PRIVATE VERSUS PUBLIC SECTOR SAVING-INVESTMENT GAP IN THE MACEDONIAN ECONOMY – A COMPARATIVE STUDY

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Abstract

This paper aims to analyze and evaluate the size of the macroeconomic imbalances, in terms of saving-investment gap, amongst the countries, with special reference to the case of Republic of Macedonia. Particularly, the sectors (private and government) saving – investment gap is investigated in order to determine which sector is the major contributor to the overall macroeconomic imbalances in the countries with different level of development. To do this the methodological framework from national income accounting is used. The results suggest that government sector in more developed countries realizes continuous negative saving-investment gap, that is completely/largely financed by the net savings of the private sector. This is not the case with the South-Eastern countries where both government and private sector realize negative saving-investment gap. The crisis caused significant changes in the behavior of private and government sector leading to "improvements" in the balance of payments current account of almost all countries.

Key words: *saving, investment, current account deficit, saving-investment gap, public debt*

1. INTRODUCTION

The macroeconomic imbalances of the countries can be analyzed from several aspects. One aspect that is very important is analyzing the imbalances in the balance of payment, i.e. the aggregate imbalance/gap between domestic saving and investment. The countries with higher investment than saving are net importer of foreign saving, and the countries with higher saving than investment are net exporter of capital. Within this framework, the sectoral dispersion of this imbalance is particularly interesting, i.e. the question which (state or private) sector is the major contributor to the overall macroeconomic imbalances in the countries with different level of development. To do this the methodological framework from national income accounting can be used that yields two important relations: the links between aggregate income and demand and the external current account balance, and the linkages between aggregate saving and investment and the external current account balance. It is particularly interesting to investigate this issue in relation to the degree of development of countries and to analyses the situation in the developed in relation to the less developed countries, particularly in the countries of the region. The last financial and economic crisis caused significant changes in the behavior of private and government sector in almost all countries, but with different intensity and direction, which is also subject of this analyzes.

2. METHODOLOGICAL FRAMEWORK AND DATA

The accounting framework established in the System of National Accounts (SNA, 2008) produced two significant relationships (links) that are used especially in macroeconomic analysis. These key relations are derived from the identity linking GDP with its expenditure counterparts. The first highlights the links between aggregate income and demand and the external current account balance. The second focuses on the linkages between aggregate saving and investment and the external current account balance.

The first set of interrelations between the national accounts and balance of payments aggregates are derived from the basic identities that are established in the definition of GDP, GNI and GNDI (Box 1). As detailed in Box 1, the current account balance (CAB) is, ex-post, identical to the gap between GNDI and absorption (A), or

GNDI - A = CAB.

This identity forms the basis for the so-called absorption approach to the balance of payment. The interpretation of this relationship is that a current account deficit occurs whenever a county spends beyond its means or absorbs more than it produce. In other words, the current account deficit reflects the excess of absorption over income. Accordingly, if the country tries to reduce the current account deficit of balance of payment, it needs to increase income and / or reduce absorption. The domestic absorption can be reduced by contacting the final consumption (C) and/or reduction of gross investment (I).

Box 1

Relations Between Agregate Income and External Current Account Balance

Gross Domestic Product (GDP)	= C+I+(X-M) = A+(X-M)	(1)
Gross National Income (GNI)	= GDP+Y = C+I+(X-M+Y)	(2)
	= A+(X-M)	(3)
Gross National Disposable Income (GNDI)	= GNI+Tr	(4)
	= C+I+(X-M+Y+Tr)	(5)
	= A+(X-M+Y+Tr)	(6)
	GNDI-A = X-M+Y+Tr	(7)
	= CAB.	
Since	S = GNDI - C	
it follows that	GNDI - C = I+(X-M+Y+Tr),	(8)
	S-I = X-M+Y+Tr	
	= CAB.	(9)

A - Domestic Absorption (Domestic Demand)
X - Export of goods and services
M - Import of goods and services
Y - Net income from abroad
Tr - Net transfers from abroad
C - Final consumption
I - Gross investment
S - Gross national saving

The second macroeconomic link between national accounts and current account balance of the balance of payment is established through difference between saving and investment (see Box 1) in the economy (saving-investment gap). As detailed in Box 1, the current account of the balance of payment is, ex-post, identical to the gap between saving (S) and investment (I) in the economy:

S - I = CAB

Saving-Investment Balance = Current account = Use of foreign savings

The interpretation of this relationship is that the current account deficit in the balance of payment arises whenever the investment exceeds domestic saving in the economy, and this gap must be financed using a foreign (imported) saving. In general, according to this link, if the country tries to

reduce the deficit in the external current account, it needs to increase its saving and/or reduce its investment.

