to fund current needs of the basic research field, rather than introduction of results of scientific and technological activities into production and economic circulation. In order to maintain the number of scientists, the priority is given to labor expenditures; the expenditures for the purchase of necessary materials, raw materials and reagents are almost not planned, making it impossible to conduct research.
- 4. Destroyed system of interaction between science, education and production; insufficient funding of academic and industrial science; outdated physical infrastructure.
- 5. Imperfect commercialization mechanism of the developments funded by the state. The results of research are not brought to the economic entities, are not implemented at the national level, that causes loss of economic benefit derived from new scientific knowledge and developments.
- 6. State structures, in fact, do not coordinate or monitor the results of research; there are no real customers for scientific developments.
- 7. The low efficiency of state administration and regulation of the economy, the existence of substantial administrative barriers prevent the full development of the institutional components of

the innovation system.

8. Fragmentary national innovation infrastructure: operation of several scientific and technological parks and business incubators.

Taking into consideration the European integration vector of Ukraine, there have been investigated the level of readiness of Ukraine's transition to the knowledge economy and the directions of economic development with the account of the experience of individual countries. The results are presented in Table 2.

Country	Japan
Model	Industrial - Agricultural
Characteristics	Practical application of innovations
Key factors of	Development of advanced technologies and their implementation in quality and
the successful	affordable goods;
knowledge	Common standards and compatibility of products;
economy es-	Toyota production system;
tablishment	Economical production, production with zero inventory;
	The ability for constant changes to meet the needs of the market;
	No reject, "right thinking", lifelong learning
Country	India
Model	Agricultural - Industrial
Characteristics	Industrialization + Building of knowledge economy
Key factors of	Main product: services
the successful	Focusing on internal development
knowledge	Development of the IT industry due to the absence of language barrier; cheap la-
economy es-	bor;
tablishment	Low barrier of entry to the IT market;
	Reduction of import tariffs; reduced restrictions for the activities of foreign compa-
	nies;
	Even development of knowledge and industry;
	Implementation of knowledge and production processes;
	Creation of relaxed and creative atmosphere;
	Distribution of productive forces;
	Infrastructure development through investment in industrial sector
Country	Finland
Model	Industrial - Agricultural
Characteristics	Manufacturing + High level of rapid acquiring of new technologies
Key factors of	Investments in the development of long-term projects;
the successful	Deregulation of cash flows; as a result, increase of investment;
knowledge	Creation of private investment funds;
economy es-	Clear response to changes of market conditions;
tablishment	Systems approach; creation of a number of innovative structures;
	Forecasting of the needs of the knowledge economy;
	Continuous upgrading of technologies as the basis for long-term growth;
	Focusing on securing competitiveness in priority areas;
	High level of social consciousness; openness to new ideas and technologies;
	Promotion of domestic competition;
	inotivation as the result of competent social policy (education);
	Clear, interconnected work of state institutions;
	Infonitoring of innovation market;
	Orientation of the education system on production needs;
	Ability to use complex crisis situations as possible ways for economic growth;
	Continuous improvement of technologies

Table 2 - Key factors of the successful knowledge economy formation in individual countries

Country	United Kingdom
Model	Mixed
Characteristics	Prevalence of the services market. Main productive resources: information, knowl- edge
Key factors of the successful knowledge economy es- tablishment	Selling of strategies: provision of consulting, banking, educational, arts and design services; Development of financial centers: commodity and financial exchanges; Ability to learn and adopt the best from others; Minimal government intervention, favorable investment climate; English language and education as strategic goods; Strong university system; Unusual approach to problem solving: dealing with distressed companies, not their isolation; State responsibility, transparency of operations and stable clearly regulated legisla- tion framework; Simplifying of tax system; Refusal from inefficient financing (refusal to support disappearing industries) and investments in new long-range industries; Creation of local business enterprises as the result of splitting of inefficient industry giants; state support of these enterprises; Creation of favorable investment environment for foreign companies; Requirement from businesses of accurate reporting about business income and fear of in text
	Requirement from businesses of accurate reporting about business income and financial state.

Taking into account Ukraine's gap in components of competitiveness and given the European integration vector of Ukraine's development – namely, the transition to the knowledge economy – the main areas of reform in the knowledge based economy development must be: creation of economic incentives and institutional environment; preparation of the society of highly qualified, mobile and creative individuals; development of dynamic information infrastructure; formation of effective innovation system and favorable business environment that stimulate innovation and entrepreneurship; creation of new cultural environment that is most appropriate for the economic development policy based on knowledge. Expansion and activization of innovative scientific and educational activities, support of new ideas, knowledge and technology, readiness for the creation and implementation of multifunctional innovations into scientific and educational practice depend directly on practical realization of state innovation policy, as the state is not only able, but obliged to take effective measures to ensure the conditions for the development of the national knowledge economy.

In order to create modern national innovation system it is necessary:

- 1. To identify legislatively the strategies and to concentrate innovation and investment policy on them.
- 2. To create the competitive research and development sector; to create conditions for its expanded reproduction.
- 3. To introduce the system of economic incentives for the integrated modernization of the economy based on technological innovation.
- 4. To improve normative legal acts that regulate the use of scientific and technical information, including copyright protection of unpublished research results (scientific and technical reports, documents, etc.).
- 5. To develop legislative conditions of use of intellectual property and scientific research results obtained for the state funds, that accelerates the commercialization of research results.
- 6. To provide necessary conditions for the development of venture businesses.
- 7. To develop measures of tax incentives, antimonopoly, customs and financial control and technical regulations of innovative investment activities.
- 8. To improve accounting system of intellectual property objects and statistical reporting in invest-

ment and innovation.

- 9. To develop the assessment system of the innovation and investment effectiveness.
- 10. To provide and implement the control functions of the state in legitimacy and effectiveness of funds allocated to innovation and investment.

## **CONCLUSION**

The concept of the knowledge economy has become today the main theoretical basis of the economic growth policy. It reveals the new role and the new place of human intellect in society. With accelerated growth of technology, availability of knowledge becomes essential for the country's participation in global competition.New technologies can have positive impact on the economies of countries, regardless of their level of development, as evidenced by the experience of the UK, Finland, Japan and India, which with the help of effective education systems have successfully found their information technology segments that allow them to be competitive on the global market. From this perspective, Ukraine's success in achieving competitiveness depends on its ability to adapt its potential in creation, use and spreading of knowledge to the needs of the global economy as quickly as possible.

## Literature

- 1. Knowledge for Development, World Bank, 2012// http://info.worldbank.org/etools/kam2/KAM\_ page5.asp
- 2 Гапоненко А. Управление знаниями. Как превратить знания в капитал / А. Гапоненко, Т. Орлова. — М. : Эксмо, 2008. — 400 с.
- 3. Державний комітет статистики України : Режим доступу: http://ukrstat.gov.ua/
- 4. Дзяд О.В., Європейські засади для розбудови економіки знань в Україні/О.В. Дзяд // Вісник Дніпропетровського університету. – 2009. – №10. - С.27 – 33.
- Звіт про результати аудиту ефективності використання коштів Державного бюджету України, виділених Міністерству освіти і науки України на наукові дослідження. – Київ : Рахункова палата України, 2009.
- 6. Конкурентоспроможність економіки України: стан і перспективи підвищення /за ред. д-ра екон. наук І. В. Крючкової. К., 2007. 488 с
- Пенькова И. Экономика знаний:институциональные трансформации [Електронний ресурс] / И. Пенькова. – Режим доступу:http://www.nbuv.gov.ua/Portal/Soc\_ Gum/eprom/2009\_44/st\_44\_02.pdf
- Сакайя Т. Стоимость, создаваемая знаниями, или История будущего / Т. Сакайя // Новая постиндустриальная волна на Западе. Антология / под ред. В. Л. Иноземцева. — М.: Academia, 1999. — 640 с.
- Федулова Л.І., Корнєєва Т.Н Особливості економіки знань на сучасній фазі розвитку суспільства:теорія і практика розбудови в Україні/ Федулова Л.І., Корнєєва Т.Н // Актуальні проблеми економіки. - 2010. - №4(106). -73 -86.
- Шульга Ж.О.,Особливості економіки знань на сучасному етапі розвитку суспільства / Ж.О. Шульга // Вісник Бердянського університету менеджменту і бізнесу. – 2012. – №1. - С.94 – 99.

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# **REDEFINING CONCEPTS: KNOWLEDGE ECONOMY IN THE BALKANS**

#### Abstract

Eastern Europe and the Balkan region in particular have long been forgotten in discussions about new socioeconomic paradigms. But can these countries surpass the 'developing countries' stigma and integrate their economies into worldwide structures?

The first problem taken into consideration is whether these regions have proper resources for this type of economy. We'll take a look into their general development regarding political and economic incentive regime, the level of education, innovation and ICT (KEI variables). A further analysis will attempt to provide an explanation on why certain countries fare better than the others, how has history taken its toll on their present situation and how can a country exploit its advantages without delaying progress in any other area.

Secondly, we'll tailor the concept on this region in particular. How are the economies structured? What measures should be taken when adapting the knowledge economy in the context of efficiency-driven economies?

Last but not least, the project will end by putting up to debate the problem of globalization and the cultural and socioeconomic phenomena it will produce. Furthermore, we'll argue that many aspects in Southeastern Europe's economy can be interpreted as different, regional variations of a knowledge-based economy.

Keywords: KEI, R&D, regional development, globalization

#### 1. A KNOWLEDGE ECONOMY 'RESOURCE CURSE' IN THE BALKANS

The formation of knowledge workers in the Balkans shouldn't be a difficult task to achieve. Each year, highly-educated potential workers graduate from their universities. SEE countries are part of the Bologna process and aim to fulfill the objectives of Europe 2020. Most of the post-secondary educational institutions are financed by the state and recent reforms insure their autonomy. In average, tertiary enrollment in this region reaches 47% and about 30% of the graduates will pursue doctorate studies<sup>1</sup>. This portion of the population could represent the base for a knowledge economy, but the results are scarcely visible on the labor market. Furthermore, a considerable number of the overqualified active population chooses to leave their country and settle for basic jobs on the outside, the potential of these workers remaining unused by either country<sup>2</sup>.

Another aspect in which Balkan countries fare well is in the ICT sector. ITU places SEE in its ICT development index at a comfortable average of 5 (1.49 less than the EU score), with a registered annual growth in the sector for the past five years in Turkey, Romania, Croatia, Bulgaria and Greece of 10%<sup>3</sup>. Still, the region seems to embody the Solow paradox, with productivity statistics pointing towards a different situation.

## 2. THE KEI: IDENTIFYING THE MAIN CHALLENGES

World Bank configured the KEI (Knowledge Economic Index) to measure the performance of each country in implementing this type of economy. Despite disposing of proper human capital, Balkan countries lack an adequate environment to allow its growth. Still, in 2012, Albania, Macedonia, FYR and Romania registered a rapid growth, mostly due to improving in the EIR domain (Macedonia, FYR managed to raise 34 spots), but also because of sustained development of the ICT sector.

Dimensions	Indicators		
Economic and institutional regime	Tariff and non-tariff barriers Regulatory quality Rule of law		
Education	Adult literacy rate Gross secondary enrollment rate Gross tertiary enrollment rate		
ICT	Telephones per 1000 people Computers per 1000 people Internet users per 1000 people		
Innovation	Royalty payments and receipts Technical journal articles Number of patents		

World Rank	Country	KEI	Economic Incentive Regime	Innovation	Education	ІСТ
36	Greece	7.51	6.8	7.83	8.96	6.43
39	Croatia	7.29	7.35	7.66	6.15	8
44	Romania	6.82	7.39	6.14	7.55	6.19
45	Bulgaria	6.8	7.35	6.94	6.25	6.66
49	Serbia	6.02	4.23	6.47	5.98	7.39
57	Macedonia	5.65	5.73	4.99	5.15	6.74
69	Turkey	5.16	6.19	5.83	4.11	4.5
70	BiH	5.12	5.55	4.38	5.77	4.77
82	Albania	4.53	4.69	3.37	4.81	5.26
	World	5.12	5.45	7.72	3.72	3.58
	Europe / Central Asia	7.47	6.95	8.28	7.13	7.50

Source: World Bank, 2012

# 2.1. Economic and Institutional Incentive Regime

The main struggle identifiable in the Balkan region is the slow progress in nation-building, which explains a vast area of differences between their evolution and Western Europe's. Most of them having lived for centuries under foreign regime in a multicultural empire, these countries have had a hard time forming their own identity and becoming self-sufficient. Bosnia and Herzegovina's political system can hardly grant any sense of stability; Kosovo's intern ethnic disputes as well as its independence status constantly generate problems for its political and economic system and its institutions' development; Albania, after a half-century isolation, tries to compensate for its slowed-down institutional and economic growth during that period, while at the same time aiming for national unification. Croatia's attempts to get rid of its statist approach are partially working and the country still has some pending ethnic issues to solve. Macedonia's lack of financial independence and its ongoing dispute with Greece represent a challenge for its evolution. Greece enters its fifth year of recession, which does nothing but aggravate the political turmoil. Montenegro's divide from Serbia further complicates the construction of an identity. Romania and Bulgaria, despite successfully adhering to EU, constantly face drawbacks due to their political restlessness.

The challenges the implementation of a Knowledge Economy represents rely heavily on their historical and political background. The omnipresence of corruption and lack of transparency discourage entrepreneurial activity. Together with an overwhelming and inadequate bureaucracy, the region is in severe need for reforms concerning their legal framework and judicial system. The consequences of the communist regime were hard to neutralize, leaving most of the countries still dealing with privatization and bureaucracy, repercussions that restrain FDI (foreign direct investment). Discussions around these persistent problems inhibited debates around some other pressing issues, such as the protection of property rights or registration of intellectual rights. Another major shortcoming is the existence of pervasive Non-Tariff Barriers (NTB) such as non-transparent import standards or custom corruption, which hinders commercial relations with the rest of Europe.

Country	Doing Business Rank 2013	DB Rank 2012	
Macedonia, FYR	23	22	
Montenegro	51	57	
Bulgaria	66	64	
Turkey	71	68	
Romania	72	72	
Greece	78	64	
Croatia	84	80	
Albania	85	82	
Serbia	86	95	
BiH	126	127	

Source: Doing Business Report, 2013

However, the current situation of the region represents an improvement from the past. Most of them have already given up harsh requirements for opening a business. Macedonia, for example, although it kept a rather fastidious system of registration, limited the time to open a business to 2 days (and 2 procedures) and ranks considerably higher than most of its neighbors<sup>4</sup>. Besides Macedonia, Serbia and Montenegro are registering accelerated improvement into coping with corruption and bureaucracy.

A trend to open one's market towards EU can be spotted. The region keeps very close relationships in terms of commerce in the region; although the Balkan countries still rely heavily on each other, partially due to their common history, partially due to similar economic backgrounds, the EU members became valuable export destinations. Bosnia and Herzegovina's main partners are Croatia and Germany; more than half of Albania's exports go to Italy, with Greece standing next-in-line, at considerable distance (8%). Bulgaria's top export partners are Germany, Greece and Italy, its Romanian neighbor following only on no. 4. Romania's top partners are Germany, Italy, France and Turkey. Probably the most indicative of this tendency would be Turkey, with Germany, France and the UK as export destinations<sup>5</sup>. Since the KEI takes into consideration

open-market and tariff and non-tariff barriers, this predisposition can be noticed in the countries' indicators. The EU countries and the highly-probable future EU states (Croatia, Turkey) register a score around the European average; former Yugoslav countries though, except for Croatia, fall below its average.



Net FDI (in US\$ mn)

The regional interdependence, coupled with mirroring Western Europe's economic phenomena (albeit with a time lag in between) defines the countries' economic evolution. In the conditions of the recent economic crisis, which destabilized many Western European economies too, the problem lies in whether the countries will fall back to nationalistic idiosyncrasies or increase their competitiveness and get close to launching themselves on the global market through EU. The partnerships could contribute to the export and import of human capital, flexible barriers, foreign investment leading to off-shoring and the development of the labor market, implicitly improving the region's KEI. The region needs though to deal with the failure of the pre-crisis system, a drop in foreign investment and the reluctance of foreign banks to sustain their activity here.

#### 2.2. Education and R&D Development

Less than 3% of the population is illiterate. In average, 90% pursue secondary education, but only 51% decide to enroll in tertiary education (UNESCO, 2010), which means about 40% of the population enters secondary education, but doesn't accede or doesn't plan to accede to tertiary education.

	Gross	Gross	Deceevable vo /	Public Expenditure		
	Secondary Tertiar Enrollment Enrollme (%) (%)	Tertiary Enrollment (%)	nt million people	Of GDP	Of Total Government Expenditure	
Albania	88	39	146.8	3.3	11.1	
BiH	90	38	197.2	n/a	n/a	
Bulgaria	89	57	1458.7	4.6	11.3	
Croatia	96	54	1613.3	4.4	10	
Greece	98	66	1866.9	4.1	9.2	
Macedonia	84	39	471.6	3.5	15.6	
Montenegro	88	48	n/a	n/a	n/a	
Romania	97	59	920.6	4.3	10.3	
Serbia	91	49	1060.1	4.7	9.5	
Turkey	82	55	884.4	2.9	n/a	
Regional Average	90.3	50.4	957.73	3.9	11	

Source: UNESCO Institute for Statistics, 2010, World Bank

Source: National authorities via CEIC data service.

One of the main factors consists in the dysfunctional labor market in Southeast Europe, defined by low wages, corruption and bureaucracy. When employment methods and criteria are not transparent, tertiary education can be translated to a waste of money and time. A good example in this case would be BiH, with the biggest gap between secondary and tertiary enrollment. The high rate of unemployment (43.3% in 2011, source: CIA, 2012) discourages its youth from pursuing higher education.

The phenomenon can only lead to brain drain. More than 50% of the students in Montenegro, Macedonia and Albania want to leave their country either for studies or for a workplace, while in BiH, the rate reaches 75% (UNDP, 2011). In 2009, 245 000 Turkish students were registered in German higher education institutions, making up 3% of the total number of students in the aforementioned country<sup>6</sup>. The Balkans have long been known as the poster child for brain drain, despite the rapid progress registered in education (it is estimated that twice as many students have a bachelor's degree or an equivalent than in early 2000s). It is especially more worrying since instead of converting into brain gain, it becomes brain waste. About 60% of the highly educated Albanians working abroad in 2006 settled for a low-profile job (UNDP, 2006).

The departure equates the loss of valuable human capital and poses major problems in Research, the engine for a Knowledge Economy. In the case of a researcher leaving her/his job, somebody has to fill in and cover a very specific part of one's area of expertise. Furthermore, if gross tertiary enrollment is 50.4%, fewer will actually finish their studies and one can expect an even lower ratio of students to acquire the minimum qualifications for becoming a researcher.

#### 2.3. Innovation

The *Innovation* pillar takes into account royalty and license fees payments and receipts (measured in million dollars), the number of scientific and technical journal articles and the patent applications granted by the US Patent and Trademark Office. Except for Greece, all the Balkan countries are below the world average and none of them measures up to European average. However, the indicator doesn't speak necessarily of their low performance; The USPTO doesn't take into account many Southeast European countries, while the legislation and payment system for intellectual rights differs from country to country, which affects the relevance of the first innovation indicator.

An alternative indicator could be Radosevic's NIC (National Innovation Capacity), which measures the potential performance of a country based on absorptive capacity (% of GDP spent on education; science and engineering graduates; tertiary education graduates; participation in life-long learning; employment in medium/high-tech industries; employment in high-tech services industries), demand for innovation (the availability of finance; domestic credit provided by the banking sector; share of FDI in the GDP; competitiveness; macro-economic stability), R&D supply and diffusion of innovation (continuous vocational training, ISO 9000 certifications per capita; Internet users and subscribers; ICT expenditure)<sup>7</sup>. The values differ in relation to the KEI since it includes also variables calculated as part of the other three pillars. However, the NIC can be deemed more relevant since R&D can hardly be seen as separate from the innovation capacity of one country and the development of ICT comes automatically into discussion with the contemporary structure of global technological progress.



Source: Radosevic, 2011

While Balkan countries seem to have the proper resources, their improvement in this area is generated by using imported technologies. Right now, their main challenge is to find a way to balance the existing policies of international technological import and their internal need for advance in terms of innovation. The NIC values also reflect on their relations to EU. Integration in ERA (European Research Area), EHEA (European Higher Education Area) and the agreement to adhere to the Lisbon Strategy improved the values of the EU members and probable members (Croatia). The interpretation of NIC provides two causes for the situation of these countries: the integration in the European structures and the positive effects of FDI, signaling a need for internal measures to boost innovative capacity. SEE countries arguably need better legal protection of intellectual rights, a closer examination of research project submissions and harmonization of national patent offices with the international ones.

# 2.4. ICT

For the ICT pillar, the KEI processes statistics from ITU concerning the individual use of telephones, computers and internet per 1000 people. While the countries register higher values than the global average, they're still beneath the European and Central Asian one (but for Croatia). The countries are described, from this point of view, as transitional, with a rapid growth in the sector, but still not on par with Western Europe. Serbia registered an impressive growth before the crisis: 37% in 2007, 28% in 2008 and kept a decent growth rate after the crisis too, with 10% in 2010 (SIEPA, 2010). Turkey encountered an ICT market growth of 14% CAGR between 2002 and 2010 (exponentially), is expected to grow at a 16% CAGR between 2012 and 2016 and has exempted R&D institutions in the domain from taxes<sup>8</sup>. Between 1998 and 2008, Romania went through a process of growth in the sector of 25%, faster than the development of the economy, resuming its growth in 2010. Still in 2010, the ICT sector made up to 10% of its GDP (BASSCOM, 2011).

Due to relatively low costs of the labor force, most of the IT giants chose to use human capital from Southeast Europe. In the conditions of globalization and brain drain, the ICT sector amplifies the consequences of the phenomenon. Since a part of the available jobs don't require moving to the host company, but offer the possibility of doing the tasks at home while still earning a higher salary (due to currency differences), many will opt for a foreign company rather than a local one. Challenges rise also from the absence of clear laws specific to this sector and the unresolved bureaucratic problem. This situation has resulted in a preference for small or medium local companies and the prevalence of outsourcing. Since 2002, more than 90% of the ICT companies are SME.

## 3. EFFICIENCY-DRIVEN ECONOMIES

With more than half of the GDP ensured by the services sector, Southeast European countries seem to have done progress towards adopting a knowledge-based economy by encouraging the trade of intangible goods. However, out of the ten countries, Only Turkey and Croatia are gearing towards the innovation-driven stage of an economy and only Greece has reached that level<sup>9</sup>. The other states are still in the efficiency-driven stage. World Economic Forum identifies the main issues in the region:



Source: GCI Reports via the World Economic Forum

The chart shows the main problems in the entrepreneurial environment, in an attempt to identify why people are discouraged from participating in the economic life of a country. The efficiency-driven stage is characterized by a high level of productivity and a tendency towards a balance between the number of employers and employees (the marginal cost of being employed rather than an employee is lower than in the factor-driven stage)<sup>10</sup>. The industries in this stage focus either on basic-goods or manufacturers and the population is better educated. The shift from an efficiency-driven stage to an innovation-driven one relies heavily on the ability of these countries to develop their economic and institutional regimes.

Although knowledge-driven economies shape themselves when a country has reached the third stage, there is no reason why countries in the efficiency-driven stage shouldn't exploit their advantages. The term of knowledge worker doesn't abide strict definitions. The ability to convert raw data firstly to information and then to useful knowledge is the only requirement all definitions agree upon.

The infusion of knowledge workers, as a result of the highly-qualified human capital these countries have, could lead to a faster economic growth. The ICT companies' participation on the stock market is nearly absent, which could be improved by the participation of knowledge workers in the area. Government expenditure towards education should focus more on developing one's skills rather than mere memorization, thus encouraging life-long learning and laying the basis for R&D. In Albania, knowledge workers could come in hand in the agricultural sector, where nearly 50% of the labor force is concentrated, which could diminish the number of small rural households acting as independent producers and develop creative solutions for investment in the area. Since the Balkan countries owe the development of their tertiary sector to banking, telecommunications and tourism,

they already operate with a high number of knowledge workers that are necessary in these fields. What they need is a stronger focus and will to adapt the concepts to each one's economy instead of taking patterns from the West.

## 4. GLOBALIZATION AND THE IMPORTANCE OF INTERNATIONAL RELATIONS

The ongoing liberalization, implementation of democratic regimes and improvement of national economic freedom have been goals Southeast Europe plans to achieve. This process has advanced at once with opening one's borders, the intensification of diplomatic activity and involvement in trade agreements. The Balkan countries still rely heavily on their economic relations with the EU, followed by interregional affiliation. The best recent example would be the financial crisis that struck EU in 2008; the crisis hit Southeast Europe a year later, since these states depended on the trade with EU and on FDI coming from its members. The crisis brought up another regional aspect of the Balkans: the unfinished nation-building that can easily degenerate into a nationalistic approach, especially since Spanish and Belgian factions were going down the same route. Most of these nations are recently formed, with unresolved ethnic conflicts and a dangerously-undefined national sentiment. Despite globalization bringing countless advantages (outsourcing, job opportunities, brain gain, the development of ICT), the Anglo-Saxon cultural imperialism clashes with their self-preserving instinct and national pride. The unstable political and social environment can be ameliorated by the EU accession (though in the case of Macedonia, FYR, it could mean reigniting the conflict with Greece), reduction of the poverty level and a strong collaboration between the EU members and the Balkans.

The most important resource the Balkan region has to offer in a world where knowledge-driven economies are emerging is human capital. Attracting investment in R&D and making good use of their work force become a necessity. Easing the transfer from university to labor market, encouraging women and Roma (and other ethnic minorities), both discriminated on the work market, and concentrating a country's efforts on its most profitable fields would be a first step towards economic growth. Despite knowledge workers existing already in many of these countries, as the services sector requires it, the output has been sporadic, companies focusing on productivity rather than innovation and creativity.

# **CONCLUSIONS**

The Balkan countries have sufficient resources for sustaining a knowledge economy, but its development is improbable in the context of political instability, lack of transparency, bureaucracy and corruption. NTB or fastidious business starting procedures can discourage FDI. Its economic growth, given the countries' history, is nonetheless impressive, and can be geared towards adopting a knowledge-driven system. However, investment in R&D needs to have a better focus and the legal system should provide protection of property and intellectual rights and labor market regulations. The ICT domain experiences a rapid growth (at a higher rate than the region's economic growth), but falls under the Solow paradox. Southeast Europe could benefit from the insertion of knowledge workers, as long as their formation corresponds with the sectors in need. Overall the solution lies in effective economic policies of using the human capital.

#### References

- 1. The Global Innovation Index, 2009
- 2. Jelavic, Matthew The brain drain: Implications for regional economic integration in the expanding European Union, Presses Universitaires de Grenoble, 2012
- 3. SEENews South Eastern Europe: Unlocking IT's Potential. SEE TOP 100 Ranking, Edition 2011 and IT sub-ranking
- 4. 2013 Index of Economic Freedom: Macedonia, The Heritage Foundation, 2013
- 5. Institute for Regional and International Studies The Western Balkans: Between the Economic Crisis and the European Perspective, Sofia, 2010
- 6. Suoglu, Başak Bilecen Trends in Student Mobility from Turkey to Germany, Perceptions, Volume XVII, 2012
- Kutlaca Dj. and S. Radosevic Innovation Capacity in the South East Europe Region, In Thomas Döring and Dietmar Sternad (eds) Handbook of Doing Business in South East Europe, Palgrave Macmillan, 2011
- 8. Republic of Turkey Prime Ministry Turkish Information and Communication Technologies Industry, 2010
- 9. The Global Competitiveness Report, 2011-2012, World Economic Forum
- 10. Acs, Zoltan J., Desai, Sameeksha, Hessels, Jolanda Entrepreneurship, economic development and institutions, 2008
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## THE IMPACT OF FDI ON COMPETITIVENESS AND DEVELOPMENT OF KNOWLEDGE ECONOMY IN MONTENEGRO

#### Abstract

Conditions of globalization and internationalization of economic environment have led to the dominance of financial flows. Foreign direct investments (FDI) play a significant role in that process due to the fact that complex investment packages include not only financial but also intangible resources, such as new knowledge, technologies, organizational solutions and techniques (M. Vidas Bubanja, 1998). FDI allows the host country to develop industries with high output levels and consistent high fixed costs. In this way, FDI became the most reliable channel of the present technology transfer, as well as the basis of modern growth and development. For this reason and given the condition of Montenegrin economy in 21st century, the focus of this paper is suitable for the analysis.

#### **1. INTRODUCTION**

In our paper we will try to examine the influence of foreign direct investments (FDI) on competitiveness and development of knowledge economy in Montenegro. We will try to link the two concepts by analysing the fluctuation of knowledge index and FDI value fluctuation in Montenegro. Following the Introduction, the second part will elaborate the motivation and review of the relevant literature on FDI and knowledge economy. The third part will provide numeric information on the subject of this paper. In the fourth part we will present certain analysis. At the end, in the fifth part we will conclude our paper and offer an adequate solution according to our opinion.

#### 2. MOTIVATION AND RELEVANT LITERATURE

The growth of Foreign Direct Investments (FDI) and world trade in the 80's and 90's were faster than the growth of the world GDP (V. Milićević, 2002). FDI have recorded a big expansion worldwide, before 2008. Thus FDI increased from 400 billion dollars, what they worth in 2000 to 1,822 billion dollars in 2007 (Work Study, 2008). The financial crisis influenced these flows and the decrease of FDI flows was evident in the third quarter of 2008.

Although a small economy with the small market, Montenegro has attracted a high level of FDI, thanks to its geographic location and natural wealth. Namely, up to 2005, Montenegro was not an attractive location for foreign investors, but as of 2005 it becomes one of the most attractive European destinations (Work Study, 2008). Up to 2009, Montenegro still records FDI growth.

A significant part of FDI inflow is invested in real estate, a predominant part of FDI is connected to the privatisation process and the biggest part of FDI was directed towards tourism, banking, industry and telecommunications (Work Study, 2008). The privatisation was the main attraction for FDI in Central and East European countries (Radovic, Shuster, Vulanovic, 2011).

In developing countries, the success was based on government assistance, national resources, cheep labour force or some comparative advantages. The time has shown that comparative advantages of certain countries are not sufficient for economic growth and development. Just now, the knowledge is bringing out. According to J. Palmer and Richards: "The New Economy favours the "intangibles" - ideas, information and relationships". In the modern digital and global economy the source of existence of competitive advantage becomes the effective use of knowledge (V. Milićevic, 2002). Investments in education, innovations and adaptation of knowledge were incorporated for the first time in economic growth models at the end of the '80 and beginning of the '90. It is estimated that more than a half of GDP, in some countries of developed market economy, is based on production and distribution od knowledge, which is a good indicator of the importance of knowledge for countries competing in the global market (V. Milićevic, 2002). This brings out the knowledge-based economy; the economy in which the value of produced and exchanged goods and services is based on applied knowledge. Peter Drucer and Paul Romer from Stanford University, Charles Goldfinger and other eminent experts, indicated its origin and characteristics a long time ago. The basic idea pervading in their papers can be summarised in one sentence: "The knowledge is completely different from natural resources" (Alle W. 2007). Knowledge and ideas can be multiplied and material resources cannot. Material resources are spendable, while spending increases knowledge.

In the New Millennium, the intellectual capital becomes the key of competitiveness, as per approach developed by Karl-Erik Sveiby and Leif Edvinsson. The policy of FDI attraction should be directed towards production sectors, providing the stimulation of new economy development which main product is the knowledge. Winston Churchill declared: "The empires of the future will be the empires of the mind".

#### 3. CORE

For satisfactory FDI inflow it is essential that a country meets certain requirements, primarily those concerning geo-position, economic and financial stability, labor force characteristics, institutional and infrastructural development, GDP and absence of underground economy. To further comment on this matter, we will make reference to the empirical data related to the annual net inflow of FDI in Montenegro.

2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
76.3	38.7	50.6	399	469.7	567.8	582	1066.5	542.4	389	453.6

Table 1.1; Annua	I net inflow of FDI in	Montenegro
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It should be noted that amounts given in the table are in millions of euros. Even at first glance it's obvious that there were large fluctuations in amount of annual net inflow of FDI in Montenegro during the given period. These fluctuations are made clearer in the line diagram.

Figure 1.1 Comparative overview of the annual net inflows of FDI made using data from Table 1.1



Sources: Bulletins CBM: January 2011, January 2012, January 2013; Monstat

The question that arises is to what factors can the increase of FDI in Montenegro be attributed? Also, there is the issue of explaining certain variations, in particular the drop of amount of annual net inflow of FDI between 2009 and 2010.

A study conducted by representatives of CBM in the year 2008 (Fabris, Kilibarda Kalezić Radunović Rakocevic) proves the existence of correlation of FDI and economic growth in Montenegro, thus recognizing the importance of foreign investment for Montenegrin economy. This publication recognizes legal framework (related to the change of the Law on Foreign Investment in 2000. and 2007. in favor of foreign investors) as an important factor contributing to the increase in FDI.

Another important observation presented in this study is related to the structure of FDI - that is, the dominance of investments associated with the privatization process in comparison to green-field investments. Considering the fact that the transition process in Montenegro started relatively late, such a structure is not surprising. The study discusses the importance of infrastructural investments as they are a prerequisite for other investments. This phenomenon is particularly important in the field of tourism, which was singled out as an area in which Montenegro is extremely competitive.

To sum it up, the 'leaps' of net FDI stock can not be attributed singly to changes in legal framework or to implementation of earlier investments. They are in fact the result of synergistic effects of previous two factors, which multiplied in 2009, when the amount of FDI reached its peak for the observed period. This statement might seem unusual in the light of global economic crisis, but one must consider that Montenegrin economy wasn't affected by it until next year. In the years after 2010, Montenegro has a lower net amount of FDI compared to 2009, but with hints of growth (given the announced investments in the current year and succeeding years). As noted above, there is a close link between FDI and economic development, especially when it comes to countries which are in process of transition. Not an easy task that is put in front of Montenegro is to rapidly integrate into modern economic processes and to achieve competitiveness, which is a prerequisite for development of knowledge economy, which is again a key prerequisite for economic development in 21<sup>st</sup> century (Lojpur, 2012).

A study published by the Journal of Economics and Business which dealing with the link between FDI and competitiveness, indicates that such correlation is a positive one, that is, greater inflow of FDI has a direct positive effect on the development of competitiveness of a country. As the author said, "the accumulation of FDI is one of the most effective ways for economies to become integrated and competitive on the global markets". On the basis of empirical data collected from member countries of the European Union, the author has devised an econometric model that reflects this positive correlation. In this paper, we will not be using the established econometric equation. However, we will utilize the study's conclusions in our paper.

World Economic Forum (WEF) issues a yearly Global Competitiveness report, which ranks world's economies by measuring their competitiveness, expressed through a number of factors. Currently, Montenegro is 72nd on the list of 144 countries, marking a decline compared to estimates from years 2010 to 2011, when it was ranked the 60th. (WEF Global Competitiveness Report 2012-2013). By comparison, the next line diagram will show fluctuations of Montenegro's rank in this category, noting that report ranks countries from most competitive (position 1) to the least competitive.



#### Figure 1.2: Trends in the competitiveness ranking of Montenegro

Source: Global Competitiveness Report, World Economic Forum, 2012-2013; 2011-2012; 2010-2011; 2009-2010: 2008-2009; 2007-2008.

We would like to highlight that Montenegro was ranked in year 2008 for the first time which is related to the fact that Montenegro became an independent state in 2006. Since then, it is obvious that Montenegro had the best position in year 2011, in spite of the fact that net inflow of FDI wasn't impressive in that year. In addition, the largest amount of FDI was recorded in 2009, when Montenegro's competitiveness rank was merely 65.

Consequently, we reached the conclusion that the amount of FDI is not the only factor contributing to increase of competitiveness. Therefore, what is the key to achieving greater competitiveness, and also faster economic growth in Montenegro? The answer is to improve parameters related to the development of knowledge economy: innovation, infrastructure, institutional quality, human resources and technical equipment. FDI, in spite of their great importance, are not the only driving force of development of Montenegrin economy. However, the impact of FDI on economic development may be important in terms of improving the competitiveness of Montenegro. Even in everyday life, we are witnesses of success of certain foreign investors. In a certain way their activities have already put Montenegro 'on the map' of Europe.

With the right strategy aimed towards attracting investors, a good selection of projects and the application of principles of knowledge economy, we can expect further increase in competitiveness of Montenegrin economy, but only under the condition that these FDI have a green-field character.

#### 4. EMPIRICAL ANALYSIS

The mechanisms for measuring the influence of foreign direct investment in development of human capital, with an emphasis on Montenegro, are not in use, considering qualitative characteristic of ``economy of knowledge``.The World Bank ranged countries by The Knowledge Economy Index, a matter of measure in which the environment affects in a stimulative way the use of knowledge (The World Bank Report, KEI Ranking). This Index considers 4 variables: economic encouragement and institutional framework, education and human resources, innovation system and information and communication technology (ICT) (A. Lojpur,2012). For the last few years, Nordic countries are at the very top, considering their high level of social standard and constant investments in knowledge. Closely related to this phenomenon is the percentage of GDP to science in reference to other countries, which is in Nordic countries higher (around 6%). However, for developing countries such as Montenegro, significant parameter is the dynamism of the overflow of investments effect on `` economy of knowledge``. The analysis of the influence of change at the level of FDI on changes regarding the human capital of people in Montenegro, shows us clearer correlation between these two elements. In period 2004- 2009, the level of FDI in Montenegro, grew from 50, 6 to 1066,5 million €, which is followed by generation and application of new knowledge,

skills and creating intellectual capital that, in its basis, represents the `` sum of knowledge of every individual, as practical transition of that knowledge into more concrete processes, brand of a product and trade mark`` (V. Milićević; 7;67).

#### **THE CONCLUSION**

It seems logical that the influence of foreign direct investments has multiple positive effects on development of human capital at certain region. First mechanism is such that FDI affects the growth of total level of economic activities in country, therefore also the growth of resources directed to science, researches and development. The second way is that companies with capital transfer bring also their own "know- how", initiating new business standards, innovations in information technologies etc. The role of FDI in process of transformation and association is especially visible in countries of Central and Eastern Europe, and as a consequence there has been noticed the difference in the structure of knowledge, that has become the main link in the chain of sustainability and development. These investments have strongly contributed to reinforcement of market economy and private sector, but the main change referred to enforcement of ``intellectual capital" as well as the transfer of new technologies and innovations in general (B. Pavlovic, 2012). It is important to mention that the structure of foreign direct investments play a role in generating the results at the field of ``economy of knowledge`` considering the fact that green- field investments have far more reaching consequences, especially the ones that contribute to progress of new solutions in informatics, in reference to the investments in the field of real estates or investments on financial markets. Investments in education, innovations and development are inseparable component in models of economic growth in the last 30, 40 years, so the authors as Drucker, Hamel and others, pointed out at the distance between traditional perception of company business and `` economy of knowledge`` in which the main factors of success are: knowledge, information, intelligence. Furthermore, the economy of knowledge differs from traditional not by representing the economy of rareness, but abundance, because knowledge and information multiply their value by sharing. We can conclude that foreign direct investments are the key component that affects sustainable development and continued investment in competences that can sustain rhythm of small, but open economy, such as Montenegrin, in competition on global level.

#### References

- 1. Marijana Vidas Bubanja,; "Methods and determinants of foreign direct investment", Institute of Economic Sciences, Belgrade, 1998;
- 2. Allee, W :"New tools for new economy", Part I; Quantun21.net; April, 2007;
- 3. Milićević, V.: "Internet economy", FON, Belgrade, 2002;
- 4. Milivoje Radovic, University of Montenegro, Serge Shuster, Graduate Center City University of New York, Milos Vulanovic, Western New England College:" Modeling of Current Accounts in South East Europe", ICIB 2011 (2nd International Conference Thessaloniki Greece).
- 5. Lojpur, Anđelko, "Knowledge economy" as a key assumption of economic development, Conference economy of Montenegro 2012;
- 6. Bulletin CBM; January 2011, 2012 and 2013;
- 7. World Economic Forum, Global Competitiveness Report 2010-2011. 2012-2013;
- 8. Fabris, Nikola; Kilibarda, Boris; Kalezić Zorica; Radunović, Mira; Rakočević, Maja," Foreign direct investment as an engine of economic development of Montenegro", Work study CBM, 2008;
- 9. Pavlović, Branka; "Foreign investments, experience of Montenegro and the region", Conference economy of Montenegro 2012;
- 10. Đurović, Momir; "Montenegro in the 21st century, in the era of competitiveness", MASA, 2010;

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### ECONOMIC GROWTH FOR LEVERAGING DEVELOPMENT IN KNOWLEDGE ECONOMY

#### Abstract

#### **INDUCTION**

The economic growth is the summary characteristic of the development of country's economy, which is not only conditioned by productive resources and policy, but also by a lot of psychological and social factors. In any economic system the economic growth is the form of expression of the extended reproduction of public outcome. By each state economic growth is seen as an important political and economic aim, the material base for well - being of society. Economic growth is closely connected with the employment problem. If the latter puts the problem, what is necessary to make full use of existing production capacity, then the main problem of the theory of economic growth is how to increase the production capacity and the volume of the public outcome in full employment conditions. One of the economic policy objectives of each country is ensuring of sustainable economic growth. In many cases the economic growth is necessary for the aim of creating new workplaces in order to reduce unemployment. The problem of world economic growth is the identification of the causes of differences between world economic development and increasing income. These theories discuss such issues as the retardation of the rate of economic development, increase of unemployment and prices, environmental pollution. A significant part of the economic growth theories aimed at simulation of economic growth, in a number of assumptions. These theories seek to identify the factors that provide the long - term and sustainable growth of national economy. The analysis of the theories of economic growth, though partially, makes it possible to answer some difficult questions:

- 1. What condition is necessary for economic growth?
- 2. What kind of economic policy should maintain the country to stimulate economic growth?
- 3. How public policies can affect the living standards of the population?

Though it is impossible to localize any theory of economic growth and model in the absolute sense, but they allow identifying common trends and develop practical measures.

Economic growth is a complex and multifaceted economic phenomenon not only for economic theory; it is also one of the important economic issues in economic policy. By saying economic growth it is accepted to understand the expansion of production scale, increase of national product, national income and other quantitative indicators of social reproduction. On the one hand it describes the whole costs of all the sections of society, on the other hand shows the whole income which has been formed in the country in the process of production. In addition to being an important economic indicator, economic growth also pursues an economic goal. Parameters of economic growth are used for describing and evaluating not only the development of national economy, but also the effectiveness of economic state religion. Economic growth is the feature and pattern of expanded reproduction. Extensive and intensive forms of reproduction are specific for economic growth as a reproduction factors, such as labor, capital and land. As a rule, it takes place on the base of former techniques. Intensive economic

growth requires use of more advanced production factors and effective use. So are bought modern appliances, raised the qualitative level of workers, and improved the ways of organizing production. In real life these two types of economic growth did not come out independently of each other, but on the contrary is expressed in the form of mutual communication. Economic growth is measured by real GDP changes. It is accepted to perform in 2 ways:

- 1. Increase of real amount of GDP in a certain time
- 2. Growth of real amount of GDP per capita.

In practice, the rate of economic growth is estimated at annual increase rate, and for determining it we divide GDP growth into the volume of baseline period, expressed by percentage. The rate of economic growth is not only a positive value, it may be zero: if in the current year the volume of GDP is the same as in baseline year. In certain cases, when GDP is reproduced with less keen compared with previous period, in this case there is a negative growth. The latter is typical of the decadent era. Currently the assessment of economic growth is applied by per capita of GDP size. This method makes it possible to estimate the economic growth in terms of raising living standards. However, this method is not also perfect. Because economic growth will be recorded in case of a negative natural population growth, even in the zero level of GDP. In the most extreme cases, even in the case of negative GDP growth will be recorded the economic growth, if there is a higher rate of negative natural growth, than the rate of decrease of real GDP. In this case, the actual state of the economy is distorted. Ensuring sustainable rates of economic growth is the premise of providing the country's economic growth. High rates of economic growth, in condition of the other factor to stay invariably, suspect the growth of economic potential and increase of material well – being of population. Decrease of the pace of economic growth, in case of annual 3% of lowering, according to some economists, the population's real income growth will decrease and will not have significant effect on improving quality of life. Moreover, in case of 2.7% of economic growth, the employment rate will not be reduced. For description of economic growth are used its guantitative and gualitative aspects. The guantitative aspect is reflected by the annual rate of economic growth, as by the "weight" of its each percent and by guantitative content. The latter is particularly highlighted in the countries with highly developed economies, for example, in USA, the annual rate of increase is about 2%, but every percent of increase weighs more than 140 billion dollars, which is several times larger than the volume of GNP in many countries, despite the high rates of increase in these countries. The qualitative side of economic growth is characterized by double meaning: on the one hand it is connected to a social reinforcement; on the other hand what kind of intensive factors are used to achieve GNP growth and what is the latter's structure and functional significance.

The speed of economic growth can be counted by the following formula:

M = ( GNPn-DNPn-1 ) / GNPn-1\*100 %

It is interesting to know what kind of speed is advantageous. From the first sight the question is simple: it is better to have high speed of growth. In that case the society will get more products and will have greater opportunities to satisfy his needs. But the economic growth can also bring negative effects. For example, when the needs of the society are on highly satisfied, in this case high speeds of economic growth can lead to completely unjustified intensive use of natural resources and to the pollution of the environment.

Economic growth is the main but not the only feature of economic development. High or low rates of economic growth don't mean the same rates of economic development. Economic development is a multi – factor, which expresses the quantitative and qualitative changes in the economic system. Economic development is controversial and difficult to measure, as it occur not rectilinearly, but unequal, including the rise and fall of the stages, the positive and negative changes in economy. In order to determine the country's level of economic development and its dynamics, it is necessary to apply

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certain criteria, by which the verity of factors affecting the development process is characterized. The evaluation of economic development is performed by the conjunction of the following standards:

- 1. Per capita gross national product, which is a base for classification of groups of developed and developing countries in the World Economy. Usually the countries which provide annually per capita 6 thousand dollars and more income are classified in the group of developed countries.
- 2. Branch structure of national economy, which polarizes the share of the leading branches of industry in GDP, particularly engineering.
- 3. The production of main products per capita, which describes the production level of certain branches, as well as its own manufacturing capabilities, which have the country for satisfying social needs. These indicators are calculated by the line of such key products, such as electricity, steel, cars, major types of products and durable products.
- 4. Economic efficiency indicators, which describe the level of economic development with great extent, as they reflect the quality of production resources and degree of utilization.
- 5. Living standards of population, as a summary result and consequence of economic development, is characterized by a final construction structure, by indicators of consumer "basket", "living minimum rage" of gross domestic products.

#### **ECONOMIC GROWTH FACTORS**

Economists separated three factors of the economy growth and different economists emphasized the priority of any of these factors in their theories about economic growth. Those factors are:

- a) a) the factors of supply that characterize the opportunities of economic growth and depend on quantitative and qualitative characteristics of manufacturing resources. They are displayed in the quantity and quality of natural resources, by the scale and structure of main capital.
- b) b) the factors of demand which make the economic growth necessary to such extent that the increase of demand would lead to the increase of the supply and growth of product.
- c) c) the factors of distribution which characterize such kind of distribution of manufacturing resources among branches, enterprises and economic cooperation of the country, which will provide their effective use and the ultimate receipt of the final result. Among the factors of distribution can be mentioned the mechanisms through which the government provides a relatively equal distribution of income.

#### THE THEORIES OF NEW KEYNESIANISM OF ECONOMIC GROWTH.

The theories of Norkanes are formed in the middle of 50s in the past century. Like the theories of Kanes, the theories of Norkanes study economic factors and quantitative functional dependencies during reproduction. The representatives of these theories: Harrord, Domar, paid attention to on quantitative dependencies of increased reliance or the problems of dynamics of economic growth.

The study of methodological reproduction of problems in Norkanes theory is characterized by macroeconomic approaches, by using the so-called aggregate categories, aggregate supply, aggregate demand, national income, gross investments, production etc.

During technical revolution the representatives of Norkanes theory were forced to abandon the traditional views of the theory of Kanes and to insert indicators of technical development in their analysis For example, Harrord developed the concept of 'capital rate', which he explained as correlation between the entire capital and national income at certain period of time.

Complementing Kanse's reproduction theory the supporters of Norkanes theory put forward the idea of accelerator, which characterizes the additional conditions provoked in the result of the investments.

#### **THE MODEL OF HARRORD**

Harrord considered the rate of the income growth one of the most important questions, which are necessary for the full use of the increasing volume of capital. Harrord introduced two variants of the issue of determining the amount of capital:

- 1. in the conditions of steadiness of techniques of production and the growth of population by Geometric progress. In these conditions the demand for capital and the population will grow proportionately. The demand will be closed if the population save the same part of its income. This necessary part of the income is equal to the division of population growth and number of population and multiplied by the coefficient of capital.
- 2. The second variant is observed in the condition of stable population and permanent progress of the techniques of production. In this variant Harrord suggests the use of the concept 'neutral' technical progress. Together with it he introduces the following idea: technical progress leads to the economy of labor and capital. The 'neutral' technical progress is when the trend of labor savings is balanced by the tendency of capital savings, and as a result the quantitative relation between labor and capital is not changed.

The equalities of dynamics are the integral part of the Harrod's theory of economic dynamics. The first equality is the following:

G\*C=S, in which:

- G the rate of economic growth
- C the relation between capital and product
- S the share of savings in national income.

Harrod's second equality reflects the conditions of equality during the rate of natural. The demand of capital investments during the the stable growth of the rate of production is expressed by Gn\*Cr, in which Cr is the coefficient of the demanded capital, which introduces the increase in main and working capital which is necessary for getting products. Harrod's third equality is:

Gn\*Cr= S

Harrod discusses the issue in terms of economic growth from two sides: at first, the decrease salary will increase the marginal usefulness of capital and this in its turn will boost business. In fact, Harrod discusses the conditions of static / $G^*C=S$ / and dynamic / $Gn^*Cr=S$ / equalities.

#### **NEW CLASSICAL DIRECTIONS OF ECONOMIC GROWTH**

The origin and spread of new classical theories of economic growth was due to the negative effects of state regulation, also due to relatively favorable trends, as a result the unemployment was reduced and the rate of economic development became stronger. In this condition the following problem appeared: to enlarge the production as much as possible, not only at the expense of used capacities, but also at the expense of new technical investments and at the expense of increasing the productivity of labor. R. Solok, Z. Mid and others are representatives of new classical theory. They are supporters of free competition. The supporters of new classical theory of economic growth think that the main factors of production are fully utilized, which provides free competition having influence on the prices of production factors. For example, if capital investment rates are large, the prices of production factors will grow. One of the features of modern theory is that the growth is characterized not as contravention of balance, but as natural state. It is a balanced growth in which demand and supply become equal. Besides the free competition, stable monetary system is also one of the conditions of balanced growth. That's why the supporters of new classical theories are against the increase of state expenses, thinking that such state intervention is a violation of the stability factor.

#### **ARITHMETICAL CONCEPT OF ECONOMIC GROWTH**

The so-called 'arithmetical concept' of economic growth is also known in economy, which attempts to identify the differences in the dynamics of economic growth. According to this theory, in developed countries with strong economy protraction in the rate of economic growth is naturally due to the fact that the increase of economic scale leads to the fact that even absolute volumes of the growth of public effects in terms of percentage are expressed by low rates of economic growth.

#### **ECONOMIC CONCEPTION OF NATURAL SELECTION**

'Economic conception of natural selection' is also known in economy the essence of which is that in the conditions of the market economy the strengthening of the most competitive businesses predetermines the changes of the macroeconomic indicators, including the rates of economic growt.

#### Let us discuss the structure of economic growth in Armenia

Measures aimed at ensuring economic growth may be considered effective and justified, if the current economic growth will be a base for the economic development.

Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Economic growth	13,2	14	10,5	13,9	13,2	13,7	6,9	-14,1	2,2	4,7	7.2

We can conclude from the table above that by the year 2007 was recorded a double – digit economic growth in Armenia. However, from the economic crisis in 2008 has not missed out also the Republic of Armenia and was recorded 6.9% economic growth instead of 13.7% in 2007. However, taking into account the fact, that in Armenia the main share of economic growth belongs to the sector of construction and services, it wouldn't be difficult to predict 14.1% economic downturn in 2009.

GDP production structure by sectors, expressed as a percentage:



It is clearly seen from the chart, compared with 2008 and 2002, in GDP structure the density of agriculture, mining, manufacturing and energy had been reduced. Instead the share of construction and services had been increased. That is, until 2008, the double – digit economic growth of Armenian economy had been provided at the account of non – production sector. However, from 2009 up to 2011 in GDP the reduction of the share of construction in favor of agriculture and industry gives an optimistic hope.

Economic recovery rates in Armenia slightly speeded up in 2011. 2.2% economic growth recorded in 2010 was followed by 4.7%-growth in 2011. Nevertheless, recovery rates of the Armenian economy are not that high: 2011 GDP has only reached 92% of the pre-crisis GDP. Recovery is accompanied by structural adjustments of the economy and is highly affected by the impact of several sectors. In 2010, economic growth was constrained by the agricultural sector by shrinking by 16%. Already in 2011, growth was resumed (by 13.7%) as a result of which the agricultural output in 2011 was equivalent to 101.3% of agricultural production in 2008. In 2011, decline was recorded in the construction sector (by 12.5%) as a result of which construction is still about the half (53%) of its level in 2008.

Construction sector experienced certain growth in April-June 2010 after the deep decline in 2009. Thus, the annual growth rate is positive. However, the decline in this sector started again since August 2010 and even deepened in the second half of 2011. Unlike agriculture and construction, industry was quite stable: some slowdown in the growth rate was recorded in early 2011; however, annual indices are quite high. Mining and quarrying, being a relatively small sector in terms of output volumes, grew very fast during 2010-2011. Manufacturing also grew by two-digit rates, while Electricity, gas and water supply, following a 6.3% decline in 2010, experienced growth with the same magnitude.

The highest growth rate in 2011 was registered in fishery (25.9%) which has been steadily growing despite being one of the smallest sectors. During the past two years, growth is very high in financial and mining sectors.

From the perspective of contribution to economic growth, agriculture, industry and services had almost similar shares. In 2011, construction restrained economic growth by 2.2 percentage points. In particular, construction sector, which was the largest in 2008 and provided for about a quarter of the GDP, became the third in 2011 after agriculture and trade. Agriculture is the largest sector in the economy (19.9%), followed by trade and repair of personal items (13.4%).

Industry, including mining and power sectors, constitutes 16.2% of the GDP; however manufacturing alone is 10% of the GDP (almost twice as small as agriculture).

In terms of expenditure components of the GDP, the picture is as follows: private consumption grew by 2.7% in 2011 providing for 2.2 percentage points of the GDP growth. Public consumption grew by 7.7%, thus, contributing to 1 percentage point of the economic growth.

Gross Capital Formation decreased by 4.7% which also reflects the decline in the construction sector. In 2011, significant contribution to growth was improvement in the external trade balance, namely – growth in net export volumes of goods and services by 17.0% which has lead to 4.2 percentage points of the economic growth. According to projections, stabilization of economic growth and further acceleration is expected in Armenia during 2012-2014. Recovery of growth in major counterpart countries (namely, Russia) allows projecting recovery of remittances, labor income and investments. At the same time, expected decline in metal prices internationally are estimated to have a negative impact.

According to the recent (April 2012) IMF projections, the Armenian economy is expected to grow on average by 3.9% during 2012-2014. In particular, 3.8% growth is expected in 2012 which will accelerate in 2013 and reach 4% in 2014. As a result, per capita GDP will total to USD 3,351 which is equivalent to international USD 6,122 after adjustment for the purchasing power parity (international USD 5,605 – in 2012). As a result of such developments, the Armenian economy will exceed its pre-crisis output levels in 2014 by 3%.

According to the Asian Development Bank (ADB), economic perspectives of Armenia are more optimistic.

According to projections published in April 2012, the ADB shares IMF's views on Armenia's economic growth projections for 2012 estimating it at 3.8%. ADB's projections for 2013 are slightly higher - 4.2% growth.

According to the 2012 Budget and 2012-2014 MTEF of the Government of Armenia, a more optimistic scenario is projected: 4.2% growth in 2012, 4.5% - in 2013 and 4.8% - in 2014. Under this scenario, precrisis output levels will be recovered in 2013. Price pressures are expected to decrease gradually. In 2012, average inflation is projected to reach between 4% (IMF) to 4.1% (ADB, Government of Armenia). In 2013, price pressures will increase, namely ADB expects consumer prices to grow by 4.5%. Thereafter, stabilization of inflation rate is expected around 4%, as a result of which average annual inflation rates will equal to 4.1% during 2012-2014 (IMF, Government of Armenia).

Exports growth rate is expected to be higher than that of imports: according to the IMF projections, it is possible to achieve on average annual 7.8% exports growth and 4% imports growth during 2012-2014. Projections of the Government of Armenia are more optimistic, according to which exports are projected to grow by 11% and imports - by 5.4% annually during 2012-2014. Current account of the Balance of payments will continue improvement trends. According to the IMF estimates, the Current account deficit as share of GDP will improve from 11% in 2012 to 8.4% in 2014. Projections of the Government of Armenia expect that Current account deficit in GDP will equal to 9.8% in 2012 and further improve to 7.5% in 2014. Thus, the main estimates of the perspectives of Armenia's economic development in the future are very close. It is expected that economic growth will accelerate and recovery of pre-crisis levels, stabilization of prices, as well as fast export growth rates over import growth rates. The Government of Armenia projects higher growth rates in Industry in 2012-2014 - on average annual 7%. Agriculture is expected to grow by 4% in 2012 and on average by 3.4% annually during 2012-2014. Services are projected to grow by 3.8% in 2012, thereafter accelerating to reach 4.6%. Construction is also projected to grow and recover gradually. In 2012-2014, the sector is expected to grow on average annual rate of 3.7% which will, however, provide for only 70% of the pre-crisis level of this sector. Budget revenues-to-GDP ratio is expected at the level of 21.6% during 2012-2014. In particular, Taxes-to-GDP (including duties and other obligatory payments) will total to 20.9% in 2012, and 21.3% - in 2014. The Budget deficit as share of GDP will continue to improve reaching from 3.1% in 2012 to 2.4% in 2014. External Debt-to-GDP ratio will continue to remain high and will reach 40.2% in 2012. In 2013, external public debt stock will start to gradually decrease to 38.2% of GDP and further to 36.3% - in 2014. As a result of developments in 2012-2014, it will stay at the level of 2011 eventually. Eurasian Development Bank have come to think that in case of keeping the high speeds of growth of the industry and export of Armenia in the first half of 2013, it will be possible to speak about the structural improvement of the economy of the country. It is mentioned in the "CIS macro monitor" published by Analysis Department that the economy of Armenia has grown by 7.2% in 2012. The growth of industry was 8.8%, the growth of agriculture was 9.5 %, the growth of trade was 3.6%, the growth of service was 10.8%. High economic growth was due to the restoration of inner consumer demand, due to metal export demand and due to favorable weather conditions for agriculture. It is mentioned in the report that according to the results of 2012 the main feature of the economic development in the CIS region was the reduction of investment demand and the retardation of production in the spheres of industry. Moreover, the consumer demand was the engine of growth in all economies of CIS. The sharp decrease of oil prices affected the figures of GDP in these countries in 2012. As a result, the total GDP of CIS countries increased by 3.4% in 2012, which is considerably less than 4.7% in 2011. Moreover, acceleration in the rate of growth was observed in Azerbaijan, Armenia and Tadzhikistan, and significant weakening in economic dynamics in larger economies of the region.

#### DECISIONS

In ensuring economic growth, the great share of service sector is one of the characteristic lines of economic policies of current developed countries. However, one should take into account the fact, that the developed countries reached to that reality already after having developed agriculture and industry, for without developing economic industrial sector, it will be impossible to maintain long – term growth in economy. Maximum, in what we can reach in this case, that we will have temporary illusory growth. The pillars of economic growth of RA are not selected well Armenia needs a new mode of economic growth, the base of which must be the development of industrial sector. However, we have a question which has no answer: what to produce. Armenian domestic market is very limited, therefore the economy can not have long – term development. Instead external demand of for Armenia is almost unlimited and may become force for further development of economy. Therefore, the export of finished products may become the key of future development of Armenia.

It is apparent that nowadays integration processes between countries are very active. Small countries, especially those that, in addition to socio-economic development problems, also have geo-political and various other limitations to development are not likely to avoid integration processes. Armenia initiated mutual trade liberalization negotiation with the EU which, in essence, implies a new phase of regulatory reforms in the country. Expected Deep and Comprehensive Free Trade Agreement with EU belongs to the new generation of FTAs emerged in recent years and covers a wide range of regulatory areas. Armenian economy is small, production and exports are concentrated in few sectors. Modernization of economy, exports expansion and diversification are imperatives of development. The Government has developed a new industrial policy concept which is a new approach in the history of independent Armenia. By simplifying the growth and development formula, it can be simply defined as follows: produce and sell in sufficient quantities by ensuring its continuity, sustainability and acceptable distribution. In these circumstances, opportunity or possibility to sell becomes crucial; i. e. the market becomes crucial. As a small country that, therefore, represents small interests, foreign markets for Armenia can be considered as infinitely large. This statement implies accessibility of those markets; therefore, the main problem is production capacity. Economic development and growth in Armenia can be considered as the same with industrial development. Economic growth cannot be stable and long term without a sky-rocketing development of manufacturing industry. Development path of manufacturing industry is a self-invention process which should result in the development of technologically mature and dynamic productions with developed international relations. Such productions will need to be capable of gaining small, yet stable shares in international markets due to capabilities of producing competitive goods or participating in that process. There are a number of obstacles to that in Armenia; however, the most important ones are technological issues both in narrow and wide senses. Technological advancement and modernization goes through two stages: technology imports and transfer and innovation and development. For the first stage, diversity and freedom of activities is a crucial factor, while the second phase depends on the development of science and research. Thus, trade policy is important, since it can support the economic advancement. However, economic development and growth are conditioned by the efficiency of industrial policy which should be seen as the main direction of economic policy. Industrial policy should support the abovementioned selfinvention process and result in technological modernization and development.

# INTELLECTUAL Property

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# LONG WAVE OR BUSINESS CYCLE? EASTERN AND SOUTH-EASTERN EUROPE SPECIFICITIES

#### Abstract

The financial crisis of 2008 led to one of the longest and most persistent Post War recessions of global economic activity. Neoclassical economists consider this crisis as the stochastic downturn of a common business cycle due to overoptimistic, risk-lover financial investors, which led to credit over-expansion. On the other hand, long wave theorists assert that deep recessions, such as the present one, are the result of the amplified long-lasting downturn, reoccurring every 40-60 years over the history of capitalism's development. According to these estimations, the last downturn of the fourth long wave started in early 70s. However, a debate exists on whether we are still facing the same downturn extended and re-enhanced due to neoliberal practices and any accompanying exogenous effects, or we are dealing with another long recession that followed the upward movement of a shortened fifth long wave that begun during the 80's. We provide a theoretical discussion and empirical evidence in order to answer two subsequent questions: Should this crisis be considered as a business cycle recession or a systemic downturn? If the second argument is true, are we facing the downturn of a fifth long wave after a relative shorter period of economic "prosperity", or on the contrary, we deal with the prolonged downturn of the fourth long wave? Our empirical comparisons check the significance of various structural specificities of different regions. In order to conclude on the importance of regional specific characteristics, we examine whether significant cross-country differences exist with respect to the evolution of this downturn in Eastern and South-Eastern Europe.

Key words: business cycles, systemic crisis, long waves, Eastern and South-Eastern Europe.

JEL: C22, E32

#### **1. INTRODUCTION**

The financial crisis of 2008 led to one of the longest and most persistent Post War recessions of global economic activity. Similarly to similar periods in economic history, it generated already vigorous debates. Neoclassical growth theory considers this crisis as the stochastic downturn of a common business cycle. On the other hand, the persistent current phase of negative growth triggers the awakening of theories that belong to a different section of economic literature. Traditionally, the theories of long waves come in the foreground with the occurrence of persistent long-lasting economic recessions. The long wave tradition asserts that deep recessions, such as the present one or similarly the ones that occurred in 1930's and 1970's, are the result of an amplified long-lasting downturn, reoccurring every 40-60 years over the history of capitalism's development.

The initial empirical evidences for long-lasting cyclical economic development lead us back to the first contributions at the end of 19th century by Jevons (1884), Parvus (1901){, 1901 #41@93}, Van Gelderen

(1913), De Wolff (1924) and the following, statistically more advanced, analysis of Kondratieff (1928). <sup>1</sup> Aside to the familiar business cycles, they emphasized the continuing long waves lasting approximately half a century. Since that time, interesting questions have been raised such as:

- Are these long lasting cycles a true economic phenomenon?
- How can these long lasting cyclical movements of economic activity be explained?

Literature on theoretical justification of long waves is quite extensive. Contributions can be divided in three different schools: Marxists (E Mandel 1981; E Mandel 1975; E Mandel 1980) interpret long waves by the falling course of the rate of profit, which is indisputably a driving force of the system. At the same time, they incorporate various exogenous factors – wars, geographical / sectoral market expansion and technological progress – which avert the systemic downward and move the economy back to a new phase of expansion.

Closely to the Marxian approach, the Social Structure of Accumulation (SSA) School provides an additional argument, offering a framework of continual cyclical movements: social institutional arrangements such as labour relations, banking system, the political environment etc, when they are propitious for the continuity of capital accumulation, reassure the transition to the next upswing. (Gordon 1980, 1991; Gordon et al. 1994; Gordon et al. 1983)

Different than the above, the Schumpeterian/Innovation School focuses on a similar cyclical movement of technological progress. Based on appropriate micro-oriented arguments like entrepreneurial motivations for adapting new ideas, theorists consider the fluctuations of economic activity as the result of innovation-clusters (A Kleinknecht 1987; A. Kleinknecht 1986; Mensch 1975; Schumpeter 1939)<sup>2</sup>.

Despite the different significance given to the parameter of technological progress, its influence on economy's long term evolution is undoubtedly accepted. Long fluctuations of economic activity were empirically and timely closely related to the occurrence of great technological revolutions. More specifically, the first long wave appears at the end of the 18th century with the beginning of the Industrial Revolution. The second started in the mid of the 19th century and was related to the mechanically produced steam engines that became the driving mechanism of production process in many industries and transportation (mechanization, first technological revolution). Direct outcome was the geographical expansion of capitalism. The opening of new markets for the mass produced industrial products occurred within the expanding period of the next, third long wave, which lasted until the end of the Second World War. Nevertheless, also this cycle was related to another (third) technological revolution: electrification that was accompanied by the expanded use of iron and heavy engineering. The fourth long wave starts after 1940 (in 1945 for Europe) relates to the revolution in natural sciences and known as the era of atomic energy, oil, automobiles and steel technologies connected with highly structured technology research (E. Mandel 1994; E Mandel 1975 ; Zarotiadis 2012).

The end of the fourth long wave divides scholars' opinions. Some say that since the 1970 a fifth long wave began, associated with the revolution in electronics, telecommunications and informatics (Freeman and Lou 2001; Korotayev and Tsirel 2010; Perez 2010). Some believe that we are still in the longer-lasting downswing of the fourth long wave (Zarotiadis 2012; Wallerstein 1984), while others assume that now begins the sixth wave, associated with new developments in nano-bio technologies (Lynch 2004). Part of this disparity results not only from using different empirical techniques but also different theoretical arguments.

<sup>&</sup>lt;sup>1</sup> Although, the literature uses the term "Kondratieff cycles", there are many authors who believe that the credits should be given to earlier works: "It would, in fact be more appropriate to speak about van Gelderen – De Wolff long waves" (Kleinknecht, A, 1992, p1).

<sup>&</sup>lt;sup>2</sup> In the course of time, various theoretical contributions combined the arguments of the mentioned schools, in order to avoid a mono-causal interpretation of long waves. Kleincknecht (1992) encourages this mixture; neo-Schumpeterians include also SSA-arguments in their discussion (Clark et al. 1981; Freeman 1982; Perez 1985, 1983, 2010, 2002, 2004; Tylecote 1992), while other theorist combine the scarcity of natural resources with the emergence of new technologies (Rostow 1975; Volland 1987). Also Van DuijnVan Duijn, J 1977, 'The long wave in economic life', De Economist, vol. 125, no. 4, pp. 544-576, ibid, Van Duijn, J (ed.) 1983, The Long Wave in Economic Life, George Allen & Unwin Ltd, Shaftesbury, Dorset, ibid. (1977, 1983) incorporates Schumpeter's theory of innovation and the dynamic system of Forrester (1976) and Sterman (1985, 1986) in his product life cycle approach.

Truly, the existence of long waves and thus the answer to the first question (in as how much they are a true phenomenon) is primarily an empirical exercise. There are both: a number of empirical confirmations (A. Kleinknecht 1986; A. Kleinknecht and Bieshaar 1983; Korotayev and Tsirel 2010; Reijnders 1992, 2009; Van Duijn 1977, 1983; Metz 1992), as well as many contributions that question the existence of long waves (Garvy 1943; Van der Zwan 1980; Van Ewijk 1981, 1982; Solomou 1998, 1990). As Van Duijn (1983) pointed out "the longer a cycle, the harder it is to prove its existence". Yet, the confirmation of a long-wave, as well as the exact periodization, depends both on theoretical fixations and / or to the use of different empirical methodologies and data. This is what the present paper tries to do. Motivated by the current persistent crisis, it combines alternative methodologies in different countries in order to contribute in answering the following questions: should this crisis be considered as a business cycle recession or a systemic downturn? If the second is true, are we facing the downturn of a fifth long wave after a relative shorter period of economic "prosperity", or on the contrary, we deal with the prolonged downturn of the fourth long wave? How different could be the periodicity of economic development due to region-specific socioeconomic characteristics – for instance the socio-political specificities of Eastern and South-Eastern European economies.

#### 2. METHODOLOGY & DATA

Spectral analysis is the most recent methodology in identifying the periodicities of time series. It estimates the level and also the significance of a period's importance in forming the cross-time development of a variable. There are two ways of presenting the derived estimations: first in the form of a table, where one shows the estimated importance (and the asymptotic standard errors) of periods of different duration, starting from the longest<sup>3</sup>. (Note that the estimations can vary depending to the windowmethodology used, namely Bartlett, Tukey or Parzen.) Second, in the form of a diagram that depicts the estimated importance of different periods, again, starting from those lasting longer.

Implementation of spectral analysis requires the transformation of time series to stationary processes. At this point, a debate exists with respect to the best trend elimination method. Difference stationarity method, which means to take 1st-differences and then apply spectral analysis, have been heavily criticized because there over- (under-) estimate the importance of shorter (longer) living periods. The opposite is being argued for trend stationarity method, where we apply spectral analysis on the residuals from the estimated linear trend: it is supposed to be biased towards longer lasting cycles. Middle ground could be created by the use of linear filters (Metz 2011). In the present paper we proceed with two alternative de-trending techniques: trend elimination after OLS estimation and Hodrick Prescott (1997) filtering<sup>4</sup> (HP) following the proposal of Metz.

