



9TH INTERNATIONAL ASECU CONFERENCE ON “SYSTEMIC ECONOMIC CRISIS: CURRENT ISSUES AND PERSPECTIVES”

Vladimir Filipovski

Ss. Cyril and Methodius University, Faculty of Economics-Skopje, Macedonia

Taki Fiti

Ss. Cyril and Methodius University, Faculty of Economics-Skopje, Macedonia

THE SUSTAINABILITY OF THE PUBLIC DEBT IN THE POST-CRISIS PERIOD

UDC: 336.27

Abstract

The global financial crisis of 2007-2008 has not only led to severe recession, but also created conditions for an upsurge in fiscal deficits and public debts. One of the channels for the increase in public debt levels might have to do with the costs of fiscal interventions related to the recapitalization of the financial sector, particularly of banks. The recession itself also has been the major driving factor for expansionary fiscal policies in the countercyclical context. However, the programs of fiscal stimuli have reinvigorated the debates about the size, and even the very existence, of the fiscal multiplier effects. Also, as the implemented fiscal stimuli programs had failed to bring about strong recovery, the question have arisen of whether they had only contributed to public debts reaching unsustainable levels, and whether those debts in themselves have acted or will act as a major impediment to future economic growth. The fiscal crisis in the Eurozone has only contributed to additional complexity of the issue of public debts as it could be related to the movements in the currency, bond and equity markets, and in the final instance, to the international capital flows. As the so-called fiscal consolidation had become one of the approaches to deal with the unsustainable public debt levels, the dilemmas have arisen concerning the three main issues: first, is fiscal austerity better be carried out through tax rises than through spending cuts, and does there exist any reasonable mix of both; second, what would be the optimal timing of fiscal restrictions, i.e. what would be the time frame for achieving a better balance in public finances so that the eventual fiscal restrictions would not stifle the post-Great-Recession recovery and would allow for fiscal problems to be overcome through economic growth; third, the risks related to the demographic changes and the insufficient rates of job creation which put the pension and social security systems under strains. As for the situation in countries like Macedonia, one of the pressing questions in this context is how to assess the sustainability level of the public debt, particularly when the costs of refinancing are adequately taken into consideration. Macedonia had responded to the global financial and economic crises with a generally expansionary fiscal policy, often justified by relatively low initial levels of public debt. However, as the EU economy has not experienced any meaningful recovery, the Macedonian fiscal policy may face tough choices in the future: the relatively low tax rates could mean that the pressure for fiscal adjustment may be directed solely toward public



9TH INTERNATIONAL ASECU CONFERENCE ON “SYSTEMIC ECONOMIC CRISIS: CURRENT ISSUES AND PERSPECTIVES”

spending cuts; this may have questionable effects on growth and unemployment, having in mind the structure of public spending dominated with various social transfers, for which the expectations has been anchored at high levels.

Key words: public debt, fiscal stimulus, fiscal consolidation, tax cuts, public spending cuts, public debt sustainability.

1. The concept of long term sustainability of public debt

The concept of government debt sustainability is closely related to the solvency dimension of the financial position of the government. It basically refers to the long-term government's ability to service its accumulated debt at any point in time, without additional risk premium imposed by the creditors for the government's access to financial market in order to regularly refinance its fiscal needs. But there is an additional dimension to the one related to classical financial definition of solvency; in the case of government debt, it could be considered sustainable if the fiscal policies that may be needed to maintain the solvent fiscal position can be perceived to be politically and macroeconomically feasible.

On the most general economic-theoretic level of analysis, the government's sector is solvent as long as the present (discounted) value of the government debt is positive in the infinite limit; or, more concretely, as long as the discounted value of the primary balances is at least equal to the initial public debt. Or, the net present value of primary fiscal balances should at the minimum equal net present value of the government debt. This last formulation in fact brings both the fiscal and the monetary sector in determining the overall public sector debt. Therefore, the mathematical formulation that captures both sectors may look like the one used by Montiel (2003: p.112):

$$PV [PS'(t) + \Delta M(t); i_D^*(t)] \geq D(0)$$

which says that the present value of the resources the public sector can use to service its debt – the primary surplus (PS') and the new monetary emission (ΔM) – should at least equal the stock of debt currently in existence (i_D^* is the risk-free rate used to discount the payments made at time t to the present time; the (t) refers to a representative time period t within the infinite future).

Scaling the primary balances and additional money supply by the nominal GDP, and decomposing the nominal interest rate and nominal GDP growth rate as a sum of real rate and inflation rate, the above equation may be transformed into a *public sector solvency condition* of the following form:

$$PV(ps' + sgn; r - g) = d(0)$$

or:



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

$$(ps' + sgn)/(r - g) = d(0)$$

As the $(ps' + sgn)$ can be viewed as permanent values of the resources for paying off debt (scaled with the level of nominal output), discounting, i.e. capitalizing them with the interest-growth (real) differential may give the size of primary balances (and seignorage) that are needed in order to leave the debt-to-GDP ratio unchanged.

The intertemporal government budget constraint can offer the following assertions:

Even in a situation when public debt ratio is increasing the government can still be solvent. For this to be the case, the key precondition is creditors to expect that the government is able and willing to make fiscal adjustments at some point in the future (i.e. to create adequate primary surpluses). As long as such expectations exist, the additions to the debt level will be financed without any change in the default risk premium.

Since expectations about the ability of the government to provide for the primary surpluses is of key importance, government has to be able to credibly commit to policies and measures that will ensure the realization of future surpluses. Credible commitment may require announcing some prudent fiscal rule for a long-term fiscal sustainability path and a mechanism for self-discipline on the part of the government in implementing the rule. However, in the real world such a credible commitment seems quite difficult to produce, not least because of the political constraints.

Another, quite compact way to express the idea that the capacity to service public debt also depends on the current expectations about the future real resources the government can provide and the seignorage revenues the monetary authorities can create, is the following equation about the valuation of government debt provided by Cochrane (2010; p. 4):

$$\frac{M_t + B_t}{P_t} = E_t \int_{\tau=0}^{\infty} \frac{\Lambda_{t+\tau}}{\Lambda_t} (s_{t+\tau} + i_{t+\tau} \frac{M_{t+\tau}}{P_{t+\tau}}) d\tau$$

where: M_t is money supply, B_t is nominal public debt level, P_t is the aggregate price level, E_t is the expectations operator, $\Lambda_{t+\tau} / \Lambda_t$ is the real stochastic discount factor between periods t and $t+\tau$, i_t is the nominal interest rate, and $s_t = T_t - G_t$ is the real primary fiscal surpluses (The second term in the parentheses is the seignorage.)

This model also emphasizes the key role of expectations about future primary balances in determining the real value of the government debt. Also it takes into consideration the importance of changes in discount rate, i.e. (default) risk premium.



