



**9<sup>TH</sup> INTERNATIONAL ASECU CONFERENCE ON  
“SYSTEMIC ECONOMIC CRISIS: CURRENT ISSUES AND PERSPECTIVES”**

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**VIEW ON MONETARY INTEGRATION IN THE EURO ZONE  
IN TERMS OF THE THEORY OF OPTIMAL CURRENCY  
AREAS**

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**Abstract**

*Over the past years, there was a consensus that the euro is the best way to achieve medium-term prosperity of the European countries since joining the Economic and Monetary Union was regarded as the basis for the development of trade and reduction of the cost of capital. However, the experience from the last financial crisis and developments in the euro zone suggest that these benefits may be overstated given the deepening differences between countries within the Union. The gradual erosion of competitiveness, higher deficits and a decline in the economic activity, raise the question of synchronization of the economic cycles, development of flexible labour and commodity markets - that make the theory of optimum currency areas. Analyzing the criteria given by the theory of optimum currency areas, this paper focuses on examining the factors that put in question the future of the EMU and the possible exit solutions for the reform of the European system.*

*The analysis includes the degree of the Macedonian convergence towards the EMU. The final result of this paper conveys a message regarding the basic guidelines and structural reforms that need to be taken for full integration and prosperity within the Union.*

**Keywords:** *optimum currency areas, convergence, EMU*



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### **1. Introduction**

According to the theory of optimum currency areas (Mundell 1961, McKinnon 1963, Kenen 1969), the optimum currency area is defined as an economic entity composed of states that are symmetrically affected by certain economic shocks and in which there is full mobility of labour and capital, while the exchange rate as an instrument for maintaining the equilibrium in the balance of payments and the monetary policy autonomy are lost. The major assumption of the concept of optimal currency areas is that in terms of removal of foreign exchange risks, the manufacturers perceive the entire area as a single market. Therefore the possibilities for taking advantage of economy of scale are high as the allocation of the resources from regions with lower productivity to regions with higher productivity is easier. The main disadvantage is that each member state can not run its own independent stabilization and development policy that is tailored to its specific preferences and requirements.

After more than ten years since the establishment of the European Economic and Monetary Union, the question is whether the necessary integration mechanisms have developed within the Union which could enable its further functioning as an optimal currency area. Given the duration and depth of the problems in the euro zone, the latest considerations point out that the differences between the Member States of the euro zone increasingly deepened because one part, especially its southern regions, are unable to ensure proper growth and prosperity and maintain a disciplined fiscal policy.

The following analysis should answer whether euro zone in the present set-up is a structural and sustainable solution on a long run taking into account the criteria of the theory of optimum currency areas.

### **2. Synchronization of the economic cycles**

One of the primary assumptions for entrance in the monetary union (Mundell, 1961) is the synchronization of the economic cycles within the monetary union, which includes rare and small asymmetric shocks among the economies of the member states. In circumstances of economic shock that equally affects the economies of all member states, the macroeconomic policies have the role of a stabilizer, so that, depending on the nature of the economic imbalance, a counter-cycle macroeconomic policy is implemented.

If the nature and economic imbalances are a result of the individual characteristics of a member country of the union, the efficiency of the single monetary policy of the central bank is reduced, that is, the rule “one-size-fits-all” is not applicable. In such cases, unless other alternative adjustment mechanisms (labour mobility, price and wage flexibility or budget transfers) are mobilized, the country can have significant negative consequences from the monetary union membership.

Following the economic growth dynamics of the member states historically (Graph 1), it can be concluded that the synchronization of the economic cycles of the member states in the euro zone is continually reduced. Namely, unlike the period immediately

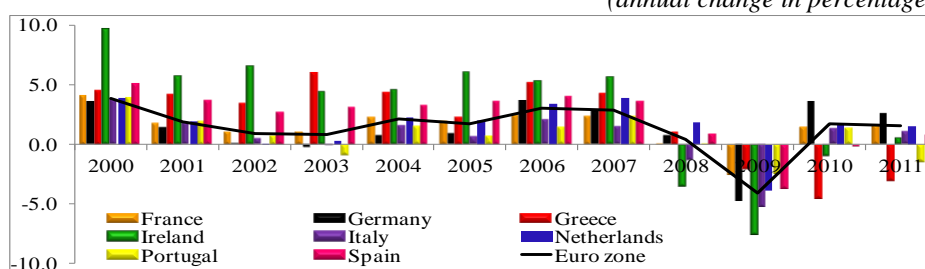


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after the establishment of the single market in 1992, with the introduction of the common currency, no further increase in the synchronization of the economic cycles is perceived. On the contrary, the analyses indicate that the correlation between the economic cycles has started to decrease since 2003, when the countries that compose the core of the euro zone showed signs of disassociation (Gayer, 2007). On the other hand, the so-called peripheral countries of the euro zone (Greece, Ireland, Portugal and Spain) were achieving rapid growth as a result of the sharp reduction of the real interest rates and their strong economic potential.

**Graph 1 Gross domestic product in some euro zone countries**

*(annual change in percentages)*

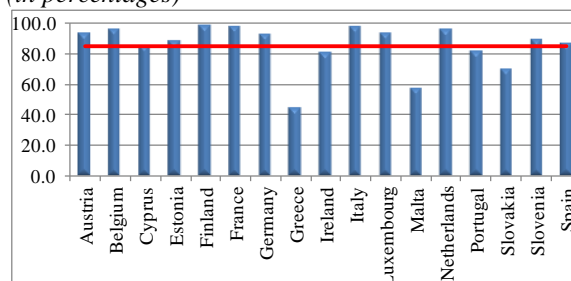


Source: Eurostat

The degree of (dis)harmonization of the economic cycles among the member states of the euro zone can be seen through the correlation coefficient. Namely, if the correlation coefficient of the average GDP growth in the period 2000-2011 is compared, it can be concluded that there are significant deviations among the smaller economies (Greece, Malta, Slovakia and Ireland), where the correlation with the euro zone GDP is lower.