We use the most recent Maddison Project datasets<sup>5</sup>. We start with an analysis of GDP per capita annual series. In this case we apply the methodology first for a longer period, 1913-2010, for four countries (UK, Germany, Italy and Greece). Second, we use a shorter period, 1950-2010, in order to include in our comparison three additional Eastern European countries (Hungary, Poland and Bulgaria). Next, we proceed with an analysis of growth rates of the same variable, yet only for the shorter period, 1950-2010 and for the seven countries. In this manner, our empirical work contributes to relevant empirical literature, which due to availability of data, focused primarily on countries that early jointed capitalism and were traditionally related with long term cyclical economic performance.

<sup>&</sup>lt;sup>3</sup> Due to space constraints in the appendix we present only the diagrams, however the relevant tables are available upon request.

 <sup>&</sup>lt;sup>4</sup> Parameter λ is chosen to be 100, as we use annual data and we wish to a filter that is relatively less sensitive to periodical changes.
<sup>5</sup> Bolt, J. and J. L. van Zanden (2013). The First Update of the Maddison Project; Re-Estimating Growth Before 1820. Maddison Project Working Paper 4. http://www.ggdc.net/maddison/maddison-project/data.htm

#### 3. EMPIRICAL ESTIMATIONS

In the following we discuss the main observances from the estimations, obtained from the above introduced methodology. Due to space constraints in the appendix you may find only the diagrams, however the relevant tables are available upon request.

Starting with the discussion of the results, there is an obvious difference in the importance of periodicities results according to the de-trending technique we use: as expected, linear trend elimination favours the presence of longer economic cycles, while, on the contrary, de-trending by the use of HP technique does the opposite.<sup>6</sup> This gives us a great opportunity to repeat something that has been widely notified in the relevant literature: to confirm the existence and the duration of a long-wave depends to a great extent on the pre-existing theoretical fixations. Truly, if we take the residuals that remain after estimating a more sensitive, flexible trend – for instance by the use of HP – waves of more than 40 years disappear. Does this mean that they do not exist, or that the sensitive trend itself reproduces actually the deeper regularity of longer lasting periodicity?

In total, even if the spectral analysis based on HP-filter does reveal the importance of shorter-lasting periods, in our understanding, the existence of long-waves lasting around 40 years is an unquestionable conclusion. As we can see in the appendix, the standardized spectral density function of all countries' GDP per capita trend eliminated (stationary) series takes high values in low frequencies, which corresponds to longer cycle periods.

Altogether, besides confirming the existing of longer lasting waves, another rough observation is that during the 20<sup>th</sup> century their average duration declined at no more than 40 years. This speaks for the existence of more than two long cycles within the century. In other words, it seems to favour the hypotheses that we experience already the downtrend of the 5<sup>th</sup> wave.

The same procedure for the shorter sample with data after 1950, leads to more interesting information. The estimations are almost similar for Hungary, Poland, Bulgaria and Greece, where apart from long cycles of 32 years period, their GDP's per capita cyclical behaviour is also explained by cycles of 16 years period, especially for Greece. Interesting is also to notify that Greece and Italy, although they have similar historical and geopolitical characteristics, they follow quite different standards of periodicity: the first seems to be more alike to the selected Eastern European countries, while the second is comparable to Germany and the United Kingdom.

Still, Italy provides also some interesting specificities. For instance, as we proceed with the estimation after using the HP filter, we find that the remaining shorter fluctuations are lasting more than 10 years in the UK, in Germany and even in Greece. This speaks for the appearance of relatively longer lasting business cycles, or in other words, our results support the presence of Juglars, Kuznets and Kitzin cycles in most of the countries. Oppositely, in case of Italy, significant periodicity appears also for 5-years cycles. In the analysis of the period of 1950-2010, using the same procedure, we found almost similar and more evident results, as we are able to compare also the estimations for the three south-eastern countries. Longer cycles seems to be present in United Kingdoms', Greece's and Bulgarian series, where the spectral density function reaches its maximum at 16 years duration. Again, Italy's graph is different from the others since three peaks occur on frequencies that correspond to cycles of 10, 5 and 4 years of duration. Partly similar is the picture we get for Germany, Poland and Hungary, where we see the existence of Juglar cycles of 10 years duration.

Finally, we estimate the spectral density functions for annual growth rates, using again the two alternative de-trending procedures. With the first method (linear trend elimination) we find long waves of

<sup>&</sup>lt;sup>6</sup> This is mostly the case in the analysis of level data (GDP per capita) then in the one of growth rates.

32 years duration in all series except from Italy. Interesting results are also presented in the series of Hungary and Bulgaria where we can see an important presence of very small cycles (2 years duration), probably because of the difficulties that they faced after the collapse of Stalinistic regimes (especially in case of Bulgaria). Greece's GDP per capita growth also depicts a long cyclical movement of 32 years, in this period. Again, as expected, with the second method (HO de-trending), business cycles are more evident in most of our series. However, long cyclical movements still appear to be significant, especially in the selected Eastern European countries, Poland, Hungary, and Bulgaria.

#### 4. CONCLUSIONS AND PROPOSALS FOR FURTHER RESEARCH

Our empirical estimations confirm long wave's significant contribution in GDP's cyclical evolution in both levels and growth GDP per capita series. The most interesting result of our research is that these long term cycles were also present to countries of Eastern Europe as Hungary, Bulgaria, Poland, despite the very different socioeconomic and political environment. Moreover, Greece seems to be very much alike with respect to cyclical patterns, although it has a quite different political development in the post-war period.

Another interesting result is that the estimated duration of long-waves during the 20<sup>th</sup> century declined at no more than 40 years. This seems to favour the hypotheses that we experience already the downtrend of the 5<sup>th</sup> wave. Nevertheless, it has to be further studied in order to come to more secure empirical conclusions for the different countries.

Finally, we find that for the selected European countries Juglars, Kuznets and Kitzin cycles of medium duration are by far more typical than the short business cycles, although with some exceptions. This is also an interesting finding that needs to be examined more carefully. In case it can be securely confirmed, it reveals a less volatile and/or less flexible character of European economies, signifying special characteristics that explain the additional difficulties faced in a period of systemic crisis like the present one.

#### Appendix



A.1 Linear Trend Elimination (Levels), period 1913-2010

#### ITALY











#### A.2 Linear Trend Elimination (Levels), period 1950-2010





#### POLAND



#### **BULGARIA**



#### ITALLY



#### GERMANY







#### A.3: Hodrick Prescott Trend Estimation (Levels), period 1913-2010

#### GREECE





#### GERMANY





#### A.4: Hodrick Prescott Trend Estimation (Levels), period 1950-2010

#### GREECE



#### POLAND



#### **BULGARIA**



#### ITALLY



#### GERMANY







#### A.5: Linear Trend Elimination (growth rate), period 1950-2010





#### POLAND



#### **BULGARIA**



#### ITALLY



#### GERMANY







#### A.6: Hodrick Prescott Trend Estimation (growth rate), period 1950-2010





#### POLAND



#### **BULGARIA**



#### ITALLY



#### GERMANY





#### References

- 1. Clark, J., Freeman, C., & Soete, L. (1981). Long waves, inventions, and innovations. *Futures, 13*(4), 308-322.
- 2. De Wolff, S. (1924). Prosperitats-und Depressionsperioden. In O. Jensen (Ed.), Der Lebendige Marxismus.Festgabe zum 70.Geburtstage von Karl Kautsky (pp. 13-43). Jena.
- 3. Eklund, K. (1980). Long waves in the development of capitalism? *Kyklos, 33*(3), 383-419.
- 4. Forrester, J. W. (1976). Business structure, economic cycles, and national policy\* 1. *Futures*, 8(3), 195-214.
- 5. Freeman, C. Innovation and Long-cycles of economic development. In, 1982 (pp. 25-27)
- 6. Freeman, C., & Lou, F. (2001). As time goes by: from the industrial revolutions to the information revolution: Oxford University Press, USA.
- 7. Garvy, G. (1943). Kondratieff's theory of long cycles. *THE REVIEW OF ECONOMIC STATISTICS*, 25(4), 203-220.
- 8. Gerster, H. J. (1992). Testing long waves in price and volume series from sixteen countries. In *New Findings in Long Wave Research* (pp. 120-147): St. Martin's Press.
- 9. Gordon, D. M. (1980). Stages of Accumulation and Long Economic Cycles. In H. T. K., & W. I. (Eds.), *Processes of the World-System* (pp. 9-45). Beverly Hills.
- 10. Gordon, D. M. (1991). Inside and outside the long swing: the endogeneity/exogeneity debate and the social structures of accumulation approach. *Review (Fernand Braudel Center)*, 263-312.
- Gordon, D. M., Edwards, R., Reich, M., Kotz, D., & McDonough, T. (1994). Long swings and stages of capitalism. In *Social structures of accumulation: The political economy of growth and crisis* (pp. 11-28): Cambridge University Press.
- 12. Gordon, D. M., Weisskopf, T. W., & Bowles, S. (1983). Long swings and the nonreproductive cycle. *The American Economic Review, 73*(2), 152-157.
- 13. Hodrick, R. J., & Prescott, E. C. (1997). Postwar US business cycles: an empirical investigation. *Journal of Money, credit, and Banking*, 1-16.
- 14. Jevons, W. S. (1884). Investigations in Currency and Finance. London: Macmillan.
- 15. Kleinknecht, A. (1986). Long waves, depression and innovation. *De Economist, 134*(1), 84-108.
- 16. Kleinknecht, A. (1987). Innovation Patterns In Crisis and Prosperity: Schumpeter's Long Cycle Reconsidered. London Macmillan.
- 17. Kleinknecht, A. (1992). Long-wave research: New results, new departures-an introduction. *1992*) New Findings in Long-Wave Research, :ST. MARTIN'S PRESS, INC, 1-12.
- 18. Kleinknecht, A., & Bieshaar, H. Kondratieff long waves in aggregate output. In, 1983
- Kondratieff, N. D., & Oparin, D. I. (1928). The "Long Wave Cycle" and 'The Theses of N.D. Kondratieff's Paper: Long Cycles in Economic conditions' (G. Daniels, Trans.). In *The Long Wave Cycle* (pp. 25-99 and 101-105, 137-108). New York Richardson & Snyder
- 20. Kondratieff, N. D., & Oparin, D. I. (1928/1984). *Long Economic Cycles* (G. Daniels, Trans.). New York Richarson & Snyder.
- 21. Korotayev, A., & Tsirel, S. (2010). A Spectral Analysis of World GDP Dynamics: Kondratieff Waves, Kuznets Swings, Juglar and Kitchin Cycles in Global Economic Development, and the 2008-2009 Economic Crisis. *Structure and Dynamics*, *4*(1).
- 22. Lynch, Z. (2004). Neurotechnology and society (2010–2060). Annals of the New York Academy of Sciences, 1013(1), 229-233.
- 23. Mandel, E. (1975). 'Long Waves' in the History of Capitalism (J. d. Bres, Trans.). In N. L. Review (Ed.), *Late Capitalism* (pp. 108-146). London: NLB.
- 24. Mandel, E. (1980). Long waves of capitalist development: a Marxist interpretation: based on the Marshall lectures given at the University of Cambridge: Verso Books.
- 25. Mandel, E. (1981). Explaining long waves of capitalist development\* 1. Futures, 13(4), 332-338.
- 26. Mandel, E. (1994). Τα Μακρά Κύματα της Καπιταλιστικής Εξέλιξης: Μια μαρξιστική Ερμηνεία (Ε.Π., Trans., 2nd ed.): Εργατική Πάλη.

- 27. Mensch, G. (1975). Stalemate in Technology: Innovations Overcome the Depression. New York: Ballinger.
- 28. Metz, R. (1992). A re-examination of long waves in aggregate production series. In *New Findings in Long-Wave Research*: St. Martin's Press.
- 29. Metz, R. (2011). Do Kondratieff waves exist? How time series techniques can help to solve the problem. *Cliometrica*, 5(3), 205-238.
- 30. Parvus (1901). Die Sturm und Drangperiode des Kapitals. In *Die Handelskrisen und die Gewerkschaften*. Munich: M. Ernst.
- 31. Perez, C. (1983). Structural change and assimilation of new technologies in the economic and social systems\* 1. *Futures*, *15*(5), 357-375.
- 32. Perez, C. (1985). Microelectronics, long waves and world structural change: New perspectives for developing countries. *World development*, *13*(3), 441-463.
- 33. Perez, C. (2002). *Technological revolutions and financial capital: The dynamics of bubbles and golden ages:* Edward Elgar Publishing.
- 34. Perez, C. (2004). Technological revolutions, paradigm shifts and socio-institutional change. *Globalization, Economic Development and Inequality: An Alternative Perspective, Cheltenham, UK: Edward Elgar*, 217-242.
- 35. Perez, C. (2010). Technological revolutions and techno-economic paradigms. *Cambridge Journal of Economics*, 34(1), 185.
- 36. Reijnders, J. P. G. (1992). Between trends and trade cycles: Kondratieff long waves revisited. In *New findings in long waves research, New York: St. Martin's Printing* (pp. 15-44): St. Martin's Press.
- 37. Reijnders, J. P. G. (2009). Trend movements and inverted Kondratieff waves in the Dutch economy, 1800–1913. *Structural Change and Economic Dynamics, 20*(2), 90-113.
- 38. Rostow, W. W. (1975). Kondratieff, Schumpeter, and Kuznets: trend periods revisited. *The Journal of Economic History*, *35*(4), 719-753.
- 39. Schumpeter, J. A. (1939). Business cycles. A Theoretical, Historical and Statistical Analysis of the Capitalist Process, abridged, with an introduction, by Rendigs Fels. New York: McGraw-Hill.
- 40. Solomou, S. (1990). *Phases of economic growth, 1850-1973: Kondratieff waves and Kuznets swings:* Cambridge University Press.
- 41. Solomou, S. (1998). Economic Cycles: Long Cycles and Business Cycles Since 1870: St. Martin's Press.
- 42. Sterman, J. D. (1985). A behavioral model of the economic long wave. *Journal of Economic Behavior* & Organization, 6(1), 17-53.
- 43. Sterman, J. D. (1986). The economic long wave: theory and evidence. *System Dynamics Review*, 2(2), 87-125.
- 44. Tylecote, A. (1992). *The long wave in the world economy: the present crisis in historical perspective:* Psychology Press.
- 45. Van der Zwan, A. (1980). On the assessment of the Kondratieff cycle and related issues. *Prospects of economic growth*, 183-222.
- 46. Van Duijn, J. (1977). The long wave in economic life. *De Economist*, 125(4), 544-576.
- 47. Van Duijn, J. (Ed.). (1983). *The Long Wave in Economic Life*. Shaftesbury, Dorset: George Allen & Unwin Ltd.
- 48. Van Ewijk, C. (1981). The long wave--a real phenomenon? *De Economist, 129*(3), 324-372.
- 49. Van Ewijk, C. (1982). A SPECTRAL ANALYSIS OF THE KONDRATIEFF CYCLE. Kyklos, 35(3), 468-499.
- 50. Van Gelderen, J. (1913, Springvloed: beschouwingen over industriele outwikkeling en prijsbeweging. *De Nieuwe Tijd*, pp. 253, 269 and 445.
- 51. Volland, C. S. (1987). A comprehensive theory of long wave cycles. *Technological Forecasting and Social Change*, *32*(2), 123-145.
- 52. Wallerstein, I. (1984). Long waves as capitalist process. *Review (Fernand Braudel Center)*, 7(4), 559-575.
- 53. Zarotiadis, G. (Ed.). (2012). Neoliberalism. Athens: Gutenberg.

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# USING GRAVITY MODELS FOR THE EFFECTIVE DETERMINATION OF SOCIOECONOMIC LOCALITY

#### Absrtact

Recent economic developments and the results of the systemic crisis of capitalism have transposed the scientific interest into issues related to labour economics. Furthermore, the necessity of occupying with the spatial aspects of a number of socioeconomic phenomena places the term of local labour markets in the heart of scientific reasoning. The main purpose of this paper is the application of an empirical methodology, based on gravity models tradition, that supports the effective determination of socioeconomic locality. This contribution is thought to provide an instrument that helps the scheduling of efficient spatial socioeconomic policies. Through this application is shown the existence of significant discontinuities regarding the administrative and the socioeconomic spatial segregation of the Periphery of Central Macedonia. Specifically, the socioeconomic demarcation of the specific geographical area that is constituted by the cities Alexandreia, Aridaia, Veroia, Naousa, Edessa, Giannitsa, Thessaloniki and Kilkis is not consistent with the administrative one. In the rest geographical area that belongs to the administrative Periphery of Central Macedonia the administrative spatial demarcation is consistent with the socioeconomic one.

Keywords: Spatial Socioeconomic Policy; Local Labour Market; Gravity Model.

JEL classification: R58, R23, F16

#### **1. INTRODUCTION**

Recent economic developments and the results of the systemic crisis of capitalism have transposed the scientific interest into issues related to labour economics. Furthermore, the necessity of occupying with the spatial aspects of a number of socioeconomic phenomena places the term of local labour markets in the heart of scientific reasoning. Ballas D. and Clarke P. (2000) have pointed out that the use of specialized geographic tools is able to provide scientific community with extended capabilities of foreseeing the results of a specific socioeconomic policy even before its application.

The extensive application of gravity models in the whole range of spatial occurrences in economics for over fifty years, especially, for trade flows and mobility of production factors, implies its remarkably consistent presence in relative scientific areas (Rose A.,2000). The gravity models is much like Newton's law of universal gravitation (1687) which states that every particle in the universe attracts every other particle with a force that is directly proportional to the product of their masses and inversely proportional to the square of the distance between them (A. Cieslik,2007).

"These models are simple in structure, fit the data well, and are in principle consistent with a wide range of theoretical underpinnings" (Deardorff A., 1998). Consequently, gravity models are regarded to

have provided "some of the clearest and most robust findings in empirical economics." (Learner E. & Levinsohn J., 1995). E.D.Ravenstein (1889) first used gravity models for analyzing the migration patterns in the 19<sup>th</sup> century UK. W. J. Reily (1931), Professor of Texas University, was the first in tackling with the delimination market problem and pioneered the use of gravity models in spatial business analysis (W. Crhristaller (1935); P. D. Converse (1949); W. Applebaum (1961); D. L Huff (1964); A.S. Fotheringham and M. E. O' Kelly (1989); R.T. Rust and N. Donthu (1995) etc).

# Illustration of the Gravity Model

The shorter the distance between two objects, and the greater the mass of either (or both) objects, the greater the gravitational pull between the objects.

Source: www.rri.wvu.edu

#### 2. SOCIOECONOMIC FRAMEWORK FOR EMPLOYMENT POLICIES

The establishment of a microeconomic administrative model of the local economic function during the last decades promoted the need of analyzing and understanding the role of local labour markets when scheduling regional socioeconomic policy plans. Moreover, the specific type of economic function seems to be further applied in the future: "In my mind, direct links between the European Union and regional and local authorities is more needed than ever" (Martin Schulz - President of the European Parliament, www. 11/03/2013 - Reuters.com). Under these circumstances, the development of strategies according to regional specific needs and the systematic use of active labour markets policy instruments are going to provide an extremely significant employment policy assistance.

The main purpose of this paper is the application of an empirical methodology, based on gravity models tradition, that supports the effective determination of socioeconomic locality. This explicit identification of labour market segmentation is going to be achieved through a multicriteria model application which determines the spatial dimension of each local labour market. This analysis is based on the term "breaking point", which is the place between two local agglomerations where "customers" are indifferent of where to go, as it was introduced by P.D. Converse (1949). This contribution is thought to provide an instrument that helps the formulation of efficient spatial socioeconomic policies. The present work is focused on the internal spatial socioeconomic structure of the Periphery of Central Macedonia. A particular emphasis is given to the investigation of significant discontinuities regarding the socioeconomic spatial demarcation of the specific Periphery and the administrative one.

#### 3. MODEL FOR EMPIRICAL REGIONALIZATION

The embodiment of the various affects of space in the theoretical and empirical framework of social sciences during the last decades is, undoubtedly, a significant progress. Deepening in the multidimensional relation of space with labour economics promotes ways of producing spatial models of analyzing socioeconomic reality. Consequently, the contribution of space to a fuller understanding of labor market function is obvious.

The main objective of the present work is proposing a normative model of empirical regionalization which aims to support the spatial demarcation of regional labour markets. This model is notably suitable for developing spatial socioeconomic policy programs as long as it proposes the optimal segregation of local labour markets.

The model of empirical regionalization proceeds through the following steps:

1. Use as an appropriate starting point an elementary or augmented formulation of gravity models:

 $Mob_{i,i} = b(p_i)^{a_1}(p_i)^{a_2}(distance_{i,i})^{a_3}$ 

where  $p_i$  and  $p_j$  is the significance of two local agglomerations, distance<sub>ij</sub> shows the distance between them, and b,  $a_1$ ,  $a_2$  and  $a_3$  are coefficients to be estimated. Log linear transformation of the theoretical gravity model into an empirical model that can be estimated, based on local available data:

 $Ln(Mob_{i,i}) = Inb + a_1In(p_i) + a_2(Inp_i) + a_3In(distance_{i,i}) + a_4Inf + \varepsilon_{i,i}$ 

Note that F is a vector of various dummies variables (taking values 0,1), representing the different physical, technical and administrative boundaries existing between i and j, while a<sub>4</sub> is the vector of relevant coefficients to be estimated.

Estimation of b,  $a_1$ ,  $a_2$ ,  $a_3$  and  $a_4$ .

- 2. Calculation of Mob<sub>ij</sub> for each pair of socioeconomic agglomeration in the wider region of interest, based on the estimated parameters from the previous step and construct the matrix A.
- 3. Construction of the matrix B which is constituted by the relative frequencies of the elements of the matrix A. In the following step takes place the construction of matrix C by taking into account the total relative repulsion of each departure city and the total relative attraction of each arrival city of Matrix B. More specifically, we treat the two variables (city of departure, city of arrival) as they are independent. The elements of matrix C are determined according to that assumption.
- 4. Construction of Matrix D that comes out of matrix C deducted from matrix B. Whether the element Mob<sub>ij</sub> of matrix D is positive, the interaction which regards the departure of city i and the arrival in the city j is gravitational, otherwise it is not. The higher than zero the price of element Mob<sub>ij</sub> is, the more gravitational the relation is.
- 5. Clustering analysis is applied in the following step of the model of empirical regionalization. Firstly, pairs of cities are created. Each pair is constituted by those cities whose mutual attraction is the most intense. Whether, two cities have the same mutual gravitational interaction with a third one, the one that represents the greater number of citizens is promoted. The biggest city of the specific Periphery (in terms of population) is not participating at the particular point of the clustering procedure. Thereafter, pairs are combined into groups that are characterized by the mightiest mutual

gravitational interaction. In that case again, whether two groups have the same mutual gravitational interaction with a third one, the one that represents the greater population is promoted.

- 6. In the next step, groups that are characterized by the higher number of mutual gravitational interactions are joint together. At least half of the existing mutual relations have to be gravitational in order to be allowed the combination of two groups. The specific restriction is applied in order to be provided an ensuring for the internal consistency of formulating groups. Furthermore, whether two groups have the same number of mutual gravitational interactions with a third one, the one that represents the greater number of citizens is promoted.
- 7. Finally, the group whose members are characterized by the mightiest gravitational interactions with the biggest city of the specific Periphery (in terms of population) embodies this city. In that case again, whether two groups have the same mutual gravitational interaction with the biggest city, the one that represents the greater population is promoted.

A pilot application of the model of empirical regionalization on the Periphery of Central Macedonia is going to allow the spatial determination of local labour markets of the specific Periphery. The necessary for the empirical procedure data has been taken from the Greek Social Data Bank (GSDB) which is administered by the National Centre of Social Research (EKKE). The cities whose population is over 20000 took place in the empirical procedure. These cities are: Serres, Naousa, Kilkis, Katerini, Thessalo-niki, Edessa, Giannitsa, Aridaia, Veroia and Alexandreia Imathias. Moreover, it was accepted that Irakleia Serron, Litohoro, Poligiros and Nea Moudania to be included due to a more effective representation of the whole geographical area of the specific Periphery. At this point, it was tested the introduction of one dummy variable (Neighb) in the empirical model. This variable has been taken the value 1 whether the two cities were in neighboring administrative areas and the value 0 if not. The verification that the specific dummy variables was serially correlated with the rest variables did not allow the augmented formulation of the model.

The application has been tested for heteroskedasticity, serial correlation, multicollinearity and specification errors. In accordance to the steps of the methodology were formulated the following pairs of cities: Alexandreia – Giannitsa, Aridaia – Edessa, Veroia – Naousa, Serres – Iraklia Serron, Katerini- Litohoro and Poligiros – Nea Moudania. In the following step, the only group of four cities that was created constituted by the cities Aridaia, Edessa, Veroia and Naousa. This situation did not change during the next steps. At the final step of the methodology, Thessaloniki formulated a united socioeconomic area with Kilkis.

Through this pilot application is shown the existence of significant discontinuities regarding the administrative and the socioeconomic spatial segregation of the Periphery of Central Macedonia. Specifically, the spatial socioeconomic demarcation of the specific geographical area that is constituted by the cities Alexandreia, Aridaia, Veroia, Naousa, Edessa, Giannitsa, Thessaloniki and Kilkis is not consistent with the administrative one. In the rest geographical area that belongs to the administrative Periphery of Central Macedonia the administrative spatial demarcation is consistent with the socioeconomic one. Consequently, this pilot application proves the existence of significant discontinuities regarding the socioeconomic and administrative segregation of the Periphery of Central Macedonia. This result can be pictured on the following way:

#### 3rd INTERNATIONAL SUMMER SCHOOL OF ASECU YOUTH / JULY 15-20, 2013. KOTOR – MONTENEGRO



Διεύθυνση Περιβαλλοντικού & Χωροταξικού Σχεδιασμού (ΔΙ.ΠΕ.ΧΩ.) Νοέμβριος 2005



#### 4. CONCLUSIONS

The main purpose of this paper was to provide an empirical methodology, based on gravity model tradition, that supports the spatial demarcation of labour markets, along with the regional specialization of applied policy. The main focus was on the use of this methodology in setting up a regionally segmented, efficiently structured, active labour market policy. Significant discontinuities between spatial socioeconomic and administrative demarcation are causing important difficulties in applying the policy that meets the socioeconomic needs of the local societies. That causes spectacular problems in evaluating and adopting efficient labour market policies and leads to the perpetuation of relative existing malfunctions. As a result, the optimal space determination of the socioeconomic locality is a prerequisite for the effective administration of economic function. Consequently, this contribution is expected to provide a spatial instrument for the enhancement of socioeconomic policy plans in the future.

#### **Bibliography**

- 1. Ballas D., Clarke G.P. (2000): GIS and microsimulation for local labour market policy analysis, Computers, Environment and Urban Systems, 24, pp. 305-330.
- 2. Cieślik Andrzej (2009): Bilateral trade volumes, the gravity equation and factor proportions, Journal of International Trade & Economic Development, Taylor and Francis Journals, 18(1), pp. 37-59.
- 3. Deardorff A.V. (1998): Determinants of bilateral trade: Does gravity work in a neoclassical world? in: Frankel J.A. (eds), The regionalization of the world economy. Chicago: The University of Chicago Press
- 4. Learner Edward E., Levinsohn James (1995): International Trade Theory, the Evidence. In Grossman and Rogoff (eds), Handbook of International Economics 3. North-Holland.
- 5. Rose A. (2000): One money, one market: the effect of common currencies on trade. Economic Policy, 30, pp. 9-45.
- Zarotiadis G., Stamboulis M. (2011): Using Gravity Models in Regional Socioeconomic Policy: pilot applications in active labour market policies, Portuguese Journal of Quantitative Methods, Vol 1-II, pp. 63-73.
- 7. www.reuters.com
- 8. www.rri.wvu.edu

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#### THE COMPARATIVE ADVANTAGE OF GREECE IN THE ERA OF RECESSION

#### Abstract

The aim of this paper is to investigate the export behaviour of Greece and to identify its comparative advantage. Moreover, through the conclusions of the analysis, is investigated whether the export activity of the country coincides with its comparative advantage especially in the present circumstances, those of recession. Initially, we define the comparative advantage based on the approaches of Adam Smith, David Ricardo's and Heckscher-Ohlin. Furthermore we analyze the current situation of the country, Greece's economic structure and its trade performance, mainly the exports. In addition we identify the elements of the Greek competitiveness and the results of the fiscal consolidation that Greece is undergoing. Having analyzed the definition of the comparative advantage mainly in four different sectors. Firstly we identify the key factors making the touristic sector extremely profitable for the Greek economy; secondly we analyze the commercial shipping sector then the strategically position of the country and finally the competitive rates in which Greece seems to gain ground.

Keywords: comparative advantage, competitiveness, internationalisation, entrepreneurship, financial crisis.

#### 1. HISTORICAL AND LITERATURE REVIEW.

International trade theory provides explanations for the pattern of international trade and the distribution of the gains from trade. The study of trade emerged in the era of mercantilism (approximately in 16<sup>th</sup> century) as a crude set of arguments about how a nation should trade. The theory of International Trade examines the reasons why different countries exchange their products, but in addition the aftermath that this process has, in the internal economy of a country involved in international trade.

Adam Smith, in The Wealth of Nations in 1776, postulated that under free trade, each nation should specialize in producing those goods that it could produce most efficiently. Some of these would be exported to pay for the imports of goods that could be produced more efficiently elsewhere. Smith ridiculed the fear of trade by comparing nations to households. Since every household finds it worth-while to produce only some of its needs and to buy others with products it can sell, the same should apply to nations.

The theory of absolute advantage is based on the assumption that the nation is absolutely better (i.e., more efficient) at production of certain goods than are its trading partners. Smith showed by his example of absolute advantage that both nations would gain from trade.

David Ricardo, in 1817, enunciated his refinement of Smith's concept by postulating the principle of comparative advantage (as opposed to Smith's concept of absolute advantage). The theory of comparative advantage states that even if a country is able to produce all its good at lower costs than another country can, trade still benefits both countries, based on comparative costs. His writings demonstrated what has become known as: "...the principle of comparative advantage: a nation,
like a person, gains from the trade by exporting the goods or services in which it has its greatest comparative advantage in productivity and importing those in which has the least comparative advantage...".

The key word is comparative, meaning relative and not necessarily absolute. There are gains from trade whenever the relative price ratios for two goods differ under international exchange for what would be under conditions of no trade. In addition, the theory of comparative advantage demonstrates that countries jointly benefit from trade (under the assumption of both goods).

With the theory of absolute advantage, Ricardo's theory of comparative advantage does not answer why production cost differ within each country and also no consideration is given to the possibility of producing the same goods with different combinations of factors.

The leading theory of what determines nation's patterns was presented by Eli Heckscher in 1919 and a clear overall explanation was developed and publicized in the 1930s by Heckscher's student Bertil Ohlin.

The Heckscher-Ohlin theory states that international and interregional differences in production costs occur because of differences in the supply of production factors: Commodities requiring for their production much of (abundant factors of production) and little of (scarce factors) are exported in exchange for goods that call for factors in the opposite proportions. Thus indirectly, factors in abundant supply are exported and factors in scanty supply are imported (Ohlin, 1933).

These simple statements lead to an important conclusion: under free trade, countries export the products that use their scarce factors intensively and import the products using their scarce factors intensively. A country is labour-abundant if it has a higher ration of labour to other factors than does the rest of the world. A product is labour-intensity if labour costs are a greater share of its value than they are of the value of other products. Those goods that require a large amount of the abundant and less costly –factor will have lower production costs, enabling them to be sold for less in international markets. (Ryszard Barnad, 1996).

"Some other new models also relaxing the several assumptions have emerged. The appearances of such new models have not reduced the popularity of comparative advantage concept, which recently becomes dynamic one. Some economists argue that a country's comparative advantage is dynamic, instead of static. So far, the dynamic theory of comparative advantage has put greater attention on the changes in supply (production) side.

This is related to how specific determinants affect the output (economic) growth and, in turn, comparative advantage. Redding (2004) finds that comparative advantage is endogenously determined by the past technological changes and innovation. The dynamics of comparative advantage might be also caused by the role of input trade (Jones, 2000), the friction in international trade and investment flows due to geography, institutions, transport, and information cost (Venables, 2001), the transmission of knowledge across borders (Grossman and Helpman, 1991), the technological differences across border (Trefler, 1995), and the monopolistic competition in differentiated products with increasing return to scale (Krugman, 1979).

Indeed, many applied economists, e.g. Liesner (1958), Kanamori (1964), Balassa (1965), Donges and Riedel (1977), Bowen (1983), Vollrath (1991), Dalum et al. (1998) and Laursen (1998), among others, have tried to make various empirical measures to "reveal" countries' comparative advantage." (Tri WIDODO).

# 2. GREECE - COUNTRY ANALYSIS: REFORMS AND FISCAL CONSOLIDATION

#### 2.1: Economic Structure and Performance of Greece:

Greece is a developed economy of 11.3 million people, located on the Southeastern edge of the European Union (EU). At \$30,000, Greek GDP per capita is at 95% of the EU average, 1 and the 29th highest in the world (IMF 2009). Greece also has a high level of social development – it ranks 25th in the human development index of the UNDP (UNDP 2009).

Services constitute a large portion of the economy (76%), followed by industry (15%) and agriculture (4%) (CIA 2010). EU accession and the adoption of the euro have been the engines of Greek economic growth in the last two decades.



Chart provided by: CEIC

Greek C/A gap accounted for 9.2% of the GDP in the pre-crisis period 2000-2008 on average. This was more than twice the 4.2% gap in an emerging economy like Poland that was witnessing capital inflows attached to the EU accession over the period.





More than having accumulated large external debt during the C/A gap period, Greece has a limited capacity to pay it back. The export per GDP ratio is very small for the country, only 7.5% for the precrisis period and indeed better (9.4%) in 2011. The share rises to 21.6% for the reference period (22.7% for 2011) if services are included in total exports. But even under this calculation, the export to GDP is

visibly lower than in the case of most EU countries. Furthermore, a very large share of the exports (some one quarter of the exports of goods) is made up by petroleum products – very risky for a country that is not producing crude oil. Oil refining margins have shrunk significantly recently and this is likely to remain on long term.

Running C/A gaps for limited period of time, or small deficits over longer periods, is not necessarily unsustainable. But the inflows balancing the C/A gap in these periods, be them loans, capital or portfolio investments, should enhance the country's export capacity. But Greece's exports of goods were only 2.1% up in 2011 vs. 2008, while its exports of services were 16% down. Germany's exports of goods increased by 9.1% over the period, but this might not be a good comparison. (*lulian Ernst, 2012*). Greek exports concentrate around transportation/logistics (mainly shipping) and tourism. These two "star" clusters account for 40% of the value of total exports and have recently had the highest growth rate (Exhibit 2). Other clusters, mainly concentrated in agricultural products, oil & gas, metal mining and manufacturing, constitute a considerably smaller part of exports, and have been shrinking over the 1997-2007 period.



#### 2.2: Elements of Greek Competitiveness.

The Greek economy suffers from serious competitiveness problems. It ranks 61st out of 128 countries in the Global Competitiveness Index. However, the picture is even bleaker when Greece's income levels are considered. In Exhibit 3, GCI rakings are plotted against income level rankings. Given its income level, Greece stands out as the least competitive economy in the EU, and has similar level of income-ad-justed competitiveness with Argentina, the Dominican Republic and Kuwait. One of the most striking features of our analysis of Greek competitiveness is that it suffers in areas where government involvement is highest. Fiscal policy and administrative infrastructure stand out as the least competitive areas, which are directly related to government intervention.



Exhibit 3: Greece has the lowest competitiveness ranking in the EU when income level is controlled (2009)

Global Competitiveness Index Rank

Source: Global Competitiveness Index. 128 countries ranked.

#### Exhibit 4: Greece has competitiveness problems in areas of high government involvement



Source: Institute for Strategy and Competitiveness

# 2.3: Fiscal Consolidation and its results.

#### 2.3.1: GDP growth rate & Consumer Price Index



#### 2.3.2: Strong austerity measures and their results.



#### 2.3.3: Driving down the deficit – Rebounding Greece



# 3. GREECE'S COMPARATIVE/COMPETITIVE ADVANTAGE.

### 3.1: Tourism: Great features of developing relying on independent entrepreneurship.

The Greek economy is often criticised for failing to develop strong industrial sector and to establish suitable distribution channels for exporting agriculture. Tourism is a major contributor to the balance of payments, while it is one of the few activities which would enable Greece to achieve competitive advantages through the redistribution of labour within Europe (Economist, 1993: 5-6). Thus it is a vital motivator of the Greek economy reducing the deficit of the balance of payments, boosting employment, generating income and contributing to regional development (Zacharatos, 1989:274; Truett \$ Truett, 1987:178).

Greece is one of the world's leading tourism destinations and draws investor interest in a variety of subsectors. Tourism accounts for 15.7% of national GDP and 18.4% of employment in Greece. The sector has grown significantly over the years and remains a strong area for investing. Greece is 17th in tourist arrivals globally and tourism is 24th in total contribution to GDP globally. (Source: invest in Greece agency). Natural and historical legacies favour tourism in Greece, a country with a unique past, a wealth of archaeological treasures and world class monuments and museums. A few years ago, Greece hosted the highly lauded 2004 Olympic Games, which proved to be a catalyst for an improved tourism infrastructure. It is anticipated that tourism arrivals will reach 20mil by 2015. With a population of around 10 million people, this means that by 2015, there will be 2 tourists for each Greek citizen.

Tourism receipts reached 10.5 billion Euros in 2011, a 10\$ increase over 2010. Supporting Greece's tourism industry is a well developed infrastructure: - More than 9.500 hotels and 1.3 million beds. – 4.500 travel agencies. –A fleet of 160,000 cars for rent. –More than 7.500 tourist coaches. -500 yacht agencies with 3.500 yachts to explore Greece's seas. -29 international airports and 45 airports in total, all ready to host domestic flights. –A comprehensive ferry system connecting the mainland with Greece's islands. –A rail and intercity coach system that covers most of the country. (Source: invest in Greece agency).

Greece is ranked 29th in the world, among 139 countries, in terms of tourism competitiveness: -5th in tourism infrastructure. -1st in environmental treaty ratification. -15th in airport density and in operating airlines. –Significant hotel infrastructure. Despite all these 5 star hotels represent only 3.5% in the distribution of Units and 4 star Hotels represent 12.8%. In spite of progress, Greece has fairly low average per capita tourism expenditure at 640 Euro. (Source: invest in Greece agency).

Tourism can be the main motor of development for the Greek economy under the following conditions: 1. Rehearsal of the policy leading to the continuous deterioration of the international competiveness of Greece. The domestic fiscal policy should be adapted to the reality of the strong euro. 2. The various fiscal measures aiding tourism, should aim primarily to provide incentives for organization and concentration of tourist services against organized demand and generally empower the touristic entrepreneurship. Finally, there is a need to strengthen the promotion of the tourism product of Greece abroad, both from the units operating in the touristic industry and by the state and the Ministry of Tourism, which occasionally increased advertising expenditure for the year 2009 by 50 %.

# 3.2: Greece's commercial shipping sector.

The leading role of the Greek-owned shipping companies in the world market and the extroverted character recommend one of the main comparative advantages of Greece that can and should acquire leading role in the new development patterns of the country. That is included in special studies prepared by "Foundation for Economic and Industrial Research"- (IOBE 2013). According to data of the studies, the maritime transports especially the ocean shipping, contribute to the value almost for 4% of the total GDP. In terms of employment offered by the maritime sector exceeds 192millions. The Greek-owned shipping companies is a sector with a strong presence in the global economy, that Greek shipowners operate in a highly competitive global market in which shipping businesses from all around the world aim at taking part and being successful. However the tradition and the deep knowledge of the difficulties and the dangers that define this specific market, consist a powerful comparative advantage for the Greek-owned shipping companies, which throughout decades are managing to be in the first positions and to hold the share of the Greek-owned shipping companies, high in the global market. This share was t the end of 2008 over 16.8% of the global transportation capacity, although in 2004-2008 there was a gradual share decrease of approximately 20.3% than it was back in 2003 and 17.4% back in 1997 (UNCTAD, "Review of Maritime Transport").

Based on the amount of new orders assigned by the Greek shipping companies in 2008 and based on the looming effect on the structure of the world fleet after the recent global financial crisis, it is estimated that its share of the Greek-owned shipping companies are reaching levels over 17% after 2011. The greatest thing is that in the decade of 2000 the bonds of the Greek shipping with the Greek economy have been boosted, because of the 1200 shipping companies which are located in Greece, in result the impressive increase of the levy from the shipping abroad that comes in balance with the country's current account in 4.06% of the GDP in 2008, 2.2% of the GDP in 2002 and 3.1% of the GDP in 2000, by the construction and entry of a large number of new businesses and ships in the market in 2004-2008, which has led to extremely high overcapacity in the shipping industry from the second half of 2008, consequently, in plummeting rates and revenue by shipping companies. The global financial crisis of 2008-09 had an extremely negative impact on the progress and the international trade, in combination with the increase of the supply of transportation capacity.

As far as the Greek economy, the crisis in the shipping industry implies the decreased levy to 33.6% within January and July 2009, in comparison to the increased levy to 20.7% within the same months in 2008. The Greek fleet was one of the biggest in the world with a high rate of qualitative improvements within the last five years. In February of 2009, the Greek fleet was in the fist place of the international ranking, owning 4161 ships over 1000 dwt (Deadweight tonnage), with total capacity of 263.6 million dwt and was the 15.2% of the global capacity (Lloyds Register – Fairplay). In these ships, 1072 under construction ships are included of total capacity 53.4 dwt. The Greek fleet is consisted by 50% of ships that transfer dry cargo and by 35% of ships that transfer crude oil. The latter consist the 21.7% of the global fleet in tankers. Another important element of the recent years - the main developments during 2008, according to the Association of Greek Ship-owners - constitutes a steady reduction in the average age of ships of the Greek-owned fleets.





- Members of the Eurozone, NATO, EBRD, EIB, IMF, UN, OECD, WTO, WHO, Interpol, UNESCO and CERN
- Access to the strategic and high growth SEE markets with:
  - Over \$1,000bn of GDP
  - Over 140 million people
- Strong business and cultural ties with the region
- Network of over 4,000 Greek companies present
- More than 3,000 Greek branches of banks covering over 20% of the banking market in SE Europe
- Greek companies in top 3 investors in every market



Greece can be the regional hub for strategic growth in SE Europe

#### 3.4: Top talent at competitive rates.



#### 3.5: The disadvantages of Greece in the era of internationalization of economies

On the other hand, Greek economy deals with competitiveness problems when the products of the leading firms in Greece are faced with those of Western Europe or North America, which are currently the most demanding markets in the world. In areas such as services, industrial products, the application of high technologies and consumer products, Greek companies have never been able to penetrate forcefully in none of the mentioned markets, mainly due to comparatively lower quality of their products and maybe the not so competitive pricing policies.

In levels of innovation, which is perhaps the most critical factor for economic progress and especially competitiveness, Greek economy is located in 22<sup>nd</sup> position among 25 members of the European Union. Greece, for many years, lagged dramatically the production of new technological ideas, but for some time now, this tendency became positive. The limited competitive advantage of the Greek economy in adopting new technological practices is also illustrated by the fact that domestic businesses is not as networked as those in foreign businesses. For instance, according to a recent research, within 2004 and 2005, only 7% of the Greek companies received orders through "e-business", in comparison with European businesses which received in average 12%. Furthermore, in Greece only 14% of the domestic businesses gave orders through "e-business", in comparison with European businesses gave orders through "e-business", in comparison with Europe in which the levels hit 24%. In conclusion we could summarize to the following: Unproductive public sector, Structural problems (public debt, trade balances deficit), lack of reliability of financial data, poor reforms to labor legislation, low competitiveness and productivity, high unemployment, incomplete Education System, comparatively smaller penetration of IT and internet, corruption and shadow economy, poor reforms.

### 4. CONCLUSIONS

Initially, we defined the comparative advantage based on the approaches of Adam Smith, David Ricardo and Heckscher-Ohlin. Our goal was to present the results, positive and negative, of an economy that would be in a state of self sufficiency in case of development of trade relations.

As comparative advantage of a country we can define the relevant productive superiority (opportunity costs) in some goods in comparison with another country, regardless of the rationale for this superiority (for ex. Technological differences, scale economies, relative abundance of a productive factor). Based, then, on the neoclassical theory of international trade, each country should be fully specialized in goods that have a comparative advantage.

The paper described some aspects of the debt accumulation in Greece and showed that apart from fiscal deterioration, lack of growth and the long delays in deciding the appropriate action resulted in exacerbating the initial problem. It is, therefore, important for restoring sustainability to ensure that policies capable of assisting growth are preferred over those that solely aim to achieve unrealistically high primary surpluses by raising taxes and further contracting the economy. Under a combination of fast-track privatisations and a modest return to growth, the debt to output ratio can be stabilized immediately and decline substantially in the next few years.

Having analyzed the definition of the comparative advantage and the present aspects of the Greek economy in the era of recession, we proceeded in Greece's special comparative advantages, mainly in two sectors: Tourism and Commercial Shipping. To start with Greece has a remarkable advantage in tourism, with significant natural, cultural and historical sources of wealth whose values is being increased over time and helps to maintain the potential rate of development of the Greek tourism at a high level. For this reason, the awakening of tourism entrepreneurship in Greece after the financial and economic crisis of 2008-2009, can be a catalyst for the dynamic recovery of the Greek economy in the years coming, coupled with the recovery of the other European economies and the global economy.

The output of the global and Greek shipping from the crisis facing the past 3 years, will depend, both on the course of the regression of the global economy and the international trade and on the other hand from the path of the embodiments of large orders for new buildings assigned to major shipyards worldwide. Already, according to published information, many orders for new vessels have been cancelled by shipping companies around the world. At the same time, the gradual restoration of the normal function of the global banking system should restore the possibilities, from the one side financing the shipping industry itself and from the other side the possibilities smoothly financing the economic development of the countries and international trade. Greece's very special geographical position can be a catalyst for the country's economic restoration as Greece could be the regional hub for strategic growth in SE Europe, Africa and Middle East.

The Greek tradable sector is very small and there is little local demand to support the industry. Greek shipping has thrived thanks to the rapid growth in global trade, and especially due to the increased demand for commodities from emerging market countries. Competing clusters have however been able to leverage the significant demand for shipping services that originates from their tradable sectors. Empirical evidence points to a significant positive relationship between a country's fleet and its foreign trade, suggesting that Greece is at a substantial competitive disadvantage compared to the competing clusters (UNCTAD 2008).

### **Bibliography**

Foreign:

Barnat, Ryszard. "Theory of Comparative Advantage." Strategic Management: N.p., 22 Aug. 1996. Web.

- Buhalis, Dimitrios. "Tourism in Greece: Strategic Analysis and Challenges | Professor Dimitrios Buhalis - Academia.edu." *Tourism in Greece: Strategic Analysis and Challenges* | School of Management Studies for the Service Sector, University of Surrey, Guildford GU2 7XH, UK, n.d. Web.
- 2. "Greek Crisis Major Adjustments Required in Balance of Payments." *CEIC Data Blog RSS*. N.p., 28 Aug. 2012. Web.
- 3. Gupta, Satya Dev. "Comparative Advantage and Competitive Advantage: An Economics Perspective and a Synthesis." St. Thomas University, Fredericton, N.B., Canada, n.d. Web.
- 4. IMF (2009). Greece: 2009 Article IV Consultation. IMF Country Report No. 09/244
- 5. IMF (2010). World Economic Outlook April, online at
- 6. http://www.imf.org/external/pubs/ft/weo/2010/01/index.htm
- 7. Morales Meoqui, Jorge. "Reconciling Ricardo's Comparative Advantage with Smith'sProductivity Theory." (2013)
- 8. Policy Research Corporation (PRC) (2008). The role of Maritime Clusters to enhance the strength and development of maritime sectors: Country report Greece, online at www.clusterobservatory. eu/library/100097.pdf
- 9. WIDODO, Tri. "COMPARATIVE ADVANTAGE: THEORY, EMPIRICAL MEASURES AND CASE STUDIES." N.p., n.d. Web.
- 10. «WORLD INVESTMENT REPORT.» UNITED NATIONS CONFERENCE ON TRADE AND DEVELOPMENT, 2008. Web. <a href="http://unctad.org/en/Docs/wir2008\_en.pdf">http://unctad.org/en/Docs/wir2008\_en.pdf</a>>.

Greek:

- Γεωργιάδης, Νικόλαος. Ηρ. «Τα Πλεονέκτημα και τα Μειονεκτήματα της Ελλάδας στην Εποχή της διεθνοποίησης των Οικονομιών.» Investment Research & Analysis Journal, Feb.-Mar. 2006. Web. <http://www.iraj.gr/IRAJ/IRAJ\_GREECE\_Adv\_and\_Disadv\_in\_the\_global\_market\_place.pdf>.
- 12. Δανίδου, Μαρία Ε. "Συγκριτικά Πλεονεκτήματα της Ελληνικής Οικονομίας: Ο ρόλος της χώρας στον διεθνή καταμερισμό εργασίας." ΠΡΟΓΡΑΜΜΑ ΜΕΤΑΠΤΥΧΙΑΚΩΝ ΣΠΟΥΔΩΝ ΣΤΗΝ « ΔΙΟΙΚΗΣΗ ΚΑΙ ΟΙΚΟΝΟΜΙΑ» (2009): n. pag. Web. <http://invenio.lib.auth.gr/record/113843/files/danidou.pdf>.
- "IOBE: Συγκριτικό πλεονέκτημα η ελληνόκτητη ναυτιλία." Naftemporiki.gr. N.p., n.d. Web. 15 May 2013.
- 14. «OIKONOMIKO ΔΕΛΤΙΟ.» Alpha Bank, Oct. 2009. Web. <http://www.alpha.gr/files/infoanalyses/ oikon\_deltio\_110.pdf>.

#### Websites:

- 15. Alpha Bank: http://www.alpha.gr
- 16. International trade center: http://www.intracen.org
- 17. Un comtrade: http://comtrade.un.org/
- 18. World Trade Organization: http://www.wto.org/
- 19. Εθνική στατιστική υπηρεσία: http://www.statistics.gr

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# PROTECTION OF INTELLECTUAL PROPERTY BY CUSTOMS SERVICES IN RUSSIA

# Abstract

This article is about intellectual property, types of intellectual property. The article shows us the importance of intellectual property. Federal customs service in Russia is the main customs authority; it has different methods of protection of intellectual property. Also this article tells us about Sochi-2014: infringement of copyrights on various kinds of goods.

*Keywords:* Intellectual property, protection of intellectual property, copyright, Federal customs service, industrial property, Sochi-2014.

# **INTELLECTUAL PROPERTY: CONCEPT, HISTORY**

One of the main indicators of a civilized society at all times was and continues to remain is the amount of attention paid to the development of science, culture and technology. The point is that they can only develop dynamically in the presence of the corresponding conditions, including proper legal protection which includes an assessment of intellectual property and copyright.

Intellectual property (IP) is a legal concept which refers to creations of the mind for which exclusive rights are recognized. Under intellectual property law, owners are granted certain exclusive rights to a variety of intangible assets, such as musical, literary, and artistic works; discoveries and inventions; and words, phrases, symbols, and designs.<sup>1</sup> Objects of intellectual property are copyright and industrial property.

A distinctive feature of intellectual property is that only the owner of the right to the object of intellectual property has exclusive rights to its (object's) use and no other person can use that object without the permission of the owner.

It is possible to consider quite authentically that the first legal act which recognized the existence of intellectual property was the Declaration of the Venetian republic of 1474. According to it, any citizen who made a machine, which had not been used on the state territory, received the privilege forbidding others to make such devices during ten years.

Issuing of privileges (in the modern sense - the patent) on inventions in Russia began in the middle of the 18th century, and the first of it was granted in 1748. The final and exact prototype of the patent in the 19<sup>th</sup> century was the privilege on production of various types of glass, and other haberdashery things given to Professor Mikhail Lomonosov in 1752. Some basic principles of patent law were specified in this privilege. Firstly – the monopoly of the producer, secondly, - the right to use the patent and receive the corresponding reward, and thirdly, - validity of the patent.

<sup>&</sup>lt;sup>1</sup> http://en.wikipedia.org/wiki/Intellectual\_property,

The list of objects of intellectual property is given in the Convention on establishment of the World intellectual property organization (WIPO) accepted in Stockholm on July 14, 1967. Now the members of VOIS are 184 states or more than 90% of the countries of the world. The Russian Federation ratified this convention on September 19, 1968.

Objects of intellectual property are subdivided into the following types: literary, works of art and scientific works; performing activity of actors, soundtracks and broadcasts; inventions in all human activities; discoveries; industrial samples; trademarks, service marks, commercial names and symbols; suppression of unfair competition.

Thus, the intellectual property consists of two main spheres of the right:

- industrial property: rights to inventions, trademarks, names of places of goods origin and industrial samples;
- copyright: the rights to musical, photographic, literary, audiovisual works and works of art.

The reasons for the states to adopt national laws, ratify regional or international governing intellectual property rights agreements, are usually justified by the desire:

- · by providing protection to create the incentive for developing various creative efforts of thinking;
- to give official recognition to such founders;
- to reward creative activity;
- to promote growth of both the domestic industry or culture, and international trade, through contracts providing multilateral protection.

#### **Industrial property**

The industrial property as an object of intellectual property includes patents on the inventions, useful models, industrial samples, trademarks and service marks, trade names and names of places of goods origin. Besides, the concept of industrial property includes suppression of unfair competition.

Industrial property registration is required as it is the intellectual property which is connected with the creation, protection and use of the objects which essence is defined by the content of the received result.

The industrial property must be recorded in the state patent department in accordance with the established procedure and requires the presence of a patent or certificate, only under these conditions intellectual property acquires the status of industrial property (other than know-how).

Examples of know-how are the secrets of management. These include, for example, marketing approaches to the promotion of goods or services to the market, the knowledge and skills of employees, customer lists, the sequence at each workplace, the optimum location of indoor workplaces.

#### Copyright

Copyright as an object of intellectual property includes works of science, literature and art, computer programs, databases, performances, soundtracks, TV or radio broadcasts.

Such objects of intellectual property don't require additional registration. The author gets right to them at the time of their creation.

Thus, the main objects of intellectual property are: inventions, utility models, industrial designs, trademarks, trade names and appellations of origin, integrated circuits, copyright, computer programs and databases.

### **PROTECTION OF INTELLECTUAL PROPERTY RIGHTS AT THE INTERNATIONAL LEVEL**

The World Intellectual Property Organization (WIPO) is one of the 17 specialized agencies of the United Nations. WIPO was created in 1967 to encourage creative activity, to promote the protection of intellectual property throughout the world.

WIPO assists signing new international agreements and modernization of national legislation to facilitate the administrative cooperation between the countries, providing technical assistance to developing countries and holds services which facilitate the international protection of inventions, trademarks and industrial designs. WIPO administers 21 agreements which cover the main aspects of intellectual property. Key agreements are the Paris Convention for the Protection of Industrial Property (1883), the Berne Convention for the Protection of Literary and Artistic Works (1886), the Lisbon Agreement for the Protection of Appellations of Origin and their International Registration (1958), the Hague Agreement Concerning the International Deposit of Industrial Designs (1934).

Most attention is paid to the protection of intellectual property in the U.S.. The least attention is paid in China, Poland and Turkey.

### **PROTECTION OF INTELLECTUAL PROPERTY RIGHTS IN RUSSIA**

Legislation on the protection of intellectual property rights in Russia appeared only in the last decades. It was promoted by the fact that market formation increases the value of the legislation regulating the relations connected with the protection of intellectual property rights for the people whose interests lie in the sphere of intellectual and spiritual work.

The formed new Russian legal system and steady integration of Russia into the world economic space make especially important the set of issues relating to the conservation and protection of intellectual property.

Today legal persons can patent (register) and thus provide reliable protection for industrial property rights (industrial designs, patents, trademarks, utility models) and objects of copyright (video and sound recordings, oral or written, three-dimensional works, works of fine art, computer programs).

Individuals have opportunity to patent the same objects of intellectual property, except trademarks. The copyright in Russia is valid during the life of the author and seventy years, counting from January 1 of the year following the year of his death (except for some special cases). After this term the work becomes public property.

Protection of objects of intellectual property is carried out by the Court of Arbitration, and also by the Chamber of Patent Disputes - a non-profit organization and a public institution. The main objective of the Chamber is to ensure the rights and legally protected interests of applicants and holders of titles of industrial property, as well as the legitimate interests of other individuals and entities.

Protection is carried out depending on the type of intellectual property:

- Trademarks can be registered with the Federal Service for Intellectual Property (Rospatent) with issuing a corresponding certificate the action of which should be prolonged every ten years.
- International registration of trademarks is carried out in two ways: when applying to WIPO or by direct reference to the Patent Office of the state.

Useful models, industrial designs, inventions, computer software are registered in Rospatent.

The Russian Authors' Society can register copyright.

#### **CUSTOMS REGISTER OF INTELLECTUAL PROPERTY**

Adding trademark information to the Customs Register of Intellectual Property, management of which is controlled by the Customs on the claims of owners of the exclusive rights to intellectual property, is an additional guarantee for protection the holders of rights to the trademark.

The Customs Register of Intellectual Property is the register containing objects of copyright, related rights, trademarks, service marks and appellations of origin of goods concerning which the federal executive body authorized in the field of customs administration, decided to take action related to suspension of the release of goods.

Duties on maintaining the customs register of objects of intellectual property are assigned to the Federal Customs Service (FCS). The main objects of intellectual property which should be included into the customs register, are considered to be information on trademarks, copyright and related rights, appellations of origin.

The customs register contains the following information:

- the name (description, image) of the trademark;
- the information on the document confirming protectability of the trademark (the name, the number, the priority date);
- the names of goods in respect to which the action is being taken;
- the class of goods on the International classification of goods and services;
- · Information about the legal owner;
- · authorized representatives of the owner;
- deadline for submitting information to the registry.

The purpose of creation of the customs register was the need to protect the products getting to the territory of Russia from abroad. The system of such protection works as follows. Officials of customs authorities as a result of customs registration and control, must verify the claimed product information with the data in the customs register. In the case of the offense – placing a trademark on imported goods without consent of the owner, the customs authorities initiate administrative paperwork.

Customs officials submit the application to the Court of Arbitration about drawing the offender to administrative responsibility. According to the decision of the court the person who violates the rights of the trademark owner is fined in the amount of 1500 rubles (300 USD), and the products, which illegally reproduce this symbol, are confiscated.

#### WAYS OF PROTECTING INTELLECTUAL PROPERTY

There are jurisdictional and non-jurisdictional ways to protect intellectual property. According to the first form of protection it is possible to use services of the structures which are engaged in criminal judicial and civil court proceedings. This way of protecting intellectual property is the most effective.

In its turn, the non-jurisdictional form of protection involves non-interference of public services and independent work of the relevant patent organizations. It is the cheapest way, but also less productive.

The court, according to the Civil Code of the Russian Federation, can use the following ways of protection of the intellectual property:

 suspension of the admission of goods through the customs border, export or import of which violates the rights to intellectual property;

- withdrawal of the materials, which were mainly used in the manufacture of goods with violation of the rights of civil law;
- use of immediate measures concerning the prevention of violations of intellectual property rights;
- withdrawal of goods which are introduced into civil circulation or were made with violation of rules of law;
- reporting violations of intellectual property rights with the contents of the court decision in mass media;
- application of a monetary penalty instead of compensation of the received losses the size of which
  is defined by the law taking into account the fault and other circumstances which will be essential
  in this regard.

The FCS of Russia is actively working to establish an effective system of protection of intellectual property rights. The system is reflected in the Strategy of Development of the Customs Service of the Russian Federation until 2020 approved by the Russian Government.

Among the priorities of the Strategy, regarding protection of intellectual property rights the FCS undertakes the following measures. The system of registration of intellectual property in the customs register has been tested and now functions successfully. As of February 2013, in the customs register there are about 2600 registered objects of intellectual property belonging to Russian and foreign companies, while Rospatent contains data on more than 300,000 trade marks.

To enhance cooperation with the owners the joint group with the Rusbrend non-profit partnership uniting the largest producers of consumer goods in the Russian market is created, and there is also cooperation with the Chamber of Commerce of the Russian Federation, the European Business Association, the American Chamber of Commerce, the Committee of producers of alcoholic beverages.

The priorities of the FCS are the revitalization of the customs authorities in the direction of protection of intellectual property rights within the initiatives developed by the Russian Federation to counteract the international trade in counterfeit goods, as well as the formation of common standards for legal practice of customs authorities in the field of intellectual property rights throughout the territory of the Customs Union.

Problems of protection of intellectual property rights are closely linked with safety and quality of imported goods, and directly relate to matters of national security. First of all, it comes to protecting the domestic consumer market against penetration of counterfeit production that, eventually affects ensuring vital activity and population health. What is important is that the use of intellectual property for commercial purposes without the consent of the respective owners causes significant damage to the economy of the state, affects business activities of respectable businessmen, causing more unfair competition and affects the reputation of a number of brands, including Russian, and also violates the rights of consumers of these products.

# **SOCHI-2014**

The Olympic and Paralympic symbolics is a protected object of intellectual property. The exclusive rights to use it belong to the lawful owner – the International Olympic Committee (IOC). Since January 1, 2009 the interests of the IOC on the territory of Russia are represented by the Organizing committee "Sochi-2014". Only those companies which have an agreement of partnership with the organizing committee of "Sochi-2014" can use the Olympic symbolics. Its absence makes any mention or use of the Olympic symbols illegal.

What are the Olympic symbols? They are the names "Olympic", "The Olympic Games", "Sochi-2014", "Olympic", "Olympian", "Olympiad", "Olympic Winter Games", "Olympic Games", "Sochi-2014" (and the words and phrases formed on their basis), the Olympic symbol, Olympic flame, the Olympic torch, the Olympic flag, the Olympic anthem, the Olympic motto, emblems and symbols of the previous Olympic Games. To protect the Olympic symbols, FCS of Russia and the Organizing Committee "Sochi-2014" signed an agreement on the basis of interaction when organizing and holding XXII Olympic Winter Games and XI Paralympic Winter Games in Sochi n 2014.

According to FCS of Russia, from January, 2008 to October, 2009 officials of customs service detained about two million units of counterfeit production with the Olympic symbolics. With the Olympic Games approach the stream of fakes and number of violations grow in Sochi. In 2012 the Russian customs officers detained more than three million units of counterfeit production with the symbolics of Sochi-2014.

The range of fakes is various. Counterfeit production arrives generally from China and Turkey via sea container traffic through the ports of Russia. And the most successful detention of goods with Olympic symbols containing signs of counterfeit, is recorded in the area of the Southern Customs. In the zone of responsibility of Novorossiysk and Rostov customs more than 90 percent of the total counterfeit is that with the Olympic symbolics.

On what goods do individual entrepreneurs most often illegally use the Olympic symbolics? In this negative rating the first place is surely held by casual clothes. And not only sports, but also usual ones – caps, shorts, t-shirts. They are followed by the Olympic souvenirs – all sorts of trinkets, mugs, magnets, items depicting the Olympic rings, the torch logo, the mascots of the games and much more. The third of the "leaders" is printed products – notebooks, calendars and albums with the Olympic rings and an inscription of "Sochi-2014". Among the fakes there were two especially surprising things – the "Olympic" laminate and... tomatoes packed in boxes with the image of the five Olympic rings and other attributes of sports competitions.

In February 2012 the Arbitration court confirmed the decision of the Federal Antimonopoly Service to invalidate the use of the Olympic symbols by the JSC General Motors Daewoo Auto and Technology CIS company. The company began selling «Chevrolet» cars with the body colour "Olympic White". However, as it was stated above, this name is a protected verbal element. More importantly, the company had no relevant agreements on the use of this name, it was not even a partner of the Olympic Games. As a result, FAS of Russia initiated administrative proceedings against the company violator. Eventually the company was fined more than 23 million rubles<sup>2</sup>.

# **THE COST OF THE BRAND**

The organizing committee "Sochi 2014" does not report the sum spent on the designing of the logo of the Sochi Olympic Games. However, its president Dmitry Chernyshenko mentioned to journalists that it had cost a smaller amount of money than the logo of the London Olympic Games (that is less than £ 400,000). The international appraisal company Swiss Appraisal evaluated the brand "Sochi 2014" at the beginning of 2009 at 179 million dollars. According to a number of experts, by 2012-2013 the trademark of the Sochi Olympic Games will increase in the price by 2-3 times.

#### **A PARALLEL IMPORT**

A parallel import is a non-counterfeit product imported from another country without the permission of the intellectual property owner. Parallel imports are often referred to as grey product, and are implicated in issues of international trade, and intellectual property.

<sup>2</sup> Magazine "Customs" Nº21(308), November 2012

The use of the trademark on the original production is closely connected with the concept of "exhaustion of the rights" to the trademark. Exhaustion of the rights to the trademark means restriction of the owner's rights to prohibit the introduction of goods into circulation by third parties in case if this product has already been put into circulation by the rightholder or with his consent. In other words, with the introduction of the goods into circulation the holder loses the right to control resale of goods and other forms of its commercial use. The question of whether the importation of products by an unauthorized exporter violates the right to the trademark or not depends on the concept of exhaustion of rights the legislation of the importing country is based on - international, national or regional.

In Russia, the national principle of exhaustion of rights is currently in effect, but suggestions are periodically made to replace the principle by the international one. This position is particularly actively supported by the antimonopoly authority. Some attempts to mitigate this mode are seen in the draft amendments to the Civil Code, which are currently being considered by the Duma.

The problem of parallel import is still not resolved in Russia, and the Russian courts are filled up with claims of foreign producers to invalidate the import of their original goods by third parties.

Although the Russian legislation does not contain a direct ban on parallel imports, the unlimited list of ways to use the exclusive trademark rights is fixed in the Civil code of the Russian Federation and it allows the right holder to protect its exclusive right by submitting claims to invalidate such imports.

It is curious that not every right holder - a foreign manufacturer, whose products are imported without his consent and distributed on the Russian territory, resorts to such ways of protection. The owners of such companies as Mercedes, Coca-Cola and Danone have not made any obstacles to parallel imports so far. Any consumer will support a parallel importer. Indeed, thanks to his actions the last consumer has the right to choose. The consumer can buy a product at a high price offered by the manufacturer (in case of goods being imported by the authorized official representative), or at a price that is usually lower (sometimes twice), offered by a person who imported the original goods without the rightholder's consent.

# **CONCLUSION**

Protection of intellectual property rights is a priority of the Russian government, because every year the import / export of the country is growing, so various objects of intellectual property are being imported. It is very difficult to check all the goods. It is necessary to create the general register of objects of intellectual property, to coordinate it with Rospatent, if necessary to come up with a request for help to create such a register on the international level.

Due to the Olympic Games in Sochi in 2014, the stream of counterfeit goods has increased. A lot of effort is thrown on control of the goods connected with the forthcoming Olympic Games. In the future it is necessary to continue working hard in this area because counterfeit goods can be the goods not properly made, of poor quality, with the use of dangerous materials that, in their turn, can damage people's health and directly affect the economy, policy and other spheres of life.

# **References:**

- 1. http://www.tks.ru/tags/intsobstv
- 2. Magazine "Customs" №21(308), November 2012
- 3. http://www.customs-union.com
- 4. http://zakon.ru/Blogs/OneBlog/5535
- 5. www.advertology.ru/article88292.htm
- 6. http://dburmistrov.ru/intelektualnaya-sobstvennost/51-tamozhennyy-reestr-obektov.html

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# **INTELLECTUAL PROPERTY**

### 1. WHAT IS INTELLECTUAL PROPERTY?

Intellectual property, sometimes abbreviated IP, is a legal definition of ideas, inventions (like those generated in laboratory research), artistic works and other commercially viable products created out of one's own mental processes. In the same sense that real estate titles and bills of sale establish ownership of tangible items, intellectual property is protected by such legal means as patents, copyrights, and trademark registrations. Intellectual property is generally handled in the same way as any other tangible product or piece of real estate. Not every idea inside a person's mind can be considered intellectual property, which can only be a good thing in some instances. There is usually a commercial viability angle which needs proper protection to prevent theft of the idea or outright copyright infringement.

IP is divided into two categories: Industrial Property, which includes inventions (patents), trademarks, industrial designs, and geographic indications of source; and Copyright, which includes literary and artistic works such as novels, poems and plays, films, musical works, artistic works such as drawings, paintings, photographs and sculptures, and architectural designs.

The Spanish law terms this aforementioned concept of ownership of innovative ideas as "Ley de Propiedad Intelectual e Industrial", and defines it as "a set of exclusive rights protecting the innovative activity behind new products, new procedures or new designs, and the commercial activity that exclusively identifies products and services supplied in the market".

The term intellectual property encompasses various types of creations of mind, like inventions. An intellectual property could be anything like a music composition, a movie, book, painting or even a brand name. According to the concept of intellectual property, such creations of mind are intangible or non-monetary assets with commercial value. The owners of such non-monetary assets (creations of mind) are assigned some exclusive rights over their creation, so that they benefit financially. However, it is not possible to recover or replace an intellectual property that is stolen. If stolen, the interests of the owner, over his/her creation will get affected. So, there must be laws to protect the moral as well as material interests of the owner over his/her intellectual property. IP law deals with the rights assigned to owners of intellectual property.

Intellectual property rights are the rights given to persons over the creations of their minds. They usually give the creator an exclusive right over the use of his/her creation for a certain period of time.

Intellectual property rights are customarily divided into two main areas<sup>1</sup>:

1. Copyright and rights related to copyright.

The rights of authors of literary and artistic works (such as books and other writings, musical compositions, paintings, sculpture, computer programs and films) are protected by copyright, for a minimum period of 50 years after the death of the author.

<sup>&</sup>lt;sup>1</sup> http://www.wto.org/english/tratop\_e/trips\_e/intel1\_e.htm

Also protected through copyright and related (sometimes referred to as "neighbouring") rights are the rights of performers (e.g. actors, singers and musicians), producers of phonograms (sound recordings) and broadcasting organizations. The main social purpose of protection of copyright and related rights is to encourage and reward creative work.

- 2. Industrial property. Industrial property can usefully be divided into two main areas:
  - One area can be characterized as the protection of distinctive signs, in particular trademarks (which distinguish the goods or services of one undertaking from those of other undertakings) and geographical indications (which identify a good as originating in a place where a given characteristic of the good is essentially attributable to its geographical origin).

The protection of such distinctive signs aims to stimulate and ensure fair competition and to protect consumers, by enabling them to make informed choices between various goods and services. The protection may last indefinitely, provided the sign in question continues to be distinctive.

• Other types of industrial property are protected primarily to stimulate innovation, design and the creation of technology. In this category fall inventions (protected by patents), industrial designs and trade secrets.

The social purpose is to provide protection for the results of investment in the development of new technology, thus giving the incentive and means to finance research and development activities.

A functioning intellectual property regime should also facilitate the transfer of technology in the form of foreign direct investment, joint ventures and licensing.

