The Impact of the Global Financial Crisis on Southeastern European Economies

Evisi Kopliku

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Approval of the Institute of Graduate Studies and Research

Prof. Dr. Elvan Yılmaz
Director (a)

I certify that this thesis satisfies the requirements as a thesis for the degree of Master of Science in Banking and Finance.

Assoc. Prof. Dr. Hatice Jenkins
Chair, Department of Banking and Finance

We certify that we have read this thesis and that in our opinion it is fully adequate in scope and quality as a thesis for the degree of Master of Science in Banking and Finance.

Assoc. Prof. Dr. Mustafa Besim
Supervisor

Examining Committee

1. Assoc. Prof. Dr. Mustafa Besim _____
2. Assoc. Prof. Dr. Salih Katırcıoğlu _____
3. Asst. Prof. Dr. Bilge Oney _____

ABSTRACT

August 2007 signed the beginning of a new era, known as the Great Recession, and considered by many economists as the hardest financial crisis since the Great Depression of the 1930s. Being a global financial crisis, as its name implies, the Great Recession had global effects. However, different countries were affected at different levels.

The aim of this thesis is to investigate the impact of the global financial crisis on a sample of four countries of Southeastern Europe: Albania, Bulgaria, Croatia and Romania. This investigation is done by using econometric models (Unit Root tests and Johansen Cointegration tests) by employing quarterly time series data from 1990 to 2009.

In order to carry out the tests, the research identifies some possible transmission channels of the crisis by looking at empirical researches and theoretical approaches related with crisis. Once the variables have been identified as possible transmission channels, their significance on the growth of the four countries is measured in order to identify the degree of impact of the global crisis on the sample of Southeastern European countries.

The results suggest that in Albania, exports and credit have been significant transmission channels of the global crisis. Interestingly, whereas FDI has a significant but negative impact on growth. In contrast, remittances have a positive

but statistically insignificant impact on growth. For the case of Bulgaria, results show that all the variables included in the model are significant. Thus, exports, FDI, openness, remittances and credit are all statistically significant. In addition, all the variables, except openness, affect growth positively. Openness has an inverse relationship with growth. Being more integrated resulted in significant effects of global crisis in Bulgaria. In the case of Croatia, exports are found to be a significant transmission channel of the global crisis, whereas openness has a negative impact on growt. In the case of the new EU member, Romania, FDI, credit and remittances are found to be statistically significant, indicating that being more integrated increased the significance of the global crisis on the growth. The three of them have a positive effect on growth. Exports are statistically insignificant for the growth of Romania.

These evaluations show how different crisis transmission channels affect the growth of different economies. It is expected that these findings will be an important source in developing policies that try to minimize the damage and costs of the global financial crisis.

Keywords: Southeastern Europe, Global Financial Crisis, Foreign Direct Investment, Openness, Remittances.

ÖZ

Ağustos 2007'de patlak veren finansal kriz, yeni bir dönemin başlangıcı ve tarihine büyük finansal kriz olarak işlenmiştir. Birçok iktisatçıya göre bu kriz 1930'ların büyük buhranından sonra en kuvvetli kriz olarak kabul edilmektedir. Bu krizin küresel olması dünyanın değişik bölgelerindeki birçok ekonomiyi değişik şekillerde ve seviyelerde etkilemiştir.

Bu tezin amacı küresel finansal krizin etkilerini dört Güneydoğu Avrupa ülkeleri üzerinde incelemek olmuştur. Bu ülkeler Arnavutluk, Bulgaristan, Hırvatistan ve Romanya'dır. Çalışmada 1990-2009 dönemindeki çeyrek zaman serileri tek kök testi, Johansen'in eşbütünlük testi gibi ekonometrik teknikler kullanılarak küresel krizin etkilerini belirlenen ekonomiler üzerinde ölçülmeye çalışılmıştır. Konu testlerin yapılması için öncelikle çalışma belirli küresel kriz etkileşim kanallarını belirlemeye yönelik teorik yaklaşım ve ampirik çalışmaları incelemiştir. Belli sayıda kriz etkileşim kanalları belirlendikten sonra bunları belirlenen ülkelerin ekonomik büyüme performanslarına etkilerinin ne derecede olduğu test edilerek ölçülmeye çalışılmıştır.

