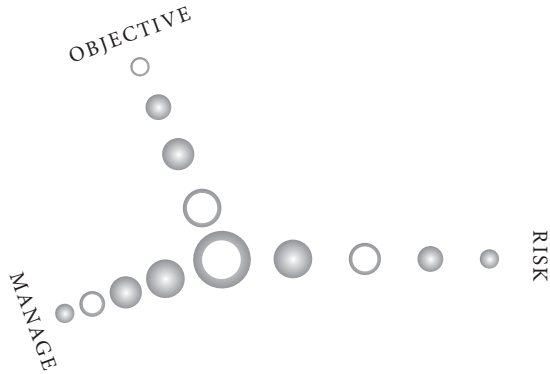

The impact of global financial crisis on economic growth in Macedonia and the role of fiscal policy

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Abstract

The purpose of this paper is to examine the impact of global financial crisis in terms of output losses in Macedonia relative to South East European countries as well as the impacts of fiscal policy which have been part of anti crisis package, in order to stabilize the national economy, i.e. improving the economic performance in the period of recession. Econometric models are employed to analyze the impacts of the crisis on main macroeconomic indicators. By using the panel regression, we found that fixed effects are higher in the period of the crisis rather than in the pre crises period. Particular importance is given to real output, government expenditure current account deficit, trade openness, and investment to GDP ratio.

Key words: global financial crisis, fiscal policy, economic performance.

1 Introducon

In today's global economy, many countries have extended their reach around the world, and so the globalization process has increased and intensified the economic inter-dependency among countries. The global financial crisis that initially was felt in the developed economies had a little time lag on the least developed countries. As regards the South East European (SEE) countries the negative impacts of crisis were recorded in the fourth quarter of 2008. The dependence of these countries' economies by foreign capital has made the effects of global crisis to give impact on many sectors affecting the government funding of projects negatively. Different policy responses have been employed in order to prevent further development of the crisis and thus a deterioration of the real economic sector.

The fall of global economic activity from 3.8% to 0.5% in 2009, proved the doubts that financial crisis in the U.S. will not be a close event and will exceed in global recession. The transmission of crisis in other countries was very rapid and with great intensity because of higher trade and financial integration between countries. Thus, Macedonia was affected by the global crisis as well, especially in the external accounts, industrial production, budget liquidity and financial liquidity by a reduction of demand for exports, reduction of capital incomes, remittances inflows and pressure for devaluation of national currency-denar.

Optimistic forecasts for future trends in economic area must be tackled with a certain dose of reserve, at most as a result of the debt crisis of our southern neighbor, Greece. It should be considered the coming impacts of its economic policies in other countries of the European Union as well as the effects that it may cause in Macedonia, both in the real sector of the country and in the financial sector, since a large body of foreign investments is from Greek capital.

Macedonia experienced a difficult and protracted transition to a market economy due to various external shocks and internal problems in the 1990s as well as the ethnic strive at the very beginning of the 21st century. Pre-transition GDP levels were not restored until the middle of this decade because robust GDP growth was delayed until 2004-2005. Unlike some more advanced transition countries, Macedonia did not experience large capital inflows from the developed economies. Being "spared" of the excesses of a property boom fuelled by low-cost credit, Macedonia was able to avoid some of the worst consequences of the financial crisis and to become aware of the limitations of this model of growth for its economy.

Farther, the highest rate of growth of 5.9% was registered in 2007. While many indicators are showing significant improvement, and the economic policies for 2009 were projected, the global financial crisis affected the metal and textile sectors, which are the biggest exporters. As a result, GDP growth in 2009 was negative, -0.9%. Initially, as a consequence of declining demand for metals, the exports were reduced to 20% in November 2008 after five years of continuous economic growth. In November 2008, the capacity utilization of companies decreased by 60.2% compared with the third quarter

of the same year as a result of falling foreign demand to 13.1% and domestic demand to 14.7%. Also, industrial production decreased for 8% in the last quarter of 2008. All these led to increased unemployment in the country, from 31.7% to 32.4% in the first quarter of 2009, and to 33.5% in the first quarter of 2010. It should be emphasized, that high unemployment in Macedonia is one of the most serious problems in the country.