Although this identity is central to macroeconomic analyses, it does not make explicit the respective roles of the government and private (non-government) sectors. The link between the fiscal aggregates and the balance of payments can easily be derived from the basic saving-investment gap for the economy as a whole by decomposing saving and investment aggregates into their private and government sector components:

$$(Sp + Sg) – (Ip+ Ig) = CAB,$$

where the subscripts p and g refer to the private and government sector, respectively. This relationship can be rearrange as

$$(Sp - Ip) + (Sg – Ig) = CAB$$

Private sector saving-investment gap + Government sector saving-investment gap = Current account balance

This identity suggests that there are important links among (a) the saving-investment gap of the private sector, (b) the overall fiscal position of the government sector, and (c) the current account of the balance of payment. It focuses on the separate roles that the private and government sector play in a current account imbalance.

In general, there are three different combinations of private and public sectoral balances and the resulting current account balances.

(1) $(Sp – Ip) > 0; \quad (Sg – Ig) < 0 \rightarrow CAB < 0$ if $|(Sg + Ig)| > |(Sp – Ip)|$

According to this situation, a fiscal deficit is the main source of the current account deficit. Usually, this situation is typical for many countries undertaking adjustment program. In this case, reducing the current account deficit will require fiscal adjustment.

(2) $(Sp – Ip) < 0; \quad (Sg – Ig) < 0 \rightarrow CAB < 0$

In this situation, the current account deficit represents both a government deficit and a private sector saving shortfall in relation to private investment.

(3) $(Sp – Ip) < 0; \quad (Sg – Ig) > 0 \rightarrow CAB < 0$ if $|(Sp – Ip)| > |(Sg – Ig)|$

Situation 3 indicates that a current account deficit coexists with a fiscal surplus and a private saving shortfall. If the current account deficit reflects a private investment boom financed by capital inflow, the policy implication are different than they would be if the current account deficit reflects a private consumption boom that mirrors a private saving shortfall.

For investigating and quantification of the above accounting framework to the specific countries, we use data from the IMF World Economic Outlook Data Base (October 2014), World Bank Data Base, EUROSTAT Data Base, and data available on the internet sites of a group of selected countries. We use data for the period 2004-2013. The data for the private sector saving-investment gap is calculated as a residual – a difference between data for balance of payments current account balance and data for general government saving-investment gap.

3. AGGREGATE DEMAND AND CURRENT ACCOUNT BALANCE

Based on the above explained methodological framework, in this section we explore the relationship between absorption (aggregate demand) and the current account of the balance of payments.

Applying the first equation (given above) in the case of a few selected countries, in the period 2005-2013 the absorption (final consumption and investment) had the highest values in the case of Republic of Macedonia (the average amount of approximately 120% of GDP) and Bulgaria (with an average amount of 110% of GDP). In developed economies, the share of the aggregate demand in GDP is

lower - the Euro area has amounted about 98% of GDP, Germany about 100% of GDP and Slovenia 98% of GDP. The relatively higher share of absorption in Republic of Macedonia is due to the high amount of final consumption (about 95% of GDP - the highest value compared with the other countries (nearly 20% of GDP higher than the Euro area, Slovenia or Croatia) (Figure 2).