9TH INTERNATIONAL ASECU CONFERENCE ON “SYSTEMIC ECONOMIC CRISIS: CURRENT ISSUES AND PERSPECTIVES”

But since the value of the government debt ($M_t + B_t$) is in nominal terms, changes in expected primary surpluses or in discount rate cause offsetting changes in the price level, P_t , and through such changes, cause changes in the real value of debt.

Now, if changes in fiscal policy can be expressed as changes in the expected future fiscal surpluses, those changes can have inflationary/deflationary repercussions *today*. For example, if the expected value of future surpluses falls (e.g. because the government adopts fiscal policy which effectively postpones the fiscal adjustment further into the future, then the real value of the debt will also fall through an increase in P_t , i.e. today's inflation: in practice, that will be realized by holders of debt selling it, since it is overvalued, and buying goods/services instead, thus causing inflation. Also, if the risk premium increased as the creditors started to question the government's ability or the timing of delivering the required primary surpluses, that would lower the present value of expected primary balances, and debt holders would again start selling nominally fixed (and overvalued) debt and buying goods/services.

Also, in order to have a more practical model that can reflect the logic of the process of evolution of the public debt-to-GDP ratio a simpler equation can be constructed (Blanchard, 2009: pp. 583-584):

$$\frac{B_t}{Y_t} - \frac{B_{t-1}}{Y_{t-1}} = (r - g) \frac{B_{t-1}}{Y_{t-1}} + \frac{G_t - T_t}{Y_t}$$

where r is the real interest rate on debt, g is the rate of real GDP growth, while B and Y are debt and GDP respectively, and G and T are government expenditures on goods and services, and taxes, respectively¹.

Therefore, this simple form of intertemporal government budget constraints says that the change in debt ratio basically depends on the cumulative effect of two components:

- the interest-growth differential: an increase in the real interest rate increases the debt ratio, while an increase in the GDP growth rate reduces it;
- and the primary fiscal balance (the second term on the right-hand side) with a primary surplus having a debt-ratio reducing effect;

If the debt sustainability is defined as maintaining non-increasing (constant) debt-to-GDP ratio, then a country which runs a primary fiscal deficit will need to achieve a GDP growth rate higher than the interest rate on debt so that the following equality holds:

$$(g - r)B/Y = \text{Primary Deficit}/Y$$

¹ The technical aspects of the derivation of this equation are in Blanchard (2009), pp.583-4, 621.



9TH INTERNATIONAL ASECU CONFERENCE ON “SYSTEMIC ECONOMIC CRISIS: CURRENT ISSUES AND PERSPECTIVES”

This means that in a hypothetical situation with a 2% Primary Deficit/Y ratio, a 40% Debt/Y ratio, and a 2% real interest rate on the debt, the country will need to achieve a long-run GDP growth rate of 7% in order to maintain the existing level of indebtedness.

2. The fiscal crisis in the EU

The fiscal crisis in the EU, and more narrowly, in the Eurozone, has been a product of the three intertwined processes:

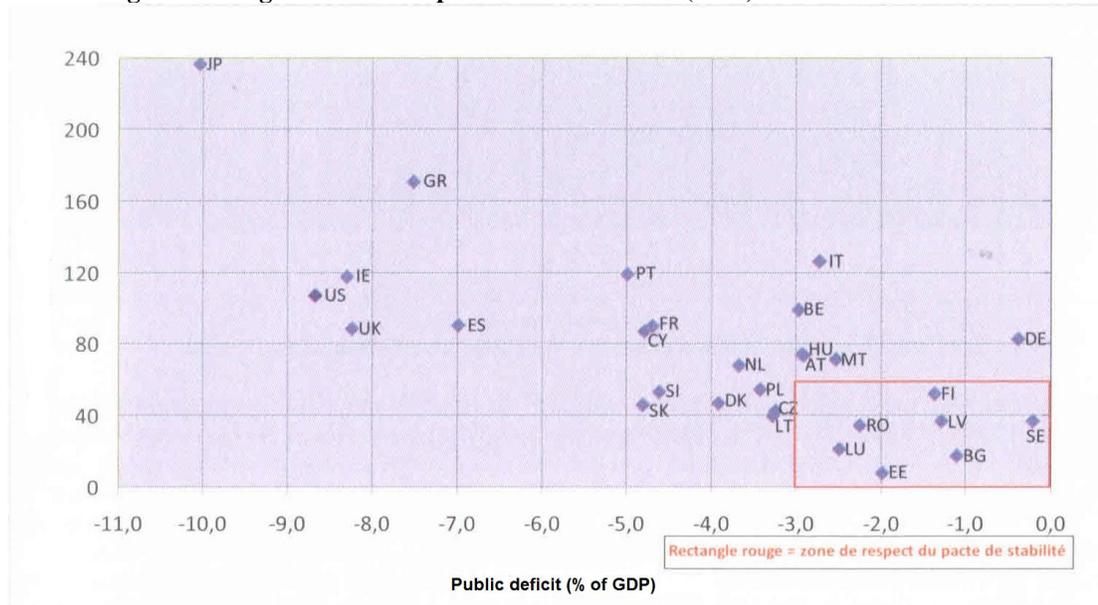
- The financial crisis, originating in the USA, has exposed the European banking and financial systems to a threat of insolvency, which led to significant government interventions, both as direct capital injections and as contingent (off-budget) liabilities, aimed at restoring the credibility and stability of the financial institutions;
- This has led to a rise in budget deficits and increase in public debts, with adverse consequences on yields on sovereign bonds, rising default risk premiums, difficulties in accessing the capital markets for public sector refinancing, which fed back as negative revaluation of bank sector assets and losses on banks' balance sheets;
- The endangered liquidity and solvency of the banks had adverse effects on the real sector, with a downfall in economic activity, i.e. recession, which fed back as a rise in non-performing loans further worsening the balance sheet and credibility of the banking sector.

As a result of the crisis, the public debt in Europe increased by 20 percentage points – from 62% to 82% of GDP for the EU as a whole, and from 70% to 90% of GDP for the EMU. Some of the largest increases occurred in Greece – from 112% (2008) to 170% (2011), UK – from 52% (2008) to 85% (2011) and Spain – from 40% (2008) to 70% (2011); significant increases also occurred in Italy (from 106% to 124%), France (from 70% to 90%), and in Germany (from 67% to 80%) (Rapport Shuman, 2013, p. 221).