Farklı yapılardaki ekonomiler, küresel krizden farklı şekillerde etkilendiği bu çalışmada da teyit edilmiştir. Buna göre Arnavutluk özellikle ihracatın ve kredilerin ekonomi üzerindeki etkisi pozitif ve istatistiksel olarak anlamlı bulunurken bu durum doğrudan yabancı yatırımda sonuçlar istatistiksel olarak anlamlı sonuçlar verse de, ekonomik büyüme arasındaki ilişki negatif olarak tespit edilmiştir. Bu sonuçlara göre Arnavutluk ekonomisinin küresel kriz dolayısıyla gerileyen ihracat ve kredileri

büyüme üzerinde önemli olumsuz etkiler yaparken, doğrudan yapancı yatırım ekonomik büyümeyi fazla da etkilememiştir. Arnavutluk için diğer ilginç tespit, ekonomisi için önemli olan yurtdışındaki işçi gelirleri yapılan çalışmada istatistikî olarak anlamlı bulunmamıştır. Benzer çalışma sonuçları Bulgaristan için değerlendirildiğinde, kullanılan bütün kriz etkileşim değişkenleri istatistikî olarak anlamlı çıkmış ve beklendiği gibi bu değişkenler ile ekonomik büyüme arasında pozitif bir ilişki tespit edilmiştir. Bulgaristan'ın Avrupa Birliği üyesi olması, küreselleşmede Arnavutluğa göre daha ileri bir aşamada olması nedeniyle, özellikle ihracat, doğrudan yabancı yatırım, yurtdışı işçilerin gelirlerinin krizden dolayı azalması, ekonomik büyümeyi bire bir olumsuz etkilemiştir. Avrupa Birliği ülkesi Romanya'da doğrudan yabancı yatırım, işçi gelirleri ve piyasaya verilen krediler ile ekonomik büyüme arasında anlamlı ve pozitif bir ilişki tespit edilmiştir. Hırvatistan için yapılan çalışma sonucunda ihracat ve ithalatın toplamından oluşan açıklık değişkeni ve ihracat istatistikî olarak anlamlı bulunurken, ekonomi üzerindeki etkileri sırasıyla pozitif ve negatif olarak tespit edilmiştir.

Bu tespitlerle, küresel krizin etkileşim kanallarının değişik ekonomilerin ekonomik büyümesine nasıl etki yaptığı belirlenmiştir. Bu bulgular, özellikle küresel krizin maliyetlerini minimize etme yolunda geliştirilecek politikalar için önemli bir kaynak olacağı beklenmektedir.

Anahtar Sözcükler: Güneydoğu Avrupa, Küresel finansal kriz, Doğrudan yabancı yatırım, açıklık, yurtdışı işçi gelirleri

To My Family

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LIST OF ABBREVIATIONS

ADF	Augmented Dickey-Fuller
BICA	Bulgarian Investment Consulting Agency
BIS	Bank for International Settlements
BNB	Bulgarian National Bank
BoA	Bank of Albania
CBS	Central Bureau of Statistics
CEE	Central-Eastern Europe
CEPR	Center for Economic Policy Research
CIA	Central Intelligence Agency
CNB	Croatian National Bank
ECM	Error Correction Mechanism
ECT	Error Correction Technique
ELG	Export-led Growth
FDI	Foreign Direct Investment
FPI	Foreign Portfolio Investment
HDR	Human Development Report
IMF INS	International Monetary Fund Institute
INSTAT	Institute of Statistics
NBR	National Bank of Romania
ODI	Overseas Development Institute
OLS	Ordinary Least Squares
PP	Phillips-Perron

SBA	Stand-by Arrangement
SEE	Southeastern Europe

Chapter 1

INTRODUCTION

1.1 Background of the Study and Statement of the Problem

History has seen a lot of crises during the years, making them an important subject for research and theories trying to explain their causes and effects. There are various definitions for the crises, but; "The classic explanation of financial crises, going back hundreds of years, is that they are caused by excesses—frequently monetary excesses—which lead to a boom and an inevitable bust" (Taylor, 2008, p.1).

The financial problems that started in USA after the turn of the twentieth century increased the fear of a global slowdown. This fear became real and a new era was recorded in the history starting in August 2007. This is the era of a global financial crisis, which was named as the Great Recession, and as its name implies, it had global effects.

1.2 Objective of the Study

The purpose of this study is to determine the impact of the global crisis on the Southeastern European (SEE) countries. After the 1990s, most of the formerly planned economies of SEE moved towards market-oriented economies. Adopting a market-based economy was not easy and many of the SEE countries went through transition periods. Despite the transition periods, these countries started to face financial development and economic growth during the last decade. Because of these

interesting characteristics of the region, a sample of four countries from the SEE has been chosen as an object of this research. The countries included in this thesis are Albania, Bulgaria, Croatia and Romania.