Figure 1

Absorption and Current Account Balance

(% of GDP, average 2005-2013)

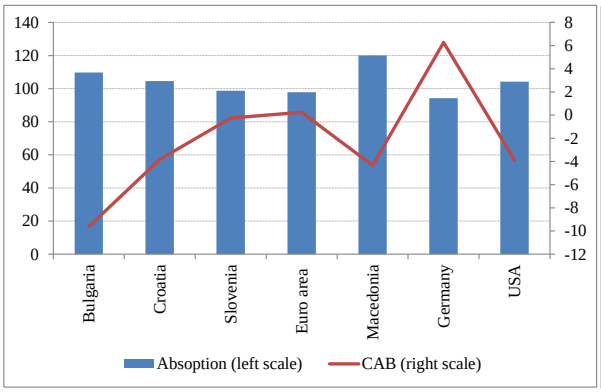
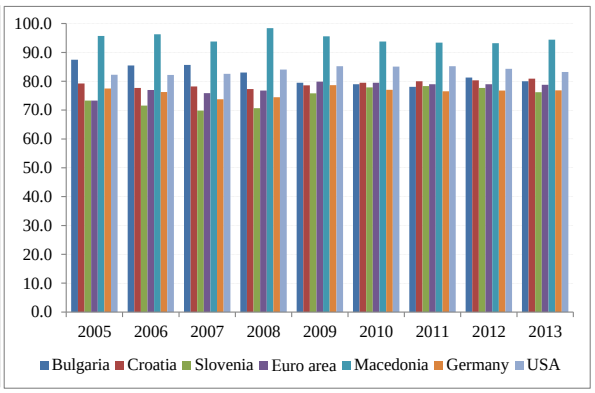


Figure 2

Final Consumption by Countries

(% of GDP, 20115-2013)

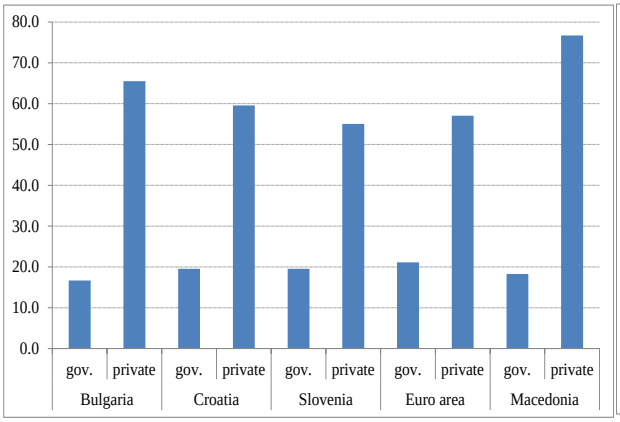


Source: WEO, EUROSTAT and own calculations.

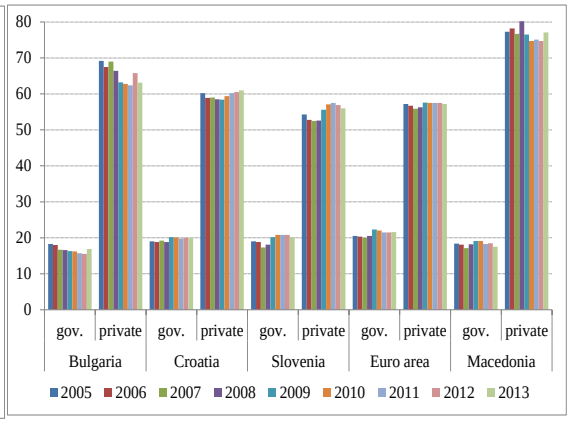
Analyzing the individual sectors, the final consumption of the private sector is the main factor causing higher aggregate demand (absorption) in the Macedonian economy (by 15-20% of GDP higher compared to the other countries including in this analysis – Figure 3). The lowest final consumption of the private sector is registered in Slovenia (55% of GDP in the period 2005-2013 on average). The government final consumption in Macedonia in the period 2005-2013 amounted 18% of GDP on average, which is almost identical in comparison to the other countries (Figure 3). The highest government consumption is registered in Euro area (21% of GDP).