**Graph 2 Correlation coefficient of the GDP growth for the period 2000-2011**

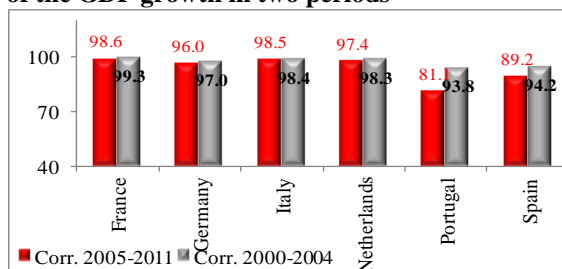
*(in percentages)*



Source: Own calculations and WEO data

Additionally, the analyses since 2005 indicate that even among the larger economies, the correlation between the economic cycles is reduced, which points to the fact that the synchronization of the economic cycles among the euro zone member states is decreasing.

**Graph 3 Comparison of the correlation coefficient of the GDP growth in two periods**





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Bearing in mind that the Union member states are in different phases of the economic cycle, the question arises whether the monetary policy of the ECB is a universal solution for each of them. This is due to the fact that because of the size and dominance of the economies, the monetary policy of the ECB was focused mostly on the economic cycles that prevailed in Germany, France and Italy. In most cases, such policy was incompatible with, even destabilizing for the small economies, whose economic cycles were not synchronized with the three largest ones.

### 3. Harmonization of the economic structure

The analysis of the sector structure of the economies of the euro zone member states indicates great structural differences among them.

**Table 1 Gross value added comparison 2000 and 2010**  
(% share of total gross value added)

	Agriculture, forestry, hunting and fishing		Industry		Construction		Trade, transport, communicat.		Business activities and fin. services		Other services	
	2000	2010	2000	2010	2000	2010	2000	2010	2000	2010	2000	2010
<b>Euro zone</b>	<b>2.4</b>	<b>1.7</b>	<b>22.2</b>	<b>18.6</b>	<b>5.6</b>	<b>5.9</b>	<b>21.0</b>	<b>20.5</b>	<b>26.6</b>	<b>29.3</b>	<b>22.1</b>	<b>24.0</b>
Belgium	1.4	0.7	22.1	16.6	5.0	5.3	21.2	21.8	27.8	30.3	22.5	25.3
Germany	1.3	0.9	25.1	23.7	5.2	4.1	18.2	17.2	27.5	30.5	22.8	23.6
Estonia	4.8	3.5	22.0	22.7	5.6	5.7	28.3	25.2	22.4	23.8	17.0	19.1
Ireland	3.2	1.0	34.3	26.3	7.5	5.6	17.9	17.2	21.3	27.2	15.8	22.8
Greece	6.6	3.3	13.9	13.8	7.0	4.1	30.1	33.3	20.6	20.5	21.7	25.1
Spain	4.4	2.7	20.9	15.6	8.3	10.1	26.1	25.3	19.5	22.8	20.8	23.5
France	2.8	1.8	17.8	12.5	5.2	6.5	18.9	19.2	30.7	34.1	24.8	27.0
Italy	2.8	1.9	23.4	19.4	5.0	6.0	23.9	22.2	24.7	28.4	20.1	22.2
Cyprus	3.6	2.3	12.2	9.2	6.8	7.2	31.2	25.5	23.8	29.9	22.3	25.9
Luxembourg	0.7	0.3	12.6	8.1	5.7	4.9	21.8	22.1	43.8	48.4	15.4	16.2
Malta	2.3	1.9	24.4	15.8	4.1	3.5	30.2	23.6	18.5	24.9	20.4	30.3
Netherlands	2.6	1.9	19.3	18.4	5.6	5.3	23.1	20.5	27.3	27.7	22.1	26.1
Austria	2.0	1.5	23.3	22.3	7.5	6.9	24.6	23.3	21.5	24.1	21.1	21.9
Portugal	3.7	2.4	20.4	17.0	7.6	6.0	25.3	25.5	20.3	23.1	22.7	26.0
Slovenia	3.3	2.4	29.0	24.3	6.7	6.7	20.4	22.2	20.2	23.4	20.0	21.3
Slovakia	4.5	3.8	29.1	25.8	7.0	9.0	25.2	24.2	17.1	19.1	17.0	18.0
Finland	3.5	2.9	28.4	22.3	6.2	6.6	20.2	19.8	20.9	24.1	20.7	24.2

Source: Eurostat

Namely, industry dominates in one group of countries, as opposed to construction or agriculture or services that have dominant share in the GDP in other member states. This distribution points to risks of appearance of idiosyncratic economic shocks in certain sectors or economies, which may be not common for the euro zone as a whole. In that case, the economic policy measures may have various, even destabilizing effects on some of the member countries (Kenen, 1969).



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With the escalation of the financial crisis, the imbalances among the countries increased, especially among those that were leaning on the sectors that were mostly affected by the crisis, such as tourism, real estate and finance. The decrease of the economic activity in the peripheral member states caused these countries to face with greater losses than the euro zone as a whole, on average.

**4. Labor force mobility**

The increased size and frequency of the asymmetric shocks pointed to a greater need for independent monetary policy and flexible foreign exchange regime, as mechanisms for establishing internal and external balance in the economy. Nevertheless, the theory indicates that there is an exception to this rule, in the cases of high labour mobility, flexible prices and wages and budget transfers (Kenen, 1969) that can support the economies or regions affected by economic shocks.

In regard to the first mechanism, there is a consensus that labour mobility in the euro zone is too low to have a role of automatic stabilizer of the divergent economic developments. The net migrations between the euro zone countries, compared to the total population in the EU is on a very low level (about 0.7%). This means that the elasticity of the migrations relative to the salaries and unemployment is quite low.