The protection is usually given for a finite term (typically 20 years in the case of patents).

While the basic social objectives of intellectual property protection are as outlined above, it should also be noted that the exclusive rights given are generally subject to a number of limitations and exceptions, aimed at fine-tuning the balance that has to be found between the legitimate interests of right holders and of users.

# 2. TYPES OF INTELLECTUAL PROPERTY RIGHTS

Intellectual Property Rights (IPR) are specific legal rights which protect the owners of IP. Adequate and effective protection of industrial property rights is essential for ensuring the technological, industrial and commercial development of a country. No nation can achieve an adequate level of economic and technological growth without a strong patents system, without effective protection of its commercial trademarks and trade names and without promoting creativity by protecting designs and other elements. The establishment of a rigorous industrial property system is a powerful tool for economic growth. This system should be set in a legislative framework for acquiring and maintaining these industrial property rights which is modern and efficient.

Nevertheless, registering industrial property rights is worthless if their protection and respect is not effectively ensured. The credibility of an industrial property system lies precisely in the application and effective respect for the rights granted under the system.

Legislative measures are essential in order to achieve the abovementioned objectives, not only from the point of view of sector regulations but also from all legislative spheres, through which proper pro-

tection for these types of rights can be obtained. Similarly, the involvement of public institutions and private organizations is vital for achieving these objectives.

According to the Spanish IP law, when granted, an intellectual property right (IPR) will give you the right to prevent others from using your property without your consent. This can give you a monopoly in the market, lasting different periods of time, depending of the type of IPR issued. This protection gives value to your invention, and will increase the technology transfer opportunities available to you. The state grants such protection in order to provide incentives to investors to develop technologies, products and ideas in order to bring them to market. This ultimately benefits the consumer.

In the extreme case of pharmaceuticals and agrochemicals, where regulatory bodies require a substantial testing and development regime and investors may spend many millions before a product reaches the market, it is important that this protection exists otherwise very few companies would go to the efforts required.

As mentioned earlier, the creators or owners are granted certain exclusive rights over their creations or works. Such exclusive rights are called intellectual property rights. These rights help them benefit from their creations and also enable them to protect their work. In that way, intellectual property is like any other real property which is financially beneficial for the owner. The monetary benefits are said to encourage people to come up with new inventions and creations.

Intellectual property rights also enable the owners or creators to protect their work. These rights can be related to Article 27 of the Universal Declaration of Human Rights. According to this statute, "everyone has the right to the protection of the moral and material interests resulting from any scientific, literary or artistic production of which he is the author". So, owners of intellectual property can benefit through protection of the moral and material interests.

An intellectual property can be defined as a creation of mind, that has a commercial value. Here is a brief overview about the different types of intellectual property rights.

It is believed that the concept of intellectual property (IP) has its roots in the early Jewish law. Later, it emerged after the French Revolution, with the French liberal theorist, Benjamin Constant, opposing the idea ('of property which has been called intellectual'), which was introduced during that time. This concept was also mentioned in the famous 1845 Massachusetts Circuit Court ruling in the patent case Davoll et al. v. Brown. Subsequently, the World Intellectual Property Organization (WIPO) was established in 1967. The term 'intellectual property' increased in popularity after the enactment of the Bayh-Dole Act in 1980.

An intellectual property can be either artistic or commercial. The artistic works come under the category of copyright laws, while the commercial ones (also known as industrial properties), include patents, trademarks, industrial design rights, and trade secrets. Copyright laws deal with the intellectual property of creative works like books, music, software and painting. Industrial properties cover those created and used for industrial or commercial purposes. As stated earlier, intellectual property is categorized into various types as per the nature of work. The most common types are copyrights, trademarks, patents, industrial design rights and trade secrets. So, these rights safeguard the interests of the owners of IP. If you are an author, who has written a new book, you can apply for a copyright for your work. Likewise, patents can be obtained for inventions. Once you establish your IP right, you can protect your work legally.

Intellectual property rights have encouraged people to come up with indigenous creations, as the law protects their rights over their works. Thus, it is very important to respect these rights and refrain from infringing them.

IPR can be subdivided into the following major categories<sup>2</sup>:

- 1. Patent A legal monopoly lasting 20 years granted in exchange for describing an invention and paying fees to the Patent Office. A patent position is destroyed by public disclosure of the idea before a patent application is filed (except for a short grace period in the US and Japan). Patents are rights related to new inventions. Such rights are conferred on persons who invent any new machine, process, article of manufacture or composition of matter and biological discoveries. In order to be patented, the invention should fit into specific criteria, which may differ from country to country. In general, the invention must be new and should be useful or can be applied in industries. The person who receives a patent for his invention has an exclusive right to prevent others from making, using, selling or distributing the patented invention without permission. Generally, the time limit of a patent is 20 years from the date of filing the application (for the patent).
- 2. Copyright Applies to literary and dramatic works, artistic and musical works, audio and video recordings, broadcasts and cable transmissions. Copyright is also the usual way of protecting software, although some software may be patented if it is a functional part of an invention. Copyright arises automatically; it does not need to be applied for (but can be for register purposes); and lasts 70 years after the death of the author. A copyright is a right conferred on the owner of a literary or artistic work. It is an exclusive right to control the publication, distribution and adaptation of creative works. The right lies with the owner-cum-copyright holder for a certain period. As the time lapses, the work can be republished or reproduced by others. Usually, in most countries the timespan of a copyright extends through the entire life of the owner and lasts up to a period of about 50 to100 (70 years in the U.S.) years after his/her death. In case of anonymous works, the right lasts for 95 years from the date of first publication or 120 years from the date of creation.
- 3. Database right Applies to databases which are not protected by copyright (an EU right only).
- 4. Design right Applies to aspects of the shape or configuration of an article. Unregistered design right (which covers computer chips, for example) can protect internal or external features. In the case of registered designs, the features must appeal to and be judged by the eye. These rights protect the visual design of objects that are not purely utilitarian, but have an aesthetic or ornamental value. It may refer to the creation of a shape, color, pattern or a combination of all these things. It can be an industrial commodity or a handicraft. The design can be either two-dimensional (based on pattern, colors and lines) or three-dimensional (as per shape and surface). An industrial design right is conferred after considering factors like novelty, originality and visual appeal. The person who has an industrial design right has the exclusive right to make or sell any objects in which the design is applicable. The right is conferred for a period of 10 to 25 years.
- Trade mark A mark (logo) or other distinctive sign applied to or associated with products or ser-5. vices, which does not describe the products or services. A trademark is a symbol generally used to identify a particular product, which indicates its source. A trademark can be a combination of words, phrases, symbols, logos, designs, images, or devices, used by an individual, legal entity or business organization to distinguish their products from others. For example, you can identify the products of Nike Inc., from the logo, which is embossed on their products. Once registered, trademarks are protected legally and the owners can sue persons for unauthorized use of their trademarks. Trade Secrets: Trade secrets are the designs, practices, formulas, instruments, processes, recipes, patterns, or ideas which are used by a company to gain an economic advantage over its competitors. The owner of a trade secret does not possess any right over anyone who gains access to that secret independently, but he can prevent the use of the trade secret by anyone who has learned it through the owner. For example, an employer can protect trade secrets through contracts with his employees. Trade secrets differ from other types of intellectual property rights, because it is the responsibility of the owner to keep the secret and it is not protected through government policies. Once the trade secret is leaked, it can be used by any person.

<sup>&</sup>lt;sup>2</sup> http://pasteur.crg.es/portal/page/portal/Internet/HIDE-Technolgy\_Transfer/Tech%20Transfer%20Info/ip

- 6. Confidential know how Information that you possess, but is not generally known in your industry, is termed "know-how" "confidential information" or "trade secrets". It is the information that distinguishes your expertise from those of your competitors or colleagues. Examples can include:
  - particular testing methodologies
  - recipes
  - manufacturing techniques
  - chemical formulations
  - experimental conditions
  - production methods

Know-how and trade secrets are protected by keeping this information confidential. This means that the information is not made public and prior to any disclosure, confidentiality or non-disclosure agreement must be signed by the person who is to receive the information from you.

	Copyright	Patent	Trademark	Trade Secrecy	Other
What is protected	"original works of authorship"(*)	products, processes	business identities	business secrets	Design patents, chip masks, databases
Symbols	© (p)	Patented	™, SM, ®		(m)
Registration	Library of Congress	Patent Office	Patent Office		•
Tests	originality (implicit)	unique, novel, non-obvious	does not duplicate existing mark	•	•
How obtained	Publication (registration)	Examination by PTO	Registration with PTO, common law	create secret	•
Duration	Life + 70 yrs., 95 yrs. (1998 changes)	17 yrs., renewable	while in use	while secret	•
Law of	federal, mostly civil	federal, civil	federal, civil	state, civil & criminal	•

#### **Types of Intellectual Property<sup>3</sup>**

In the U.S. copyright covers the following categories or works (Section 102):

- 1. literary works
- 2. musical works
- 3. dramatic works
- 4. pantomimes and choreographic works
- 5. pictorial, graphic, and sculptural works
- 6. motion pictures and other audiovisual works
- 7. sound recordings.

There are five specific, separable rights (Section 106):

- 1. to reproduce the work in copies or phonorecords
- 2. to prepare derivative works
- 3. to distribute copies
- 4. to perform the work publicly
- 5. to display the work publicly.

<sup>&</sup>lt;sup>3</sup> http://courses.ischool.berkeley.edu/i231/s09/IPR-intro.html

# 3. WHAT IS A PATENT?

A patent protects new inventions and covers how things work, what they do, how they do it, what they are made of and how they are made. If a patent application is granted, it gives the owner the ability to take a legal action under civil law to try to stop others from making, using, importing or selling the invention without permission. This may involve suing the alleged infringer through the courts, which is costly and time consuming because it involves expert legal advice. The patent owner needs to be able to pay for this civil legal action and advice themselves, although they may get some costs back if they win their case.<sup>4</sup>

Your invention must:

- be new
- have an inventive step that is not obvious to someone with knowledge and experience in the subject
- be capable of being made or used in some kind of industry
- not be: a scientific or mathematical discovery, theory or method; a literary, dramatic, musical or artistic work; a way of performing a mental act, playing a game or doing business the presentation of information, or some computer programs; an animal or plant variety; a method of medical treatment or diagnosis against public policy or morality.

If your invention meets these requirements, you may want to consider applying for a patent. If you have a granted patent, you must pay a renewal fee to renew it every year after the 5th year for up to 20 years protection.

#### 3.1 History of patents

The origins of patents for invention are obscure and no one country can claim to have been the first in the field with a patent system. However, Britain does have the longest continuous patent tradition in the world. Its origins came from the 15th century, when the Crown started making specific grants of privilege to manufacturers and traders.

Open letters marked with the King's Great Seal called Letters Patent, signified such grants. Henry VI granted the earliest known English patent for invention to Flemish-born John of Utynam in 1449. The patent gave John a 20-year monopoly for a method of making stained glass, required for the windows of Eton College that had not been previously known in England.

#### **Tudors and Stuarts**

In the time of the Tudors, it became common practice for the Crown to grant monopolies for trades and manufacturers, including patents for invention. From 1561 to 1590, Elizabeth I granted about 50 patents whereby the recipients were enabled to exercise monopolies in the manufacture and sale of commodities such as soap, saltpetre, alum, leather, salt, glass, knives, sailcloth, sulphur, starch, iron and paper.

Under Elizabeth I and her successor James I, the granting of monopolies for particular commodities became increasingly subject to abuse. It was common for grants to be made for inventions and trades that were not new. In some instances, grants were made to royal favourites for the purpose of replenishing royal coffers.

In 1610, James I was forced by mounting judicial criticism and public outcry to revoke all previous patents and declare in his "Book of Bounty" that 'monopolies are things contrary to our laws' and "we

<sup>&</sup>lt;sup>4</sup> http://www.ipo.gov.uk/types.htm

expressly command that no suitor presume to move us". He stated an exception to this ban for "projects of new invention so they be not contrary to the law, nor mischievous to the State".

The doctrine of the public interest was introduced into the patent system and the words were incorporated into the Statute of Monopolies of 1624. Section 6 of the Statute rendered illegal all monopolies except those "for the term of 14 years or under hereafter to be made of the sole working or making of any manner of new manufactures within this Realm to the true and first inventor".

#### The 18th century

In the 200 years after the Statute of Monopolies, the patent system developed through the work of lawyers and judges in the courts without government regulation.

In the reign of Queen Anne, the law officers of the Crown established as a condition of grant that "the patentee must by an instrument in writing describe and ascertain the nature of the invention and the manner in which it is to be performed".

James Puckle's 1718 patent for a machine gun was one of the 1st to be required to provide a "specification". The famous patent of Arkwright for spinning machines became void for the lack of an adequate specification in 1785, after it had been in existence for 10 years.

Extensive litigation on Watt's 1796 patent for steam engines set out the important principle that valid patents could be granted for improvements in a known machine. It also established that a patent was possible for an idea or principle, even though the specification might be limited to bare statements of such improvements or principles, provided they come into effect, or were "clothed in practical application".

#### The 19th century

Britain's patent system served the country well during the dramatic technological changes of the industrial revolution. However, by the mid-19th century it had become extremely inefficient. The Great Exhibition of 1851 accelerated demands for patent reform.

Up to that time, any prospective patentee had to present a petition to no less than seven offices and at each stage to pay certain fees. Charles Dickens described the procedure in exaggerated form, somewhat derisively, in his spoof, "A Poor Man's Tale of a Patent", published in the 19th-century popular journal "Household Words"; Dickens' inventor visits 34 offices (including some abolished years before).

The Patent Office came about to meet public concerns over this state of affairs, and was established by the Patent Law Amendment Act of 1852. This completely overhauled the British patent system and laid down a simplified procedure for obtaining patents of invention. Legal fees were reduced and the publication of a single United Kingdom patent replaced the issuing of separate patents for each nation of the Union.

A subsequent Act in 1883 brought into being the office of Comptroller General of Patents and a staff of patent examiners to carry out a limited form of examination; mainly to ensure that the specification described the invention properly, but without any investigation into novelty.

#### The 20th century

An important milestone in the development of the British patent system was the Act of 1902, which introduced a limited investigation into the novelty of the invention before granting a patent. This re-

quired patent examiners to perform a search through United Kingdom specifications published within 50 years of the date of the application. Even with this restricted search, a vast amount of preparatory work was involved and an additional 190 examiners assisted the existing staff of 70 examiners.

By 1905, to enable searching, patent specifications from 1855 to 1900 had been abridged and classified in 1,022 volumes arranged in 146 classes according to subject. By 1907, the abridgement volumes extended back to the first patent to have a number:

• Patent No. 1 of 1617 granted to Rathburn & Burges for "Engraving and Printing Maps, Plans &c".

The legislation in force at present is the 1977 Patents Act. This was the most radical piece of patents legislation for nearly 100 years. The Act sets out to ensure that the patent system is well suited to the needs of modern industry, sufficiently flexible to accommodate future changes in technology and adapted to operate in an international context

### 3.2 Benefits of patent protection

A patent gives you the ability to take legal action to try to stop others from copying, manufacturing, selling, and importing your invention without your permission. The existence of your patent may be enough on its own to stop others from trying to exploit your invention. If it does not, the patent gives you the right to take a legal action under civil law to try to stop them exploiting your invention. This may involve suing the alleged infringer through the courts, which is costly and time consuming because it involves expert legal advice. The patent owner needs to be able to pay for this civil legal action and advice themselves, although they may get some costs back if they win their case.

The patent also allows you to:

- sell the invention and all the intellectual property (IP) rights
- · license the invention to someone else but retain all the IP rights
- discuss the invention with others in order to set up a business based around the invention.

The public also benefit from your patent because we publish it after 18 months. Others can then gain advance knowledge of technological developments which they will eventually be able to use freely once the patent ceases.

#### What if I do not patent my invention?

If you do not patent your invention, anyone can use, make or sell your invention and you cannot try to stop them. You can attempt to keep your invention secret, but this may not be possible for a product where the technology is on display.

# 4. WHAT IS A BRAND?

A trade mark is a sign which can distinguish your goods and services from those of your competitors (you may refer to your trade mark as your "brand"). It can be for example words, logos or a combination of both. The only way to register your trade mark is to apply to us - The Intellectual Property Office.<sup>5</sup>

You can use your trade mark as a marketing tool so that customers can recognise your products or services.

<sup>&</sup>lt;sup>5</sup> http://www.ipo.gov.uk/types.htm

Trade marks are acceptable if they are:

• distinctive for the goods and services you provide. In other words they can be recognised as signs that differentiates your goods or service as different from someone else's.

You may be familiar with the trade marks below. They don't describe the goods or services, which is why they are good examples of registrable trade marks.

Trade marks are not registrable if they:

- describe your goods or services or any characteristics of them, for example, marks which show the quality, quantity, purpose, value or geographical origin of your goods or services;
- · have become customary in your line of trade;
- are not distinctive;
- are three dimensional shapes, if the shape is typical of the goods you are interested in (or part of them), has a function or adds value to the goods;
- are specially protected emblems;
- are offensive;
- are against the law, for example, promoting illegal drugs; or;
- are deceptive. There should be nothing in the mark which would lead the public to think that your goods and services have a quality which they do not.

A registered trade mark must be renewed every 10 years to keep it in force.

A brand is a 'promise of an experience' and conveys to consumers a certain assurance as to the nature of the product or service they will receive. Intellectual property rights provide legal protection for some of the most important aspects of a brand.

A brand can be a trade name, a sign, symbol, slogan or anything that is used to identify and distinguish a specific product, service or business. But a brand is much more than this; it can also be a 'promise of an experience' and conveys to consumers a certain assurance as to the nature of the product or service they will receive and also the standards the supplier or manufacturer seeks to maintain. For example, a 'brand' might focus on exclusivity of design; or perhaps excellence of customer service or maybe high moral standards in its dealings with suppliers; or perhaps a combination of these and other values. This guaranteeing function is not created overnight; it is usually hard won in the marketplace and develops over time.

Brands are therefore reputational assets based on powerfully held beliefs; they drive the understanding of value in a product or company, and, perhaps most importantly, customer loyalty. It can, therefore, be important that as a company develops and expands it considers how its new products and services fit in with its branding, and how the value that they represent may be protected under intellectual property rights.

#### 4.1 Intellectual Property Protection for Brands

Intellectual property rights provide legal protection for some of the most important aspects of a brand e.g. the name, logo, design, domain name and sometimes the product itself.

Systems for the registering and granting the excusive use of brand-related intellectual property rights to their owners have been developed in order to allow companies to prove their ownership of brands, and then enable them to legally prevent others from copying or 'free riding' on their brand investments.

- Registered Trade Mark a sign which can distinguish your goods and services from those of your competitors. It can be, for example, words, logos or a combination of both.
- Registered Design a legal right which protects the overall visual appearance of a product.
- Unregistered Design Right automatic protection for the internal or external shape or configuration of an original design.
- Copyright automatic protection for original literary, artistic and musical creations, along with
  other categories of creative endeavour. Logos, jingles, labels and packaging etc. may be afforded
  copyright protection.
- Patent protects new inventions and covers how things work, what they do, how they do it etc. In essence a brand may be the product itself.
- Domain Names unique addresses that identify, and permit access to specific web sites. Domain
  names are registered with licensed registry operators, such as Nominet that administer the .uk
  domain, who are overseen by ICANN

### 4.2 Different types of trade marks

The vast majority of goods and services are covered by 'ordinary' trade marks. These marks function to indicate the trade origin, in other words they link the owner of the mark to the goods or services, and the goods or services to the owner.

However, there are certain marks that do not have the same function as a ordinary trade mark. We call these Certification marks or Collective marks.

#### 4.2.1 Certification marks

A certification mark is a specific type of mark. They provide a guarantee that the goods or services bearing the mark meet a certain defined standard or possess a particular characteristic. The owner of the mark will define those standards or characteristics. Such marks are usually registered in the name of trade associations, government departments, technical institutes or similar bodies.

#### 4.2.2 Collective marks

A collective mark is a specific type of trade mark which indicates that the goods or services bearing the mark originate from members of a trade association, rather than just one trader.

#### 4.3 Internet Domain Names

A domain name is a name by which a company or organization is known on the Internet. It usually incorporates the company name, or other identifier.

Being the owner of a registered trade mark, does not automatically entitle you to use that mark as a domain name. The main reason being, that the same trade mark can be registered for different goods or services and by different proprietors. Also, someone may have already, and quite legitimately, registered the domain name, perhaps with its use being connected with unregistered goods or services.

The opposite also applies, if your domain name has been properly registered, it does not automatically follow that a similar trade mark will satisfy the requirements for trade mark registration, and/or it may be confusingly similar to someone else's earlier trade mark.

#### 4.4 History of trade marks

The marking of goods for various purposes, including identifying them from those of other traders, dates back to ancient times. In the same way, the existence of rules governing the use of such marks goes back to the medieval craft guilds.

It was only in the 19th century that people began to think of marks, which had become distinctive of a trader's goods, and so attracted valuable goodwill, as a type of property. In the middle of that century, the right to take action in the courts against infringement of a trade mark came about, even when there was no intention to deceive on the part of the infringer.

The usefulness of such an action was, however, limited by the need for a trader to prove that the mark concerned was in fact capable of distinguishing his goods, and that it belonged to him.

#### 4.5 First legal framework and further legislation

The first trade mark registry was established in 1875. Trade mark law was consolidated in 1883, and the trade marks act of 1905 gave the first statutory definition of a 'trade mark'. 1938 saw further legal changes, which had major effect on trade mark registration.

Amendments to the 1938 Act by the Trade Marks (Amendment) Act 1984 introduced the registration of service marks in respect of services such as laundries and banking. The Patents, Designs and Trade Marks Act 1986, and the Copyright, Designs and Patents Act 1988 made further amendments, which made the forgery of a trade mark a criminal offence.

#### 4.6 Benefits of registration

Registering your trade mark gives you the exclusive right to use your mark for the goods and/or services that it covers in the United Kingdom (UK).

If you have a registered trade mark you can put the <sup>®</sup> symbol next to it to warn others against using it. However, using this symbol for a trade mark that is not registered is an offence.

A registered trade mark:

- may put people off using your trade mark without your permission
- makes it much easier for you to take legal action against anyone who uses your trade mark without your permission
- allows Trading Standards Officers or Police to bring criminal charges against counterfeiters if they use your trade mark
- is your property, which means you can sell it, franchise it or let other people have a licence that allows them to use it.

#### 4.7 Protecting unregistered trade marks

If you don't register your trade mark, you may still be able to take action if someone uses your mark without your permission, using the common law action of passing off.

To be successful in a passing off action, you must prove that:

- the mark is yours
- you have built up a reputation in the mark
- you have been harmed in some way by the other person's use of the mark.

It can be very difficult and expensive to prove a passing off action.

If you register your trade mark, it is easier to take legal action against infringement of your mark, rather than having to rely on passing off.

### 4.8 How do I protect my unregistered trade mark?

Section 5(4)(a) of the Trade Marks Act 1994 prevents the registration of a mark by virtue of passing off. You or your company must prove, through factual evidence, that:

- you have an established trade mark that has acquired a reputation and/or goodwill in the mind of the relevant public;
- the offending trade mark has been, or is likely to be, confused with your established trade mark; and
- your business under your established trade mark has been, or is likely to be, "damaged" by use of the offending trade mark.

Damage must be in the form of lost business or revenue.

# 5. WHAT IS A REGISTERED DESIGN?

# 5.1 Legal definition of "design"

A Registered Design is a legal right which protects the overall visual appearance of a product or a part of a product in the country or countries you register it.<sup>6</sup>

For the purposes of registration, a design is legally defined as being "the appearance of the whole or part of a product resulting from the features of, in particular, the lines, contours, colours, shape, texture or materials of the product or ornamentation."

This means that protection is given to the way a product looks. The appearance of your product may result from a combination of elements such as shapes, colours and materials.

References to texture and materials does not mean that protection may be granted for the feel of a texture, or what the product is actually made from; only that these features may influence what the overall product looks like. Equally, design registration cannot protect non-stylised wording (ie. basic text), the way something works, or the idea or concept behind a product.

#### 5.2 What is a "product"?

You can register a three-dimensional product such as an industrial or handicraft item (other than a computer program), or two-dimensional ornamentation alone, eg. a pattern intended for display upon a product, or a stylised logo. In all cases, the term "product" can mean things like packaging, get-up, graphic symbols, typographic typefaces, and parts of products intended to be assembled into a more complex product.

In respect of 'get-up', protection may be granted to the overall presentation of those products which comprise multiple components but which are sold as one single item, eg. a board game complete with playing pieces, or a product in its packaging. 'Get-up' does not include sets of items which may be bought individually, such as cutlery or suites of furniture.

<sup>6</sup> http://www.ipo.gov.uk/types.htm

#### 5.3 What does a Registered Design do?

A Registered Design can be a valuable intellectual property right. It can form the basis of an infringement action against other parties, and will help you in stopping others from creating designs which are too similar to your own (within the same geographical area you have protected your design).

#### 5.4 Does my design have to be brand new?

For its registration to be valid, a design must:

- be new
- have individual character.

A design is considered to be 'new' if no identical (or very similar) design has been published or publicly disclosed in the UK or the European Economic Area (EEA). For example, a design would not be considered new if it had been 'published' on an Internet website viewable in the EEA before the date it was filed. However, you can apply to register a design in the UK up to 12 months after the designer first discloses it.

Individual character means that the appearance of the design (known as the overall impression) is different from the appearance of other already known designs.

#### 5.5 Are there any exclusions?

You may not be able to register your design if:

- · It is not a design by legal definition as described above
- It is offensive
- · It consists of, or includes, certain protected flags and international emblems
- · It is solely dictated by the product's technical function

#### 5.6 Design law

Design legislation in the UK consists of Acts, Rules and Directives that set out the legal rights, duties and procedures relating to the protection of designs in the UK. The main piece of legislation is the Registered Designs Act 1949 (as amended). This is based on the EU Designs Directive which provides guidelines to all Member States of the EU.

Case law from previous court decisions helps us to interpret that legislation, whilst previous tribunal decisions handled by the IPO help us to develop our practice. Practice notices announce changes to our practice, such as how we interpret a provision of the law, or how we handle applications.

#### 5.7 History of designs

The law of designs has a long history dating back to the latter part of the 18th century. Originally introduced to protect the designing and printing of linens and cottons, design law has been extended over the years to cover functional as well as decorative articles.

#### 5.8 Textiles and the start of industrial design protection

The first Act dealing with copyright in industrial designs was the Designing & Printing of Linen Act in 1787. This gave a very limited copyright protection to those who engaged in the "arts of designing and printing linens, cottons, calicos and muslin". It gave proprietors the sole right of printing and reprinting

for 2 months from the date of first publication, provided the name of the proprietor was marked on each piece. In 1794 the period of protection was extended to 3 months.

# 5.9 The introduction of registration

From 1839 a series of laws were passed, gradually extending the boundaries of design protection. The Copyright and Design Act 1839 considerably increased the protection given to fabrics by extending the law to fabrics composed of wool, silk or hair and to mixed fabrics.

The same Act extended protection far beyond the textile trade and gave us the foundations of modern design law. It gave protection to every new or original design including textiles. It also allowed protection for the ornamentation and for the shape and configuration of any article of manufacture.

This Act introduced a system of registration. A Registrar was appointed by the Board of Trade and unless a design was registered before it had been published, the benefits of the Act could not be obtained.

The Design Act 1842 consolidated all earlier Acts and further increased the remedies for infringement. It also divided the possible articles of manufacture and substances into classes. In 1843 this was amended to extend protection of the Act to designs composed of functional features. This meant that designs such as springs for a bicycle, an oil can and gas pilot light were then capable of registration.

### 5.10 The Designs Registry joins the Patent Office

In 1875 the powers and duties of the Board of Trade under the various Designs Acts were transferred to the Patent Office.

In 1883 a single consolidating and amending Act was passed embracing Designs, Patents and Trade Marks (which had also joined the Patent Office).

From 1911-49 design registration was governed by the designs portion of the Patents & Designs Acts 1907-1946. In 1949 registered designs were once more separated entirely from patents and the law relating to registered designs was governed by the Registered Design Act 1949. The most important alterations in the law was the amendment of the definition of design and the abolition of classification, both of which materially affected the validity as well as the scope of many registered designs.

The Registered Designs Act 1949 is still in force today but as amended by the Copyright, Designs and Patents Act of 1988. The act was amended further on 9 December 2001 to incorporate the European Designs Directive. Future amendments and changes will be necessary to reflect the growing and changing needs of design protection.

# 5.11 Design right

The term "Design Right" refers to the specific legal protection available to unregistered designs in the UK. There are specific differences between Design Right and Registered Designs.

Registered Designs give you exclusive rights in a design, in the UK, for up to 25 years. You can stop people making, offering, putting on the market, importing, exporting, using or stocking for those purposes, a product to which your design is applied. You can protect two-dimensional designs or surface patterns as well as shape and configuration with a Registered Design.

By comparison, Design Right gives you automatic protection for the internal or external shape or configuration of an original design, i.e. its three-dimensional shape. Design Right allows you to stop anyone from copying the shape or configuration of the article, but does not give you protection for any of the 2-dimensional aspects, for example surface patterns. Protection is limited to the United Kingdom (UK), and lasts either 10 years after the first marketing of articles that use the design, or 15 years after creation of the design - whichever is earlier. For the last 5 years of that period the design is subject to a Licence of Right. This means that anyone is entitled to a licence to make and sell products copying the design.

If you are the owner of a design right subsisting in a design, you have the exclusive right to reproduce the design for commercial reasons by making articles to the design or by making a design document recording the design for the purpose of enabling articles to be made. If anyone else carries out these activities without your permission, they may infringe the design right.

#### 5.12 Does design right give protection abroad?

No, Design Right is effective only in the United Kingdom. Designs may however be protected in all countries in the European Union through the Unregistered Community Design.

#### 5.13 How do I get design right protection?

Design Right is like copyright in that the protection arises automatically when the design is created.

You do not have to apply to register Design Right, but it may be wise to keep a note of when the design was first recorded in material form, and when articles made to the design were first made available for sale or hire or otherwise disclosed to the public. This information may be useful if someone challenges your rights in the design or if you believe someone is infringing your rights and you wish to take the alleged infringer to court.

You can take certain steps to provide evidence that you are the first owner of the Design Right. You could, for example, deposit a sample or a copy of your design drawings with a bank or solicitor. Alternatively, a designer could send himself or herself a copy by special delivery post (which gives a clear date stamp on the envelope), leaving the envelope unopened on its return. However, there is no guarantee that this will prove establishment of Design Right before the Courts. A number of private companies operate unofficial registers, but it would be sensible to check carefully what you will be paying for before choosing this route.

#### 5.14 Do all designs qualify for unregistered Design Right?

No. The design must be any aspect of the shape or configuration of the whole or part of an article, that is, its three-dimensional shape and arrangement. Design Right does not protect the article itself.

Two-dimensional designs such as graphics and textile or wallpaper designs will not qualify, but they may be covered by copyright. Protection for two-dimensional designs may, however, also be sought by applying for a Registered Design.

Designs that are commonplace, everyday or ordinary are unlikely to be protected by Design Right. To assess whether a design is commonplace, everyday or ordinary, the Court will look at similarities with the types of products already available in the relevant design field, and the readiness of availability of the type of product.

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# 5.15 Are there any exceptions to Design Right?

Yes. Design features enabling one product to be functionally fitted or aesthetically matched to another are excluded from protection. These so-called 'must-fit' and 'must-match' exceptions are influenced by the need to ensure that third party providers of spare parts should not be unfairly prevented from competing within the spare parts market.

Competitors cannot be stopped from copying any features of a protected design that enables their own design to be connected to or matched with existing equipment designed by someone else. However, competitors will infringe design right if they copy features of a protected design where there is no need to do so.

# 5.16 Licences of Right for unregistered designs

Unregistered Design Right expires 15 years from the end of the calendar year in which the design was first recorded or incorporated into an article or 10 years from the end of the calendar year in which articles made to the design were first made available for sale or hire anywhere in the world, whichever is earlier.

Licences are available as of right during the last five years of the subsistence of the design right. This means that if anybody asks for a licence in relation to the design right during those 5 years, they are entitled to it. If you are unable to agree the terms of the licence, the dispute can be referred to us but no application can be made earlier than one year before the earliest date that the licence of right is available.

# 5.17 Registered design protection

#### 5.17.1 Why should I register my design?

There are a number of benefits of registering your design. Some of these are listed below.

- Exclusive rights in your design A Registered Design grants exclusive rights in the look and appearance of your product. You can stop people making, offering, putting on the market, importing, exporting, using or stocking for those purposes, a product to which your design is applied.
- Protect all aspects of your design Design Registration protects the overall look of the whole or a part of your design. You can claim protection for the shape of a product, a two-dimensional surface pattern or graphic design, or a combination of the two.
- Long period of protection Registered Designs can be renewed every 5 years up to a total of 25 years.
- Easier to enforce The existence of your registration may be enough to stop anyone infringing your design irrespective of whether they copied or came up with the design independently.
- Make money from your design A registered design allows you to sell your design and the intellectual property (IP) rights to it; or licence somebody else to use your design whilst you retain the IP rights.
- Deferred publication You can choose to defer registration and publication of your design for up to 12 months. This allows you to establish a filing date, but gives you more time to develop the product or apply for a patent before publicly disclosing the design on our Register.
- Public benefit Intellectual Property registration aims to protect the creator but also to benefit the
  public as publication of registrations showcases developments in design and stimulates further
  innovation.

#### 5.17.2 What happens if I do not register?

If you do not apply for a registered design, your creations may still receive limited protection through unregistered Design Right or copyright: However, there are some limitations to what may be protected:

- You can only stop people using your design if you can prove it was intentionally copied so Design Right is difficult to enforce.
- You can only protect the three-dimensional shape.
- Two dimensional designs may be protected by copyright but this is more difficult to enforce than a Registered Design.
- Protection only lasts for a maximum of 15 years and is subject to a Licence of Right for the last 5 years.

Other kinds of protection

This table compares registered and unregistered design rights as well as other kinds of protection which may apply to designs.

#### 5.18 Design forms

Our designs forms are available in both PDF and Microsoft® Word versions.

If you wish to complete the form by word processor, we recommend that you use the locked Word version as this version has full functionality but prevents accidental editing of the text of the form. The unlocked Word version allows the text of the form to be altered but does not have full tick box functionality.

#### 5.19 About copyright

Copyright can protect:

- literary works, including novels, instruction manuals, computer programs, song lyrics, newspaper articles and some types of database
- dramatic works, including dance or mime
- musical works
- artistic works, including paintings, engravings, photographs, sculptures, collages, architecture, technical drawings, diagrams, maps and logos
- layouts or typographical arrangements used to publish a work, for a book for instance
- recordings of a work, including sound and film
- broadcasts of a work

You should only copy or use a work protected by copyright with the copyright owner's permission.

Copyright applies to any medium. This means that you must not reproduce copyright protected work in another medium without permission. This includes, publishing photographs on the internet, making a sound recording of a book, a painting of a photograph and so on.

Copyright does not protect ideas for a work. It is only when the work itself is fixed, for example in writing, that copyright automatically protects it. This means that you do not have to apply for copyright.

A copyright protected work can have more than one copyright, or another intellectual property (IP) right, connected to it. For example, an album of music can have separate copyrights for individual songs, sound recordings, artwork, and so on. Whilst copyright can protect the artwork of your logo, you could also register the logo as a trade mark.

# 5.20 Automatic right

There is no official registration system for copyright in the United Kingdom (UK) and most other parts of the world. There are no forms to fill in and no fees to pay to get copyright protection.

So long as you have created and fixed, for example in writing, an original work that qualifies for copyright protection, that is it falls into one of the categories of material protected by copyright, you will have copyright protection without having to do anything to establish this. It is a requirement of various international conventions on copyright that copyright should be automatic with no need to register.

To help protect your copyright work, it is advisable to mark it with the © symbol, the name of the copyright owner and the year in which the work was created. Although this is not essential, it will let others know when the term of protection started and it should then be possible to calculate whether it has ended or not. It will also indicate who the owner was at that time in case it is then necessary to approach them should you need to ask permission to use the work.

Additionally, a creator could send himself or herself a copy by special delivery post (which gives a clear date stamp on the envelope), leaving the envelope unopened on its return (ensuring you also know what is inside each envelope in case you do this more than once). Alternatively you could lodge your work with a bank or solicitor. It is important to note, that this does not prove that a work is original or created by you. But it may be useful to be able to show the court that the work was in your possession at a particular date.

### 5.21 Copyright registers

There is no official copyright register because copyright is automatic. There are certain steps you can take to protect your rights, but you do not have to register anywhere.

There are, however, a number of companies that offer unofficial copyright registers. You should think very carefully whether this is a useful service for you before choosing this route. Some of the things to think about are:

- How much does it cost and is it a one-off or regular payment?
- Are you paying just for a registration, or does the cost cover more than this, for example help with a legal action should your copyright be infringed?
- Is the registration likely to be better than the evidence you can create for yourself by sending a copy of the work to yourself by Special Delivery post and not opening the envelope upon its return?
- Are you still likely to have a problem proving that you had the copyright material at a certain time which is all that registration can help to prove?

Note that neither registration nor sending a copy of the work to yourself show that you were the creator of the work. Keeping copies of all your drafts and any other material that shows your connection with the particular copyright material as you develop it could, however, be useful evidence if you ever have to prove that you are the author.

#### 5.22 Benefits of copyright protection

Copyright allows you to protect your original material and stops others from using your work without your permission. The existence of copyright may be enough on its own to stop others from trying to exploit your material. If it does not, it gives you the right to take legal action to stop them exploiting your copyright, and to claim damages.

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By understanding and using your copyright and related rights protection, you can:

- sell the copyright but retain the moral rights.
- license your copyright for use by others but retain the ownership.
- object if your work is distorted or mutilated.

Copyright gives the right owner numerous exclusive economic rights

#### 5.23 Economic rights

Economic rights give the copyright owner the opportunity to make commercial gain from the exploitation of his/her work. Copyright owners generally have the right to authorise or prohibit any of the following things in relation to their works:

- copying the work in any way. For example, photocopying, reproducing a printed page by handwriting, typing or scanning into a computer, and taping live or recorded music are all forms of copying
- issuing copies of the work to the public
- performing, showing or playing the work in public. Obvious examples are performing plays and music, playing sound recordings and showing films or videos in public. Letting a broadcast be seen or heard in public also involves performance of music and other copyright material contained in the broadcast
- broadcasting the work or other communication to the public by electronic transmission. This includes putting copyright material on the internet or using it in an on demand service where members of the public choose the time that the work is sent to them
- making an adaptation of the work, such as by translating a literary or dramatic work, transcribing a musical work and converting a computer program into a different computer language or code.

Copyright is infringed when any of the above acts are done without permission, whether directly or indirectly and whether the whole or a substantial part of a work is used, unless what is done falls within the scope of exceptions to copyright permitting certain minor uses.

#### 5.24 History of copyright

It was not until the 1709 Statute of Anne, which passed into law on 10 April 1710 that copyright in books and other writings, gained protection of an Act of Parliament. Prior to this, disputes over the rights to the publishing of books could be enforced by common law.

The scholars of Ancient Greece and the Roman Empire were the first to be concerned about being recognised as the authors of their works, but they did not have any economic rights.

It was not until the invention of printing in the 15th century that a form of copyright protection came about. Until then, the copying of a manuscript was a painstakingly slow process done mainly by monks and was limited to copying religious works for orders and the royal courts of Europe. The majority of people were illiterate and only privileged members of society had access to these manuscripts.
# 6. CONCLUSION

Intellectual property encourages human creativity by shifting the boundaries of science and technology and enriching the world of literature and art. Lack of knowledge of the intellectual property rights importance is understandable because in the past this was an esoteric area of law and is left to the technical experts and lawyers in corporations. However, times have changed: the revolution of information technology and a rapid growth in the number of inventions, influence and importance of invention in conjunction with the rapid globalization of intellectual property brought into the spotlight. Sometimes a secondary and uninteresting subject, today is a key factor in the design of public policies, as well as in corporate strategic planning.

#### Literature

- 1. www.wto.org
- 2. http://www.wipo.int/about-ip/en/
- 3. http://courses.ischool.berkeley.edu/i231/s09/IPR-intro.html
- 4. http://www.ipo.gov.uk/types.htm
- 5. http://pasteur.crg.es/portal/page/portal/Internet/HIDE-Technolgy\_Transfer/Tech%20Transfer%20 Info/ip

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# THE ROLE OF ACADEMIA IN CREATION OF KNOWLEDGE ECONOMY - FULL PAPER

We are living in a society dominated by change. The technical, economical and social evolution has shaped people's way of living and thinking. The globalized markets, the technical and technological revolutions are transforming the modern economy into a "knowledge based society" in which new ways of organizing the work are governing the world, demanding a perpetual build up of competences, a rapid spread of high performance technologies, solid knowledge and increasing responsibilities. In the society of the future, education will play the key part in the way of life specific to this education and knowledge-based society. Introducing in the educational system of new learning and teaching techniques is a prerequisite of national cultural success, as much as it is also a prerequisite of economic competitiveness.

Nowadays, there is a wide and common understanding that industrial countries are undergoing economic and social transformation in which people's knowledge and skills are visibly becoming the essential agent of effective organization and development of societies. The emergence of the knowledge based society is both, a prerequisite and a result of the rapid introduction of information and communication technologies as well as of the growth of global competition. At the same time the social and economic restructuring experienced in knowledge based society gives an impetus to the adoption of a new social contract creating higher level of welfare state, equity and equality among its citizens.

It is undeniable that we are witnessing the rise of knowledge society, i.e., a society which privileges knowledge, leads to the integration of the 2 economies of the world, and makes the nations of the world interdependent and interconnected.

The 21st century knowledge based society tends to expand to a global proportion. Acknowledging the rapid moral depreciation of knowledge and abilities, the modern society prepares to adopt a new approach to education in order for it to function as a life-long institution of learning. In the knowledge based economy, people need to learn before entering the labor market, while in school, passing through several levels of education, as well as afterwards, adapting through various sub-systems specific to the permanent education to the increasingly complex demands of the world's dynamics.

Knowledge will be the key to this age, and fundamental sources of wealth may well be knowledge and information rather than raw materials and labour. Efficient utilisation of existing knowledge can create comprehensive wealth for the nation in the form of better health, education, infrastructure etc. for improving the quality of life. Ability to create and maintain the knowledge infrastructure, develop knowledge workers and enhance their productivity through creation, growth and use of new knowledge will be the key factors in deciding the prosperity of this knowledge Society.

Education and especially higher education is the primary agent of transformation towards sustainable development and increasing people's capacities to transform their visions for society into reality. Education provide the skills for "learning to know, learning to live together, learning to do and learning to be".

To function effectively and to manage or even work in any economic activity, knowledge becomes essential; hence the need for involvement and education of all people. In this perspective, looking to the role of higher education, one needs to go beyond the role of the traditional universities and degrees and the teaching- learning process.

Universities have emerged as central actors in the knowledge-based economy. No longer confined to their traditional roles of teaching and conducting primary research, the famously successful examples of Stanford University and the growth of Silicon Valley, and MIT and the development of the ICT corridor of Route 128 indicate that they are increasingly viewed as key drivers of innovation and "major agents of economic growth".

Universities are not just trainers of highly qualified scientists and researchers, they are also attractors of talent from elsewhere to the local community. Universities do not only generate new knowledge through primary research, they also provide technical support and specialized expertise and facilities for on-going firm-based R&D activities. University activity is not confined to the process of knowledge transfer on a local basis, but also acts as a conduit of new knowledge through the "global pipelines" of international academic research networks. Finally, rather than acting as "ivory towers" insulated from their community, they act as "good community players" that facilitate local linkages and networks and create "anchors of creativity" that underpin the virtuous cycle of talent attraction and retention.

In recent years, however, universities have come under increasing pressure to expand their traditionally dominant role in the conduct of basic research and supplement it with more applied research activities. Three major trends characterize the changes that have affected the university system: the linking of government funding for academic research with economic policy; the development of more long-term relationships between firms and academic researchers; and the direct participation of universities in commercializing research. As a result, while universities continue to fulfill their traditional roles of performing primary research and training highly qualified people, they have come under increasing pressure in recent years to expand their basic research activities to include more applied research of greater relevance to industry, and to diffuse technical knowledge and provide technical support to industry. This shift reflects changing government expectations that public investments in basic research should produce a measurable economic return.

It has been said very often that higher and technical education in our country is facing a crisis. However, every crisis carries within it the seeds of opportunity, of new possibilities for change and reform. Today's knowledge-based economics are shaped by movements of talent, ideas and innovation, which flow seamlessly across geographical and jurisdictional boundaries.

Higher and technical Education has been a key part of every one's agenda. We all recognize that there is going to be a huge skill shortage in almost all areas in the near future. We have already started seeing the strains on the industry. If we are to continue with the growth of 9 - 10% we have no options but to focus clearly on higher and technical Education.

Increased mobility of students and teachers, international research projects, interactive networking, greater emphasis on professional education, exploring new areas such as information sciences etc are some of the key factors responsible of internationalization of higher education institutions & universities in all over the world. Through these various initiatives we can draw lessons from the knowledge sharing, which is one of the main aspects of knowledge based economy.

Innovation is also a social process, where users and producers actively learn from each other by regular 'learning-through-interacting' In this context, learning refers primarily to the building of new competencies and the acquisition of new skills rather than simply accessing information of codified scientific knowledge. However, successful learning through interaction involves a capacity for localized learning within firms, and between firms and supporting institutions in a region. In this sense, the capacity for learning of firms in a region – the ability to develop and assess both person-embodied, tacit knowledge, and easily accessible and reproducible codified knowledge - is a critical variable in successful innovation. This form of learning often occurs at the regional level because firms within a region often share common networks that facilitate learning among them, and are supported by a common set of regional institutions, including universities.

As central players in the innovation system universities provide inventions (which they should patent, as a means of improving technology transfer from university to industry), instrumentation, which is necessary for doing further, and probably more applied, research, and they are providers of skilled labour, which industry can employ in its own innovation activities. All of these are relatively direct contributions to the economy in general, and to innovation in particular. The justification of the university here is as a creator of wealth, if indirectly.



Knowledge transfers between universities and other economic actors are highly personalized, and as a result, often highly localized, which underscores the significance of geographical proximity for the process of knowledge transfer. Proximity to the source of the research is important in influencing the success with which knowledge generated in the research laboratory is transferred to firms for commercial exploitation, or process innovations are adopted and diffused across researchers and users. The proximity effect of knowledge transfer provides a strong clue as to why universities are increasingly seen as an essential element in the process of local and regional economic development, especially in knowledge intensive industries, such as information and communications technology or biotechnology. However, what is not yet clear is the actual process by which, and degree to which, the proximity effect of university research on innovativeness contributes to the process of regional economic growth and industrial cluster formation.

The role of universities in local economic development goes far beyond the linear transfer of basic research into commercializable products. Instead, universities emerge as multi-faceted economic actors that are embedded in regions, and not only produce codified and commodified knowledge and human capital, but also actively participate as important institutional actors in both building and sustaining local networks and flows of knowledge, and in linking them with global ones. In this context, the role of universities in regional economic development appears to be less direct or instrumental than is often presumed. However, universities do retain a measure of policy autonomy. Active participation in the local community and economy is, in many ways, a matter of individual institutional policy, and "the involvement of the university in the region depends on the role that the university chooses for itself"

So, by coming to some conclusions, we can say that High education institutes provide academic programs due to which we have a highly developed young generation, who is the future of the country he/ she lives in and the whole World he/she belongs to.

University is not only the center of such academic programs, but also the key of knowledge economy, society, outreach and curriculum, without which we just can't imagine the modern and technically enriched, developed world we live in, create and study.

So when we say "University" we imagine components which are closely connected with each other and which are the results of good knowledge-based economy including technical innovation, economic productivity, growing markets, foreign industrial investment, competitive use of.

University has a "Curriculum" which includes such key notes as life long learning, employability, innovative programs, training, life skills and soft skills, flexibility in adaptation to new needs, graduate competency, life span of knowledge which are chosen to make it to work more flexible and to meet modern requirements.

The next important component is "Outreach", which is impossible without capacity building and technology transfer, expanding capacity of tertiary education, science technology and innovation, reducing inequality of access, relevance of education and research, coupling education and research, modern communication.

Let's pass to the last but one of the most important components "Society" with its subcomponents: health and social well-being, urban and rural development, high tech industries, globalization, regional competitiveness, optimum use of resources.

Concluding the above mention information we realize that we'll succeed and satisfy the modern demands of education if we are able to follow innovations.

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# ENHANCING SOCIAL CAPITAL FOR SUSTAINABLE DEVELOPMENT

#### Abstract

Social capital refers to the stock of social relations, based on norms and networks of cooperation and trust, that spillover to the market and state to enhance collective action between formal actors and achieve improved social efficiency and growth. Not with standing the paucity of available data and references, we shall attempt to evaluate the content and context of social capital and its capacity to enhance economic growth. The first step towards developing a consistent and integrated framework concerning the nature of social capital and its relationship to socioeconomic performance is to examine the factors that determine the development of social capital and its role in sustainable development of economy.

#### Key Words: Social capital, economic growth, development,, trust and reciprocity.

The economic direction contradies to real life – rules, the principles and norms limit the actions of people as much as it affects the economy at whole. Accepting such a contradiction, researchers not once tried to introduce elements of one direction into another. Yoram Ben-Porat (economist) introduced concept of F-communications (family, friends, firm), influencing on economic exchange. Oliver Wiliamson examined conditions of organization of economic activity in various institutional forms. Appeared a whole scientific direction – institutional economy. Social capital has an important role in all this. The social capital is a new category caused to life by historical changes, connected with reconsideration of the role of the person in the organization and management of economic development.

Specificity of the social capital is reflection of the communications between the interacting individuals. The social capital examines changes in the relations between people who promote economic actions. Social capital such as physical and human capital promotes the growth of the productivity of the work. Group of workers with relations of understanding and trust works more harmoniously and effectively than in the group where there are no such relations.

The idea of social capital can be found in the works of many economists as Alexis de Tocqueville, Emile Durkheim, Max Weber, JAcobs, Coleman. Nevertheless there is no unified definition of social capital. One approach connects the concept of the social capital with institutional issues. It is called "social opportunities" by some economists. Others prefer another definition with more narrow meaning which is reduced to social communications and norms of mutual responsibility or trust. The trust can be considered as consequence of the social capital or as a component of the shared values and norms which compose the social capital.

And so the social capital consists of communications, also recognized norms, values and understanding that promote interaction inside or between groups. Recognized norms and

values allow people to communicate and benefit by joint experience as well as deviations from some norms and values. If there is a dominating situation of tolerance various systems of values can coexist together with recognized without interfering cooperation. Thus dialogue and mutual understanding based on mutual patience of various culturesor beliefs are necessary attributes of social unity and pro-

mote development of the social capital. The social capital allows individuals groups and communities to solve collective problems in more simple ways. The social capital can be a by-product for different types of activity. For example participants of factory choral studio visit it because they like to sing but not for strengthening their social communications. Due to the social capital many people win from investments of a certain individual or group into the social capital. From here a risk of underinvestment begins as the participants of action don't receive and don't realize their benefits wholly.

However access to information and influence through social communications can bring private benefit to individuals and in certain cases can be used by individuals or groups for excepting the strangers and strengthening own domination and privileges.

Thus the concept of "social capital" is based on the idea about expected return from investments in the social relations. Individuals enter the social relations and join certain networks for receiving profit. Basis of profit can become, at least, four major resources which arise or amplify exactly due to social communications and allow to increase efficiency of economic activity.

- 1. First, access to information. Social communications in a certain environment and at certain hierarchical levels give an individual a useful data not available from other sources of opportunities and variants about the most favorable behavior in the market.
- 2. Secondly, social communications can have an impact on managers of the personnel or heads of the firm, that is the persons accepting the important personnel decisions of hiring, dismissal and advancing of the worker.
- 3. Thirdly, social communications of the individual can be perceived by the organization as certain certificates or social guarantees providing access to certain social resources.
- 4. And at last fourthly, social communications strengthen and accelerate the process of recognition and adaptation of the new worker.

Three main forms of the social capital are distinguished: communications - "fetters", communications - "bridges" and communications - "links".

Communications - "fetters" belong usually to the relations in a family and in ethnic groups, communication - "bridges" characterize relations with not so close friends, acquaintances and colleagues, communications - "links" define the relations between various social groups in hierarchies where the power, social status and wellbeing are available only to certain groups. To the last form refer, for example, ability of the individuals or groups to use resources, ideas or information of the formal institutes which aren't directly an element of a group.

Under certain circumstances concrete forms of communications of social capital can impede the social unity. So the social capital doesn't differ from other forms of the capital. Their use can pursue different aims that are welcomed by community as a whole. The value of the concept of social capital is expressed that it identifies certain aspects of social structures through their functions, in particular, through the importance of these aspects for actors as resources that they can use for achieving their interests. At that can be reached purposes both at individual level, and at the level of transition from micro to macro level . The concept of the social capital presents as a signal that any value is created for those actors who possess this resource, and this value depends on the social organization. The second stage of the analysis consists in developing the concept. We have to open which components of the social organization influence on the created cost. The following aspects of the social relations can act as capital resources for the individual : obligations, expectations and confidence in structures.

When Investigating the social capital, we have to consider the difficulties of its measurement. In essence, activities of the social capital have to be:

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 as much as possible comprehensive in reflection of key concepts (communication, value and norm); and 2) balanced from the point of view of subjective and evaluative elements (for example, the level of trust to people) and behavioural aspects (for example, participation in associations and branching of social communications). The World Bank supports researches of the social capital in the form of special developed inspections or specialized modules in already existing inspections. The trust assessment is especially important.

In some countries (France, Italy, Spain) where trust level to unfamiliar is below, than in other countries of OECD, higher level of trust is noted is noted higher level of trust in a close family circle. Though the trust and civil activity are interconnected, there are considerable distinctions how the individuals belonging to different social groups build their communications and relations. High level of trust in one sphere can coexist with the limited radius of interaction and trust in another. But data of inspections should be used in the analysis with care.

It is also known the experiment when a large number of purses with \$50 were "lost" in a number of the large cities. The share of the returned "lost" purses to owners in each country closely (0,67) correlated with a trust indicator. That is in the countries, where the level of mutual trust it is high, people really deserve more trust.

And so if there are not large and complete indicators as a conditional measuring instrument of the social capital it is possible to use a trust indicator.

#### **SOURCES OF THE SOCIAL CAPITAL**

The social capital is created on the level of a family, community, firm, national or sub-national administrative units. The social capital is created on the level of a family, community, firm, national or subnational administrative units.

The social capital is embodied in norms and the institutes including the state and legal bases. For studying of the formation of the social capital the following sources of information are necessary: 1) family; 2) school; 3) territorial community; 4) firms; 5) civil society; 6) public or state sector; 7) floor; 8) ethnic origin.

Scientific discussions of the last years pay much attention to voluntary and civil associations, unfortunately, practically ignoring the importance of family, school and firm.

Each of them has its place and value in the general system of the social relations. Changes in the levels of the social capital reflect more long-term changes in norms, values and models of social interactions. In recent years in the USA there is a tendency of reduction of social and civil activity while in Great Britain and Sweden participation in various types of public organizations increased both in absolute expression and on a share in the cumulative population.

In some countries, for example, in Australia, the model of civil participation changes and becomes more individualistic and superficial. In many countries there are distinctions between level of trust and civil activity on age cohorts.

While in many countries of OECD the role of traditional local forms of social communications decreases, there is open a question, whether these new social communications will be able to replace the old. The analysis of intercountry comparisons also showed decrease in level of trust to different types of institutes, including political and religious hierarchies. In many countries during 1981-1990 decreased

registered level of trust to the state, public organizations, polices, churches, and also to an education system and mass media. At the same time level of interpersonal trust during the same period changed a little or even increased. These tendencies can be connected with increasing level of coverage by education and shift of values to a bigger personal autonomy and smaller obedience of government.

In the majority of the countries of OECD there take place important changes in values, norms and models of social behavior. The new values focused on autonomy and independence, can have undesirable side effects, for example weakening of call of duty and lack of participation in the enterprise. For example strong communication is revealed between increasing of time at watching television . People who watch TV much have less time on visiting friends and acquaintances, recepting guests, for a voluntary in local community, correspondence and telephone conversations. It seems the same problem is with the Internet. But computer communications help exchanging of information, collecting opinions and the organizing of discussions between widely spaced people. Thus, however, trust establishment in virtual space is more difficult, than in the real world.

As a whole internet communication is an addition but not replacement for real social interrelations. As factors of reduction of the social capital also are called increase of working hours, growth of quantity of families with two workers, development of urbanization and also the prospering state. Value of the social capital in the labor sphere is shown practically at all stages of the labor relations: from hiring to dismissal, including development, training, permission of labor conflicts.

The social capital can be considered as a valuable resource while searching job and workers, especially in the open and flexible labor markets. The social capital not only expands information space for subjects of a labor market, but what is most important allows to overcome or minimize asymmetry of information on a labor market. The worker uses his social communications for searching the most attractive workplace. Successful job search doesn't depend on number of communications and the contacts available to the individual but on the status of the person with which the individual is connected and whom he trusts in the solution of the question of work. While searching job more important is a social capital in shape of "communications bridges" instead of "communications fetters". The most striking example of influence of the social capital on the labor relations is using of recommendation letters in the process of hiring workers. The second type of recommendations which we conditionally called supporting isn't less important. Just such type of recommendation letters allows the employer to save transactional costs for personnel search and selection, and this economy can be so considerable for the employer that he installs a system of material encouragement for the employees of the enterprise recommending for work of new employees from among the acquaintances and relatives.

The theory of the social capital finds in this situation probably the brightest confirmation because, from the point of view of the employer takes place an investment of means in the social capital in the form of a payment to workers for recommendations and receiving return from these investments in the form of economy of funds for selection and hiring most suitable workers. From the point of view of the worker he earns reward for useing his own saved-up social capital.

But together with unconditional advantages the method of useing the social capital in the form of recommendation letters bears in itself a number of potential dangers if it is the only and basic method for selecting workers. But never the less the econometric analysis of influence of the social capital on welfare of the worker showed that importance of contacts for obtaining a certain income honor is as great, as importance of education or experience in branch and on this workplace. Most the evidence of positive impact of the social capital is found in the sphere of personal health. It was noticed that the number of suicides sharply increased during the periods of social changes (Figure 1). The effect was charged to destruction of structure of society and weakening of social communications. Researches of influence of the social capital on health show that social isolation usually precedes diseases, that is it is

the reason, but not the result of illness . As for value of the social capital in life of children, it concedes only in size to the value of poverty. But if poverty is connected with high level of teenage birth rate and an unemployment in study or work, an involvement into life of communities possesses opposite effect. Social communications are the major factor, along with level of the health, providing an appreciation of level of wellbeing and happiness. There are data that social communications are more important for happiness, than education and income (at least for people with income at the level of averages or above averages). Though education is considered as an important factor of happiness, it takes the third place after social communications and health. The income is important, but it takes only the fourth place, and in process of growth of level of the income value of this factor decreases. The sharp forms of social exclusion (by social, ethnic, gender or religious signs) are closely interconnected with low indicators of trust and civil activity, that is weakest "communications bridges". Changes in the social capital can reflect changes in models of the economic inequality in the countries and between the countries. For example, decrease of the social capital in the USA is connected with a growing inequality of the income and welfare. The countries where the population is divided by class, language or ethnic signs, with bigger degree of probability will face social splitting of society.

## **INFLUENCE OF THE SOCIAL CAPITAL ON ECONOMIC GROWTH**

#### **Productivity in firms and organizations**

Any transaction independently whether it is private, social, economic or political by nature, isbased on trust. The crucial in definition of the social capital is the concept of the communications based on trust. The trust win established connection, becomes a source of profit of firm as promotes coordinating of inter firm and intracompany interactions, decrease in transactional costs for negotiations, perfecting of information and disposal from excessive bureaucratic links. In this context the trust gets diverse manifestations, including belief in good intentions, competence and reliability of other participants of the transaction.

According to experts the confidential relations between economic agents is possible to exaine as important competitive advantage of the industrial enterprises of Germany, Japan and Italy. Buyers and sellers establish long-term relations of cooperation and mutual obligations through repeatedly repeating transactions based on trust and communications.

The business connections covering marketing, training, research development, bring benefit in the long-term period due to decrease in cumulative expenses, exchange of information and establishment of sanctions for opportunistic behavior. In some branches (for example, production of commodities – clothes, footwear, etc.) enormous advantages in saving of time can be received due to exchange of information and timely fine tuning to changes of requirements of consumers. In some researches distinction between the general and specific trust is studied. It is shown that the share in BBП of production of 20 most major companies is positively connected with trust of people and negatively connected with trust in a family. The hypothesis is offered that the large enterprises dominate in societies where level of trust is higher , and punishments for opportunistic behavior aren't so necessary(Table 1). Table 1 presents empirical results of the impact of social capital on economic growth rate that rises from 0.04 to 0.07 per cent for per additional unit of trust. This suggests that for each extra year of schooling may provide additional growth rate for an economy from 0.13 to 0.22 per cent through creating trust. These social capitals have also definite impact on income level as well as on economic growth. Thus, these empirical results support that social capital is a factor of production.

And to the contrary according to the same hypothesis, it is harder to create large enterprises in closely weaved societies based on family or ethnic relations. In this model the trust is considered as the exogenous factor created under the influence of historical and cultural conditions and operating in support of collaboration, including civil activity and efficiency of the government. Similarly, intra firm communications and norms of interactions can promote team work, increase efficiency and quality, improve exchange of information and knowledge. Cooperation between workers and by the direction is considered as the major factor which has historically caused high competitiveness of the Japanese automobile companies. In the American companies each worker seeks to become better than others, to achieve individual success and therefore hides his knowledge from colleagues.

In Japan everyone seeks to share with everything he knows and is able i with colleagues because considers that the success can be reached only by team. Various types of social and organizational capital can correspond more or less to various phases of economic development (we will take into account the fact that in the 1990th years competitiveness of Japanese automotive industry decreased). The regional production systems which are based on local educational networks, potentially may be more flexible and dynamic, than the systems where the training process is concentrated at the separate enterprises. Striking example of influence of the social capital on labor productivity growth in the region is the Silicon Valley where on the basis of cooperation of businessmen and scientists the world famous center of advanced technologies was created. The success of this center was reached first of all due to formal and informal cooperation of all the companies, both production and research, working in the region.

#### **MACROECONOMIC BENEFITS**

Unfortunately, the conducted researches aren't enough to reveal and confirm unambiguously dependence of intercountry distinctions in economic growth from scales of the social capital. The complexity is the accounting of the social capital for its heterogeneity, not readiness of uniform adequate indicators at intercountry level.

To evaluate the effectiveness of investments inhuman capital is used Dzh.Mintsera's standard equation of wage represented as follows: LnW = (0 + (1)univ + (2Tech + (3Sec + (4Exp + (5Exp2 + (6Ten + (7Ten2)univ + (2Tech + (3Sec + (4Exp + (5Exp2 + (6Ten + (7Ten2)univ + (2Tech + (3Sec + (4Exp + (5Exp2 + (6Ten + (7Ten2)univ + (2Tech + (3Sec + (4Exp + (5Exp2 + (6Ten + (7Ten2)univ + (2Tech + (3Sec + (4Exp + (5Exp2 + (6Ten + (7Ten2)univ + (2Tech + (3Sec + (4Exp + (5Exp2 + (6Ten + (7Ten2)univ + (2Tech + (3Sec + (3Sec+ (, where the variables Univ, Tech, Sec mean years of schooling for different levels of education: higher, secondary and general secondary (In the case of the Soviet Union and the Russian Federation. Other countries used local counterparts). Variable EXP describes the experience of the worker in the labor market, as an answer to the question about the years of service. TEN – characteristics of return from the specific human capital or professional experience gained in the enterprise. Mincer's equation makes it possible to formalize the calculation the value of returns from education, perceived by most of young people or their parents at the level of common sense. Like all other theories, the concept of human capital has a number of defects. First while counting, in most cases, are not considered all types of income received in non-traditional form. They simply can't be technologically calculated and included in the comparison. From this follows and second defect - considering only quantitative but not qualitative parameters of incomes. The third defect - limited information base makes impossible researches, that examine changes of income throughout the whole life cycle. (Table 2) Table 2 presents empirical results of the impact of social trust (capital) on income level. Social trust and human capital have positive impact on a country's income level (Table 2). Empirical results suggest that for each extra one year of education the trust (index) improves 3.2 points (Table 3) and for each additional increment of social trust the level of income (real GDP) increases from \$137 to \$302 (International dollars at 1996 constant price). This suggests that for one year extra schooling might directly provide extra income \$1848 and indirectly (through social capital, viz., trust) extra income from \$438 to \$966 and in aggregate extra income increase from \$2286 to \$2814. Economic growth rate increases with improvement of social capital (specifically social trust). Figure 2 shows, that in advanced countries the role of social capital in GDP is smaller than in developing countries like Armenia.

Because of the limited available statistical and analytical material, retrospective assessment of what happened in the interested us sphere of typical planning economy in the USSR and other socialist countries, it is possible either on base of expert analysis, or by using this kind of econometric calculations. While evaluating the study researches we have to remember about the specifics of the formation of income in planned economy: natural income and benefits, depending on status economic abilities had comparable, if not greater, importance than money income. Under the existing tariff schedules wage differences were not significant, far more important was the access to the benefits: free housing, being free for everybody it is different by quality and time of waiting to get it. The same is about health care, food distributors, rest homes, camps for children, etc. If a planned economy is characterized by low rates of impact (in terms of an additional year of education: 3.1% in the USSR, 2.7% in Czechoslovakia), in the transition economies they are notably increased (6 - 8% in Russia), confirming the hypothesis that the liberalization of the economy and decentralization of wage regulation contribute to the growth of private rates of return on investments in education. But with the development of a market economy a new experience is build, that is acquired in new conditions environment and are often more valuable for an employer than vigor of youth. This is evidenced by comparison of the analysis RLMS: in 1995-96. income reached a peak for men aged 30-35 years, in 1998, as we have said, he moved into a more senior age group 35-39(Table 4). Table 4 shows that in the countries of EU the group membership is not so high only 35%, and half of it is deviated. The highest level of education is in secondary school, working status is high among the employed. The highest levels in age groups are 26-35 and 36-45.

#### **CONCLUSION**

So social capital is a broad term containing the social norms and networks that generate shared understandings, trust and reciprocity, which underpin co-operation and collective action for mutual benefits, and creates the base for economic prosperity. Social capital is accumulated when people interact in a purposeful manner with each other in formal and informal meeting places. These social activities increase with development of human capital that is generated in the schooling system. Educated individuals are interested in dialogue and conversation that enables people to build communities, to commit themselves to each other, and thereby to knit the social fabric. Thus social capital greases the wheels that allow nations to advance smoothly.

This paper tries to develop mechanism through which social capital forms and contributes to economic growth in the endogenous growth framework. This study deals with development of social capital through human capital formation that is created from productive consumption. The predictions of the model are examined empirically for a cross-section of countries. The empirical findings support our hypothesis that social capital has significant impact on the income level and economic growth rate.

#### References

- 1. Alesina, A. and Ferrara, E. La., (2002), Who trusts others?, *Journal of Public Economics*, vol.-85, 207-234.
- 2. Bengtsson, M., Berggren, N. and Jordahl, H., (2005), Trust and Growth in the 1990s: A Robustness Analysis, Department of Economics, Uppsala University, Sweden, *Working paper* No. 2005:1.
- 3. Berggren, N. and Jordahl, H., (2006), Free to Trust: Economic Freedom and Social Capital, *Kyklos*, vol.-59(2), 141-169.
- 4. Chou, Y. K., (2006), Three simple models of social capital and economic growth, *Journal of Socio-Economics*, vol.-35(5), 889 – 912.

- 5. Crudelia, L., (2006), Social capital and economic opportunities, *Journal of Socio-Economics*, Vol.-35(5), 913 – 927.
- 6. Dasgupta, P., (2002), Economic progress and the idea of social capital, in P. Dasgupta and I. Serageldin (eds.), *Social Capital: a multifaced perspective*, World Bank, Washington DC.
- 7. Helliwell, John F., and Putnam, R., (1999), Education and social capital, *NBER working paper*#7121.
- 8. Lin, N., (2001), Social Capital, Cambridge, Cambridge University Press.
- 9. Mankiw, N. G., Romer, D. and Weil, D. N., (1992), A Contribution to the Empirics of Economic Growth, *The Quarterly Journal of Economics*, Vol. 107(2), 407-437.
- 10. Miguel, E., (2003), Comment on Social Capital and growth, *Journal of Monetary Economics*, vol.-50, 195-198.
- 11. Narayan, D. and Cassidy, M. F., (2001), A Dimensional Approach to Measuring Social Capital: Development and Validation of a Social Capital Inventory, *Current Sociology*, Vol.-49(2), 59 102.
- 12. Sobel, Joel., (2002), Can We Trust Social Capital?, Journal of Economic Literature, Vol.-XL, 139-154.
- 13. Steger, T. M., (2002), Productive consumption, the intertemporal consumption trade-off and growth, *Journal of Economic Dynamics & Control*, vol.-26, 1053-1068.
- 14. Temple J.; Johnson P. A., (1998), Social Capability and Economic Growth, *Quarterly Journal of Economics*, vol.-113(3), 965-990.
- 15. Zak, P. J. and Knack, S., (2001), Trust and Growth, *Economic Journal*, vol.-111, 295-321.

# **Appendix**

Variables	Growth rate per capita			
	(1)	(2)	(3)	
Intercept	0.454 (0.9)	1.029 (1.58)	0.439 (0.61)	
Trust	0.043***	0.056***	0.068***	
Schooling (mean years)	(2.88)	( <b>3.2</b> ) 0.145	( <b>3.69</b> ) 0.028	
Per capita GDP at 1990		(1.4)	(0.2) -0.094* (-1.78)	
$R^2$		o 4 47 4	0.4040	
$\overline{R}^2$	0.1198	0.1474	0.1910	
A Log likelihood function	0.1054	0.1190	0.1498	
	-126.441	-125.44	-123.787	
NO. OF UDSERVATIONS	63	63	63	

Table 1: Estimated Impact of Social Capital on Economic Growth rate.

Note: The figures in parentheses are t-values. '\*\*\*', '\*\*' and '\*' indicate the level of significance at 1%, 5% and 10%, respectively.

Variables	Income level (Per Capita GDP ('000 PPP )at 1990)		
	(1)	(2)	
Intercept	1.0346 (0.62)	6.2943*** (4.01)	
Trust	0.3023*** (6.25)	<b>0.1366</b> *** ( <b>3.26</b> ) 1.8478***	
Schooling		(7.36)	
$R^2$	0.3902	0.6794	
$\overline{R}^2$	0.3802	0.6687	
Log likelihood function	-201.136	-180.887	
No. of Observations	63	63	

Table 2: Estimated impact of Social Capital on Income level

Note: The figures in parentheses are t-values. '\*\*\*', '\*\*' and '\*' indicate the level of significance at 1%, 5% and 10%, respectively.