9TH INTERNATIONAL ASECU CONFERENCE ON “SYSTEMIC ECONOMIC CRISIS: CURRENT ISSUES AND PERSPECTIVES”

Figure 1. Budget deficits and public debt in the EU (2012)



Source: *L' état de l'Union, 2013, Rapport Shuman sur l'Europe, Publication de la Fondation Robert Shuman, éditions Lignes de Repères, Paris, 2013, p. 217.*

3. Sources of unsustainability of public debt in the EU

The results of a study presented in ECB (2011) decomposing the change in debt-to-GDP ratio for the euro area, show that the major worsening of the public debt situation occurred in 2008 and 2009, when the debt ratio increased by 3,6 and 9,4 percentage points of GDP, respectively. In 2008, the main driver was the item called “deficit-debt adjustment”, which effectively refer to the governments’ interventions to save the insolvent financial institutions. In 2009, the main two drivers were: (i) the shift from primary surplus (contributing with -1,0 percentage point to the change in debt ratio in 2008) to primary deficit (which contributed with +3,4 percentage points in the change in debt ratio in 2009); and (ii) the strong negative effect of the recession amounting to 3 percentage points, due to negative GDP growth rate. However, even the negative effect of the primary balance could partially be traced to the adverse fiscal impact of the falling economic activity.

In the future, the major threat to the overall long-run fiscal sustainability may well be the so-called implicit liabilities, i.e. future government liabilities related to the ageing of population in EU and other advanced economies. Pension and health care costs may require a significant increase in public expenditures. One research cited in ECB (2011: fn. 22) argues that “if all pension-related implicit liabilities are taken into account, euro area



9TH INTERNATIONAL ASECU CONFERENCE ON “SYSTEMIC ECONOMIC CRISIS: CURRENT ISSUES AND PERSPECTIVES”

government obligations would be more than four times higher than the current explicit government debt”. These implicit liabilities are of a size that may even undermine any serious efforts for future fiscal consolidations.

The situation with the European debt crisis is extremely complex. It was silently preparing well before the emergence of the global financial crisis of 2007/2008. The Maastricht treaty of 1992 imposed a rule on potential member countries of the Eurozone to maintain their budget deficits below 3% of their GDP. Later the Stability and growth pact defined the basic fiscal rule for the Eurozone countries more precisely. According to these rules, the countries of the EMU are not allowed to create budget deficits higher than 3% of GDP. If a certain country exceeds the benchmark, it is obliged to pay penalties in the form of a deposit in an amount that varies from 0,2 to 0,5% of GDP, according to the size of the deficit. The deposits from the countries which exceed the target level of budget deficit shall be returned to them, provided that they manage to bring the deficit down to the required levels within two years.

These rules were supposed to serve as a substitute for the lack of a common fiscal policy in the EMU and as an important assumption for maintaining the stability of the euro. However, without an efficient control over public spending in some countries of the EMU, the fiscal rules were not obeyed – not only in the countries of the periphery, but in certain years, also by the highly developed countries.

4. Fiscal consolidation approaches – problems, dilemmas and risks

4.1. Financial consolidation as an imperative

Europe’s debt crisis has raised awareness and concerns over fiscal sustainability. The dramatic rise of budget deficits and public debt, resulting from the global financial and economic crisis, has already entered a critical zone and threatens to limit the long run economic growth of certain economies and of the total world economy. Hence, the financial consolidation has been presented as a *conditio sine qua non* for avoidance of risks to future economic development. This notion can be sustained by numerous arguments, summarized below:

- The standard macroeconomic literature locates the negative economic effects of the accumulation of budget deficits and the growth of public debt in several areas – decrease in national savings, consequences on future generations (regarding the burden of servicing the public debt) and crowding out of private investments (crowding out effect through higher long-term interest rates), with the displacement of capital towards less productive uses being its most severe manifestation. The ultimate result is a limitation of economic growth rates. IMF analyses suggest that the increase in public debt of approximately 40 percentage points of GDP (compared to the pre-crisis situation), is going to increase interest rates by 2 p.p. in the forthcoming years and lower economic growth rates by 0,5 to 1 p.p. each year. (Horton 2010, p.28)



9TH INTERNATIONAL ASECU CONFERENCE ON “SYSTEMIC ECONOMIC CRISIS: CURRENT ISSUES AND PERSPECTIVES”

- Although the ability of countries to handle the public debt burden varies and cannot be measured only with the public debt to GDP ratio, the fact remains that even the most developed countries (such as the USA², Japan and Great Britain, whose budget deficits exceeded 10% of GDP) will have to implement fiscal consolidation in the medium and long run. The key argument, according to Carlo Cottarelli (the Director of the IMF’s Fiscal Affairs Department), is the fact that with a high initial public debt, even a small increase in interest rates can throw the public finances off track. (Cottarelli 2012, p. 53)³
- This confirms that high public debt can cause turbulences in financial markets of developed countries on different grounds (increased financing needs for budget deficits in the most advanced countries, serious problems of the most severely affected countries – Greece, Portugal, Spain etc., in financial market access due to high costs i.e. high interest rates on their bonds, expectations of increased tax burden in the future etc.), which ultimately increases the risks to recovery of the real sector in these economies. This might cause serious problems and implications for emerging and developing countries – contraction of trade and financial flows and limitation of their economic growth possibilities.

4.2. Risks to fiscal consolidation

The fiscal consolidation in advanced countries profiled in the long term, assumes the public debt to be reduced to 60% of GDP by 2030. Although this concerns the long term, the fiscal consolidation process is not going to be simple, and the risks of it not being implemented with the desired dynamics must not be underestimated. The following risks should be considered:

- The initial shock that triggered the 2007/2008 crisis, this time, came from the financial system. However, the problems in the financial system, which “erupted” in the summer of 2007, accumulated years before that. The financial systems of the developed countries went through a big transformation after 1980. They became incredibly diversified (the securitization of bank loans enabled the appearance of a large number of ‘innovative’ financial instruments, various types of options, futures, collateralized debt securities etc.; new players and institutions, such as shadow banks, entered the financial markets), deep and interdependent. IMF experts, based on the experience from the so called *Five post war financial crisis*: Finland (1990-1993), Japan (1993), Norway (1998), Spain (1978-1979) and Sweden (1990-1993), argue that

² Some authors reasonably notice that even the USA, the economically most powerful country, has to implement fiscal consolidation, due to several reasons: (1) the consequences from the crisis and the impact on its output were extremely strong; (2) President Obama, as a response to the crisis, implemented large fiscal stimuli; (3) the USA faces high health care, pension insurance and defense costs (Horton 2010, p. 28, Kotlikoff 2010, p.30-33).

³ Empirical estimates suggest that around debt levels of 70-80% of GDP, interest rate effects of debt seem to become more pronounced, discretionary fiscal policy becomes less effective (because of a stronger offsetting private saving responses) and trend growth falls. Thus, OECD experts propose a target for gross debt of around 50% of GDP or even lower long-term target during normal times. (OECD April 2012, p.3)



9TH INTERNATIONAL ASECU CONFERENCE ON “SYSTEMIC ECONOMIC CRISIS: CURRENT ISSUES AND PERSPECTIVES”

recessions accompanied by financial crises, as well as synchronized, i.e. global recessions (the latter are defined as a situation when out of 21 highly developed countries, 10 or more are in a recession at the same time), are long-lasting i.e. manifest a slow recovery.⁴ (IMF, April 2009, p.114-117) The recent recession has both characteristics. In such conditions, due to the slow recovery and the danger from the cycle reversing to the declining phase, there is always a risk that governments would reach for expansive fiscal policy.