Figure 3 Final consumption by sectors as a % of GDP

(average 2005-2013)



(by years)



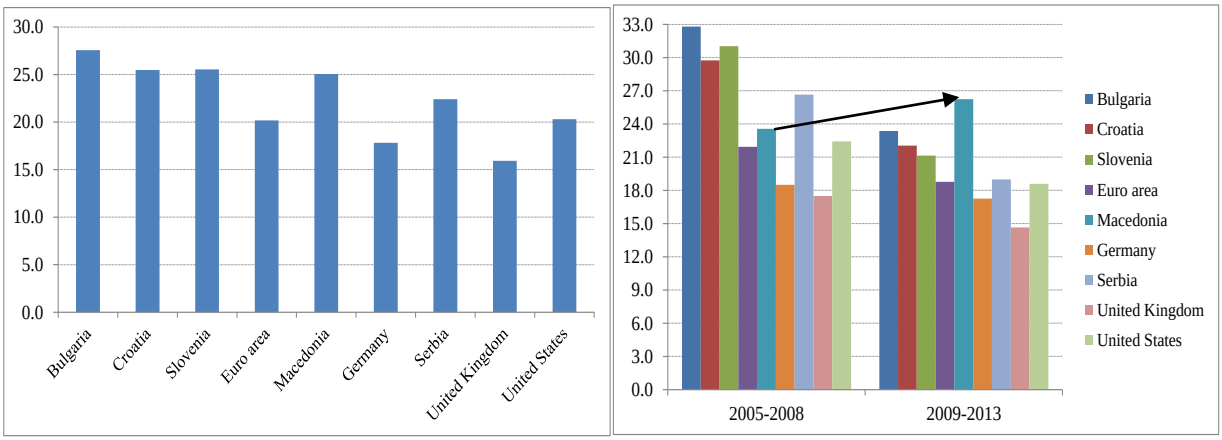
Source: Graphs prepared based on IMF (WEO) and EUROSTAT data.

The rate of investment, which is the other component in the absorption, is lower in major developed economies (USA, Germany, United Kingdom) in comparison with developing countries (on average by about 7% of GDP). The highest rates of investment are realized in Bulgaria (on average about 28% of GDP), Croatia, Slovenia and Macedonia (about 25% of GDP), while the lowest rates of investment are achieved in United Kingdom (about 16% of GDP) and Germany (about 18% of GDP).

The 2008 crisis caused significant decline in the rate of investment in almost all countries. The biggest decline is registered in Slovenia and Bulgaria (by about 10% of GDP). The only country that registered increase in the rate of investment during the crisis period was Macedonia (Figure 4). In the pre-crisis period (2005-2008) the rate of investment in Macedonia was behind the countries of the region, while in the post-crisis period Macedonia realized the highest investment rate in comparison with the other countries.

Figure 4 Investment by countries

(% of GDP, average 2005-2013) *(% of GDP, effects of crisis)*



Source: WEO, EUROSTAT and own calculations.

Despite the high amounts of aggregate demand, the current account deficit in the balance of payment of the Republic of Macedonia is relatively moderate mainly as a result of the compensating effects of the higher inflow of private remittances from abroad. The other countries realize relatively moderate amounts of aggregate demand, causing these countries to have relatively moderate amounts of current account deficits in their balance of payments. In the case of the Euro area, and especially Germany, a current account surplus of the balance of payments was registered. Bulgaria is the country with highest current account deficit in the balance of payment, determined by the higher consumption and investment in this country.