This paper looks at theoretical approaches of crises and empirical research related to crises in order to identify some channels of transmission of the crisis. This thesis has identified exports, FDI, credit, remittances, openness and foreign portfolio investment as important variables affecting the growth (GDP) of a country. The aim of this study is to measure the degree of impact of these variables on growth. It is known that during a crisis, growth is affected negatively. This is how the study measures the impact of the crisis: by investigating which variables played a role in transmitting the crisis to the region and which ones did not. In other words, the study investigates which variables affected growth and which ones had no significant impact on it. In order to identify the relative importance of the variables on growth, Johansen cointegration technique has been employed in this research.

1.3 Structure of the Study

The thesis is structured as follows: chapter 2 is a review of the crisis definitions, previous crises experiences, different studies trying to explain their causes and to prepare a theoretical ground of crises; chapter 3 gives some background of the economies of Albania, Bulgaria, Croatia and Romania during the last decade; chapter 4 presents the data and methodology. It explains the variables that are used in the study, the economic growth models into which these variables are incorporated and the econometric tests that will be used; finally, chapter 5 gives the results of the econometric analysis and concluding remarks.

Chapter 2

LITERATURE REVIEW

2.1 Crisis

The purpose of this chapter is to review the crisis experiences that have been experienced globally. In this regard, the chapter will outline the definitions used for crisis, crisis experiences, causes of crisis and its implications. Further, the research will try to summarize the studies that have been carried out with the objective of preparing a theoretical ground for the thesis.

2.1.1 What is "Crisis"?

"The classic explanation of financial crises, going back hundreds of years, is that they are caused by excesses—frequently monetary excesses—which lead to a boom and an inevitable bust" (Taylor, 2008, p.1).

"Financial crises" date back to 33AD. The origin of a crisis is found in both developing and developed economies, but developing ones are more sensitive to a crisis because they are less financially diversified, and offer fewer insurance alternatives. Thus, the impact of the crisis can become greater and lead to serious problems in the real economy. The repeating nature of financial crises tells us that they develop gradually and naturally, but then they have dynamic effects.

"… according to Kindleberger, "... the financial crisis [...] is the culmination of a period of [business cycle] expansion and leads to a downturn" (Yokoi-Arai, 2002, p.

6). Further, he only considers it a financial crisis when they are "both major in size and in effect and, as a rule, international in scope" (Yokoi-Arai, 2002, p.6).

A list of other definitions on the term "crisis" is given below:

- "… a common view is that disruptions in financial markets rise to the level of a crisis when the flow of credit to households and businesses is constrained and the real economy of goods and services is adversely affected" (Jickling, 2008).[1]
- "A financial crisis is a disruption to financial markets in which adverse selection and moral hazard problems become much worse, so that financial markets are unable to efficiently channel funds to those who have the most productive investment opportunities. As a result, a financial crisis can drive the economy away from an equilibrium with high output in which financial markets perform well to one in which output declines sharply" (Mishkin, 1991).
- According to Schwartz (1985), Miron (1986) and Wolfson (1986): "A demand for reserve money so intense that the demand could not be satisfied for all parties simultaneously in the short run" (Yokoi-Arai, 2002, p. 6).
- The definition given by the Federal Reserve Bank of San Francisco (1985): "A sharp reduction in the value of banks' assets, resulting in the apparent or real insolvency of many banks and accompanied by some bank collapses and possibly some runs" (Yokoi-Arai, 1985, p. 7).
- Veblen (1904) and Mitchell (1941) state: "A liquidation of credits that have been built up in a boom" (Yokoi-Arai, 2002, p. 7).

[1] www.fas.org/sgp/**crs**/misc/RL34412.pdf

Some theoretical explanations of financial crises have been divided into two groups. One set of explanations, defined as first-generation models (e.g., Krugman, 1979), focus on inconsistencies between government policy commitments and domestic economy fundamentals. "For example, excessive monetary expansion to monetize fiscal deficits can deplete the central bank's foreign exchange reserves and weaken its ability to defend a peg" (Glick, Moreno and Spiegel, 2001, p. 7).

According to the second-generation models, (Obstfeld, 1994), the government weighs the benefits against the costs of defending the exchange rate, which in some cases may lead to more than one equilibrium for the exchange rate.

2.1.2 Global Crisis

The Panic of 1893 was an example of a financial depression that occurred in the United States. This was a national crisis. However, rarely does a crisis stay within the borders of a single country. Because there are trade, financial and economical linkages between countries, an interdependence between economies is created. This interdependence causes the crisis to transmit to other countries as well. In addition, geographical proximity causes the crisis to transmit outside the domestic borders. Speculations and undermined investor confidence affects the neighbor countries. However, the financial crises need not be international as Krugman (1991) states. The crisis might cause regional disruptions only, and these disruptions vary in size according to proximity, and financial ties between the countries.