**Table 2 Rate of gross migrations in the euro zone countries  
in reference to the total population in the EU**

	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average (2002- 2010)
<b>European Union</b>	<b>0.8</b>	<b>0.9</b>	<b>0.8</b>	<b>0.7</b>	<b>0.6</b>	<b>0.8</b>	<b>0.6</b>	<b>0.4</b>	<b>0.4</b>	<b>0.7</b>
<b>Belgium</b>	0.8	0.7	0.7	1.0	1.0	1.1	1.2	1.2	1.6	1.0
<b>Germany</b>	0.6	0.3	0.2	0.2	0.1	0.1	-0.1	0.0	0.3	0.2
<b>Estonia</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Ireland</b>	1.8	1.6	2.5	3.1	3.2	2.1	0.1	-1.2	-1.5	1.3
<b>Greece</b>	0.7	0.7	0.8	0.7	0.7	0.7	0.6	0.6	0.3	0.7
<b>Spain</b>	3.2	3.1	2.9	3.0	2.8	3.1	1.8	0.2	0.3	2.3
<b>France</b>	0.6	0.7	0.7	0.6	0.4	0.2	0.2	0.2	0.2	0.4
<b>Italy</b>	1.2	2.2	2.0	1.1	1.3	1.7	1.4	1.1	1.0	1.4
<b>Cyprus</b>	2.0	3.5	4.4	3.9	2.3	1.9	0.9	0.5	-0.8	2.1
<b>Luxembourg</b>	1.2	2.5	2.0	2.7	2.3	2.5	3.2	2.6	3.0	2.4
<b>Malta</b>	0.9	0.9	1.0	0.8	1.1	0.8	1.2	-0.1	1.1	0.9
<b>Netherlands</b>	0.4	0.1	-0.1	-0.3	-0.3	0.0	0.4	0.5	0.4	0.1
<b>Austria</b>	0.9	1.1	1.4	1.2	0.6	0.8	0.8	0.5	0.7	0.9
<b>Portugal</b>	1.4	1.3	0.9	0.7	0.5	0.4	0.2	0.3	0.1	0.6
<b>Slovenia</b>	0.2	0.4	0.2	0.7	0.6	1.4	1.8	1.1	-0.1	0.7
<b>Slovakia</b>	0.0	0.1	0.1	0.1	0.1	0.3	0.3	0.2	0.1	0.1
<b>Finland</b>	0.2	0.2	0.3	0.3	0.4	0.5	0.6	0.5	0.5	0.4

Source: Eurostat data and own calculations

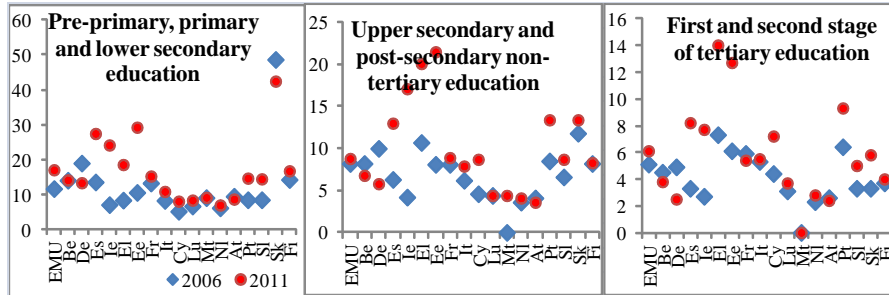
Additionally, the insufficient qualification of the labour force is another factor that makes the labour mobility more difficult. In case when the unemployment is increased, the number of people with lower qualifications who look for a job also increases due to their smaller adaptability and mobility.

In 2011, in the euro zone as a whole, the average unemployment rate of the people with primary school or lower high-school education is 17%, and is almost three times higher than the unemployment rate (6.1%) of the people with tertiary education. In the peripheral member states where the participation of labour force with lower education is higher, the unemployment growth was much stronger as a result of such educational structure and the impossibility for its redirection to other sectors of the economy.



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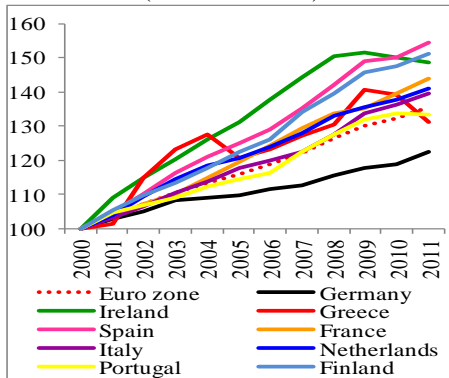
**Graph 4 Unemployment rates by highest level of education attained**  
(in percentages)



Source: Eurostat

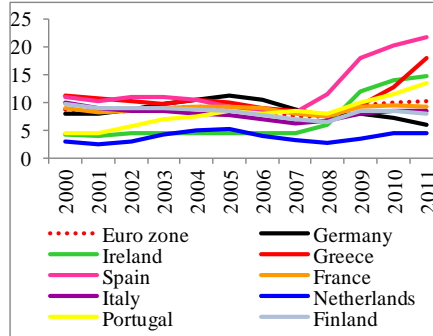
In respect to the labour market, the analyses indicate that the wage flexibility is quite low. Following the wage index within the euro zone (Graph 5), it can be concluded that until 2002 there were no significant divergences between the wage level among the member states. However, in the period after 2002, we may notice that the wages in some economies start growing intensively.

**Graph 5 Fluctuation of the wage index**  
(index 2000 = 0)



Source: Eurostat

**Graph 6 Unemployment rate as a percentage of labour force**  
(in percentages)



Source: Eurostat and own calculations

Despite the intensive wage growth, during the whole period from 2000-2011, the peripheral member states register high unemployment rate (Graph 6), which indicates low wage sensitivity to the unemployment movements.

The European Commission (2008) points to the fact that despite the positive effects of the single currency introduction, the increase of the labour costs in the euro zone contributed to the productivity growth slow down. Therefore, as a result of the insufficient labour productivity achievements, despite the introduction of new technologies and good business practices, the economic growth in the euro zone was slowing down.

In this regard, it can be concluded that in the event of economic shock, when there is no flexible foreign exchange regime and autonomous monetary policy in the member



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states, the labour mobility or wage flexibility cannot recover the differences among the economies in the Monetary Union.