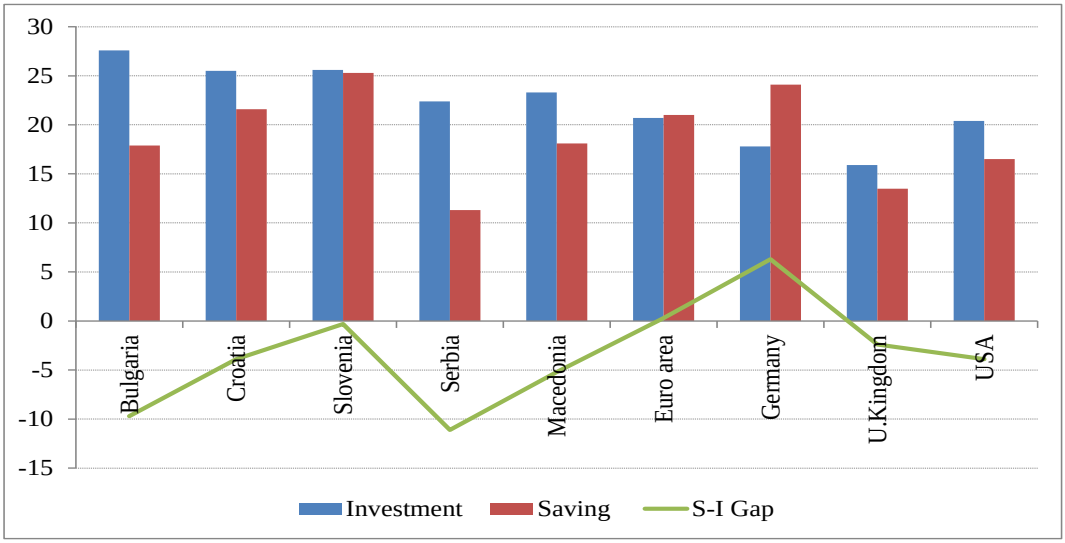
4. SAVING – INVESTMENT GAP AMONGST THE COUNTRIES

In this section, a comparative analysis of the amount of the macroeconomic imbalances (saving – investment gap) is made in certain countries in the period 2005-2013, from two aspects: (1) Analysis of gross investment, gross savings and the financing gap at the level of total economy, and (2) Sectoral analysis of the amount of the macroeconomic imbalances (S-I). The intention here is to test and implement the second link explained above, which relates to the connection between aggregate savings and investment and the current account of the balance of payments.

Regarding the saving, in the period 2005-2013, the highest rates of savings realized Slovenia (on average about 25% of GDP), Germany (about 24% of GDP) and Croatia (about 22% of GDP), while all other countries realized lower rates of saving. Republic of Macedonia, with an average savings rate

of about 18% of GDP is in the middle of the analyzed countries, lagging behind only Slovenia and Croatia in comparison with the countries in the region (Figure 5).

Figure 5 Investment, Saving and Saving - Investment Gap *(% of GDP, average 2005-2013)*



Source: WEO, EUROSTAT, countries internet sites and own calculations.

As a result of such movements in the savings and investment, developed economies realize smaller amounts of macroeconomic imbalances (saving-investment gap, i.e. current account balance) in respect to the countries of South and Eastern Europe. In the period 2005-2013, Republic of Macedonia realized negative saving-investment gap (investments are continuous higher than savings) of 5% of GDP on average, that is lower in comparison to Serbia (11% of GDP) and Bulgaria (10% of GDP), but higher to Croatia and Slovenia (Figure 5). In the case of Euro area a net saving is registered, with especially high net saving in Germany of about 6% of GDP.

The analysis of the sectoral structure of the macroeconomic imbalances showed that in developed market economies the government sector achieve continuous negative difference in terms of savings-investment gap (budget deficit), amounting on average about 5%[1] in the analyzed period (2005-2013). The largest budget deficit was registered in the U.S. (on average about 7% of GDP) and United Kingdom (on average about 6%).

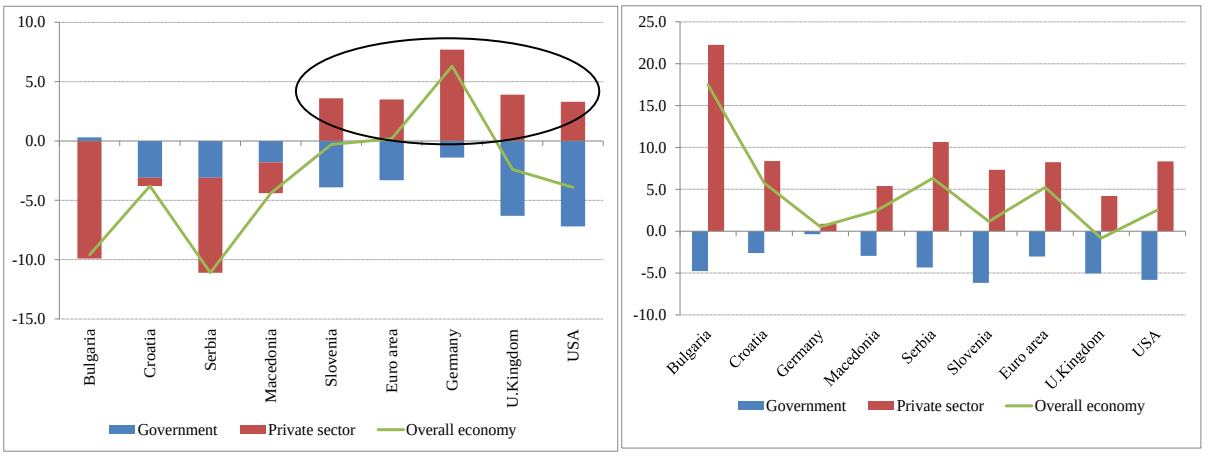
On the other hand, in the analyzed period the private sector in developed market economies has achieved a positive difference in terms of saving-investment gap (about 4% of GDP), i.e. the private sector is a net lender to the other sectors, mainly to the government sector. Within the analyzed countries, the largest private sector saving-investment surplus is realized in Germany (on average about 8% of GDP), while the private sector saving-investment surplus in the U.S. and United Kingdom are moderate and on average amounted around 3% and 4% of GDP, respectively.