- The situation in the EU is especially complex, considering the fact that the debt crisis is not just a threat to the Union’s growth perspectives, but also to the existence of the euro and the EMU. Indeed, European countries’ leaders, in the summits for “rescue of the euro” achieved a certain progress in establishing foundations for a common fiscal policy (setting clear limits for budget deficits and creation of public debt, automatic sanctions for countries which exceed the ceilings; a possibility for the European rescue fund for the euro to inject money directly to banks which face problems; establishing a European body for supervision of banks which would involve the ECB etc.) But, the implementation of the offered solutions remains uncertain – England, not a member of the EMU, but a part of the big Troika of the EU, did not accept the solutions in the December 2011 Summit; Germany, despite making a compromise about the utilization of liabilities (leverage) of countries, still advocates fiscal austerity and has remarks about the common bank supervision; the countries have not reached an agreement about a mutual European bank deposits insurance fund etc. On the other hand, Finland presents a new threat to the Euro zone. Recently, senior Finnish functionaries (the minister of finance and the minister of exterior) clearly pointed out that Finland is not prepared to share the liabilities of the problematic countries in the Euro zone and that the country has already prepared a plan for an eventual abandonment of the common currency. (The Economist, August 25th, 2012, pp.10-11) Obviously, despite the economic logic which requires the Euro zone to become “more federalized”, the political logic opposes these requirements – fiscal policies remain national, and some EU countries that are more disciplined in implementing fiscal policy (Germany, Finland and others) show a resignation and unwillingness to support Eurozone’s problematic countries.
- Demographic changes, specifically population ageing in developed countries will, in the long run, increase pension and health care insurance costs and will present a serious risk to the process of fiscal consolidation. Out of 15 countries which submitted a report on demographic movements in 2012, 11 registered a decrease in fertility rates (number of children that a woman is expected to have during her life) in 2011. An interesting fact is that in a number of European countries (Spain, Latvia, Norway,

⁴ The fact that this recession is accompanied by financial crises, confirmed that the credit “boom” in the expansion stage created disincentives for household saving and contributed to the creation of bubble economies. After the bubbles burst, the recovery of household consumption, as an important component of aggregate demand, is difficult (due to the time-lag in the labor market recovery and to the problems with the recovery of household investment in real estate). On the other hand, the process of rehabilitation and consolidation of banks is long and difficult. The fact that the crisis is global indicates a slow and hard recovery of exports. The ultimate result is a slow recovery of economies and risks from new recessions. (Fiti 2009, pp. 54-56)



9TH INTERNATIONAL ASECU CONFERENCE ON “SYSTEMIC ECONOMIC CRISIS: CURRENT ISSUES AND PERSPECTIVES”

Denmark and others), the fertility rates have decreased substantially during the period 2008-2011, implying a coincidence of the process of economic cycle. (The Economist, June 30th 2012c, p.28) In many developed countries, the fertility rates have fallen below 1,5. Even in developed countries with relatively high fertility rates (like France for example), the process of population ageing is evident. Namely, an analysis of France shows that the share of people older than 65 in the working age population is going to rise from 27% in 2007 to 42% in 2025 and to 58% in 2050. This, along with persistent deficits in the public pension system and the fast growth of fiscal costs of local governments (after the fiscal decentralization in the 1980s), causes significant turbulences in France’s fiscal area. Hence, the government is forced to implement rigorous fiscal reforms. (Cheng, De Vrijer and Yakadina, 2010, p. 36-37; Camdessus and Guidee, 2010, p.38-39) Considering the fact that similar tendencies appear in other developed countries, demographic changes (population ageing) are going to put a significant pressure on the budget expenditures (costs of social funds) and are going to present an important risk factor to successful implementation of fiscal consolidation and to long-term fiscal sustainability. (OECD April 2012a, p.7). IMF estimates suggest that by 2030 net present value (NPV) of pension spending increases is about 8½ percent of GDP for advanced economies and 8 percent of GDP for emerging countries, and over the next 20 years the increase in both groups is likely to be over 20% of GDP. (IMF, April 2010, p.22)

4.3 Approaches to fiscal adjustment

In essence, fiscal adjustment presents reducing budget deficit and public debt. Following demand side fiscal policy mechanisms in terms of an inflationary gap, Alesina, Favero and Giavazzi indicate two approaches to fiscal adjustments (Alesina, Favero and Giavazzi, 2012):

- Government expenditure cuts – *EB approach (spending – based approach)*
- Tax increase – *TB approach (tax – based approach)*

The fiscal adjustment can also be implemented by a combination of the two approaches.

The authors bring to mind that in neoclassical models the fiscal policy can affect the output through three channels: the wealth effect, intertemporal substitution and distortions. In addition, the three channels act differently according to the approach.

The government spending cuts create a positive wealth effect, since economic agents expect a future tax cut and an increase in aggregate demand, through a rise in private sector investments and household consumption. **The tax increase**, on the contrary, creates a negative wealth effect on aggregate demand. Obviously, the literature on the effects of fiscal policy on output is typically focused on the effects on aggregate demand components, and less on the effects on the side of aggregate supply. However, Alesina, Favero and Giavazzi point out that the effects on the aggregate side also matter. These effects, based on their analysis, can be summarized as follows:



9TH INTERNATIONAL ASECU CONFERENCE ON “SYSTEMIC ECONOMIC CRISIS: CURRENT ISSUES AND PERSPECTIVES”

- When a fiscal adjustment is implemented using the EB approach, the positive aggregate supply side effects are mainly effectuated through an improvement in the business climate of the country. Namely, announced government spending cuts affect expectations of economic agents i.e. they lower the uncertainty of investors and increase the propensity to invest – this is normal because economic agents (in this case investors) would expect lower budget deficits, lower inflation rates and lower interest rates. In the long run, this approach enables an increase in capital stock because it eliminates the adverse consequences of the crowding out effect – especially the displacement of accumulation and capital towards unproductive uses (covering budget deficits).
- When a fiscal adjustment is implemented using the TB approach, it leads to lower investments (the higher tax burden causes a lower propensity to invest) and to distortions in the economy.