### 5. Capital mobility

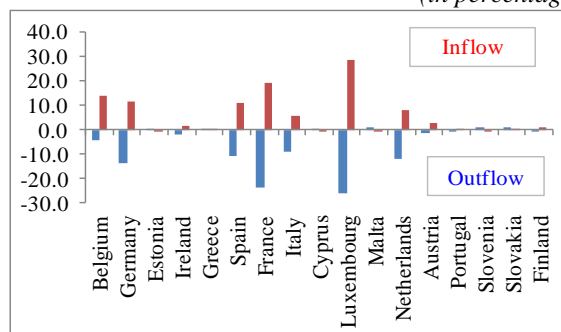
In circumstances when a member country is affected by a specific economic shock and when there is no responsiveness in the labour market, the theory of the optimal currency areas points to another possible solution. In terms of the fixed exchange rate, the differences between the economies within the Union can be resolved through greater capital mobility (Ingram, 1969). Having in mind that the foreign exchange risk is eliminated, the foreign direct investment (FDI) inflows can intensify trade and investments, support the economic growth and reduce unemployment.

However, although it is evident that the FDI among the member states have intensified with the establishment of the European Union, the analysis of the FDI by countries points to significant geographical concentration. Namely, in the past ten years, the largest part of foreign investments was directed from and towards the six most developed economies, which is mostly due to their traditionally well developed mutual cooperation. In the same period, there was practically no inflow of FDI towards the “peripheral” member states.

The main reason for the lower investments in these countries are: bad infrastructure, large state administration, undeveloped product services and qualifications of the employees, which all contribute to lower return on investments and their insufficient interest.

**Graph 7 FDI movement among the member states in the period 2000 – 2010 in comparison to the total direct investments in the euro zone**

(in percentages)



Source: Eurostat data and own calculations

### 6. Trade – openness of the economy

The theory of the optimal currency areas indicates that the countries that achieve high level of trade relationships have higher benefits from the acceptance of the single currency because they eliminate the transaction costs, which additionally support the trade and interconnections between the member states of the union (McKinnon, 1963).

If we observe the level of openness of the economy, as a total value of imports relative to the country's GDP, we may conclude that the degree of openness of the euro zone economies significantly varies, from very open economies, such as Belgium, Estonia, Malta to rather closed economies, such as Italy, France, Spain and Germany. In

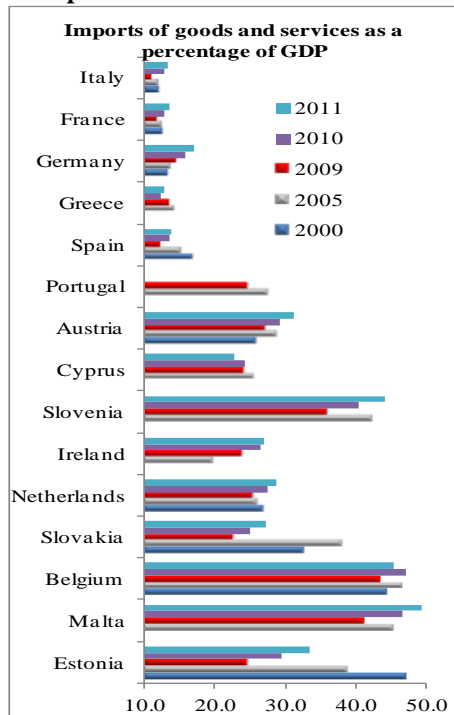


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principle, the smaller economies are more open than the larger ones considering the fact that their local markets and national resources are limited. Therefore, the entrance into a currency union is a significant advantage for the smaller economies, due to the lower transaction costs.

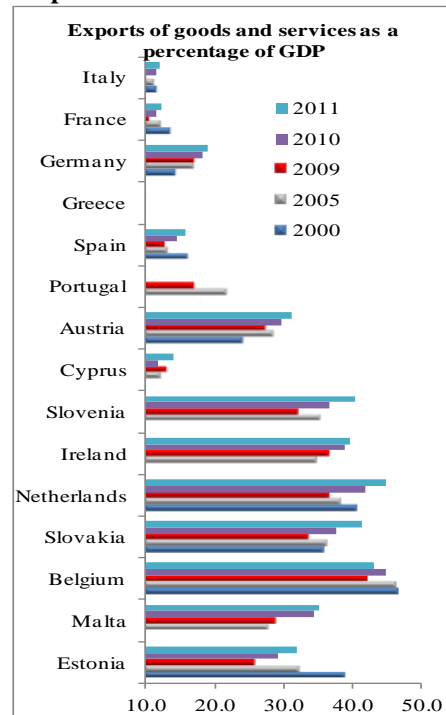
However, the data over the last ten years show that there is stagnation or reduction in the trade activity between the peripheral economies and other euro zone economies, both in terms of import and in terms of export.

**Graph 8a**



Source: Eurostat

**Graph 8b**



These fluctuations in trade are mainly result of the differences in productivity and competitiveness emphasized above, as well as of the different effects of the macroeconomic policies on economies of the member countries, which lead to the further increase of imbalances of them. Therefore in the "peripheral" countries there is significant deterioration of the external balances.

### 7. Price stability

The analysis of the consumer price indexes in the euro zone as the main indicator of inflation and price stability, points to favourable achievements in the period 2000-2011. Namely, the inflation in the euro zone fluctuated close to the stipulated objective according to the Maastricht Criterion, and moved from 0-2% annually. Nevertheless, if the situation is analyzed by countries, significant variations may be observed. Namely,



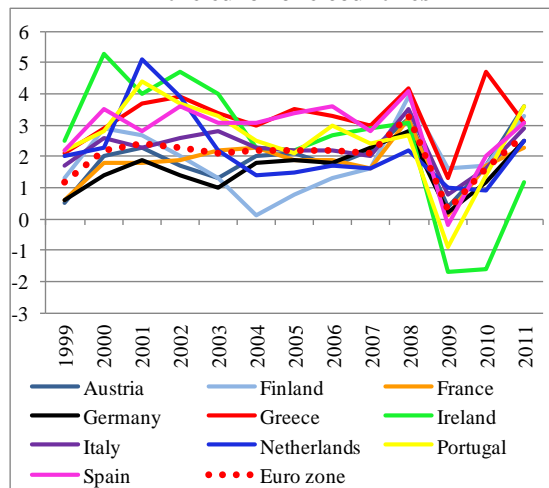


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the ECB nominally determines the interest rate and it is valid for all euro zone countries. This means that in the countries with higher inflation this policy brings lower, in some cases even negative real interest rates, whereas in the countries with lower inflation it results in higher and positive real interest rates. The lower the domestic real interest rate, the higher the motivation for economic activity, as well as for the domestic inflation growth. Thus, in the period before the escalation of the world financial and economic crisis, there was rapid growth of the consumption and investments in residential construction in Spain, Greece and Italy which was, in fact, a result of the positive reaction of the lower real interest rates in these countries. This contributed to the increase of the prices of the houses and the rents, further inflation growth, while the real interest rates were still decreasing.

