

The Affecting Channels Of The Global Crisis On The South-Eastern Europe (See-7) Countries' Growth Performance

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SEE-7 includes Bosnia and Herzegovina, Croatia, Kosovo, Macedonia, Montenegro, Serbia and Slovenia.

Abstract

This paper analyzes the impact of the global crisis on the growth performance of SEE-7 countries. From the beginning of 2000's to the eve of the global crisis, these economies had a strong growth performance. Especially, increasing export, inflows of foreign direct investments and private capital significantly contributed to their economic growth. However, the global economic crisis adversely affected all the SEE-7. According to empirical findings obtaining from the panel regression results, until the global crisis, the external variables significantly contributed to growth performances of these economies. However, the impacts of external variables on GDP growth rate reduced sharply during the crisis.

Keywords: The SEE-7 countries, growth performance, the global crisis, external variables, panel data.

1.INTRODUCTION

While the global crisis erupted in advanced countries, it started to affect other countries after last quarter of 2008. In the beginning of 2009, many developing countries were heavily exposed by the global crisis. The impact of the global crisis on economic activity varied widely across countries that have different real, external and financial vulnerability (Berkmen, et al. 2009). At first, the most adverse affecting countries became more openness ones.

Seven of South-Eastern Countries (the SEE-7)²⁵ also suffered from the global crisis despite of their different monetary, exchange rate regimes, and fiscal stances (Cocozza et al., 2011). However, these countries had some common characteristics as economically and politically. Firstly, they were new independent countries. Most of them gained their independence in the mid-1990s after a violent war, including destructive effects on their economies. Secondly, their transitions from central planned to market economies occurred at the same period. In 1990s because of conditions of war and transition, these economies had to deal with both economic and politic distresses. Finally, they had a high level of economic and financial openness and thus exposed to the risk that came with the global crisis.

²⁵ SEE-7 includes Bosnia and Herzegovina, Croatia, Kosovo, Macedonia, Montenegro, Serbia and Slovenia.

Most of current economic literature, not depending on empirical evidences, claimed that the main cause of their economic contractions in the global crisis was sharp reduction of their export capacities and foreign capital inflows. The aim of the paper is to analyze the effect of external variables, which many of them are components of the balances of payments, on GDP growth rate of SEE-7 countries in 2000-2010. The paper examines the effects of external variables in two different periods. It describes 2000-2007 as the period of pre-crisis and 2007-2010 as pre-crisis plus post-crisis. Thus, it is possible to compare with two different periods with respect to impacts of external indicators. There are not enough empirical papers about this topic in literature. The purpose of the paper is to fill this gap and provide empirical evidence to support the claims of current literature.

At first, the impacts of the global economic turbulence were spread across SEE-7 countries by two different channels (Cocozza et al., 2011):

First channel is deficiency of import demand of the developed countries shortening the export capabilities of other countries. Especially, small open economies like SEE-7 the export-oriented began to slump. In addition, because the largest partner of SEE-7 countries is EU, they incurred aftermaths of the global crisis.

Second is disappearance of their financial facilities because of turmoil in the global finance and capital markets. Diminishing in inflows of foreign direct investments, portfolio equity and contradiction in total reserves in SEE-7 countries reduced their growth rates. As long as capital inflows reduced, SEE-7 countries' growth rate having been fuelled by credit boom decreased. In addition, as their exchange rates depreciated, their real burden of foreign currency loans increased. Both their external debt stocks and interest payments on external debts rapidly rose. The extent of openness to flows of foreign direct investment has been a major cause of the transmission of the effects of the crisis to the region (Bartlett and Prica, 2011).

The paper is structured as follows: Section 2 introduces an overview of current literature about transmission channels of the global crisis in SEE-7 countries. In Sections, an econometric analysis identifies the effects of external variables on GDP growth rates in SEE-7 economies. Section 4 includes conclusions.