The different effects of the two approaches on output are related to the impact of fiscal multipliers. In Keynesian models, as is widely known, each cut in deficit and public debt (the government spending), using either approach, leads to a recession and a fall in GDP and employment.⁵ The standard Keynesian model even insists that the multiplier is far larger for a change in government spending than for a change in taxes. We would like to point out here that in the post crisis period there has been a re-actualization of debates and old and new dilemmas about the real possibilities of fiscal policy and the operation of fiscal multipliers. The models used to calculate fiscal multipliers often provide different results related to numerous controversies. (Romer and Romer, 2010, p. 763-800; Uhlig, 2010, p.30-34) The recent empirical literature, however, suggests (confirmed also in the Alesina, Favero and Giavazzi research) that the tax multiplier is much larger than the spending multiplier and that the multiplier is larger during a recession. Hence, Alesina, Favero and Giavazzi's general conclusion is that *the fiscal adjustment through a reduction of budget spending tends to be accompanied with mild and short-lived recessions or even with a lack of recessions. Conversely, tax based fiscal adjustments can be accompanied by prolonged and deep recessions.* Other authors also agree that spending based consolidations are more effective and less contractionary, and are especially benign if they are based on cuts on transfers and other current spending. (Molnar 2012; IMF, October 2010, p.102, p.105; OECD 2012b, p.3).

Many economists, however, warn that experiences from previous fiscal contraction episodes cannot provide all the answers for today's roaring budget deficits and public debts, because of some of today's specific circumstances, such as: tied hands of monetary policy by the near zero interest rates; liquidity constraints on households; a weak global demand; the simultaneous global fiscal consolidation; repairing banking sectors; the necessary size and spread of consolidations; the presence of 'hysteresis' effect which keeps

⁵ IMF experts find that fiscal consolidation is typically contractionary (fiscal consolidation equal to 1 % of GDP typically reduces real GDP by about 0,5 % and increases unemployment rate by about 0,3 percentage point after two years). (IMF, October 2010, pp. 98-99)



9TH INTERNATIONAL ASECU CONFERENCE ON “SYSTEMIC ECONOMIC CRISIS: CURRENT ISSUES AND PERSPECTIVES”

the productive capacity of the economy persistently or even permanently lower, pressures from population ageing etc. (IMF, October 2010, p.108; Molnar, 2012, p. 8; Perotti 2011, p.3) The appropriate mix of adjustment measures for each country depends on numerous factors, like: the current level of public spending, the level of the tax burden, demographic pressures, political situation, the size of the needed adjustment etc. (OECD, p.4; IMF, April 2010, p.10-11; Cottarelli, June 2012, p.53) Experts in the OECD and IMF also suggest spending reforms aimed at improving the efficiency in health care systems, public education and public services in general, as well as reforms of social insurance and public pension programmes, scaling back tax expenditures and some tax preferences, using environmental taxes as means for fiscal consolidation without endangering recovery prospects. (OECD, pp. 4-7; IMF, April 2010, p.12)

One of the approaches for preventing high budget deficits and public debt are *fiscal rules* – fiscal policies based on rules instead of discretions. The number of countries that lead rule based fiscal policies permanently grows, primarily because a growing number of economists in the modern macroeconomic science (the mainstream modern macroeconomics) prefer rules over discretions in the fiscal area, and because of the enormous growth of budget deficits resulting from the policy response to the global financial crisis. The latest IMF study of fiscal rules (www.imf.org/external/datamapper/FiscalRules/map/map.htm) confirms that in March 2012, 75 countries in the world implemented a rule based fiscal policy, compared to only 5 countries in 1990.

What do experiences from countries that implemented fiscal rules show?

In the USA, the first serious attempt to introduce rules for a reduction of the budget deficits dates from 1985, when two republican senators (Gramm and Rudman) and the democrat Hollings, proposed the famous Gramm-Rudman-Hollings Act. The Act set ceilings on the budget deficit growth after 1985, for each fiscal year separately, with an ultimate goal to eliminate the deficit in 1991. The Act assumed, in case the proposed budget does not comply with the established budget deficit ceiling, a start of a special procedure for decreasing all public spending programs, by the same percentage (linearly), in order to achieve the established target. However, the Act *excluded from this procedure the budget spending programs related to servicing the debt and to a part of the social security and social transfers*. The Act, importantly, *did not derogate, or at least did not completely derogate the stabilization function of the fiscal policy, with the very fact that it assumed a loosening of the budget ceilings in case the GDP growth rate was below 3%*. The implementation of the Act did not go smoothly. Although the achieved budget deficits were higher than the ceilings, the share of budget deficits in GDP decreased from 5,1% in 1986 to 3,9% in 1990, due to the economic growth, but partly also to the Act (Blanchard and Cohen, 2004, pp.517-520)

In 1990 a new act was adopted, which established fiscal policy rules (Budget Enforcement Act). This Act did not focus directly on the budget deficit, but on budget expenditures. In



9TH INTERNATIONAL ASECU CONFERENCE ON “SYSTEMIC ECONOMIC CRISIS: CURRENT ISSUES AND PERSPECTIVES”

addition, it assumed a slow but regular decrease in discretionary budget expenditures (mainly expenditures on goods and services) in the following 5 years. Regarding nondiscretionary expenditures (mainly social transfers), the Act affirmed the *pay-as-you-go rule*, which, in order to prevent an increase in budget deficits, did not allow new transfer payments from the budget without a previously provided real financing funds (from new sources of funds or through a cut in funds for other expenditure programs). *This set of rules enabled a budget deficit growth in time of recession* (under the influence of automatic stabilizers) simultaneously maintaining budget expenditures on the level established with the rules. The ultimate result was a transformation of the budget deficit into a surplus in 1998. Again, *the decrease in the deficit, can be mostly explained by the economic growth (which in the USA was extraordinary in this period), and partly by the introduction of these fiscal rules.*

In the EU, as was already mentioned, the Maastricht Treaty of 1992 posed a requirement to the countries within the Euro zone to keep their budget deficits below 3% of GDP (with a necessary flexibility in terms of recession) – a rule which, in the absence of efficient control mechanisms, many countries did not follow. The experiences of the countries which implemented rules confirm that:

- The practical implementation of the rules is difficult, because the fiscal area is a legal matter and is often exposed to political pressures and influences;
- Beside the sharp distinction of discretions from rules in theory, in practice, conducting fiscal policy based on established rules does not derogate the social and stabilization function of the fiscal policy – which can be achieved with well measured and basically flexibly established rules;
- ***Economic growth rates are crucial*** in reducing budget deficits, while the rules themselves are less significant. Namely, if a country facing high budget deficits and a large public debt ensures a dynamic and sustainable growth, the increase in economic activity will lower the relative share of deficits and public debt in its GDP. In this sense, Alesina, Favero and Giavazzi, in the mentioned paper (Alesina, Favero and Giavazzi, 2012), point out that supply side measures (enhancement of the competitive pressure in the economy, labor market reforms – liberalization and increased flexibility etc., in short, structural reforms, which are important for increasing the pace of economic growth) can have much stronger effects in terms of decreasing or even eliminating output losses as a result of budget spending restrictions.

