THE IMPACT OF THE GLOBAL FINANCIAL CRISIS. EVIDENCE FROM EU COUNTRIES

Adina DORNEAN
„Alexandru Ioan Cuza”
University of Iasi
Iasi, Romania
amartin@uaic.ro

Andreea SANDU
Economist
Iasi, Romania
andreeasandu88@yahoo.com

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Abstract: *The recent financial crisis has affected the economies of all countries in the world, including the European Union (EU) countries and has given rise to new challenges for the EU unity and stability. This paper aims at emphasizing the most important determinants of the financial and economic crisis and its impact on the EU member states. Using the Least Square Method based on Panel Data, we analyze the different impact of the global crisis on the EU countries. For this purpose, we have considered four significant variables: dependent variable – economic growth, two independent variables – budgetary revenue and budgetary deficit and a dummy variable – financial crisis. Our result leads to the hypothesis that all EU member states were faced with the financial crisis, but the countries from the non-euro area were more affected than the ones from the euro area because their economies had a higher sensitivity to the disorders on the international markets and, at the same time, they were unable to manage their economic activities in order to limit the effects of the recent crisis.*
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INTRODUCTION

After a period of strong economic expansion worldwide, the financial crisis that started in the real estate sector from the United States at the end of 2007 spread rapidly and it became global. Even if at the beginning only developed economies from U.S. and Western Europe were affected, soon the effects of the crisis were felt by all EU countries. They were faced with the deterioration of the national economies through economic downturn, rising unemployment, lower productivity and deteriorating government fiscal position (Eurostat, 2001).

In developed economies such as Belgium, Germany and Switzerland, the international financial crisis spread rapidly because the banks from those countries had large amounts of toxic assets from U.S. However, the banks from Austria, Sweden and Greece were exposed to non-performing loans from foreign subsidiaries and, on the other

hand, the banks and the companies from South-Eastern European countries had a strong connection with the international financial market. At the same time, Ireland, Spain and Britain faced their own "boom" of the house prices, increasing their vulnerability, which led to a decreased ability to withstand systemic shocks on the financial markets. Those aspects favoured the spread of the financial crisis in EU countries, but the effects were felt differently. For example, new EU countries experienced a sudden stop of capital inflows because, unlike developed countries, they could not implement countercyclical macroeconomic policies and therefore, the downturn was felt stronger than in the countries with developed economies. However, the effects of the crisis were felt by all EU member states through financial instability that every state tried to overcome by implementing their own anti-crisis measures.

This paper is structured as it follows: section 2 presents a short literature review on the recent financial crisis and its impact on the EU member states. In section 3, we describe the methodology used, we show the data selection process and the characteristics of our samples and we report our results. Finally, we present our main conclusions.

LITERATURE REVIEW

Many economic analysts believed that the main cause of the crisis was the securitization of mortgage loans, but its root causes were much deeper, both on micro and macroeconomic level (Isărescu, 2009). On microeconomic level, among the main causes we could mention financial deregulation, inappropriate economic policies, public debt exceeding the possibilities, frenzy securitization and complexity of financial markets. Financial deregulation in the early 1990s led to an increased bank competition and therefore, in order to withstand high competition, the banks were involved in more complex operations associated with increasing risk. However, deregulation meant the entry of certain "low cost" brokers (Bal, 2010) which provided loans for low income households. Regarding the inadequate economic policies, we could mention the reduction of the interest rate in 2001, while the U.S. economy faced an excessive liquidity. That decision determined the increase of the mortgage market and the consumption. The complexity of financial markets manifested through the development of sophisticated financial instruments such as financial derivatives and securitization (Swartz, 2008) that were characterized by the inability of the investors to properly understand the operating mechanism of those instruments and the difficulty in properly assessing the associated risks by the rating companies. On macroeconomic level, there were some economic and financial imbalances (Stiglitz, 2010) that led to a fast propagation of the financial crisis on global level. Thus, the global savings glut maintained the trend of excessive consumption in the U.S. which determined the economic crisis, but the connections with the global financial system favoured the spread of the crisis, affecting both developed and especially developing countries.

For a better understanding of the crisis causes, it was necessary to identify its main features. The recent global crisis was characterized by six basic elements: it was an exclusively financial crisis because it was the result of over financing; it was a punctual

crisis because it originated in the U.S. housing market; it was a cyclical crisis (Staehr, 2010) because the economic theory indicated that after the development of a certain economic phenomenon it was followed by its decline; it was a structural crisis because its causes were multiple; it was a predictable crisis, resulting both from its structural and cyclical character; it was a global crisis because the connections with the global financial system led to the spread of the recent crisis to all world economies (Dinga, 2009).