Variable	Dependent Variables		
	Trust	GDP	Growth rate
Constant	8.918*	-5.076***	1.525**
t-value	(1.92)	(-3.1)	(2.25)
Mean years of <b>Schooling</b>	3.217***	2.287***	0.034
t-value	(4.97)	(10.03)	(0.36)
<i>R</i> <sup>2</sup>	0.2885	0.6227	0.0021
$\overline{R}^2$	0.2768	0.6165	0.0143
Loglikelihood function	-251.72	-186.015	-130.395
No. of Observations (Countries)	63	63	63

Table 3: Estimated Impacts of Schooling on Trust, Income and Economic growth rate

Note: The figures in parentheses are t-values. '\*\*\*', '\*\*' and '\*' indicate the level of significance at 1%, 5% and 10%, respectively.

	EU-15			
SET OF VARIABLES	Mean	Std. Deviation	N	
Group membership $(y_i = 1, \text{ if member of group})$ $(y_i = 0, \text{ if not member of group})$	0.3496	0.4768	121627	
Natural log of personal net income	9.0310	1.1439	110210	
Highest level of education completed Set of dummy variables for:				
Less than secondary level	baseline	baseline	baseline	
Secondary level	0.2931	0.4552	130240	
Tertiary level	0.1851	0.3884	130240	
Working status Set of dummy variables for:				
Employed	0.5224	0.4995	130803	
Unemployed	0.0526	0.2231	130803	
Inactive	-	-	-	
Age Set of dummy variables for:				
16-25	0.1576	0.3643	129819	
26-35	0.1925	0.3942	129819	
36-45	0.1868	0.3898	129819	
46-55	0.1675	0.37343	129819	
56-65	0.1330	0.3396	129819	
66-75	0.1097	0.3125	129819	
76-85	-	-	-	
Gender $(y_i = 1, \text{ if male})$ $(y_i = 0, \text{ if female})$	0.4812	0.4997	131386	
Marital status (y <sub>i</sub> = 1, if married) (y <sub>i</sub> = 0, if otherwise)	0.5901	0.4918	127694	
European Countries				
Nordic countries	0.1553	0.3622	131386	
Agglosaxon countries	0.1080	0.3104	131386	
Benelux	0.1465	0.3536	131386	
France	0.0813	0.2733	131386	
Austria	0.0475	0.2128	131386	
Germany	0.0859	0.2802	131386	
Mediterranean countries	-	-	-	
Region of birthplace and residence	0.7596	0.4273	93290	
Natural log of per capita GDP	4.5944	0.2018	131386	
Unemployment Rate	8.4979	3.8289	131386	
Income distribution	4.6117	1.0524	131386	

#### Table 4: Social capital variables in the countries of EU



Figure 1: Relative effect on black mortality





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# RECOVERY AND GROWTH PROSPECTS OF THE GREEK ECONOMY IN A PERIOD OF A GENERAL EUROPEAN CRISIS

#### Abstract

Since the unfolding of the financial and economic crisis in the United States, it was quite clear that this economic collapse had a severe impact on real economies and livelihoods, and soon begun to take on serious global dimensions. The financial crisis spread rapidly in developed countries and then around the world, with dramatic effects on the banking system and business. According to the International Monetary Fund, the crisis moved forcefully into the real economy, leading to recession and decline in employment.

Greece and most of European countries face severe and persistent problems in significantly and rapidly reducing large existing margins of slack, and in restoring their economies to growth paths similar to those that prevailed on average for the quarter century before the Great Recession.

Focusing on the case of Greece, the economic policies of the last three decades have brought country to the brink of bankruptcy. The reforms that implemented in other countries many years earlier, were postponed continuously in Greece. As a result, the country lagged far behind, with a non-productive public sector, an unfair and inefficient tax collection system, an unsustainable pension system, and a restrictive and inefficient regulatory economic framework, with a low and a continuously decreasing competitiveness.

Nevertheless, this difficult time will enforce the whole 'system' to work efficiently, making sure to turn the threats arising from the global recession forces into opportunities, solve problems and eventually achieve excessive growth and quality product restructuring. In order to improve the performance of the real economy so as to ensure that real convergence or "catch-up" occurs quickly, it is necessary to implement a wide spectrum of reforms founded on the principles of competitiveness, productivity, extroversion, investment stimulation and employment opportunities, which can contribute to increasing competitiveness and allow the country to regain lost ground.

The exit strategy from this economic recession in the years to come should primarily focus on ensuring the significant improvement of the economic climate in the country for the early recovery and development of Greece.

This paper analyzes the recovery and growth prospects of the greek economy as well as the related policies that will be able to fuel country's economic growth in the coming years.

Key words: growth prospects, tourism, shipping, agriculture, renewable energy.

#### **INTRODUCTION**

Lately, the global community is facing a high-intensity economic crisis, which, although manifested initially in the United States with a focus on banking delinquencies and especially the inability to serve mortgage loans, soon took epidemic proportions. This economic collapse had a severe impact on the global economic and financial environment by introducing a massive amount of uncertainty about economic prospects and future fiscal and monetary policy, since most countries experienced a sudden downturn and a drying up of liquidity. According to the International Monetary Fund, the crisis moved forcefully into the real economy, leading to recession and decline in employment : public finances of most countries in the Economic and Monetary Union, are in a worse state today than at any time since the industrial revolution, except for wartime episodes and their immediate aftermaths. And the problems are not confined even to the Euro Area (EA), but extend to EU member states not in the EA, like the UK and Hungary, and to Japan and the USA.

While the origins of this widespread loss of fiscal control are shared by most countries and can be traced to pro-cyclical fiscal policy during the boom periodpreceding the financial crisis that started in August 2007, the fiscal cost of the financial rescue operations, the revenue losses caused by the recession and the discretionary fiscal measures taken to stimulate economic activity, the uniquely serious situation in Greece owes much to unique features of its economy, its political institutions and its policies.

## BACKGROUND

Greece joined the European Economic Monetary Union (EMU) and adopted the euro in 2001. The agreements that institutionalize the Union, in particular the Maastricht Treaty, set as guidelines that each member country limit its fiscal deficit to 3% and its public debt to 60% of GDP. The adoption of the Maastricht Treaty put pressure on greek goverments to follow difficult and often painful adjustment policies so as to improve the convergence situation of the country. In turn, the implementation of prudent macroeconomic policies and a number of structural reforms paid off in rapid growth and high macroeconomic stability. GDP growth was particularly pronounced during the ten-year period 1996-2005 when Greece achieved an average annual increase in GDP of 3.78%. As for public finances, the improvement was less remarkable. Nevertheless, the overall economic progress and the economy's favourable prospects at the dawn of the new millennium facilitated the complete transition of the Greek economy to the fiscal phase of European Economic and monetary Union.

On the other hand, having achieved high rates of growth by the year 2008, Greece showed signs of recession in 2009 as a result of the global financial crisis, while the year 2010 and after the recession intensified considerably due to budgetary imbalances : In October 2009, following the Greek general election and change of government, Greece's general government budget deficit was revealed by the new government to be 12.7 % of GDP rather than the 6.0 % reported by the old government, and the 3.7 % promised to the European Commission at the beginning of 2009. In November 2009, Greece reported revised fiscal data that showed a fiscal deficit for that year of 13% of GDP, well above the previously reported figure of 8%, and a projected public debt level of 115% of GDP. And, while the finances of many sovereigns deteriorated strongly as a result of the recent crisis, Greece entered the downturn with a large underlying public deficit already. Greece's budgetary problems owe much to high entitlement and agerelated spending, poor tax administration and a bloated public sector. These weaknesses are compounded by the growing uncompetitiveness of much of its industry, as measured for instance by relative normalized unit labor costs, by any other of a range of real exchange rate indices or by Greece's poor showing in such surveys as the World Bank's Doing Business 2010 or the World Economic Forum's Global Competitiveness Report 2009-2010. This sharp deterioration in Greece's fiscal picture raised concerns about the country's ability to service its debt, worries that intensified as the cost of financing government debt rose. Yields on Greece's 10-year bonds more than doubled between January and May 2010.

In response, Greece reached agreement with the International Monetary Fund, the European Commission, and the European Central Bank on a focused program to stabilize its economy, become more competitive, and restore market confidence with the support of a  $\leq$ 110 billion rescue package, including  $\leq$ 30 billion from the IMF and  $\leq$ 80 billion from other euro zone countries. This assistance was conditioned on implementation of austerity measures, with the goal of reducing the fiscal deficit-GDP ratio to 7.6% in 2011, 6.5% in 2012, and below 3% by 2014. Nonetheless, yields on Greek 10-year sovereign bonds stabilized around 10%, only two percentage points below their May 7 peak.

On 14 March 2012, euro area finance ministers approved financing of the Second Economic Adjustment Programme for Greece. The euro area Member States and the IMF committed the undisbursed amounts of the first programme (Greek Loan Facility) plus an additional €130 billion for the years 2012-14. Whereas the financing of the first programme was based on bilateral loans, it was agreed that - on the side of euro area Member States - the second programme would be financed by the European Financial Stability Facility, which had been fully operational since August 2010.

The saga of the Greek public finances continues. But this time, Greece is not the only country that suffers from doubts about the sustainability of its fiscal position. Quite the contrary, crisis that started in Greece culminated into a crisis of the Eurozone as a whole. The international community is facing its greatest economic crisis since the post war period. Inflation rate of Eurozone has doubled, high prices turned into a major social problem for all countries, unemployment is threatening seriously most societies. Growth rates of the EU dropped in half, crisis has reached the heart of Europe and financial institutions are decaying.

#### THE ROOTS OF THE FISCAL UNSUSTAINABILITY PROBLEMS IN EMU AND GREECE

The fiscal unsustainability problems in most advanced economies share common root, s since crises initiated by the simultaneous presence of the following factors:

- First, the deep economic recession that began in the U.S. as a financial crisis in 2007, and led to a global recession that now threatens many heavily indebted European countries.
- Strongly pro-cyclical behaviour by the fiscal authorities during the boom period between the bursting of the tech bubble at the end of 2000 and the onset of the financial crisis of the North Atlantic region in August 2007.
- The bubble in real estate prices in many parts of the U.S., which facilitated the over-consumption, resulting in overheating of the economy and raising a current account deficit, as often happens in similar crises.
- The direct fiscal costs of the financial crisis, that is, the bailouts and other budgetary rescue measures directed at propping up the financial system, starting with the collapse of Northern Rock in September 2007, and expanding massively with the rescue of Fannie and Freddie by the Federal government on September 7, 2008, the Lehman Brothers insolvency on September 15, 2008, and the last minute rescue by the Federal government and the Fed of AIG and its counterparties in a number of interventions that started on September 16, 2008.
- The transfer of risk from banks' balance sheets to public and investors through securitisations, many of whom were unaware of the level of risk and susceptible to high yields. Such a transfer of risk allowed banks to lend fearlessly to non creditworthy borrowers and then obtain liquidity for additional lending without the need to find new depositors.
- The rapid spread of high risk domestic loans, from 9% of total housing in 2003 to 24% in 2007, that is to say a wild credit extension in household types that under normal circumstances should not

have been loaned. Banks provided loans with only guarantee the expected increase in the price of housing, while accommodated households with attractive and low interest rates in the early years, which afterwards were about to be adjusted. Many times banks were willing to pay loans of trouble repaying households by another bank.

Together, these developments caused an unprecedented peacetime deterioration in the public finances of most advanced countries.

While the finances of many sovereigns deteriorated strongly as a result of the recent crisis, Greece entered the downturn with a large underlying public deficit already. That is to say, that the causes of the Greek crisis must be identified in additional country-specific factors of fiscal troubles:

- Drastic reduction policies of tax revenues adopted by the Greek government before crisis for over a decade.
- The neoliberal strategy of the European Union, which not only excluded the direct lending from the European Central Bank so as to support the euro zone public finances, but also obliged the governments to raise loans only from commercial banks and large financial markets, resulting in soaring interest rates in times of crisis.
- Thus the persistence of Greek government to neoliberal strategy

When financial markets withdrew their confidence in the Greek economy, the interest rates of public lending soared to unsustainable heights. In February 2010 the European Commission decided to offer a loan package support to the Greek government with the involvement of the International Monetary Fund (IMF), provided that the country would follow a rigorous program of reduction of the public expenditure. The government focused on reducing public spending salaries, as well as the welfare state, while increasing income mainly from indirect taxes. The conditions regarding other sources of income or expenditure remained the same. On 23 April 2010, the Greek government requested the activation of credit support from the EU and IMF, while launching "shrink the state" policies regarding the insurance system, pensions and local government.

- The very existence of the euro, which before the crisis, facilitated resources transfers to countries that grow faster. Those capital inflows preserved the balance of payments in a stable condition, that is to say they allowed Greece and other European countries to keep a significant deficit in the balance of payments on current account before economical recession. With the outbreak of the crisis this possibility disappeared since capital inflows experienced a great reduction.
- Finally, during 1996-2008, Greece achieved a high growth of real GDP in the order of 61.0%, Spain of 56.0% and Ireland of 124.1%, by contrast with the most developed European countries. The corresponding percentage for Germany was 19.5%, for Italy 17.8% and for France 30.8%. Countries which exhibited higher growth rates, basically ended with significant current account deficits. According to NSS, the first quarter of 2009 70,000 jobs were lost, and despite the 28 billion given to the banks, liquidity is not spent on business. Sealed checks have exceeded in 1.7 billion.

It has become quite obvious that the flawed economic and growth model of the past, needs to be replaced by a drastical pattern of development and a sense of purpose. A top-to-bottom examination of the Greek economy shows that the effective management of the current crisis and the best opportunities for growth, would most likely occur in sectors where output can be enhanced by measures to maximize competitiveness, productivity and extroversion, and as a result to confront successfully the increasing trend of inequality and the squalid conditions of social protection and health. Greece possesses major sectors, which though they are not yet sizeable, nonetheless offer the possibility of significant future growth.

#### **MAJOR SECTORS**

#### **Tourism**

Tourism sector is one of the most important pillars of development of greek economy because of its geographical position, its climate superiority and its worldwide enormous historical and cultural inheritage .The great contribution of tourism sector in state revenues is a fact, since its direct and indirect contribution in country's GDP stands at 16.5%. In addition, employees involved directly and indirectly in Greece's tourism, are amounted to 18.4% of the total workforce.

In the aftermath of the global financial crisis in 2008, Greece is passing through an economic and social crisis without precedent, in the vortex of which, tourism sector is severely affected. The problem is detected in reducing number of foreign tourists, as well as the fact that the march of events has affected the sustainability of many businesses connected to tourism sector. The national coiling around the most important economic pillar needs to be strengthed.

Trade policy should seek to qualitative improvement of 'sun and sea' product so as to increase levels of tourism competitiveness. Accorrding to the announcement of the European Comission in 18.04.2012 regarding the growth for Greece, it is important to draw an immediate development strategy so as to improve country's position as a profitable destination of high quality, since tourist season focuses only on summer months, while tourists visiting Greece spend less money than those who visit competing destinations. Desertification of tourist products , improvement of service quality in order to attract tourists from higher income families as well as the extension of tourist season, should be one of the main growth engines in tourism sector, which can be developed by the following ways:

- Increase in tourism demand: undertaken goals focus on an extension of the tourist season, providing potentialities to make holidays, while increasing the number of tourists in social tourism initiative 'Calypso' and '50.000' tourists, introducing multi-channel platforms for a distinctive pre-visit experience (e.g 'Visit Greece' portal), creating a portal to attract tourists outside the EU as well.
- Awareness-raising and promotion of destinations. Key actions including the Eden initiative for sustainable tourism development of small emerging destinations, thematic cultural travelling (eg olive roads) and motivation campaign for bicycle tourism.
- Creation of an exchanging platform of best practices, such as the Advisory Committee on Tourism (is a forum for representatives of EU Member States, which could benefit Greece
- Easy access and transportation : Greece needs to promote actively better connectivity with emerging and long-haul markets by attracting more direct flights from these source markets, as well as lowering entry barriers (facilitating Visa processes) and airport charges.
- Revamp tourism zoning and planning legislation, and lift excessive restrictions: facilitate the development of quality accommodation, such as vacation homes, and enable the productive utilization of existing dormant tourists assets.

According to the Development Strategy of Greek tourism, growth parameters should relate to protection and promotion of values, lifestyle and heritage of the Greek civilisation, as well as respect and exploitation of country's natural resources, while providing an authentic experience of high quality to foreign visitors.

#### **CROSS SECTORAL APPROACH- CO-OPERATION-ALTERNATIVE TOURISM**

Growth model is defined by the role of tourism in country's general economic policy, and is strongly affected by the type and degree of co-operation with the remaining sectors. The current portfolio of Greek tourism includes the following products : "sun and sea", nautical / trekking / cultural / conference tourism, ecotourism, wellness tourism and city break. The final product is equal to the sum of the primary product plus added value.

The primary product in Greece is excellent (sun, sea, beaches, natural beauty, climate, cultural heritage). Although, added value is sometimes negative (inadequate infrastructure, bad service, downgrading environment) and results in average final product which is often overpriced and therefore uncompetitive.

Firstly, it is important that the product 'sun and sea' will be preserved by upgrading its quality and by continuous improvement between price and quality. The traditional approach to this matter involves diversification of existing product with other kinds of tourism. On the other hand, the new philosophy suggests that new products should arise as a result of intersectoral cooperations. This approach intends to create demand through products/services of other sectors/industries.

According to the study of SETE-2020 Greek Tourism <<Proposal for the new development model>> the sectors with which synergy and co-operation could yield new tourism products are athletics, gastronomy, culture and medical services.

#### 1. Athletics

The approach to athletics as a branch/product of tourism including athletic events (for travelers with basic motive to attend them), recreation sports (for travelers whose main motive is to exercise in organized sport facilities or in the field), and training programs (for groups or individual athletes who travel in a place in order to practice).

Since a destination invests in a broad range of sports products, it enjoys the benefits that arise from the demand for tourism services, (such as money spent on travel, accommodation, food, shopping and tour expenses) and the significant growth of revenues as well. In addition, major events well reported in the international media result in regional reputation with long term benefits.

Greek tourism fulfils all requirements for a successful integration to sport portfolio since it has a long athletic tradition (Olympics, running marathon, ancient stadiums). Thus, Greece possesses all the components required for the connection between tourism and sports , such as infrastructure, know-how and manpower, while the climate and the particular morphology of Greece make it a suitable environment for practicing numerous sports. Specifically, three categories of products are proposed:

- Products for which Greece has an historical tradition such as wrestling and marathon.
- Products for which country has a strong brand name such as basketball and water polo.
- Products for which Greece owns powerful natural and artificial resources such as water sports (swimming, sailing, diving), air sports (paragliding), mountain bike, climbing etc.

Finally, it should be mentioned that some sports attract tourists of high income classes, who choose high standard accommodation, spend enough money, and are considered as a particularly profitable target.

#### 2. Gastronomy

Gastronomy as a tourist product includes a mix of products, services and activities that highlight the traditional products, dishes, the uniqueness and the tradition of a place, so as to offer visitors a complete travel-gastronomic experience. The benefits of gastronomy spread to a wider range of economic activities. Great food represents an important source of satisfaction for each tourist, while motivating a higher tourist spending. Lately, the increasing number of tourists who are more involved with food and drink has the potential to exploit this trend. Recent SETE research showed that Greek cuisine has gained ground abroad, thanks to its special character. Examples coming from Santorini and Crete, proved that involvement with gastronomy yields, should be followed by other regions as well.

#### 3. Culture

Culture as a tourist product including activities related to cultural heritage, modern arts, lifestyle items and creative industries. Unfortunately, nowadays, Greece is not demonstrating its modern civilization. The challenge-proposal arising from this matter is to maximize the intensity of the cultural experience of visitors, since it will enrich and diversify significantly the tourist offer in the country.

Actions proposed to this direction are : the proper notifying of operating hours of archaeological sites that are open to public, the possession of historical knowledge by employees, the existence of information material and web support of equivalent quality to the monuments importance. Despite the fact that the market of cultural tourism is particularly attractive and constitutes the second largest market in European level after the 'sun and sea' market, Greek culture has a low market share. However, this can be emerged into a competitive advantage. Greece is famous for its art, philosophers, history and vast cultural heritage around the world (ancient theaters, stadiums, temples, organizing festivals and performances at the ancient theatre of Epidaurus or Herod Atticus theatre) and with the appropriate actions Greek tourism can spread its uniqueness to the whole world.

#### 4. Education

Education -as a field of interest for the tourist economy- includes training-educational activities by institutions and private sector. Given the specific procedure required for the education system, it is proposed that the connection between tourism and education will start with a series of courses-specific seminars, addressed to tourists, concerning sectors in which Greece has an excellent performance, such as shipping, philosophy, theatre (eg theatre seminars in Epidaurus and philosophy in Athens).

#### 5. Medical services

Medical services can be a major source of demand for tourist services. People who travel with the sole motive of health reasons without being interested in making use of wellness services, are considered as tourists-patients. Investments in healthcare industry can prove beneficial for tourism, since both patients and their attendants create demand for tourism services. In addition, patients won't hesitate to spend much money for their health. Trends show that there is a dynamic in demand for health services, while it is estimated that 10% of European patients seek for treatment outside their country. It is also noted that neighboring countries such as Turkey, Egypt, Croatia and Cyprus are strongly activated in attracting travelers' health. Nowadays, such medical services are provided in Athens, Thessaloniki, Rhodes, Crete and Corfu. It is proposed, in particular to hoteliers– given the oversupply/abundance of beds- either to shape a part of their hotels so as to accept tourists-patients, or create a specialized unit providing medical services and accommodation.

#### 6. Wintering-Residence

Wintering as a tourist product regards that part of visitors who are interested in living for a great deal of time in a destination other than their place of residence and which by inference has better climatic conditions. Specifically it refers to those who want to buy houses and live in Greece either throughout a year, or a period of it. In order to cover this need, it is proposed to create tourist residences as an integral part of larger tourist complexes, so as to make effective use of tourist demand. This development should be gentle, controlled, of high standards and adding value, and be directed towards attracting tourists of a wealthy income class. It is estimated that more than 1 million Europeans regard Greece as a candidate destination of second house, so it is quite obvious that wintering is a very attractive market.

# 7. Transport Networks

McKinsey's report ' Designing the new Greek growth model and strategy' mentions that the connectivity to emerging and distant markets is limited ,while the specific entry points –and especially Athens – are very expensive for the air carriers. For that reason, it is proposed to facilitate the possibility of visits and transport through the active promotion of a better connectivity with emerging and distant markets of the US ,Russia and China, so as to attract more direct flights from these market sources by the reduction of entry barriers (eg by facilitating procedures of Schengen Visa ) and airport charges. Moreover, it is proposed that capacity, connectivity and quality/cost offering for island transportation should be upgraded, development of 2-3 local hubs (eg Cyclades, Dodecanese, Ionian islands) should be promoted , as well as is recommended the review of prices concerning access points such as ports and airports. The suggestion that Greece should create additional connection points with emerging and more distant markets through direct flights, and the lifting or review of procedures so as to provide an entry permission (facility under Schengen) presented at the conference "Tourism & Development ' as well.

Tourism investments along with consumption of tourism products, create job opportunities in a variety of activities which supply tourism businesses and visitors with products and services (eg construction of hotel units, agricultural production, telecommunications, wholesale/retail trade).

The challenge for economic policy is reflected in recognition of tourism opportunities in order to raise and exploit employment rates. The state has to obtain the terms, conditions and circumstances for the proper function of the labor market of tourist economy, which must include quantitative and qualitative adequacy of human resources in connection with demand for employment.

The need for flexibility in labor market should be a matter of priority since demand is characterized by seasonality and periodicity. However we must admit that any flexibility of the greek market is also a result of black economy and illegal employment of economic immigrants as well. Their acceptance and embodiment as well as their education and training should be a primary obligation of the state. Moreover, employment policy should broaden the measure of employment subsidy. In an effort to create demand, cost factor is of high importance, since the reduction of the operation costs of tourism enterprises support the creation of demand and employment. In the same framework, the reduction of non-wage labor cost should be confronted by rationalization of the labor cost while reducing employers contributions. It is noted that the cost of social security in Greece is 22.4% of total labor costs, versus 20.9% of the overall EU average.

#### POLICY PROPOSALS FOR THE GROWTH OF MARITIME SECTOR

Shipping is an industry with unlimited potential and enormous national extensions, that contributes to the development of the global economy, in which Greece plays an international key role. Preservation and strengthening of Greek shipping and its vested key role worldwide, should be an absolute priority. In current critical circumstances of extreme crisis which affected the shipping industry, Greece has to develop its maritime sector and extend its impact on national economy, in terms of employment, investment and competitiveness through joint policy proposals, that have been presented to the public by all stakeholders.

Ports promote a more sustainable approach to development, since their favor sea over saturated and polluting land transport, ensure combined transport of passengers and goods, contribute to the increase of employment and business activity, serve the needs of local communities which host them and the needs of wider regions as well, and in general they constitute o pole of life and development.

Moreover, Greek maritime transports, which over the years serve the needs for nutrition, energy and raw materials, continue to have a strategic role in the transport chain of continuous increasing trade demands.

Nowadays, Greek merchant shipping is facing serious internal problems, such as lack of funding sources due to financial crunch, massive decline in the value of ships, significant fluctuations in fuel prices, and a sharp drop in freight rates. Moreover, the daily operation of Greek ships is facing a variety of problems such as piracy, geopolitical conflicts – which lead to trade sanctions against countries having a great importance in global trade -, as well as the need to comply with regional laws of environmental or commercial nature which are not compatible with the international maritime character. In this harsh economic environment, Greek maritime is challenged to face a number of barriers with the following policy proposals:

- Port policy: quality and efficiency of port infrastructure, maritime services and connections, redesign of ferry network and actions for development of the Greek islands.
- Trade maritime policy: enhancing national strategy and reconstitution of YEN, preservation and development of maritime clusters, emphasis on human resources, maritime education and training through upgrading of AEN.
- Marine tourism: highlighting tourist activities regarding cruise and yachting as main products of the marine tourism with regulated market features.

The above policy recommendations require an effective public administration and a removal of bureaucratic barriers regarding investments and businesses, so as to be successfully implemented and make a great leap of development. This observation concerns in particular the cruise industry, which can offer multiple benefits in Greek ports, making them the centre of rambles and sightseeing through appropriate investments on behalf of cruise line companies.

#### **PROSPECTS FOR AGRICULTURAL PRODUCTIVITY AND GROWTH**

Agriculture has been historically important to Greece, accounting for approximately13% of employment (approximately 500.000 individuals) while being one of the largest contributors to the country's economic output. The sector's importance becomes more evident when considering its additional effects on sustainable rural and environmental development, and its impact on other sectors such as food manufacturing. The overall sector which concludes crops, livestock and fishing, is characterized by low productivity. Based on Eurostat pre-crisis GVA per person was 44& below EU-15 (€ 17.200 versus € 30.900 for the EU average). Between 200-2008, labor costs have almost doubled, suggesting a further relative loss of competitiveness: in the same period, the increase in Germany , Italy and France was 3%, 23% and 38% -respectively. Greece's penetration of core European markets is very low, (2% share versus Italy and Spain at approximately 10% and 13% respectively) and the country lacks a holistic and focused product and export strategy. Labor input and land productivity lags behind most south European peers, besides its fragmented production in sub-scale for international competitiveness. In Greece Agricultural units are on average almost 5 times smaller compared to EU-15 levels. Greek government should set agricultural development at the forefront of policies which may contribute to a decisive national effort to exit the crisis. Therefore, not only there is the need to introduce measures of restoration of the agricultural sector, but also to provide for a long term national strategy, which will negotiate the reforms of the Common Agricultural Policy and will apply the future regulatory framework as well. The negotiated CAP reform constitutes a first class opportunity for Greece to abandon the logic of cyclical micro-management of the EU funds, in favor of the use of the European regulatory and financial framework, so as to serve the national strategy targets in the field of agriculture. In particular, to address these issues and further develop the agriculture sector it is proposed:

- Better targeting and support of effectiveness for 'active', young farmers, strategic agricultural sectors, agricultural activities in disadvantaged areas.
- Strengthening of producer organizations, with recognition extending possibilities of producer organizations, associations of producer organizations and interprofessional organizations across most sectors of the single CAP, as well as the negotiating position of producers in the food supply chain through the regulation of contractual relations, as currently attempted in the dairy sector.
- Training of farmers, and their support through advisory services.
- Promotion of horizontal and vertical cooperation between supply chain factors and local markets.
- Strengthening markets of organic products and quality systems of agricultural and food products.
- Supporting research and innovation, and interfacing with the practice application in agriculture ("European Innovation Partnership")
- Economically and environmentally sustainable agricultural activities (beneficial agricultural practices for climate and environment, agricultural activities in the areas of Natura 2000 Network, and in areas of high natural value, etc.)
- Effective use of tools of markets regulation and risks management, security of production and stabilization of agricultural income (innovative tool to provide compensation in a case of a reduction of income above a certain percentage).
- Differentiating and focusing Greece's product and market strategy and tailoring their production and commercial strategies to their fundamentals. In addition Greece should focus on developing a dedicated in 'niche' categories such as mastiha, safran, asparagus etc
- Improving competitiveness through scale productivity and quality. This involves revisiting arable land allocation to products, potentially utilizing publicly-owned land (e.g with long term leasing) to increase scale and introducing modern methods to boost land productivity, while providing relevant incentives that are output and result based (e.g proven capacity and production, investments in modern methods). The launch of a new standardization and certification mechanism for agricultural products and methods (including biological farming) would also be critical.
- Securing international market access and presence. This involves establishing the 'Greek foods company' to coordinate, establish and manage distribution networks abroad, while launching an aggressive Greek agricultural products campaign.
- Revamping capabilities. This involves establishing an Agriculture University degree focusing on both business and practical agricultural aspects, as well as creating an 'Agricultural Development Institute' to disseminate and promote know-how and innovation to agricultural units and cooperatives. Finally, introducing incentives for new farmers focused on scale and exports oriented farming, so as to rejuvenate the labor force and create additional employment opportunities.

By 2021, the annual incremental GVA could be € 4.5 billion (direct and indirect), employment could increase by approximately 140.000 jobs and trade balance could improve by approximately €2.7 billion.

#### **GREEN DEVELOPMENT AND RENEWABLE ENERGY SOURCES.**

Green development constitutes a choice of high added value which can contribute to Greece's exit from the crisis, as well as to create the opening of a new long-term cycle of growth and prosperity. In order to achieve this goal it is necessary to create a specific framework which will favor the green entrepreneurship and also include strict rules for the protection of the environment. Renewable Energy sources can be a key factor for the country's economic recovery. Unfortunately, bureaucratic obstacles and lack of interest on behalf of the state have created huge obstacles in this direction. Government should create a support and funding framework so as to urge the development of renewable energy. Moreover, licensing system should be more flexible, in order to promote strengthening of an entire industry, which will become more competitive by boosting the economy and creating new jobs. At the same time, it is necessary to create synergies with other sectors such as infrastructure and agriculture. There are specific recommendations relating to both environmental protection and the use of it to boost the economy and growth, which are summarized below:

- Direct promotion of the exploitation of Greek mineral resources, including also underwater mineral resources, through international competitions which will assure the licence agreements for exploration and exploitation of potential mineral deposits. In addition, accomplishment of procedures concerning the determination of the Exclusive Economic Zones of the country and modernization of legislation on mineral wealth.
- Direct promotion of energy investments as a part of a fully liberalized and competitive energy market –focusing on those that are cost effective- after taking into consideration the compliance with the European legislation on emissions.
- Facilitate investments based on indigenous sources such as wind, solar energy, lignite, geothermal
  and biomass, and their promotion according to their economic performance and the latest international financial and technological developments.
- Emphasis on electronic interface between islands and mainland, and creation of factories producing photovoltaic panels and windmills.
- New land and urban planning, combining environmental protection with development, and the facilitation of urban planning ( urban and industrial-industrial areas etc) with organised structure.
- Mapping of land , in order to introduce a forest policy so as to identify double space of the future forest, with programs of growing trees, with biomass exploitation and release of soils which are not susceptible of reforestation. Forests are a source of life, 200.000 acres of reforestation annually.

A policy of open horizons can help the Greek economy to exit the economic crisis ,since it can contribute to the creation of jobs and new business activities.

#### **CONCLUSION**

To conclude, the sectors related to Greece's natural resources are definitely an effective tool in achieving the economic recovery and the goals of financial growth and development . Nevertheless, the policy proposals mentioned above, require an effective public administration along with the elimination of bureaucratic barriers upon investments and businesses, as well as structural reforms to increase productivity and improve public finances' quality, in order to be successfully implemented. Economy is not an isolated case. It is connected with politics, with human nature and with what is considered proper behaviour.

The only good thing about the current economic situation in Greece is that there is much room for improvement. In the coming years, the main priorities of Greek economic policy should be directed towards enhancing productivity and achieving a sustainable path of economic development.

Finally, there are clearly growth opportunities in other sectors and sub-sectors of the Greek economy that haven't been covered by the scope of this study. However, these opportunities along with the proposals mentioned above, should share common starting points, such as the need for radical social and political reforms, and the transparency in decision-making processes, that would allow the country to regain lost ground. Achieving growth constitutes a difficult endeavor and not an a obvious one.

## References

- 1. «Tourism & Shipping for a Coherent Development Perspective of Greece against crisis» July 2012, Mantzavinou Konstantina
- 2. "Greece 10 Years Ahead. Defining Greece's new growth model and strategy (Executive Summary)", McKinsey& Company, Athens Office, March 2012
- 3. The Greek crisis and the future of the Eurozone Paul De Grauwe March 2010
- 4. «The Greek agriculture leveraged country out of the crisis», Professor George Papastamkos, European Parliament Vice President, Member of the Committee on Agriculture and Rural Development, Member of the Committee on Budgets
- 5. «The Greek Sovereign Debt Crisis and ECB Policy» Stefan Gerlach, Institute for Monetary and Financial Stability, University of Frankfurt, Centre for Economic Policy Research 8 June, 2010
- 6. «Greece and the fiscal crisis in the EMU» Willem H. Buiter Chief Economist Citigroup, Ebrahim Rahbari Economist –Citigroup 07-09-2010
- 7. «Greece's Economic Performance and Prospects» *Ralph C. Bryant, Nicholas C. Garganas, George S. Tavlas* Bank Copyright © Bank of Greece and The Brookings Institution 2001
- 8. «How to unlock the \$1 trillion that developing countries urgently need to cope with the crisis». Centre for Global development, Birdsall N.,(2009
- 9. «The global economic crisis and the stock markets." Χρήμα Magazine, January-February 2010, George Koufaris, (2010)
- 10. «The Greek economy and employment,» Annual Report, Athens, INE-GSEE (2008)
- 11. «Organization Services and Health Systems,» International Health Systems. Volume II. «Βήτα medical arts», Athens Liaropoulos (2010)
- 12. «The financial crisis in Greece: Reforms and opportunities at a critical juncture,» Dimitri Vayanos, Vettas Nikos and Costas Meghir (2010)
- 13. "Finance and Economic Growth: The Case of Greece, 1960-2005" Koutroulis Aristotelis (2009) \* Centre of Planning and Economic Research
- 14. "Economic growth in Greece: Medium term trends and future prospects"Sotiris K. Papaioannou August 2012 \* Centre of Planning and Economic Research

# FINANCIAL MARKET INNOVATIONS

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# BANK INNOVATIONS IN RUSSIA: TRENDS OF DEVELOPMENT AND POSSIBILITIES OF FOREIGN PRACTICE ADAPTATION INTRODUCTION FINANCIAL MARKET INNOVATIONS

Topicality of the essay is determined by the need to create conditions to develop the domestic banking sector and a range of services, as well as methods for their provision on the basis of analysis and adaptation of international experience with the existing economic and social characteristics of the banking sector and the needs of clients.

In Russia, as of January 1, 2013 there are 956 registered credit institutions, 42% of which are small and medium banks. This fact increases the competition between them. That is why it is necessary for the credit institutions to develop and improve their operations constantly. In addition the range of services banks can not fully meet the needs of the client. All these facts make the introduction of new services and, consequently, the development of the methods of their introduction necessary. Thus, the domestic credit institutions and the banking system as a whole are motivated to intensify the use of banking innovation.

Among the vast range of innovations there are innovations introduced both by the government and by the banks themselves. Improving the quality and range of banking services to individuals and businesses is one of the priorities of the "Banking Sector Development Strategy of the Russian Federation for the period up to 2015."

One of the tasks of the state currently developing the domestic financial market is to create the conditions for the majority of the population to have access to bank products. Within the frame of this task it is advisable to create a Post Bank in Russia.

Due to the homogeneity of the target customer segment, and therefore the stability and predictability of consumption, this type of bank will be better able to duplicate services and manage their sales and increase liquidity. It should be mentioned that the postal and banking facilities are generally characterized by the greatest stability, a high degree of sedimentation (saving accounts) balances and low turnover.

It must noted, that the postal and banking facilities are generally characterized by the greatest stability, a high degree of preservation of account balances and low turnover. This is due to the homogeneity of the expressed target customer segment, and therefore the stability and predictability of consumption, which allows to replicate services more efficiently, manage their sales and increase liquidity.

While creating the Post Bank the extent of the costs of operating the integration of bank and mail should be assessed. It requires complete retooling most of post offices, training and recruitment of new staff, the costs for security, etc. Therefore each branch must be provided with workstations, communication channels, office equipment and specialized banking equipment. However, one should consider the fact that in addition to the money to be obtained from Postal Bank's future shareholders, The Russian Post receives the Federal Program Funds for modernization (50 billion rubles up to 2013<sup>1</sup>). Recruiting of new employees will contribute to the reduction of unemployment in the country, which is also important and will have an economic effect.

<sup>&</sup>lt;sup>1</sup> Gladunov O. Russian Post came up with a way to gain. Internet Resource: http://svpressa.ru/economy/article/25084

The next step is to lift the ban on issuing shares of The Post of Russia. In this way the company will be able to attract investors, and, in addition, being a joint stock company the Post of Russia will enter into the share capital of the Postal Bank. In our view the stalling this process prevents potential partner banks form participation in this project. However, the "Post of Russia" will lose subsidies from the federal budget for the reimbursement of loss-making activities.

Transformation of Postal Bank in the exclusive deliverer of pensions and empowerment to grant microcredits to the poor strata of the population those not having direct access to them in the region will create the initial customer base.

The advantage that Post Bank will receive from the mail is payments for of utility bills. Payment through the commercial banks has not become popular in some regions. For example, it is possible to register an email address. This is a service for which, as for an ordinary letter, the sender pays, for example, payments centre of the housing and communal services.

Organization of the process of providing postal and banking services is as follows: the Bank is a service provider; the Post of Russia is a seller. The Post of Russia performs the functions of the front-office - the work with the client; and the bank performs the functions of back-office - keeping operations accounting. The Post of Russia receives their commission stipulated solid fare for each received and sent request. Consequently it does not mean that if the Russian Post gets its own bank it will become a monopolist. In prove the controversy of this position, the experience of Deutsche Postbank (Germany) is indicative.

Thus, the priority of the strategic development of the postal banking business should be:

- active territorial expansion;
- massive sales;
- retain competitive advantages in the long term.

Another important innovation is the decision to introduce a Universal Smart Card. The chip of the card should carry all the information about the owner and it will be possible to pay in stores with it as with a regular credit card. Since the 1st of September 2010 a pilot project for introduction of universal electronic cards has initiated in three Russian regions. The introduction of universal electronic card will improve the accessibility for products and services as well as the level of financial literacy in the use of banking services. However, the existing ATM network of Savings Bank, Bank Uralsib and Ak Bars Bank is not sufficient for the project.

While implementing this project, the international experience with a focus on Russian peculiarities should be considered.

The following suggestions are to be entered:

- Universal cards should be accepted by all ATMs located in Russia, it does not only require mass production of the cards, but it should be ensured that the majority of Russian banks to be connected to the system. Being created on the basis of Communication-bank the Postbank is the best suited for the organization of such a big project: the availability of a wide network of offices, a recognizable brand, and the ability to create and establish the processing structure and operator functions.
- 2. The presence of only three elements of a Universal card will narrow the choices available for potential cardholders; therefore the regional banks which meet capital adequacy requirements and have a positive history in the interbank market are to be involved in the project.
- It is necessary that in Russia for all transactions committed in the framework of the National Payment System, there was no commission. This measure should encourage the development of settlements in the frame of the National Payment System.
- 4. The structure of the card should be easy to grow and should be capable of accepting new features. Starting from the most in-demand services with the possibility to add other services

The combination of the introduction of the postal and banking servicing and a universal electronic card on a national scale will increase the synergy of these innovations.

In addition to the innovations supported by state on the level, there have been innovations imposed by the banks themselves. A bracelet instead of a wallet, a plastic card with a display and PC functions, the retina of the eye instead of a PIN code remind a set of spy. But these are the technologies that are used by foreign banks. It is quite possible that most of them will win the Russian consumers in the foreseeable future and. Further we will consider the innovations that are believed to be implemented in Russia.

The first innovation to be considered is a bracelet wallet. Lion share of the western segment of the innovation accounts for credit cards and internet banking. One of the most innovative American banks US Bank offered consumers an electronic wallet (e-wallet). Unconventional wallet is a bracelet, e-filling of which, on the one hand, is an access to medical information of the owner, on the other – it is possible pay with it for goods and services. Bracelet is created together with the MasterCard and allows you to make payments using technology Radio Frequency Identification (RFID). Chip mounted in it, is attached to a special card account to which the user can deposit some money through online banking. The chip also provides access to cloud storage with medical information about the user, the access to which, if necessary, emergency services can obtained using the code printed on the bracelet. The bracelet costs about \$ 40, the price includes one year contract for the use of cloud services to store contact information and medical information.

This wallet can be a major help for universal electronic card. First, the electronic chip does not contain complete information about its owner, eliminating the collection, processing and accounting of all personal data and privacy of sensitive information. Second, it is convenient to carry and what is more important, bracelet wallet is harder to lose than the universal electronic card.

The second innovation is a super smart card. Currently it is mostly used in an advanced Asian market, but it may well soon come to Russia. The super smart card Toshiba used in the Visa system combines credit, debit and prepaid cards, as well as a number of additional functions: a clock, a calculator, a calendar, a currency conversion, a notebook. The super smart card has a small screen to use these functions, and a keypad to entry data. If banks are trying to reduce all customer services to the so-called "one window" scheme, the technical tools tend to "all in one device" scheme, and the Russian consumers may like the idea of super smart card.

The experts admit that foreign bankers on a number of well-known reasons for us to have a more fertile ground for innovative solutions than their Russian counterparts. In Russia, most banking innovations are imposed by the authorities to a consumer who is not always ready for them. For example, nowadays the system of contactless payments is considered the most promising technology in the world short-range radio communication NFC as a platform for payments is developing in Russia with humble pace. All running projects, mainly related to the cost of travel in public transport, have not become widespread.

To introduce the new technologies to the Russian market more active a lot has to be changed. First of all it concerns the level of financial literacy of the population, as even the distribution of classical banking services in the regions leaves much to be desired. Cash payments are still dominating in the Russian market. And given the fact that the cards have become widespread only recently, and most of them are used mainly to withdraw salary, it is too early to talk about the technology of contactless payments and other more complex solutions.

To develop these technologies in Russia first it should be solved issues about the infrastructure of their use. But the banking community also raises questions about the feasibility of introducing these technologies in the Russian market right now.

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# PORTFOLIO INSURANCE STRATEGIES: OBPI VERSUS CPPI

#### Abstract

The aim of this paper is to provide an ample framework for making a comparison between the different alternative portfolio insurance methods in realistic contexts: the Option Based Portfolio Insurance (OBPI) and the Constant Proportion Portfolio Insurance (CPPI). Thus, our results add generality to former findings which compare option based and constant proportionality portfolio insurance strategies.

In the first part we study fundamental characteristics of these two procedures and make a comparison between them using different criteria. We confirm that the OBPI strategy can be examined as a sort of CPPI where the multiple is allowed to be modified. In a second section, we examine more deeply both strategy's dynamic properties. We focus on the dynamics management involved by these two strategies. Our results prove the superiority of CPPI over OBPI in all cases.

Keywords: Portfolio Insurance, OBPI, CPPI, financial crisis

#### **1. INTRODUCTION AND PROBLEM STATEMENT**

Portfolio insurance is designed to give the investor the ability to limit downside risk while allowing to participate in rising markets. These methods allow investors to recover, at maturity, a given percentage of their initial capital, especially in bear markets.

The risk-averse investors require higher security for their investments given the recent turbulence in the financial markets. The portfolio insurance strategies (static and dynamic) offer investors the certainty of a guaranteed amount at maturity. For the issuer, the dynamic strategies introduce the risk that the value of the portfolio will be less than the amount guaranteed at maturity. This is known as the gap risk. In general conditions, when the investor is assumed to be a risk-averse and requires a proportion (usually 100%) of its initial capital to be repaid at maturity, there are a number of strategies that can be considered. Simple Strategies "buy-and-hold", which invest only the difference between the initial capital and the present value of collateral in the risky asset, have no gap risk, neither from the uncertainty of the price action, nor from the interest rate risk. Of course, a risk-free pure investment has no risk by definition, but does not participate in the market either. Constant Proportion Portfolio Insurance (CPPI), on the other hand (see Perold (1986), Black and Jones (1987) and Perold and Sharpe (1988)) is a dynamic strategy that has the potential to produce greater profits, but with an expense of introducing a gap risk. Although far from being a recent phenomenon, the popularity of CPPI on the current market for structured funds is important, as noted Bread and Rand (2008).

Option Based Portfolio Insurance (OBPI) is another popular strategy that exposes the seller to no gap risk. Introduced by Leland and Rubinstein (1976), the OBPI works by investing enough capital in a bond so it increases in order to equal the guaranteed maturity amount with the remaining capital invested in options. The performance of the OBPI strategy can also be reproduced using only the underlying risky asset and bonds in a strategy known as a synthetic put option. However, unlike the CPPI which gives the investor control over the risk exposure with multiplier value, the composition of the synthetic put is entirely defined by the delta hedging in the Black-Scholes.
The original CPPI model assumes that the risky asset follows a geometric Brownian motion (GBM), but the stylized facts indicate the existence of thick tails distribution, breaks and combinations of volatility. The implications of these effects have been studied in the literature. Bertrand and Prigent (2002) apply the theory of extreme values to determine an appropriate multiplier. Cont and Tankov (2007) found that, although jumps in asset prices significantly contribute to the gap risk, the risk is low using the parameters estimated from stock prices. CPPI applications using empirical data can be found in Herold et al. (2007) and Do and Faff (2004).

Therefore, the research problem is to compare the two basic methods of portfolio insurance: OBPI and CPPI. The objective of the article is to make a description of the problem, to compare the profit at maturity, the portfolio's sensitivity to stock prices variations, and the portfolio's sensitivity to the implied volatility of both portfolio insurance strategies.

# 2. LITERATURE REVIEW

The OBPI method, introduced by Leland and Rubinstein (1976), is a portfolio invested in a risky asset *S* (usually a financial index such as the S & P500) covered by a put option listed on the risky asset. Whatever the value of *S* at maturity *T*, the portfolio value will always be greater than the exercise price *K*. At first glance, the objective of the OBPI method is to guarantee a fixed amount only at maturity. In fact, as it is recalled and analyzed in the article, the method provides a portfolio insurance at any time. Nevertheless, the European put option exercise price at the appropriate maturity may not be available on the market. Therefore, it must be synthesized by a dynamic replicating portfolio invested in risk-free assets (i.e., Treasury bills) and in the risky asset.

The CPPI method was introduced by Perold (1986) (see also Perold and Sharpe (1988)) for fixed income instruments and by Black and Jones (1987) for equity instruments. This method uses a simplified strategy to dynamically allocate assets over time. The investor starts by setting a floor level equal to the lowest accepted value of the portfolio. Then, it calculates the cushion as the excess of the value of the portfolio over the floor level and determines the amount allocated to the risky asset by multiplying the cushion by a predetermined multiple. The floor and the multiple are functions of risk tolerance of the investor and are exogenous to the model. The total amount allocated to the risky asset is known as exposure. The remaining funds are invested in the reserve asset, usually in Treasury bills.

The greater the multiple, the more the investor will participate in a sustained increase in stock prices. Nevertheless, the greater the multiple, the quicker the portfolio will reach the floor when there is a steady decline in stock prices. As far as the cushion approaches to zero, the exposure approaches to zero as well. In continuous time, this allows the value of the portfolio to not fall below the floor. The portfolio value will fall below the floor value only when there is a sharp decline in the market before the investor has the opportunity to trade.

Bookstaber and Langsam (2000) analyze the properties of these two portfolio insurance models. They focus on the dependency path, showing that only the optional replication strategies provide an independent way. They also deal with the problem of time horizon and in particular with the strategies of invariable time or perpetual strategies (discussed further by Black and Perold (1992)).

Black and Rouhani (1989) compare the CPPI with the OBPI method when the option must be synthesized. They compare the two profits and examine the role of volatilities, both actual and expected. They show that "OBPI works best if the market is growing moderately. The CPPI is better if the market falls or rises with small or large quantities."

#### 3. MODELING AND COMPARISON OF OBPI AND CPPI

The investor shares his wealth between two assets: B represents the risk-free asset and S is the risky asset. The portfolio is self-financing and it is set on the interval [0,7].

The value of the risk-free asset B moves by:  $dB_t = B_t r dt$ , where r is the risk-free rate

The dynamic asset S is given by a classical diffusion process:  $dS_t = S_t [\mu dt + \sigma dW_t]$ , where W is a standard Brownian motion.

#### The OBPI approach

This approach is to buy q units of assets S and q European puts of assets S with the exercise price K and maturity T. The portfolio value at maturity is always greater than K:

$$\begin{cases} S_T + (K - S_T) + \\ K + (S_T - K) + \\ K + (S_T - K) + \\ \end{bmatrix}$$
  
If  $K \ge S_T$ ,  $V_T^{OBPI} = \begin{cases} S_T + K - S_T = K \\ K + 0 = K \\ K + 0 = K \\ \end{bmatrix}$   
If  $S_T \ge K$ ,  $V_T^{OBPI} = \begin{cases} S_T + 0 = S_T \ge K \\ K + S_T - K = S_T \ge K \end{cases}$ 

For every t < T, the portfolio value is always greater than  $Ke^{-r(T-t)}$ :  $V_{t^{OBPl}} = S_t + P(t, S_t, K) = Ke^{-r(T-t)} + C(t, S_t, K)$  where  $(t, S_t, K)$  and  $C(t, S_t, K)$  are the Black-Scholes price of the European put and call of exercise price K and maturity T-t.

Note that these findings are the result of the Put-Call Parity formula:  $C_t - P_t = S_t - Ke^{-r(T-t)}$ 

We recall also that: 
$$(t, S_t, K) = S_t N(d_1) - N(d_2)$$
  
With  $d_1 = \frac{\ln\left(\frac{S_t}{K}\right) + (r + \frac{1}{2}\sigma^2)(T - t)}{\sigma\sqrt{T - t}}$  and  $d_2 = d_1 - \sigma\sqrt{T - t}$ 

The value of the put is demonstrated with the Put-Call Parity formula:  $P(t,S_t,K) = C(t,S_t,K) + -S_t$  and N(.) is the distribution function of the standard normal-centered law.

#### The CPPI approach

The approach of the cushion holds a dynamic that keeps the value of the portfolio over the floor  $P_t$  evolving by:  $dP_t=P_t r dt$ 

The value of the cushion is determined at each reporting date as the difference between the portfolio value and the floor value:  $C_t = V_t - P_t$ 

The exposure, which is the amount actually invested in asset S, is usually chosen as a multiple of the cushion:  $E_t = m^* C_t$  where m is a constant value called "multiple" which measures the convexity of the payment due.

For t < T, the portfolio value is given by:  $dV_t = (V_t - E_t) \frac{dB_t}{B_t} + E_t \frac{dS_t}{S_t}$ 

The first part of the equation is the profit of the risk-free asset, which evolves according to its dynamics, and the second part of the equation is the profit of the risky asset, which evolves according to the dynamics of *S*.

Therefore, the cushion becomes: dCt = d (Vt - Pt)

$$\begin{split} &= (V_t - E_t)\frac{dB_t}{B_t} + E_t\frac{dS_t}{S_t} - dP_t \\ &= (C_t + P_t - mC_t)\frac{dB_t}{B_t} + mC_t\frac{dS_t}{S_t} - dP_t \\ &= (C_t - mC_t)\frac{dB_t}{B_t} + mC_t\frac{dS_t}{S_t} \\ &= (C_t + P_t - mC_t)rdt + mC_t(\mu dt + \sigma dWt) \\ &= C_t[(m(\mu - r) + r)dt + mC_t + m\sigma dW_t)] \end{split}$$

Thus:  $C_t = C_0 e^{(\mu-r)+r-\frac{m^2\sigma^2}{2}t+m\sigma W_t}$ 

But the risky asset *S* can be written as a standard geometric Brownian motion:  $S_t = C_0 e^{\mu - \frac{\sigma^2}{2}(t + \sigma W_t)}$ We can deduce :  $W_t = \frac{1}{\sigma} \left[ \log \left( \frac{S_t}{S_0} \right) - \left( \mu - \frac{\sigma^2}{2} \right) t \right]$ 

We can substitute the value  $W_t$  from the expression of cushion and we thus obtain:

$$C_t(m, S_t) = C_0 \left(\frac{S_t}{S_0}\right)^2 e^{(1-m)\left(r+m\frac{\sigma^2}{2}\right)t} = \alpha_t S_t^m$$
  
With  $\alpha_t = \left(\frac{C_0}{S_0^m}\right) e^{\beta_t}$   
And  $\beta = (1-m)\left(r+m\frac{\sigma^2}{2}\right)$ 

The portfolio value at each date t, is:  $V_t^{CPPI}(m, S_t) = P_0 e^{rt} + \alpha_t S_t^m$ 

#### The comparison of the payment function at maturity

To properly compare these two types of methods, the initial amounts must be equal  $(V_0^{OBPI}=V_0^{CPPI})$  for the same level of assurance K at maturity.

We have:  $V_0^{OBPI} = P_0 e^0 + \left(\frac{c_0}{S_0^m}\right) e^0 S_0^m = P_0 + C_0$ And:  $V_0^{OBPI} = K e^{-rt} + C(0, S_0, K)$ 

We will take  $P_T = K$  where  $P_0 = Ke^{-rt}$  and the initial value of cushion is equal with the call value in t=0:  $C_0 = C(0, S_0, K)$ .

The assurance level is fixed with K for the initial amount of:  $V_0^{OBPI} = V_0^{CPPI} = Ke^{-rt} + C(0, S_0, K)$ 

The proportion of capital guarantee at maturity is given by:  $p\% = \frac{K}{Ke^{-rt} + C(0,S_0,K)}$ 

The CPPI approach is parameterized by  $P_0$  and m (this is what we will demonstrate with examples of exposure) while the OBPI method is parameterized exclusively by the exercise price of the put, K.

Here is a numerical example for standard values of the CAC40 stock index:  $S_0 = 100, \mu = 0.1, \sigma = 0.2, T = 1, K = 100, r = 0.05.$ 



Graphic 1: The Payoff of an OBPI and a CPPI with different values of m

We can observe that high multiple "convexifies" more the payoff for large values of *S*, but it decreases the performance in cases of decrease.

The curves of the two methods intersect at several levels of S when m changes. In other words, no method dominates the other, the payoff of a method may not be all the time higher from the payoff on the other method, for all S values (this thing makes sense for obvious arbitration justifications). This derives from the fact that both initial investment values are equal. The data for the above graphic can be seen in Appendix A.

#### The Delta $\Delta$

The "Delta" of a portfolio represents the quantity that determines the portfolio's sensitivity to alternations of prices at time t. It expresses the number of shares of the underlying asset S in the hedging portfolio. Practically, the Delta is the first derivative of the net asset value (NAV) of the portfolio compared with  $S_t$ .

The Delta is the standard Delta of an OBPI call, so  $\Delta^{OBPI} = N(d1)$ .

For the CPPI approach we have:

$$\Delta_{CPPI} = \frac{\partial V_t^{CPPI}}{\partial S_t} = \frac{\partial (Ke^{-rT}e^{rt} + \alpha_t S_t^m)}{\partial S_t} = \frac{\partial (Ke^{-rT}e^{rt})}{\partial S_t} + \frac{\partial (\alpha_t S_t^m)}{\partial S_t} = 0 + \alpha_t m S_t^{m-1} = \alpha_t m S_t^{m-1}$$
Note that  $\alpha_t = \left(\frac{C_0}{S_0^m}\right) e^{\beta_t}$  and  $\beta = (1-m)\left(r + m\frac{\sigma^2}{2}\right)$ .

Here is a numerical example for standard values of the CAC40 stock index:

 $S_0 = 100, \mu = 0.1, \sigma = 0.2, T = 1, K = 100, r = 0.05.$ 



Graphic 2: The Delta of an OBPI and of a CPPI for different values of m

#### The Véga ${m u}$

The Vega determines the sensitivity to implied volatility. The Vega is an increasing function of maturity. Thus, a parallel increase in volatility will have more impact on portfolios with a maturity date higher than for those portfolios with a maturity which is smaller.

So, for the OBPI method we have:

Recall that  $V_t^{OBPI} = Ke^{-r(T-t)} + C(t, S_t, K)$ ,

We can easily notice that the result is the Vega of a European standard call:

$$v^{OBPI} = \frac{\partial K e^{-r(T-t)}}{\partial \sigma} + \frac{\partial C(t, S_t, K)}{\partial \sigma} = 0 + v^{Call} = S_t N'(d1)\sqrt{T-t}$$
  
And for the CPPI method:  $V_t^{CPPI} = K e^{-r(T-t)} + \left(\frac{C_0}{S_0^m}\right) S_t^m e^{tr(1-m)t + \frac{t\sigma^2 m}{2}(1-m)}$ 

$$v^{OBPI} = \frac{\partial V_t^{CPPI}}{\partial \sigma} = 0 + \left(\frac{C_0}{S_0^m}\right) S_t^m \sigma m (1-m) t e^{\beta t} = \alpha_t \sigma t m (1-m) S_t^m$$

Here is a numerical example for standard values of the CAC40 stock index:

 $S_0 = 100, \mu = 0.1, \sigma = 0.2, T = 1, K = 100, r = 0.05.$ 

Data of the above graphic can be seen in Appendix C.



Graphic 3: The Véga of an OBPI and of a CPPI for different values of m

The price of CAC40

The sensitivity of the CPPI against  $\sigma$  is negative for m > 1.

#### 4. CONCLUSION

The portfolio insurance strategies have emerged in the financial industry in the late 70s. They have grown considerably in the past three decades, with ups and downs for the financial industry, according to market fluctuations and also with the beginning of the crisis.

Our article allows us to observe that a high multiple convexifies more the payoff for large values of *S*, but it decreases the performance during a drop. Regarding the portfolio's sensitivity to alternations of the price at time *t* for the CPPI method, the higher the multiple, the more convex the Delta becomes. The Delta of the OBPI method is reduced to 1, though it is larger than the Delta of the CPPI for *S* values that are near the exercise price *K*.

There is still room for new strategies that can meet the different utility functions for the agents. However, we believe that simplicity is a prerequisite for the development of these strategies. Further extensions can be used to better take into account potential losses when the price of financial assets declines. For example, a criterion such as the expected deficit can be established. Other state variables can also be considered as exogenous macroeconomic factors. Finally, the impact of transaction costs may also be considered.

# Appendix A

## Table 1: The payoff of an OBPI and of a CPPI with different values of m

S0	100	d1	0,35	
mu	0,1	d2	0,15	
sigma	0,2	N(d1)	0,636830651	
т	1	N(d2)	0,559617692	
К	100	C0	10,45058357	
r	0,05	Underlying asset	CAC40	

		Payoff			
ST	VT CPPI (m=2)	VT CPPI (m=4)	VT CPPI (m=6)	VT CPPI (m=8)	VT OBPI
0	100	100	100	100	100
1	100,0009551	100,0000001	100	100	100
2	100,0038204	100,0000011	100	100	100
3	100,008596	100,0000057	100	100	100
4	100,0152818	100,0000181	100	100	100
5	100,0238778	100,0000442	100,0000001	100	100
6	100,034384	100,0000917	100,0000002	100	100
7	100,0468005	100,0001699	100,0000005	100	100
8	100,0611271	100,0002898	100,0000012	100	100
9	100,077364	100,0004642	100,0000024	100	100
10	100,0955111	100,0007076	100,0000045	100	100
190	134,4795224	192,2104409	310,1415052	508,0904783	190
191	134,8434198	194,167093	316,8654843	525,5931136	191
192	135,2092275	196,1547204	323,7678068	543,7490986	192
193	135,5769454	198,1736484	330,8522369	562,5792272	193
194	135,9465735	200,2242037	338,1225982	582,1048424	194
195	136,3181119	202,306715	345,5827743	602,3478468	195
196	136,6915604	204,4215126	353,2367091	623,3307153	196
197	137,0669192	206,5689285	361,0884079	645,0765062	197
198	137,4441882	208,7492964	369,1419375	667,6088736	198
199	137,8233675	210,9629516	377,4014274	690,9520799	199
200	138,2044569	213,2102312	385,8710698	715,1310076	200

# **Appendix B**

## Table 2: The Delta of an OBPI and of a CPPI for different values of m

<b>S</b> 0	100	d1	0,35	
mu	0,1	d2	0,15	
sigma	0,2	N(d1)	0,636830651	
т	1	N(d2)	0,559617692	
К	100	C0	10,45058357	
r	0,05	Underlying asset	CAC40	

Delta							
N(d1)	ST	VT CPPI (m=2)	VT CPPI (m=4)	VT CPPI (m=6)	VT CPPI (m=8)	VT OBPI	
-	0	0	0	0	0	-	
0	1	0,001962501	3,18E-07	3,46E-11	2,99E-15	0	
1,21E-276	2	0,003925003	2,55E-06	1,11E-09	3,82E-13	1,21E-276	
1,79E-222	3	0,005887504	8,59E-06	8,40E-09	6,53E-12	1,79E-222	
1,21E-187	4	0,007850006	2,04E-05	3,54E-08	4,90E-11	1,21E-187	
1,09E-162	5	0,009812507	3,98E-05	1,08E-07	2,33E-10	1,09E-162	
1,24E-143	6	0,011775009	6,87E-05	2,69E-07	8,36E-10	1,24E-143	
1,84E-128	7	0,01373751	0,000109127	5,81E-07	2,46E-09	1,84E-128	
5,19E-116	8	0,015700012	0,000162895	1,13E-06	6,27E-09	5,19E-116	
1,45E-105	9	0,017662513	0,000231935	2,04E-06	1,43E-08	1,45E-105	
1,21E-96	10	0,019625014	0,000318155	3,46E-06	2,99E-08	1,21E-96	
0,999999999	190	0,372875275	2,182222068	8,563564655	26,70648394	0,9999999999	
0,999999999	191	0,374837777	2,216859872	8,791306317	27,70607965	0,9999999999	
1	192	0,376800278	2,251862281	9,023867707	28,7375744	1	
1	193	0,37876278	2,287231204	9,261324925	29,801812	1	
1	194	0,380725281	2,322968551	9,503754867	30,89965406	1	
1	195	0,382687782	2,359076229	9,75123523	32,03198019	1	
1	196	0,384650284	2,395556148	10,00384451	33,19968837	1	
1	197	0,386612785	2,432410217	10,26166203	34,40369516	1	
1	198	0,388575287	2,469640344	10,52476791	35,64493602	1	
1	199	0,390537788	2,507248439	10,79324308	36,92436562	1	
1	200	0,39250029	2,545236411	11,06716932	38,24295807	1	

#### KNOWLEDGE ECONOMY - IMPACT ON SUSTAINABLE DEVELOPMENT OF THE COUNTRIES FROM EAST AND SOUTH EAST EUROPE

# Appendix C

## Table 3: The Véga of an OBPI and of a CPPI for different values of m

<b>S0</b>	100	d1	0,35	
miu	0,1	d2	0,15	
sigma	0,2	N(d1)	0,636830651	
т	1	N(d2)	0,559617692	
К	100	C0	10,45058357	
r	0,05	Underlying asset	CAC40	

Véga						
N′(d1)	ST	VT CPPI (m=2)	VT CPPI (m=4)	VT CPPI (m=6)	VT CPPI (m=8)	VT OBPI
-	0	0	0	0	0	-
0	1	-0,00027475	-1,34E-07	-2,42E-11	-2,93E-15	0
4,29E-275	2	-0,001099001	-2,14E-06	-1,55E-09	-7,50E-13	4,70E-275
5,69E-221	3	-0,002472752	-1,08E-05	-1,76E-08	-1,92E-11	9,36E-221
3,53E-186	4	-0,004396003	-3,42E-05	-9,92E-08	-1,92E-10	7,74E-186
2,97E-161	5	-0,006868755	-8,35E-05	-3,78E-07	-1,14E-09	8,13E-161
3,16E-142	6	-0,009891007	-1,73E-04	-1,13E-06	-4,92E-09	1,04E-141
4,45E-127	7	-0,01346276	-0,000320833	-2,85E-06	-1,69E-08	1,70E-126
1,19E-114	8	-0,017584013	-0,000547328	-6,35E-06	-4,91E-08	5,21E-114
3,17E-104	9	-0,022254766	-0,000876713	-1,29E-05	-1,26E-07	1,56E-103
2,52E-95	10	-0,02747502	-0,001336249	-2,42E-05	-2,93E-07	1,38E-94
•••						
4,47E-09	190	-9,91848232	-174,141321	-1138,954099	-4972,747309	4,65E-07
3,34E-09	191	-10,02316215	-177,8364989	-1175,397655	-5186,02399	3,49E-07
2,49E-09	192	-10,12839147	-181,5901743	-1212,80782	-5407,261999	2,62E-07
1,86E-09	193	-10,2341703	-185,4029614	-1251,204997	-5636,714723	1,97E-07
1,39E-09	194	-10,34049863	-189,2754775	-1290,609911	-5874,642229	1,48E-07
1,03E-09	195	-10,44737646	-193,2083431	-1331,043609	-6121,311415	1,11E-07
7,71E-10	196	-10,55480379	-197,2021821	-1372,527467	-6376,996142	8,27E-08
5,73E-10	197	-10,66278062	-201,2576213	-1415,083194	-6641,977387	6,19E-08
4,27E-10	198	-10,77130695	-205,375291	-1458,732832	-6916,543386	4,63E-08
3,17E-10	199	-10,88038278	-209,5558245	-1503,498762	-7200,989782	3,46E-08
2,36E-10	200	-10,99000811	-213,7998585	-1549,403705	-7495,619783	2,58E-08

## Bibliography

- 1. Bertrand, P. and Prigent, J. (2002). Portfolio Insurance: The Extreme Value Approach to the CPPI Method. *Finance*, 23(2):69–86.
- 2. Black, F. and Jones, R. (1987). Simplifying portfolio insurance. *Journal of Portfolio Management*, Fall: 48–51.
- 3. Black, F. and Perold, A. (1992). Theory of constant proportion portfolio insurance. *The Journal of Economics, Dynamics and Control,* 16, 403-426.
- 4. Black, F., and Rouhani, R. (1989). Constant proportion portfolio insurance and the synthetic put option: a comparison, in Institutional Investor focus on Investment Management, edited by Frank J. Fabozzi. Cambridge, Mass.: Ballinger, 695-708.
- 5. Bookstaber, R. and Langsam, J. A. (2000). Portfolio insurance trading rules. *The Journal of Futures Markets*, 8, 15-31.
- 6. Cont, R. and Tankov, P. (2007). Constant Proportion Portfolio Insurance in presence of Jumps in Asset Prices. *Columbia University Center for Financial Engineering, Financial Engineering Report No.* 2007-10.
- 7. Do, B. and Faff, R. (2004). Do futures-based strategies enhance dynamic portfolio insurance? *Journal of Futures Markets*, 24(6):591–608.
- 8. Herold, U., Maurer, R., Stamos, M. and Vo, H. (2007). Total Return Strategies for Multi-Asset Portfolios. *The Journal of Portfolio Management*, 33(2):60–76.
- 9. Leland, H. and Rubinstein, M. (1976). The evolution of portfolio insurance. In D. L. Luskin, editor, *Portfolio Insurance: a guide to dynamic hedging*. Wiley.
- 10. Pain, D. and Rand, J. (2008). Recent developments in portfolio insurance. *Bank of England Quarterly Bulletin*, 2008 1st Quarter, 48(1): 37–46.
- 11. Perold A. (1986). Constant proportion portfolio insurance. *Harvard Business School*.
- 12. Perold, A. and Sharpe, W. (1988). Dynamic strategies for asset allocation. *Financial Analysts Journal*, 44:16–27.

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# GLOBAL SYSTEMICALLY IMPORTANT BANKS. A RISK-BASED APPROACH

### Abstract

In recent years, the financial institutions' output has been correlated with risk-taking approach manifested before the financial crisis. However, the big banks have benefited of special treatment considering the influence on the global market and the massive potential damages in case of failure. The links and dependence associated to global systemically financial institutions (G-SIFIs) derived from unchecked consolidation of corporate power indirectly represent a threat for the whole society. In the first line we find medium and small banks, respectively in the second line, the negative consequences have been transferred to the clients.

During the crisis, the global systemically important banks have faced a different set of integrated policy measures (higher capital requirements, supervisory expectations for risk management functions, risk governance, and internal controls). The aim of this paper is to quantify the impact of risks on the activity of global systemically important banks (GSIBs). We explain the characteristics of these entities considering their importance on the global banking market. Structured in three parts, we point out the assessment criteria of GSIBs in terms of specific features, we analyze the new requirements applied within the risk management process and we determine the risk impact (credit risk and liquidity risk) on bank performance using an econometric approach.

To conclude, we highlight the need for change in the structure of the banking industry, more responsibility and orientation to general welfare in a globalized world. The effects of a financial crisis characterized by multiple failures transpose into massive losses in terms of money, time and confidence. The global systemically important banks have the power to disrupt the financial environment or to speed up the progress?

Keywords: risks, global systemically important banks, financial crisis

## **INTRODUCTION**

The financial crisis has determined a reconfiguration of the banking approach in terms of regulation, business models and activity. In order to prevent risk manifestation, the Banking Committee on Banking Supervision proposed and implemented a series of reforms designed to improve the resilience of the global banking system. Additional capital requirements, leverage ratio, countercyclical buffers and liquidity standards serve as instruments for limiting different types of individual risk. The rationale for having a new category called global systemically important banks is related to the potential of cross-border negative externalities, spillover effects in case of failure and the massive impact over the economies (Basel Committee, 2011).

#### **CRITERIA VS. INDICATORS**

A G-SIB is defined as a financial institution whose distress or disorderly failure would cause significant disruption to the wider financial system and economic activity. In November 2010, the G20 leaders brought into the light the problem of moral hazard induced by systemically important financial institutions, providing the original mandate to create a methodology framework.