Also, the advances in information technology make the parties indirectly related to the crisis' causal factor to be affected. Therefore, crisis spreads around and becomes international in nature.

2.2 Global Crises' Experiences

2.2.1 The Panic of 1873

There are crises remembered to have caused great damages worldwide. The end of the nineteenth century was characterized by continuous crises, of which the banking panics of 1873 and 1893 are worth mentioning. According to Bordo (2003), these panics were followed by sovereign debt defaults in many countries and they would be the ancestors of one of the most serious recessions in history.

The failure of the Philadelphia investment house of Jay Cooke on September 18th, as a result of speculation in railroads, caused the beginning of the Panic of 1873. According to Larson (1936), this was followed by a sharp drop of the stock market, precipitating bank runs and a worldwide depression. This caused a lot of businesses to fail, unemployment (almost 3 million Americans lost their jobs), and increase in food prices, resulting in great rural poverty.

The roots of this crisis can be found in Europe, around 1870s. In those years, new lending institutions that issued mortgages for construction started rising. It became easy to obtain mortgages, so a building boom started. This made the value of land to climb higher and higher, while borrowers were assuming more and more credit. But, the region' assumptions about continuous economic growth came out to be too optimistic when a new competitor aroused. Europe started facing the so called American Commercial Invasion. Central Europe faced the first crash in May 1873. Banks started tumbling, and British banks held their capital back because they were not sure which institutions were affected more. This banking crisis hit America as well in the fall of 1873, starting with the railroad companies. According to Cheong

(1974), and Johnson and Supple (1967), the effects of this panic were felt far from home. They explain that global trade with China was transformed, starting with New England traders who switched from China trade to American railroads. In addition, speculation in tea, silk and other products caused the failure of merchant houses from London to New York and Boston in the late 1830s.

2.2.2 The Great Depression

Following the stock market crash in 1929, the Great Depression signed its start in 1930. It was called "Great" because it followed a long series of depressions that distressed the American economy during the whole nineteenth century. According to Schultz (1999), the Great Depression began in the United States with the collapse of stock prices in the New York Stock Exchange in October 1929. But, of course, America was not alone as Schults (1999) states. The crisis spread in Europe and other industrialized areas. Because of its duration and severity, the Great Depression turned into the worst crisis ever experienced in the Western world. It lasted till 1939 and had catastrophic consequences such as decrease in unemployment rate, decrease in the demands for goods, bankruptcy of 9000 banks, and decrease in stock prices to 40%, hitting a bottom down of 80% in 1932 and 1933[2].

This depression was caused mainly because of weaknesses and imbalances that had prevailed in the US economy during the boom period of 1920s. Between these imbalances and weaknesses, war debts, inequality of wealth distribution, overproduction in industry and agriculture, and high tariffs can be mentioned (Kindleberger, 1973).

[2] http://deathby1000papercuts.com/2008/09/dow-largest-drop-historical-context-paints-a-different-story/

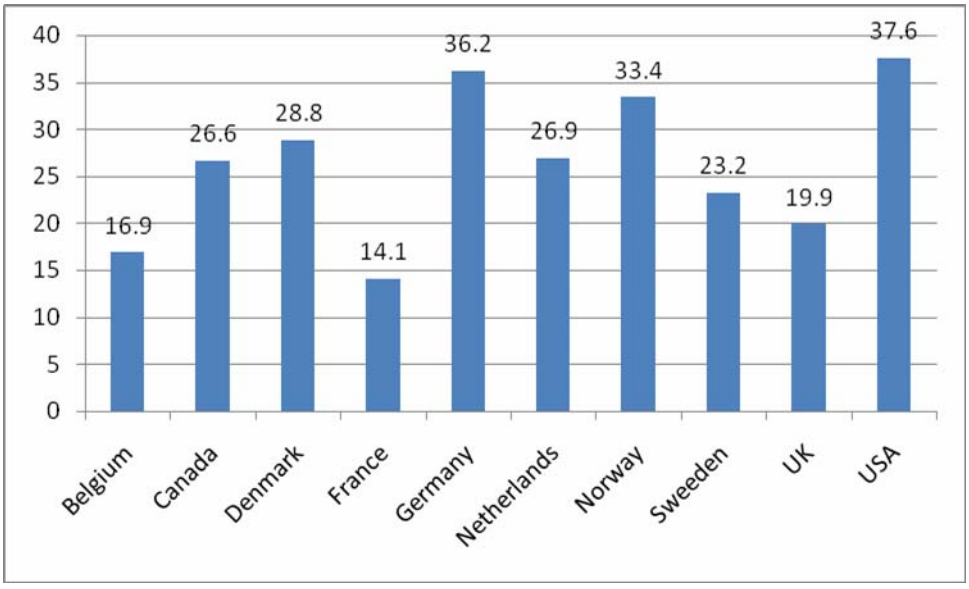

Figure 1: Percentage of Industrial Workers Unemployed in 1933
Source: IMF (2009)