**Graph 9 Fluctuation of the annual inflation rate in the euro zone countries**

Therefore, unlike the aggregate inflation, which moved within the stipulated objective, the inflation between member states increasingly varied. Bearing in mind that these fluctuations were permanently maintained for a longer period of time, the competitiveness of the countries with high inflation gradually decreased (Ireland, Greece, Spain and Portugal), while the countries with low inflation were becoming more competitive (Germany, Finland, France, Austria).



Source: Eurostat data and own calculations

### 8. Fiscal stability

The financial problems of the euro zone, the growing external imbalances and differences between the competitiveness of the countries from the “core” and the “periphery”, in terms of single monetary and exchange policy, point out the question about the role of the fiscal policies of the Union member states. However, along with the escalation of the economic crisis, the capacities of the national fiscal policies for implementing contra-cyclical measures dramatically decreased, which led to the domestic fiscal policies being “captured” in high debts and deficits. Following the fiscal achievements of the euro zone member states, we may conclude that there is a significant deviation from the given rule with the Maastricht Treaty and the Stability and Growth Pact, that stipulates maintenance of the budget deficit not higher than 3% of GDP, and the public debt may not exceed 60% of GDP.



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**Table 3 Budget deficit/surplus as a percent of GDP**

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
<b>Euro zone</b>	-0.1	-1.9	-2.6	-3.1	-2.9	-2.5	-1.3	-0.7	-2.1	-6.4	-6.2	-4.1
Belgium	0.0	0.4	-0.1	-0.1	-0.3	-2.7	0.1	-0.3	-1.3	-5.8	-3.8	-3.7
Germany	1.1	-3.1	-3.8	-4.2	-3.8	-3.3	-1.6	0.2	-0.1	-3.2	-4.1	-0.8
Estonia	-0.2	-0.1	0.3	1.7	1.6	1.6	2.5	2.4	-2.9	-2.0	0.2	1.1
Ireland	4.7	0.9	-0.4	0.4	1.4	1.7	2.9	0.1	-7.3	-14.2	-30.9	-13.4
Greece	-3.7	-4.5	-4.8	-5.6	-7.5	-5.2	-5.7	-6.5	-9.8	-15.8	-10.7	-9.4
Spain	-0.9	-0.5	-0.2	-0.3	-0.1	1.3	2.4	1.9	-4.5	-11.2	-9.7	-9.4
France	-1.5	-1.5	-3.1	-4.1	-3.6	-2.9	-2.3	-2.7	-3.3	-7.5	-7.1	-5.2
Italy	-0.8	-3.1	-3.1	-3.6	-3.5	-4.4	-3.4	-1.6	-2.7	-5.4	-4.5	-3.9
Cyprus	-2.3	-2.2	-4.4	-6.6	-4.1	-2.4	-1.2	3.5	0.9	-6.1	-5.3	-6.3
Luxembourg	6.0	6.1	2.1	0.5	-1.1	0.0	1.4	3.7	3.0	-0.9	-0.8	-0.3
Malta	-5.8	-6.4	-5.8	-9.2	-4.7	-2.9	-2.8	-2.4	-4.6	-3.7	-3.6	-2.7
Netherlands	2.0	-0.2	-2.1	-3.1	-1.7	-0.3	0.5	0.2	0.5	-5.6	-5.1	-4.5
Austria	-1.7	0.0	-0.7	-1.5	-4.4	-1.7	-1.5	-0.9	-0.9	-4.1	-4.5	-2.5
Portugal	-2.9	-4.3	-2.9	-3.0	-3.4	-5.9	-4.1	-3.1	-3.6	-10.1	-9.8	-4.4
Slovenia	-3.7	-4.0	-2.4	-2.7	-2.3	-1.5	-1.4	0.0	-1.9	-6.1	-5.7	-6.4
Slovakia	-12.3	-6.5	-8.2	-2.8	-2.4	-2.8	-3.2	-1.8	-2.1	-8.0	-7.7	-4.9
Finland	6.9	5.1	4.1	2.6	2.5	2.8	4.1	5.3	4.3	-2.5	-2.5	-0.6

Source: Eurostat

Namely, as a result of the weakened competitiveness and growing current account deficits, the "peripheral" economies with continually higher deficits, created additional losses, which led to significant decrease of the public revenues and increase of the expenditures. In some of these countries, the public revenues greatly depended on tourism, real estate and finance, which were greatly affected by the crisis. Therefore, in 2009, the euro zone budget deficit reached 6.4% of GDP, after which, as a result of austerity measures it was reduced to 4.1% of GDP.

The situation with the public debt performances of the member states is similar. Only five countries did not surpass the upper limit for the public debt, while four countries, had never achieved the stipulated limit of 60% of GDP. As a result, the euro zone aggregate public debt reached 87.3% of GDP and it exceeded the fiscal limit by about 27 p.p.