The fast propagation of the crisis from US to different countries, big or small, proved that there was a growing interdependency between national economies due to an intense market globalization, including the financial ones. The main effect of crisis was the decelerating economic growth of all countries that was reflected by the lowering of their GDP. Also, the international financial crisis manifested worldwide and therefore on the level of the EU by lower productivity, falling exports, limiting access to credit, decrease in global investments, lower incomes and corporate profits, rising unemployment, rising inflation, rising budget deficits and public debt.

METHODOLOGY

The model

In order to emphasize the impact of recent economic and financial crisis on EU countries, we used the Least Square Method based on Panel Data. For that purpose, we split our data in two sub-samples: first sub-sample was represented by 10 countries from the non-euro area (Bulgaria, Czech Republic, Denmark, Latvia, Lithuania, Hungary, Poland, Romania, Sweden, United Kingdom) and the second one included the 17 countries from the euro area (Austria, Belgium, Cyprus, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Malta, the Netherlands, Portugal, Slovakia, Slovenia and Spain). We considered as dependent variable the GDP growth and as independent variables: budgetary revenue, budgetary deficit and financial crisis (a dummy variable taking value 1 during the years 2008-2011 and value 0 otherwise). The basic equation of the regression model is represented by the equation no. 1.

$$(1)\ GDP_t = \alpha_0 + \alpha_1 \cdot INCOME_t + \alpha_2 \cdot DEFICIT_t + \alpha_3 \cdot CRISIS_t + \varepsilon_t$$

In order to check the robustness of our regression model we have applied the methodology used by Staehr (2010) and we have selected two control variables: public debt and unemployment rate. In addition to the basic model, we estimated three different models by introducing each variable at a time, and in the end, both variables.

DATA AND DESCRIPTIVE STATISTICS

The data for the 27 EU countries is available for the period 2005 – 2011 from EUROSTAT. Descriptive statistics is presented in Table 1.

Table 1 Descriptive statistics

Variable	Sample 1 -Non-euro Area	Sample 2 - Euro Area

	Median	*St.dev*	*Median*	*St.dev*
GDP	0.0228	0.0516	0.0210	0.0379
Budgetary income	0.4015	0.0721	0.4240	0.0583
Budgetary deficit	-0.0283	0.0394	-0.0364	0.0610
Financial crisis	1.0000	0.4984	1.0000	0.4969
Public debt	0.3830	0.2148	0.6040	0.3245
Unemployment rate	0.0740	0.0340	0.0770	0.0362

RESULTS

Our findings suggest that, for the initial model, the financial crisis, the budgetary revenue and the budgetary deficit had a highly significant influence on the economic growth during the crisis period. The estimated models (by introducing the control variables) are presented in Tables 2-3.

Table 2 Sample model 1 – Non euro Area

Variable [a]	Basic Model	Model 1	Model 2	Model 3
Constant (C)	0.1720*** (0.0362)	0.2851*** (0.0466)	0.1825*** (0.0284)	0.3213*** (0.0505)
Budgetary income	-0.2649*** (0.8193)	-0.6218*** (0.1275)	-0.2702*** (0.0825)	-0.6763*** (0.1296)
Budgetary deficit	0.6125*** (0.1632)	1.0942*** (0.2048)	0.5821*** (0.1687)	1.0871*** (0.2018)
Financial crisis	-0.0406*** (0.0107)	-0.0495*** (0.0102)	-0.0399*** (0.0108)	-0.0490*** (0.0101)
Public debt	-	0.1287*** (0.0369)	-	0.1442*** (0.0375)
Unemployment rate	-	-	-0.1173 (0.1556)	-0.2516* (0.1456)
R-squard	0.4246	0.5149	0.4296	0.5365
Adjusted R-squared	0.3984	0.4851	0.3945	0.5003

***, **, * - Indicates significant at the 0.1 level, 0.05 level and 0.01 level

[a] - dependent variable is represented by GDP of EU member states

Table 3 Sample model 2 – Euro Area

Variable [a]	Basic Model	Model 1	Model 2	Model 3
Constant (C)	0.1117*** (0.0211)	0.1018*** (0.0218)	0.1011*** (0.0246)	0.0878*** (0.0255)
Budgetary income	-0.1578*** (0.0480)	-0.1127** (0.0548)	-0.1449*** (0.0505)	-0.0931 (0.0579)
Budgetary deficit	0.2547*** (0.0504)	0.1807*** (0.0669)	0.2690*** (0.0533)	1.1930*** (0.0679)
Financial crisis	-0.0272*** (0.0060)	-0.0288*** (0.0060)	-0.0278*** (0.0060)	-0.0297*** (0.0060)
Public debt	-	-0.0189* (0.0114)	-	-0.0204* (0.0114)
Unemployment rate	-	-	0.0721 (0.0.0865)	-0.0904 (0.0863)
R-squard	0.4367	0.4501	0.4402	0.4554