2. AN OVERVIEW OF CURRENT LITERATURE

From the beginning of 2000s to 2008, the SEE-7 had a strong growth performance. All the SEE-7 countries experienced rapid increase of economic output pre-crisis. The measures of economic stability and restructuring seriously contributed to this achievement (Nero, 2010). In addition, increasing their facilities of exports and financial sources integrated them into the global economic system and provided a significant contribution of their growth performances. As a result, in the period of 2000-2007, they had an average growth rate about 4.9 % (Table 1). In 2008-2010, the same rate reduced 0.9 %. Investments, remittances, industrial production, foreign exchange reserves and employment rates have fallen sharply. As a result, growth has slowed down (Ismail and Sahin, 2009). Especially, Slovenia, Croatia and Montenegro further suffered from the crisis.

	Bosnia and Herzegovina	Croatia	Macedonia	Montenegro	Serbia	Kosovo	Slovenia
2000	5.5	3.8	4.5	3.1	5.3		4.3

2001	4.4	3.7	-4.5	1.1	5.3	27.0	2.9
2002	5.3	4.9	0.9	1.9	4.1	-0.7	3.8
2003	4.0	5.4	2.8	2.5	2.7	5.4	2.9
2004	6.1	4.1	4.6	4.4	9.3	2.6	4.4
2005	5.0	4.3	4.4	4.2	5.4	3.8	4.0
2006	6.2	4.9	5.0	8.6	3.6	6.0	5.8
2007	6.8	5.1	6.1	10.7	5.4	6.3	6.9
2000-07	5.4	4.5	3.0	4.6	5.1	7.2	4.4
2008	5.4	2.2	5.0	6.9	3.8	6.9	3.6
2009	-2.9	-6.0	-0.9	-5.7	-3.5	2.9	-8.0
2010	0.8	-1.2	1.8	2.5	1.0	4.0	1.4
2008-10	1.1	-1.7	1.9	1.2	0.4	4.6	-1.0

According to Stiblar (2009), they were small and weak local capital markets, overdependence on capital inflows from Western Europe. They were highly dependent on external inflows of money, either capital investments or loans, and foreign financial aid. Sanfey (2010) argued that during the past decade, SEE-7 has experienced a serious transformation such as the progress in economic development, democratic reforms, and integration into global economic and financial markets. On the other hand, SEE-7 countries had huge current account deficits and thus needed foreign credit or investments. The former have high current account deficits driven by even higher trade deficits (Gligorov and Landesmann, 2009).

Beltramello et al. (2009) described the global crisis as an “imported” crisis, because its origins stem from countries in Western Europe and North America. Due to falling demand from key EU trade partners, the region’s exports declined substantially. According to Risteski and Trpkova (2009), the main channels of the crisis were trade shocks, lower remittances and lower foreign direct investments. As a result, credit growth decelerated and domestic demand shrunk.

According to Jerger and Knogler, (2009), there were some significant channels to spread to SEE-7. First of them was decline of export demand as the most obvious channel through which an economy may be affected. Decline of the demand for exports obviously became more painful for countries with high export dependence. Export of goods and services as a percentage of GDP in Slovenia, Macedonia and Croatia is respectively 67%, 50% and 42% in 2008. Second leading channel was a considerable amount of debt denominated in foreign currencies. The burden of this debt increased with devaluation of the domestic currency.

Bartlett and Monastiriotis (2010) claimed that as the SEE banking systems were not directly exposed to ‘toxic assets’, the crisis was transmitted to the region through a number of indirect channels. These included a contraction of international trade, a sudden stop to credit growth, a rapid fall in inflows of foreign direct investment. Over the last decade, foreign investors found extensive opportunities, besides the banking sector, in telecommunications, energy and other sectors opened up by privatization.

According to IMF (2009), the SEE-7 were exposed to the global crisis more than in previous ones, because they were more integrated with the world economy through trade, FDI, and remittances. The crisis significantly influenced these countries through reduced demand for their exports. Rising interest rates increased debt service costs. Increased trade and financial links with the outside world also imply greater dependence on external conditions. Because

the slowdown in global growth reduced trade, remittances, foreign direct investment, these factors had a major impact on the SEE-7. Tightened global liquidity conditions adversely affected financing facilities.

SEE-7 countries had developed based upon an economic model dependent on capital inflows from abroad; with the global credit crunch adversely affected their ability to maintain this growth strategy (UN, 2009). The rapidly expanding credit growth financed with short-term external bank borrowing came to a sudden stop in 2008 (IMF, 2011).