The financial system in Macedonia is dominated by the banking sector, and it has the most important role in stabilizing the financial system as a whole. Unlike the real sector, which was affected by the global crisis, the financial system remained stable, and that, due to the traditional way of banking, low level exposure to international markets and foreign capital markets. Most of banks in Macedonia are owned by foreigners and are capitalized by the largest holder of host states, as it was the growth of capital of Stopanska Bank in October 2008 by the holder, the National Bank of Greece.

However, despite the stability of financial sector, in the last three quarters of 2009, it is seen a considerable change of commercial banks towards investment in treasury bills and significant decline in lending towards companies and citizens. The restrictive monetary policy of the National Bank of Republic of Macedonia influenced the increased deficit of the balance of payment of the country, to ”tighten” even more the monetary policy through the basic rate of interest and increase of the compulsory reserves of the commercial banks. When basic rate of interest of NBRM reached 7%, the interest rate of commercial loans reached average rate of interest from 9-9,5%. In the conditions of significantly decreased incomes in the central budget, the Ministry of Finance on behalf of the Government of Republic of Macedonia announced the selling of state bonds on the “record” annual rate from 9% that forced NBRM to react with increase of the basic rate of interest of the treasury bills from 7% to 9.1%. This led to enormously increasing of interest rates for loans toward economy, in average from 11-13%, and for consumer loans of citizens from 13%-15%, which resulted in decreased consumption and investment.

These challenges that emerged as consequence of financial crisis imply the need for rapid response, innovative and resolutely through macroeconomic policies.

Therefore, the objectives of this paper are:

1. *To examine the impact of the financial crisis on real output for Macedonia relative to some countries of South East Europe, by using the panel regression model,*
2. *To measure the effects of fiscal stimulus during the financial crisis in Macedonia, through functional econometric models, logarithmic models with binary variables (dummy).*

2 The crisis response through fiscal policy

The US Congress in 2009 passed the American Recovery and Reinvestment Act, which was authorized for spending $787 billion to promote job growth and increase

economic activity. Barro (2009) & Ramey (2009) in their empirical findings indicate such a government spending may actually decrease economic growth due to inefficient use of money. Barro (1991) analyzed 98 countries from dates: 1960-1985 by using cross-section time series and his results showed that public consumption (current) spending are inversely related to GDP growth. Also, public investments have no significant effect on growth. Thus different empirical evidences suggest controversy conclusions. Blenchard and Perotti (2002) empirically have analyzed the government expenditures, tax revenues, price level, consumption and output to see the impact that the fiscal policy has on GDP and on other macroeconomic variables. Their finding is confirmed with *Keynesian approach* of the economy for both shocks: an increase in public expenditure produces positive effects on GDP and an increase in taxation is followed by negative effects.

Macedonia's government from the beginning was deployed to expansionary fiscal policy paradigm and the Keynesian approach, in order "compensation" the part of the demands for goods and services of Macedonian companies that are the main exporters, and in this way to improve the economic performance. For this reason, the government of Macedonia undertook four packages of measures. In November 2008, brought the first "package of anti crisis measures" composed of ten measures, in financial value of about 20 billion MKD or 330 million Euro.

The composition of this package was: Writing-off the outstanding current liabilities for health insurance, if in the next four years the companies regularly and on time pay the employee's health insurance benefits, where the government budget from this measure waives 50 million Euros. Writing-off all accumulated interest payables on the liabilities for social care insurance benefits if the company pays the principal dept. The expected value from this measure was 165 million Euro, but in fact until 31.08.2009 are realized only 15 million Euro, which shows clearly that the effects of this measure are significantly below the projections. Thus, opportunity for the company for postponed payment to the main tax liability if the company secures the debt with banking guarantee of 100% or if the company offers mortgage with a value of 250% of the main liability, reduction of the custom taxes (for 498 items), lower personal incomes taxation rates for the individual farmers, transformation of the tax receivables of the government into a permanent share in some companies where the government is already the major shareholder/owner, reduction the Governmental New Year's spending (2008).

The downside of these measures is that they are based on "fiscal forgiveness" rather than in direct injection of funds into the economy or in financial assistance through loans with favorable interest rates.

Due to the limited economic effects of these measures, the Government of Macedonia brought the second package of anti crisis measures, which was an Investment Program of the Macedonian Government, with duration of 8 years (2009-2016). This program included among others: road infrastructure projects, railroad infrastructure, sport infrastructure projects, energetic, water supply and sanitation etc., with planned funding sources from Budget of R.M., credits from European

Investment Banks, Word Bank and other financial institutions.