Taking into account the above macroeconomic trends in developed economies, we can conclude that the government sector is a major sector causing macroeconomic imbalances in these countries (on the level of total economy). Much of the net debt position of the government sector in the developed countries is financed by the net savings of the private sector. In the case of the Euro area, especially Germany, the net savings of the private sector is greater than the net debt of general government, therefore this group of countries as a whole and Germany in particular exports their savings to the other countries (Figure 6).

[1] Source: World Economic Outlook Data base, IMF October 2014.

Figure 6 Macroeconomic imbalances (S-I) by sectors

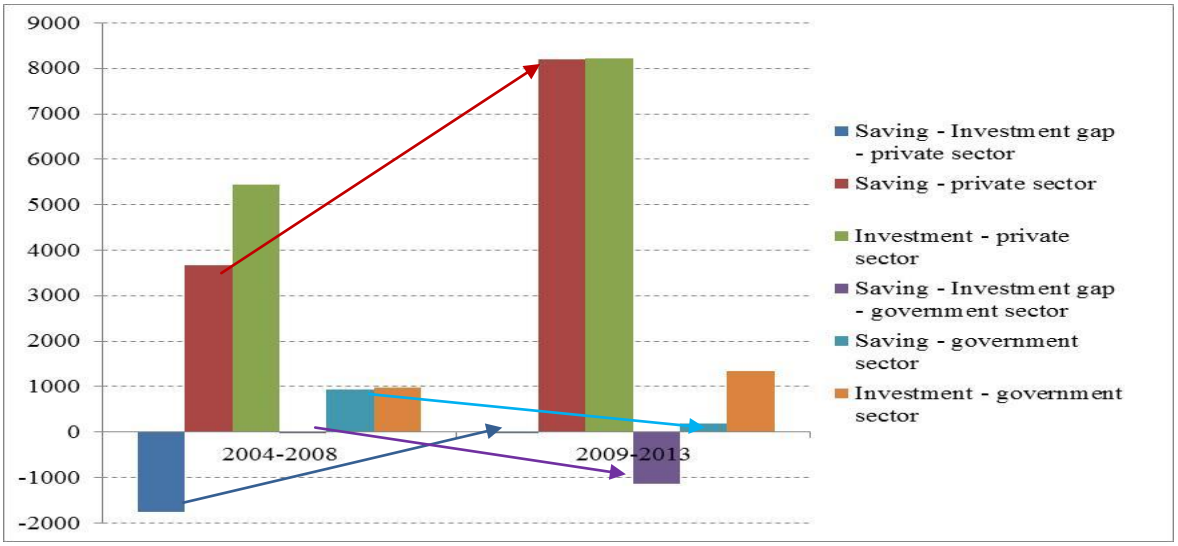
(% of GDP, average 2005-2013) *(changes, % of GDP, effects of crisis)*



Source: WEO, EUROSTAT, countries internet sites and own calculations.