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**Table 4 Public debt as a percent of GDP**

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Euro zone	69.2	68.1	67.9	69.1	69.5	70.1	68.5	66.3	70.1	79.8	85.4	87.3
Belgium	107.8	106.5	103.4	98.4	94.0	92.0	88.0	84.1	89.3	95.9	95.5	97.8
Germany	60.2	59.1	60.7	64.4	66.3	68.6	68.1	65.2	66.7	74.4	82.5	80.5
Estonia	5.1	4.8	5.7	5.6	5.0	4.6	4.4	3.7	4.5	7.2	6.7	6.1
Ireland	37.5	35.2	31.9	30.7	29.4	27.2	24.7	24.8	44.2	65.2	92.2	106.4
Greece	103.4	103.7	101.7	97.4	98.6	100.0	106.1	107.4	113.0	129.3	148.3	170.6
Spain	59.4	55.6	52.6	48.8	46.3	43.1	39.6	36.2	40.1	53.8	61.5	69.3
France	57.3	56.9	58.8	62.9	64.9	66.4	63.7	64.2	68.2	79.0	82.3	86.0
Italy	108.5	108.2	105.1	103.9	103.4	105.4	106.1	103.1	105.8	115.5	119.2	120.7
Cyprus	59.6	61.2	65.1	69.7	70.9	69.4	64.7	58.8	48.9	58.5	61.3	71.1
Luxembourg	6.2	6.3	6.3	6.1	6.3	6.1	6.7	6.7	13.7	14.8	19.2	18.3
Malta	54.9	60.9	59.1	67.6	71.7	69.7	64.1	62.1	62.2	67.8	68.3	70.9
Netherlands	53.8	50.7	50.5	52.0	52.4	51.8	47.4	45.3	58.5	60.8	63.1	65.5
Austria	66.2	66.8	66.2	65.3	64.7	64.2	62.3	60.2	63.8	69.5	72.0	72.4
Portugal	48.5	51.2	53.8	55.9	57.6	62.8	63.9	68.3	71.6	83.0	93.5	108.1
Slovenia	26.3	26.5	27.8	27.2	27.3	26.7	26.4	23.1	21.9	35.3	38.6	46.9
Slovakia	50.3	48.9	43.4	42.4	41.5	34.2	30.5	29.6	27.8	35.5	41.0	43.3
Finland	43.8	42.5	41.5	44.5	44.4	41.7	39.6	35.2	33.9	43.3	48.6	49.0

Source: Eurostat

### 9. Assessment of the economic performances of the euro zone member states

On the basis of the analysis of the economic cycles synchronization, sector harmonization, labour mobility, productivity, unemployment rate, capital mobility, openness of the economy, inflation rate, fiscal stability, the following conclusions have been reached:

- Greece, Malta, Slovakia, Cyprus, Portugal, Ireland and Slovenia do not fully satisfy the optimality criteria for euro zone membership (Table 5 and Graph 10). Although there are certain positive achievements with regard to a small number of the analyzed criteria, generally, the main weakness in these economies is the incompatibility of the economic cycles, the high sector dependence, the weak capital mobility, the high inflation rates and the heavy budget burdens, which makes them exceedingly vulnerable to economic shocks. The countries which are at the bottom of the table (or on the right side of Graph 10), Finland, Belgium, The Netherlands, Germany and France, have the best achievements as they are characterized by a high level of synchronization of the economic cycles, structural consistency, high mobility of labour and capital, and they also have relatively stable macroeconomic and fiscal performances. Among them, one of the weaknesses of France is the higher budget



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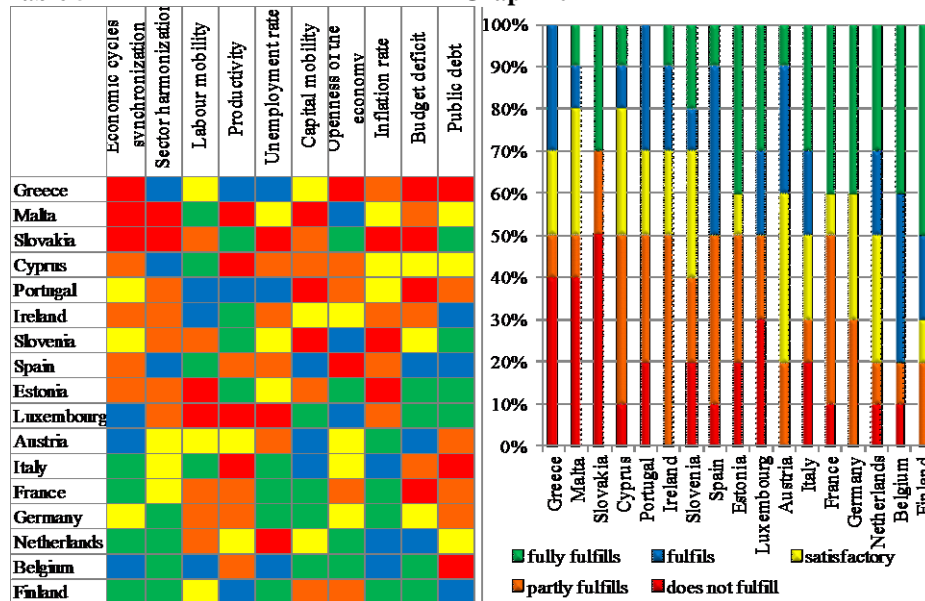
deficit, as well as the relatively small openness of the economy, especially towards the "peripheral" economies. However, despite its relatively lower degree of openness, the sensitivity of France's economy is not significant, because the greatest part of the trade is carried out with the economies of the "euro zone core", with which it has highly correlated business cycles. Among the countries with high performances, Finland is distinct in the sense that it is the only small economy which is still relatively closed and that could be a problem in case of appearance of idiosyncratic shocks in the economy. On the other hand, the economic risks for Belgium come from the high public debt. That puts some limits on the capacities of the economy to deal with the so-called asymmetric shocks. The Netherlands also satisfies the criteria for membership in the currency union, although there are some weaknesses in the area of labour mobility. Namely, the analysis shows that there is certain rigidity in the labour market due to the higher than average deviation from the unemployment rate in the euro zone, despite the low rate of 3.8% in the past twelve years.

- Germany is considered to be the "anchor" country or, as it is frequently called, the "locomotive" of the euro zone. Namely, Germany has the highest contribution in the euro zone GDP, it ensures high price stability and is one of the most important trade partners of the euro zone member countries. The intensive trade relations with the other economies, especially Austria, the Netherlands, France and Italy, provide synchronization of their business cycles with the largest economy in the euro zone.