The second package of measures is characterized as package of measures that can be taken in normal conditions and do not have the character of anti-crisis measures. It is obvious that the possibilities for implementing such an expansive fiscal policy are constrained by limited fiscal space, and the structure of revenues and expenditures, by which such investments lead to significant increase of public debt for the next 8 years, so it is prescribed timing of realizations of such projects.

During the second quarter of 2009, the Government brought ”third package” of anti crisis measures, consisted of 70 measures. These measures included: budget rebalance (reduction of expenditures of 137mil. Euro) and keeping the budget deficit of 2,8%, credit support for businesses from the European Investment Bank in the amount of 100 million Euro, measures to stimulate export, programs for co-financing, loan guarantees for long-term investments.

In terms of realization, was overdue realization of credit line, the delay in implementation of budget rebalance and shortfall of long-term loans in denars. The practice showed that this measure, also was accompanied with negative effects on the liquidity of companies.

The ”fourth package” of anti crisis measures included 24 measures such as credit lines from the European Investment Bank and the European Bank (15mil. Euros) as well as an extension of time for collection VAT.

These measures are characterized as daily mass actions and without the component of risk and crisis.

In general viewpoint, there is a lack of cohesion and synergy of the competent institutions for the most vital macroeconomic policies in Macedonia, fiscal and monetary, the increased of interest rates in one side and the demand for liquidity in another side, generated negative effects by their non coordination. Therefore, the focus of this paper is to tackle these issues empirically. Although, there are a few studies investigating the effects of financial crisis, indeed most of them are descriptive and don't use rigorous models of analysis. Also, researches focused on the effect of fiscal policy on economic growth are scarce.

3 Methodology and data

3.1 The fixed effects regression model

To examine the impact of the financial crisis in Macedonia relative to some countries in the region we use the panel regression by looking for the responsiveness of real output to main macroeconomic indicators. The regression model has the form:

Where Y represents the real output for country and time , X is a vector of

macroeconomic control variables that include investments to GDP, exports plus

$$Y_{it} = \beta_0 + \beta_1 X_{it} + \beta_2 Z_i + \varepsilon_{it}$$

imports to GDP, inflation, government expenditures, external debt and current account deficit to GDP. Whereas is an unobserved variable that varies from one country to the next but does not change over time. We want to estimate , the effect on Y of X holding constant the unobserved country characteristics Z. Because varies from one country to the next but is constant over time the real output regression model can be interpreted as having n intercepts, one for each country and is the stochastic term.

Specifically, let

Then the equation becomes:

This equation $\alpha_i = \beta_0 + \beta_2 Z_i$ represents the fixed effects regression model by which we estimate the fixed effects on real output in two time periods, before and

$$Y_{it} = \beta_1 X_{it} + \alpha_i + \varepsilon_{it}$$

in the period of crisis.

3.2 The logarithmic model

In order to measure empirically the effects of the anti-crisis measures we used the log-log model with dummy variables for the period of crisis, where we have analyzed the effects of the fiscal component, such as government expenditures of Macedonia. The regression model is:

$$\ln(Real\ GDP) = \beta_0 + \beta_1 \ln(Government\ expenditure) + \delta_1 Dcrisis + \varepsilon_i$$

And

$$\ln(Real\ GDP) = \beta_0 + \beta_1 \ln(Tax/GDP) + \delta_1 Dcrisis + \varepsilon_i$$

Government expenditure is used as independent variable, in order to explore if the government stimulus had an impact on alleviation of the crisis or not and what effects had on real output. The variable Dcrisis represents a dummy variable that takes the value 1 during 2008-2010 and 0 otherwise.

3.3 The data

The data used in the empirical research for the first approach consists of an unbalanced panel of annual observations for the period 2000-2010 for 6 SEE's economies (Albania, Bulgaria, Bosnia and Herzegovina, Croatia, Macedonia and Serbia) are taken from two main sources from World Bank database (WDI) and

EBRD database. As regards the second approach of the case of Macedonia for the logarithmic models the data are provided from State Statistical Office of Macedonia and Ministry of Finance, for the period 1996-2010.