5. Pre-crisis consensus on fiscal and monetary policies

Based on the previous analysis, we may determine several pillars of the so-called Pre-Crisis Consensus within the mainstream macroeconomics, which are related to fiscal and monetary policies:



9TH INTERNATIONAL ASECU CONFERENCE ON “SYSTEMIC ECONOMIC CRISIS: CURRENT ISSUES AND PERSPECTIVES”

Fiscal Policy:

- Fiscal policy should be based on automatic stabilizers or long-term rules;
- Discretionary fiscal policies should be applied and could be efficient only in times of sharp and prolonged recessions (depressions);
- In the short run, fiscal policy can have a significant impact on the economy's output;
- In the long run, fiscal policy cannot reduce unemployment.

Monetary policy

- Monetary policy based on rules should be preferred to discretionary monetary policy;
- In the short run, monetary policy could have a significant impact on the economy's output;
- In the long run, a monetary expansion may not affect real macroeconomic magnitudes;
- Low inflation should be the main priority of the monetary policy;
- A zero-rate inflation is not desirable, because it prevents the economy's structural adjustment and push the economy towards the so-called liquidity trap;
- A central bank with high degree of independence and credibility among the public is a precondition for achieving low inflation and dealing with the problem of time inconsistency of the monetary (and macroeconomic in general) policy.

6. The Post-crisis emerging convergence of views on macroeconomic policies

The financial and economic crises of 2007-2008 has opened wide debates on the their causes and consequences on the world economy, on the policy responses and their (in)efficiency, on the management of business in times of crisis, and etc. Many eminent economists, both from the Keynesian and neoclassical provenience, has joined the debates on the new rethinking of the pre-crisis macroeconomic consensus, particularly in relation to the efficiency and limits of macroeconomic policies. Their views on the need for changes in the design of macroeconomic policies range from insisting that the general macroeconomic policy framework should be maintained and only supplemented by the insights and lessons learned by the last crisis (Blanchard, Dell’Ariccia and Mauro, 2010), to the view that it is necessary to completely rethink and redesign macroeconomic policies, since today we are faced with a crisis in economic science as a whole (Leijonhufvud, 2008).

Maybe it is too early to talk about the post-crisis consensus around the issues of macroeconomic policies (fiscal and monetary). However, some kind of convergence of views on these issues seems to be taking place; such convergence, according to our opinion, will be happening along the following lines:



9TH INTERNATIONAL ASECU CONFERENCE ON “SYSTEMIC ECONOMIC CRISIS: CURRENT ISSUES AND PERSPECTIVES”

- During deep and prolonged recessions (depressions) the fiscal policy is more efficient than the monetary policy. Therefore, it is necessary that during normal times, the fiscal policy to be implemented through the automatic stabilizers or be based on long-term rules which would prevent the creation of large budget deficits and would leave enough fiscal space for interventions when macroeconomic conditions significantly deteriorate;
- The fiscal policy multiplier has been seriously questioned and the traditional Keynesian view that every public spending cuts (and lowering of budget deficits and public debts) will inevitably lead to recession and decline in GDP and employment, as well as that the multiplier is much larger for expenditures than for taxes. The convergence of views tend to accept the idea that the fiscal multiplier may be quite different depending on level of economic development, the exchange rate regime, the openness of the economy to foreign trade, the level of public debt and etc.;
- During normal times and mild recessions, the monetary stabilization policy is relatively more powerful and useful than the fiscal policy, due to higher flexibility of the former;
- Although the monetary policy decision makers should maintain the priority of price stability goal, they may be much more careful to prevent the economy fall in the liquidity trap situation;
- The Keynesian concepts of aggregate demand management and the optimization of the fiscal-monetary mix will again gain importance, particularly in the context of the process of fiscal consolidation, in order to mitigate the crowding-out effect and to improve the structure of the output of the economies.

7. The issue of fiscal sustainability in the case of the Republic of Macedonia

A larger increase of the public debt of the Republic of Macedonia is evident after 2008, since the Government announced an abandonment of the policy of fiscal austerity (IMF 2009b, p.10).



9TH INTERNATIONAL ASECU CONFERENCE ON
“SYSTEMIC ECONOMIC CRISIS: CURRENT ISSUES AND PERSPECTIVES”

Table 2. Central Government debt (consolidated) (in millions of EUR)

Basis	2008	2009	2010	2011	2012	Q1 2013
EXTERNAL CENTRAL GOVERNMENT DEBT	921,2	1.105,3	1.173,8	1.582,1	1.612,5	1.673,7
Central Government	886,7	1.074,5	1.146,5	1.558,4	1.592,5	1.673,7
Public Funds	34,6	30,9	27,3	23,6	20,0	0,0
DOMESTIC CENTRAL GOVERNMENT DEBT	465,5	491,7	536,8	506,7	932,0	1.029,5
Structural bonds	343,5	282,5	226,1	152,1	126,8	124,1
Stopanska Banka Rehabilitation Bond	0,0	0,0	0,0	0,0	0,0	0,0
Bond for selective credits	16,9	16,9	16,9	16,9	16,9	16,9
Stopanska Banka Privatization Bond	51,5	42,9	34,3	27,9	19,3	17,2
Bond for old foreign exchange savings	152,9	101,9	51,0	0,0	0,0	0,0
Denationalisation Bond (I - XI issue)	122,2	120,7	124,0	107,3	90,6	90,1
Continuous Government Securities	122,0	209,2	310,6	354,6	805,2	905,4
o.w. Treasury bills for monetary purposes	0,0	0,0	0,0	0,0	0,0	0,0
TOTAL CENTRAL GOVERNMENT DEBT	1.386,7	1.596,9	1.710,6	2.088,8	2.544,5	2.703,2
GDP	6.720,0	6.703,0	7.057,0	7.525,0	7.521,0	7.978,0
Average export	2.692,6	1.933,0	2.492,8	3.179,0	3.093,0	3.347,0
External central government debt as % of the total central government debt	66,4	69,2	68,6	75,7	63,4	61,9
Domestic central government debt as % of the total central government debt	33,6	30,8	31,4	24,3	36,6	38,1
Total central government debt as % of GDP	20,6	23,8	24,2	27,8	33,8	33,9
Total central government debt as % of average export	51,5	82,6	68,6	65,7	82,3	80,8

Source: Ministry of finance of the Republic of Macedonia, 2013
http://www.finance.gov.mk/files/u4/stock_of_central_government_31_03_2013.pdf

At first glance, budget deficits of 2,5% to 2,8% of GDP, (and 3,5% in 2012) that Macedonia achieved in recent years, are small and perceived as a normal countercyclical measure during recession. Likewise, the data on the level of central government debt (internal and external) of around 2,4 billion euros (this amount does not include the obligations of the monetary authority from repo contracts, although, according to the GFS classification they are also included in the public debt of a country), which amounts to slightly above 30% of Macedonia's GDP (around 33 - 34% today) are not alarming.