2.2.3 The Great Recession

After the turn of the twentieth century, USA started having financial problems like a growing current account deficit, and debt inflows replacing equity inflows. This increased the fear of a global slowdown, which became real during the year 2007. It was August 2007 that led towards the beginning of a new era, known as the Great Recession, and considered by many economists as the hardest financial crisis since the Great Depression of the 1930s.

The world's stock markets started going down and large financial institutions collapsed, Lehman Brothers being the first. The economic activity around the world slowed down. Interest rates have been cut, and investment banks have collapsed.

The collapse of the subprime mortgages, which reached a peak in the United States in 2006, is also another cause which led to a credit crisis. This damaged investor confidence, led to declines in credit availability and to bank insolvency. As credit tightened, international trade declined, affecting economic activities all over the

world. Demand declined, unemployment rates started rising and many countries started facing negative growth rates.

September 14th, 2008 was a big shock to the world as Lehman Brothers filed for bankruptcy[3]. Being one of the world's largest investment banks, its bankruptcy marked the beginning of the global financial crisis. Meanwhile, many financial institutions in USA and Europe started facing financial distress. A lack of confidence spread all over the world, with investors fearing which bank would be next to collapse or survive. These events, which are the characteristics of financial contagion, shocked the financial markets. There is strong financial linkage between Europe and USA, this is why the crisis spread to Europe. For example, the depreciation of Dollar against Euro translates into a competitive disadvantage for Europe, as it becomes cheaper for US to export, while the balance of payments of European countries get negatively affected.

In addition, the spread of the crisis to the world was not just because of the turbulence in the housing segment of the American market. What happened was that banks all over the world had taken too many loans and securitized on assets which were based on very faulty mortgages. Then, they had been holding these securitized property loans in their portfolios as off-balance sheet items. Once the property bubble burst, the balance sheets started being checked and many such loans had to be written-off. This resulted in falling share values because of the continuous negative news, and mistrust between banks, thus, refusing to lend to each other. This situation

[3] http://www.nytimes.com/2008/09/15/business/15lehman.html

became worse with the collapse of Lehman Brothers, because as Aiginger (2009) puts it: "the hope that big ships are unsinkable was lost" (p. 3).

Soon after the collapse of Lehman Brothers, Iceland almost went bankrupt because three of Iceland's largest banks collapsed, resulting in a collapse of its financial system[4]. Actually, the collapse of the giant investment Bank caused a perfect storm in Central and Eastern Europe. But, Iceland, Latvia and Pakistan were the three countries that suffered the most after the fall of Lehman Brothers[5]. Being over leveraged and highly dependent on lending – especially by foreign banks- these countries suffered a lot. Furthermore, the German banks and other western banks refused to continue supporting these countries.

From what we can see, there is some similarity of the current global crisis to that of 1873. In both cases, there is a mortgage crisis originating from easy lending, optimistic expectations about housing prices, and a downturn of these expectations, causing an inability on the side of borrowers to repay the mortgage loans.

The historian, Nelson (2008) says that the current economic crisis looks a lot like the Panic of 1873, which showed a shift of the world's credit to the west — from Central Europe toward the United States. Whereas, the current crisis suggests a further shift — from the United States to India and China.

However, Nelson (2008) disagrees on the fact of a possible relationship between the current crisis and the Great Depression, by pointing out that according to many

[4] http://www.guardian.co.uk/business/2009/sep/04/lehman-collapse-global-impact
[5] http://www.guardian.co.uk/business/2009/sep/04/lehman-collapse-global-impact

economists and historians, the depression had more to do with very large inventories of factories, the inability of Germany to pay the war debts back, and a stock-market crash. None of these factors can be related to the causes of the current crisis.

2.3 Causes of Crisis

"The roots of the crisis are not only to be found in the financial sector but also in macroeconomic imbalances, in regulation failures and insufficient policy coordination" (Karl Aiginger, 2009, p.1).