Sewel (2011) argued that the crisis transmission mechanism was not the banking and financial system. Rather the serious decline in export markets and the collapse of foreign direct investment that had the origin of recent growth and development in the region adversely affected their performance. Virtually all of the countries had balance of payments deficits prior to the crisis. Generally, current account deficits are quite normal for such developing countries in the beginning of growth. The first growth spurt is frequently financed by inflows of investment, capital goods and equipment. Moreover, their physical capital legacy had already become old largely. Thus, they needed new enormous investment facilities as both physical and financial capital stock (Gallego, 2010). Until the global crisis, the availability of export facilities and significant capital inflows for SEE-7 have helped finance their growth spurt (Sewel, 2011).

Jovicic (2009) studied the relationship between the degree of trade integration to the EU market and the timing and intensity of the onset of the crisis effects among the Western Balkan countries. She found that while those with a high degree of trade integration experienced the crisis sooner, those with a lower degree of integration experienced a larger decrease in production.

3. ECONOMETRIC MODEL AND RESULTS

The dataset is composed of annual data for SEE-7 countries, which are Croatia, Serbia, Montenegro, Macedonia, Kosovo, Bosnia and Herzegovina and Slovenia from 2000 to 2010. Data was collected from the World Bank's World Development Indicators (WDI). The objective of our empirical model is to investigate the impacts of external variables on GDP during the global crisis and pre-crisis. To compare crisis period with pre-crisis period it is analyzed 2000-2007 and 2000-2010 separately. The aim is to examine in both period data set.

Data set consists of 10 variables. The dependent variable is Gross Domestic Product (GDP) as change of percentage. As share of percent of GDP the independent variables are Foreign Direct Investment (FDI), Private Capital Flows (PCF), Portfolio Equity (POE), Total Reserves (TOR), Export of Goods and Service (EXP), Import of Goods and Service (IMP), Official Exchange Rate (OER), External Debt Stocks (EDS), and Interest Payments on External Debt (IPE).

The paper has four different models analyzing the impacts of external variables on GDP growth rate.

$$GDP_{it} = \alpha + \beta_0 + \beta_1 FDI_{it} + \beta_2 PCF_{it} + \beta_3 POE_{it} + \beta_4 TOR_{it} + \varepsilon_{it} \quad (2)$$

$$GDP_{it} = \alpha + \beta_0 + \beta_1 EXP_{it} + \beta_2 IMP_{it} + \beta_3 OER_{it} + \varepsilon_{it} \quad (3)$$

$$GDP_{it} = \alpha + \beta_0 + \beta_1 EDS_{it} + \beta_2 IPE_{it} + \varepsilon_{it} \quad (4)$$

$$GDP_{it} = \alpha + \beta_0 + \beta_1 FDI_{it} + \beta_2 PFC_{it} + \beta_3 POE_{it} + \beta_4 TOR_{it} + \beta_5 EXP_{it} + \beta_6 IMP_{it} + \beta_7 OER_{it} + \beta_8 EDS_{it} + \beta_9 IPE_{it} + \varepsilon_{it}$$

(5)

To estimate models, it is used OLS method. Firstly, to eliminate the problem of poisson regression, unit roots is tested for each variable. Levin, Lin, Chu (LLC) and Im, Pesaran, Shin (IPS) unit root results are in Table 2. According to Table 2, all variables are stationary in first level I(1).

Variables	Levin, Lin, Chu		Im, Pesaran, Shin	
	t statistic	Results	W statistic	Results
GDP	-1,734**	I(1)	-1,435*	I(1)
FDI	-4,056***	I(1)	-1,953**	I(1)
PCF	-3,065***	I(1)	-1,386*	I(1)
POE	-1,879**	I(1)	-2,372***	I(1)
TOR	-5,083***	I(1)	-2,471***	I(1)
EXP	-4,199***	I(1)	-1,825**	I(1)
IMP	-1,665**	I(1)	-1,206*	I(1)
OER	-5,298***	I(1)	-4,949***	I(1)
EDS	-3,044***	I(1)	-1,777**	I(1)
IPE	-5,331***	I(1)	-3,104***	I(1)

Secondly, it is investigated whether the problems of autocorrelation and heteroskedasticity. The availability of autocorrelation problem is tested by Wooldridge test; the availability of heteroskedasticity problem is analyzed by Wald test. In models it is implemented *Estimated Generalized Least Squares (EGLS)* to eliminate autocorrelation problem. *White's cross section coefficient covariance method* is applied to eliminate heteroskedasticity problem.