4 Empirical findings

4.1 The fixed effects regression results

The empirical results indicate the following:

- The investment to GDP has a positive impact but not statistically significant in both periods (see the table below). Empirical evidence shows that the investments are slower in the periods of crisis.
- Inflation is used to measure macroeconomic stability and it is negatively related with real GDP in the pre crisis period and statistically significant at 10% level, whereas it has a positive relationship in the period of crisis but not statistically significant.
- The trade openness variable that include the export plus import to GDP ratio has a positive relationship and statistically significant before the crisis but a negative relationship in the period of crisis.
- Government expenditures are positively related to real output in both periods and are statistically significant. Ram (1986) by analyzing a panel data of 115 countries concluded that increase in government expenditure will tend to have a positive effect on GDP growth.
- The external debt has a negative relationship with real output in both periods but it is statistically insignificant.
- The sign of current account is positive but statistically insignificant in the pre crisis period and negative in the period of crisis and insignificant as well.

Table 13.1 — *Fixed effects estimation.*

Dependent variable Real GDP	**Years 2002-2007**		**Years 2008-2010**	
	Coefficient	P-value	Coefficient	P value
Investment/GDP	0.0730172	0.214	0.0077124	0.297
Inflation	- 0.120886	0.078	0.0872428	0.141
(Export +import)/GDP	0.1052375	0.048	-0.099096	0.038
Government expenditures	0.04623778	0.028	0.03240081	0.106
External debt/GDP	-0.0338345	0.253	-0.1439107	0.501
Current account/GDP	0.0307162	0.150	-0.0539971	0.613

Fixed effects		
Albania	8.880175	8.138737
Bosnia & Herzegovina	5.170440	19.75487
Bulgaria	5.873033	11.24465
Macedonia	7.821514	9.639041
Croatia	8.74430	32.22532
Serbia	7.696940	14.33013
R-Squared	0.6632	0.6013
SE of regression	0.252	1.785
Mean dependent variable	9.883	1.641
Sum of squared residuals	2.344	7. 236
Durbin –Watson	2.109	3. 492

4.2 The logarithmic model estimates

The regression estimates of the log-log model that measures the elasticity of government expenditures are the following:

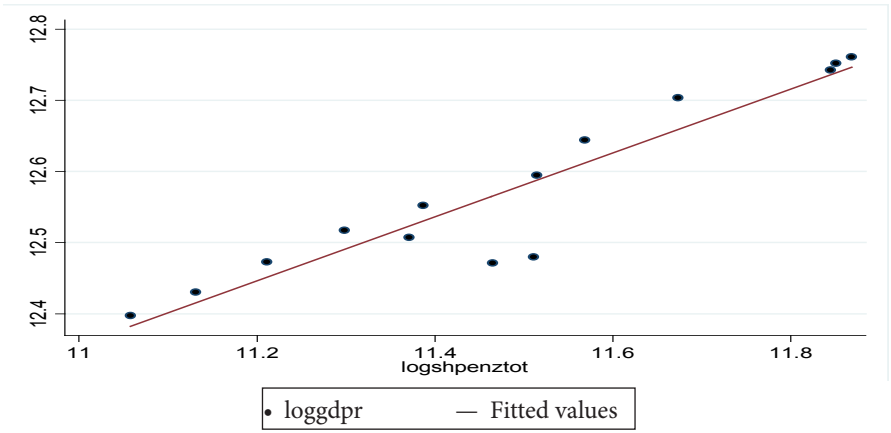

FIGURE 13.1 — *The effects of government expenditures to real GDP (Authors' calculation).*

The government expenditure variable is used as a fiscal indicator in order to analyze the effects of fiscal policy of Macedonia on the real economic activity. The results indicate that there is a positive relationship between government expenditures and the real output. Thus, if the government expenditures increase by 1% the real output will increase by 0.4%. The coefficient of the dummy variable that takes values 1 for the period of crisis is also positive and statistically significant. This means that the anti crisis measures undertaken by the government have done positive impact on crisis alleviation in Macedonia.

5 Conclusions

The main objective of this paper was to assess the impact of the financial crisis on real output of the Republic of Macedonia relative to some SEE countries as well as to investigate if the anti crisis measures were effective. The estimates indicate that the fixed effects are higher in the period of crisis rather than in the pre crisis period except Albania. Also from the log-log model we can conclude that the fiscal stimulus has given positive effects on crisis alleviation in the Republic of Macedonia.

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