Adjusted R-squared	0.4221	0.4308	0.4205	0.4313

***, **, *, - Indicates significant at the 0.1 level, 0.05 level and 0.01 level

[a] - dependent variable is represented by GDP of EU member states

Robustness check of our model suggested that, even if we include the other two variables in the model, it remained valid for both sub-samples. Moreover, the results suggested that an increase in public debt had a significant influence on the non-euro area countries, but also in the euro area countries at 10% level. The greater impact on non-euro countries may be explained by the fact that those countries were emerging countries and an increase in public debt required efforts from both authorities who needed to manage the debt and the population who must support higher level of taxation. Regarding the unemployment rate, it is significant at 10% level only for non-euro area countries. That might be explained through the fact that the financial crisis affected the economic activities on private sector, therefore the unemployment rate increased.

According to our results, the financial crisis had a higher impact on the EU countries. A high level of revenues, a low level of budgetary deficit, the public debt and the unemployment rate led to a weak economic situation in the EU countries. The most affected ones were the non-euro area countries, due to fact that they had hardly managed to cope with the shocks from the financial markets. Moreover, the efforts for reducing the negative effects of the crisis supposed a lot of time in implementing austerity measures, which in a short-term period meant poor living standards for the population and a decrease of the economic growth. Almost all countries started to feel the effects of the financial crisis in the late 2008, but the peak was recorded in 2009, when EU countries experienced dramatic fall of the GDP, at the same time with a large increase of the budget deficit and the public debt.

The most affected non-euro area countries were Latvia (-17.7%), Lithuania (-14.8%) and Estonia (-14.3). Despite the fact that, during the period when those countries joined the EU, they had the highest growth rate from the entire EU (12.22% in Latvia in 2006) and an unemployment rate below the European average, in 2009 they faced serious economic problems. The main reasons were represented by housing market collapse and the high debt ratio of both companies and population, because almost 90% of loans were in euro. Those events led to an increase in unemployment rate and the inability of the population to repay the loans, so by the end of 2009, the economies of Latvia, Lithuania and Estonia were the hardest hit economies in the world. In contrast, Poland succeeded to manage efficiently the effects of the financial crisis. It happened due to several factors: Poland's exports did not decrease with the same intensity as in other EU countries; the consumer credits in foreign currency were reduced (most populations' loans were in local currency); an increase in domestic consumption and positive values of GDP growth during the financial crisis period. However, Poland's ability to maintain low macroeconomic imbalances, allowed it to access an IMF credit line for the national economic recovery of 20.5 bill. USD.

The decreasing of economic growth for the non-euro area countries (figure 1) led to an increase of the costs for the recovery of the national economies and therefore, the

budget deficit. A significant increase of budget deficit was registered in Latvia (-9.8%) and Lithuania (-9.4%).

Figure 1 Correlation between economic growth and budgetary deficit (EU 10)
Before crisis **During the crisis**

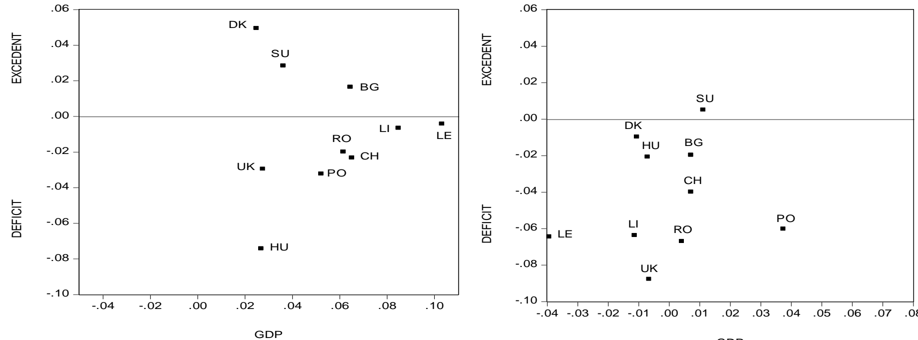
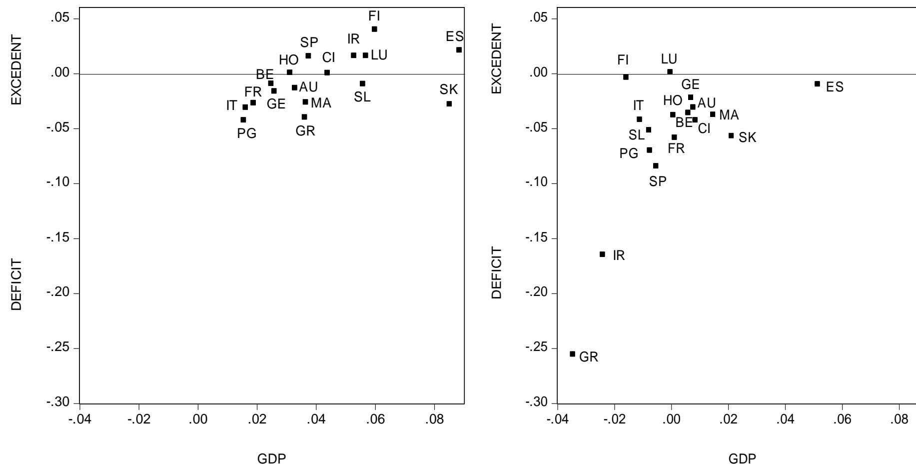