Unlike the private sector in developed economies, the private sector in the Central and Eastern Europe countries that are the subject of this analysis, realized a net debt position on a continuous basis. The net debt position of the private sector is highest in Bulgaria (on average about 10% of GDP) and Serbia (about 8% of GDP). The net debt position of the private sector in the Republic of Macedonia in the period 2005-2013 on average amounted around 3% of GDP. Only in the case of Republic of Macedonia, Bulgaria and Serbia, the private sector appears as the main creator of the negative macroeconomic imbalances on the level of total economy (balance of payments current account deficit). This is not the case with the other countries, where, as in the case of developed economies, the government sector appears as a main creator of the net debt position of the overall economy. But unlike developed countries, almost all countries covered by this analysis, both private and government sector realize a negative macroeconomic imbalances (saving-investment gap).

Figure 7 Saving – investment gap in Macedonia: private vs gov. sector (effects of crisis) *(mill. EUR)*



Source: State statistical office, Ministry of finance, NBRM and own calculations

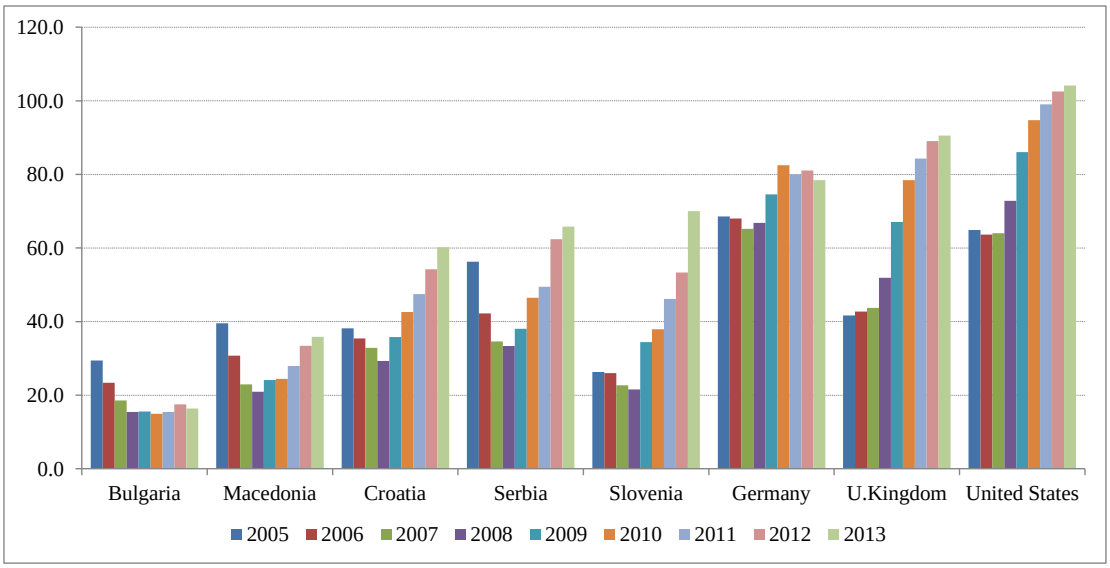
It should be noted that in the last years all of these economies realized relatively higher budget deficits, due to the large fiscal packages that brought these countries in order to offset the negative effects of the global economic crisis. Also the dynamic analysis showed that in the last years the private sector net savings in these economies have registered significant increase as a logical reaction of this sector to the global economic crisis (Figure 6). These "crisis" effects caused "improvements" in the balance of payments current account of almost all countries. Bulgaria is the country with the highest decline in the balance of payments current account deficit (by 17% of GDP in the period 2009-2013 compared to 2005-2008 on average).

In order to investigate the net investment/borowing position of the Macedonian economy, a matrix of cumulative financial flows among the main sectors of the Macedonian economy was constructed. The analysis of the matrix shows that in the period 2004-2013 the difference saving-investments in Macedonia is negative, i.e investments are permanently higher than savings (cumulative by 2.9 billion EUR, or by 5% of GDP). Analyzed by periods, net borrowing position of the Macedonian economy after the crisis declined - from 1.8 billion EUR in the five years before the crisis to 1.1 billion EUR in the period after the crisis.

Analysed by sectors in the period 2004-2013, both private sector and central government are net borrowers with higher amount of net borrowing in the private sector - 2.9% of GDP (private sector) vs 1.9% of GDP (central government). The overall investments of the private sector are around 22% of GDP, while saving is around 19% of GDP. The crisis caused significant changes in the behavior of the private and government sector: (1) saving of the private sector increased significantly causing "improvement" in the saving-investment gap of the private sector; (2) saving of the government sector decreased causing higher saving-investment gap of the government sector (Figure 7).