Reinhart and Rogoff (2008a), showed that: "…standard indicators for the United States, such as asset price inflation, rising leverage, large sustained current account deficits, and a slowing trajectory of economic growth, exhibited virtually all the signs of a country on the verge of a financial crisis - indeed a severe one" (p. 1). Reinhart and Rogoff, (2008b) state that: "… the antecedents and aftermath of banking crises in rich countries and emerging markets have a surprising amount in common. There are broadly similar patterns in housing and equity prices, unemployment, government revenues and debt" (p.1).

Researchers that have examined the historical records of crises have found many similarities across financial indicators. According to what Reinhart and Roggof (2008) write in their paper: "... the run-up in U.S. equity and housing prices that Graciela L. Kaminsky and Carmen M. Reinhart (1999) find to be the best leading indicators of crisis in countries experiencing large capital inflows closely tracks the average of the previous eighteen post World War II banking crises in industrial countries" (p. 1).

Sanfey (2010) explains in his paper the importance of three factors as causes of crisis: "... the sharp drop in exports; the chocking-off credit; and the effect on remittances" (p.1).

Regarding the spread of the crisis in the SEE region, a workshop report (2009) notes that the crisis was initially transmitted through conventional channels such as trade and remittances, then it started spreading through financial linkages, leading to a slowdown in foreign banking activities, and high level of current account deficits.

Foster and Magdoff (2009) also look at the causes of crises. An interesting thing they point out is the negative personal savings rate. "Last year U.S. households spent a record 13.75 percent of their after-tax, or disposable, income on servicing their debts. With little to no income growth among wage earners, the past year (July 2005 – June 2006) has seen people spending $1.1 trillion more than they earned" (Foster and Magdoff, 2009, p. 50).

Foster and Magdoff (2009) point out that debt could be another cause of the crisis. They say that the larger the debt grows, the smaller is its stimulating effect in the economy.

As former Federal Reserve chairman Alan Greenspan told Congress in June 2005: "I think we've learned very early on in economic history that debt in modest quantities does enhance the rate of growth of an economy … but in excess, creates very serious problems" (Foster and Magdoff, 2009, p. 49).

Foster and Magdoff (2009) mention also the financial speculation in the U.S. economy, which is stimulated by higher levels of debt. They show that debt incites financial speculation and financial speculation causes more debt.

2.4 Implications of Global Crisis

The global financial crisis, as its name implies, had global effects. "Huge governmental financial aid, 60%-70% stock exchange indices reduction are only few examples" (Kaszuba, 2010, p. 89). However, different countries were affected at different degrees. The next section will investigate the implication of crisis for countries at different levels of development.

2.4.1 Developed Countries

Hungary was hit at a high speed in the September of 2008. A major problem in Hungary is the governmental debt, which was inherited by the former communist government. According to Kaszuba (2010), the crisis situation in Hungary is complicated because it started in 2006, and its roots can be found even in 2000-2001. After the elections in 2002, public finances were in very bad conditions. According to Kaszuba (2010), the political instability in Hungary made the country to be hit hardest among other countries in Eastern Europe.

Just when Hungary had started to decrease its level of debt, from 90% of GDP in 1993 to 52% in 2001, it has increased again to 66%. Another weakness that caused Hungary to feel the crisis is government spending, which is high, as much as more than 50% of GDP. Of course, capital inflows also decreased, as investors started pulling their investments out of the country. Declining capital inflows is the last thing that a country with high debt and government expenditures needs. In addition to this, the Hungarian political scientist, Kiszely (2009), says that the big foreign

companies get the profits, which go as outflows abroad, leaving nothing for the medium-sized domestic Hungarian companies. Thus, domestic companies find it difficult to survive.

The United Kingdom does not stay far behind with a budget deficit of 13% of GDP in 2010, considered as one of the highest in the G20 countries. The EU rules require that the Eurozone countries do not exceed a budget deficit of 3%. This amount corresponds to a forecast deficit of £178bn for UK.

Greece is another country which has been hard hit by the crisis. Greece's debt has been rated at the beginning of December, 2009, by the rating agency Fitch as BBB+. German Economy Minister, Bruederle warned that deficits in countries like Greece could have catastrophic effects on others. This explains the fears that weak countries like Greece could affect the stability of the entire euro zone (Fleming, 2010).[6]

During 2009, when it seemed that fears were cooling down, two big companies in Dubai announced in November 2009 that they would be unable to repay their debts back, and asked for a six-month extension of their paying term. This provoked again fears around the world.