Figure 2 Correlation between economic growth and budgetary deficit (EU 17)
Before crisis **During the crisis**



From euro area countries, Greece was the most affected country, facing serious economic problems. The Figure 2 presents the distribution of the budget deficit and GDP growth for euro-area countries and the impact of the financial crisis on their economies.

Furthermore, we wanted to demonstrate that the differences regarding the GDP growth and the budgetary deficit of the two analyzed sub-samples (EU 10 and EU 27) were statistically significant. For that purpose, we conducted a t-test, according to Table 4.

Table 4 Paired sample test

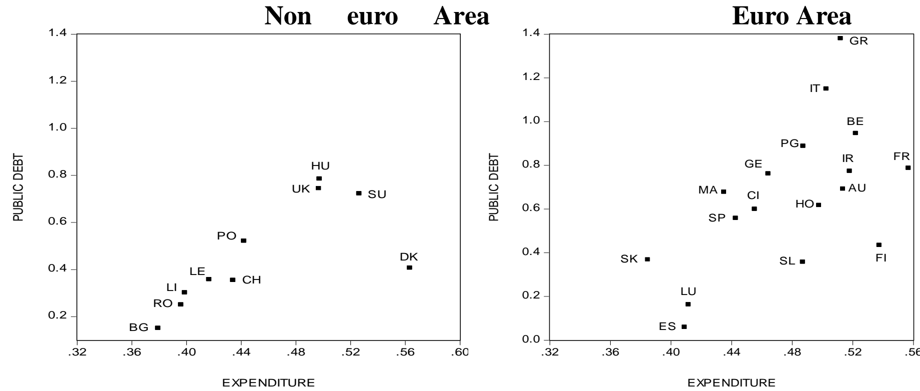
	GDP		Budgetary deficit	
	EU 10	EU 17	EU 10	EU 17
t –test value	4.548*	6.995*	3.049**	3.542*

*, ** - null hypothesis of equality is rejected at significance level of 1% and 5%

The results confirmed the fact that the financial crisis had a significant impact on the GDP growth of EU countries, both from non-euro area and the euro area. In the case

of budgetary deficit, significant differences were registered in the non-euro area countries. For the countries from euro area the hypothesis was significant at 5% level. Moreover, for the EU countries, a significant value was recorded for the sovereign debt. To emphasize the significant difference between public debt from countries from non-euro area and the euro area, we represent in Figure 3 the distribution of public debt and expenditure during the crisis for the two sub-samples.

Figure 3 Correlation between public expenditure and public debt



CONCLUSIONS

The main effect of the recent global financial and economic crisis consisted in the decrease of the economic growth rate in the world, triggering a chain reaction of all economic sectors as it followed: limiting access to credit led to lower productivity and therefore of the exports and investments; restricting economic activity meant lower incomes and, also, fewer jobs; rising unemployment led to increased public expenditure and they determined the increase of budget deficit and public debt. The connections with the global financial system favoured the spread of the crisis on all world economies, affecting both developed and developing countries. Among them, we included the EU member states that have experienced a decline in the economic activity since 2008.

According to our analysis, the global financial and economic crisis had a strong impact on the EU member states, so the decreasing revenues, the increasing budgetary deficit, public debt and unemployment led to a deterioration of their economic situation. Also, the obtained results suggested that the recent international financial crisis had different implications on the EU member states. The developed countries from non-euro area were more affected than the euro area countries as their economies had a higher sensitivity to market shocks and they had not been able to manage the crisis in order to limit the effect of the crisis. All those aspects hindered the economic recovery. Overall, all EU member states were faced with the economic crisis, but the most affected country was Greece and the less affected was Poland.

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