Thirdly, it is determined the method (fixed effects or random effects) to estimate the models using Hausman test. Finally, in estimating the models, it is analyzed two different periods (2000-2007 and 2000-2010) separately (Table 3 and Table 4).

Variables	2000-2007				2000-2010			
	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
FDI	-0.016 (-0.002)			3.864 (1.257)	21.648* (1.897)			5.240 (1.355)
PCF	4.933 (0.536)			-2.580 (-0.362)	-18.975 (-0.807)			1.366 (0.138)
POE	-8.658** (2.167)			-5.199*** (-2.860)	-29.576*** (-2.888)			-16.367** (-1.097)
TOR	-8.248 (-1.565)			0.767 (0.133)	-21.425 (-1.255)			-8.099 (0.133)
EXP		-1.626 (-1.579)		-2.507** (-2.677)		19.800 (0.874)		11.939 (1.216)
IMP		-0.630 (-0.998)		-0.299 (-0.614)		-3.283** (-2.290)		4.124 (0.758)
OER		-10.962 (-1.095)		-15.80* (-1.725)		-22.307 (-1.463)		-9.734 (-1.288)
EDS			3.515	6.400**			-7.444	-5.511**

			(1.228)	(2.187)			(-0.960)	(-2.063)
IPE			-1.493 (-0.202)	4.389 (0.985)			-32.843 (-1.173)	-8.676 (-1.042)
R²	0.813	0.809	0.803	0.873	0.177	0.187	0.145	0.452
Adj R²	0.787	0.788	0.788	0.832	0.105	0.131	0.102	0.347
F statistic	0.000	0.000	0.000	0.000	0.043	0.015	0.024	0.000
N	42	42	42	42	63	63	63	63
D-W	2,079	2.108	2.217	2.225	2.194	2.147	2.029	2.021
Woolridge test	0,003	0,007	0,001	0,005	0,001	0,005	0,001	0,004
Wald test	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
Hausman test	RE	RE	RE	RE	RE	RE	RE	RE

* Significant at 10%; ** significant at 5%; *** significant at 1%; t values in brackets.

Table 3 shows results from panel OLS regressions for SEE-7 countries in two different periods that are 2000-2007 and 2000-2010. It is estimated four models for each period. Model 1 includes four variables that foreign direct investment, private capital flows, portfolio equity and total reserves. Model 2 consists of three variables that are export, import and official exchange rate. Model 3 comprises only two variables that are external debt stock and interest payments on external debt. Model 4 have all variables in other models.

Although, for each variable, it is not obtained enough significant results from the panel regressions, these models reveal a striking empirical evident coinciding with main hypothesis of this paper. Adjusted R² has higher values in 2000-2007 than 2000-2010 does. In other words, the models for 2000-2007 have more explanatory power than 2000-2010 do. The effects of external variables on GDP growth rate in the SEE-7 countries are further in pre-crisis period. From 2000 to 2007, in other words until the global crisis, the external variables contributed to growth performances of these economies. However, the impacts of external variables on GDP growth rate naturally reduced sharply during the crisis. For example, in model 4 including all variables, while adjusted R² is 0.832 for 2000-2007, the same value is only 0.347 for 2000-2010.

4. CONCLUSIONS

The impacts of the global crisis were spread across SEE-7 countries by two different channels. First of contagion channels of the global crisis is deficiency of import demand of the developed countries shortening the export capabilities of other countries. Second of them is disappearance of their financial facilities because of turmoil in the global finance and capital markets.

The paper examines the effects of external variables on GDP growth rate in the SEE-7 in two different periods. The first is 2000-2007 as the period of pre-crisis. The second period is 2007-2010 as pre-crisis plus post-crisis. Thus, it is possible to compare with two different periods with respect to impacts of external indicators.

According to empirical findings obtaining from the panel regression results, until the global crisis, the external variables significantly contributed to growth performances of these

economies. However, the impacts of external variables on GDP growth rate naturally reduced sharply during the crisis.

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