The Financial Stability Board (FSB) uses five criteria to identify the GSIBs, as follows: the degree of global (cross-jurisdictional) activity, interconnectedness (which shows the potential affected area), size (interrelated to the financial power on a specific market), substitutability (the capacity of other component of the system to provide the same services in case of failure) and complexity (as seen in Table 1). Also, the FSB asks for extended internal supervisory measures applied by each bank (risk management control functions, risk data aggregation capabilities, risk governance, and internal controls). The major goal is to reduce the systemic risk. According to European Central Bank (2010), the systemic risk is defined in terms of financial stability- the capacity of reducing and eliminating shocks, imbalances and disruption in order to allocate money to profitable investment opportunities.

The banks have been divided into five different groups, reflecting their required "additional loss absorption capacity", rising from 1% to 2.5% of risk-weighted assets (with an empty bucket of 3.5% to discourage further systemic events). In 2011, the list included 29 banks. According to the European Banking Authority, by 30 June 2012, some banks from the European Union have to meet the 9% capital requirements (additional capital of 106 billion euros).

Category	Indicator	Individual Weight
Cross-jurisdictional	Cross-jurisdictional claims	10%
activity (20%)	Cross-jurisdictional liabilities	10%
Size (20%)	Total exposures as defined for use in the Basel III leverage ratio	20%
Interconnectedness (20%)	Intra-financial system assets	6.67%
	Intra-financial system liabilities	6.67%
	Wholesale funding ratio	6.67%
	Assets under custody	6.67%
Substitutability (20%)	Payments cleared and settled through payment systems	6.67%
	Values of underwritten transactions in debt and equity markets	6.67%
	OTC derivatives notional value	6.67%
Complexity (20%)	Level 3 assets	6.67%
	Trading book value and Available for Sale value	6.67%

Table 1 GSIBs Methodology: Indicator-Based Measurement Approach

Source: \*\*\* Basel Committee on Banking Supervision (2011): Global systemically important banks: Assessment methodology and the additional loss absorbency requirement, http://www.bis.org/publ/bcbs201.pdf, p.11

Considering the presence and focus on G-SIBs, the objective of cross-jurisdictional activity is to capture the global action area of banks. The indicators included in this category measure the importance of the bank's activities outside its home (headquarter) jurisdiction relative to overall activity of other banks. The international impact from a bank's distress or failure should vary in line with its share of cross-jurisdictional assets and liabilities. The greater the global reach of a bank, the more difficult it is to coordinate its resolution and the more widespread the spillover effects from its failure.

A bank's distress or failure is more likely to damage the global economy or financial markets if its activities comprise a large share of global activity. The larger the bank the more difficult it is for its activities to be quickly replaced by other banks and there is a greater chance that its distress or failure would cause disruption to the financial markets in which it operates. In this regard, lack of confidence is the first negative consequence. Size is a key measure of systemic importance.

Financial distress at one institution can materially raise the probability of distress at other institutions given the interconnectedness (contractual obligations) between entities. A bank's systemic impact is considered to be positively related to its financial linkages vis-à-vis other financial institutions.

The systemic impact of a bank's distress or failure is expected to be negatively related to its degree of substitutability as both a market participant and client service provider.

The systemic impact of a bank's distress or failure is expected to be positively related to its overall complexity – that is, its business, structural and operational complexity. The relationship between complexity, cost and time needed to resolve the bank is direct.

The critics regarding G-SIBs criteria are related to the lack of transparency in determining the systemic importance of banks. The size is seen as the most problematic criteria (BNP Paribas), the possibility of double counting given by similarities between substitutability and complexity criteria represents a concern, the absence of risk-weighted assets indicator (used for quantifying the risk of distress/failure of a bank) is questionable.

In November 2012, the Financial Stability Board updated the list of G-SIBs (28 institutions) from which eight U.S. banks, sixteen European banks, along with three Japanese institutions and one from China.



One of the main experiences of the recent crisis was that a market runs on an institution whose illiquid assets were financed by short-term liquid liabilities. We observe the large gap between the minimum and maximum value of short-term funding and short-term funding as percentage of total assets.

#### 3<sup>rd</sup> INTERNATIONAL SUMMER SCHOOL OF ASECU YOUTH / JULY 15-20, 2013. KOTOR – MONTENEGRO









In 2010, the relationship between intra-financial liabilities (IFL) and intra-financial assets (IFA) has the following features: for the maximum value, the IFL is 4.5 times higher than IFA and for the average value; the IFL is almost 6 times higher than IFA.



Source: http://www.regulatorychange.com/uploads/1/2/2/3/12239908/ga2012\_benchmark\_study1\_pdf.pdf

The average level 3 assets as a percentage of total assets were 4.8%, a good level considering that a high proportion of illiquid assets will create severe problems in market valuation in case of distress, with negative effects on confidence. Assets held for trading purpose could generate spillovers through mark to market loss and subsequent fire sale in case an institution experiences severe stress. In 2010, on average, banks had 275 US\$ billion assets held for trading purpose.

Bank of China Limited			10	.54		
BBVA		_	10	0.77		
Nordea Bank		11.17				
Banco Santander		_	1	1.17		
UniCredit		_	_	11.44		
Wells Fargo		_		11.75		
BPCE Group	-	_		12.21		
Mitsubishi UFJ FG				12.22		
Royal Bank of Scotland		_	_	12.43		
Société Generale		_		12.5		
JPMorgan Chase		_	_	12.59		
Mizuho FG		_	_	12.75		
Sumitomo Mitsui FG				12.81		
Crédit Agricole Group				12.85		
Bank of America				12.89		
Barclays		_	_	13.35		
HSBC		_	_	13.44		
Standard Chartered		_	_	13.45		
BNP Paribas	-	_	_	13.63		
Citigroup				14.06	5	
ING Bank		_	_	14.3	5	
Bank of New York Mellon		_		15.	02	
Deutsche Bank		_	_	15.	13	
Goldman Sachs	-	_	_	_	16.75	
Morgan Stanley					17.72	
Credit Suisse		_	_	_	18.44	1
State Street					19.:	13
UBS					_	21.29
	0	5	10	15	20	25

#### Graph no. 9 Tier 1 capital Ratio<sup>1</sup> (%) of the 28 G-SIBs -Q4 2012

Source: http://www.fdic.gov/about/learn/board/hoenig/capitalizationratios.pdf

The G-SIBs will have to raise their Tier 1 capital ratios above Basel III mandates (7%). The banks which do not meet the criteria will face restrictions regarding dividends and bonuses payments.

The critics said that capital increases would force banks to cut back on their lending, and they argued that large banks provide unique benefits to the economy.

<sup>&</sup>lt;sup>1</sup> Calculated and reported under Basel I standards for U.S. Banks, under the China Banking Regulation Commission regulations for the Bank of China, under Basel II for Banco Santander, BBVA, ING Bank, Mitsubishi UFJ FG, Mizuho FG, Nordea Bank, Royal Bank of Scotland, Standard Chartered, Sumitomo Mitsui FG, and Unicredit, and under Basel 2.5 for Barclays, BNP Paribas, BPCE Group, Credit Agricole, Credit Suisse, Deutsche Bank, HSBC, Societe Generale and UBS.

#### **METHODOLOGY**

We included in our analysis only 16 global systemically important banks (European banks) considering the homogeneity of data. We collected the data from BankScope Database, during 2007-2012.

We use panel data analysis, in order to capture the dynamics of the selected indicators. Baltagi and Kao (2000) sustain the superiority of this method due to the possibility to obtain results in time and cross-sectional (within banks). The major advantages consist of accurate results, using more degree of freedom, a reduced level of multicollinearity, improving the efficiency of econometric estimations. Also, the double dynamics (temporal and individual) allows controlling the effects of other variables which do not appear in the model (Hsioa, 2006).

The model developed for the analysis of the determinants of systemic risk within the 16 G-SIBs has the form of a multiple regression with panel data.

Using the specific methodology, we test the type of model based on the combination between fixed and random effects, through OLS technique. As reference we used two papers: one of Matthias Kohler (2012) called *Which banks are more risky? The impact of loan growth and business model on bank risk-taking, Discussion Paper No.33/2012, Deutsche Bundesbank* and the other one called *Measuring Bank Insolvency Risk in CEE Countries, 2008,* presented at The National Bank of Croatia.

According to the existing literature (Boyd and de Nicolo, 2005; Laeven and Levine, 2009; Altunbas et al., 2009; Demirguc- Kunt and Huizinga, 2010) we consider Z-score (dependent variable) a measure of systemic banking risk, proxy for financial stability which includes the influence of credit risk, liquidity risk and market risk. A higher value shows low levels of risks. As independent variable we choose proxies for individual risks (non-performing loans to total loans – NPL- and loan loss reserves to total loans – LOAN\_LOSS\_RES\_GROSS\_LOAN- for credit risk, liquid assets to total deposits and short-term funding – LIQ\_AS - for liquidity risk), performance indicator (return on average assets - ROA) and capital indicators (capital ratio - CAR, tier 1 ratio TIER1 and equity to total assets - EQUITY\_TOT\_AS).

#### **THE ANALYSIS**

Looking at the evolution of the selected indicators between 2007 and 2012, we observe major fluctuation in the context of the financial crisis. The 16 banking groups are from UK (4), Switzerland (2), Spain (2), France (4), Italy (1), Denmark (1), The Netherlands (1) and Germany (1). These evolutions are explained considering the exposure of the country to the crisis and the situation of the national banking system.



Table 2 Descriptive Statistics

	Z_SCORE	ROA	LOAN_LOSS_RES_GROSS_LOAN	EQUITY_TOT_ASSETS
Mean	23.68368	0.318938	2.116333	4.615896
Median	19.47366	0.322000	2.023500	4.404000
Maximum	111.3898	1.404000	6.833000	7.524000
Minimum	1.961783	-1.606000	0.204000	1.449000
Std. Dev.	22.09038	0.466119	1.441158	1.436067
	LIQ_AS	CAR	NPL	TIER1
Mean	53.08515	13.92063	3.447708	10.98771
Median	46.26300	13.40000	2.830500	10.55000
Maximum	125.5130	25.20000	11.85200	21.30000
Minimum	20.07400	8.870000	0.486000	6.550000
Std. Dev.	28.12367	3.289770	2.365084	2.937917

Source: Own Processing using E-Views 7.0

According to the null hypothesis (H0), the series has a common unit root (in non-stationary). Otherwise, the series is stationary. If probability < 0.05, we reject the null hypothesis and we accept H1. The results of stationarity can be seen in Table 3. We have used PP - Fisher Chi-square and all 8 variables are stationary.

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	Z_SCORE	ROA	LOAN_LOSS_RES_GROSS_LOAN	EQUITY_TOT_ASSETS			
PP - Fisher	85.8931	79.6536	57.4939	69.1983			
Chi-square	(0.0000)*	(0.0000)*	(0.0037)*	(0.0001)*			
	LIQ_AS	CAR	NPL	TIER1			
PP - Fisher	97.7196	49.5738	61.5649	29.0242			
Chi-square	(0.0000)*	(0.0245)*	(0.0013)*	(0.0179)			

Tab	le 3	Stationa	arity Tes	ts
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P-values are in parentheses, \* show significance at 1%,5%, 10% Source: Own Processing using E-Views 7.0

For panel data, the homoscedasticity test is not defined, but, in this case the only option is to choose from the Weights section the category of *Cross Section weights* for an automatic adjustment. We assume that model parameters are efficient and the errors are uncorrelated.

#### RESULTS

Dependent Variable: Z\_SCORE Method: Panel EGLS (Cross-section weights) Sample: 2007 2012 Periods included: 6 Cross-sections included: 16

Total panel (balanced) observations: 96

Linear estimation after one-step weighting matrix

	-			
Variable	Coefficient	Std. Error	t-Statistic	Prob.
NPL	-0.282460	0.222296	-1.270645	0.0079
TIER1	0.201445	0.237660	-0.847621	0.0494
ROA	1.684998	0.574111	2.934969	0.0045
LIQ_AS	0.024273	0.015929	-1.523809	0.0319
EQUITY_TOT_ASSETS	4.732024	0.288594	16.39680	0.0000
CAR	0.042088	0.259466	-0.162209	0.0716
LOAN_LOSS_RES_GROSS_LOAN	0.489148	0.413725	1.182304	0.2409
С	5.330238	1.950698	2.732477	0.0079
	Effects Speci	fication		
Cross-section fixed (dummy variables)				
	Weighted St	atistics		
R-squared	0.986780	Mean depende	ent var	33.57320
Adjusted R-squared	0.982796	S.D. dependen	t var	22.41549
S.E. of regression	2.065699	Sum squared r	esid	311.4991
F-statistic	247.6739	Durbin-Watsor	n stat	2.013215
Prob(F-statistic)	0.000000			
	Unweighted S	Statistics		
R-squared	0.989782	Mean depende	ent var	23.68368
Sum squared resid	473.6888	Durbin-Watsor	n stat	1.697943

Source: Own Processing using E-Views 7.0

The results show that 6 variables are statistically significant (Prob<0.05). There is a positive relationship between Z-score and return on average assets, equity to total assets, capital ratio, tier1 capital and liquid assets to total deposits and short term funding.

According to the fundamentals of banking if the ROAA grows, the bank will be more stable and the level of systemic risk reduces. Similarly, when bank have higher capital ratio, Z-score will follow an increasing trend (the risks decrease). There is a negative relationship between Z-score and nonperforming loans to total loans. Credit risk has a major contribution to the manifestation of systemic risk.

R-squared has a value of 0.98; the selected independent variables explain the evolution of the dependent variable in proportion of 98%.



Graph no. 11 Histogram

Source: Own Processing using E-Views 7.0

Testing for error autocorrelation we obtain a probability higher than 0.05. Errors' histogram shows that the mean represents 2.17 X 10 -16, which means that errors are normally distributed, normality is checked up, so that the errors' mean is approximately zero.

#### **CONCLUSIONS**

Ex-post the financial crisis the banking industry faced a dramatic change in the risk management paradigm. New requirements, new classifications and new regulation appeared.

The results of our analysis show that credit risk has a systemic character, being an integrated result of the effects manifested in the selected banks. The mixture of capital levels, performance and individual risk can lead to a disruption in the banking activity. Z-score seen as a proxy for the supreme risk is influenced by most of the selected indicators.

Strict monitoring of global systemically important banks is real due to the potential of direct and indirect consequences in case of failure.

One of the consequences of systemic risk manifestation is higher cost associated to individual risks. In this regard, efficiency has an active role in the investment process.

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### References

- 1. Boyd, J., H.; de Nicolo, G. (2005): The Theory of Bank Risk Taking and Competition Revisited, *Journal of Finance*, 60, 1329–1343
- 2. vičić,L.; Kunovac , D. ; Ljubaj, I. (2008): Measuring Bank Insolvency Risk in CEE Countries, National Bank of Croatia, http://www.hnb.hr/dub-konf/14-konferencija/ivicic-kunovac-ljubaj-2.pdf
- 3. 3. Kohler, M. (2012): Which banks are more risky? The impact of loan growth and business model on bank risk-taking, *Discussion Paper* No.33/2012, Deutsche Bundesbank
- 4. \*\*\* Basel Committee on Banking Supervision (2011): Global systemically important banks: Assessment methodology and the additional loss absorbency requirement, http://www.bis.org/publ/bcbs201.pdf
- 5. http://www.regulatorychange.com/uploads/1/2/2/3/12239908/ga2012\_benchmark\_study1\_pdf.pdf
- 6. Bankscope Database , https://bankscope2.bvdep.com
- 7. WorldBank Database, http://databank.worldbank.org/ddp/home.do
- 8. IMF Database, http://www.imf.org/external/data.htm

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# BANK PERFORMANCE AND EFFICIENCY DURING THE GLOBAL FINANCIAL CRISIS: A COMPARATIVE CASE STUDY

### Abstract

The economic world is currently under the sign of profound changes, determined, in a significant extent, by the mutations in financial markets, the regulatory and institutional changes, illustrating its powerful impact on the financial system actors. The paper's main purpose is to provide a comparative analysis of the performance and efficiency of commercial banks in seven European Union countries (Bulgaria, Czech Republic, Hungary, Latvia, Lithuania, Poland and Romania) and an empirical analysis regarding the soundness of the Romanian banking system. The new global order stands to be trapped in a spiral of change, which became increasingly complex and fast, so the analysis undertaken in the paper highlights the need for banks to apply essential adjustments in their activity, such as the orientation to a new banking model, or the gearing to the latest regulations and tighter conditions of supervision on the financial sector. In the study there were pointed out a series of issues which captured the overwhelming implications of the global financial crisis on the "health" of the financial system in European Union and also a chain of challenges that banking environment was facing in this context, noticing the need for further measures from the governmental authority and also the monetary one, measures that have as a main goal the avoidance of a financial system collapse. The methodological approach used to develop this work begins with a literature review, which sets out the role and place of this research.

Keywords: Basel III, sub-prime crisis, efficiency, performance, financial stability.

## **1. INTRODUCTION**

The current financial crisis manifested primarily on financial markets, so the spread was relatively fast on national economies, through the transmission channels, amplifying risk manifestation.

The paper aims to address the crisis repercussions, providing an overview on the performance of the banking system in terms of non-euro EU countries, but also a more detailed casuistic on Romanian banking system. In this regard there were also outlined some of the key lessons that revolve around policies and measures pursued by central banks.

The paper is structured in five sections: the *first part* of the paper include some introductory remarks on the importance of the theme; the *second part* is dedicated to the literature review; the *third* highlights the consequences arising from the subprime crisis regarding the banking system robustness and performance in the countries analyzed and main measures embraced by the authorities to support financial system stability, and in the *fourth part* is reflected the empirical analysis results, regarding the Romanian banking system.

The paper ends with a summary conclusion.

#### 2. LITERATURE REVIEW

During the global financial crisis, the literature has shown a keen interest in *financial stability* issues, suggesting that this provision has always been a *natural concern of the monetary authorities*, the primary motivation being to counter the financial crisis. [Stein, 2011]

It is considered that the current crisis has affected the banking system of so high intensity that it cannot be compared with previous turbulences, suggesting the indispensable role of central bank in the financial system, so it can be said that the crisis *"has shaken the comfortable world of central banks"*. [Borio, 2011]

In order to avoid a collapse of the financial system, aiming an improvement in transparency and liquidity, it was adopted in 2011 a *new Basel Agreement*, which is regarded as the main response of monetary authorities to the deficiencies caused by the international financial crisis. This agreement has two additional security systems, capital conservation buffer and the countercyclical buffer, being activated in case of excessive lending, so banks are protected from an increasing level of non-performing loans or a suddenly change of the business cycle. [BIS, 2011]

Changes in financial or institutional field (liberalization of capital flows, enhancing the level of competition, the increasing volume of speculative transactions etc.), led to an increase in the financial instability degree, thus facilitating risk diversification, mainly credit risk.

The impact of risk on performance and soundness of the banking system was indeed a theme intensely addressed, especially during the international financial crisis, aiming an econometric estimation of risk implications, desiring to identify some appropriate tools to monitor them and to highlight more clearly the related correlations<sup>1</sup>.

The concept of performance has been approached over the years in numerous studies and analyzes, being explained in terms of effectiveness, adaptability etc. [Wagner, 2009], but in the banking environment is seen related to the concept of creating value adage, the purpose being to generate a costbenefit optimality. The analysis of this indicator is vital to identify the *pulse of banking activity*, so the approach should be made at micro and macro level.

From the literature review it can be extracted the statement that there is a strong relationship between the regulations of the financial system, financial supervision and performance of the banking system. [Chortareas and others, 2010] There are also opinions that excessive regulation could lead to constraints on banking activity, which would conduct to a downward trend in financial performance. [Herring, 2003] Numerous studies have revealed the relationship between the business cycle and bank performance [Albertazzi, Gambacorta, 2009], [Bolt et al, 2010], but the implications on factors related to the management of an institution or funding policy on the level of bank performance, are in a lower presence. [Brunnermeier, 2009] [Erkens et al, 2012]

For consistency of performance and efficiency in addressing banking systems, to increase the level of comparability between countries, namely to increase transparency in the banking market, IMF defined a *set of financial soundness indicators* that are segmented into two categories: core set and encouraged set (financial firms, non-financial corporations, households and real estate market). On the other hand, the ECB has promoted also a set of *macro-prudential indicators* which has the same mission as those developed by the IMF, respectively benchmarks for ensuring the soundness of the financial system.

<sup>&</sup>lt;sup>1</sup> It can be observed: Hughes and Mester (1997), Berger (1997), Altunbas et all (2000), Banerjee (2009), Pasiouras and Fethi (2010), Epure and Lafuente (2012), Berger and Bouwman (2012).

In the literature there were identified studies that focuses on an in-depth analysis of financial soundness indicators for shaping the overall picture of the banking sector, such as the study of return on assets, indicator, which was either decomposed in more than two terms (Du Pont model) or in only two indicators, namely the return on investment funds (ROIF) and return on financial leverage (ROFL) in order to differentiate the performance of assets and liabilities. [Lindblom, Willesson, 2011]

Despite the fact that there were other large crises of which there weren't drawn the appropriate lessons, maybe the unprecedented size of the current turmoil is a warning to both policy makers and actors of the financial systems in order to prevent imbalances, with reference to the banking system main principle, namely *prudence*. [Grant, 2012]

In order to keep under control vulnerabilities and risks in the financial system, there has been adopted a range of measures of fiscal consolidation, economic and regulatory, which were seen at first as a *panacea*, and after it was considered that served as a drainage element, to a new model banking business, promoting an increase in the level of financial education.

#### 3. DEVELOPMENTS OF CEE BANKING SYSTEM AND IMPLICATIONS OF INTERNATIONAL FINANCIAL CRISIS

For the analysis performed there were chosen seven non-euro EU countries, namely Bulgaria, Czech Republic, Latvia, Lithuania, Poland, Romania and Hungary. The reason for choosing these countries is based on their *similar features*, namely economic and financial structures that are not crystallized, the potential for expansion, judiciary and public administration sensitivity, fiscal domination of the macroeconomic policy mixetc. [Dinga, 2009] The background of the analysis was based on official statistics of the IMF, World Bank and the central banks. The period under study is the manifestation of the crisis, namely 2008-2012. The countries listed have made two remarkable transitions over the past two decades, namely the transition from plan to market economy and in the next step the join to European Union, which led to a wave of trade and integration in global financial markets.

In the current analysis we addressed both qualitative and quantitative performance recorded by the banking sectors in Central and Eastern Europe, so we chose to analyze the financial soundness indicators promoted by the IMF, which is divided into two categories in accordance with the standards IMF, namely: basic analysis and the recommended one.

Regarding the analysis of the *adequacy of capital*, i.e. regulatory tier 1 capital, there is a downward trend in the growth ratio during 2008-2011, the present situation being stabilized, although it is considered to be more robust (see Fig. 1). In 2011, the risks addressing financial stability, increased considerably in the light of worsening sovereign debt crisis and intensification of negative effects on the banking sector. Due to the recession, to the currency depreciation, income cuts etc., there was an inability to honor properly the debt service, which led to an increase in the level of nonperforming bank loans. From the countries analyzed, in the third quarter of 2012, in the top there were Lithuania, Hungary and Latvia. The mean of this indicator assessed by reference to the region studied is 25.88% for 2009-2012, the deviations from the mean being notably in the mentioned countries, so the maximum value of this indicator is 77.11% (Lithuania) and the lowest was observed in Poland (12.96%).



Fig. 1 Evolution of capital adequacy growth rate, in CEE, during 2009-2012

1- Regulatory Tier 1 Capital to risk weighted assets; 2-NPL/Provisions Source: own proccessing after official statistics of IMF and central banks

Credit risk, a significant pillar in the management of a credit institution, can be estimated by *asset quality*, so the most important indicators in this regard are: the evolution of non-performing bank loans and sectorial distribution of loans to total loans weights. In the countries surveyed it stand out that the biggest share of loans is granted to non-financial corporations, averaging 91.66%.

For a realistic assessment of the situation of an institution is required the *operational results* analysis, due to the fact that these indicators are the most suitable in terms of time for determining bank performance. In this respect, the most expressive indicators calculated are: return on assets (ROA), return on equity (ROE), net interest margin and non-interest expenses, the last two being reported to total revenue recorded.

According to the table no. 1 (see Annexes), after the spread of international financial crisis, the banking system of the countries surveyed showed a downward trend in the indicators of profitability and efficiency, going into a negative territory for some countries and registering low performances in all operations involved, regardless of their importance. The largest decline in the performance took place in 2009, for Latvia and Lithuania, the situation trickling in 2010 but at a slower pace. Currently this indicator remains on average constant values, but in the case of Romania, return on equity touched a negative point in the third quarter of 2012. The best results were found in the case of Latvia, the Czech Republic and Poland, the growth of ROE for Latvia in the third quarter of 2012, being 154.01%. The main causes of these results are the bigger level of risk provisions as a result of more stringent requirements of the monetary authorities. The leverage suggests that additional resources have been committed in an advantageous manner.

The following indicators studied are those regarding *bank liquidity*, i.e. liquidity ratio and the share of liquid assets to total short-term liabilities. In 2012, the fastest liquidity growth rate was identified for Latvia, while the share of liquid assets in short-term liabilities recorded a contrary trend.



Fig. 2 Evolution of liquidity growth rate, in CEE, during 2009-2012(%)

Sourcee: own proccessng after official statistics of IMF and central banks

The average liquidity growth rate recorded in the countries studied was 27.94%, in the third quarter of 2012, down with 4.55% over the same period last year. The liquidity position of commercial banks is at a corresponding level, the parent banks dependence adjusting is realized in a gradual and orderly manner, the main implication of this trend being reflected in the future development of financial intermediation and credit risk. Reviving liquidity position can be justified in the light of external financing agreements the EU, IMF and IFIs, the provision of liquidity by central banks and credit institutions' efforts to increase the internal resources or portfolio of securities.

A particular importance in the present context it has banking system *sensitivity analysis* in this respect analyzing the net open position in foreign exchange to capital. An important step to counter risks in the international financial environment, is represented by the adoption of an integrated set of measures aimed for systemically important financial institutions (the 29 institutions), taken by G20. ECB supports new international standards designed primarily to prevent moral hazard and the negative externalities associated with these types of institutions. These measures are a necessary step to reduce the likelihood and severity of financial instability, thus reducing the level of sensitivity of credit institutions in international corrections. In this respect, it is worth mentioning the mechanism promoted by the ESRB, which wants a banking environmental monitoring, which has in its epicenter the regime *act or explain*.

To identify the general level of risk in banking systems currently under study, we chose to calculate the *Z index* which shows the failure probability of an institution, being calculated after the following formula:  $Z = \frac{ROA + C/A}{\sigma ROA}$ (1)

Where ROA - return on assets, C/A - the share of capital in total assets and  $\sigma_{_{ROA}}$  - volatility of ROA.

When the values of this indicator are high, the entity is less vulnerable, and such high values can come from either higher revenues or additional capital, which indicates a high level of financial stability (Annexes, table no. 1). With reference to the countries under study, it is observed that the highest value of the indicator was recorded in Czech Republic for 2007-2012, the average being 185.28, while the lowest value, even alarming, is recorded for Latvia where the average for the same period is 6.65.

The second pillar of the study is based on the *encouraged analysis*, aiming a set of indicators such as the share capital assets, major exposures on capital assets related to the weight of FD, i.e. liabilities capital, commercial revenues, staff costs weighted non-interest expenditure, the share of deposits in total loans, the share of foreign currency loans in total loans and foreign currency liabilities in total liabilities, etc.

During the international economic crisis there has been adopted a *set of measures* aiming to support the financial system, which can be seen both from the state and the banks point of view. Thus, *the government* was involved in the help given to the recovery of the financial system, namely: government guarantees on bank deposits, recapitalization, dissociation of so-called "bad banks" and nationalization of credit institutions. For example, with regard to the deposit guarantee system, we can see that before the economic crisis, the law stipulated a minimum guarantee of 20,000 EUR, today this level reaching the value of EUR 100,000.

*Central banks* also played an important role in managing the risks that arise from the economic crisis, their primary role being reflected in the provision of liquidity support to banks in a period that was characterized by lack of confidence in the banking system. Thus, central banks cut interest rates to monetary policy, since financial market deterioration has changed the outlook in terms of price stability, but also to encourage bank lending (see fig. 3).



Fig. 3 Evolution of monetary policy interest rate in CEE, during 2007-2013(%)

Source: own proccessing after official statistics of central banks

The measures initiated to support financial system were used in combination, observing ad-hoc measures implemented in the individual financial institutions, and complex schemes applied when the global financial crisis intensified. *Ad-hoc measures* (conventional) were initially applied at an individual level due to the fact that the implementation process is fast and flexible and *complex schemes* (conventional), which were used because it provides a more transparent perspective than the original, not leading to a distortion of competitiveness and could easily be taken as a forming part of a definite plan. Main unconventional measures adopted by the ECB in the crisis are those with respect to improving liquidity and intermediation in financial markets (refinancing of a fixed rate repo, swaps) and to counter liquidity constraints, respectively credit easing. These measures were designed to mitigate the impact of the international financial market tensions.

Currently, central banks have started to reverse the measures to support the economic and financial environment by waiving some of the unconventional measures. While the ECB tightened monetary character twice since the crisis (April and July 2011), the worsening economic and financial situation in the euro area, led the central bank to ease monetary policy stance again. On the other central banks, the currency appreciation trend, the gloomy forecasts for the end of this year, the financial and economic climate, are reasons for maintaining the current level of interest rates.

Another large challenge for monetary and tax authorities, is the deeper *sovereign debt crisis*. In the field of monetary policy and financial stability, the huge sovereign debt raises serious problems for authorities, affecting the future generations by slowing down the GDP growth rate. Therefore, there should be a closer cooperation between fiscal and monetary front, an improvement in the enhancement capacity with financial stability and thus a better transmission of monetary policy in the financial sector and the real economy.

Another issue that stands out is regarding the monetary policy in terms of sovereign debt crisis, namely increasing level of damaging the credibility of central banks acquired in the fight against inflation.

A highly debated topic in the literature aims the *national prudential supervision*, highlighting the positive and negative aspects that accompany this decision. To note is that most studies that focuses on the theme addresses the consequences regarding this kind of supervision, namely the possibility to shape the risk profile of credit institutions. On the other hand, there are outlined also the benefits of integrated supervision, namely: reduced level of spillover effects, improved management structure of credit institutions, a higher speed of decision adoption and implementation at EU level and others.

The international financial crisis has changed the economic and financial climate, affecting the relationship between customers and credit institutions, regarded as individuals and businesses. The big institutions from financial markets have become the main concern of monetary authorities, but we must consider the fact that the size, market power and complexity are major issues related to the management of an institution. These features need to be addressed in a specific manner so as not to affect the robustness and soundness of the banking system. In this regard, the major changes and challenges to the financial system have created a new trend in banking, namely *a new banking business model*.

In the current model, banks have tried to avoid exposure to these kinds of risks, providing loans, which they sell in order to transfer the risk off-balance sheet. Individually bank risks have increased due to reduced incentives to monitor the packets transferred off balance, to the deterioration of credit quality, the increase of bank debt and the level of risk combination, which was a precondition for the creation of speculative bubbles.

The current financial and economic crisis is considered to be unprecedented in the last half century, the devastating effects of its extending in all sectors, especially in banking.

#### 4. ANALYSIS OF BANKING SOUNDNESS AND PERFORMANCE. THE CASE OF ROMANIA

At an international level, the turmoil caused by the financial crisis has generated concerns about the magnitude of spillover effects, namely banking market implications. In this regard the study focuses on an empirical analysis that has in its epicenter the Romanian banking system. The analysis was performed using official statistics of the National Bank of Romania, using monthly data, for the period 2007-2012. Due to the fact that some indicators are reported quarterly, we opted for interpolation, aiming to obtain a homogeneous database. In analyzing the soundness of the banking system in Romania we use auto-regression and moving average model (2).

The solidity is evaluated through Z index, which indicates the ability of a system to dissipate the repercussions caused by shocks in the economy. The method aims to explain the unpredictable character of the indicator, being able to obtain also a forecast for a certain period of time. The model knows the following form:

$$\mathbf{Z}_{t} = \boldsymbol{\beta}_{0} + \boldsymbol{\beta} \mathbf{1} \, \mathbf{Z}_{t-1} + \mathbf{Z}_{t-2} + \boldsymbol{\varepsilon}_{t} \tag{2}$$

Where Zt- soundness indicator at time t, ɛt-random variable.

Due to the monthly data used we registered a number of 72 observations. First we proceed by testing the stationarity of the variable, suggesting that amplitude fluctuations are approximately uniform and vary around a constant mean. In this case variables did not meet this assumption, in this sense opting for an index calculation. Tests for this hypothesis are Augmented Dickey-Fuller (ADF), Phillips-Peron

(PP) and Kwiatkowski-Phillips-Schmidt-Shin (KPSS). After the model identification, the equation was applied to classical hypothesis testing, i.e. homoscedasticity hypothesis (ARCH test), test error autocorrelation (Breusch-Godfrey test) and normality of errors (Jarque-Bera test). The forecast obtained refer to the period January-April 2013.

Regarding the predictability of the strength indicator, if we consider the extent to which the market can be guided by econometric models in tracing the behavior of financial markets, according to the results obtained, it could take the form of an *ARIMA-type (1,2,1)* (see Annexes). The results suggest a slight improvement in the level of bank soundness, namely the risks registered a slowdown.

Despite the results, it is important to outline the fact that there are some *limitations*, due to the fact that there weren't taken into account the new international economic pressures, namely the implications of sovereign debt crisis (i.e. Cyprus), issue that will generate an increase in the level of risk. Despite the fact that the doctrine is really developed for studies to anticipate financial crises, their use in practice remains limited, thus the robustness of the forecast made on the next four months is somewhat restricted, suggesting duplication with other techniques for evaluating the stability of the system.

A fundamental lesson that should be learned from the current crisis is that of *temperance*, open to all participants in the financial markets and beyond, which from the desire to gain quick wins assumed excessive risks, not falling under any circumstances under the rational agent pattern.

After many successful years, the global banking system is facing historical changes, so many of the mechanisms previously applied are found to be exceeded in the current economic conditions. In this respect, *the banking market* faces a series of pressures, observing a transformation, *a reconfiguration*, which is viewed at three levels, namely the economic, the business model and financial education. From the analysis undertaken, the banking system soundness will experience a relatively timid improvement in the near future, highlighting the profound implications of the capital adequacy level, asset quality, management decisions and macroeconomic factors, issues that are supported by monetary and governmental measures.

#### 5. CONCLUSIONS

The crisis years radiography reveals ample *implications* on the banking sector in terms of deceleration in lending, by deteriorating financial soundness indicators, by tightening banking regulations and suggesting the vital necessity of a common European financial supervision structure.

In the paper it was made a comparative analysis of financial soundness indicators promoted by the IMF through the non-euro EU countries, our results suggesting that the *risks* to financial stability *increased considerably* in light of worsening sovereign debt crisis, which intensified the negative implications on the banking sector. It was also carried out an analysis on the Romanian banking system, opting for the auto-regression and moving average model, the period selected being the manifestation of the subprime crisis, namely 2007 to 2012. Our results showed positive impact of consolidation measures taken so far on financial system soundness, but there were not taken into account the implication of the recent pressures in the international financial markets, caused by sovereign debt crisis.

The study aims to sketch a picture of the international economic context, in order to monitor the *"health" and soundness of financial institutions and markets*, highlighting strengths and weaknesses of each financial system. Financial soundness indicators have two distinct axes to avoid the approach *"one-size-fits-all"*, which suggests a greater flexibility in analyzing the various regions.

Therefore, we find that *the period under review was one atypical*, marked by challenges in economic and financial plan, the measures adopted being used in combination (ad hoc measures or complex schemes). The *central bank* acted in a consistent manner to ensure financial stability, playing the role of an *anchor* in maintaining confidence in the banking system.

After spreading international financial crisis, the banking systems analyzed were deeply affected, and although we are seeing a slightly recovery of the financial system, we must consider one of the fundamental lessons being drawn from the crisis, namely *the principle of prudence*.

In this respect, we conclude by saying that *the financial system* plays a fundamental role in ensuring financial stability, being *drained and consolidated* over time, so despite the pressure from international financial markets, it must be increased the level of efficiency regarding the implementation of various measures, which involves more flexible economic policies.

# References

- 1. Albertazzi, U., Gambacorta, L., *Bank profitability and the business cycle*, 2009, http://www.sciencedirect.com/science/article/pii/S157230890800065X;
- 2. Altunbas, Y., Liu, M.H., Molyneux, P., Seth, R., *Efficiency and risk in Japanese banking*, 2000, http://ideas.repec.org/a/eee/jbfina/v24y2000i10p1605-1628.html;
- 3. Andrieş, A., A comparative analysis of performance and soundness indicators of the main Romanian banks, Scientific Annals of Alexandru Ioan Cuza University of Iasi, Economic Sciences, 2009;
- 4. Berger, A., Bouwman, C., *How does Capital Affect Bank Performance During Financial Crises?*, 2012, http://papers.ssrn.com/sol3/papers.cfm?abstract\_id=1739089;
- Berger, A., Klapper, L., Turk-Ariss, R., Bank competition and Financial Stability, 2008, http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2008/08/20/000158349\_2 0080820103955/Rendered/PDF/WPS4696.pdf;
- Berger, A., Problem Loans and Cost Efficiency in Commercial Banks, 1997, http://www.federalreserve.gov/pubs/feds/1997/199708/199708pap.pdf;
- 7. BIS, Basel III: A global regulatory framework for more resilient banks and banking systems, 2011, http://www.bis.org/publ/bcbs189.pdf;
- 8. Bolt, W., Haan, L., Hoeberichts, M., Oordt, M., Swank, J., *Bank Profitability During Recession*, 2010, http://www.dnb.nl/en/binaries/Working%20paper%20251\_tcm47-236504.pdf;
- 9. Borio, C., *Central banking post-crisis:What compass for uncharted waters?*, 2011, http://www.bis.org/publ/work353.pdf;
- 10. Brunnermeier, M., *Deciphering the Liquidity and Credit Crunch 2007-2008*, 2009, http://www.princeton.edu/~markus/research/papers/liquidity\_credit\_crunch.pdf;
- 11. Chortheas, G., Girardone, C., Ventouri, A., *Bank Supervision, regulation and Efficiency: Evidence from the European Union*, 2010,
  - http://www.sciencedirect.com/science/article/pii/S1572308911000593;
- 12. Dinga, E., *Criza financiară international și economia emergentă: Vulnerabilitate sau Oportunitate?!*, 2009, http://www.wall-street.ro/editorial/286/Criza-financiara-internationala-si-economia-emergenta-Vulnerabilitate-sau-Oportunitate.html;
- 13. Donnelly, S., The financial crisis of 2008: paradigm shifts on risk management and changes in financial services regulation, 2012,
  - http://regulation.upf.edu/utrecht-08-papers/sdonnelly.pdf;
- 14. Epure, M., Lafuente, E., *Monitoring Bank Performance in the Presence of Risk*, 2012, http://ideas.repec.org/p/bge/wpaper/613.html;
- 15. Erkens, D., Hung, M., Matos, P., Corporate Governance in the 2007-2008 financial crisis: Evidence from financial institutions worlwide, 2012, http://papers.ssrn.com/sol3/papers.cfm?abstract\_id=1397685;

#### 3rd INTERNATIONAL SUMMER SCHOOL OF ASECU YOUTH / JULY 15-20, 2013. KOTOR – MONTENEGRO

- 16. Grant, J., Banks should rediscover the art of caution, 2012, www.ft.com;
- Herring, R., How can the Invisible Hand Strenghten Prudential Regulation?, 2003, http://fic.wharton.upenn.edu/fic/papers/04/0412.pdf;
- Hughes, J., Mester, L., Bank Capitalization and Cost: Evidence of Scale Economies in Risk Management and Signaling, 1997, http://ideas.repec.org/p/fip/fedpwp/96-2.html;
- 19. Lindblom, T., Willesson, M., *Financial Crisis and EU Banks'Performance*, 2011, http://www.snee.org/filer/papers/648.pdf;
- Morttinen, L., Poloni, P., Sandars, P., Vesala, J., Analysing Banking Sector Conditions. How to Use Macro-prudential Indicators, 2005, http://www.ecb.int/pub/pdf/scpops/ecbocp26.pdf;
- Pasiouras, F., Fethi, M., D., Assesing Bank Efficinecy and Performance with Operational Research and Artificial Intelligence Techniques: A survey, 2010, http://ideas.repec.org/a/eee/ejores/v204y2010i2p189-198.html;
- 22. Roman, A., Anton, S., Banking Sector Trends and Challenges in Selected Central and Eastern European Countries, Volumul Conferinței Internaționale Management of International Business and Economics Systems 2009 (MIBES 2009), Greece, 2009;
- 23. Stein, J., C., *Monetary policy as financial-stability regulation*, 2011, http://www.nber.org/papers/w16883.pdf;
- 24. Wagner, J., *Measuring Performance Conceptual Framework Questions*, 2009, http://www.ersj.eu/index.php?option=com\_content&task=view&id=307;
- 25. Walter, S., *Basel III and Financial Stability*, November 2010, http://www.bis.org/speeches/sp101109a.htm;
- 26. Official statistics of IMF, ECB, NBR and National Banks.

### Annexes

Country		20	09			20	10			20	11			2012	(Q3)	
	ROA	ROE	LE	Z	ROA	ROE	LE	Z	ROA	ROE	LE	Z	ROA	ROE	LE	Z
BG	1,08	9,79	9,06	19,96	0,84	7,77	9,25	18,93	0,63	5,74	9,11	19,08	0,8	7,9	9,88	18,58
CZ	1,32	23,76	17,95	170,84	1,39	22,17	15,99	186,47	1,32	20,16	15,27	188,15	1,39	20,95	15,08	195,66
LV	-3,86	-50,6	13,10	1,56	-1,83	-19,7	10,78	3,05	0,49	4,76	9,71	4,34	2,52	22,22	8,83	5,67
LT	-2,06	-27,2	13,17	3,95	-0,5	-6,54	13,19	5,39	1,21	12,88	10,65	8,03	0,8	7,03	8,79	9,23
PL	0,94	13,23	14,08	34,82	0,92	12,11	13,22	36,35	1,20	15,39	12,87	36,43	1,2	14,51	12,08	39,21
RO	0,25	2,89	11,6	12,73	0,2	0,15	0,75	13,25	0,03	-0,1	-4	12,71	0	-0,3	0	11,99
HU	0,86	11,40	12,37	26,14	0,6	7,32	12,22	26,49	0,25	3,17	12,65	26,12	0,26	2,89	10,97	26,15

Table no. 1: Evolution of profitability and efficiency indicators in CEE, during 2009-2012 (%)

Source: own proccessing after official statistics of IMF and central banks

Table no. 2: The descriptive statistics, during 2009-2012

Indicator	Mean	Median	Мах	Min	Std. Dev.	Skewness	Kurtosis	J.B.	Prob.	Sum	Obs.
I_Z_IND	0,996073	0,996758	1,129331	0,902941	0,033889	0,594234	6,678751	44,21426	0,000	70,72122	71

Source: own proccessing on EViews

Table no.3:

Graphical representation of the correlogram regarding autoregression and moving average model Date: 04/14/13 Time: 00:52

Sample: 2007M01 2012M12

Included observations: 71

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
·  ****	·  ****	1	0.528	0.528	20.626	0.000
.  *.	.* .	2	0.135	-0.199	21.995	0.000
.* .	.* .	3	-0.158	-0.200	23.901	0.000
.* .	. .	4	-0.199	0.015	26.959	0.000
.* .	. .	5	-0.131	-0.005	28.299	0.000
.* .	.* .	6	-0.100	-0.105	29.098	0.000

Source: own proccessng on EViews

Table no.4: The estimation of the mode	el
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	AR(1)	AR(2)	ARIMA(1,2,1)
Adjusted R-squared	0,27559	0,29610	0,34744
Akaike info criterion	-4,21745	-4,21728	-4,27929
Schwarz criterion	-4,15321	-4,12014	-4,14977
DW	1,76440	2,05548	1,88362

Source: own proccessng on EViews

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Month	I_Z_indf
2013M01	0,977202
2013M02	0,993146
2013M03	1,003437
2013M04	1,008969

Source: own proccessng on EViews

#### Table no.6: Model testing - Autoregression and moving average

Dependent Variable: I\_Z\_IND Method: Least Squares Date: 04/14/13 Time: 01:00 Sample (adjusted): 2007M04 2012M12 Included observations: 69 after adjustments Convergence achieved after 11 iterations MA Backcast: 2007M03

Variable	Coefficient	Std. Error	t-Statistic	Prob.
С	0.998755	0.001420	703.3837	0.0000
AR(1)	1.464455	0.101788	14.38734	0.0000
AR(2)	-0.598382	0.099600	-6.007864	0.0000
MA(1)	-0.974604	0.015665	-62.21513	0.0000
R-squared	0.376230	Mean dependent	var	0.996417
Adjusted R-squared	0.347440	S.D. dependent	var	0.034277
S.E. of regression	0.027690	Akaike info criter	ion	-4.279290
Sum squared resid	0.049837	Schwarz criterior	ı	-4.149776
Log likelihood	151.6355	Hannan-Quinn ci	riter.	-4.227907
F-statistic	13.06835	Durbin-Watson s	tat	1.883620
Prob(F-statistic)	0.000001			
Inverted AR Roots	.7325i	.73+	25i	
Inverted MA Roots	.97			

Source: own proccessng on EViews

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# **INTANGIBLE ASSETS: RAIFFEISEN BANK ALBANIA CASE**

## Abstract

Intangible assets and investments made to these assets are placed increasingly in the spotlight since the end of the 20th century, this is for those who play a key role in the growth of a considerable business value. Literature annually enriched not only by theoretical, where required to give an accurate definitions them, but mainly to the importance that they have. In our country unfortunately studies have not been performed in this direction. For this reason the treatment of this subject has been difficult.

This study aims to identify some of the intangibles that operates at Raiffeisen Bank in Albania analyzed qualitatively and quantitatively the role of investment in these assets. Intangible investments and their role in developing the company Raiffeisen Bank JSC, impact and importance at this company.

## **1. INTRODUCTION**

This part of the topic will address investment in human capital by looking at details of intangible investment in human capital made by Raiffeisen Bank in Albania. One of the purposes of this topic is to describe the terminology associated with investment in human capital, about business and organization. Another goal is to identify certain types of investment assets and their role in the development of the company Raiffeisen Bank JSC. This bank is the biggest of the second level banks in Albania and has the highest number of staff. The banking sector is an important sector in the Albanian economy. Raiffeisen Bank plays a major role in this sector, being more often the initiator for the market introduction of innovations in services / products, technology and politics.

Watkins, T.(2000) has argued that banking products are easily copied given that there is little protection through patents. Competitive advantages for banks mainly generated from hidden intangible assets, than tangible. For this reason, banks provide an ideal context for studying intangible investments. Human capital is one of the main components of intangible assets and intellectual capital resource of a company. Banks make investments for the development of their staff. These investments are stated as costs or personnel costs and very often it is impossible to measure in financial terms, the impact that they bring. For example, it is impossible to measure the impact of a policy to "empower Google employees".

# 2. METHODOLOGY

In this study are used qualitative research methods. Research methods used in this theme are interviews with bank executives as:

- Interview with the Director of the Department of Human Resources
- Interviews with specialists of Human Resources Department at Raiffeisen Bank
- Interview with responsible planning and control unit at the Finance Division.

Review the bank's internal reports and statistical data. Study of literature and internal policies of the bank.

### 3. HUMAN CAPITAL AT RAIFFEISEN BANK

Enstein told: "Not everything that can be counted counts, and not everything that counts can be counted". This statement is quite adequate to explain the role that intangible investments for which in most cases is difficult to put a value and to reflect it in the financial statements, but on the other hand without such investment, the company will not create "added value".

#### 3.1 The definition of human capital

As mentioned, one of the goals of the thesis is to describe some definitions related to intangible assets. Human capital is not only a staff or people in the company itself. People have control over their human capital and they are free to invest this capital better profitability in the family, in society, at work, in faith, etc. Given this aspect of the definition provided in relation to human capital by Leslie A.Weatherly (2003): **Human capital is the sum of a company's collective attributes, life experience, knowledge, creativity, energy and enthusiasm that its people choose to invest in job.** 

But according to the researcher mentioned above, the calculation of the value of human capital (HC) is not easy because human capital is quite different from the others. Human capital asset also represents the greatest potential, but even greater obligation that an organization will carry over its business cycle. This is the only intangible asset that has great influence but on the other hand can not be fully controlled. Human capital is unique and it does not lose its value despite in cases when companies implement technological innovations that replace human labor.

#### 3.2 Background and details of Raiffeisen Bank JSC

The banking sector is an important sector of the Albanian economy and the market because of the ever-increasing role he plays in the local economy by having a direct or indirect impact on the stability of many other sectors of the economy. Currently in the banking sector in Albania operates 16 commercial banks.

Raiffeisen Bank JSC (RBAL) is the market leader in Albanian. Bank owned 100% of the shares of Austrian group Raiffeisen Bank International (RBI), which operates since many years in Central and Eastern Europe through a network of banks and financial institutions.

Raiffeisen Bank JSC operates in Albania since 2004, when Raiffeisen Zentralbank Group Savings Bank privatized.

Information about Raiffeisen Bank JSC listed at the end of December 2012:

The data were obtained from the Audit Department reports to the bank and the internal statistics of the Department of Human Resources and Training.

Total Assets	2,273,256.14 thousand EUR
Volume of Deposits	2,037,371.84 thousand EUR
Total loans	967,456.04 thousand EUR
The total number of customers	712,023 Costumers
Business Unit	103 (Branches and Agencies)
Number of employees	1458 Employees

For 2011, net profit after tax was EUR 50.609 and represents the highest profit recorded by the bank. For 2012, profit is expected to be lower than in the previous year, but still high compared with other years.

Total expenses for personnel, for 2012, were EUR 17,216 and have increased compared to last year where these costs were 15.968 Euros.

Raiffeisen Bank Albania has the largest number of employees and the wider geographical among commercial banks, by providing access to banking services a large number of clients.

Raiffeisen Bank JSC provides services through several types of distribution channels which count among the service branches, electronic cards, ATM, POS, e-Banking, Mobile / SMS Banking etc. Also serves several market segments as private individuals, micro businesses, medium and large corporations. For specialized services supported through these channels, required trained staff to provide technical information about these services. On the other hand, to implement innovation in these services, or to be more optimized, expertise and knowledge needed.

In November 2012, "The Banker", recognized magazine of the "Financial Times LTD", honored Raiffeisen Bank JSC with the award for Best Bank of the year.

Raiffeisen Bank JSC directed by the Board of Directors which consists of 4 members: Executive Director, Deputy Executive Director, Member of the Board responsible for Retail business, Board member responsible for IT and Operations. Each member of the board of directors is responsible and has to direct its dependence divisions / departments to deal with bank

Regarding data on staff turnover, RBAL has decreased during the last 3 years.

Tab 1: Bank staff turnover during the period 2010-2012							
Year	2012	2011	2010				

Staff turnover *	6.5%	8.1%	8.2%
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The data in the table are derived from annual reports of Human Resources.

\*Staff turnover shows a percentage of the number of employees who resign. Statistics from the human resources department shows that the most common reasons for resignation were: 50% for position and better salary, 17% for better salary, 33% for other reasons (study, migration, etc.).

#### 4. INVESTMENT IN HUMAN CAPITAL RAIFFEISEN BANK JSC

According to the Director of HR, any amount out of the budget in balance human resources is categorized as personnel expense. However, in the RBI Group and Raiffeisen Bank JSC management is aware of the fact that current spending on personnel can bring value to the company in the future, as they can promote the growth of satisfaction and motivation of employees, increase their staff knowledge, which brings increased staff performance, improve work processes, etc..

Human Resources Department at Raiffeisen Bank JSC prepares reports for the management of the bank, in which is made an estimate to measure ROI (return on investment) for investments made in human capital. ROI is calculated by the following formula:

 $ROI = \frac{\text{Revenue} - (Total Cost - \text{Staff Costs})}{\text{Staff Costs}}$  and in 2011, ROI = 3.47 EURO

For every € 1 invested in human resources bank, investment bank returns by 3:47 Euro.

The implementation of some human resources policy initiatives bring for the company positive effects which are often not tangible, but in long time constitute an added value for the company and they can

produce competitive advantages for it. For example, activities such as the implementation of a training program designed to enhance leadership skills of managers can be considered simply an expense for staff? One such activity will bring added value for the company because a qualified leadership will result in increased performance in work teams they lead. Robert S. Kaplan (2004), referring to the case of Syracuse Gray Company, explains how after the implementation of a training program to improve work processes, it was possible to sensitize managers to review all current work processes and implemented new changes which led to 50% reduction in production time of the final product to the client. This case is an example where training produces a stable added value for the company.

Some of the expenses for staff development and human capital are simultaneously company investment which does not take embodiment (or at least not directly, immediately, but they are viewed as strategic investments for the future). To measure their impact should be studied cause and effect relationships that are generated from these investments. Below, there are described some of the intangible investments carried out for the development of human capital in Raiffeisen Bank in Albania and their role for the bank.

#### 4.1 Training Staff Development

According to the definition given by Goldstein & Ford (2002), training refers to systematic approach to learn, develop and improve the effectiveness of the individual and team the organization.

Investment in staff training constitute a strategic tool that helps achieving business goals and objectives of the organization. Training and development is the process of acquisition or transfer of knowledge, skills and qualifications, necessary to perform particular task or activity. There are still no methods and tools which can accurately measure the impact of intangible investment. Feedback received from participants at the end of training through questionnaires and discussions, as well as feedback received from their managers through interviews are used to measure the effectiveness of Raiffeisen Bank JSC methods training. In some cases, other tests are performed after the training to measure the level of knowledge transfer. All these estimators have produced an overall qualitative data about training and there were no cases of quantitative measurements to assess the impact directly or indirectly brings about investing in a company training program. Daniel R. Tobin (2009) argues that it is very difficult to measure the return investment from training and such measurements are often wrong because they not consider a broader context factors combined with training, create a climate for increased productivity and achieve positive results.

#### 4.2 Statistics for Training and Staff Development at Raiffeisen Bank JSC

The following statistics are taken from the Department of Human Resources and Training at Raiffeisen Bank JSC

	Year	2012	2011	2010	2009					
1	The number of daily clients:	3′450	2′560	2′726	3′358					
2	Number of training days:	4′551	4′421.5	3′909	4′612					
3	Budget Spent:	244′412	337′217	282'193	300′390					
4	Number of employees who have participated in at least one training:	981	1′204	956	1′160					
5	% of staff attended a training	70%	88%	70%	85%					
6	The annual average number of active employees	1400	1360	1357	1356					
7	Training days / No. of employees:	3.25	3.25	2.88	3.4					

Tab. 2: Summary	v of data from	HR & Training	Annual Statistics.	<b>Raiffeisen Bank JSC</b>
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Number of training days is calculated by multiplying the number of participants in training and the number of training days
For example: 10 participants x 2 days = 20 days training

- Spent budget includes all expenses related to the organization of training such as programs fees, fee trainees and accommodation, training rooms, equipment, etc..
- Annual average number of active employees is calculated as an average of monthly data. Each
  month is calculated the number of full-time employees, which was revealed the number of employees who are on maternity leave or long residence due to health problems that are not counted
  as active employees for the month.
- Training Days / No. of participants is another indication of the amount of training provided during the year. Under the guidance of Raiffeisen Bank International Group banks should not fall below the minimum of 2 days of training per year per employee.

The above statistics reflect a decrease in total expenses for training in 2012. This was due to the decline of organized training abroad and fall of training courses organized by the contracted company (outsource). Also, efficient management contributed to lowering costs and reducing them. Because of this awareness, at the beginning of the year there was a decline in the number of requests for training abroad or other costly programs that can be replaced with training programs developed by bank's internal training. Also, most of the requests was focused on the most immediate needs for training in certain departments. Another reason has been the increased capacity of the bank on training, through wider use of experts and training bank staff.

### 4.3 eLearning - as an intangible investment

One of the investments made by the bank in 2011 has been the implementation of a platform for 'eLearning' training which is done through the computer. This was an investment in software and licenses for computer programs for creating extra special 'eLearning' training modules. After the implementation, the platform itself gets added value whenever a new 'eLearning' training module is created, which offers access and records to the bank staff according to the target group.

Creating electronic training modules records and the management of records and tracking training in the platform is the responsibility and the duty of the specialists in the training unit. During the first two years of the implementation 6 training modules were created, which developed a series of testing modules to measure the knowledge of the staff. Compared with other methods of training like classroom training as 'coaching', this platform has its limitations because of a non-direct contact and a non-direct feedback from participants.

However, investment in this platform had some qualitative and quantitative measurement for the benefits that has brought. The main benefits of it were:

- Faster distribution of training programs and knowledge. For example, for training as soon as possible the staff for 'Mobile Banking' service, it was used this platform and training was received from sales staff (about 600 employees) within 2 days.
- Saving on travel costs for staff from branches in districts that would be coming in Tirana to get training or to perform the required tests. Cost savings during the first year of the use of the platform were estimated to be 10400 euros. This figure exceeded the forecast made in the analysis of costs and benefits of the acquisition and implementation of this platform where was expected a saving of Euro 5500.
- Another benefit that cannot be measured in monetary value is the benefit from the fact that employees in branch or directory should not be separated from work and lose valuable time traveling for training.

Because of these results, the bank has estimated that eLearning has passed the investment spent on the purchase of program and technical implementation costs.

#### 4.4 Student Intern Program

This program is organized by Raiffeisen Bank JSC in cooperation with several local universities (or Albanian students of international universities) and the objective for the bank is to select and hire new talents from universities. Each year the bank expects approximately 30 students placed in different departments or branches. In 2011, were employed 11 from interns students.

For these interns are organized various training like orientation training for new staff, through which one can gain knowledge and an overview of the work in the bank. The rating given by participants for this type of training is very pleasing and viewed by them as an advantage compared with interns in other companies.

Another initiative in this regard has been the inclusion of Raiffeisen Bank JSC at the FASTIP program of the University "Alexander Moses" in Durres, supporting and funding each year four young students who are pursuing their studies in "Banking Management". These students are supported with a purpose to be employed at the end of their studies. FASTIP is a new learning model that combines academic study with practical study in the company.

#### 4.5 Performance Management

Human resource policies at Raiffeisen Bank JSC aimed to reinforce a culture that supports high performance of our employees and strengthen competencies / behaviors desired by the staff of motivated employees through a consolidated system of performance management.

Performance management system currently used at Raiffeisen Bank JSC, was implemented in 2007. Every year this system has undergone certain elements but has essentially maintained its structure and principles.

Management System that is used by banks, takes into account the achievement of the objectives / goals of the employee and the powers that appear in results.

This system consists of the extra special forms that support the process steps and information processing. The process steps are:

- Determination of Annual Objectives (these objectives come as cascade for the strategic objectives of the organization, from senior managers to middle level managers and then to team leaders and staff). Objectives should be set in accordance with the principles of SMART objectives.
- Review of objectives between the year. (Here can be done changes and adjustments.)
- Evaluation of objectives and performance at the end of the year. (Every manager should sit down with staff to carry out this evaluation and to complete appropriate forms, which should be detailed evaluation data. Percentages classified achievements through some notes from 1 to 5; each note corresponds to a percentage level of achievement of objectives.

Exellent	Very Good	Good	Average	Poor
5	4	3	2	1
Consistently exceeds expectations (Over 110%)	Complitely realize expectations and exceeds them easily (98-110%)	Complitely realize expectations in most of the cases (81 – 97 %)	Complitely realize expectations at a certain level, but there is room for improvement (70-80%)	Weak results or very week results (less than 70%)

#### Tab 3: Form of individual performance evaluation of employees at Raiffeisen Bank JSC

 In addition to objectives an assessment is made by grade and competencies required in business such as technical skills / professional, quality of work and productivity, interpersonal skills and teamwork skills, creative and proactive skills, focus on the client (whether internal or external), integrity and trust.

A performance below 2.8 is considered problematic and requires a development plan through training, help desk support from the manager and staff monitoring performance. Although these forms exist there is not a neat addition and monitoring of the development plan. On the other hand, in the case of a performance under 2, is required the dismissal of staff.

A performance 3 is rated as level, as it shows that staff has met expectations. Average performance assessment for bank staff in 2010 and 2011 was the same as follows:

Tab 4. Average performance assessment for bank star (2010-2017)							
Years	2010	2011					
Average performance measurement results	3.73	3.73					

Tab 4: Average performance assessment for bank staff (2010-2011)

\*The data in the table are taken from the annual reports of the bank HR.

This indicates that the average staff performance is generally satisfactory and in most cases exceeded expectations.

# 5. THE IMPACT OF INVESTMENTS IN JOB SATISFACTION

Raiffeisen Bank JSC organizes every year an internal survey to measure job satisfaction and staff motivating factors. The survey is conducted electronically to guarantee the anonymity of responses. The final results of the survey are communicated by the Department of Human Resources. (Appendix). The results of this survey for 2011 and 2012 indicate that it is maintaining a high percentage of job satisfaction. 97% percent of those surveyed in 2011 responded that they support the work they perform. In 2012 this percentage was 97.8.

About 99% of staff who have more than 5 years of employment at Raiffeisen Bank JSC, responded that like work always or in most cases, indicating that the labor satisfaction rate is higher for staff that has many years of working in the bank. This is an indication that explains the tendency toward job loyalty and lower turnover of staff that has many years of working with the bank. More than 90% of staff which participated in the survey believe that the management of the bank is very good or good. Satisfaction and positive assessment of the bank's management has been improved and in 2012 recorded the highest figure of 91%. Over 85% of staff considers satisfactory supervisor-subordinate relationship.

The data of this survey show that the bank staff has high pleasure toward work and toward the organization. These data are the result of the investments made and the culture of relationships formed within the organization.

#### 6. CONCLUSION

Some forms of intangible assets have very broad definitions which allowed interpretations like human capital. Increasingly Raiffeisen Bank has focused on investment in human capital development which is the source of intellectual capital for growth, and structural relationships of a company.

Investments in human capital are difficult to measure the impact that they bring. At Raiffeisen Bank JSC, any payment for services performed for the bank staff development or human capital recorded and reported as expenses and staff costs. Regardless on how these expenses are treated and recorded in the financial statements, at Raiffeisen Bank face restrictions on the bank's internal policies, where these costs are referred to as strategic investments that are expected to add value to a company.

Special reports prepared for management of the bank perform more detailed analysis of these costs, watching as investments to achieve strategic objectives and long term goals of the bank. An indication of the measure in this context, is Human Capital ROI but its results leave much room for interpretation which are the real factors that have led to the return on investment. In most cases it is impossible to draw quantitative results for individual investments and the income from their benefits.

Raiffeisen Bank JSC some reports are developed within the company and some of them are drawn by the patterns established by the Group RBI to enable banks comparisons within the group and the level of these investments.

As evidence the surveys, these investments have brought Raiffeisen Bank JSC results in increased staff satisfaction, increased staff loyalty, retention and motivation level high performance of the company and considered as added value that affects the performance of the company.

## References

- 1. Annual Report of Raiffeisen Bank JSC (2011)
- 2. Handbook of Human Resources at Raiffeisen Bank (2012)
- 3. Job Satisfaction Survey (2012)- Results of the internal survey of the bank
- 4. Kaplan, Robert S. (2004) Strategy Maps: Converting Intangible Assets into Tangible Outcomes: Harvard Business School Publishing Corporation
- 5. Raiffeisen Bank JSC Talent Management and Succession Planning Policy (2012)
- 6. Watkins, T. (2000). Marketing Strategies in Retail Banks: Current Trends and Future Prospects, London: LLP Professional Publishing.
- 7. Weatherly, Leslie A. (2003). Human Capital the Elusive Asset Measuring and Managing Human Capital: A Strategic Imperative for HR; SHRM 2003 Quarterly Research, Q1,3-7

# Appendix

2.07% 0.11% Always Most of the 42.94% cases 54.88% Rarely Never

Published results of "Survey staff satisfaction at work" (2012)



Fig.1-2: I like my job







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# THE INFLUENCE OF MANAGING THE INTEGRATED ACCOUNTING TOWARDS THE SUSTAINABLE GROWTH AND DEVELOPMENT

### Abstract

Natural resources such as the non-renewable fossil fuels oil and coal, or the renewable commodities of soil and water, are the foundation for every commercial activity. By using capital goods and natural and human resources as efficiently as possible, a national economy produces goods and services, thus improving the quality of life.

Measuring well-being, i.e. the utility of economic goods and services, and aggregating it in measures of economic welfare are well known to be very difficult. Therefore, in this paper by linking the process of managing the accounting function for a future sustainability and growth and giving a glimpse on this relationship through emerging accounting practices, like Cost and Benefit Analysis the way in which Performance measurement systems are implemented in corporations today and at the end of the paper the Integrated Reporting, the present state and future benefits towards the overall sustainability are measured.

With all this, this paper strives to give an explanation of present condition and how it can be improved by employing novel approaches in Managing Corporate Accounting and Reporting.

*Keywords:* Sustainable development, Economic growth, Performance, Social sustainability, Cost-Benefit Analysis, Global Reporting Initiative, Sustainability Performance Measurement Systems, Integrated Reporting Framework.

# **INTRODUCTION**

Nowadays, there is contemporary recognition that environmental issues and systems are affected by and affect human activities in pursuit of social, demographic, political, and economic goals. Issues of pollution, resource exploitation, desertification, and population growth and concentration, continue to be the responsibility of fragmented departments and macro-economic policies focus on the maximization of economic growth. To remedy this situation, the United Nations established a World Commission on Environment and Development (WCED). Under the generic label of *'sustainable development'*, the Commission proposed to move from dealing with environmental effects after their occurrence to focusing on the *'policy sources'* of these effects for preventive action (Bartelmus P., 1992).

Accounting for both socio-economic performance and its environmental effects is the first step towards the effective integration of environmental concerns into economic planning and policies. The availability of resources and the efficiency with which they are used are crucial determinants of a country's quality and perspective of life. The challenge facing individual countries is to improve the overall conditions in such a way to ensure that not just capital goods, but also natural and human resources are used more efficiently. The success with which the national economy manages its available resources can have a long-term impact on its credit standing and ultimately affect the attractiveness of sovereign bonds. (Sarasin Bank, 2010)

# **1. LINKING SUSTAINABILITY AND GROWTH**

# 1.1. Basic preconditions for sustainability

Economic progress is often evaluated in terms of welfare (or utility) for willingness to pay for goods and services consumed. Economic sustainability seeks to maximise the income or consumption that could be generated while at the minimum, maintaining assets (or capital) which gives these beneficial outputs. Key role for allocation of resources in production and for the consumption choices that maximise utility is having efficiency. Human capital enhancement, trough education and strengthening of social values and institutions, will increase social capital meaning accumulation of capabilities for sustainability, both for individual and groups of people, in order to work together and achieve shared objectives. To sum-up, for both social, economic and ecological systems, improving of the system health and its dynamic ability for adaptation to change across a number of spatial and temporal scales is a must for achieving the needed sustainability, instead of preserving ideal situation.

# 2.1. Sustainability for growth

Simplified approach within a conventional Cost Benefit Analysis (CBA) framework is usually applied in order to value all costs and benefits, including environmental and social aspects, and to optimize the resultant net benefits (i.e. benefits minus costs). Sometimes it may be easier to measure environmental and social assets in non monetary units, especially where they cannot be monetarily valued. One of many views of sustainability requires non-negative net environmental degradation in the economy. Others have defined sustainability in terms of non-declining income, consumption or welfare. (Islam 2001)

Sustainability is highly dependent on social and environmental costs and benefits. Typical costs for a sustainable growth include urbanisation problems, worsening income distribution, commuting disproportions, and on the other side benefits are improved transport, communications, and standards of living. Besides them, the second set of costs and benefits are environmental. Pollution, reduction of natural resources and bio-diversity are costs, while benefits are technological innovation and less damaging resource extraction, substitution of rare natural resources, and lowering of pollution.

Growth which derive from reduced pollution and increased substitution of efficient natural resources is expected to be sustainable. On contrary, if environmental costs of economic growth surpass benefits, the outcome is both unsustainable and impoverishing. Resources are not always efficiently used, but transformed into waste that must be absorbed by the environment. Owing to above mentioned, many experts argue that perpetual, material-intensive growth is unsustainable.<sup>1</sup>

# 2. ACCOUNTING FOR SUSTAINABILITY

A sustainability concept of maintaining a particular level or growth rate of outputs or yields of human activities,<sup>2</sup> contributing to the achievement of development objectives, does not provide further insight into the development process. The utility of economic goods and services or measuring wellbeing, and combining it in measures of economic welfare are well known for its difficultness.

<sup>&</sup>lt;sup>1</sup> S.M.N. Islam et al. / Ecological Economics 47 (2003) 149–166 p.153

<sup>&</sup>lt;sup>2</sup> The ecological concept of 'sustained yield' has been taken up by the World Conservation Strategy

The process of applying various accounting instruments requires knowledge, in order to preserve the marginal damage cost from the loss of ecological services. A variety of valuation techniques, applied in cost–benefit appraisals of environmental protection projects and programmes purport to provide this knowledge. (Islam, Munasingheb and Clarke 2003).

#### 2.1. Sustainable Economic Growth

If we look at economic objectives of producing and consuming goods and services, basic (primary) input limitations can be presented as availability of production factors, consisting of produced, natural, and human capital. Another prerequisite which regulates or otherwise affects economic activities is the institutional set-up, dealing with law and order, international relations, etc. Accordingly, different sustainability categories can be distinguished, referring to the sustainability of:<sup>3</sup>

- 1. Produced economic capital.
- 2. Natural capital of natural resources and environmental waste absorption capacities.
- 3. Human capital of labour, skill, and knowledge.
- 4. Institutional capital, providing the social, legal, and organizational infrastructure for economic activities and conflict resolution.

National, as well as corporate, accounting already allows for the sustainability or maintenance of produced capital by costing capital consumption as depreciation and deducting it from Gross Domestic Product (GDP) (or gross value added generated), and by accounting for stock increase as capital formation and stock use as capital decrease affecting intermediate consumption or final use. If we focus on the maintenance of produced and natural capital for ensuring continuing generation of output and value added, and bearing in mind technological progress, resource discovery or substitution of inputs, *sustainable economic growth* can be defined in operational terms as:

increase in (real) domestic product, allowing for the consumption of produced capital and the depletion and degradation of natural capital, taking into account that past trends of depletion and degradation can be offset or mitigated by technological progress, substitution, discoveries of natural resources and changes in consumption patterns.<sup>4</sup>

The concept of sustainable economic growth differs, however, from the definition of such indicators as an essentially analytical concept that anticipates the occurrence of resource discovery, improvement in the efficiency of resource use, technological progress or changes in lifestyles, relaxing sustainability constraints of natural resource availability, and environmental (services) capacities.<sup>5</sup>

Sustainability of economic growth does not necessarily mean the sustainability of its components such as consumption, capital accumulation or the balance of foreign trade. Focus of sustainability from the maintenance of capital in economic growth, by introduction of standards and targets in development analysis is moved to the examination of development programmes and activities, on various levels.