The realization of the negative saving-investment gap (budget deficit) of the government sector leads to a continuous increase of the countries public debt. The comparative analysis between countries showed that the developed market economies experienced significantly higher amounts of public debt (about 80-105% of GDP at the end of 2013) in comparison with the other countries that are subject to this analysis (about 15-65% of the GDP at the end of 2013).

Figure 8 General Government Gross Debt (as a % of GDP)



Source: WEO, EUROSTAT, countries internet sites and own calculations.

Republic of Macedonia (public debt of about 36% of GDP) and Bulgaria (public debt of about 16% of GDP) are the countries with the lower size of its public debt. This is due to a relatively balanced

government budget that the both of these countries have experienced during the analyzed period (Macedonia -1.8% of GDP, Bulgaria 0.3% of GDP). It should be noted that for this situation and developments, the stance of monetary policy in the countries plays a significant role. In this respect, of all the analyzed countries, only Republic of Macedonia and Bulgaria implement more "rigid" regimes of monetary policy strategies - Macedonia, a strategy of targeting the exchange rate of Denar against the euro, and Bulgaria, the currency board strategy.

This monetary policy strategy in the Republic of Macedonia is an important limiting factor in determining the desired mixture of macroeconomic policies (combination of monetary and fiscal policy), especially during the period of crises. For example, during the last economic crises (and of 2008) fiscal policy in the Republic of Macedonia, following the example of other countries, focused on anti-cyclic actions by increased spending (promotion of several fiscal packages of anti-crisis measures). It is difficult to measure the extent to which these packages contributed to the economy's relatively insignificant decline. Nevertheless, what can easily be measured is this policy's effect on the foreign exchange market (foreign currency demand), as well as the pressures on the MKD exchange rate depreciation. Hence, in the period Q4.2008-Q1.2009 NBRM withdrew around 500 million EUR from the liquidity, by means of foreign currency net-sales (with the aim to protect the MKD exchange rate), which to a large extent (around 280 million EUR or more than 50%) was created as a result of increased public spending. Because of this, the foreign exchange reserves significantly declined.

5. CONCLUSION

The main conclusions of the analysis of the private versus government sector saving-investment gap amongst the countries are the following:

- The aggregate demand (absorption) has the highest values in the case of the Republic of Macedonia and Bulgaria, mainly due to the high amounts of the final consumption of the private sector. However, the balance of payments current account deficit of the Republic of Macedonia is relatively moderate mainly as a result of the compensating effects of the higher inflow of private remittances from abroad. In developed countries, the share of aggregate demand in GDP is relatively low;
- The rate of investment in major developed economies is lower in comparison with developing countries (on average by about 7% of GDP). The only country that registered increase in the rate of investment during the crisis period was Macedonia;
- With exception of Slovenia, Germany and Croatia, all other countries realized relatively low rates of savings. Republic of Macedonia is in the middle amongst the analyzed countries;
- Developed economies realize smaller macroeconomic imbalances (saving-investment gap) in respect to the countries of South and Eastern Europe. Republic of Macedonia realizes an identical amount of negative balance as the other countries in the region;
- In developed countries the government sector realizes continuous negative saving-investment gap, with higher budget deficit in the last years. On the other hand, the private sector in these economies is a net lender to the government sector. Therefore, in these economies the government sector is the main contributor to the overall macroeconomic imbalances. Almost all developed countries have experienced significantly higher public debt compared to the other countries;
- The private sector in the South and Eastern Europe countries realizes a net debt position on a continuous basis. In some countries (including Macedonia) the private sector appears as the main creator to the negative macroeconomic imbalances of the overall economy. Therefore, in almost all South and Eastern Europe countries, both private and government sector realize a negative saving-investment gap;

- In the last years the private sector net savings in these economies have registered significant increase as a logical reaction of this sector to the global economic crisis. These "crisis" effects caused "improvements" in the balance of payments current account of almost all countries.
- Republic of Macedonia and Bulgaria are the countries with the lower size of public debt. This is a consequence of the implementation of more "rigid" regimes of monetary policy strategy.

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