In the Overseas Development Institute (ODI) report, according to Velde (2008), growth in the developed and developing countries was studied. According to this study, as developed countries like UK, Germany, Spain, USA were facing a

[6] http://-www.thisismoney.co.uk/news/article.html?in_article_id=498260&in_page_id=2#ixzz0n0HLZiEy

recession, that could not be said for countries like Malawi, whose economy was projected to grow by 8% during 2008, as stated by the Malawian finance minister.

2.4.2 Developing countries

The same thing could be said regarding Nigeria, which is growing at a a rate of 9%. As reported by the Financial Times, Lagos is not Lehman. China was offering to help the world by increasing its growth rates up to 10%. According to Velde (2008), several other African and Asian countries were in better positions because they had built government reserves, and they were also still showing solid export performances, resulting in positive current account positions. The same could be said for Latin American countries as well, which have been facing the crisis more positively as compared to the financial shocks of the 1990s.

However, this does not mean that the signs of crisis are not present. High food and oil prices, and high inflation rates are present in other countries. Small importing countries like Fiji, Dominica and Swaziland tend to face higher shock in terms of trade. African countries like Tanzania and Kenya are estimated to have faced shock of more than 5% of GDP (World Bank, 2008).[7]

However, as some developed countries are in recession because of the crisis, this does not mean that developing countries were not affected. Actually, this is the path that the development of the crisis followed: it started in 2007 in USA, then started developing during 2008, thus, affecting many countries in Europe, like Germany, UK, Iceland etc. As a result, recessions started in USA, the United Kingdom,

[7] World Bank paper for October 2008 Commonwealth Finance Ministers Meeting.

Germany. Meanwhile, developing countries were still not as much affected. But, 2009 was the year when the developing countries started feeling the crisis, too.

According to Velde (2008), the current financial crisis affected the developing countries in two possible ways:

First, because of financial contagion, the fall-down in stock markets in USA, India, Brazil, China, and South Africa, caused a lot of turmoil.

Second, the economic downturn in developed countries affected the developing countries. According to the report, some main channels of transmission of crisis are:

-*Trade and trade prices*: Growth in China and India had increased the demand for oil, copper and other natural resources, i.e. had increased the imports for these resources as well. Since, the crisis caused a slowdown in the growth of these countries, the imports would fall down. Thus, exporting countries would be affected.

- *Remittances*: The crisis lead to a lower volume of remittances per emigrant because fewer emigrants are travelling to countries in recession.

- *Foreign Direct Investment (FDI) and Equity Investment:* There was a record of FDI flows to developing countries during 2007. But, equity financing and project finance are now under pressure. An example of this is the Xstrata takeover of a South African mining conglomerate which remained on hold because it was difficult to obtain financing during a credit crisis.

- *Commercial lending:* This has to do with the tightening of credit. Less loans limit investments, as it has happened in some countries like Argentina, Iceland, Pakistan and Ukraine.

The effect of the crisis on the developing countries varies according to the economic characteristics of the countries and their responses to the crisis. According to the

channels suggested above, the countries most likely to be affected by the crisis are: countries whose exports have been affected significantly (for example, Mexico); countries exporting products whose prices have been affected by the crisis (for example, Zambia would be hit because of the lowering copper prices); countries dependent on remittances; countries dependent on FDI, and portfolio investments (for example, Africa cannot afford to lower interest rates as it has already lost some investments by doing so).

All these possible channels of crisis transmission lead to general effects across countries such as, declines in exports and less export revenues, lower investment rates, increase in unemployment, pressure on the balance of payment and current account especially.

According to ODI report (2008) "The World Association of Investment Promotion Agencies foresees a 15% drop in FDI 2009. FDI to Turkey has already fallen 40% over the last year and FDI to India dropped by 40% in the first six months of 2008. FDI to China was $6.6 billion in September 2008, 20% down from the monthly average in year 2008 so far, and mining investments in South Africa and Zambia have been put on hold" (p. 2).

Examples of drops in remittances are Mexico and Kenya. Remittances to Mexico have decreased by 4.2% during the first eight months of 2008, because most of Mexican people migrate to US. Even harder have the remittances to Kenya been hit (again dependent on USA), where the Central Bank estimated a decline of 38% in August 2008.

As mentioned previously, exports are a key indicator between the crisis channels. They have been falling rapidly. The fall of price of copper by 40% since July 2009 has made the Kenyan exports fall rapidly. The negative impact on tourism has decreased tourism bookings of Cambodia down 40%, and visitor revenues to Kenya by 30%.

International financial flows have been affected as well. According to a research, (Cali, Massa and te Velde, 2008b): " ... net financial flows to developing countries may fall by as much as $300 billion over two years, equivalent to a 25% drop" (p. 2).