However, a thorough analysis of the public debt situation in the Republic of Macedonia suggests a need for a big precaution in future creation of public debt and especially in the way the money that collected money from Government borrowing on the domestic market



9TH INTERNATIONAL ASECU CONFERENCE ON “SYSTEMIC ECONOMIC CRISIS: CURRENT ISSUES AND PERSPECTIVES”

and international financial markets are being spent. In this context, the following theoretical and practical aspects of the problem should be taken into account:

First, in a market economy, the business sector is the creator of economic growth, while the state (government) creates a general favorable framework for development and expansion of businesses through productive investments and employment growth. Since the Government of the Republic of Macedonia has abandoned the fiscal austerity policy, it became the biggest investor and employer in the Macedonian economy. However, governments (the economists would say by definition) are less rational and efficient in resource allocation. Hence, this model of economic growth should be abandoned in time (after the exit from the crisis).

Second, the budget expansion can contribute to production and employment growth only in the short term (year or two). Already in the medium term, the increased money demand raises the interest rate and limits further investment, GDP and export growth. (Parkin, 2012, p.338)

Third, the expansionary fiscal policy (in the medium and especially in the long run) through structural budget deficits creates public debt and crowds out the private sector (the business sector) from the economic activity. One of the most severe consequences from crowding out is the displacement of accumulated capital from productive to unproductive uses. IMF analyses confirm that public and private investments are typical substitutes in the Republic of Macedonia and in the region. (IMF 2009b, p.13)

Fourth, the research by Reinhart and Rogoff (2009) has shown that in the case of middle-income emerging market countries (like Macedonia) when the public debt-to-GDP ratio exceeds the range of 3% - 35% the default risk starts to increase rapidly. (Reinhart Carmen and Rogoff Kenneth: *This Time is Different. Eight Centuries of Financial Folly, USA and UK: Princeton University Press, 2009*)

Fifth, viewing things from a more pragmatic angle, the arguments for caution in the creation of budget deficits and public debt in the case of the Republic of Macedonia are even more convincing. In this context, we would emphasize that the share of gross external debt in the country's GDP, around the middle of 2012, reached 4,96 billion euros i.e. 67% of GDP, exceeding even the critical point of 60%, typical (in the pre-crisis period) for developed countries. Thus, the gross external debt (even though the figure incorporates also the private sector debt - those are debts that need to be returned in foreign currency) becomes a serious problem for the Macedonian economy. Namely, the capacity of the Macedonian economy to finance its public debt is limited, primarily because of the weak export performances and the large import dependence of the economy. The weak export performance of the Macedonian economy is determined by the unfavorable structure of the economy (exports are dominated by sectors with low value added and sectors with stock prices), and the situation is further complicated by the fact that a part of the public debt is being unproductively used, and by the European debt crisis. IMF analyses also indicate the



9TH INTERNATIONAL ASECU CONFERENCE ON “SYSTEMIC ECONOMIC CRISIS: CURRENT ISSUES AND PERSPECTIVES”

need for such a precaution - within the assessment of the criteria related to the so called Precautionary credit line, they highlight the need for the government, already in 2012, to lower the budget deficit to 2,2% and to undertake further reductions in the forthcoming years in order to create fiscal space for interventions in case of a fall in economic activity. (IMF 2011, p.9) Meanwhile, the economic activity has drastically fallen and it is now certain that Macedonia is going to achieve a stagnant economic growth in 2012 (around 0% or a little above zero), as is also certain that in the following several years the growth rates are going to be far lower than in the pre-crisis period. The fall in the total economic activity reduces budget revenues, and the European debt crisis will additionally decrease export revenues and will further sharpen the borrowing terms in the international financial market.

Sixth, when a budget deficit is nevertheless created, even in bearable amounts, the spending priorities must be clearly defined. Macedonia has a bad public expenditures structure – an enormous part of the budget revenues are spent on salaries and contributions for the hypertrophied and inefficient public administration and for social transfers. Both these budget items are negatively correlated with economic growth. This structure of public spending requires a share of the funds received from government borrowing, among other things, to be used also for financing current budget expenditures - salaries, pensions etc. Although the current government managed to increase the share of capital investments in the total structure of budget costs in the last few years, the priorities are poorly set - the position capital costs incorporates items such as cars, furniture, administrative buildings, monuments and other unproductive costs, i.e. transfers that “swallow” significant amounts of money which end up abroad and hence, do not have a multiplying effect on the domestic economy. Thus, it is necessary for public investments to be directed primarily to roads, modernizing the railway, gasification and at the energy sector in general. Even if discussions in modern macroeconomic science about budget multipliers (dilemmas whether the multiplication effect is stronger when the budget expansion is done by government spending or by taxes) are disregarded, there is a simple argument that shows why it is important to use the borrowed funds for financing large infrastructure projects, instead of unproductive purposes. Namely, the public spending aimed at large infrastructure projects (the infrastructure is one of the key segments of the business climate) significantly decreases the costs of running a business.

Seventh, Macedonia significantly reduced the tax burden on businesses with the introduction of a flat tax rate (the previous three progressive marginal personal income tax rates were reduced to a single tax rate of 10% and a corporative income tax (profit tax) of 10% as well). This is good for a country with extremely high unemployment, and is positive for attracting foreign investments. This benefit, however, could be impaired, if the further public debt growth produces problems in its regular servicing.

Eighth, the process of demographic ageing is going to seriously complicate the process of fiscal consolidation in the future i.e. it is going to increase the fiscal costs of the social funds – the Pension and Disability Insurance Fund and the Health Care Fund.



9TH INTERNATIONAL ASECU CONFERENCE ON “SYSTEMIC ECONOMIC CRISIS: CURRENT ISSUES AND PERSPECTIVES”

8. Conclusions

The issue of sustainability of public debt has recently gained in importance as the financial crisis and Great Recession led to significant increases in public sector indebtedness in many developed countries. Economic theory deals with the issue of public debt sustainability within the intertemporal government budget constraint framework, and tries to formulate a long term solvency condition that relates the present value of expected primary budget surpluses, determined by capitalizing the surpluses with the interest-growth differential, to some level of debt-to-GDP ratio that is taken as constant. For ensuring a long run sustainability of debt level, the rate of long-term GDP growth is of critical importance. The fiscal crisis in some of the EU countries has shown that it could be very difficult to achieve fiscal sustainability when there is a significant increase in fiscal costs related to restoring solvency of the financial institutions in times of financial crisis, and also, when the downfall in economic activity requires a very delicate balance between a short-term countercyclical increase in budget deficits and a medium term fiscal consolidation needed to ensure to return the fiscal position on the long term sustainable path. The implicit fiscal liabilities related to ageing of population may be the most significant risk for the fiscal sustainability in the medium to long run in the EU and other developed economies. The Republic of Macedonia has managed to maintain relatively prudent fiscal position during most of the transition period. The resilience of its banking sector to the financial crisis of 2007-8 has helped to avoid any significant shock to the public finances stemming from intervention in financial institutions. However, as the recessionary trends in the EU, the main economic partner of the Republic of Macedonia, cause prolonged weak results in terms of economic growth, and as the countercyclical fiscal efforts led to increases in short term fiscal deficits, the country may well need a longer term strategy of how to ensure the long term sustainability of its public finances.