**Fulfilment of the membership criteria**

**Table 5**

**Graph 10**





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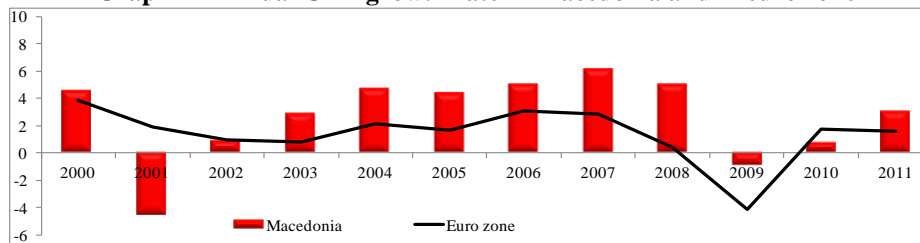
### 10. The degree of convergence of Macedonia towards EMU

For a country such as Macedonia, adoption of the single currency should eliminate the exchange rate risk in relation to the euro zone and reduce the costs of foreign trade and investment. This should further increase the benefits from the country's intense involvement in the international division of labour. Besides the aforementioned benefits, however, adoption of the euro will simultaneously imply costs and risks arising from the loss of independent monetary policy and exchange rate flexibility vis-à-vis major trading partners. Therefore, the benefits and costs stemming from the entrance in the Union are affected by the characteristics and situation in both, the Macedonian economy and the euro zone economy. These factors will influence whether adoption of the single currency will lead to an increase in the country's economic stability and performance.

The basic theoretical starting point for the analyses of the preparedness of the Macedonia's economy for entrance in the monetary union is the theory of optimum currency areas.

Alignment of economic activity and similarity of economic shocks will increase the likelihood that the single monetary policy in the euro zone will be appropriately configured from the perspective of the Macedonian economy. But the analyses indicate still very low correlation of overall economic activity between Macedonia and the euro zone (coef. of correlation 43.5).

**Graph 11 Annual GDP growth rate in Macedonia and in euro zone**



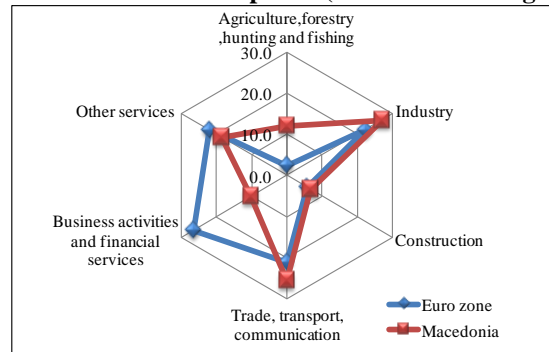
Source: Eurostat

Additionally, similarity of the structure of economic activity with the euro zone should decrease the risk of asymmetric economic shocks. The differences in the economic structure of the Macedonian economy compared to the euro zone show that there is a possible source of asymmetric developments. Macedonian economy is characterized by a large services sector, a middle-sized manufacturing sector and a small agricultural sector. Therefore, in order to increase the economic growth and to improve the diversification of the economic structure, it is necessary to continue with the support of the traditional sectors (textile industry, metal industry, agribusiness), but also of the new sectors (pharmaceutical and chemical industry, information industry, alternative energy, tourism and others).



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**Graph 12 Gross value added at basic prices (% share of total gross value added)**



Source: Eurostat

The labour and capital mobility is another important mechanism through which the economy can cope with shocks within the Union.

But the present Macedonian labour market is still significantly different from that in the euro zone countries. Main characteristics of the labour market in Macedonia are low employment rate, slow job creation and long term unemployment. The unemployment rate is still three times higher than the euro zone average. Having in mind the high participation of the lower skilled workers of almost 40% of the total number of unemployed persons, the possibility for their mobilization to other sectors and regions is very low. Some FDI projects are labour intensive, which could help cut the unemployment rate. However, a durable fall in unemployment requires active labour market policies, which would take several years to feed through.

**Table 6 Unemployment rates by highest level of education attained**

	2006	2007	2008	2009	2010	2011
Total rate of unemployment	36.3	35.2	34.0	32.3	32.2	31.6
Pre-primary, primary and lower secondary education	42.6	43.6	42.0	39.2	39.8	38.2
Upper secondary and post-secondary non-tertiary education	37.0	35.2	33.1	32.3	32.1	31.6
First and second stage of tertiary education	21.2	20.6	21.4	21.3	21.8	23.0

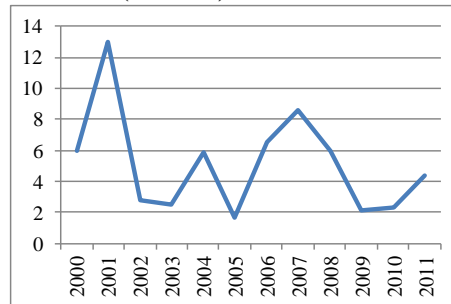
Source: Eurostat

Until 2000s, FDI in Macedonia were quite low, compared with the size and the level of development of the economy. The larger FDI inflows emerged with the privatization of state-owned firms, and acquisitions of major companies and banks by foreign investors. Accordingly, FDI inflows were concentrated in the services sector, in particular in financial intermediation, as well as in electricity gas and water supply and manufacturing. In 2008 and 2009, FDI dropped, largely due to a deteriorating international environment.



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**Graph 13 FDI in Macedonia (% GDP)**



*Source: NBRM*

Having in mind the lessons from the financial crisis and the importance of the FDI, the macroeconomic policy is focused on business climate improvement and supporting development of economic entities, encouraging investment activity, developing human capital and economic infrastructure of the country. Therefore, by gradual stabilization of global financial developments, alleviation of uncertainty and improvement of the perceptions of foreign investors, there are expectations for further increase of the FDI in Macedonia.