The above-described concept of sustainable economic growth and development emphasize the need to integrate natural capital constraints and further environmental welfare effects into socio-economic analysis to satisfy at least some necessary conditions for sustained development. In principle, such integration can be achieved directly by incorporating the use of natural capital, as additional costs and benefits, into the standard indicators of economic performance and growth, i.e. Value added and Net Domestic Product (NDP), which are easily compiled in national accounts. The System of integrated Environmental-Economic Accounting (SEEA) is based on an earlier proposed framework for integrated environmental and economic accounting (Bartelmus, Stahmer and Van Tongeren 1991).

<sup>&</sup>lt;sup>3</sup> BARTELMUS P. (1992). Accounting For Sustainable Growth And Development. Structural Change and Economic Dynamics, 3 (2), P.243

<sup>&</sup>lt;sup>4</sup> BARTELMUS P. (1992). Accounting For Sustainable Growth And Development. Structural Change and Economic Dynamics, 3 (2), P.244

<sup>&</sup>lt;sup>5</sup> Considering that the capital depreciation concept reflects a loss in income spinning capacity of economic assets

# 2.2. A Framework for Integrated Environmental-Economic Accounting

The Statistical Division of the United Nations has developed the SEEA as a system that will elaborate and detail monetary accounts, and their physical counterparts of stocks and flows of natural resources and waste residuals. The experimental nature of environmental accounting and inconsistencies in the valuation of nonmarketed goods and services with the values of market transactions are the reasons for not replacing the conventional accounts that serve numerous, in particular short and medium term, economic analyses. The idea is to allow users of economic data to choose among different information systems according to their particular areas of interest. The objectives of integrated environmental-economic accounting can be summarized as:<sup>6</sup>

- 1. Identification of all environment-related stocks and flows in conventional national accounts.
- 2. Incorporation of environmental costs and benefits into national accounts.
- 3. Assessment of the composition and sustainability of national wealth.
- 4. Modification of accounting aggregates.

### 2.3. Emerging accounting practices

Accounting for environmental issues has evolved from accounting for the cost of environmental cleanup and fines , illustrated through the following examples which include accounting practices in the following dimensions:<sup>7</sup>

- estimated liabilities associated with the cleanup of contaminated land,
- removal and cleanup of leaking underground storage tanks,
- removal of asbestos from buildings, and
- removal and replacement of PCB-filled lighting ballasts and transformers.

Recently, the World Business Council for Sustainable Development and the Federation of European Accountants, have begun urging organizations and governments to begin accounting for potential expenses and liabilities that may be associated with managing their greenhouse gas (GHG) emissions. Accounting for financial costs can be instrumental in helping organizations understand the business case for reducing waste, packaging, energy, and water use. The pressure to manage costs and preserve or enhance reputations continues to drive improvements in environmental management and corporate social responsibility. The International Federation of Accountants has developed a sustainability framework to help professional accountants influence the way organizations integrate environmental, economic, and social considerations into their objectives, strategies, management, and definitions of success.

# 3. COST AND BENEFITS OF SUSTAINABLE GROWTH

There are several limitations of existing literature regarding the costs and benefits of sustainable growth:

- ✓ First, most studies investigate these issues qualitatively rather than in quantitative form. (Mishan, 1971) Few studies exist, focussing on costs and benefits within an ecological model. (Islam, 1998)
- ✓ Second, when economic costs and benefits are discussed, their impacts on the three domains are generally not distinguished. The costs and benefits of economic growth can affect the social or environmental domains in rather different ways. The question of sustainability is largely dependent on which type of costs and benefits are considered. (Mishan 1971) (Daly and Cobb 1990) (Cobb and Cobb 1994)

Economic growth models which include the calculation and consideration of costs and benefits in a sound operational model are needed because there are recent studies that suggest the costs of economic growth are higher than its benefits but there are also others which disagree.

 $<sup>^{\</sup>overline{6}}$  BARTELMUSP. (1992). Accounting For Sustainable Growth And Development. Structural Change and Economic Dynamics, 3 (2), P.247

<sup>&</sup>lt;sup>7</sup> http://www.oag-bvg.gc.ca/internet/English/sds\_fs\_e\_33574.html#, p66

The exploration of the links between pollution, natural capital and growth has continued ever since in the economic history (Leontieff 1970); (Stiglitz 1974); (Solow 1993); (England 2000). After the Second World War, economic growth was considered vital for improving both individual and collective welfare. While pollution might increase with growth, once society became richer and pollution reached unacceptable levels, additional resources would be expended to reduce pollution. (Beckerman, 1992; Gylfason, 1999; World Bank, 1992). As resources deplete, market prices would go up to prevent natural resource exhaustion and by that encouraging substitution or technological improvements that increased resource supply or reduced levels of equilibrium usage.

Environmental costs and benefits are also closely linked to sustainability, especially to the concept of sustainable growth. Liberalising policies have benefited both the economy and the environment. However, some growth have increased environmental and social damage. In general, the remedy require the implementation of additional complementary measures that reduce the negative impacts. (Islam, Munasingheb and Clarke 2003)

#### 3.1. Cost-Benefit Analysis (CBA)

CBA has traditionally been used by governments as part of their decision-making processes for development of investment projects and is an obvious way to integrate environmental costs into development decisions. Environmental economists perceive that the cost—benefit analysis should be applied to all private and public projects, especially because nowadays, cost-benefit analyses are a formal requirement of many large-scale projects which are run predominantly by private enterprises, such as those in the mining sector and the building industry.

In the past environmental costs and benefits have usually not been quantified and incorporated into the analyses but the sustainable development requirement for integration of environmental and economic goals has meant that the new approach is to integrate these environmental costs and benefits by pricing them and incorporating them into the calculations.

Cost - benefit analysis is promoted as a primary method for integrating economic and environmental considerations and can be applied to other matters requiring decisions, such as the rate of exploitation of scarce natural resources and the management of wilderness areas, and to government policies such as regulation (as proposed by the US Republican-dominated Congress in 1995). Economists and business people are now arguing that it should be used more often as a way of deciding which way to proceed towards sustainable development. (Beder S. 2000)

# 3.2. Distribution of Costs and Benefits

Aggregated costs and benefits are main point of interest of CBA and it does not deal with the issue of how they are distributed, yet distribution of costs and benefits is of prime concern when considering equity. For example, a cement producing plant may provide many benefits, profits to shareholders, taxes to governments and wages to workers but in the same time causing a deterioration of air quality in the neighbourhood. As long as the sum of benefits is larger than the sum of the costs, the society as a whole will remain silent, even if only a small group of people benefits and many people are taking consequences. It is sometimes argued by economists that, if the total benefits outweigh the total costs, the winners could compensate the losers and still be better off; but this is only theoretical reasoning and very rarely happens in practice. If we look at our society, we can see that there is tendency towards winners to win more often and losers to continually lose.

Usual placement of polluting facilities is in working class areas than in areas of higher-income. The costs of pollution, if measured as an environmental costs as lost wages because of health decline also

proves that the costs of placing a facility in a low income area is better in terms of cost benefit analysis. In 1991, the chief economist of the World Bank suggested ironically in a well publicised memo, that dirty industries should be encouraged to move to less developed countries. He claimed that it was economically logical to dump toxic waste in countries where wages were lowest because the "measurement of the cost of health-impairing pollution depends on the foregone earnings from increased morbidity and mortality".<sup>8</sup> (Beder S. 2000)

### 3.3. Discounting Future Costs and Benefits

In a CBA, the value of future consequences is discounted. A more commonplace example is the case of refforestation. 'Except at very low discount rates, a tree that takes 40 years to grow would have a very low value today to show against its costs.'<sup>9</sup> If using discounting at normal rates, long-term environmental costs such as resource depletion may be effectively ignored because costs that are more than thirty years away become almost valueless. Discounting therefore discriminates against future generations by saying that future costs are worth less than present costs.

Basic assumption that costs and benefits in the future are not worth as much to people today, leads to appearance of discounting. The logic behind discounting means that a person would prefer to receive money now than the same amount in the future. Pearce, Markandya and Barbier put forward the following reasons for this: <sup>10</sup>

- Money obtained now can be invested and earn interest.
- People tend to be impatient.
- The person might die before he or she gets the money.
- One cannot be sure of getting the money in the future.
- People in the future will probably be better off; money will not be worth as much then.

The idea that someone would like to consume now rather than in the future is not applicable to public goods which can be enjoyed now and in the future. Also society gets the benefits of environmental preservation, and therefore the risk of one person dying before he or she gets the benefits is meaning-less. Any positive discount rate devalues future environmental losses and this disadvantages future generations with respect to today's decisions. (Beder S. 2000).

Discounting also occurs with goal of determining present value of future costs and benefits and decision is needed for accepting or forfeiting investments with potential impact on environment.

# 3.3. Substitution of Private Wealth for the Nature

A very important implication of the CBA which leads to it's weak overall sustainability, meaning that environmental assets can be substituted by human-made assets that can be bought on the market and all that matters in the end is that the aggregate gains outweigh the aggregated losses. If a project generates more wealth than the calculated monetary costs of environmental damage, then the project should go ahead. The loss of the environment is made up for by the wealth that is generated.

The idea of passing on an equivalent stock of goods to future generations that may contain fewer environmental goods and more human-created sources of wealth, is integrated in the cost - benefit analysis. In this context, Pearce argues that the Amazon forest can be removed so long as the proceeds from removing it 'are reinvested to build up some other form of capital'. (Beder S. 2000)

<sup>&</sup>lt;sup>8</sup> Pearce, Fred (1992), Why its Cheaper to Poison the Poor, New Scientist 1st February. http://www.uow.edu.au/~sharonb/esd/ equity.html, see fusnote Nr.26

<sup>&</sup>lt;sup>9</sup> Ecologically Sustainable Development Working Group Chairs 1992, Intersectoral Issues Report, AGPS, Canberra., p. 14., view Citation: Sharon Beder, 'Costing the Earth: Equity, Sustainable Development and Environmental Economics', New Zealand Journal of Environmental Law, 4, 2000, pp. 227-243. http://www.uow.edu.au/~sharonb/esd/equity.html

<sup>&</sup>lt;sup>10</sup> Pearce et al, op.cit., http://www.uow.edu.au/~sharonb/esd/equity.html see fusnote Nr.28

#### 4. IMPLEMENTING PERFORMANCE MEASUREMENT SYSTEMS FOR CORPORATE SUSTAINABLE GROWTH (SPMS)

Corporations are increasingly making commitments to apply the principles of sustainable development. Nevertheless, many corporations have made great efforts to develop reliable, synthesized measures regarding corporate sustainability performance.

At the individual corporation-level, there are several relevant contributions. The most widely-applied corporate sustainability framework is the Global Reporting Initiative (GRI 2006). The GRI suffers from several weaknesses, including a lack of guidance on integration with existing corporate initiatives, a lack of cross-cutting indicators, and the fact that it includes few leading indicators. Beside the GRI, many corporations make attempts to incorporate the sustainable growth into the Balanced Scorecard.

At early stages, the importance of setting priorities in the design of a corporate SPMS has been obvious, with limited attempts to develop systematic situational, goal, or implementation diagnostic questions to guide the development of a SPMS. A contingency diagnostic is necessary to help a corporation develop an interpretation of sustainability, understand its current situation, and understand how a SPMS will relate to its existing initiatives for a sustainable growth. An implementation diagnostic is required to identify resource needs and to identify how the SPMS will be used and by whom. These diagnostics are needed to ensure that a corporation works towards the development of a functional SPMS, not just one that exists on paper. (Cory Searcy 2009)

### 4.1. Overview of the diagnostics

The diagnostics of implementation are needed for putting an accent on the key questions a corporation must address at the start of a process to create a SPMS. The diagnostics questions are therefore intended to help corporate decision-makers transparently address the challenges in the development of any SPMS by helping them to understand their current situation, the challenges in developing of SPMS, the desired end state, and the options available.

There is no optimal set of questions that can be used for all cases and it is not possible to be aware up front of challenges and opportunities in creating a SPMS, which means that every process of developing the SPMS must be flexible and adaptable. The diagnostics do not provide a roadmap to guide all corporations through the first steps of creating a SPMS but are intended to structure thinking and discussion for the key issues up front that particular SPMS will need to address. Usually, the application of the diagnostic questions is iterative.



#### Figure 4.1: Overview of the situational, goal, and implementation diagnostics

Source: CORY SEARCY (2009). Setting a course in corporate sustainability performance measurement MEASURING BUSINESS EXCELLENCE, **13** (3), 49-57

#### 4.1.1. Goal diagnostic

The purpose of goal diagnostic is to make clear what are SPMS end results. As the goals developed in the beginning of the process will help to guid throughout the further development of the SPMS, the accent will be on establishing persistent and consistent goals that will not become obsolete. The goal diagnostic focuses on a systematic survey of two key areas:<sup>11</sup>

- 1. Establishing the overall goal and objectives of the SPMS; and
- 2. Identifying linkages to existing goals and targets.

I will describe both areas in details below, on the following way:

- 1. The overall goal of the SPMS must be clear from the very beginning of its development. This goal may be different for different corporations, but it is important to consider how the SPMS will be used in practice. Because the ultimate goal will have to be continuously reinforced through the process of creating SPMS, it is important to concisely summarize what the SPMS is intended to accomplish and it must also be clear what the SPMS will not accomplish. The end goal will be supported by a number of specific objectives for the SPMS. As measurement must ultimately be tied to action, these outcomes may include the changes in both results and behaviours that the SPMS will encourage. Special care will be required to ensure that the selected objectives are viable and desirable. Potential conflicts between the objectives should also be considered. It may not be possible to resolve all potential conflicts, but they should be made more transparent.
- 2. It is very important that the corporation considers how the SPMS relates to existing goals and targets in the start of the process. While this could be considered as a part of the survey of the internal environment in the situational diagnostic questions, it has been separated from that section to highlight its importance. The corporation may already have in place goals and targets that relate to sustainability. A comprehensive survey of relevant internal goals and targets should be undertaken. Where relevant goals and targets are identified, it is important that the SPMS builds on those wherever possible. One benefit of this is that it will explicitly show how the SPMS contributes to existing corporate initiatives. In many corporations, the purpose of the SPMS will likely not be to create an entirely new system, but rather to augment what is already in place. (Cory Searcy 2009)

#### 4.1.2. Implementation diagnostic

The implementation diagnostic is used to focus attention at the beginning of the process on issues that will affect the successful implementation of the SPMS. It is important to emphasize that the diagnostic does not address all of the details that will arise during the actual implementation of the SPMS after it has been designed. The implementation diagnostic is strictly focused on looking forward into the future before initiating the detailed design of the SPMS in order to identify potential challenges and opportunities. Because sustainability is an emergent concept, the identification of potential challenges and opportunities will inevitability be incomplete. With that in mind, the implementation diagnostic focuses on a systematic survey of two key areas:<sup>12</sup>

- 1. Identifying how the SPMS will be used; and
- 2. Identifying resource needs.
- In each diagnostics, there is an assumption that one of the best ways to develop a functional SPMS is to clearly identify how the information it generates, will be used in advance. Normally, different corporations will use a SPMS for different reasons, one on which can generally include measuring progress for defined goals, internal and external education, informing, decision-making, internal

<sup>&</sup>lt;sup>11</sup> CORY SEARCY (2009). Setting a course in corporate sustainability performance measurement. MEASURING BUSINESS EXCEL-LENCE, 13 (3), 49-57.

<sup>&</sup>lt;sup>12</sup> CORY SEARCY (2009). Setting a course in corporate sustainability performance measurement. MEASURING BUSINESS EXCEL-LENCE, 13 (3), 49-57.

and external communication, or many others. But, corporations which are designing a SPMS must go beyond such general classifications. Getting internal and external stakeholders to actually use the indicators is likely to be one of the most challenging aspects of the design and implementation of the SPMS. The final use of the SPMS must therefore guide every step in its development.

2. Resources required for creation of a robust SPMS is necessary to be considered up front. These resource needs can be human, technological, financial, informational, and/or other resources. From the point of view of human resources, key internal personnel must be available throughout the process. External human resources, such as key external stakeholders, facilitators, and technical experts, will also be required to create the SPMS. From the point of view of information resources, the corporation should perform an assessment of existing data collection, management, analysis, and reporting capabilities.

Technology will have mayor role within the process and resources needed for this, such as communication equipment, intranet sites, internet sites, and software, should be identified. Existing information sources will be most important input into the system but even with this information, the SPMS can ask for information that is not already collected.

In essence, developing a SPMS is a complex process with many challenges. The diagnostics questions will help corporate decision-makers approach the early stages of developing a SPMS in a systematic manner. In doing so, they will help establish the foundation for the development of a meaningful SPMS that is widely used in practice. (Cory Searcy 2009)

# 5. INTEGRATED REPORTING

#### 5.1. The State of Corporate Reporting Today

At least once yearly, a financial performance report must be issued by every company publicly listed on a stock exchange. These reports are based on a set of accounting standards, usually International Financial Reporting Standards or US Generally Accepted Accounting Principles which determine which information should be reported in a company's balance sheet, income statement, and notes to the financial statements. High-quality and transparent financial reporting that presents an accurate view of a company's financial condition is one of the fundamentals for fair and efficient capital markets. Companies, their external auditors, standard setters like the Financial Accounting Standards Board in the United States and the International Accounting Standards Board, and regulators such as securities commissions all make substantial efforts to ensure high-quality financial reporting by listed companies.<sup>13</sup>

#### **5.2.THE EMERGENCE OF INTEGRATED REPORTING**

The Danish company Novozymes was the first company to issue an integrated report in 2002 and after has been followed by other companies from all over the world. It is slightly possible that they knew about each other's efforts because of diverse industries and geographical presence of these companies. Their reasons for issuing integrated reports include a commitment to sustainability, defined broadly in financial and ESG terms terms; a belief that an integrated report is the best way to communicate to shareholders and other stakeholders how well a company is accomplishing these objectives; and a recognition that integrated reporting is an important discipline for ensuring that a company has a sustainable strategy. (Eccles and D. Summer 2011)

<sup>&</sup>lt;sup>13</sup> ECCLES, Robert G. and D., Saltzman (Summer 2011). Achieving Sustainability Through Integrated Reporting. Stanford Social Innovation Review, (Leland Stanford Jr. University), The State of Corporate Reporting Today p.57

# **5.3.INTEGRATED REPORTING EXPLAINED**

Integrated Reporting enables getting an information in one report about an organisation's business model, strategy, governance, performance and prospects in a way that reflects the commercial, social and environmental context in which the company works. It creates a management approach to a collective understanding of the full complexity of value creation to investors and other stakeholders.

The IIRC aims to create the globally accepted Integrated Reporting Framework. The IIRC's Discussion Paper, "Towards Integrated Reporting – Communicating Value in the 21st Century", released in September 2011, outlined initial proposals for the development of the Framework, which included the following building segments:<sup>14</sup>

Figure 5.1 Guiding principles and content elements for development of Integrated Reporting Framework.



Source: CORY SEARCY (2009). Setting a course in corporate sustainability performance measurement MEASURING BUSINESS EXCELLENCE, **13** (3), 49-57

Integrated Reporting is an evolution in corporate reporting that supports business and investor decision-making, by helping to reveal how value has been created over the short, medium and long term. The combined effects of a series of economic, business and environmental crises underlines the need for Integrated Reporting.

Economic difficulties in many parts of the world are causing businesses and policymakers to question capital market orthodoxy and challenge traditional accounting practices, business models and value creation methods. One concern is whether capital is being allocated in the most effective way to achieve sustainable returns over the short, medium and long term. The quality of the information businesses communicate to the market is a significant factor in determining investors capital allocation decisions. (IIRC, The International Integrated Reporting Council)

#### **5.4.THE BENEFITS OF INTEGRATED REPORTING**

Integrated reporting begins with a single report on a company's financial and nonfinancial performance. An integrated report is not intended to be a replacement of every single piece of performance information. Rather, it brings together material information on financial and nonfinancial performance in one place, on an integrated manner. Examples of the kind of information that would be included in

<sup>&</sup>lt;sup>14</sup> IIRC, THE INTERNATIONAL INTEGRATED REPORTING COUNCIL; Capturing the experiences of global businesses and investors. THE PILOT PROGRAMME 2012 YEARBOOK, p.3

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an integrated report are:15

- How much water does a company use per unit of production compared to its competitors?
- To what extent do energy-efficiency programs reduce carbon emissions and lower the costs of production?
- What is the impact of training programs on improved workforce productivity, lower turnover, and greater customer satisfaction?
- How do improvements in customer satisfaction lead to greater customer loyalty, a larger percentage of the customer's spending, and higher revenue growth?
- How is better management of reputational risk through good corporate governance contributing to the value and robustness of the company's brand?

Although integrated reporting is still in its beginning, it is possible to identify three classes of benefits.

- **The first** is internal benefits, including better internal resource allocation decisions, greater engagement with shareholders and other stakeholders, and lower reputational risk.16
- **The second** is external market benefits, including meeting the needs of mainstream investors who want critical information, referring whether sustainability is existing, in order to correlate it with data which reflect the nonfinancial information of the company.
- **The third** is managing regulatory risk, including being prepared for a likely wave of global regulation, responding to requests from stock exchanges, and having a seat at the table as frameworks and standards are developed.17

In a word, Integrated reporting is the combination of a company's financial and nonfinancial performance in one document — is a crucial step to creating a more sustainable society. (Eccles and D. Summer 2011).

#### **CONCLUSION**

- 1. Within this paper, through basic concepts of managing the integral accounting for sustainable growth and development, I elaborated that the social, economic and ecological systemic constraints influence the organizational health and its dynamic ability for adaptation to change across a number of challenges. Sustainable growth accompanied by reduced pollution and increased substitution away from natural resources is likely to be sustainable. Alternatively, if environmental costs of economic growth exceed benefits, the outcome is both unsustainable and impoverishing. Sustainability of economic growth does not necessarily mean the sustainability of its components or determinants such as consumption, capital accumulation or the balance of foreign trade.
- 2. The introduction of standards and targets in development analysis shifts the focus of sustainability from the maintenance of capital in economic growth to the examination of development programmes and activities. In this sense, the relatively neutral sustainability criterion of capital maintenance is replaced by a more normative one of the feasibility of development programmes. Accounting for financial costs can be instrumental in helping organizations understand the business case for reducing waste, packaging, energy, and water use.
- 3. The pressure to manage costs and preserve or enhance reputations continues to drive improvements in environmental management and corporate social responsibility. The International Federation of Accountants has developed a sustainability framework to help professional accountants influence the way organizations integrate environmental, economic, and social considerations into their objectives, strategies, management, and definitions of success. The framework also includes advice on how to incorporate environmental and other sustainability issues in an organization's

<sup>&</sup>lt;sup>15</sup> ECCLES, Robert G. and D., Saltzman (Summer 2011). Achieving Sustainability Through Integrated Reporting. Stanford Social Innovation Review, (Leland Stanford Jr. University), Page 59

<sup>&</sup>lt;sup>16</sup> Robert G. Eccles and Michael P. Krzus, One Report: Integrated Reporting for a Sustainable Strategy, Hoboken, N.J.: John Wiley & Sons, 2010: 146–56.

<sup>&</sup>lt;sup>17</sup> Robert G. Eccles and Kyle Armbrester, "Two Disruptive Ideas Combined: Integrated Reporting in the Cloud," IESE Insight, no. 8, 2011., Reference in ECCLES, Robert G. and D., Saltzman (Summer 2011). Achieving Sustainability Through Integrated Reporting. Stanford Social Innovation Review, (Leland Stanford Jr. University), Page 59

financial statements and reports.

- 4. Sustainable development, including its economic, environmental and social elements, is a key goal of decision makers. Optimal economic growth has also been a crucial goal of both development theorists and practitioners.
- The challenge facing individual countries is to improve the overall conditions in such a way to ensure that not just capital goods, but also natural and human resources are used more efficiently. The success with which the national economy manages its available resources can have a long-term impact on its credit standing and ultimately affect the attractiveness of sovereign bonds.<sup>18</sup>
- Resource efficiency is a prerequisite for sustainable development.

In this context, "To achieve sustainable development, we need to become far more efficient in the way we use resources. There are two aspects to efficiency: on the one hand, the deployment of resources to increase material wealth has to be scaled back, partly by using technologies that consume fewer resources. On the other hand, material wealth is not an end in itself, but should be seen as a means of improving the quality of life. Here, material factors such as life satisfaction, security and fairness are crucial. This presents a challenge in particular to national governments, whose efforts to create suitable overall conditions in the areas of economic and social policy, financial services, administration and social infrastructure (education, healthcare) help to lay the foundation for sustainable economic growth and a good quality of life." (Sarasin Bank, 2010)

- 5. Cost—Benefit Analysis (CBA) is a primary method for integrating economic and environmental considerations and can be applied to other matters requiring decisions, such as the rate of exploitation of scarce natural resources and the management of all business areas, and to government policies such as their regulation. CBA is about aggregated costs and benefits and does not deal with the issue of how they are distributed yet distribution of costs and benefits is of prime concern when considering equity. It is sometimes argued by economists that, if the total benefits outweigh the total costs, the winners could compensate the losers and still be better off; but this is only theoretical reasoning and seldom happens.
- 6. In a CBA, the further the costs are into the future, the less they will be worth in today's values; yet future generations will still have to put up with them. Discounting also occurs with goal of determining present value of future costs and benefits and decision is needed for accepting or forfeiting investments with potential impact on environment. The idea of passing value to future generations that may contain fewer environmental goods and more human-created sources of wealth is embodied in the use of cost benefit analysis.
- 7. The most widely-applied corporate sustainability framework is the Global Reporting Initiative (GRI). An implementation of diagnostics is required to identify resource needs and to identify how the SPMS will be used and by whom. These diagnostics are needed to ensure that a corporation works towards the development of a functional SPMS, not just one that exists on paper.
- 8. Integrated Reporting brings together material information about an organisation's business model, strategy, governance, performance and prospects in a way that reflects the commercial, social and environmental context within which it operates. It is an evolution in corporate reporting that supports business and investor decision-making, by helping to reveal how value has been created over the short, medium and long term. The combined effects of a series of economic, business and environmental crises underlines the need for Integrated Reporting.
- 9. Integrated reporting, the combination of a company's financial and nonfinancial performance in one document is a crucial step to creating a more sustainable society.
- "The discipline of producing Integrated Reports should benefit companies themselves. Integrating information from a management perspective can help to recognise how material issues link to business strategy and purpose."<sup>19</sup>

<sup>&</sup>lt;sup>18</sup> SARASIN BANK, (2010). Bank Sarasin Sustainability Research: Country rating shows the importance of sustainability for quality of life. Media release, Page 1

<sup>&</sup>lt;sup>19</sup> Colin Melvin, Hermes Equity Ownership Services and Chair of the Investor Network in IIRC, THE INTERNATIONAL INTEGRATED REPORTING COUNCIL; Capturing the experiences of global businesses and investors. THE PILOT PROGRAMME 2012 YEARBOOK, Page 13

# Bibliography

- 1. AYRES, R., (1996). Limits to growth paradigm. *Ecological Economics*, Vol. 19, 117–134.
- 2. AYRES, R. (1998). *Turning Point*. London, Earthscan Publications.
- 3. BARTELMUS P. (1992). ACCOUNTING FOR SUSTAINABLE GROWTH AND DEVELOPMENT. Structural Change and Economic Dynamics, **3** (2)
- 4. BARTELMUS, P., STAHMER, C. and VAN TONGEREN, J. (1991). Integrated Environmental and Economic Accounting: Framework for a SNA Satellite System. *The Review of Income and Wealth*, **37**, 111-47.
- 5. BECKERMAN, W. (1992). Economic growth and the environment, World Development. In: *Beckerman, W., 1995 Growth, the Environment and the Distribution of Income.* republished in
- 6. BEDER S. (2000). Costing the Earth: Equity, Sustainable Development and Environmental Economics. [online]. Last accessed 25 April 2013 at: HYPERLINK "http://www.uow.edu.au/~sharonb/esd/equity.html" http://www.uow.edu.au/~sharonb/esd/equity.html
- 7. COBB, C. and COBB, J. (1994). The Green National Product. Lanham, University Press of America.
- 8. CORY SEARCY (2009). Setting a course in corporate sustainability performance measurement. MEASURING BUSINESS EXCELLENCE, **13** (3), 49-57.
- 9. DALY, H. and COBB, J. (1990). For the Common Good. Boston, Beacon Press.
- 10. ECCLES, Robert G. and D., Saltzman (Summer 2011). Achieving Sustainability Through Integrated Reporting. *Stanford Social Innovation Review*, (Leland Stanford Jr. University),.
- 11. ENGLAND, R. (2000). Natural capital and the theory of economic growth. *Ecological Economics*, **34**, 425–431.
- 12. GRI, Global Reporting Initiative (2006). *Sustainability Reporting Guidelines: Version 3.0*. Amsterdam, Global Reporting Initiative.
- 13. GROSSMAN, G., (1995). Pollution and growth—what do we know. In: *Goldin, I., Winters, L.The Economies of Sustainable Development*. Cambridge, Cambridge University Press.
- 14. GYLFASON, T. (1999). Principles of Economic Growth. Oxford, Oxford University Press.
- 15. IIRC, THE INTERNATIONAL INTEGRATED REPORTING COUNCIL; Capturing the experiences of global businesses and investors. *THE PILOT PROGRAMME 2012 YEARBOOK*,
- 16. ISLAM, S. (1998). Ecology and Optimal Economic Growth. In: *Paper presented at the Fifth Biennial Meeting of the International Society for Ecological Economists*, Santiago, Chile, 15–19 November..
- 17. ISLAM, S. (2001). Ecology and optimal economic growth: an optimal ecological economic growth model and its sustainability implications. In: *Munasinghe, M., Sunkel, O., de Miguel, C. (Eds.), The Sustainability of Long Term Growth*. Cheltenham, UK, Edward Elgar, p.227–273 (Chapter 11).
- ISLAM, Sardar M.N., MUNASINGHEB, Mohan and CLARKE, Matthew (2003). Analysis: Making longterm economic growth more sustainable: evaluating the costs and benefits. *Ecological Economics*, 47, 149–166.
- 19. KOOPMANS, T. (1973). Some observations on optimal economic growth and exhaustible resources. In: *Bos, H., Linneman, H., de Wolff, P. Economic Structure and Development North-Holland*. (Essays in Honour of Jan Timbergen) ed., Amsterdam, p.239–255.
- 20. LEONTIEFF, W. (1970). Environmental repercussions and the economic structure: an input approach. *Review of Economics and Statistics*, **52** (3), 262–271.
- 21. MALTHUS, T. (1798). On Population Random House. New York Modern Library Edition.
- 22. MISHAN, E. (1971). The Costs of Economic Growth. London, Penguin.
- 23. NORDHAUS, W. D. and TOBEN, J. (1972). Is Growth Obsolete? In: *Economic Growth, National Bureau of Economic Research*. General Series 96 ed., New York, NBER.
- 24. OFFICE OF THE AUDITOR GENERAL OF CANADA (2013). A Discussion Paper by the Commissioner of the Environment and Sustainable Development: Managing Sustainable Development. [online]. Last accessed 25 April 2013 at: HYPERLINK "http://www.oag-bvg.gc.ca/internet/English/sds\_fs\_e\_33574. html" \l "p67" http://www.oag-bvg.gc.ca/internet/English/sds\_fs\_e\_33574.html#p67
- 25. RICARDO, D. (1817). Principles of political economy and taxation. In: *Sraffa, P., Dobb, M.H.The Works of David Ricardo*. Cambridge, Cambridge University Press.

- 26. SARASIN BANK, (2010). Bank Sarasin Sustainability Research: Country rating shows the importance of sustainability for quality of life. *Media release*,.
- 27. SOLOW, R. (1993). An almost practical step towards sustainability. *Resources Policy*, **19**, 162–172.
- 28. STIGLITZ, J. (1974). Growth with exhaustible natural resources: efficient and optimal growth paths. In: *Review of Economic Studies, Symposium*, , p.123–137.
- 29. UNITED NATIONS (1968). A System of no. E.69.XVII.3..
- 30. WORLD BANK (1992). World Development Report. New York, Oxford University Press.

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# RECAPITALIZATION OF BANKS: A CASE STUDY OF THE GREEK BANKING SECTOR

#### Abstract

The financial crisis that burst out in 2008 in United States as a banking sector crisis, spreaded all around the world and affected particularly the banks by creating problems with their liquidity. These problems appeared in Greece intensively after 2010, as a sovereign debt, which led to a banking sector crisis. This paper examines, first the current general situation of greek economy and concerning the debt aftermath, second the status of the finance sector, with the main focus on the recapitalization of banks (legislative framework). We conclude with a comparative analysis between the recapitalization process in Greece and other countries facing similar liquidity issues. This preliminary survey is based on private studies of banks and the legislation framework.

Keywords: banking sector crisis, fiscal cost, recapitalization of banks, financial crisis

JEL Classification: G01, G21

#### **1. INTRODUCTION**

It has been six years since the beginning of the global financial crisis, which started in the USA in 2008 as a crisis in the banking sector. This is the latest of 147 systemic banking crises over the period 1970-2011. In most cases, the crisis started as a crisis in the systemic banking sector and then spread in the "real" economy. Only 1% of this crisis started as a sovereign debt and then proceeded as a banking crisis. Greece belongs to the latest category, because what is now happening in the country began in 2010 as a debt crisis, which turned into a crisis of the banking sector later in the end of 2011.

In particular, the problem in the greek economy became intense in 2010, when the debt was raised at a big enough rate of the GDP (180% of the GDP) and the government could not have access to the international markets. At that crucial moment, the greek government had to take-measures for the reduction of the greek debt. As a result, a lot of austerity measures were implemented, and this action brought suppression to the greek economy and liquidity problems in the greek market. The lack of liquidity led to the increase of Non-Performing Loans (NPLs) and this is when the problem in the banking sector started.

The spreading of false rumors about the greek exit from the euro and the return to the drachma ("grexit"), contributed to the fact that a big percentage of the deposits were transferred abroad and the banks started having liquidity problems because of the liabilities' reduction. It has been estimated that since the beginning of the crisis more than 75 billion Euros in deposits have been withdrawn from the greek banks. Furthermore, at the end of 2011 (October 2011) the European Instruments decided that the greek debt is non-performing anymore and they proceeded on the debt's haircut with the participation of the private sector (PSI). The greek banks, which hold Greek Government Bonds (GGB) in their portfolios, lost an important amount of their assets and lots of them found themselves at the end of 2012 with negative position in their equity capital.

The aggregate equity capital of the greek banking sector was 47 billion euros in September 2011 while greek banks held 58 billion in claims (bonds and other loans) on the greek government, and their loans to the greek non-governmental sector were 251 billion. With a haircut of 53.7% of the government debt the losses in claims to the greek government were 31.15 billion euros. Table 2 in appendix indicates the total amount of the Greek Government Bonds (GGB) which were held by the five largest greek banks and the percentage amount in relation their assets. As it seems in Table 1, the Agricultural bank of Greece held the highest percentage amount of Greece bonds, something very expected because this banks was under state control and management.

Adding the PSI losses and the Provisions for NPLs, which were only 18 billion in September, greek banks have ended with a negative equity capital (31.15+ 18> 47) in total. These numbers were likely to understate the extent of the losses. (Dalianes and Vayanos, 2011). More specifically, after the end of 2012, all banks had negative equity capitals because of the losses of participating in the PSI. The aggregate gap on the banking sector was approximately 9 billion euros by the end of 2012 and this gap would be covered with 6.5 billion euros by the greek state, by the HFSF and and with a remainder 2.5 billion amount by the private sector. This is a huge amount if someone takes into consideration the capitalization of the whole banking sector in the stock market which costs only 1,5 billion euros (April 2013).

As logical, banks were obliged to meet the capital ratios as stated in the provisions of the Basel treaty, in a way that involves not only asset sales but also injections of fresh capital. Therefore, greek banks started an effort to obtain the adequate asset with alternative methods rather than using governmental funds. As a result, the issue of recapitalization caused a dispute between the government and the shareholders of banks.

# 2. STRESS TEST IN GREEK BANKING SECTOR

Once the crisis became global and the banking sector all around the world was in trouble, since 2009 the Economic and Financial Affairs Council (ECOFIN) decided to conduct EU-wide stress tests in order to examine the capital adequacy (Tier 1 capital ratio) of each banking institute in the European Union and the possibility of these institutes to cope with extreme financial circumstances and to strengthen the credibility of the banking system. The tests are simulations of the capital and financial data behavior of the banks under different and unfavorable economic conditions for 2010 and 2011 in a two-year horizon. More specifically, the test concludes to three different scenarios (Benchmark scenario, Adverse scenario, Additional sovereign shock on the adverse), and examines the adaption of the liquidity of the banks on each circumstance. The required liquidity ratio (Tier 1 ratio) has to be more than 6% so that the bank is not judged failed. The mathematical model of this test doesn't concern this paper but it is interesting to see only the results.

In Greece, only the six largest banking groups (National Bank, EFG Eurobank, Alpha Bank, Piraeus Bank, Agricultural Bank, and Post Bank) were selected to take part in the EU stress test. These banks represent more than 90% of the assets of the total greek banking sector.

Based on the data of 2009, the results of the European stress test of 2010 indicated that only the Agricultural Bank of Greece (ATE) did not exceed the 6% of the capital adequacy ratio (under the adverse scenario). The other five banks had no problem with the capital adequacy indicators.

In 2011 the results were visibly worse but the five core banks were still holding the capital ratio indicators at a good level and only ATE had a problem with its capital ratio. In table 3 we can see the analytic results of the stress test of the greek banks under the different scenarios. Table 2 depicts the total results of the stress test in the whole Europe in 2011. Showing how many banks of each country match on the equivalent ratio of Tier 1 capital ratio under the adverse scenario. For Greece, there are two banks on the red zone, EFG Eurobank with 4,9% (<5%) Tier 1 ratio and ATE bank with -0,8% (<2%) Tier 1 ratio.

A year later, in 2012, the stress test (based on data of 2011) showed that one more Greek bank was added in the European list of "failed" banks. Both ATE and EFG Eurobank were "bad" banks in the greek economy according to the stress test. In table 4 we can observe the results from the stress test of the Greek banks under the adverse scenario and under the adverse scenario after taking measures for the improvement of the capital adequacy ratio.

In additional, in 2012, when the Greek government decided to contribute to the recapitalization of banks with public funds, the Central Bank of Greece (CBG) conducted a test on December, in order to find which banking institutes were viable and, therefore, had the opportunity to use public funds through Hellenic Financial Stability Fund (HFSF will be examined on the next section). This test was based on data from the economic reports of 2011.

It is very important to point out an important difference between the European stress test and the NCB's stress test. During the European stress test, the authorities didn't take into account the data from the bank institutes which were related to the predictions of precarious elements of assets and the provisions for NPLs. On the other hand, in the NCBs' test other variables were taken into consideration, such as the losses from the participation of banks in PSI and the projections of credit loss. The variables between the two stress tests were somewhat different and as a result the outcomes were different too.

According to CBG's test, only four out of the entire bank sector were viable. These institutes were National Bank, Alfa Bank, EFG Eurobank and Piraeus Bank, and these banks were described as systemic. These four banks account for approximately 75% of the domestic banking sector assets. It is also remarkable to say that EFG Eurobank according to the last European stress test is a failed bank and according to CBG's stress test is one of the healthiest institute of the Greek banking sector (and the second larger institute in terms of assets).

This CBG's test also indicated that the aggregate capital needs, estimated to be 40,7 billion Euro, of which 27,5 billion are attributed to the four systemic banks. Specifically, the amount of 27,5 billion had the following allocation : 9,75 bn to National Bank of Greece, 5,84bn to EFG Eurobank, 4,57 bn to Alfa Bank and 7,34 to Piraeus Bank.

If the CBG's test will be repeated on 2013, none of the above banks would be judged "viable" because after the end of 2012 all greek banks had negative equity capitals on their balance sheets.

In fact, the aggregate capital needs of the banks won't be paid directly from the government, but there is a very elaborate procedure for the recapitalization of the banks. There are a lot of parameters that have to be in force for the participation of the HFSF on the recapitalization of the banks as we will see in the next chapter.

# 3. RESTRUCTURING OF THE BANKING SECTOR

As history indicates, every crisis in the banking sector had as a consequence the restructuring of the above sector. This change may have the form of mergers and acquisitions between banking funds and the nationalization of some banks if the bank can't find enough capital from the private sector in order to obtain adequate equity.

Since 2008, all cases of mergers or acquisitions were the impact of the crisis in the Greek economy. As it is mentioned above (Section I) only four systemic banks (according to CBG's test) will have the opportunity to raise their equity capital with public funds through HFSF. The other non-systemic banks will have to find a way to raise their equity capital through the private sector, otherwise they have to be merged with other financial institutes. Overall, the acquisitions that occurred were four.

The first case was very complicated. The Agricultural Bank of Greece (ATE) which was under state control was deemed through the European "stress test" as the worst bank in the whole Europe. So, the government decided to allocate this bank in a "good" and in a "bad" one, in order to sell the good part of the bank to another institute. Finally, in July 2012 Piraeus bank bought off the healthy part of ATE, which today is in function under the name "New Agricultural Bank of Greece".

In fact, Piraeus Bank redeemed all the deposits of ATE Bank, a big part of performing loans and the whole staff from the "old" ATE Bank. The unhealthy part of ATE which includes NPLs, toxic assets and liabilities of subsidiary banks of ATE remained under state control.

Additionally, the second case is the acquisition of Geniki Bank from Piraeus Bank. Since October 2012 Piraeus is the owner of 99.08 % of the share capital of Geniki Bank, which was bought off from Societe Generale. This action made Piraeus Bank to hold pro-forma assets of 79.1 billion Euros. A significant element is that Geniki bank had been recapitalized from Societe Generale as a subsidiary company, before its purchase from Piraeus bank. In fact, the amount of money which destined for the recapitalizion of Geniki bank haven't been given directly to Geniki, but it will be given to Piraeus Bank from Societe Generale as a part of the process of the recapitalization of Piraeus bank. This amount is approximately 170 million Euros.

In February 2013 Alpha Bank proceeded in the purchase of Emporiki Bank from Credit Agricole. After this act, the club of Alpha Bank is the second largest institute in the banking sector of Greece with pro-forma data, hold-ing 20% of the aggregate deposits in the Greek economy and the 24% of the loans that have been given.

Since the end of 2011, there was a big discussion between National Bank and Eurobank. More specifically, the National Bank (the largest bank in Greece) was considering buying off the share capital of Eurobank (the second largest institute in order). Finally, on Monday 9<sup>th</sup> April 2013, the management of both banks announced that the two above institutes haven't reached an agreement, instead they will proceed to a raise of Share Capital in order to reach the adequate levels of liquidity.

On 22th April of 2013, the Piraeus bank announced the acquisition of the Millennium Bank of Greece (MBG) from the Popular Millennium Bank (MCP). The cost for the Piraeus bank was only 1 million Euros. On the other hand, the MCP will participate in the recapitalization of Piraeus bank with 400 million Euros, as a kind of recapitalization process of MBG. If we reckon in the amount of 170 million Euros from Societe Generale and also the amount of 400 million Euros from MCP, the aggregate amount comes up to 570 million and remain only 120 million Euros to cover the 10% of the participation of the private sector in the recapitalization process.

Since the 9<sup>th</sup> October 2011, the HFSF is the only shareholder of the New Proton Bank (previously named Proton Bank) in order to avoid bankruptcy. The cost of this transition was 250 million Euros. This situation is temporary until the New Proton Bank will be merged or redeemed by another bank institute.

In the near future banks like Hellenic Post Bank and other small banks, which weren't deemed as viable through the "stress test" and haven't got the opportunity to take part in the recapitalization of the banking sector throughout HFSF, may be absorbed by other bank institutes. In fact, there is a range of foreign banks, which are interested in buying out these institutes. An exception is the case of Attica bank that achieved to quarry capital from the private sector, in order to avoid the state control.

# 4. LEGISLATIVE REGULATION AND THE ROLE OF THE HFSF

# 4.1 The Role of the HFSF

It is very important to point out the role of Hellenic Financial Stability Fund (HFSF) before the procedure of the recapitalization is examined and exactly what this organization is.

After the decision of the Greek government to take part in the recapitalization of the banks, a need rose to establish an institute that will undertake the whole process of recapitalization, because the banks didn't have the possibility to derive funds directly from the European Financial Stability Fund (EFSF). The purpose was to create an organization that would mediate between the European Committee, the government and the bank institutes. Furthermore, it ensured that the money would be used effectively.

The HFSF was established in July of 2010 (by law 3864/2010) as a legal entity of private common law and does not belong in the public sector. It has administrative and financial self-independence. The purpose for the existence of the HFSF is to maintain the stability in the Greek financial economy through the capital injection to the financial institutes (domestic and foreign banks).

The total share capital of HFSF is 50 billion euros (the initial share capital was 10 billion euros). This amount comes from the European Union and IMF in the framework a Support Mechanism. The capital of the funds is deposed on a special account in the Central Bank of Greece (CBG). The equity capital of HFSF couldn't be invested on any bonds or other commercial securities. These capitals destined to become investments only on the bank institutes that CBG has agreed to. After the liquidation of the fund, the whole assets of the HFSF will be transmitted to the state. Also, every year since HFSF's establishment, 30 days after the closure of the last economic period, the fund has to convey the aggregate profits of this period to the state. These profits will be calculated in the annual state budget.

On 20/04/2012 the HFSF provided 18 billion euros to the "viable" banks as a payment in advance of the future raise of the share capital. More specifically, this amount was allocated to the four following banks: 6.9 billion euros to the National Bank of Greece, 4.2 billion to EFG Eurobank, 1.9 billion to Alpha bank and finally 5 billion to Piraeus Bank. In table 5 (see appendix) we can see the amount of payment in advance from the HFSF, the expected total amount of the recapitalization of each institute and finally the percentage of the expected capital injection in relation to the aggregate share capital of each institute.

The HFSF has appointed two representatives on the Board of Directors of each institute that had got funds as a payment in advance. The purpose was to provide the interests of the Fund and to ensure that the bank will accomplish indeed a raise of share capital.

The prerequisites that a bank has to meet to ask for a capital injection will be analyzes in the next chapter of this section.

# 4.2 Legislative Regulation

After the successful integration of the PSI program on March 9<sup>th</sup> 2012, the greek banks begun to face the problem of capital inadequacy (liquidity problems) which started the discussion about a fund raising equity capital. But the situation in the greek economy made questionable whether the private sector could cover the aggregate capital gap of banks.

The European Instruments pressured the government to participate in the process of recapitalization. In fact, the capital gap is too large to reach the 10% of the capital needs of the private sector. As a result, the government will be approximately the only financier in the process of recapitalization.

In August 2012, the Minister of Economics put a legislative regulation in the Greek parliament to vote. The parliament agreed with the legislative regulation and then a process started in order to set up a mechanism throughout the greek government to take part in the recapitalization. Particularly, the government decided to provide capital only to the banks which would be judged "viable" through the stress test of CBG. These banks have to prepare a business plan in three year horizon and then the committee of the Central bank of Greece will decide if these institutes will take part in the recapitalization through HFSF.

After a depth discussion with the bankers and the European instruments, the HFSF with the greek government have taken the following decision: if the participating of the private sector comes up to 10% of each institute, then the HFSH will buy preference shares (or common shares) without the right of vote on the General Meeting. Otherwise, the HFSF will cover the whole amount in shares' raising process, and so it has the right to vote. The result will be that the government will take part in the management of this institute. The last option is a kind of nationalization of the bank.

A significant part of this process is the existence of "warrants" and "coco's". First, the "warrants" are a form of a motivation, given by the government to the banks' owners, in order to take part in the recapitalization. Warrants give to the owners the right to purchase back in the future shares of the banks from the HFSF at a fixed price, with the condition that they will take part in the recapitalization process (over 10% that matches on the private sector). More specifically, there is a fixed ratio between the number of warrants and the number of shares that the shareholders can gain back. For example, if the ratio is ¼ (share/ warrants, that means that for each share that someone buys now, he has the right to buy 4 shares in the future at a fixed price. The banks' owners demand a relation of 7 warrants per share, in order to have the right to gain back the whole amount of shares from the HFSF. In fact, this is impossible and the most feasible solution is a relation of 4 warrants, which give the opportunity to gain back only 51% from the HFSF.

Second, coco's is security similar traditional convertible bond in that there is a strike price (the cost of the stock when the bonds converts into stock). The total amount of coco's that each bank can issue, will be determined by the government. It is important to say that the more coco's issued the less money have to be paid by the private sector. For example, when the total amount of recapitalization for one institute reaches 1 billion euros, and coco's corresonds to 10% (100 million euros), the remainder amount is calculated at 900 million euros and if the private sector has to participate with 10% in this process, then the private sector has to pay 90 million euros. In the case that coco's represent 30% (300 million euros) of the capital needs, then the remainder is 700 million Euros and the private sector have to pay 70 million euros.

The legislative regulation determines that the banks that are not "viable" do not have the right to ask for funds by HFSF. These banks have to find capitals either by the financial market or by the private sector.

There are some more specific regulations, which needed to be mentioned. First, the whole amount of the capital raise has to be paid in cash. The old shareholders do not have executive right on buying new shares (after the capital raise). Second, the price that the new shapes will be issued, have to reflect the commercial value of the institute, without having estimated the extra value that the institute gains after the capital support by HFSF or the Central Bank of Greece. Third, the value that the shareholder could get back from the shares by HFSF is defined as the highest price between the price that the shares had been issued and the market value of the shares at the time of the repurchase. However, the repurchase cannot be done without consent of the CBG. Finally, there is a prohibition. The HFSF cannot sell the stocks of the banks that it holds to another legal entity apart from the shareholders of each institute and the coco's that maybe the fund holds are not tradable.

## 5. CONCLUSIONS

As it is obvious from the above analysis the procedure of the recapitalization of the greek banks is very complicated and cannot be confronted with similar processes in other countries.

In fact, it is a mixture of policies which were implemented in other countries, such as the U.S. (2008), Argentina and Mexico (tequila crisis, 1994-1999). The establishment of HFSF was not something innovative. In all cases there was a Fund, which took control of the process of the recapitalization. More specifically, in the case of the U.S. the Emergency Economic Stabilization Act (EESA) undertook to recapitalize the American banks with public funds through the purchase of preference shares and warrants.

The Mexican case displays the largest similarities to the Greek case. It is the only country that separates the banking sector to "viable" and "non-viable" banks. The Trust Fund for the Protection of Bank Savings (FOBAPROA) developed supporting programs with public funds only for the banks that were judged viable. At the same time, Argentina established three Funds in order to recapitalize the whole banking sector without giving significance to the sustainability of the bank institutes.

However, Argentina was the only country which managed to face the process of recapitalization with the minimum surcharge of its taxpayers by using a total amount of 0.3% of GDP. In comparison to the Argentinean case, USA and Mexico used a total amount of 20% of GDP. And in Greece until May 2013 had been used from government approximately 170% of GDP either with form of guaranties either with the form of direct financing.

On the other hand, the recapitalization in Greece was the only case which demanded the participation of the private sector (at least 10% participation in the raise of share capital of the viable institutes). In any different case the HFSF will be the only financier in the process of recapitalization something that will lead to the nationalization of banks. However the warrants' purchase and the issuance of coco's give the potentiality to the old shareholders to regain the control of the banks.

Only a small part of the recapitalization of the greek banking sector has accomplished by now (May 2013) and this process is well under way and it is intended to be completed until the middle of July of 2013.

#### References

- 1. Patrick Honohan, Recapitalizing Banking Systems: Implications for Incentives and Fiscal and Monetary Policy, *working paper of DECRG*
- 2. Anil Kashyap, Takeo Hoshi, (April 2009), Will the U.S. Bank Recapitalization Succeed? Lessons from Japan, *working paper of IMF* 2011 EU-Wide stress test aggregate report, (July 2011), *European Banking Authority research*
- 3. Greek macro-monitor, (January 2013), Greek banking sector recapitalization and restructuring Program modalities, progress already made and next steps, *Eurobank research*
- 4. Fabrizio Spargoli, (November 2012), Bank Recapitalization and the Information Value of a Stress Test in a Crisis, *job market paper*
- 5. Luc Laeven, Fabián Valencia, (June 2012), Systemic Banking Crises Database: An Update, *IMF work-ing paper*
- 6. Peter Dalianes, Dimitri Vayanos, (December 2011), The recapitalization of Greek banks, working paper
- 7. Report on the recapitalisation and restructuring of the Greek banking sector, (December 2012), *research of Bank of Greece*
- 8. Department of economics, (March 2013), legislative regulation: law of the establishment of Hellenic Financial Stability Fund, Athens: 2013

- 9. Department of economics, (April 2012), legislative regulation: Regulations concerning the recapitalization of credit institutions
- 10. Filippopoulou C., Folder: recapotalization of banks, To Vima, 31 August 2012
- 11. Ministry of Finance, July 2010, Stress tests results for the Greek banks (online), Available: http://www.minfin.gr
- 12. "National Bank: Stress Test Results" (online), Capital online journal, 18 July 2011, Available: http://english.capital.gr/news.asp?id=1241587
- 13. Koumakis T., To the Piraeus bank belongs the "good" Agricultural Bank, Ta Nea, 28 July 2012
- 14. "The acquisition of Emporiki from Alpha Bank accomplished", Proto Thema, 2 February 2013
- 15. Markou A., "The acquisition of Geniki from Piraeus Bank accomplished", To Vima, 14 December 2012

#### **Appendix**

**Table 1**. Assets and holdings of Greek government bonds (GGB) of the five largest Greek banks.

 (Numbers are in billions of Euros)

	National bank of Greece	EFG Eurobank	Alpha bank	Piraeus Bank	Agriculture Bank of Greece
Assets	121	87	70	58	31
Holdings of GGB	13.5	7.5	3.0	6.9	5.7
Holdings of GGB as % of assets	11.2	8.6	4.3	11.9	18.4

Source: Central Bank of Greece

#### Table 2. Bank capital ratios with capital raising to 30th April 2011

Adverse scenario

	2010	2012	< 2%	< 3%	< 4%	< 5%	< 6%	< 7%	< 8%	< 9%	< 10%	> 10%
AT	8.2%	7.6%	0	0	0	1	0	0	1	1	0	0
BE	11.4%	10.2%	0	0	0	0	0	0	0	0	0	2
CY	7.7%	5.7%	0	0	0	0	1	1	0	0	0	0
DE	9.4%	6.8%	0	0	0	0	2	4	2	1	1	2
DK	9.8%	11.9%	0	0	0	0	0	0	0	0	1	3
ES	7.4%	7.3%	0	0	3	2	7	5	1	3	2	2
FI	12.2%	11.6%	0	0	0	0	0	0	0	0	0	1
FR	8.4%	7.5%	0	0	0	0	0	2	1	1	0	0
GB	10.1%	7.6%	0	0	0	0	0	1	2	1	0	0
GR	10.2%	6.1%	1	0	0	1	2	0	2	0	0	0
HU	12.3%	13.6%	0	0	0	0	0	0	0	0	0	1
IE	6.2%	9.8%	0	0	0	0	0	0	1	0	0	2
IT	7.4%	7.3%	0	0	0	0	1	2	1	1	0	0
LU	12.0%	13.3%	0	0	0	0	0	0	0	0	0	1
MT	10.5%	10.4%	0	0	0	0	0	0	0	0	0	1
NL	10.6%	9.4%	0	0	0	0	0	1	0	1	1	1
NO	8.3%	9.0%	0	0	0	0	0	0	0	1	0	0
PL	11.8%	12.2%	0	0	0	0	0	0	0	0	0	1
PT	7.1%	5.7%	0	0	0	0	2	2	0	0	0	0
SE	9.0%	9.5%	0	0	0	0	0	Û	0	1	2	1
SI	5.7%	6.0%	0	0	0	0	- 1	0	0	1	0	0
Total	8.9%	7.7%	1	0	3	4	16	18	11	12	7	18

Source: EBA

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		Post Bank	Alpha Bank	EFG Eurobank	National Bank of Greece	Pireaus Bank	ATE Bank
Actual results 2009	Tier1 ratio (%)	17.1%	11.6%	11.2%	11.3%	9.1%	8.4%
Benchmark scenario at December 31, 2011	Tier1 ratio (%) after benchmark scenario	17%	12.3%	11.7%	11.7%	10.9%	10.7%
Adverse scenario at devember 31,2011	Tier1 ratio (%) after scenario	15%	10.9%	10.2%	9.6%	8.3%	8.9%
Additional sovereign shock on the adverse scenario at December 31, 2011	Tier1 ratio (%) after the adverse scenario and sovereign shock	10.1%	8.22%	8.17%	7.40%	6.00%	4.36%

Table 3. The results of the Europe-wide stress test of 2010.

Source: Ministry of Finance

**Table 4.** The results of the Europe-wide stress test of 2011

		Post Bank	Alpha Bank	EFG Eurobank	National Bank of Greece	Pireaus Bank	ATE Bank
Adverse scenario at December 31,2012	Tier1 ratio (%) after scenario	5.5%	7.4%	4.9%	7.7%	5.3%	-0.8%
Adverse scenario after the taking of measures for the improvement of capital adequacy ratio	Tier1 ratio (%) after scenario	7.1%	8.2%	7.6%	9.7%	6.3%	6.0%

Source: IMF

# **Table 5**. The amount that has given as payment in adverse from the HFSF to banks on 20/04/2012.(Numbers are in billions of Euros.)

	Alpha Bank	EFG Eurobank	Piraeus Bank	National bank of Greece	Total
Payment in advance of recapitalization	1.90	4.2	5.00	6.9	17.87
Expected Total amount of recapitalization	4.50	5.80	7.00	9.70	27.00
Expected Amount of recapitalization/ Assets	7.6%	7.5%	14.2%	9.1%	9.2%

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# **FINANCIAL MARKET INNOVATION**

### **INTRODUCTION**

When we talk about financial market innovation, we can say that everything about financial market is innovation because this market was created about forty years ago. More precisely, modern financial market was emerged in the seventies. Common finanial market originates from the period when money began to be minted.

But, what is actually financial market?

Financial market is term which describes any marketplace where buyers and sellers participate in the trade of assets such as equities, bonds, currencies and derivatives. Financial markets are usually defined by having: transparent pricing system, basic regulations on trading, costs and fees and market forces which determine the prices of securities that are used in trade. Some financial markets allow only participants that accomplish certain criteria, which can be based on factors like the amount of money held, the geographical location of investor's, knowledge of the markets or the profession of the participants.

The aim of this work is to describe two financial innovations which appeared in the second half of the twentieth century, those are securitization and CDS – Credit default risk .

# a) SECURITIZATION<sup>1</sup>

Securitization is a financial term which describes the process used to pool, trade and sell financial paper – most, usually mortgage loans. This process is complicated and contains a massive amount of information that can seem discouraging at first. However, this method is used by almost every financial institution.

There are many other definitions of securitization, for example: "A securitization is a financial transaction in which assets are pooled and securities representing interests in the pool are issued". We can use an example like a financing company that has issued a large number of auto loans and wants to raise cash so it can issue more loans. One of much solution would be to sell off its existing loans, but unfortunately there isn't a liquid secondary market for individual auto loans. Instead, the firm pools a large amount of its loans and sells interests in the pool to investors. For the financing company, this raises capital and that leads to getting the loans off its balance sheet, so it can issue new loans. It creates a liquid investment in a diversified pool of auto loans, which may be an attractive alternative to a corporate bond or other fixed income investments, for investors. The ultimate debtors (the car owners) do not need to be aware of the transaction. They continue making payments on their loans, and now those payments flow to the new investors, which is opposed to the financing company.

In general, what are characteristics of securitization? It is very useful thing that convert illiquid financial assets to marketable securities. These bonds are backed in precisely defined assets like mortgages,

auto loans or other kind of long-term loans, as a rule it isn't short-term loans. It is reason why we are common called them asset-backed securities.

Whose are participants in process of securitization ?

Firstly, it is loan originator, bank that has awarded the loan to the original debtor. She want to convert illiquid financial property to liquid asset because she need cash in the short term. Loan originator respectively bank is also *servicer*, which deals with collecting repayments from the borrower, and collects and stores information about debtors. Secondly, it is *rating\_agency*. Rating agency has very important role. She says which bonds are good and which are bad. She does due diligence that is to say studying companys financial reporting to find out whether enterprise do business well. For corporation, it is better to their bonds get high rating score from agency, because it would be easier to sell securities. If rating score are high – risk premium is lower which means that the cost of debt for the end user will be less. Thirdly, *underwriter* that has extensive experience in business and advises bank to sell securities. For example, it promote sales of bonds, define price and amount of securities. Fourthly, *the\_investors*, major participants which appear in securitization affairs. They have money and independently decide which bonds would be beneficial to buy. Issue of securitization must be adjust to investors and their needs .

Generally, There are two types of securitization in the world.

American and Europians. Both of models implies issuing mortgage securities. In European models, pledge assets for issuing securities remain ( on balance sheet securities ) in the originators balance ( covered or mortgage bond ). In Americans, pledge assets for issuing securities are separated from originator balance ( of balance sheet securitization ) and transferred to a special property of the legal entity ( SPV, special purpose vehicle ), so there risk sharing between the bank and buyer of securities .

#### b) CDS – CREDIT DEFAULT SWAP<sup>2</sup>

If we want to explain CDS we must fulfil some terms, firstly, we need to conceive very interesting explanation. Secondly, it must be picturesque. And thirdly, story need to be simple.

For example we can suppose that we have only two friends: "One earns well and have many to burn, but other does not have a good job, works over time but still does not have money for good living. One day, poorer friend runs out of money and ask well-off buddy to borrow him some cash. Richer said that he want to lend him seeking money, but not on beautiful eyes. He said also that he must to get IOU from recipient of loan. IOU is abbreviation of "I owe you", it is written certificate of debt".



Picture says: Lan lends money to Barb and in returns gets IOU (In real world IOU may be corporate bond or collection of debts called collateralized debt obligation).

Len is taking some risk, he doesn't know exactly will Barb repay his debt to him. Len has risk aversion, and that is why he tries to find any person who wants to take risk of Barbs default. There we have new person, Sid, who isn't risk-aversion and wants to access to work, but in return for a taking risk of Barbs default he requires periodic payment.



This we have CDS. CDS is warranty that Sid will, in case of Barbs default, repay loan to Len. Simplified, Sid is like co-signer. Sid hope to collect CDS fee without paying for Barb. The Lens motive is to ensure paying back a debt, and Sids motive is to earn easy money.

One more example. Let's suppose we have invested in the General Motors bond, and that our investment was \$10,000,000. Suppose also that we have become worried that General Motors is getting into financial trouble. What should we do? Obviously we could just sell our bonds in the secondary market, or enter into a credit default swap. If we want a credit default swap we should think on an insurance contract (insurance against the possibility that a company might get into financial trouble and cause us to lose money on our bond position).

To do that we have to find someone prepared to insure us. Of course that that can't be General Motors. Those are usually banks.

So, we could pay the bank a periodic small amount of money known as a 'premium' (insurance premium). This is calculated as a percentage of the face value of the bond we are insuring against, which, in our case, is \$10m. That (the \$10m) is known as the 'notional principal'. The premium is paid usually every three or six months, throughout the life of the contract. Bank has in return promises to us that if the company GM goes to bankrupt, return our invested capital. Bank doesn't do anything while ( if it ever happens ) company default and cannot to payback our money to us. Picture below describes everything:



#### **CREDIT EVENTS**

What is credit event? – It is situation when company goes to financial difficulty and cannot to pay our money to us. There are several types of credit events:

- 1. Bankruptcy
- 2. If a company goes into Chapter 11<sup>3</sup> (in the US) then that is a clear indicator that the company is in serious financial difficulty and that the bondholders may not get all their money back. This is an obvious thing to have trigger the payment in a CDS contract.
- 3. Failure to Pay
- 4. Restructuring

We can set up one realistic assumption about credit default swap: "Size of premium payment is bigger if the company is more likely to default! "

### **CONCLUSION**

Trading with financial innovation has the dual purpose of hedging and risk taking. Customers buy them because of speculation - taking risks, use them for hedging - fencing of risk, due to the arbitration, and so on. Given that trading in derivatives related to the delay in delivery of futures contracts on the basis of which their owners are betting on the expected changes in the price of commodities and financial instruments in the future, and what can be done unlimited profits, and accordingly and unlimited loss, in particular extent they may be compared with the bookmakers. Derivative securities are also called a contingent claim, and as such includes the leverage mechanism. I also think, that financial innovation had significant part in emergence of the last big crises. Financial innovation can contribute much to the purpose for which they are made but only if used correctly. If there is excessive risk-taking which, of course, financial innovation allows, then we can expect the emergence of the financial crisis, just as the posthumously celebrated the great Russian economist Minsky sixties said: "The cause of each crisis was excessive risk-taking."

#### References

- 1. adapted from: Financial markets and institutions, Phd Dejan Šoškić and Phd Boško Živković - Options, futures and other derivates, John Hall
- 2. adapted from: A Beginner's Guide to Credit Default Swaps, Rich Newman wordpres - Credit Default Swaps and their Role in the Financial Crisis, Klaus Schults
- 3. Chapter 11 is a form of bankruptcy that involves a reorganization of a debtor's business affairs and assets. It is generally filed by corporations which require time to restructure their debts. Chapter 11 gives the debtor a fresh start, subject to the debtor's fulfillment of its obligations under its plan of reorganization.

# GLOBAL MARKET CHALLENGES AND PERSPECTIVES

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# DEVELOPMENT OF ECONOMIC RELATIONS BETWEEN EUROPEAN UNION AND CHINA

# Abstract

Nowadays, China is the second largest economy in the world, and their international position each year is strengthened. China's growing economic potential is related to the international expansion of capital. Chinese companies are increasingly investing in overseas projects, and they have support from the state. . In recent years, there has been improvement in the European Union's economic relations with China (increase in trade and mutual investments) and there are still great opportunities for their development. Currently, China is one of the biggest economic partners of the EU. The development of economic cooperation the EU and China has caused that there are more and more dependent on each other.

Key words: European Union, China, economic relation, bilateral relations

# **1. INTRODUCTION**

China's international position is strengthened every year. Due to the growing importance of the country in various aspects of international relations, the European Union attaches increasing importance to deepening and strengthening relations with China. Thanks to this cooperation, the EU member states are trying to take advantage of the growing importance of China to benefit from its growth and strengthen position in the international arena (Gang, 2011).

China's surplus in trade with the EU is the result of different levels of economic development, competitiveness, industrial structure, the pattern of trade and the international division of labor. However, both parties make large benefits from close commercial cooperation because it takes place on a reciprocal basis. A positive result of extensive collaboration is the inflow of foreign direct investment. EU companies investing in China have a significant impact on increasing their international competitiveness through access to low-cost means of production. Direct investments are also a good way to bypass the barriers to export and gain a greater share in the Chinese market. Chinese entrepreneurs are increasingly investing in Europe thanks to savings. In 2009, the cumulative value of Chinese investment amounted to 58.3 billion Euro. Thanks to its services, Chinese investors establish branches of their banks, buying up factories and also gain market share. Foreign direct investments are a source of capital, new technologies, organizational systems and knowledge, create new jobs, raises the level of labor standards (Gang, 2011).

The purpose of this strictly theoretical paper is to discuss and analyze the development of economic relations between the European Union and China. Aiming to provide a theoretical landmark was adopted a hypothesis that the high degree of economic cooperation between the European Union and China makes the EU and China are becoming more dependent on each other. In order to do so, first was analyzed the impact of WTO on China's trade liberalization. Next section shows political and legal forms of cooperation between UE and China. Finally, analyzed the trade and FDI flows between the EU and China.

#### 2. CHINA'S TRADE LIBERALIZATION

In 1947 was signed an agreement regarding tariffs and trade, which aimed to help international trade liberalization - "General Agreement on Tariffs and Trade" (GATT). In the GATT was four main principles: the principle of the possibility of intervention in trade (in order to protect its own industry), the principle of non-discrimination and equal treatment, the principle of reciprocity (equal benefits) and the principle of national treatment (treatment of import goods on a par with the national). All these rules have been taken over by the World Trade Organization (WTO). The Uruguay Round led to the creation of the World Trade Organization (WTO), which has a set of rules of international trade, a forum for the resolution of commercial disputes and negotiating trade agreements (Starzyk, 2009).

For China's WTO membership was an important impetus for the continuation of market reforms. It is the driving force for China's trade in goods and services, capital flows (especially in the form of foreign direct investment) and technology transfer. The European Union had a significant impact on China's membership of the World Trade Organizations. The main rationale for providing them support were economic factors. In its relations with the EU - China is noticeable structural complementarity. The core of the European Union create developed countries which have a rich financial resources and advanced technology, the low rate of economic growth compared to China. China's economy is characterized by large domestic market, abundant labor resources and the spectacular economic growth. These differences offer opportunities for beneficial trade cooperation, production cooperation and scientific - technical cooperation for both sides. China's accession to the WTO has contributed to the development of trade relations between the EU and China (Shi, 2008).

### 3. POLITICAL AND LEGAL FORMS OF COOPERATION

Diplomatic cooperation between the European Union and China were established in 1975. document which forms the basis of this relationship is *EU and China Trade and Cooperation Agreement*, and was signed in 1985. The dynamic development of bilateral relations in the field of trade and also economic relations and political dialogue, created the need for formal definition of this cooperation and outlining the way ahead (Pietrasik, 2005).

In the years 1998, 2001 and 2003 were issued, Communications of the European Commission with the aim of highlighting the desire for further cooperation. Aim was also to update the key assumptions concerning the market opening the dialogue on energy security, the protection of intellectual property rights and cooperation in science and technology. *EU-China: Closer Partners, Growing Responsibilities* is the next document in this respect, which was signed in 2006. Since 1998, each year there are also meetings of the *Summit of European Union-China* which brings together representatives of the highest authorities. China is represented by the Prime Minister and the Ministers responsible for the matters to be taken. From the EU participates President of the European Council, the President of the European Commission's, high-level representative for the Common Foreign and Security Policy and also other European Commissioners. Range of subjects dialogues covers issues related to foreign policy and economics and also environmental protection, human rights, education and culture (Wouters, 2011).

# 4. TRADE BETWEEN EU AND CHINA IN 2000-2010

Currently, China is one of the largest partners of the European Union and ranks second in total trade turnover. In 2010, imports from China to the EU countries amounted to 281 billion Euro which accounted for 18.9% of global imports of the EU. In the years 2000-2010 can be seen a significant increase in the share of imports from China in total imports of the EU from 7.5% to 18.9%. Only in 2009 there was a decline in
the value of imports of 247 billion Euro in 2008 to 214 billion euros. This decrease was due to the recession in global markets and global economic slowdown. In the analyzed period is also noticeable systematic increase in EU exports to China. In 2000 it amounted to 25 billion Euro while in 2010 has 113 billion Euro. Therefore increased its overall share in global exports EU from 3.0% to 8.4%. In 2009, in contrast to imports (in which there was a decrease) was noted a 4% increase compared to the previous year.