REFERENCES

- Alesina Alberto, Favero Carlo and Giavazzi Francesco, (2012), "The output effect of fiscal consolidations", August 2012 (the paper is part of *Growth and Sustainability Policies for Europe (Grasp project (#244725) funded by the European Commission's 7th Framework Programme)* – online version.
- Barrell, Ray, Holland Dawn and Hurst Ian, (2012), “Fiscal Consolidation: Part 2. Fiscal Multipliers and Fiscal Consolidations”, *OECD Economics Department Working Papers*, No. 933.
- Blanchard, Olivier, (2009), *Macroeconomics, Fifth Edition*, Pearson Education, Inc., Upper Saddle River, New Jersey, USA.



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

Blanchard Olivier and Cohen Daniel, (2004), *Macroéconomie*, Pearson Education France, 2004

Camdessus, Michel, and Guidee, Renaud, (2010), "By the Rule", *Finance and Development*, IMF, September 2010

Cochrane, John, (2011), Understanding policy in great recession: some unpleasant fiscal arithmetic”, *European Economic Review*, 55, pp. 2-30.

Cottarelli Carlo, (2012) "Age of Austerity", *Finance and development*, IMF, June.

Cheng Kevin, De Vrijer Eric, and Yakadina Irina, (2010), " The Long Run is Near", *Finance and Development*, IMF, September.

Daianu, Daniel, (2011), “Fiscal Consolidation in the EU’s New Member States”, *CASE Network E-briefs*, No. 02/2011, January.

ECB, (2012), “Analysing government debt sustainability in the euro area”, *Monthly Bulletin*, April.

ECB, (2011), “Ensuring fiscal sustainability in the euro area”, *Monthly Bulletin*, April, pp.61-77.

The Economist, (2012a), "Charlemagne - Europe on the rack”, June 30th.

The Economist, (2012b) " The Bond market - To strive, to seek, to find, and not to yield", June 30th.

The Economist, (2012c) “Population and recession - Europe’s other crisis”, June 30th.

The Economist,(2012d), "Inching towards integration", July 30th.

The Economist, (2012e), "The Finn red line", The Economist, August 25th.

Fiti Taki, (2011), *Keynesian Economic Philosophy - From Keynes to the Present Days*, Macedonian Academy of Sciences and Arts, and Ss Cyril and Methodius University, Faculty of Economics – Skopje, 2011 (in Macedonian).

Fiti Taki and Tashevskaja Biljana, (2008), “The phenomenon of crowding-out the private sector investments”, *Annual of the Faculty of Economics – Skopje*, Vol.43, Ss. Cyril and Methodius University, Faculty of Economics – Skopje, 2008.

Horton Mark, (2010), "Now Grim a Fiscal Future", *Finance and Development*, IMF, September.



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

IMF, (2009a), *Country Report - Republic of Macedonia*, NO 09/ 60,.

IMF, (2009b), *Country Report - Republic of Macedonia, Selected Issues*, NO 09/ 61,

IMF, (2009c), *World Economic Outlook (WEO): Crises and Recovery*, April.

IMF, (2010a), *From Stimulus to Consolidation: Revenue and Expenditure Policies in Advanced and Emerging Economies*, IMF, Fiscal Affairs Department, April 30, 2010

IMF, (2010b), *World Economic Outlook (WEO): Recovery, Risk and Rebalancing*, October.

IMF, (2011a), *Fiscal Monitoring - Shifting Gears, Tackling Challenges on the Roads to Fiscal Adjustment*, April.

IMF, (2011b), *Country Report*, NO 11/280.

Kotlikoff, Laurence, (2010), "A Hidden Fiscal Crisis", *Finance and Development*, IMF, September.

Kouretas Georgios and Vlamis Prodromos, (2010), "The Greek Crisis: Causes and Implications", *Panoeconomicus*, No 4/2010, Novi Sad.

Carballo-Cruz, Francisco, (2011), "Causes and Consequences of the Spanish Economic Crises: Why the Recovery Has Taken So Long", *Panoeconomicus*, No 3/2011, Novi Sad.

Mankiw Gregory (2010), *Macroeconomics*, Pearson Education, Inc.

Mankiw Gregory (2010), "Questions about Fiscal Policy: Implications from the Financial Crisis of 2008-2009", *Federal Reserve Bank of St. Louis Review*, May/June, 92(3), pp.177-183.

Miles David, and Scott Andrew, (2005), *Macroeconomics: Understanding the Wealth of Nations*, John Wiley & Sons, Ltd., West Sussex, England.

Ministry of Finance of the Republic of Macedonia: "Stock of Central Government Debt 31.03.2013",
http://finance.gov.mk/files/u4/Stock_of_central_government_30_09_2012.pdf

Molnar, Margit, (2012), "Fiscal Consolidation: Part 5. What Factors Determine the Success of Consolidation Efforts?", *OECD Economics Department Working Papers*, No. 936.

Montiel, Peter J.,(2003), *Macroeconomics in Emerging Markets*, Cambridge University Press, Cambridge, UK.



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

NBRM,(2012), *Annual Report for 2011*, National Bank of the Republic of Macedonia, Skopje, April.

Nitika Bagaria, Dawn Holland and John Van Reenen, (2012), “Fiscal Consolidation During A Depression”, *Special Paper No.27*, Centre for Economic Performance, August.

OECD, (2012a), “Fiscal Consolidation: How Much is Needed to Reduce Debt to a Prudent Level?”, *OECD Economics Department Policy Notes*, No. 11, April.

OECD, (2012), “What are the Best Policy Instruments for Fiscal Consolidation?”, *OECD Economics Department Policy Notes*, No. 12, April 2012b

Parkin Michael, (2012), *Macroeconomics*, Worth Publishers, 2012

Perotti Roberto, (2011), “The “Austerity Myth”: Gain Without Pain?”, *BIS Working Papers No.362*, Bank for International Settlements, November.

Romer Christine and Romer David, (2010): "The Macroeconomic Effects of Tax Changes: Estimates Based on a New Measure of Fiscal Shocks", *The American Economic Review*, Vol. 100, No. 3, June.

Roubini Nouriel, (2001), “Debt Sustainability: How to Assess Whether a Country is Insolvent”, Stern School of Business, NYU, December 20.

Uhlig Harald, (2010), "Understanding the Impact of Fiscal Policy: Some Fiscal Calculus", *The American Economic Review*, Vol. 100, No. 2, May 2010.