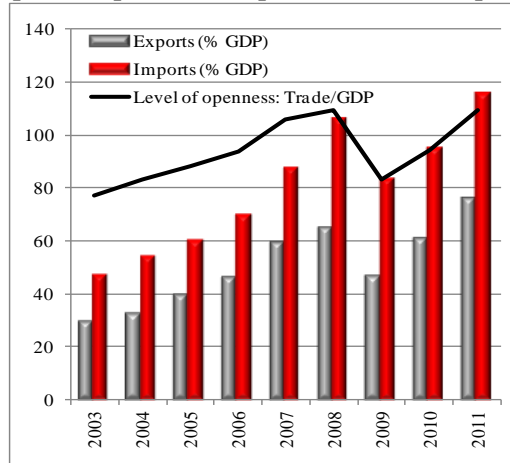
According to the theory of the optimal currency areas, the degree of trade openness is a significant argument for joining the monetary union. During the past period, continuous expansion of the integration of Macedonia in the world trade flows, as well as growth of the trade openness can be noted. Yet, despite the high level of trade openness, Macedonia still could not be comfortable with its trade performances due to several reasons.

Namely, the high values of trade openness index are result of the higher growth of imports, than exports. This situation implies a higher trade deficit and low coverage ratio. Therefore, having in mind the technological lag of Macedonian production capacities and still low level of competitiveness of the Macedonian products, the main efforts should be directed towards further export promotion, researching the potential target markets and improving the diversification of the export structure.



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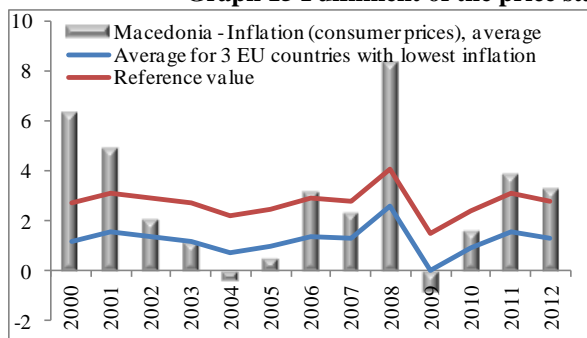
**Graph 14 Exports and imports and level of openness**



Source: NBRM and own calculations

Regarding the fulfilment of the other criteria for entrance in the optimal currency union analyzed above, price stability and fiscal stability, it may be concluded that Macedonia has generally made positive achievements. According to the calculation of the reference value for the three best performing countries in terms of price stability (Maastricht criteria), Macedonia was generally compliant with this criterion. In 2011 and 2012 there were some deviations regarding this criterion mostly as a result of the movements in 2009. The lower energy and food prices compared with the previous year, amid the global recession, coupled with the decline of the domestic economy, manifested as sharp disinflation. Since then, prices have been gradually increasing. This growth started to slow down by the end of 2012.

**Graph 15 Fulfilment of the price stability criterion**



Source: Eurostat, NBRM and own calculations



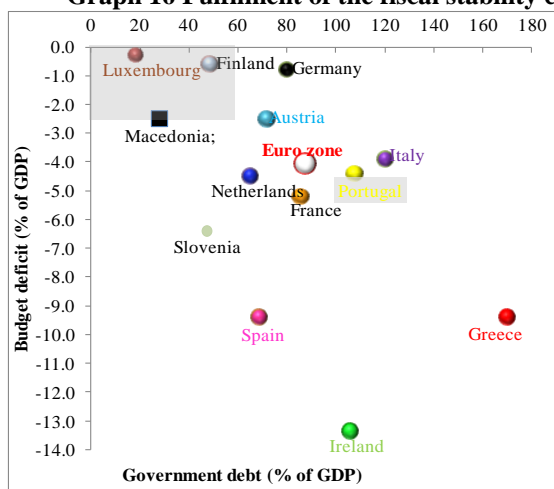


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the global recession, coupled with the decline of the domestic economy, manifested as sharp disinflation. Since then, prices have been gradually increasing. This growth started to slow down by the end of 2012.

In the field of public finance, Macedonia has long record of prudent fiscal policy performance which helped to preserve macroeconomic stability and to strengthen the ability of private sector for growth. Despite all the challenges in the past, the budget deficit in Macedonia was maintained at a very low level which created a fiscal room for increasing the support for the economy, if there is spill over of the effects from the debt crisis in the euro zone. Hence, the Macedonian budget deficit of 2.5% for 2011 is significantly lower than the average in the euro zone (4.1% for 2011) and the Maastricht criteria of 3% of GDP. In addition, Macedonia is among the countries with the lowest government debt (27.8% of GDP in 2011) compared to the euro zone member countries.

**Graph 16 Fulfilment of the fiscal stability criterion at the end of 2011**



Source: Eurostat, NBRM and own calculations

Therefore, we may conclude that today, when a number of euro zone countries do not fully meet the Maastricht criteria in terms of budget deficits, debt or inflation, Macedonia, which has not yet started negotiations for EU membership, largely fulfils these criteria for more than a decade.

### 11. Conclusion

Analyzing the reasons for the sovereign debt crisis in the euro zone, it may be concluded that in the absence of national FX and monetary policies, it is primarily a result of the lack of fiscal discipline and delayed implementation of reforms in the labour and capital markets, which had to provide greater flexibility and adaptability to changes in economic cycles.



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Latest measures to "save the euro", are aimed at strengthening fiscal discipline, improving the coordination of economic policies and better monitoring of financial trends in member states. Reform measures are directed towards increasing productivity, competitiveness, employment and long-term economic growth. The results of these measures can be expected in the long run, while in a short run the main dilemma remains - whether countries can withstand the fiscal consolidation without having their stability undermined.

The main message for the countries such as Macedonia, aspiring to join the Union is that they should firstly achieve a high degree of cyclical and structural adjustment of their economies in order to ensure the single monetary policy pursued within the Union to be adequate and optimal for them. At the same time, it is necessary for the countries to build capacity to absorb potential asymmetric shocks. By increasing the degree of alignment, the risks arising from accession and the costs arising from the loss of the autonomous monetary and FX policy would be reduced.

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