$\sum$	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Export	3,0%	3,5%	3,9%	4,8%	5,1%	4,9%	5,5%	5,8%	6,0%	7,5%	8,4%
Import	7,5%	8,4%	9,6%	11,4%	12,5%	13,6%	14,4%	16,2%	15,8%	17,9%	18,9%

Table T China's share in the total turnover of the EU in 2000-2010 (in %	Table '	I China's share i	n the total turnover	of the EU in 2000-2010 (in %)
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Source: http://trade.ec.europa.eu/doclib/docs/2006/september/tradoc\_113366.pdf

Despite the increase, the import is still much higher than exports for which the EU has a problem with a negative balance of trade with China. Over the last decade, only in 2009 there was deficit reduction of 169 billion Euro in 2008 to 133 billion Euro (as a result of a large decrease in imports), but already in 2010 amounted to 168 billion Euro. The reason for such a large difference between exports and imports is the level of development of both economies (Clarke, 2010).

Despite spectacular economic growth, China still belong to developing countries. The economy is dominated by the industrial sector, although increasingly important role to play also begins the service sector. Very low cost of production, the understated value of the Yuan and preferential tax treatment in special economic zones for foreign companies meant that China has become the "factory of the world". Because the production costs in developed countries is much higher, many European companies contracts the production of goods (especially labor-intensive) to Chinese factories. For this reason, there has been a high level of imports from China (Chen, 2009).

The European Union is characterized by a far more developed services market and specialized production. It offers high-tech products, machinery needed to modernize production and transport equipment. The low level of exports to China is a result of use of barriers to market access (particularly with respect to consumer goods) and not due to the lack of competitiveness of European goods. The best proof is that the export of European products to the United States is more than two times higher than to China, in 2010 amounted to 242 billion Euro (113 billion Euro to China). The Chinese market is huge and untapped potential for EU exporters. To change all that there must be a significant reform in the Chinese economic system, especially those related to increased domestic demand and easier access for foreign investment.





Source: http://trade.ec.europa.eu/doclib/docs/2006/september/tradoc\_113366.pdf

Strengthening of relations between the European Union and China have contributed to the gradual extension of a market for Chinese goods in Europe and the opening of the Chinese market for European exports. In 2009 the European Union was the most important trade partner of China with 17.4% of the total turnover. EU was the second partner in terms of imports, and the first in terms of China's exports (Chen, 2009).

### 5. FDI FLOWS BETWEEN THE EU AND CHINA

Many European companies have noted the benefits of the location of the investment in special economic zones of China and decided to move their business or opening of its branch there. In 2006 European countries have invested 6.7 billion euro in China. In subsequent years, there was a decrease the inflow of investments. In 2007, new investments amounted to 6.6 billion euro, and in 2008 the size was reduced to 4.7 billion euro. In 2009, there was an increase of new investments and it amounted to 5.3 billion euros. These investments represent only a small part of the total EU investment. In 2008, only 2% of the investment from EU countries went to India and China (Sunesen, Jespersen, Thelle, 2010).

The value of the influx of Chinese investment in the European market is much smaller. European countries are not as attractive for Chinese investors as Africa or Latin America. In 2009, new investments amounted to 0.3 billion Euro, it was a big drop in investment flows compared to 2006, when the direct investment amounted to 2.2 billion Euro. In 2008 there was a decrease of 0.1 billion Euro investment in the previous year which means that investors already operating in the European market have decided to withdraw some of its shares.



Figure 2 FDI flows between the EU and China in 2006-2009 (in billion Euro)

Source:http://epp.eurostat.ec.europa.eu/statistics\_explained/index.php/Foreign\_direct\_investment\_statistics

The highest value of new direct investment in China in 2009 have reached Germany and amounted to 2.5 billion Euro. Second place went to France, where investments amounted to 1.3 billion Euro and the third to Finland with 0.5 billion Euro of new investment. Other positions went Belgium and Sweden, companies in these countries have invested in China in 2009 of 0.3 billion Euro. The countries with investments of 0.2 billion Euro were: Spain and Austria, and the countries with 0.1 billion investment were: Denmark, Italy, Luxembourg and the United Kingdom. The Netherlands is the only country recorded a negative result, which meant the withdrawal of existing investments. Inflow of direct investment from other countries was very small, none of them exceeded 50 million Euro (Sjoholm, 2008).

The level of Chinese investment in the European market in 2009 was very low. The highest value of new investments was noted in France, they amounted to 0.2 billion Euro, was followed by Belgium, Germany, Austria, where Chinese companies have invested at 0.1 billion Euro. Ireland, the Netherlands, Poland is a country where there was the greatest decrease in liabilities. In other countries, like in the case of European investment, Chinese investment does not exceed 50 million Euro (Sunesen, Jespersen, Thelle, 2010)



Figure 3 Value of FDI between EU and China in 2007-2009 (in billion Euro)

Source: http://trade.ec.europa.eu/doclib/docs/2006/september/tradoc\_113366.pdf

The size of European investment in the Chinese market has decreased during the period. In 2007 these investments amounted EUR 4.6 billion Euro, but in 2008 decreased by 54% to 2.5 billion Euro. In 2009, there was an increase in investment relative to the previous year and amounted to 3.5 billion Euro.

Definitely more Chinese companies to invest in European Union countries. In 2007, the value of their investment reached a level of 40.9 billion Euro. In the next year, investments increased by 28% and amounted to 52.4 billion Euro. In 2009, the value of the investment has continued to increase reaching a level of 58.3 billion, which represented a 11% increase over the previous year.

According to the Chinese Ministry of Commerce in China was created 1688 new businesses with capital from EU countries in 2010. This represented an increase of 6.97% compared to the previous year. The total amount of European investments in 2010 amounted to 5.5 billion dollars and was 10.71% higher than in 2009 (Sjoholm, 2008).

### 6. SUMMARY

Currently, China is the second largest trading partner of the EU. They have a 13.9% share of EU trade turnover of 394 billion euros. They are the main source of imports to the European Union and ranks second in terms of exports to the EU. In 2010, the value of imports from China to the EU amounted to 281 billion Euro, that is 18.9% of the share. EU exports to China reached 113 billion Euro value, this is a 8.4% share of total EU imports.

However, the European Union is the largest trading partner of China. Its share in the total turnover of China in 2009 accounted for 17.4% with the value of 260 billion Euro. The EU is the main direction of China's exports of goods and ranks second in terms of the volume of Chinese imports. In 2009, the volume of China's exports to the EU is estimated at 169 billion Euro, this is a 20% share, while imports from the EU amounted to 91 billion Euro, that is 14%.

The level of trade has made the degree of interdependence between the EU and China is very high. If the European Union closed its market against Chinese goods, China would be in a difficult situation. This would mean a significant drop in China's exports and thus production and employment. Should be remembered that the EU imports from China mainly processed products, and the manufacturing sector in China is 46% of GDP. Given the low level of domestic demand and high household savings, reduction of export to EU countries could lead to economic collapse of China. Such distortions of trade could also have a negative impact on the EU economy. Both the EU and China derive great benefit with mutual trade.

#### **References:**

- 1. Chen X., 2010. Policy evolution of the China EU Trade and Economic Relationship, Chinese Academy of Social Sciences
- 2. Clarke, J., 2010. Trade Policy Review of China, European Union opening statement, Geneva
- 3. EU bilateral trade and trade with the world, [online] Available at: http://trade.ec.europa.eu/doclib/ docs/2006/september/tradoc\_113366.pdf [Accessed on 18/04/2013]
- 4. Foreign direct investment statistic, [online] Available at: http://epp.eurostat.ec.europa.eu/statistics\_explained/index.php/Foreign\_direct\_investment\_statistics [Accessed on: 19/04/2013]
- 5. Gang, Y., 2011. International Monetary and Financial Committee, Deputy Governor of the People's Bank of China, Washington
- 6. Pietrasik, M., 2005. *Współczesne Chiny kultura, polityka, gospodarka*, Wydawnictwo Uniwersytetu Łódzkiego,
- 7. Shi, W., 2008. Intellectual Property in the Global Trading System: EU-China Perspective, Springer Berlin Heidelberg
- 8. Sjoholm, F., 2008. *The Effect of FDI on Employment and Technology In China*, Research Institute of Industrial Economics and Örebro University
- 9. Sunesen, E.R., Jespersen, S.T., Thelle, M.H., 2010. *Impact of EU outward FDI Final Report*, Copenhagen Economics
- 10. Starzyk, K., 2009. Zagraniczna polityka ekonomiczna w procesie rynkowej transformacji gospodarki: przypadek Chin, Wydawnictwo Placet, Warszawa
- 11. Wouters, J., Wilde, T., Defraigne, P., Defraigne, J. C., 2011. *China, The European Union and Global Governance*, Leuven Centre for Global Governance Studies

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## **INNOVATIVE ECONOMY OF RUSSIA: REALITIES AND PROSPECTS**

#### Abstract

This article is devoted to the analysis and comprehension of a new step of evolution of economy under the title- "Innovative economy". In this work the task of consideration of positive and negative sides of this phenomenon, also opportunities and prospects of development of this type economy in the Russian realities is set, and also steps, by are identified means of which it's possible to achieve success in this sphere. Besides, experience of the foreign countries should be noted and the main lines and characteristics of development of this type of economy are marked.

#### Key words: Innovations, development, problems and prospects.

Each historical period is characterized by its changes, its the waves of exchange, they bring something new to the face of society and to create the future. Sometimes these innovative waves are gentle, giving rise to the evolutionary development of society through the transfer of existing trends into the future. But there are times when it's a boom, when there comes a storm, uncertainty increases, innovative waves accept character of a tsunami wave, sweeping all outdate on the way.

At this particular time we live, it is tumultuous time which of change has fallen to the share of the 21th century. The world is becoming unrecognizable and calls new understanding from scientists, long-term state strategy and political figures, and also new way of thinking by the public.

As for the state strategy to its further development during an era of sweeping changes, its defining becomes not only difficult for authorities, but also it is very important and fatal. The country faces a choice between an inertial and innovative way of development.

Further Inertial strategy is based on extra use of natural resources, on long ago invented technologies, economic growth by such strategy is reached mainly in most cases extensively. Such strategy is widely used, and our country can be an example of it.

I think that in present time realization of innovative strategy, concentration of society's efforts, the state, business on development of essentially new, competitive technologies and products, transition to innovative economy is simply necessary.

It is important to increase the role and responsibility of the state for a choice and strategy realization, for development and distribution of new generations of equipment and technologies, for efficiency of integration processes, for assistance to increase of innovative activity of businessmen, scientists, designers, engineers, young generation which should make crucial decisions and to carry out them in the forthcoming decades is necessary. Only on this basis it is possible to provide high rates of economic growth and social development.

#### **ECONOMY OF INNOVATION**

Before describing innovative economy in our country, it is necessary to give its definition.

Innovative economy (economy of knowledge) is the type of the economy based on a stream of innovations, on continuous technological improvement, on production and export of hi-tech production with very high additional value and technologies.

Thus generally the profit is supposed be created by intelligence of innovators and scientists, the information sphere, instead of production of goods (industrial economy) and not concentration of finance (capital).

Some researches (Toffler, Fukuyama, Bell...) consider that for the majority of the developed countries in the modern world innovative economy provides a world economic superiority of the country which creates it.

Nowadays, the number of the countries with innovative economy and the developed venture business includes the USA, Germany, Japan, Australia, Canada, Sweden, Finland, Singapore, Israel and other countries.

Also innovative economy has the paradoxical laws, different from those in a traditional market framework. It was established and illustrated by the Nobel prize winner on economy Brian Arthur, working at complexity Institute in Santa Fe (USA). In textbooks of economics it is claimed that the firms working in one area, disturb each other. They should be different either territorially, or by product range from each other.

The Silicon Valley is the world center of the computer industry which demonstrates a bright example of the exactly opposite opinion. There the interaction of the similar firms has not only negative character, as stated in textbooks on economy, but positive one as well.

The cooperative, synergetic effect connected with possibility of creation of the single information and technological environment, with an exchange of ideas, knowledge and qualified personnel considerably surpasses traditional economic factors.

It should be noted still such features of innovative economy as:

**High role of education and knowledge.** The main factor of production in innovative economy is knowledge, thus there is a radical change of the role of education and knowledge. Now it is much more important not to provide a certain set of knowledge and abilities, but to teach to study and think more is such a progress that is hard for an individual to keep up with it using only a certain set of knowledge and abilities. To remain and be competitive it is crucial self-improvement all the time.

**The organization and self-organization role has sharply increased in technological development.** If the century XX deserved the title of high-tech was the era of high technologies in the industry, agriculture, military science, the century XXI may become the century of high-hume is the high humanitarian technologies aimed at the development and effective use of opportunities of certain people and collectives.

*The role of small firms and individuals has increased in technological process.* The way from the idea to the result became much easier quicker and more effectively, than 10 years ago. Many key innovations began to be created in small firms consisting less than of ten people.

*Emergences of «closing technologies» are* the ways of production technologies making unnecessary or inefficient the whole branches of economy, types of production.

### **MODERN TRENDS OF DEVELOPMENT OF INNOVATIVE ECONOMY OF THE WORLD**

From all over said above it is possible to draw a conclusion that innovations affect more and more economies of single countries and the world as a whole. But how is extent of innovative development of the country defined? For this purpose there are different ratings, one of them is the *Global innovative index*. This index was developed by the Boston consulting group, National association of producers and production Institute. This index estimates the general condition of innovative infrastructure. Investments into basic researches, nature of interrelations between various sectors of economy, etc. are considered here.

The global innovative index considers also basic features of innovative system, such as: total number employed people in the sphere R&D, the general amount of allocations for research and development, their share financed by the private sector, level of expenses on the higher education, efficiency of measures for protection of the rights to intellectual property, openness of national economy in relation to world economy and level of the income per capita.

The last publication was made in 2012 by International business by school (INSEAD) and the World intellectual property organization (WITO). Russia took the 51st place in the list of 141 countries. The rating of the countries is presented in table 1 according to a global innovative index.

Rating	Country	Index
1	Switzerland	68,2
2	Sweden	64,8
3	Singapore	63,5
4	Finland	61,8
5	United Kingdom	61,2
6	Netherlands	60,5
7	Denmark	59,9
8	Hong Kong	58,7
9	Ireland	58,7
10	USA	57,7
11	Luxembourg	57,7
12	Canada	56,9
13	New Zealand	56,6
14	Norway	56,4
15	Germany	56,2
34	China	45,4
51	Russia	37,9

Table 1: Rating of the countries on the Global innovative index

According to this rating, it is possible to trace dynamics of innovative development of the certain states and to reveal the factors influencing them. To addition to this index there is a global index of innovative efficiency which shows, what countries apply innovative ideas in practical results better than others.

The first ten of this rating demonstrates the following:

- 1. China 6. Paraguay
- 2. India 7. Serbia
- 3. Moldova 8. Estonia
- 4. Malta 9. Netherlands
- 5. Switzerland 10. Sri Lanka

Thus, we can make the conclusion, new dynamics of innovations is appearing in the world, despite preservation of deep and steady inequality in this area among the different countries and regions. The most considerable gap in innovations exists among the countries having different stages of economic development.

In the average the countries with high level of the income per capita go ahead the countries with lower income on all innovative parameters. The deep inequality in the sphere of innovations among different geographical regions still, remains especially if we compare average indicators of the countries with high level of the income with indicators of the countries in other regions of the world, such as Africa and many regions of Asia and Latin America remains. The European countries continue to develop with a different speed. The countries of Northern and Western Europe go ahead, but they are caught up by countries of Eastern Europe and Baltic, countries of Southern Europe are backward.

### **PROBLEMS AND PROSPECTS OF FORMATION'S INNOVATIVE ECONOMY IN RUSSIA**

Nowadays the Russian Federation tries to follow a way of innovative economy. On the one hand various political decisions which have to affect modernization of our country positively are undertaken. But they can't cope with current situation in full extent. Though in comparison with the beginning of the 2000s the situation has improved Russia considerably still remains behind the developed economy of the world. For example, costs of research and development from 2004 to 2012 grew in 6.9 times, and a quantity of demands for inventions is in 1.4 times.

Dynamics shows that the direction of innovations' course has already been taken, but it is quite considerably lags from leaders. Dynamics of expenses on R&D for 2 years (the 2010th and 2011th years) is presented in table 2. It shows that 1.05 percent of GDP were spent for science in the 2011th year that accounted for 24.9 billion US dollars. In comparison in Germany expenses made 87.9 billion dollars, as for the leader - the USA-its expenses are made 427.2 billion dollars that exceeds in 2.4 expenses in China which holds the 2nd place of the rating.

Though Russia does not also take a leading position, but now we can observe such political decisions as establishing of organizations as RUSNANO in 2007 and the Innovative center Skolkovo, the decree about which creation was signed in 2010, and estimated date of completion of construction and commissioning is 2020.

RUSNANO under the leadership of Anatoly Chubais is created to develop and stimulate the growth of nanotechnologies in our country. The main field of activity of "RUSNANO" is to joint financing of private projects on creation of nanotechnological productions. Formats of participation in projects:

- Individual share;
- · Granting money in the form of comfortable loans;
- Providing guarantees on the credits;
- · Acquisition of bonds and convertible debts;
- · Implementation of leasing operations;
- Support through joint financing of funds.

Thanks to financial participation of RUSNANO in Russia there are created dozens modern productions on release of various production with use of the nanotechnologies, applied in electronics, industry of energy, mechanical engineering, medicine, biotechnologies and other industries' branches.

Besides this activity the company is engaged into development of various educational programs. To the middle of 2012 by request of the companies more than 80 programs of preparation and retraining of staff of the companies of a nanoindustry are developed: technological and administrative profile.<sup>1</sup>

In the middle of 2012 Anatoly Chubais declared that a number of the companies created with the participation of "RUSNANO", successfully export their products to the USA.

Following the results of the first five years of the activity (that is by September, 2012) "RUSNANO" has concluded 105 investment agreements with the total budget of 480 billion rubles, where 205 billion are invested by "RUSNANO". With the assistance of "RUSNANO" in Russia 24 new productions were open.<sup>2</sup>

Another ambitious project being developed in our country is creation of the innovative center Skolkovo (The Russian Silicon Valley).

This project is dated back to 28.09.2010 when Federal Law № 244 "About the innovative center Skolkovo" was signed.

The implementation of the project on creating and ensuring the functioning of the Innovative Center (Project) "Skolkovo" is carried out in order to promote and stimulate development, research and commercialization of their results (FL-244).

The project of creating the Innovative Center is realized by Skolkovo Foundation (the full name – Fund of development of the Center of development and commercialization for new technologies).

The territorial infrastructure and mechanisms of interaction of participants of the Project form is the Ecosystem Skolkovo.

			Gro	oss Expedit ions of U.S	ures on R&l . Dollars	D		
			2010		2011			
		GDP PPP Bil, US\$	<b>R&amp;D</b> as % GDP	<b>GERD</b> PPP Bil, US\$	<b>GDP</b> PPP Bil, US\$	<b>R&amp;D</b> as % GDP	GERD PPP Bil, US\$	
1	United States	14,660	2.83%	415.1	15,203	2.81%	427.2	
2	China	10,090	1.48%	149.3	11,283	1.55%	174.9	
3	Japan	4,310	3.44%	148.3	4,382	3.47%	152.1	
4	Germany	2,940	2.82%	82.9	3,085	2.85%	87.9	
5	South Korea	1,459	3.36%	49.0	1,549	3.40%	52.7	
6	France	2,145	2.21%	47.4	2,227	2.21%	49.2	
7	United Kingdom	2,173	1.81%	39.3	2,246	1.81%	40.7	
8	India	4,060	0.80%	32.5	4,472	0.85%	38.0	
9	Brazil	2,172	1.10%	23.9	2,294	1.20%	27.5	
10	Canada	1,330	1.95%	25.9	1,387	1.95%	27.0	
11	Russia	2,223	1.03%	22.9	2,367	1.05%	24.9	
12	Italy	1,774	1.27%	22.5	1,824	1.30%	23.7	
13	Taiwan	822	2.30%	18.9	883	2.35%	20.7	
14	Australia	882	2.21%	19.5	917	2.25%	20.6	
15	Spain	1,369	1.38%	18.9	1,409	1.40%	19.7	
16	Sweden	355	3.62%	12.9	379	3.62%	13.7	
17	Netherlands	677	1.84%	12.5	703	1.87%	13.1	
18	Switzerland	324	3.00%	9.7	338	3.00%	10.1	
19	Israel	219	4.27%	9.4	234	4.20%	9.8	
20	Austria	332	2.75%	9.1	350	2.75%	9.6	

#### Table 2: Cumulative costs of the countries of research and development

Source: Battelle, R&D Magazine, International Monetary Fund, World Bank, CIA World Factbook.

Mission of Skolkovo Foundation is Ecosystem creation, formation of favorable conditions for innovative process: scientists, designers, engineers and businessmen together with participants of educational projects will work at the creation of competitive knowledge-intensive development of world level in five priority directions: energy efficiency and energy saving, nuclear technologies, space technologies and telecommunications, biomedical technologies, strategic computer technologies and software.<sup>3</sup>

An expected result is the self-managing and self-developing Ecosystem which is favorable for development of business and research, promoting creation of the companies, successful in the global market.

From all aforesaid it is clear that the project consists of 6 basic elements which functions are presented on Picture 1.



Source: http://community.sk.ru/press/our\_results/p/yanuary\_2013\_en.aspx

Also, now Skolkovo cooperates with many world-leading enterprises in the sphere of innovations such as: Intel, Microsoft, Nokia, IBM, Boeing, Siemens and others. All this says that project managers are adjusted on successful result. And though the project has been in progress only since 2010, but there are already certain results. On Picture 2 key achievements are presented.

These projects are not unique in Russia, but they are the largest. They appeared thanks the policy which the authorities of our country started carrying out.

Sk Key av	chievments of Skolkov stem elements	10
Both and senters counter	the Party and	W Technopast + Intellectual Property Canton
Apparentify one signal or the excellence of 25 KGs centers Advantage Lanks postability 15 Brongs and the second latent for apparentify an excendition for a line of 110 obtain 14000.     (110) obtain 14	CLUB pine water control     Cutomers of gardingsets based     india water and gardingsets based     india water and the second of the sec	<ul> <li>Expension was preferred units approximately instantically of the Augusteen of the theory partner.</li> <li>If a partners was instantic in the theory partners of The Programs the approximate of the Programs the approximate of the Programs.</li> </ul>
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#### Picture 2: Key achievements of Skolkovo

Source: http://community.sk.ru/press/our\_results/p/yanuary\_2013\_en.aspx

In 2012 prime minister D. A.Medvedev at the meeting of the presidium of the Council at the president of the Russian Federation on modernization of economy and innovative development, expressed his hope that the government would be able to support expenses on R&D works (Research and development) at the level which is not below the present.

But besides research and development, the establishment of innovative economy greatly depends on the education level of the country. At the present stage of development, the country is undergoing different reforms in this sphere. The field of education is quite problematic, especially in the sphere of the higher education. Many experts allocate 7 main problems<sup>4</sup>:

- 1. Low level of teachers' salary.
- 2. **The status of a teacher in the society is lowered.** Work of a teacher and his social status is no longer respectable in the society. Moreover, there is an opinion that those to whom "there was no place" in commercial structures or in the sphere of public administration become teachers.
- 3. The developed order according to which certain schemes of receiving offset or examination in this or that subject (within a certain higher education institution) are created. It is possible to call this regularity "a corruption spiral": according to the generally accepted order such information is handed down from higher courses' students to newcomers. Thus, once established order is constantly supported.
- 4. *Emergence of a large number of "formal" students.* Recently because of various factors in the mass environment of students there was a considerable layer pseudo-students.
- 5. Low interest of the Russian society in high-quality education. In many sectors of society there is a fundamental misunderstanding of importance and effectiveness of education, profound and versatile knowledge.
- 6. *Increase of economic pressure upon higher education institutions.* The countries around the world reduce financial support of the higher school. Even the most prestigious universities are occupied with increase in economic efficiency of the activity.
- 7. **Decrease in qualification of professorial teaching staff of higher education institutions.** The lowered salary of teachers and the low social status in consciousness of society lead to the fact that in higher education institutions the quantity of unskilled shots increases.

All this leads to an inefficiency of higher educational establishments, and therefore the education level is falling in the country. Certainly, the government tries to stop this process by means of various reforms such as encouragement of teachers, graduate students and young scientists. Also the state support of leading Russian universities is carried out. All these are initial steps of reforming Russian education which should be followed by other more essential ones.

Besides a problem of education there are two more very important aspects which slow down our innovative development. It is a question of corruption and orientation of our economy mainly to production of resources (oil, gas).

The problem of corruption is quite sharp in Russia. This disease of the Russian economy affected many spheres of our economy preventing it from developing. The whole economy suffers from it. Certainly, nowadays, politicians take a set of various efforts in order to improve situation. These actions bring results, but they are not enough.

Corruption is a handicap for innovative development of the Russian economy, first of all, because white-collars are quite often interested in competition restriction in the markets in favor of those businessmen who are ready to pay for it. White collars receive an administrative rent through competition restrictions. Not that businessman who introduces innovations becomes competitive but the one who pays officials for protection. The administrative rent replaces an innovative rent.

Besides, corruption reduces overall effectiveness of a state administration and state costs, including scientific projects which are initiated by the state. Corruption scandals in Russia, including in the innovative sphere, has become a regular phenomenon. The situation has slightly improved, for example, an index of perception of corruption, which shows corruption level on the 100th ball scale (the 100-minimum level, 0-maximum), improved. In 2012 Russia gained 28 points, and took the 133rd place, in comparison to the previous year, when it took the 143rd place.

In the figure 4, the index of perception of corruption is presented.

A slight positive dynamics is observed in this figure. The index of perception of corruption represents the summary indicator counted on the basis of statistical data and information, received from the expert sources provided by the international organizations.



#### The figure 4 Index of Perception of Corruption in the world

Source: http://www.transparency.org/cpi2012/results

But it is just the beginning of the fight against corruption. In order to win it is necessary to develop a certain strategy. In 2012 Dmitry Medvedev signed the current plan of counteraction of corruption for 2012-2013. The fight against corruption in the country is only growing and we will see its results in the future.

The second problematic aspect is focusing of our economy on extraction of natural resources. Nowadays we can precisely tell that the Russian economy is generally focused on raw branch.

Existence of raw material resources gives considerable opportunities for country development. At the same time in long-term prospect indicators of growth of the countries which are rich with resources are quite often worse, than in poorer countries with comparable initial level of the income per capita.

Despite unceasing disputes on this subject, researches show that rates of economic growth in the countries which are rich with natural resources, as a rule, are below, than in the countries where the stock of such resources is limited. One of explanations of negative interrelation between the volume of stocks of natural resources and economic growth is so-called "the Dutch illness".

Emergence of this term is connected with opening natural gas fields in the late fifties and at the beginning of the 60th in that part of the North Sea which belongs to Holland. The growth of gas exportation caused essential rise in price of national currency that negatively affected other export-oriented branches.

At the present time we can observe only separate symptoms of the Dutch illness, but not the whole illness. To avoid these consequences it is necessary to use such "medicine", as development of non-oil branches. Thus it is important to use correctly the oil income which comes from extraction and oil export. It should be directed to development of new technologies, improvement of financing an in-frastructure and replenishment of fund of future generations. Moreover a part of the funds should be invested in education and health care. The possibility to get the ensured profits from production of raw materials reduces desire of business to invest in risky innovation projects. Thus, the natural rent has to be aimed at the innovative development; however, at the present time the natural rent substitutes an innovative rent.

### **CONCLUSION**

In the world it is the high time to change the milestones and the transition to innovative rails needs to be carried out now. Russia tends to go along the way of innovative development. The country obtains a number of opportunities and possibilities to turn from industrial economy to innovative one. The main role in creation of institutes in the innovative sphere belongs to the state, instead of private business: there are funds of the help to young scientists, expenses on research and development are growing, and the new organizations are created such as RUSNANO, ROSATOM, the innovative center Skolkovo, etc.

However, there exist considerable handicaps on the way of developing innovative system in Russia. Opportunity to get profits on the basis of an administrative and natural rent significantly constrains the realization of innovative capacity of our country.

### **Bibliography**

- 1. A. Chubais/ Innovation Economy in Russia: What to Do?
- 2. 2012 Global R&D Funding Forecast/December 2011, Batelle and R&D magazine
- 3. The Global Innovation index 2012 /INSEAD, WIPO/ 2012
- 4. Technology and Innovation Report 2011/UNCTAD/2011
- 5. http://www.transparency.org/
- 6. www.rusnano.com
- 7. www.sk.ru
- 8. Federal Law №244 "About the innovative center Skolkovo"/ 28.09.2010

### **Citation list**

- 1 http://www.rusnano.com/infrastructure/education
- 2 http://www.rusnano.com/about
- 3 http://www.sk.ru/Model.aspx
- 4 http://www.klgtu.ru/ru/magazine/2009\_16/22.doc

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# COGNITIVE SEGMENTATION AND STRUCTURING THE MARKET OF HOTEL SERVICES BASED ON THE INTERNET TECHNOLOGIES (FOR EXAMPLE OF ROSTOV-ON-DON)

#### Abstract

The work reveals the features of cognitive segmentation of suppliers and customers at the market of the hotel services unlike traditional criterions of segmenting industry participants the advantages and disadvantages of Internet technologies are identified in the hotel business. Empirically, the criterions of hotel service suppliers in Rostov-on-Don are analysed and justified as well as some suggestions are made to improve the system of online booking and to design the consolidated network with access to the Global Distribution Services/Systems (GDS). The cognitive hotel services customer's segmentation is conducted and reflected in the paper.

#### Key words: cognitive segmentation, on-line booking, hotel service

In the twenty-first century with overall computerization epy service market, especially the market of tourist services is undergoing strong modifications. In connection with the widespread use of pads, phones with access to the Internet, consumers prefer direct rather than indirect booking. The relevance of the work is that on-line booking is not treated as an impersonal system, but from the point of view of consumers ' perception.

So, what is the online - booking?

Online – booking is a booking over the Internet in an interactive manner. This term is applied to booking and purchasing tickets (air, railway, bus and so on), rooms in the hotels, places in the restaurants, cinemas, as well as car rental services.

Fundamental principles of online - booking are:

- search for available offers. A user on the site of the definite reservation system selects a route, dates, cost, a number of people, destination and other options, depending on the object of online booking. For example: Reservation of a hotel is characterized by the following criteria: country, city, hotel, the date of arrival and departure, the number of persons, the number of children and their age.
- filling in the form with your billing and contact information. As a rule, such things as: a name, a phone number, E mail, card number (if the customer is going to pay cashless).
- a document confirming the booking. The client receives this document, which guarantees him a service. For example, it may be a voucher for the check in or an electronic ticket and so on.

All this confirms the necessity for cognitive segmentation of the market of hotel services, as this is the most important factor limiting the development of industry and the market, imposing new requirements on the part of demand and supply of hotel services market. Internet – technologies «compresses» a lifecycle of service saving time from finding a supplier before the payment of hotel services through the Internet forming by this new industry chains (carrier – transfer – hotel) and a new level of competition on this type of market.

Internet technologies are changing the segmentation on the one hand – the suppliers of hospitality services (now free Wi-Fi access is available in each hotel, the site of the hotel, feedback on such specialized resources as «komandirovka.ru», online rating of hotels on national, regional and local levels – best hotels in Rostov-on-Don, Warsaw, London), etc.,- and, on the other hand, consumers of services (Internet connection coverage in a country, region, district, number of orders through the Internet-booking, sex and age of users of Internet booking, blogs, rural or urban residents of megapolises etc.) thereby – structuring newly the market of hotel services and defining new competitive advantages on this market.

Cognitive segmentation is connected with motivational segmentation of suppliers but, firstly, it's important for consumers of hotel services market. Apart of the well-known consumer segmentation based on demographic (income, gender, age) and geographical (region transport network) criteria, cognitive consumer segmentation refers to the psychological factors of consumers choice of services and technological factors (IT skills of a consumer, Wi - Fi, Internet technologies, the acquisition of mobile Internet-booking (phones, computers, tablets, etc.).

Not only does online booking technology expand consumer access to information about suppliers of hotel services, but it imposes certain cognitive limitations on consumers to explore Internet search system, to order and to pay hotel services as well.

Thus, cognitive ability of consumers in the field of hospitality services can be identified as non-codified, unalienable knowledge of consumers, reflecting their ability to analyze, evaluate and systematize information about the functioning of the hotel services market (how a consumer can get information about hospitality services, what her/his duration of the stay is, what features and parameters he uses by selecting views of friends, relatives, visitors of specialized resources). Cognitive preferences have a direct effect on motivation mechanism for consumers and determines the amount of costs of searching for information about a provider of hospitality services, assessing the validity of quality hotel services provider, provider locations, etc.

As there are no works devoted to the analysis of specific marketing issues about cognitive consumer preferences of hotel services, we can suppose that in "the hidden" invisible form the cognitive ability is directly reflected in the consumer choice of Internet technologies during search, order, registration, payment for hotel services and feedback i.e. throughout the whole life cycle of the hotel facilities.

Talking about cognitive segmentation we can define both advantages and disadvantages of using Internet technologies (see picture 1).



Picture 1. Advantages and disadvantages of online - booking

#### 3rd INTERNATIONAL SUMMER SCHOOL OF ASECU YOUTH / JULY 15-20, 2013. KOTOR – MONTENEGRO

The advantages of online booking of hotel services are:

- mobility and independence of the information about the hotel services (convenience and the opportunity, without any help to book a hotel in any country, region, locality), a great choice, unlike tour operators are focused on its own network of contractors (suppliers of hospitality services).
- personification of consumer services (location of a provider, a room selection, getting familiar with a minimal set of services – a hairdryer, slippers, TV, Wi- Fi, mini bar, a number of rooms and a bathroom-online virtual tour in rooms and hotels).
- awareness of the consumer not only with basic facilities (accommodation), but additional types of hotel services (transfers from arrival point, restaurant, gym, beauty salon, laundry service, luggage storage facilities, etc.).
- possibility of using Internet-based technologies throughout the lifecycle of the hotel services the choice of a carrier, search for and choice of hotels, order, payment, feedback or, in other words, structuring the market of hotel service and getting discounts from carriers, taxi, etc.
- "compression" of the lifecycle of hotel services and the chain of tour-operators.
- no expenses for interrelation between a tour operator and a supplier of hotel services in force majeure or the avoidance of incoordination of their actions (overdue payment for a hotel, changes of accommodation conditions, and hence the cost of the hotel facilities).
- · possibility of changing an order without addressing to the tour-operator.
- no need to prove the consumer rights twice before both a tour operator and a hotel services provider.

But despite the advantages of such online booking there is a number of disadvantages as well. The first and one of the main advantages of online booking – visualization- becomes, at the same time a drawback. The discrepancy of information on the hotel site and in reality(especially for small hotels, low stars (2-3 stars) leads to distrust and disappointment of a consumer. However, large hotels offer more reliable information. Thus, a consumer is forced to clarify everything from room square till furniture, refrigerator, mini bar. He/she should also read the reviews about a hotel on at least three different sites before booking that requires cognitive abilities of the consumer).

Another drawback can be payment by bank cards of Kiwi-wallets as there is a number of crimes connected with non-cash payment.

There is different information content of hotel sites – asymmetry of the information between providers of services, even if the provider is suitable by location, price, star rating, etc. (no online booking – 24 hours, online consultancy, information is provided on a core set of hotel services, sometimes in addition to detail information about additional services).

Moreover, the ability and desire of a consumer to use Internet communications services are also handicaps for successful performance of a hotel that is psychological setting to distrust the Internet technology, fear of inconsistency, the skill and experience to order electronic tickets, etc. The physical paper tickets are more accustomed and reliable than an electronic ticket received via the Net that is also an evidence of necessity for cognitive segmentation of the market.

But probably the biggest and the most important problem is risk of using Internet technologies in general and in the hospitality industry in particular (Internet locks of hotel rooms, the responsibility for the choice of the services provider).

Speaking of cognitive market segmentation it is also essential to take into account the fact that the most of consumers using online bookings are urban citizen. This is primarily due to the high availability and widespread use of the Internet. For example, in Rostov – on – Don, the number of Internet users in the last 3 years has increased by 17 % (Table 1), who are more advanced users of the Internet and

prefer a direct communication with the service provider. This causes reducing the costs and having more reliable information as a consumer by choosing hotels not only observes the site of a hotel, but also feedback sites, reviews of other users.

Veere	Tatal	Sex		Age					
rears Iotai	TOLAI	Male	Female	18-25	26-34	35-44	45-59	60-and over	
2009	29,7%	33,2%	27,1%	70,2%	47,8%	35,6%	19,6%	4,4%	
2010.	36,8%	44,2%	31,6%	79,0%	61,5%	49,7%	20,7%	3,8%	
2011	44,8%	50,4%	40,7%	85,3%	77,1%	58,9%	29,7%	6,1%	
2012	46,7%	53,2%	41,2%	88,1%	80,4%	60,3%	24,3%	5,8%	

Table 1.	The usage	of the	Internet	in	Rostov-on	Don
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On the other hand, rural residents still prefer face-to-face communication with tour-operators; use only the first phase of the Internet life cycle the hotel services (search, selection). They are more likely to trust their acquaintances, experience, etc. Therefore this cognitive perception encourages the development of tourism in rural area although an increasing number of Internet users in rural areas is also observed in recent years.

In order to attract more consumers from abroad most of hotels and guesthouses create their own websites, and Rostov-on-Don is not exclusion. The number of hotels in the city accounts for about 3000 (81 hotel operates under the international brand, 2765 are non-Web), and only 522 ones have their own sites. Most of the hotels are presented on the website www.booking.ru.

Analysis of the activity and the popularity of these sites has shown that consumers are actively interested in the possibility of online booking, but clear disadvantages and complexity of perceptual information, displayed on the site, prevent from wider use. Most of the websites offer just to fill in the reservation form and wait for a response, which in most cases does not meet the customer's needs. Only 3 sites offer online services consultant who can answer any questions.

In category 2 \* -3 \* hotels the activity of sites is almost zero, because they do not have, for the most part, any information, except the phone number and addresses of hotels.

Thus, of all the above it can be concluded that in order to attract more tourists to the city and spread the active use of the Internet it is important to create a single site of all hotels in Rostov-on-Don with possibility of comparing them in terms of cost and in terms of the services provided. Online booking gains popularity though it has some disadvantages , depending on the target group, to which it is directed. One of such disadvantage, visualization can be, at the same time, an advantage. It is also essential to mention that cognitive market segmentation should be an integral part of the marketing strategy of any firm providing service. All major hotels in the world now have their own personal sites, and many of them even offer the ability to explore virtually rooms and the hotel. Nowadays Russian and Rostov hotels among others, are also considering the Internet as a key part of attracting and communicating with customers.

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## **BUSINESS MARKETING AND SOCIAL MEDIA**

#### Abstract

This paper has been written in order to give to the reader an impression for the usefulness of social media. It is widely known that there is an interesting connection between company and social media and for this reason it is highly recommended that each company should take advantage of the social media, because they can improve the image of a company. Nowadays, there are plenty of social media such as **Face book, Twitter, Flickr**, which are extremely famous and attract lots of people, who are involved with them in daily basis.

Also, this paper has as a key objective, to determine company's view on the functioning of marketing through social networks and how this influences their sales and to explore how social networks contribute into the promotion of products and the reputation as well.

It analyses issues related to social networks, marketing, advertisement and advertizing through social networks.

### **1. INTRODUCTION**

According to research which have been realized, it is proved that an increasing percentage of large companies accept and adopt the social media in marketing strategy that follow.

Most of them follow individual some Social media networks and briefly show the following interesting statistics:

- ✓ 65% of them are active on **Twitter**,
- ✓ 54% maintain a company profile on Facebook,
- ✓ 50% have created their own YouTube channel and
- ✓ 33% have corporate blogs.

What emerges from the above is that most companies have realized the usefulness of social media and their use in various ways. Of course it's not important that they simply use these services but at what rate and how they put into use their power and influence throughout this period we are going through.

Indeed, it has been observed that a partnership Fan page on **Facebook** if is used properly, can be far more effective than a television advertising campaign, which can cost tens of thousands of Euros. The same also goes for **YouTube** and **Twitter**.[1]

Our paper is organized in the following way. In section 2 we examine the connection between a business and social media. The contribution of social media for a company is analyzed in Section 3 and having finished with this we examine how beneficial the social media are for the company progress (Section 4). In the middle of this paper (Section 5) the reader can find out both how the social media affect daily the consumers and the companies and in which way marketing effects the strategic of marketing

(Section 6). In addition to this, in Section 7 we emphasize on the role of the Social Media Marketing and in Section 8 we enumerate the most essential reasons for a company to create an Internet Profile in Social media. Finally in the last section (Section 9) we mention five successful examples with companies which have already adopted methods of social media marketing.

### 2. THE CONNECTION BETWEEN BUSINESS AND SOCIAL MEDIA

Firstly, it is advisable to make a brief reference to the concept of "Social Networking". Social Networking is the concentration or participation of individuals into specific groups. Social networks are essentially communities that are categorized into groups according to their area, their interests, their professional activities, etc.

Thereby the so-called target group are created, which enables the adjustment of an advertising message and its presentation to targeted audience. [2]

Furthermore, through social networking sites, which are virtual communities, Internet users have the ability to create their virtual profile and simultaneously develop a network of contacts through which they can communicate through the website. In today's era the most common social networking platforms globally is **MySpace** and well-known **Facebook**.

The increasing trends for internet usage drive people's interest in marketing and brought new data on business marketing. Especially the use of social networks has changed the balance and created new needs and methods in the projection and the presence of a business on the Internet. Social networks established the marketing that allows consumers to actively participate and not be a mere passive recipient of advertisements. The interaction between advertiser and consumer, and the desired and valuable feedback were established through the use of social networks. Constantly new social networking platforms are developed, which provide applications and innovative promotion services and communication for businesses.

### 3. HOW SOCIAL MEDIA ARE TO CONTRIBUTE TO A COMPANY MARKETING

The rapid increase in technological advances and the widespread use in all aspects of our lives naturally affected the economy. Now, whole states are based on transactions conducted via the Internet such as Great Britain where e-commerce involves an 144.8 billion revenue annually, or 8.3% of GDP and it is the world leader in e-business.

The broad participation of people in social networks like **Facebook**, or **Twitter** and in blogs is estimated at 2 billion worldwide, with the access to the Internet to become even easier due to the use of smart mobile (smart phones), notebooks and tablets.

In a world where information is readily available to the general public, marketing professionals are not able to convince or to 'cheat' the consumer that only their product is appropriate to meet their needs. [3]

The work of marketing people has ceased to be the construction of qualitative and quantitative models that can predict what the needs of consumers are and what demand that product will have. Current target marketing men must be able to join in the various social networks and find ways to communicate in this digital environment. In short, we would say that modern marketers have ceased to be a broadcaster-transponder of information and turned into an aggregator-manifold of information.

The purpose of the aggregator is to create a content which allows the collaboration among the users of the Internet and allow them to build communities with voluntary and active participation around this product. It is not required that executives forget what they already know about marketing but they should also broaden their thinking to the new data created in social change and to review practices used so far.

The aim of the social network marketing man is to attract customers and this can be achieved in the following two ways:

- 1. either by creating an attractive environment on business page in order to attract internet users, gain their interest and revisit it in the future
- 2. or to go out and engage themselves in public solicitation

The most effective way for a business to collect information about the product is when a discussion starts on the Internet about this product. During the on-line public discussion there will be positive feedback and negative reviews. The policy to be followed by each company should not be resentful to the negative comments but they should use them as feedback in order to improve their product. Furthermore, it is sure that there will be some "faithful" customers who will try to protect the product and its reputation and reverse negative criticism with arguments.

The longer the discussion around the product, the greater is the value of name.

Finally, it is important to remember that all professional marketing analysts emphasize on honesty and transparency that must exist in a relationship between a business and its customers. In a society where globalization prevails and where there are thousands of different substitute products, the purpose of any business is to build its reputation based on two principles, winning customers and trust. Communication channels and sources of information have been tremendously increased and only a honest relationship between the society and the company can be profitable for both. Social networks have become for many people the main center of activity for every aspect of their daily lives. Maybe, companies should focus more on it now. [4]

### 4. THE BENEFITS ONE COMPANY EXPECTS THROUGH SOCIAL MEDIA

The interactive capabilities of the Internet have fundamentally changed the relationship between customer and the company. Social networks are very popular with consumers, offering many advantages.

Services like **Face book** or **Twitter** etc. steadily increase the number of visitors. In this new age of virtual communication, social networking plays an important role in business marketing.

A marketing program in terms of social networks today belongs in any good business strategy. So we need to find new subjects in order to exploit entirely new customer segments. Anyone who operates in the market with good yields and unique features should ensure good comments and fanatic customers who are active supporters of the business. So it is important for businesses to become familiar with these new data as soon as possible, to actively take part in online discussions and reshape their content to a large extent. [5]

Interesting and innovative topics spread on the internet very quickly. Businesses must face the negative comments on the Internet as opportunities for self-criticism and improvement and must view these comments as inexpensive advice to the business. Therefore, it is important for a business to adopt online assessments, which offer the following benefits to the enterprise:

- First, consumers are becoming more favorable to the company when consulted.
- Second, the firm receives comments in real time and thus can cover the shortages.
- Thirdly, international empirical research indicates that companies that follow this process are in-

creasing their sales.

• And fourthly, new ideas are offered by customers at no cost.

Whoever now buys consumes or invests, relies more on the advice of his entourage and information harvested from relevant websites.

One thing is for sure today. The social importance of diffusion is increasingly growing vigorously. Businesses nowadays, due to the economic recession that has plagued our country, must show that they belong to the really good and "healthy" companies. This should not be supported by the company but by its customers. That is why companies must have social diffusion as the primary purpose of their business plans. Fanatic customers are the best sellers, because they have the greater power of persuasion and the lowest cost variance. [6]

### 5. THE SOCIAL MEDIA AND THE IMPACT ON CONSUMERS AND COMPANIES.

Social networks are an on-line discussion, which nourishes the relationship, the participation and the networking among individuals compared to traditional media, which communicate only content without the opportunity for discussion.

This definition refers to the heart of what it means to live in a structured social media environment. Therefore, the target for the executives of marketing is: *"people discussing online for products and services"*.

Social networks connect groups of people not only socially but also geographically. Thanks to them it is easy to share ideas, likes and dislikes with the world at large or with a familiar group of people. You can search for and find friends or develop business contacts and become a member of a community. Consequently, social networks give people something that traditional media (e.g. TV, radio) could never give: *the opportunity to create relationships and networking with others*.

For advertising agencies, the potential of social networks results from the dedication and trust that is implanted in these online discussions. Today, social networks have become very important for communicating with consumers. Social networks cannot be ignored, because they give people the opportunity to express themselves, helping designers with who exactly are the people they want to approach, what incites them, what to say and how.

Large and small businesses today deal consistently with marketing in social networks. They deal with the question of how to use the online facility to connect people with products in more familiar and humanly ways, since the discussions on social networks have their roots in social and not commercial life. Participants share consumer experiences with an open and honest manner. Therefore, executives of marketing face a new world of transparency. Consumers have a new tool that gives them the power to increase or decrease the reputation of the brand of the product of a product.

Social networks can play an important role in building the brand of the product. These have proven to be an important marketing tool for the future, since the product brand is the sum total of emotions and experiences related to the product of the company. The online discussions are honest and reveal much about the relationship between consumer and product brand, which they like or dislike.

As marketing executives opened the door for the use of social networks, should be aware that they are exposed now in a different way from other media. The moral and social contribution or the lack thereof cannot be hidden in the world of social networks. Consumers discuss both successes and failures and reflect both with passion and seriousness.

The more social networks are inclined towards culture, the more the behavior of marketing should reflect the sensitivity and confidence, which are necessary to human conversation. When product brands and businesses communicate socially, they should act as members of society, based on the golden rule: identify and cover first and foremost the needs of consumers. The mistake business usually make not to be honest or ignore the needs of the consumer will end up having a negative impact on more than one consumer.

Consumers have a voice in social networks and product brands must act so that this voice is be used to their advantage. When the product brands communicate with honest experiences, then consumers take this experience, believe in it and give value to it.

They do not continue to participate in the discussion, unless the social strain of marketing works honestly according to their needs and expectations. [7]

#### 6. THE EFFECTS OF MARKETING THROUGH SOCIAL NETWORKS AND THE IMPLEMENTA-TION OF STRATEGIC MARKETING

Some of the effects of marketing through social networks are:

- The building and shaping the brand image. In the era of branding, social media contribute to shaping the image of a new product launched in the market and to the emergence of all the values and benefits that surround it.
- The increase in knowledge and awareness of the brand (brand awareness): Repeated advertising as part of an integrated marketing campaign increases the visibility of the brand and establishes it as recognizable to the general public.
- The management of corporate reputation. It not only the building and shaping of the image of the brand that interests the marketing of a business when it uses the social media strategically. The social media is a fundamental tool of public relations. They display the values, vision and social contribution of the business.
- The Development of relationships and the involvement of the consumer. Social media can also
  provide important information on the desires and needs of consumers and contribute to the recognition and activation of consumer influence through dialogue and closer ties.
- Customer service. Some companies use the rich interactive features that social media provide for customer service. [8]

Compared to traditional media such as television and radio, for marketing through social networks, which is popular with the public, it is more difficult to measure and analyze percentages. Of course you can make some estimates based on indicators such as «Likes» on the Face book, so as to give a simple indication of the impact of a corporate site. On the other hand, there is the advantage that good recommendations for a brand "word of mouth" are expressed in the written word. This multiplier effect can be measured to a large extent by appropriate monitoring applications (monitoring), showing feedback, the users with the greatest influence, the number of recommendations and their readings etc. On Face **book**, for example, the stats of a page or an advertisement give comprehensive data on viral. Generally, the measurement of ROI in social networks is subjected to ongoing research and development. Until recently, the implementation of the marketing strategy of the product included electronic mediums such as company website, advertising with banners and text ads on other sites. The introduction of social media does not remove any of these tools. But it adds an additional tool, adapted to serve the marketing objectives, accordingly to the public of the business and its product or service. For example, an SME service is more likely to choose as LinkedIn or other professional social network, while an undertaking in consumer goods expressway is likely to choose the Face book to implement its marketing plan. In conclusion, social media offer many possibilities for usage by marketing professionals and are now an integral tool of an integrated communication strategy. [9]

### 7. THE ROLE OF SOCIAL MEDIA MARKETING

The Social Media Marketing is the use and exploitation of all Social Media Networks, blogs and general online communities to foster a web presence, to showcase and promote a business, a product or a service.

The social media is a platform that is easily accessible to anyone with an internet connection. Increased communication promotes awareness of the company's product and improves customer service in every business. Moreover, social media serve as a relatively inexpensive means for businesses to implement the marketing campaigns that they desire.

For these purposes, they create accounts - profiles, related links and posts on sites like **Face book** and **Twitter**. The target audience is visiting the advertised website by following the links positioned and thus buy the product or are informed about the services they want. With this move businesses optimize and marketing plan that they have designed after growing the conversion rate of visitors into potential customers.

In the marketing, which companies follow, they apply two basic ways to promote and place their product in the market.

- The first relates to the use of RSS (Really Simple Syndication) feeds through which they share news, announcements, videos and images available for viewing, and this is a method of exchange of digital information content through the Internet, grounded on standard, well-established and widely supported markup language XML.
- The second relates to the participation in public debates and relevant posts on blogs, forums and social networks.

The social media optimization moves within the search engine marketing and combined with SEO (Search Engine Optimization) offers a complete package of web promotion while maintaining the lowest possible cost. Optimization of participation in social media is associated with Search Engine Advertising, since the aim is to draw visits from various sites. So it indirectly improves the rankings of companies in search engine results, and maximizes the percentage of the possible successful conversion of visitors into effect.

A well designed site can accept and successfully maintain the number of visits from the use of social networks. What is needed is a properly structured content that informs, pleases and fulfills the expectations of the user. [10]

#### 8. THE MOST ESSENTIAL REASONS FOR ONE COMPANY SO AS TO CREATE AN INTERNET PROFILE IN SOCIAL NETWORK

A key question is whether a company should have a page on the popular social network. The answer is **yes** and below one can read the 5 key reasons:

### 8.1. Awareness

- There are more than 2.5 million Greek **Facebook** users and more than one billion worldwide who are potential fans.
- 60% of them come daily on **Facebook** and this number is steadily rising.
- The average user stays within the page for approximately 55 minutes.
- The momentum of this medium is obvious. So the recognition and visibility that a business can have in this medium is immense. It is also undisputed that when absent from social networks, you lose the ability to communicate with its existing and new customers.

#### 8.2. Bidirectional Communication

Social networks offer a two-way communication between all of those who choose this medium to find a specific business, but the most important is that they are choosing it and the company is there to hear them. Furthermore, they eliminate the monotony of the phone and email and apply a lighter and more relaxed communication on a personal level through the relative anonymity they have.

#### 8.3. For important demographical reasons

Social networks give the opportunity to the company to have a more "personal" look at its customers - partners in such a way that only through website can you succeed so aptly. Moreover, the statistics page of the company contains very important demographics such as gender, age, level of education, place of residence and more. Finally, you can track all interactions (likes, shares, comments) on a daily basis and thus consider in a more direct and easy way, what attracts more attention than anything else.

### 8.4. Targeting according to the demographical results

Creating an advertising campaign on social networks, a company can turn to more specialized public, based on customer demographics that the company thinks will have a better response to the product or service it represents.

#### 8.5. Significant impact on SEO

The main reason why the company should have a page on social networks is SEO (Search Engine Optimization). Google and generally all search engines "read" all internal - autonomous pages of **Face book** (personal and professional) and display their results. This means that a firm can take advantage of the popularity of social networks as a vehicle to achieve higher positions in search engines.

### 9. SUCCESSFUL AND INTERNATIONAL STANDARD OF SOCIAL MEDIA MARKETING

There is the belief that social media is only for owners of small businesses, who usually try to execute a desperate experiment. This is a big mistake. Below are just a few examples of big companies that have been involved successfully in social media:

#### Coca-Cola

#### Target: customer engagement

The Coca-Cola company is one of the leaders in social media marketing and truly one of the first examples to follow for the effective use of social media. Its strategy was developed with the approach of fans through social, photo sharing and video sharing networks as the main purpose.



#### KNOWLEDGE ECONOMY - IMPACT ON SUSTAINABLE DEVELOPMENT OF THE COUNTRIES FROM EAST AND SOUTH EAST EUROPE

#### Dominos Pizza

#### Target: customer feedback

The position of Dominos in the market lately was weakened and one of the main reasons cited was that it had the same pizza recipe since it was launched 50 years ago. In an effort to regain lost market share and hoping to bring change to its reputation for taste, they decided to completely change the recipe of their pizza. Instead of turning to the management team for help, they raised the issue to consumers and asked their opinion on the pizza.

#### Dell

#### Target: crowd sourcing

Dell has decided to create a community called The Storm Ideas, where people can come together to share their ideas for improving products Dell, knowing that the best judges are the same customers. With the improvement of various models and interaction with customer ideas creates products with increased demand and the consumer really wants to buy.



SHARE

Most Recent Ideas

NAME AND DESCRIPTION OF

e idee what v

You know better than an

want from Starbucks. So tell us. What's your Starbucks Idea? Revolutionary or simple - we

ant to hear it. Share your ideas, tell us wha sa think of other people's ideas and juin the

ussion. We're here, and we're ready to ke ideas happen. Let's get started.

Hithere, hip-to to make a comment

Ideas so far

#### Starbucks

#### Target: crowd sourcing

**Starbucks**, wanting to use the public to improve products, shops and services, created the social network «*My Starbucks*». Users, who are part of this network, feel that they have an essential role in the decision making process of the company and that makes them feel part of it.

#### Ford Fiesta

#### Target: Generating Buzz

Ford is the contest «Fiesta Movement», where four thousand people took part in a video, gave the opportunity for the winners to drive a Fiesta for six months. The winners then shared their experience with the car. Although this does not appear initially as successful strategy, within six months, the results were exciting namely:

- 4.3 million views on YouTube
- More than 0.5 million views on Flickr
- More than 3 million Twitter impressions
- 50,000 interested customers, 97% of which had not had a car Ford before. [11]



#### References

- [1] Esther Gal-or, Tansev Geylani, and Tuba Pinar Yildirim, 2012.
- [2] Haythornthwaite C. (2005), "Social Networks and Internet Connectivity Effects" p. 125-147
- [3] Kotler P., Zaltman G. (1971), "Social marketing: an approach to planned social change" p. 3–13
- [4] Hopkins N. (1992), "Modeling Dyadic Interactions and Networks in Marketing" p.5-17
- [5] Hill R. P., Nora Moran (2011), "Social marketing meets interactive media" p. 142-161
- [6] PAPABASILEIOU Nikolaos, Professor in Marketing in University of Economics, Athens, (2012), newspaper: « KATHIMERINI », Article: «Μάρκετινγκ με κοινωνικά δίκτυα»
- [7] PAPABASILEIOU Nikolaos, Professor in Marketing in University of Economics, Athens, (2011), newspaper: « KATHIMERINI », Article: "Social Media in the field of Marketing"
- [8] Hopkins N. (1992), "Modeling Dyadic Interactions and Networks in Marketing" p.5-17
- [9] Taubenheim, A.M., Long, T., Smith, E.C., Jeffers, D., Wayman, J., Temple, S. (2008), "Using social media and internet marketing to reach women with the heart truth" p. 58–67
- [10] http://www.webprofile.gr/
- [11] http://www.greekpcteam.info/2011/02/social-media-marketing-5.html

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## AN ECOLOGICALLY SUSTAINABLE DEVELOPMENT SOCIETY

### Abstract

As the need for economic development is becoming more intense, the quality of environment tends to be worsen. It is important to find a way to economic growth while environmental quality will be preserved. In order to create a sustainable economy, we have to consider many things. The contribution of the environment to the quality of life and the economy is one of them. When we talk about development we should understand that preserving economy and environment for the future generations is fundamental. If environment is not to be protected, then the economy will not develop as natural resources will be extracted with higher rate than the reproduction rate. The solutions provided may help us understand the situation better.

The origins of environmental economics lie in the 1950s when, in the United States, the Resources for the Future (RFF) was established in Washington, DC. The early focus of RFF was on the issue of natural resource scarcity. But it was in the 1960s that environmental economics truly came of age. RFF early focus concentrated on the same issue with "Scarcity and Growth", by Barnett and Morse in 1963. The political backdrop was the first environmental revolution initiated by Rachel Carson's Silent Spring in 1962. Environmental economics became more popular after the first petroleum crisis in 1973. The members of OAPEC (Organization of Arabic Exportation of Petroleum Countries) announced that they would not export petroleum to the countries that helped Israel at the fight with Egypt and Syria. This led to a price increase from 3 dollars per barrel to 20 dollars per barrel. Of course the increased prices of petroleum result in an increase on the prices of other products too. Another important reason, which made environmental economics more important, was the collision of Exxon Valdez. In 24 May 1989 Exxon stumbled on a reef and 11 million gallons of petroleum spilled into the sea. In early 1990s David W. Pearce and Jeremy J. Warford with their book "World without end" tried to deal with issues such as sustainable development. The reason that environmental economics came of age is that there is a great need of bridging social and physical sciences.

It's generally accepted that development is an urgent need. Unfortunately, we tend to believe that the word "development" is only connected to economics. However, economic development can't be achieved without developing other fields. We have to realize that a move that will possible lead to growth on economy may have a poor result in another field. Every move that will possibly lead to growth has a cost; unless that cost is minimum then the move is not going to develop.

The words development and growth have different meanings. Development implies changes that lead to progress or improvement. A society which increases Gross Domestic Product (GDP) without transforming its social and economic structures is unlikely to be viewed as developing. Economic development is defined as achieving a set of social goals. However, these targets change so economic development is actually a process. In the economic development process it is possible to observe three sets of changes.

• An advance in the utility, in other words in the pleasure or the well-being, experienced by individuals. Absolutely important to improvements of well-being is real income per capita. Another reason contributing to utility is the quality of environment. However, greater weight should be

given to the most disadvantaged sectors than the society as a whole. A society cannot be viewed as developing unless the well-being of the most disadvantaged sectors is improved as much as the well-being of the whole society.

- Possibly changes in the realms of education and health. Advances in skills and knowledge of the individuals of society are involved at economic development.
- A society will be developing if it exhibits a growing sense of independence, in other words selfesteem and self-respect are very important.
- Economic growth is an advance over time in the level of real gross national product. However, it is unlikely to experience an advance in gross national product without developing other fields. A society that achieves economic growth at the expense of other social or political sectors cannot be viewed as developing.

Sustainability is the capacity to endure. For economists, sustainability means to manage to build an economy that will not cause any problems to the future generations. Actually, sustainability is the continuous growth or the maintenance of the same levels of Gross Domestic Product after the changes that will have been applied. However, it is not possible to develop if we have to destroy important structures of society or raw materials. It is very important to understand that economic goods have a cost. Although, finding raw materials has a great cost for society, we still focus on extracting them. Our aim should be to reduce these costs. In other words if we reduce our cost we can increase the production and GNP of our country.

Some people support that an economic development would improve the average well-being. I firmly believe that this is absolutely wrong. Usually when we experience an economic development, we may notice a lower quality environment. The reason is that profit becomes the top priority of society and fewer people care about maintenance of the environmental quality. How can we actually reduce the expenses of natural resources while maintaining well-being at the same level for our and the future generations too?

Environmental economics could be the solution to this problem. The target of this field is to grow economy while the quality of the environment will improve. Environmental degradation results in lost economic output, that is, lost gross national product. The sequence of arguments may be summarized as follows.

- Firstly, the environment is important to the economy and the well-being of all people.
- Secondly, the degradation of environment may lead to mismanagement of the economy.
- Finally, if we solve the environmental problems, we will have a chance to provide incentives for resource conservation and source reduction.

If we are to succeed in preserving resources, it is important to impose some economic incentives. This could be a way to control the prices to which the products will be sold. With this measure, we can let consumers know the exact cost of production of the products and be able to understand which businesses are actually trying to protect environment. Moreover, it is important to impose more taxes to make businesses care more about protection of the environment. The most important issue though is to manage to make countries to help each other, because it does not matter which country has the higher pollution level. They just need to understand that if the developed countries help the developing countries everyone will benefit from protecting the environment.

It is important to understand the contributions of environment to our life. Environment contributes directly to the quality of life, as it acts like amenity. Moreover, it can contribute to the GNP because there are more jobs available. Besides, we can get supplies like raw materials, oil, caol and gas. There are some indirect contributions too to the quality of life. Poor environment may contribute to stress and ill health.

Having considered all these issues, the idea of sustainable development was born. Sustainable development is actually the idea of economic development while environmental quality will improve. The purpose of sustainable development is to gain as many as possible resources without depriving them of the future. Thus, natural resources should be extracted in lower rate than the reproduction rate.

Moreover, we have to find a way to measure the success of sustainable development. Preserving the state capital is a way to measure sustainability. Although, we could preserve state capital, even if environmental quality degrades because this degradation may result to the creation of other forms of state capital. So, environmental degradation may not result in bad sustainability of economy. Nevertheless, there must be limits to environmental degradation. Degradation of environment should be tolerable only if it results in the creation of new funds. The problem is how to calculate the costs of the environmental degradation

An economy may be sustainable if the state capital is being maintained or increased. State capital could be every construction, human capital (knowledge and skills) and environmental capital (air quality, soil quality). Manufactured capital assets depreciate over time. If the value of these assets is X at the beginning of the year and the depreciation over the year is d, then the value of assets at the end of the year is X-d. To maintain the capital, gross output Y has to be higher or equal with the depreciations. Net natural product(NNP) is actually the gross natural product(GNP) minus the deprecation of manufactured capital (Dm). (NNP=GNP-Dm). A way to measure sustainable income is NNP=GNP-Dm-Dn, where Dn is the deprecation on environmental capital, which is measured by the monetary value of environmental degradation over a year. Expressed in another way, the level of sustainable consumption is equal to GNP minus the investment required to sustain the overall capital stock.

On the other hand, there are those who do not want development, because they support that sustaining environmental quality and developing economy are opposing targets. They believe that every improvement that will be succeeded with eco-friendly technologies will be counterbalanced from the increase of production and consumption of products. By this scope economy supports excessive production and consumption. In my opinion, this view is counterbalanced by the fact that investing on renewable sources of energy we will have a chance to increase our invested capital because we will not degrade environment quality so we will not invest money to maintain its quality and the only cost of renewable sources is the invested capital and the cost of the maintenance of machineries.

Moreover, it is supported that sustainable development, which is "managed" from some authorities, will have a bad result between economy and ecology. That's why they believe that letting environmental protection on individuals would be a better solution. The problem with this view is that it is unlikely that most individuals will care more about environment than making profit.

In my opinion, the only way to achieve sustainable development is to consider protecting the environment and understanding the opportunities of development without needing to deplete the state capital and natural resources. Moreover it is the only way of keeping the level of well-being high. In case that these measures would be taken into consideration, the state could be characterized as developing.

### References

- 1. http://en.wikipedia.org/wiki/Economic\_growth (economic growth)
- 2. http://en.wikipedia.org/wiki/Sustainability (sustainability)
- 3. http://en.wikipedia.org/wiki/Sustainable\_development (sustainable development)
- 4. David W.Pearce, Jeremy J. Warford, World Without End, Oxford University Press, 1993
- 5. Bruno Fritsch, Stephan Schmidheiny, Walter Seifritz, *Towards an Ecologically Sustainable Growth Society,* Springer-Verlag, 1994

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## **BIOENERGY AND SUSTAINABLE DEVELOPMENT: THE CASE OF BIOMASS**

#### Abtract

Energy is the key element for economic growth. Today Slovakia as well as EU is dependent on foreign supply of fossil fuels. The only solution to reduce this energy dependency of is to the extent the usage of renewable energy sources. Agriculture is crucial industry producing biomass, which represents the greatest potential for renewable energy. Biomass currently accounts for 2/3 of renewable energy in Europe and bioenergy will play a key role in achieving the ambitious targets approved by the renewable energy directive. Within the bioenergy sector the increased use of biogas opens up new fields of applications where biomass has not played a major role so far. High tech process energy for industries, effective small scale power generation and transportation fuels. Biogas cogeneration plants have reached a parity of heat and electricity output

Keywords: Renewable Energy, Biomass, Biogas Station

#### **BIOMASS AS A RENEWABLE ENERGY SOURCE IN SLOVAKIA**

Energy is the key element for economic growth in Europe. Economic growth must ensure job creation and sustainable development at the same time. The increasing oil prices focus the attention of EU leaders on an increasing Europe's dependency on import of energy. Due to this facts energy policy of EU has three main objectives:

- competitiveness
- sustainable development
- security of supply

From this perspective, the EU's energy policy is starting to move towards higher energy independence on countries outside the EU. Ecological considerations in this context are getting less important. Considering that Slovakia is dependent not only on gas supplies from a single source, but from the same source is also dependent on the supply of oil, coal and nuclear fuels, so we can conclude that Slovakia is absolutely dependent on energy from Russia (more than 95 percent of the energy carriers are imported from Russia). The only solution to reduce energy dependency of Slovakia on foreign countries is to the extent the usage of renewable energy sources (RES) to the maximal reasonable and bearable scale. RES are solar, hydro, geothermal, wind power and biomass energy sources. RES are the only alternative to traditional fossil fuels, especially when we consider that fossil fuels are nonrenewable and the estimated time to exhaustion is from 40 to 150 years. Slovakia's RES share in total energy consumption is only about 5-7%, including large hydropower plants. Compared with developed Europe is still a small share. Some states has the share of RES approaching 50%. Biomass as RES has the highest potential from all the RES in Slovakia. This fact was also declared in the conceptual government materials, such as: Strategy for increasing the use of renewable energy, which was approved by the Government in July 2007 or the Biomass Action Plan for the years 2008 -2013, approved by the government in February 2008

Biomass is a material of plant or animal origin, suitable for industrial energy recovery. It also includes waste and secondary raw materials incurred in the cultivation and processing, as well as relevant biodegradable fraction of municipal waste. Biomass in the form of plants is chemically conserved solar energy. It's part of one of the most versatile and most widely used energy sources in the country.

The most exploitable biomass energy potential has the agricultural biomass material. Agricultural biomass can be categorized in terms of energy utilization of three basic groups. Biomass suitable for:

- burning
- biofuels production
- biogas production

Energy potential of agriculture biomass is more than 76 PJ. We can quantify the theoretical energy potential of agricultural biomass to 29,449 GWh or 106,054 TJ of heat. Agricultural biomass could theoretically cover up to 13% of the total annual energy consumption in Slovakia, which is 800 PJ in total. The use of biomass for energy purposes has also other benefits than only lowering fuel prices. they are these:

- · improvement in the trade balance of the state, reducing demand for imports of energy carriers
- increase the energy independence of the State
- creating new jobs
- · capital appreciation of financial funds in Slovakia
- environmental protection
- development of regional economy
- landscaping

Use of agricultural biomass should be implemented in the sector of agriculture as a priority, to cover its own energy needs, in order to reduce energy costs, which can increase the competitiveness of agricultural products in the European market. The uses of agricultural biomass for energy purposes are wholly consistent with the objectives of sustainable development as it contributes to the development of the three fundamental pillars of sustainable development:

- economic prospectus its use can reduce production costs by up to 80%
- protecting the environment reducing the production of greenhouse gases, mostly CO2
- · social benefits creating jobs and solving the issue of regional development

Agriculture in Slovakia is crucial industry producing biomass, which represents the greatest potential for renewable energy. Biomass energy has significant potential and represents up to 42% of all renewable energy sources. It is estimated that the annual production of agricultural biomass is about 2,000,000 tons. Its total energy potential is reaching 12,890 GWh of thermal energy. The projections assumed that agricultural biomass has potential to secure up to 15% of all energy needs in Slovakia. Cultivation and use of biomass helps landscaping, environment, regional development, creating new jobs. but in the first place it helps to diversify existing energy sources. Agricultural biomass as a renewable energy source has four conditions of sustainability:

- · production operations are close to nature
- use only part of the plant and return crop residues back to soil
- · the use of fuels with high efficiency and cost gains
- · low energy use in manufacturing

Another transformation of biomass into energy is via an anaerobic digestion, where the resulting product is a biogas, serving as fuel for cogeneration units. Biogas reaches about 70% of the energy content of natural gas. Burning 1000 m3 of biogas can be obtained 2178 kWh of electricity or 11.4 GJ of heat. Also, 1 m3 of biogas also contains as much energy as 0.6 to 0.7 dm3 of fuel oil for heating. Compared with conventional heat and electricity can be saved up to 40% of fuel. Compressed and adjusted biogas can be supplied to the grid as natural gas. In Slovakia, agricultural biomass, as a RES, represents a real alternative to imported fossil fuels, because diversification of energy sources by type of energy sources and also according to their areas of geographic origin is crucial today. Energy based on renewable sources of energy must be focused on long-term goals. The long term goal for the research and development of biomass energy is primarily to ensure its competitiveness with fossil fuels. An increase of the share of biomass used on total annual energy consumption should comply with long-term concept and gradually increase the share of biomass energy realized only by environmentally and economically sustainable practices. This means that basic needs must be met while maintaining certain principles and, when value and economic growth are achieved both within social sustainability consuming as low as possible non-renewable natural resources and energy.

Agriculture has the potential to contribute to meeting the growing energy needs and resources in a sustainable manner. This way we can reduce greenhouse gas emissions, improve the quality and land use and protect biodiversity. In addition, it contributes to appreciation of domestic resources, increasing the reliability of energy supply and use of this energy reduces independence on traditional fossil fuels.

At present, biogas is used mostly as a renewable fuel for generating electricity and heat in cogeneration units located in nearby biogas plants. The reason is established support for installations using renewable energy sources for electricity production through guaranteed purchase prices. The disadvantage of such installations is often not using the heat from cogeneration especially in the summer months. Therefore recently appear a number of installations aimed at transforming biogas into biomethane which is a full substitute for the natural gas useful. **[6]** 

#### **BIOMASS USE IN EU**

Biomass currently accounts for 2/3 of renewable energy in Europe and bioenergy will play a key role in achieving the ambitious targets approved by the renewable energy directive. 20 % of the final energy consumption have to be provided by renewable sources by 2020. A great target compared to the share of 8,5 % we have today. According to a study of the European Environmental Agency 2 the potential from agricultural is still largely unexploited and this sector is expected to have the highest growth rates in the coming years. Within the bioenergy sector the increased use of biogas opens up new fields of applications where biomass has not played a major role so far. High tech process energy for industries, effective small scale power generation and transportation fuels. Biogas cogeneration plants have reached a parity of heat and electricity output (one kW electric for every kW thermal) through technological advances in recent years. Europe's dependence on fossil fuel imports should further encourage the energy market and politicians to invest in a renewable alternative and create market incentives for biogas. Biogas is the versatile, sustainable energy carrier Europe is looking for.

Many European countries have established favourable conditions for electricity production from biogas (see feed-in-tariffs in chapter 5 Economics of biogas). Germany has a leading role in Europe with almost 4000 biogas plants, most of them on farms for cogeneration. New legislation often requires the use of heat as well in order to reach a better efficiency. While the biogas sector grows impressively every year, it hasn't received the same attention as for example liquid biofuels for transportation. The majority of people are not aware that natural gas powered vehicles have been available for a long time and that biomethane could play an important role in the transportation sector. So far only Sweden has established a market for biomethane-driven cars. Due to its relatively low prices for electricity, Sweden has traditionally used biogas for heat production (today around 50 % of biogas) and focused less on electricity (8 %). About 25 % of the produced biogas is upgraded and used as vehicle fuel (the rest is flared or used for other applications). 294 biogas plants were producing green electricity in Austria in 2008. The average size of 260 kWe installed power shows the decentralized structure of biogas. The feedstock is available in close proximity to the plants (manure, maize, grass) and transportation costs are kept to a minimum. The produced biogas is combusted in a gas engine which generates electricity and heat.

The biogas sources vary distinctively among the members of the European Union. Germany, Austria and Denmark produce the largest share of their biogas in agricultural plants using energy crops, agricultural by products and manure, whereas the UK, Italy, France and Spain predominantly use landfill gas. This source might not increase further in the medium and longer term as the EU directive on landfill waste foresees a gradual reduction of the land filling of biodegradable municipal waste.

Within the overall potential of biomass for energy in Europe biogas could reach 15 % to 25 % of total bioenergy, as compared to 7 % in 2007. The biomass potential for energy as a whole is much bigger than its present use, but this potential has to be developed by activities on local, regional, national and international level. Looking at the overall contribution to bioenergy, forest based biomass is currently the main contributor, but the agricultural sector has a greatest potential and could be already the most important energy supplier by 2020. Biogas will especially profit from this development as it offers effective alternatives for the fast growing sectors of bioelectricity and vehicle fuels.

Maize is already established as an energy crop for biogas production and in the future other energy crops will be used in order to optimize the yield per hectare agricultural land. Together with manure from animal production (mainly cattle and pig farms) decentralized co-digestion plants have the greatest potential for biogas production but also the use of sludge and food industry waste and household waste offers big opportunities. At the moment about 109 million hectares arable land exists in Europe. If 5 % of this land is used for energy crops a yield of 15 tons of solid dry matter per hectare could provide 23,4 Mtoe of energy if converted into biogas. In the coming 10-20 years an increasing utilisation of crops for energy and industrial purposes is expected to be seen. Scenarios of 10-20 or 30 % of the arable land shifting from food and feed towards energy farming will gradually occur. Large European countries, with significant fertile agricultural area of cropland, might play a major role in bioenergy production; examples can be Ukraine and France. An average total crop yield of around 20 /ha is considered feasible in the near future. Maize, sugar beet and various other crops will increase in importance European wide. Crop paradigm changes are in progress. **[2]** 

### **BIOMASS UTILIZATION: THE CASE OF BIOGAS STATIONS AND SITUATION IN SLOVAKIA**

Using biomass for anaerobic fermentation in biogas stations is one of the most advanced technologies as a source of renewable energy. Realization of projects for building Biogas stations (BGS) in Slovakia had to wait for an adoption of legislative guarantees, so that electric energy and heat produced from biogas will have long-term consumption ensured for guaranteed prices. These conditions were necessary due to high capital need to build BGS. Price of BGS with the most commonly installed capacity in Slovakia at the level of 1 MW of electricity is over  $\in$  3 million. There is  $\notin$  3 -  $\notin$ 3,5 thousand for each 1 kWh of installed capacity. Act. 309/2009 Z.z about promotion of renewable energy guarantee price of electric energy produced in BGS for duration of 15 years. This removed uncertainty and risk for investors in terms of return on investments. **[7]** 

According to data from the technological and Testing Institute of Agriculture in Rovinka there were at the beginning of autumn 2012 in operation, under construction, or In the last phase just before construction already 92 biogas stations with total installed capacity of 91.64 MW. Out of this amount was in operation 42 BGSs, 7 other stations were running on experimental basis. The potential of biogas stations is still not fully exhausted. It is estimated that only in the processing of animal substances

from agriculture, there is possibility for 280 BGSs to work in Slovakia with average installed capacity of 350 kW of electric energy and an annual consumption of 40 thousand tons of animal substances from agriculture for each. At the same time in Slovakia could work up to 8300 BGSs with average installed capacity of 500 kW with an annual consumption of 600 tons of biomass per one biogas station. **[3]** 

The average installed electric capacity is 838 kW. In Czech Republic there are BGS with average installed electric capacity of 595 kW, in Italy 760 kW, in Denmark 513 kW, in Austria 260 kW and in Germany 380 kW. In terms of total installed capacity of power facilities in Slovakia, BGSs represents only 0.4 percent. All BGSs in Slovakia are technologically aimed at production of electricity and heat, but in most BGSsdo not utilize the produced heat. [4]

Technical and Research Institute of Agriculture in Rovinka (TSUP) did a research of production of electric energy from renewable sources 2011. The analysis did not include producers in operation before 2009, except for those who were modernized. In total, 1140 facilities were analyzed with a total installed capacity of 2459, 338 Mw. 33 BGSs were involved in the research, of which 20 BGSs were agricultural and 13 facilities were sewage treatment plants.

BGSs had a common installed capacity 16,764 MW and yearly produced more than 125 million. kWh of electricity. The average BGS was of 838kWh installed capacity. In most cases the input material is corn silage.



Graph 1 Share of RES in Slovakia

In Slovakia, the highest share of RES in electricity production has hydropower plants, which is 68.43 % share of the total installed capacity, then there is solar energy with 19.81% and third biggest share goes to biomass utilization reaching 11.63 %. BGSs on its own have minimal contribution to electric energy production. Their share on RES group is only 0.76%. **[5]** 

In Slovakia most of BGS are those with installed capacity of 1 MW. Purchase prices of electricity are about  $\in$  18/MW higher in case of BGS with installed capacity of up to 1 MW compared with BGS with higher capacity. At the same time reduction of costs per installed 1kW goes hand in hand with higher installed capacity. This suggests that BGS with installed electric capacity of 1 MW would gain the fastest return on investments. This is true when prices of outputs and operation costs are equal. However in reality, input prices are not stable compared to the fixed price of electricity. Many experts in Germany, where are more than 4000 BGS, warn that the rising cost of input materials negatively affects economy of larger BGS more. In case of corn silage average prices at about  $\in$ 25 -  $\in$ 27 per ton, BGS with installed capacity of 1 MW becomes inefficient if the of 1 ton of corn silage increases by  $\in$ 6. While in case of BGS with installed capacity of 300kW, the price of corn silage can go up to by  $\in$ 8/ton to start making loss.

Source: ROLNICKE NOVINY, n.41/2012

This is also one of the reasons why there are in Germany preferred BGSs with lower performance. But the main reason is the government support. The final price of electricity consists of several items. The first is the basic purchase price, which is defined in legislation of RES. This price is the highest for the BGSs with lower installed capacity. In addition, producers are given so called NAWARO bonus of €0.07/ kWh of electricity if it is produced from agricultural raw materials. Other €0,03 / kWh are given if a minimum volume of 30% of material is manure. Another €0,02 cents / kWh are connected wit further technical innovations.

to be put into operation from 1.7.2012. until 31.12.2012, and after 2013						
Source of energy	From 1.7.2012 to 31.12.2012 (EUR/MWh)	From 1.1.2013 (EUR/MWh)				
Solar	119,11	119,11				
Hydro	109,8	109,8				
Wind	79,29	79,29				
Combustion of targed biomass	112,24	112,24				
Combustion of other biomass	122,64	122,64				
Combustion of cereal straw	171	154,27				

Table 1 Purchase prices of electricity (€ / MWh) generated from various energy sources for equipment to be put into operation from 1.7.2012. until 31.12.2012, and after 2013

Source: Act URSO 184/2012

136,33

118,13

115.01

134,08

118,13

115.01

Combustion of biomethane from wet fermentation (to 1 MWh)

Combustion of biomethane from wet fermentation (over 1 MWh)

Since in Slovakia there are more BGS with higher performance, we must carefully monitor costs of inputs. We have less room to operate for the profitable work of BGS in the case of growth of inputs. In this context, it is very important to properly plan production management of inputs. It should be produced in the vicinity of BGS. Otherwise transport costs increases and thus the overall cost of production. While in the next 15 years, we have guaranteed purchase prices of electricity, the cost of inputs most likely will increase. These include the fuel, and therefore overall logistics materials to BGS must be well planed prepared. BGS with electric capacity of 1 MW needs annually 20 thousand tons of silage, which is an area of 500-600 ha. **[4]** 

### **EXTERNALITIES OF BGSS POLICY**

**Bioliauids** 

Neither the law nor the regulatory office for network industries regulating the purchase prices does not regulate quality of material used in BGS. It only sets the price of electricity produced from the combustion of biogas produced by anaerobic fermentation technology with the overall performance up to 1 MW or more. This forces investors to build BGSs with bigger installed capacity and use raw material with the greatest yield of biogas for the fastest return on investment and make profit. This causes that 80 percent of the input material into BGSs is corn silage, the rest are various wastes, including biomass from livestock production. Thus composition is not correct from the perspective viewpoint because of the fact that corn silage is grown only on arable land, which is subsided by direct payments and should be used to ensure food security of the country. Further building of BGSs focused primarily on corn silage can threaten , since the increase arable land for growing corn silage can only be by sacrificing amount of soil for crops aimed at the nutrition for the population. The development of biogas may be the reason why there is slight increase of arable land used for corn silage in 2009 -2011. Another risk is

that the price of corn silage is constantly increasing due to higher oil prices. While in 2008 the price of corn silage was about €25/ton, today it is €35/ton. [7]



Chart 1 records the purchase price of electricity from biogas in half-year intervals since 2010. Purchase prices tend to fall. Trend is partly justified, as with time it is expected that new technologies for production of electricity from renewable energy sources will be more efficient, and thus, will generate more energy. The newest regulation of URSO says that the purchase price for BGS with capacity up to 1 MW of electricity will fall again in 2013. Those investors who managed to operate BGS with capacity of 1 MW until 31.12.2012 will be eligible for the purchase price of electricity at the level of  $\in$  136.33. Those, whose BGS become operational after 1.1.2013, will be paid  $\in$  134.08 / MW. BGS put into operation in 30.6.2011, now gains guaranteed price for 15 years at the level of  $\in$  148.72 / MW. The decline in prices is notable and there is possibility for their further reduction in summer 2013. **[1]** 

Table 2 shows all BGSs in Slovakia in operation or ready to be build and in various states of preparations and approval. Data are from recent results of TSUP in Rovinka and are still being processed (10/10/2012). It seems that interest in building BGS in Slovakia is still high and it is expected that any new legislative amendments will support further building of BGSs. **[6]** 

Area	Number of BGS	Total installed capacity	Average installed capacity in kw				
BA	2	1 199	950				
TT	20	19 541	977				
TN	10	9 273	927				
NR	21	17 006	809				
ZA	4	4 616	1 154				
BB	22	28 391	1 290				
PO	9	8 025	891				
KE	4	3 587	899				
Together	92	91 648	996				

Table 2 BGSs in Slovakia according the regions
## **Bibliography**

- 1. BRESTENSKY, V. (2012) Rozostavanu BPS sa oplati dokoncit co najskôr. Agromagazin. 8/2012, p. 32.
- EUROPEAN BIOMASS ASSOCIATION, 2013. A Biogas Roud Map for Europe. [online]. 2013. [cit. 2013-05-04]. Available on the internet: < http://www.aebiom.org/IMG/pdf/Brochure\_Biogas-Roadmap\_WEB.pdf> P. 4,12,17
- 3. EUROPSKY POLNOHOSPODARSKY FOND PRE ROZVOJ VIDIEKA. (2012) Obnovitelne zdroje su prilezitostou pre farmarov pri diverzifikacii vyroby. *Agromagazin*. 12/2012, p. 37.
- 4. KARKULIN, D. (2012) Agrotrade group, spol. s.r.o., ponuka komplexne riesenia pre bioplynove stanice. *Agromagazin*. 8/2012, p. 28, 29.
- 5. ŠTEFAN PEPICH, (2012) Bioplyn a vyroba elektriny. Rolnicke noviny. 41/2012, p. 11, 12
- 6. TECHNICKY A SKUSOBNY USTAV ROVINKA, 2013. Vyuzitie polnohospodarskej biomasy na energeticke ucely a jej vplyv na trvalo udrzatelny rozvoj. [online]. 2013. [cit. 2013-05-04]. Available on the internet: <a href="http://www.tsup.sk/files/vyuzitie\_poln.biomasy\_na\_energet.ucely.pdf">http://www.tsup.sk/files/vyuzitie\_poln.biomasy\_na\_energet.ucely.pdf</a>>
- 7. ZACHARDA, F. (2012) Ako dalej v budovani bioplynovych zariadeni. *Rolnicke noviny*. 36/2012, p. 21, 22

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# THE DEVELOPMENT TENDENCIES OF THE COMPETITIVENESS OF SLOVAKIA

#### Abstract

The Slovak Republic was during the last decade exposed to many factors changing the whole economic situation, along with the direction of the development of the whole country. The changes were mainly resulting from the impact of globalization, integration process, entry of the SR into the EU, changes of national policies implemented, etc. All of these important factors affected our competitiveness and the tendencies of its development. We could observe the strongest impact of globalization in the years 2008 and 2009, when the financial- economic crisis started in the USA and spread through the whole globalized world and showed its power and ignorance of boarders. The last two years we could observe the rising crisis of the EU and its members. According to the mentioned facts, the main contribution of this work, we see in the quantification and analysis of the tendencies of the Slovak republic's competitiveness, comparative advantages and disadvantages during the years 2003 to 2012, affected by national policies, globalization, integration process and the entry of Slovakia into the EU and in the last years, the effect of the global economic – financial crisis and the crisis within the EU. Only the mastery of our competitive advantages and elimination of our competitive disadvantages would open the gates of the long-term sustainable growth and prosperity.

Key words: competitiveness, comparative advantages and disadvantages, sustainability.

#### **INTRODUCTION**

The Slovak Republic has gone through many different changes during the last decade. The whole economic situation of Slovakia was strongly affected by many factors, coming from both, the internal and external enviroment. The most crucial events affecting our economic development during the observed space of time, were caused by the changes of politics, negotiation processes, the impact of the negotiations of the WTO, Slovakia's entry and aspiration to become a recpected partner in the EU, impact of the globalization forces, which opened many doors for our country, but also revealed risk and possible harmful forces. The last years of the observed time are characterized by the impact of the powerful global economic crisis as by the crisis within the EU itself. All of these factors did significantly affect the development of the whole country.

## **1. THEORETICAL BACKGROUND**

# 1.1. Globalization and the trends of the economic development in the world and in the Slovak republic

**Stiglitz, J. (2006)** the professor from the Columbia University in New York, a Nobel Prize laureate says, that economic globalization brings an economic integration of the countries by an increase of the flow of labor, goods, services and capital. In the process of globalization, Stiglitz sees a great hope to bring increased living standards, access for the poor countries to the rest of the world markets, to offer to them the possibility to trade their goods and services, lower the prices of products and services through foreign investments, opening boarders for people travel, study and work abroad. The Nobel Prize laureate also believes, despite the fact that the evidence is showing that this potential is not used efficiently, that globalization could benefit both, as the developing, so the developed world to promote their well- being.

**Drucker, P (2003)** states, that the only real competitive advantage in the global economy is the "knowledge worker productivity".

**Zuberec, V. (2004)** Dramatic increase of the foreign direct investments connected with increasing influence of corporations, might be observed on their market share, or in their global strategies. Their activities might lead us to concerns, that many countries will be exploited by such corporations. It is a fact, that in the last two decades of the 20th century, there was a huge expansion of corporate power not only in the western countries, but everywhere in the world.

**Hošková, A (2001)** According to her latest results, the importance of FDI for the Slovak Republic is significantly increasing on its importance. In the connection with this trend, it is necessary to know about the impact of the FDI on the Slovak economy and mostly on the production sphere, bank sector, thirds sector, etc.

#### 1.2. The recent trends connected with competitiveness

**Costantini, V., Mazzant, M. (2010)** are discussing the question how was the export competitiveness affected by innovation and environmental regulations. The core of his thesis is based on the Porter's idea of how can the environmental policies influence the international competitiveness by implementation of the innovation of technologies.

**Guo, Ch. (2011)** analyzes the international competitiveness of the China's trade in services. To display the competitiveness he uses the TX, MS and RCA indexes and the restricting factors of China's service trade competitiveness, through the evaluation to determine the international competitiveness of China's service trade position.

**Hargaš**, J. (2007) says that the national competitiveness and the welfare of citizens are prominently affected by the ability of the companies to succeed on the foreign markets. In the last decades, there could be observed a continuous growth of the amount of the foreign trade and foreign investments. Competitiveness in this environment represents an additional advantage and in the macro view a platform for a stable economic growth. This phenomenon can be observed mostly in small countries, where the usage of competitive ability is the way to break the limits, resulting from the relatively small domestic market.

**Podolák, A. (2006)** prioritizes the problematic of the multinational movement of the capital, the impact of the foreign direct investments on the performance and competitiveness of the agro trade. He

also states that the multinational corporations are gaining power leading to non-limited behavior through the FDI and the global agro- trade sector is missing basic ethical rules. The FDI are the source of many pros, but also cons and negative influence. In his article, Podolák highlights the negative effect of the globalization and FDI on the destruction of the performance of the economy and competitive-ness of dairy, malt and beer producers and traders.

**Hečková, J., Chapčáková, A. (2008)** explain, that if a country identifies a significant loss of their markets, for the benefit of new competitors, the issue of competitiveness becomes more important for such a nation. This situation can be observed nowadays, during the days of the largest enlargement of the EU members, called by these authors as the *'* big bang*'* manner of the EU.

**Trichet, J.C., (2011)** the president of the European Central Bank describes the concept of competitiveness through the questions: How should we understand competitiveness? How should we act upon it? What does it mean for European Monetary Union? These are the question connected all of his life, with his role as an economic policy- maker. These are also the questions that are essential for healthy particular economies of each member state of the EU.

**Mauro, F., Forster, K. (2008)** are aimed on the examination of the recent trends in European monetary union, dealing with competitiveness and its future development. As globalization has radically altered the environment of many countries in which firms operate, the question how to strengthen competitiveness has become the question no.1 for nearly every single business. Their analysis has displayed difficulties in the definitions and measurements by the usage of traditional methods and indicators, mostly competitiveness based on price level, sectoral specialization and market shares.

#### 1.3. Competitiveness of the Slovak republic

**Matišák, A. (2011)** Explains that the EU still can stand its ground in the economic battle. In the chart of competitiveness, which was published by World economic forum, belong 6 places to countries from EU. Sweden, Finland, Germany, Netherlands, Denmark and Great Britain. The Slovak Republic finished on the 69th place. The EU knows very well, that the competitive pressure is increasing each year. Countries like China, India, Brazil, Russia, South Africa and Turkey are creating an environment of competitiveness, where the criteria for survival are tougher as the time passes by. These facts highlight the Strategy Europe 2020. This document states, that the core for a stable development are three complementary priorities: Intellectual growth, sustainable development and inclusive growth. And mainly the part of sustainable development describes the support of the more ecological and competitive economy, which uses resources more efficiently. The EU will profit from the fact, that its economy is one of the most opened of all economies in the world, but the competition of the developed and developing countries is still increasing. Countries like China or India sufficiently invest into research and development, with the goal to shift their industry in the value scale to higher positions and gain the level of global economies, states the strategy.

Žúdel, B. (2011) the famous economist from Cerge institute in Prague presents his opinion about the relationship: Slovakia versus innovation. According to the World economic forum, Slovakia dropped to the 69th place. Slovakia felt 9 places on a year basis. The Slovak Republic is falling in this chart already the 4th year. There are two reasons for this situation. The first is the inclusion of new countries into the comparison, since the year 2006; there are 17 new countries in this chart. Their competitiveness was higher than that one of Slovakia, so their entrance into this research caused our drop. Slovakia is not just dropping in comparison with other countries; its index of competitiveness is decreasing, too. The increase of this index was in the period mentioned above by 8%, which is the 6th biggest increase following Island, Estonia, Greece, Ireland and Jamaica. 5% decrease was also observed by Finland, Denmark Norway, the Czech Republic and Hungary, too. The main reason of the decrease of competitive-

ness of our economy is that the strong growth was not connected to structural changes of the Slovak economy, where a bigger role should stand for innovations and a smaller role should be presented by the mass production.

**Wijnands, J., Poppe, K., Maulen, B. (2007)** their unique study provides an overview of the competitiveness of the EU compared to the third countries. The result of their study is unflattering: Weak competitiveness of the EU food industry. They warn that some problems connected with the modern "European" way of life could lead to several negative effects on the future of all EU member- states. The most important problems of the EU are connected with the low population growth, which might be the background for the lower growth of the value added. Also the ignorance of exploitation of the economies of scale might lead to lower labor productivity. They recommend enterprises to exploit economies of scale, economies of scope and to differentiate their production according to the cultural differences in Europe. Following the ideas of authors, companies should innovate and use latest technologies. Wijnands, J., Poppe, K. and Maulen, B. also give some advices to national governments to direct and lead their policies towards harmonization of legislation within the EU and worldwide, too. Their policies should not decrease the competitiveness of the enterprises, but instead of that, should create and innovation- friendly environment for the firms.

**PAS (2009)**, the Business Alliance of Slovakia, the partner of the World economic forum with the headquarter in Geneva in Switzerland, a non-governmental organization which has obliged itself to help the world to increase its prosperity states: "The Global Competitiveness Report assesses the ability of countries to provide high levels of prosperity to their citizens. This in turn depends on how productively a country uses available resources. Therefore, the Global Competitiveness Index measures the set of institutions, policies, and factors that set the sustainable current and medium-term levels of economic prosperity." (PAS, 2009)

#### 1.4. The impact of the present crisis on the economy

**Financial times (2012)** informs about the growing firepower of China. Many Chinese investors are considering the EU market as a good place to invest and an opportunity to diversify their businesses. In the hard times for the Europeans, they are welcoming the idea of Chinese entrepreneurs to invest in the European Union, perceived as a lifebuoy for the European economy, fighting the crisis.

"Some of the more surprising bidders emerging for European assets are China's power companies, often large conglomerates expanding into western markets for the first time.

While Chinese power companies are relatively new to European markets, their spending power and close ties to Chinese financial institutions make them attractive partners for debt-strapped European governments., (Financial times, 2012)

**Elliott, L. (2011),** the famous economist of Guardian predicts, that there will be no happy end of this economical crisis story. Following his ideas, the best possible outcome will be a long, weak growth accompanied by high unemployment, as the cumulated debt in the bubble years will have to be paid down by individuals and banks. The worst possible outcome described by Elliot, which might occur is, that the global economy will be pulled back into recession in the next years.

#### 2. THE METHODOLOGY AND THE MATERIAL OF THE WORK

#### 2.1. The object of the study

The main study of this paper are the tendencies of the development of the competitiveness of the Slovak Republic. The main objective is also connected with the expression of the impact of our economic development, EU integration and the infuence of the crisis on the competitiveness, on the public sector and on the business enterprise.

#### 2.2. The methodology and the indexes

#### 2.2.1. The global competitiveness

We will use the data from the World economic forum available in their annual Global competitiveness report.

For reaching the goals, we will also use statistical data connected with competitiveness. For the mentioned purpose, we will import data from web pages such as the Statistics agency of Slovak republic, Eurostat and the Business Alliance of Slovakia, etc. (http://portal.statistics.sk, http://epp.eurostat. ec.europa.eu, http://www.alianciapas.sk , etc.)

#### 2.3. The space of time

This study will be based on the space of time from 2003 – 2012. The main reason for this choice, is that most of these years were very important for the image of the development of the foreign investments, competitiveness and the foreign trade of the SR.

The year 2003 will be taken as the base year. The observed development in this year was affected by our pre- EU entry activities, negotiation process and other factors affecting our economy, resulting from our future accession into the EU.

The years following the year 2003 were the years of our entry into the EU, years of development of our economy as a EU member state, influenced by the regional and world globalization, changes in national policies, global financial- economical crisis and last, but not least by the crisis within the Eurozone.

## 3. RESULTS AND DISCUSSIONS

#### 3.1. The global competitiveness index

#### 3.1.1. The report of the Global economic forum

The global competitiveness report is world-wide accepted as a first-class global research offering multinational comparison of countries in the questions of economic competitiveness and economic growth. This report evaluates the ability of chosen countries to maintain sustainable economic growth and a high level of prosperity of its citizens. It also monitors the functioning of public institutions, analyzes economic policies and factors conditioning the sustainable economic development in the mediumrun horizon. The world economic forum evaluates competitiveness of countries according to available statistical data and due to the world-wide research of the opinions of the managers. The research is held every year since 1979, with participation of 14,000 managers from the entire world. In 2012, 144 chosen countries were involved into this research (71th position of Slovakia). For comparison, in 2003, the chart consisted only of 102 countries (43rd position of Slovakia). Since 2003, there are 42 new countries in this comparison and since 2003, Slovakia did fall exactly 26 places. On the first sight it may look like Slovakia is falling in this ranking, but we have to take into consideration the new members of this global competitiveness index measurement.

#### 3.1.2. The report of the Global economic forum in connection with Slovakia

Based on the research of the World economic forum and its reports about the global competitiveness, Slovakia might be compared to other countries involved into this unique research. This comparison displays our strong and weak spots and shows the way, in which it would be possible to improve the parameters of our economy in the long run period. Slovakia has to master the competitive advantages and eliminate its competitive disadvantage, to achieve sustainable growth. (PAS, 2003)

In Slovakia, 220 managers from large enterprises and 220 small and medium enterprises managers, randomly chosen following the methodology of the World economic forum. Nearly all of the asked respondents from Slovakia answered on the questions of the research electronically on the web page of the World economic forum and PAS (Podnikateľská aliancia Slovenska (Business Alliance of Slovakia) did not have the access to the individual answers of the respondents. (PAS, 2012)

#### 3.1.3. The development of Global competitiveness index of the Slovak republic

The year before accession of the SR into the EU, in 2003 the World economic forum stated that Slovakia has made some crucial steps to improve its competitiveness during the last years. Slovakia has finished on the 42nd place from all 102 countries.

On the macroeconomic level compared to other countries, the strong features of Slovakia were the level of savings, positive changes in the credit availability and the national level of savings. The weak point of Slovakia were mostly public expenditures, high deficit of public budgets and the redistribution of public funds, low trust of the public towards politicians, the range of harmful government subsidies and inflation.

In the technology area the advantage of SR were mostly good conditions for the inflow of foreign direct investments and the transfer of technology connected with the FDI, fast adoption and implementation of new technologies from outland, the prevalence of personal computers and mobile phones among citizens, availability of internet and the cooperation between education centers and firms. On the other hand, the brake of the development was the inability of government to prioritize the development in the information technologies, low competition among the telecommunication market and last, but not least low expenditures of the enterprises on research and development. (PAS, 2012)

In the area of public institutions, Slovakia was weak mostly because of the impact of the organized economic crime, government choices giving advantages to a certain groups and insufficient independence of courts. The positive aspects were low rate of corruption by the request for the connection to the public infrastructure and by paying taxes.

According to the World economic forum, the five most serious disadvantages of Slovakia in the business environment in 2003 were corruption, non- efficient state administration (high level of bureaucracy), tax legislation (the complicatedness of the system), non-sufficient infrastructure and the access to financing and funding. In the business sector of Slovakia, as the main advantage was seen the innovation capacity of enterprises, strong position of firms on the home market, but also the high quality and reliability of professional managers. The disadvantages were the nature of the competitive advantages, based on cheap labor force, high capital difficulty and low value added, etc.

When talking about the home entrepreneurial environment, the strongest side was the quality of technologic education, openness for the foreign direct investments and paradoxically quite low level of bureaucracy. There were mentioned also other advantages of Slovakia such as high quality of health care, media freedom, etc.

The research was mostly concerned about the huge regional differences in the quality of the entrepreneurial environment, low efficiency of the tax system, differences in the evaluation of women and men in firms, illegal financial support of political parties etc.

In 2011, according to the World economic forum, Slovakia has finished on 69th place from 142 countries in the research of the global competitiveness index. The most competitive country in the world is Switzerland, which finished on the first place the last year, also. Switzerland is followed by Singapore, Sweden and Finland. In the top 10 of the most competitive countries are also the USA, Germany, Netherlands, Denmark, Japan and also the Great Britain has fitted into the ten most competitive countries in the world. (PAS, 2012)

The biggest competitive disadvantage of Slovakia has the World economic forum identified as low law enforcement (139th/144), followed by high rate of clientelism in the country, extremely low trust of the public towards politicians and non- transparency in public procurement. The air infrastructure is also missing quite a lot. A competitive disadvantage of Slovakia is also a high deficit of public finance, non- efficient agrarian policy, low- quality of the education system, taking into consideration economical schools. From other disadvantages, we can mention strong consumer's orientation on the price of the good or service, not on its quality, outflow of talented people from the country into outland, non-sufficient cooperation between educational institutions and firms, or the weak support of technological innovations through public procurement.

Among the strongest competitive advantages of Slovak economy there are the openness of Slovakia towards foreign ownership of businesses, low custom barriers, openness towards foreign investments bringing new technologies to Slovakia, low spread of interest rates , high correlation between the level of salaries and labor productivity, internet expansion, low risk of terrorism, healthy banking sector. In the area of infrastructure the best positions were gained by highly positively perceived railway and energy infrastructure.

After the decreases of the competitiveness caused by the impact of the global financial crisis, we could observe some recovery this year. Following PAS (2012), in comparison with the last year, all of the top 10 ranked countries gained higher score in the competitiveness index. According to Kičina's (PAS, 2011) opinion, the potential of the reforms which were implemented in Slovakia 8 years ago is exhausted. The new reforms were not introduced, or their impact could not be observed in practice at the times of the evaluation process of this research. We can feel uncertainty and pessimism in the entrepreneurial environment. Slovakia is falling in the ranking of competitiveness already the fifth year in a row and lost its advantage compared to other V4 countries absolutely. While our economy has significantly fallen on a yearly basis again, other V4 nations are after a slight decrease in their position stabilizing their positions, or are climbing and gaining better rankings.

The most distinctive barriers which are lowering the competitiveness of Slovakia, still are mostly nonefficiently functioning public institutions, low rate of innovation in economy, inadequate and slowly developing infrastructure, lagging educational system, bureaucracy and corruption. (PAS, 2012) The prompt and effective reaction on the research of the World economic forum and its reports would be beneficial for Slovakia in many ways. This research revealing our 'Achilles heels' every year, which we should work on, to reinforce our economy, so closely connected with our welfare. The question of our competitiveness is one of the crucial points, where should our attention be focused on. Wise use of our advantages while fighting with our demons, our competitive disadvantages, would secure us a bright future full of 'honey and milk.'





#### **CONCLUSIONS**

During the observed period of years 2003 – 2012 the competitiveness of the Slovak republic was influenced by many different factors, causing unique changes in the history of Slovakia. The effect of the negotiation processes, entry of Slovakia into the EU, effort to achieve the position of a respectable partner in this union consisted of 27 countries of Europe, changes in national policy, the impact of the globalization, but also the global financial- economic crisis and the crisis of the EU were one of the most significant factors, affecting not only our competitiveness but also the whole economy and the course of our whole country. During this decade, Slovakia has adopted to new circumstances connected with the routing of the whole country, as for example the common European market, bordered by the size of this fellowship, adopting the new currency and the integration resulting from the entry to the monetary union of the EU. Integration and globalization came along with new challenges and pitfalls, with such a huge dimension, which Slovakia did not have to face in its short, 20 year history of independence.

During the observed decade, by the pressure of globalization and European integration, financial crisis and because of other factors, Slovakia was developing and along with this evolution competitiveness of Slovakia was developing also. During the 10 years Slovakia has dropped to 71th place in the global competitiveness report of the world economic forum 2012. The real decrease was exactly 26 places, because in 2003 there were only 102 countries involved into this research, while in 2012 there were already 144 chosen countries researched in this report.

The most important competitive advantages of Slovak economy in 2012 were characterized as the openness of Slovakia towards foreign ownership of businesses, low custom barriers, openness towards foreign investments bringing new technologies to Slovakia, low spread of interest rates , high correla-

Ranking = position in the given year/ number of all researched countries in the given year. Source: Own calculations and graphical solutions.

tion between the level of salaries and labor productivity, internet expansion, healthy banking sector. In the area of infrastructure the best positions were gained by positively evaluated railway and energy infrastructure.

The most crucial barriers which are decreasing the competitiveness of Slovak republic were in 2012 pointed out the non-efficiently functioning public institutions, lack of innovation in businesses, non-sufficient infrastructure, low- quality educational system, corruption and also bureaucracy.

## **Bibliography**

- 1. BIELIK, Peter. 2004. Competititveness of slovak agricultural producers. *In Acta oeconomica et informatica*. [online], Vol. 2, 2004, p.32 -35, [cit. 2012-01-24]. Available on the internet: http://www.fem. uniag.sk/acta/en/13/acta\_oeconomica\_et\_informatica/content/2004/2/
- COSTANTINI Valeria MAZZANTI Massimiliano. 2010. On the green and innovative side of trade competitiveness? The impact of environmental policies and innovation on EU exports. s.n. [online], 2010, [cit. 2012-02-19]. Available on the internet: http://www.sciencedirect.com/science/article/ pii/S0048733311001612
- 3. DRUCKER, Peter. 2003. Creating competitive advantage through knowledge worker productivity gains. In *Stratabase* [online], 2003. p. 1-6. [cit. 2012-02-07]. Available on the internet: http://www.stratabase.com/PDF/200304\_KWP.pdf
- 4. ELLIOT, Larry. 2011. Global financial crisis: five key stages 2007- 2011. In *The Guardian*, [online], 2011. [cit. 2012-03-05]. Available on the internet: http://www.guardian.co.uk/business/2011/ aug/07/global-financial-crisis-key-stages
- 5. Europeans welcome Chinese investors. In *Financial Times*. [online], 2012, [cit. 2012-01-24]. Available on the internet: http://www.ft.com/intl/cms/s/0/f9d84446-4363-11e1-8489-00144feab49a. html#axzz1kMaxZcVE
- GOU, Ghen. 2011. Analysis on international competitiveness of China's service trade. In 2nd International Conference on Artificial Intelligence, Management Science and Electronic Commerce (AIM-SEC), 2011. [online], 2011. [cit. 2012-03-19]. Available on the internet: http://ieeexplore.ieee.org/xpl/mostRecentlssue.jsp?punumber=5992814
- HARGAŠ, Ján. 2007. Podporné programy a konkurencieschopnosť malých a stredných podnikov v SR za roky 2002 – 2006: diploma thesis. [online], 2007, , [cit. 2012-03-19]. Available on the internet: http://diplomovka.sme.sk/zdroj/3218.pdf
- HEČKOVÁ, Jaroslava CHAPČÁKOVÁ, Alexandra. 2008. Teoretické východiské problematiky konkurenčnej schopnosti ekonomiky. [online], 2008, [cit. 2012-02-05]. Available on the internet: http://www.pulib.sk/elpub2/FM/Kotulic7/pdf\_doc/heckova2.pdf
- 9. HELG, Rodolfo (2008) The concept of country competitiveness. 2008. [cit. 2012-04-08]. Available on the internet: http://my.liuc.it/MatSup/2008/F83021/ountry%20competitiveness.pdf
- 10. MATIŠÁK, Andrej. 2011. Obstojí EU v konkurencii? In *Pravda* [online], 2011. [cit. 2012-02-07]. Available on the internet: http://spravy.pravda.sk/obstoji-eu-v-konkurencii-0xa-/sk\_svet. asp?c=A110921\_104213\_sk\_svet\_p09
- 11. MAURO, Filipo. FORSTER, Katrin. 2008. Globalisation and the competitiveness of the Euro area. In *Occasional paper series*, [online], 2008. [cit. 2012-02-07]. Available on the internet: http://www.ecb. int/pub/pdf/scpops/ecbocp97.pdf
- POLODÁK, Alojz, 2006. Vplyv integracnej globalizácie na výkonnosť a konkurencieschopnosť agropotravinárstva. In International scientific days 2006: Competitiveness in the EU – Challanges for the V4 countries. [online], 2006, [cit. 2012-01-23]. Available on the internet: http://www.fem.uniag.sk/ mvd2006/zbornik/sekcia3/s3\_podolak\_alojz\_377.pdf
- 13. SCHWAB, Klaus . (2011) The Global Competitiveness Report 2011–2012 . 2011. [cit. 2012-04-08]. Available on the internet: http://www3.weforum.org/docs/WEF\_GCR\_Report\_2011-12.pdf

- 14. Správy o globálnej konkurencieschopnosti za rok 2003 2012 2012. [cit. 2013-04-4]. Available on the internet: http://www.alianciapas.sk/menu\_pravidelne\_globalna\_konkurencieschopno-st\_2011.htm
- STIGLITZ, Jozeph, E. 2006. Making globalization work. New York: The Maple-Vail Book Manufacturing Group, 2006. 199p. ISBN-13: 978-0-393-06122-2
- ŠVEHLÍKOVÁ, Ilona. 2012. Legitimita moci v ére globalizácie. In *Pravda* [online], 2012, [cit. 2012-01-24]. Available on the internet: http://heredy.net/documents/02\_politika/Legitimita%20moci%20 v%20ere%20globalizacie.pdf
- 17. TRICHET, Jean, Claude. 2011. Competitiveness and the smooth functioning of EMU. [online], 2011, [cit. 2012-02-07]. Available on the internet: http://www.bis.org/review/r110224b.pdf
- WIJNANDS, J.H.M. et al. 2006. Competitiveness of the European food industry: Discussion, conclusions, recommendations. [online], 2006. [cit. 2012-03-05]. Available on the internet: http:// ec.europa.eu/enterprise/sectors/food/files/competitiveness\_study\_en.pdf
- 19. ZUBEREC, Vladimír. 2004. Nadnárodné korporácie v čase globalizácie nepriatelia národných štátov? In *Euractiv* [online],2004. [cit. 2012-02-07]. Available on the internet: http://www.euractiv. sk/ekonomika-a-euro/analyza/nadnarodne-korporacie-v-case-globalizacie---nepriatelia-naro
- 20. ŽÚDEL, Branislav, Slovensko bez inovácii. In Pravda, 2011. n.d.

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# PACKAGING AS A MEANS OF INCREASING EFFICIENCY OF LOGISTICS SERVICE

## Abstract

Every company trying to get on the market with it's own products is planning to receive as many orders and customers for that product as it is possible. But the products are not always adequately accepted by the market. Product promotion on the market is possible only when the product satisfies needs of the customers and its quality meets the market expectations. If it does not, then the product looses its appeal to buyers rapidly and then leaves the market. To prevent such situations, it is very important to use all features of a product including the packaging.

Marketing pays much attention to the packaging. Packaging, its quality and its functions aimed basically at the market promotion are very important for the such success.

Packaging also has a big affect on the logistics efficiency, where the qualitative improvements could be reached by the development of the "logistical packaging" concept. On the one hand, packaging plays an important role in protecting a product quality, but from another hand it should also arouse an interest among buyers. The simultaneous achievement of these two objectives is a quite complicated task. Types and benefits of packaging, factors that influence the type of packaging and factors influencing the choice of packaging are reviewed in the article. Also overview of different packaging functions is described by relation to logistics and marketing categories.

Keywords: logistics, logistics service, packaging, packaging functions.

## RESULTS

Packaging is an important and essential attribute of a product in the modern world. It is a container or a product wrapper [3, 7, 8, 10, 18].

Depending on the purpose packaging are divided into the following types [3, 9,10, 11]:

- primary;
- secondary;
- shipping.

Primary packaging - is a one where the product is placed after the manufacturing process. Secondary packaging is used in addition to the primary and is usually thrown out to the garbage when the product gets to the consumer. It is usually a sort of additional advertising and promotion in the market. Shipping packaging is a packaging, required for the primary packaging storage and transportation.

In the modern world packaging creates an additional value for a customer by providing the following benefits:

- Informational it gives a required product details.
- Functional it helps to ensure the consistency, security and the safety of a product, guarantees a comfortable usage of a product.
- Perception benefits it provides a positive perception with the help of a bright design proposal, which is easy to remember.

There are the following factors that influence the type of packaging in a practice:

- the properties and characteristics of the goods, weight and volumes during transportation, loading and storage;
- · level of adaptability to the transportation, storing;
- types of goods and means of transport, as there are significant differences in the package, depending on the vehicle

The choice of packaging manufacturer is affected by many factors. Basic are presented in Figure 1.1. [3]

Functions of package start to be formed right from the production of goods. They apply to the entire product life cycle - from the manufacturer to the wholesaler or retail store. Package does not function at a time when the customer or consumer takes out it's goods and destroys it.

Functions of packaging are too complex, but we can relate them to two main categories: logistics and marketing. Overview of important packaging functions is presented in Figure 2. [17]

A detailed review of the marketing and logistics functions of packaging is shown below.

#### Promoting the product / brand

Packaging is an effective instrument of promoting and providing information about the product. It plays the role of a means of communication between company and consumers. It creates an image of this industry through design, color, shape, material reflects its popularity not only before and during the purchase of the goods, but after using it. In other words, the packaging advertises the brand and the product, it is deeply involved in creating the image of the goods.

Packaging design should match the image which the company wants to create for their products and marketing strategies
Collective package should be adequate to make the group (one item on each package of a certain range, or a variety of packages for different segments of the market)
The standardization of packaging caused the desire for international products recognition
The cost of the package must be corresponding to the consumer's needs
The choice of materials for packaging (cardboard, plastic, metal, glass, etc.) is dictated by the transportation, storage products, manufacturing traditions
Multi-variative packing is determined by the possibilities of a company, the requirements of distribution channels, customer needs
On the size, color, shape, packing content affects the desire for ease of use and transportation, the desire to be competitive
Printing prices in advance is basically on the wishes of dealers
Competitive advantages may create individually packed portions

#### Figure 1. – Factors influencing the choice of packaging

#### **Aesthetic properties**

The size, shape and color of packaging can stimulate the consumer desire to buy the product. In the same way packaging can increase the subjective value of the goods and encourage the buyer to a thoughtless purchase. Packaging of a product should be different from the competitors one, it should have its own special design and image to help consumers quickly find the goods.



Figure 2. Overview of different packaging functions

#### Holds an information about the product

Packaging should carry all the necessary information. First of all, it provides identification of the product, informs the buyer about the features of the goods and is the last joining link with the consumer on the trading floor, prompting him to buy the product, which is preceded by advertising and promotion of the product in other ways. It should contain a list of ingredients, usage instructions of the product, instructions on how to store the product, etc.

#### **Environmental**

Ability of the package during the usage and disposal not to cause significant harm to the environment. On the one hand, the packaging must protect the packaged product from the harmful effects of the environment, and on the other – it should also provide the protection of people and the environment from the aggressive and dangerous products through their special packaging. During the disposing of different types of packaging a variety of substances with the varying degrees of impact to the nature are thrown to the environment. This included the recovery / recycling, toxicity, dematerialization, safety and recycling function.

#### **Ergonomics and usability**

This may be noted in a convenience for the consumer to use the packaged product, as well as the availability of special tools make it easier to consume. This role is particularly versatile and must be designed to meet the needs of the consumer, i.e., packaging should maximize the effect of useful services provided to the buyer of that product.

#### **Economic efficiency**

It is connected with a selection of optimal packaging technology in particular and the production process in general. Production of packaging and packaging products require high material and labor costs, which together determine its value. Packaging costs have an important place in the economy of the individual companies and entire industries of economy. They significantly affect the price of the product. On the one hand, it is necessary to seek for economy of material and working time in the production of packaging and packaging materials, on the other - t is necessary to seek the rational scheme of the operations of the packaging, storage and marketing of packaged products

Economic considerations are the main selection criteria. Considered to be the most effective package the one that provides the lowest cost and the biggest savings of human power on all stages of its usage - from manufacturing to disposal. Packaging costs should not be a major part of the cost of goods, so a package that would provide the best protective properties in the required time storage of goods must be chosen.

#### Containment

Modern packaging must retain all the qualities of the goods - freshness, smell, taste, and appearance. Packaging lies between the product and the environment, while the main aim of packaging is to protect the product from all that may be partially or completely ruin it.

## Facilitate distribution and cargo handling

This function includes the ease of handling in the process of sorting, storage, transportation and marketing, improving all warehouse processes. It is also important to take into account to the creation of rational units of cargo for transportation, loading and unloading goods and the creation of optimal (weight and volume) units for the sale of goods.

The desire of designers to create an original and complicated packaging, which is often prompted by the requirements of the marketing, may lead to the unplanned increasing of logistical costs of physical distribution. Marketing sometimes defines a packaging term as an "silent seller" concept because on the retail stage it may become the decisive factor affecting sales greatly. From the position of marketing the following parts are important for the product: the appearance of packaging, its colorfulness, the presence of complete information about this product – i.e. a list of features, that can distinguish a product among similar interchangeable goods from the different competitor offers.

For a logistics manager packaging is important principally from the view of its sizing and ability for the protection the product from the possible damages during its transportation and cargo handling. In particular, the end-user (trading) packaging should be suitable for for placing it in an industrial or outer shipping container preferably with the most optimal capacity usage.

#### References

- 1. Белявцев М.І., Іваненко Л.М. Маркетинг: Навчальний посібник. К.: ЦНЛ, 2005. 328 с.
- Гаджинский А. М. Логистика: учебник для высших и средних специаль-ных учебных заведений / А. М. Гаджинский. – 2 – е изд. – М. : Информационно – внедренческий центр "Маркетинг", 1999. – 228 с.
- Герасимчук В.Г. Маркетинг: теорія і практика: Навчальний посібник. К.: Вища школа, 2000. 327 с.
- Гончаров В. В. Руководство для высшего управленческого персонала : в 2 т. / В. В. Гончаров. М. : МНИИПУ, 1997. – Т.1. – 768 с.
- Джеймс Р. Сток. Стратегическое управление логистикой / Джеймс Р. Сток, Дуглас М. Ламберт. – М.: Инфра – М, 2005. – 830 с.
- 6. Економічна енциклопедія : у 3 т. / відп. ред. С. В. Мочерний. К. : Видавничий центр "Академія", 2001. Т. 2. 848 с.
- 7. Котлер Ф. Основы маркетинга / Пер. с англ. М.: Прогресс, 1990. 736 с.
- 8. Котлер Ф., Армстронг Г., Сандерс Дж., Вонг В. Основы маркетинга: Пер. с анг. М.: ИД «Вильямс», 2000. 944 с.
- 9. Леви М., Бейтс Б. Основы розничной торговли. СПб.: Питер, 2000.
- Маркетинг для магістрів: Навчальний посібник / За загальною редакцією д.е.н., проф. М.М. Єрмоленка, д.е.н., доц. С.А. Єрохіна. – Том 1 – К.: Національна академія управління, 2007. – 604 с.
- 11. Райс Э., Траут Дж. Маркетинговые войны. СПб.: Питер, 2000.
- 12. Смехов А. А. Введение в логистику / А. А. Смехов. М. : Транспорт, 1993.
- 13. Шумаєв В. Логистика инновационной деятельности / В. Шумаєв, Д. Захаров // Ресурсы информация снабжение конкуренция. –2010. № 3.
- 14. Энджел Д., Блэкуэлл Р., Миниард П. Поведение потребителей. СПб.: Питер, 2005.
- Bernard J. LaLonde, Martha C. Cooper, and Thomas G. Noordewier. Customer Service: A Management Perspective. Oak Brook, III: The Councilof Logistics Management. – 1988. – 640 p.
- 16. Ebeling C.W. (1990) Integrated Packaging Systems for Transportation and Distribution. Marcel Dekker, New York.
- 17. Jönson, G., 2000. Packaging Technology for the Logistician, 2nd Ed., Lund University.
- 18. Lockamy, A., 1995 A Conceptual Framework For Assessing Strategic Packaging Decisions, The International Journal of Logistics Management, Vol.6, Issue 1, pp 51-60.
- 19. Twede D. (1992) The process of logistical packaging innovation. Journal of Business Logistics 13, 69-94.

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# HELLENIC TOURISM INDUSTRY: CURRENT SITUATION, INNOVATIVE PROPOSALS AND PROSPECTS

## Abstract

International tourism is one of the largest and most dynamic sectors of the global economy, showing continuous growth and diversification. The emergence of new destinations in the world tourism map contributes to both economic growth and to rising standards of living in many countries increasing the disposable income. This improves infrastructure and transport and makes transportation cheaper and faster. The evolution of tourism is a determinant of social and economic progress. Foreign tourism is considered as an integral part of international trade and is classified in fourth place worldwide, after the income generated by exports of fuels, chemicals and automotive products. For the Greek economy, tourism is a key pillar of growth with significant contribution to the gross domestic product (GDP), employment and investment. The rich cultural heritage, the extensive coastline and its natural environment are some of the comparative advantages that make the country one of the most important tourist destinations worldwide. At the same time tourism along with shipping are the most outward-oriented sectors of the Greek economy. The inflows of foreign exchange from travels have a positive effect on the balance of payments of the country, contributing to the reduction of the deficit account. The present paper analyses the influence of the tourism industry in economic development focusing on Greek reality and providing innovative proposals for its further expansion and improvement.

Keywords: Tourism, Disposable Income, Cultural Heritage, Deficit Account.

JEL: H 25, O15, O23, O38, O49

## **1. MAIN FEATURES OF GREEK TOURISM**

The cultural heritage, long coastline and natural beauty lend to Greece significant comparative natural advantages, and make it one of major tourist destinations worldwide. The basic characteristic of the Greek tourism product is the geographical definition of demand from abroad, as a whole almost from the entire European continent, and with even now they don't show change in the last decade **(diagram 1.1).** In 2010 Arrivals from European countries amounted to 13.3 million, of which 68% came from countries of the European, while 40% were visitors from member countries of the European.

At country level, Germany and the United Kingdom are timeless traditional markets from which comes the largest number of foreign visitors, although their share is diminishing the recent years. It is indicative that in 2010 the proportion of those countries was stood at 14% and 12% of total arrivals, when in 2000 ranged in 19% and 22% respectively. However during the last decade, new countries emerged from promotion markets which Greece attracts large number of visitors. These countries are mainly Russia and neighboring Balkan with arrivals to partly compensate the decline of other countries (diagram 1.2). In particular, arrivals from Russia have increased significantly over the last year (average an

nual rate of growth in the period 2005-2010 was 20% and still increasing), contributing simultaneously strengthening tourism receipts, with the average visitor spending from this country varies in level of nearly twice the average for the all foreign visitors  $(1,099 \in against 640 \in was the average cost per trip in 2010)$ . On the other hand, the decrease of the visitors from countries such as Japan and China, which indicating the existence of other markets from which Greece could benefit from attracting large number of visitors. The contribution of tourism to the economy is reflected in the Greek tourism receipts (namely the cost of foreign visitors during their visit in Greece) which representing 5% (GDP for average five years 2005-2010) of GDP, a ratio that is higher compared with other developed tourist Mediterranean countries such as Spain , Albania and Turkey (diagram 1.3a). Accordingly, revenue from foreign tourism is more than 1/3 of total receipts. The services balance (ratio corresponding nearly to that of Italy) which substantially contribute to reduce the current deficit account (diagram 1.3b).





(\*) Including arrivals from Russia, (\*\*) including the arrivals from Turkey **Source:** Hellenic Statistical Authority





DE: Germany, UK: United Kingdom, IT: Italy, NL: Netherlands, FR: France, USA, BU: Bulgaria, RU: Russia
Source: Hellenic Statistical Authority



# **Diagram 1.3:** Tourism Receipts in Mediterranean Destinations (as % of GDP and Receipts of the Balance Services) Mid : 2005-2010.

HR: Croatia, MT: Malta, CY: Cyprus, PT: Portugal, ES: Spain, TR: Turkey, FR: France, IT: Italy / Source: Eurostat

#### 2. HELLENIC TOURISM INDUSTRY: CURRENT SITUATION

Today, the crisis that Greek economy is passing through indicates the necessity to adopt measures for the direction to a new development model.

Is common finding that this model should emphasize to use the benefits that the country has and to stimulate openness and investment. The interesting of the development prospect of Greek economy from the perspective of policies and tools to stimulate openness, reasonably is directed to strategies like growth of exports of goods and services, such as in the field of tourism, which is called to play an important active role in the economic development of the country.

In a highly competitive environment of the Mediterranean countries, and also from new emerging destinations that comes to surface nowadays, in today's uncertain environment, however, a reasonable analysis of the importance that some specific areas that Greek economy has, is need it, so the debate to be conducted per substance and not by vague findings. In this context, the importance of tourism in Greece should be explained and analyzed accurately and include not only standard sizes for imaging of tourism demand (like international arrivals receipts from foreign visitors, etc.), but also the wider impact of the Greek economy.

## 3. BASIC CONCEPTS OF TOURISM AND THEIR CONNECTION WITH NATIONAL ACCOUNTS

In the system of National Accounts tourism is not reflected as single industry, because it is associated with a wide range of economic activities to produce goods and services, which consumed by visitors of an area. In order to analyze the impact of the economy is necessary to identify the economic activities (sectors) that are involved in the production-supply of goods and services that compose the tourist expenditure (consumption). According to the IRTS '08 (§ 4.2), as tourist expenditure, is defined the amount of paid for the acquisition of consuming goods and services for own use or from third parties for making a trip such as at and during the trip. Including costs of visitors, and the expenses that are paid by others for those ones.

Main categories of tourism expenditure are: a) the inbound tourist expenditure namely expenditure by foreign visitors who travel to a country of reference, b) <u>domestic tourism expenditure</u> includes consumption of resident visitors from the reference country and c) <u>outbound tourism expenditure</u> associated with traveling resident in countries different than that of permanent residence. To assess the effect tourism in the Greek economy are taken into account the incoming and domestic tourist expenditure, the sum up is the internal tourism expenditure (Internal tourism consumption). The consumption of outbound tourism is the value that channeled to areas of non permanent establishment, and therefore are not taken into account during assessing the impact of tourism on the domestic economy. **IRTS '08** (International Recommendation for Tourism Statistics 2008).

#### 4. TOTAL IMPACT OF TOURISM ON THE GREEK DOMESTIC ECONOMY: METHODOLOGY AND ESTIMATES

The estimation of tourism impact on key figures of Greek economy it is based on 2010 data (latest available). Although the contraction of gross domestic product (as a result of recessionary path of the economy which is partly due and to the process of the fiscal policy) may lead to a reduction the size in absolute terms, estimates as a proportion in the total economy highlight the important role of tourism in the Greek economy.

The contribution (effect) of tourism in the domestic economy is divided into <u>direct</u>, <u>indirect</u> and <u>in-</u> <u>duced</u>. The increase of the final demand as a result of tourist spending (inbound and domestic) affects those companies that the majority of their turnover comes from the development of tourism activity. The changes in the level of production, owing to tourism consumption, combined with the increase of initial inputs used by firms represent the direct impact of tourism consumption.

The largest output in the sectors of economic activity that is directly affected by tourism also increases the demand for products of other industries used in the production process. So formed from the side of suppliers, the need for additional inputs (primary and intermediate) to cover the additional demand for products produced themselves (as many of its outflows that cannot be produced within the economy are imported). This interdependence between productive process in an economy is the indirect effect.

In addition, households with incomes paid for their work that offer in satisfaction of final demand for tourism products and services in the along the value chain. Furthermore, as consumers spend their incomes on purchase of goods and services. Then, a change in the amount of work that is necessary to production in one or more branches affects their income and also the expenses that do as consumer units. Consequently, the amount of their purchases depends on their income, which in turn depends on the size of production in each sector. The definition induced effect describes the contribution to results (GDP, employment, etc.) from the demand for goods and services in the economy as a result of the change in the disposable income of households taken in the value chain of tourism products and services. For examining the economic impact of tourism on the local economic sectors activities, the study focuses on Gross Value Added (GVA). GVA defined as the difference between the value of output and total intermediate consumption. In essence, this has do with the resource "that stay in economy" to pay wages, employer contributions, taxes on production, depreciation of capital and the dividends value to shareholder, and capital accumulation as a reserve of profits from business, which is an important source of funds for future investment. The sum of GVA and the indirect taxes (excluding subsidies) on products that consumed, constitutes the gross domestic product (GDP) produced by each economic industry activity. The GDP from tourism is equivalent to the gross proceeds of disciplines that participate directly or indirectly in shaping the tourism product.

#### 5. IMPACT OF TOURISM ON DOMESTIC ECONOMY ACTIVITY

The GDP reflects the value in monetary units of final goods and services produced in a year. Part of this production by each branch absorbed from other sectors of economic activity as an input in the production process. Apart from the intermediate demand, the product that produced is consumed by households, the state (the government), directed to investments, but also exported outside the country. The sum of these factors represents the final demand for goods and services which, together with the interim constitute the total demand for each product sector.

In the case of tourism, the consumption of tourism products from the part of households represents the demand created by the national tourism, while demand from the state associated with costs from the government side, for example the advertising campaign to promote the tourism product, and the hosting expenses during the visit or staying foreign people in Greece (informing). Correspondingly, investments related to the money that are spent by the public and also the private sector to carry out investment projects aimed at improving the tourism product and service that offers to visitors in a area.

On the other hand, exports reflect the demand for tourism services from foreigners who visit Greece, a figure which, in monetary value, reflected in travel receipts and revenues from cruises (all

means of transportation that visitors use). The use of input-output tables are intended to express the cost from the side of final demand in terms of product, distributing the total tourism GDP in <u>direct</u>, <u>indirect</u> and <u>induced</u> result. This is achieved by assuming that the final demand for tourist services is an extraneous change in economic activity, whose effects are estimated for the whole economy. The overall effect is examined in this study as the sum generated by the impact of tourism expenditure (the money that visitors spent, domestic or foreign, in the categories of goodsservices), and the impact from the side of investment. It should be noted however, the difficulty to identify data regarding the level of investment which associated with the development of tourism sector, because of the large number of companies who try to manage perfect the tourism product in many different industries. A similar difficulty is identified when you try to exact identification of those public investments aimed at developing or improving the tourism product. For this reason, as tourism investments are considered the payments made by the Public investment program (PIP or  $\Pi\Delta E$  in Greek) of 2010 for infrastructure (for example: roads, ports, etc.) in tourist developed areas of the country.

#### 6. ESTIMATES OF TOURISM IMPACT AND EMPLOYMENT

Based on the above assumptions, the direct impact of tourism to the GDP of Greece in 2010 is estimated at 15.2 billion  $\in$ , indirect 5.2 billion  $\in$  and induced to 13.9 billion  $\in$  (**diagram 2.1**). As a result, the overall effect amounts to approximately 34.4 billion  $\in$ , which demonstrates the importance that tourism plays in Greek economy, by contributed at 15.1% of total gross product of the country. From the total impact of 34.4 billion  $\in$  in the Greek economy, the 32.4 billion  $\in$  is result of tourist expenditure and 1.9 billion  $\in$  are assessing impact on the domestic product from tourism investments. Therefore, for every 1,000  $\in$  tourism expenditure in gross proceeds of Greek economy can grow at 2,220  $\in$  about. Alternatively, this assessment indicates that achieving the target of 20 million arrivals of foreign visitors to Greece, would result in tourism receipts from abroad to reach at least 12.8 billion  $\in$ , increased by 3.2 billion  $\in$  compared with 2010. In terms of overall impact on GDP is equivalent to an additional effect of more than  $\in$  7 billion compared with 2010.



Diagram 2.1: Total impact of tourism on Greek GDP

Moreover, for the formation of the direct effect of tourist spending, the largest contribution comes from the services of accommodation and secondly from the accommodation them self, so these two categories can make up almost 2/3 of direct impact of tourism by tourism expenditure (**diagram 2.2**). In the transport sector, the contribution of the domestic product due to the development of tourism product exceeds the 3.1 billion  $\in$  (or 22% of total direct effect) with most important the shipping industry.



Diagram 2.2: Direct impact on tourism related with economic activity of industries 2010

Major sectors (indirect) that benefit from tourism is commerce, industry, property management, as well and financial services (like banks and insurance services where the indirect effect exceeds 570 million €). Positive also affects the business in construction and telecommunications, while important is the contribution of the development of the tourism product in both primary sector (Agriculture, Livestock and Fisheries) also and the domestic industrial production (Food processing, power generation, etc. diagram 2.3).



**Diagram 2.3:** Indirect effects of tourism on domestic economic sectors activity, 2010

On the other hand, tourism contributes to the promotion of social cohesion offering development and business opportunities particularly in parts of the country as islands and other with a rich tourist interest, which characterized by depopulation, while enhancing the standard of living through the jobs it creates. By employment in the tourism sector which is labor intensive, as the production of goods and services related to the demand of the guests used comparatively more work versus capital equipment. Another characteristic trait, is the labor variance that exhibits during the year due to the seasonality of tourism product in the country, which increases during the summer months at the peak of the tourism demand. As in the case of gross domestic product, the impact of tourism in employment divided into <u>direct</u>, <u>indirect</u> and <u>induced</u> (diagram 2.4).



#### Diagram 2.4: Effect of tourism on employment, 2010

## 7. THE IMPACT OF TOURISM ON TAX REVENUES

The main factor in the conduct of fiscal policy is the followed tax policy. The State derives income from many types of taxes on natural and legal persons, such as income tax, excise taxes, and taxes that imposed at different stages of the production process. This section examines the effect of tourism product in revenue from taxes who are linked to production of goods and services, as included in the input-output table of the Greek economy. These taxes related to indirect taxation (VAT, taxes and duties on goods that imports and excise duties ) paid by companies of each sector to purchase (buy) products or services which are the inputs to their production process. Taxes on services offered by tourism businesses to their customers, such as the VAT paid by the consumer for his stay in a hotel accommodation for example, and that is not captured at a sectoral level in the system tables input-output framework. The impact of indirect taxation on tourist spending is estimated for 2010 to be at 733 million €. **(diagram 3.1).** 

Respectively, taking into account the effect of the investments that associated with the developmentimproving the domestic tourism product, the direct effect on tax the revenue amounted to 762 million €, while including private consumption, the contribution is increased by 411 million €. Cumulatively, the contribution to tax revenues estimated at about 1.4 billion € (**3.2 diagram**) units, representing 5% of total state revenues in 2010 from indirect taxation.



Diagram 3.1: Distribution of impact (% of total) in indirect revenue taxation of tourism expenditure, 2010



Diagram 3.2: Impact of tourism revenue from indirect taxation 2010

#### 8. INNOVATIVE PROPOSALS AND PROSPECTS

Many things can be done to achieve economic growth even to a global crises that economy passing through, there are many alternative ways for producing, managing and promoting the tourism industry, like the followings:

1) The importance of tourism highlights the need to identify international relations and its contribution to domestic economic activity, by creating long time relations with other countries worldwide. That will make easier and more approachable the transportation and communication with the country for visitors and that will increase to the top the number of visitors that will come in, and that of course will have a positive effect on GDP.

2) Reduction of the bureaucracy (red tape), that means that the transportation traveling will be faster and easier.

3) Showing that Greece is not only a summer accommodation, and has many things that is worth to visit the hole year, that will effect positively the tourism receipts and make a big amount of visitors come to the country hole the year.

4) Tourism is a key pillar of the Greek economy and by good promotion and cooperation it will capture impression and it will stop developing the gathering in specific areas in the world tourism map for travelers and that will open new horizons to the tourism flow to see and addicted to new thing's.

5) Creating the right security and health restrictions for visitors. The creation of a climate of responsibility and trust, accompanied by the desired result of physical health care for the visitor is really important.

6) The development of the tourism product creates additional positive effects to the economy by foreign and also domestic tourism, so needs to be approached from both sides.

7) The indirect contribution of tourism is estimated at 5.2 billion  $\in$ , the branches that are most affected by tourism consumption, is Trade, financial services, industry, management of real estate, construction and manufacturing. Accordingly, the effect caused by the increase of disposable income in households amounts to  $\in$  13.9 billion, resulting that tourism contributes at 15.1% (or 34.4 billion  $\in$ ) of the total gross domestic product the country in 2010. And that has positive effects the total economy.

As mentioned to above estimates, except the contribution of the tourism sector in the domestic economic activity, also can bring dynamics in the country's economic growth for the coming years. For this purpose, it should be emphasized the until today untapped resources (activities), that will strengthen the tourism demand, as well the emergence of the business side of tourism, showing the relationship between price and quality of services that offered. Is necessary, the use of alternative forms of tourism, which complement the existing pattern around the sun and the sea, which is the pillar of growth of domestic tourism product. In a particularly competitive environment as shaped by the Mediterranean countries, but also from new emerging destinations. New types of tourism, such as tourism cities (Athens and Thessaloniki), congress tourism and health tourism, coupled with the development of the cruise, can help in this direction. Is indicative that based on the assessment of the impact of tourism on the Greek economy, achieve the target of 20 million arrivals from abroad would result in the tourism receipts from overseas to reach at least 12.8 billion  $\in$ , while in terms of overall impact on GDP the additional contribution would be greater than 7 billion  $\in$  compared with that for 2010.

#### 9. CONCLUSIONS

Tourism is a central pillar of the Greek economy, with significant contribution to the Gross Domestic Product and employment. This suggests the role it has to play in the growth of economy and particularly in adoption of a new production model, which relies to a greater extent, compared with the past, the extroversion. The rich cultural heritage, mild climate and the natural beauty of Greece lead the country to be among one of the the most important tourist destinations worldwide. The continued development of tourism can offers multiple benefits which are diffused throughout the economy by supporting productive structures and regional development particularly parts of the country, such as islands, where growth prospects are smaller. This fact indicates the necessity to investigate interdisciplinary relations and the contribution of the tourism sector to the domestic productive activity. In contrast, however, as other important sectors of the economy such as construction, Manufacturing, Agriculture, etc., tourism is not reflected in a single industry, but is associated with a wider range of activities. This creates the need to define those sectors that affected by the consumption of goods and services from visitors in an area that is not a place of permanent residence. These categories distinguished in accommodation, in diet (food and drinks), transport, services travel agencies, recreational-cultural activities and markets shop, and other everyday products with their respective industries. The economic activity that offer goods and services is affected

directly from the height of tourist expenditure. At the same time, the development of the tourism product creates additional positive effects, from the perspective of production units, supplying businesses that are active with tourism, while the change in demand for goods and services in the economy affected the disposable income that households receive in the value chain of tourism products and services. In 2010, the direct impact of tourism in Greece's GDP was estimated at 15.2 billion €, of which 14.6 billion  $\in$  (in terms of gross domestic product) is the result of tourism expenditure on the part of foreigners, but also domestic visitors, including revenue from the cruise. This estimate shows that for every 1,000 € tourist expenditure in gross proceeds of the country, is increased by 2,220 € approximately. The largest contribution comes from the accommodation services, while in combination with focus, are the almost 2/3 of the direct impact of tourism. Important is also the contribution of the domestic product from transport, especially maritime, road, which include an extensive service network for the movement of visitors to the country. In aviation, the corresponding contribution is slightly milder despite the fact that the bulk of arrivals performed with this specific vehicle. This development is associated with the development of mass tourism and movement of large numbers of tourists with charter flights (charter), the majority of which are made by foreign airlines. This has as a result the cost of moving to be regarded as a benefit to the country's economy that (airline) companies have their headquarters. In individual categories, the contribution from the industry of travel agencies and from Cultural-Recreational-Sports hovering at around 4%, while for retail trade close to 5%. Also indicative of the interaction of the branches of the tourism development is the case of the organization of fairs-Conferences, where the relatively small direct contribution of the sector reflects the positive impact-in terms of value-creating-making conferences mainly for hotels and focus. The indirect contribution of tourism is estimated at 5.2 billion  $\in$ , the branches of which activity is most affected by tourism consumption, is trade, financial services industry, management of real estate and, construction and manufacturing. Accordingly, the effect caused by the increase of disposable income in households amounts to  $\in$  13.9 billion  $\in$ , resulting in a tourism to contribute 15.1% (or 34.4 billion) of the total gross domestic product of the country in 2010.

Important is also the contribution of tourism to the labor market, the immediate and Indirect employment is estimated to be 446 thousand workers, and the overall effect on employment amounts to 741 thousand or 16% of total employment in the country in 2010. It should also be noted that the tourism (direct) employment increases during summer, when the tourism demand increasing. The above estimates, except from the contribution of tourism sector in the domestic economic activity also brings dynamics in economic development of the country in the coming years. For this purpose, it should be emphasized to until today untapped resources-activities that will strengthen the tourism demand, and as well the emergence of the business side of tourism relationship between price and quality of services that they offer. All that had been said previous, can help to realize the importance, and the coming results that tourism industry "good" handling can offer, such as the increase of economy situation (alternative-ideas-development), the giving chances for development, for alternative ways of using the world standards, and the most important, a chance for a better future, for each the country and for its people.

#### **Bibliography**

- 1. Website Google
- 2. United World Tourism Organization (UNWTO), Tourism highlights 2008 Edition and World
- 3. Tourism Barometer (June 2009)
- 4. International Recommendations for Tourism Statistics, 2008. UNWTO
- 5. Methodology for producing the 2011 WTTC/OE Travel and Tourism Economic impact research. World Travel and Tourism Council-Oxford Economics
- 6. Paulopoulos P. The size and dynamics of the tourism sector, 1999