In a country study of Sierra Leone done by John Weeks, statistics indicate that there was a decrease of 15% in export earnings in 2009, compared to 2008. Regression-based models estimate that this fall in exports could lead to a 10% decline in national income.

2.5 Theories and Empirical Research

In the literature, it has been observed that there exist a number of theoretical approaches that try to explain crisis. One theoretical explanation is the effect of the "Great Stability" which is strongly suspected to have contributed to the Great Recession of 2007. The "Great Stability" is the period of nearly fifteen years of continuous growth, falling unemployment and low inflation as defined by Vaciago (2009). In addition to stating that there is suspicion that the period of "Great Stability" has contributed to the explosion of 2007, Vaciago (2009) adds that two propositions follow if the above interpretation is accepted as the cause of today's crisis. One of the propositions is the theory of risk and its consequences on the stability of the financial system, which has to do with the relationship between credit

and finance. The second proposition is concerned with the effects of the macroeconomic stability on systemic risk and financial stability. This case calls for action during speculative times, not only after the negative consequences have been pointed out.

The "Great Stability" is a phenomenon that has been observed at the onset of the Asian crisis in 1997. Before the burst of the crisis, the South East Asian countries faced two decades of rapid growth characterized by: "high saving and investment rates, high rates of human capital accumulation, and a pronounced work ethic. Associated with the "Asian miracle" was a disciplined macroeconomic policy management, keeping both budget deficit and inflation in control" (Corsetti, 1998, p. 5).

On the other hand, Minsky developed a "financial stability hypothesis" in the late 1960, which argues that the financial structure of the advanced capitalist economy is imperfect. Thus, the whole economy becomes sensitive to debt-deflation of the kind exhibited during the Great Depression. "For Minsky, the Achilles' heel of a developed financial system was that it was dependent on a constant cash flow of income, in particular profits, to support and " validate" its continued expansion. Over time the instability of the financial system increased, with debt piled on debt in a bubble only waiting to burst when the infusion of cash from income inevitably slowed" (Foster and Magdoff, 2009, p. 17).

Corsetti (1998) also mentions the fundamental and structural theory of the international transmission of a crisis which stresses common shocks, trade linkages, and financial linkages between countries. According to Forbes (2001), if a country

with certain macroeconomic characteristics is discovered to be vulnerable to a currency crisis, then investors will be susceptible toward other countries that have similar characteristics. Tornell (1999) also develops a model which focuses on explaining how a shock in one country is transmitted to another country. According to his model: "…a currency crisis in one emerging market will act as a coordinating device and cause money managers to expect attacks on "more vulnerable" countries" (Glick, Moreno and Spiegel, 2001, p. 110).

Griffith-Jones and Ocampo (2009) identify three key mechanisms that lead to the transmission of the crisis to the developing world: remittances, capital flows and trade. As mentioned above, these three mechanisms also appear to have contributed to the recent boom. "The crisis can be seen as being driven by the reversal of the three positive shocks that developing countries experienced during the recent boom: rapid growth of remittances, capital flows and trade" (Griffith-Jones and Ocampo, 2009, p. 1).

The South-eastern and Central European regions are a mirror to the East Asian experience during the 1990s, regarding the rapid, trade-driven growth followed by a crash (BIS, 2009). SEE and CEE have been noticed for the high volume of exports over the past decade. On the one hand, this has contributed to the growth of these regions by importing capital and capital goods. On the other hand, this has caused current account deficits which injure the stability of an economy (IMF, 2009d). Hence, standard theory and policy saw such balance of payment imbalances as the only source of macroeconomic instability (CEPR, 2010). "The Asian financial crisis of 1997-98 revealed that even when coupled with strong growth, large and sustained current account deficits leave economies vulnerable to swift reversals of capital

inflows, which directly impinge on growth and on investors' confidence" (BIS; IMF, 2009d).

According to Allen, Babus and Carletti (2009), the current crisis is similar to the past crises in many dimensions. The previously mentioned authors say that this is documented by Reinhart and Rogoff (2008a, 2008b, 2009) who relate the systemic banking crisis to previous credit booms and asset bubble prices. In addition, Allen, Babus and Carletti (2009) show that this is also consistent with Herring and Wachter (2003) who show that many financial crises are the result of real estate bubbles.
According to an IMF working paper prepared by Berkmen, Gelos, Rennhack, and Walsh (2009), cross country regressions have been used to explain the variations in growth. It has been found out that a small set of variables explain a large share of these variations. This is one of the first attempts that tries to explain the differences in the impact of the crisis across developing and developed countries. The study has been carried out by comparing GDP growth before the crisis to GDP forecasts after the crisis.

The World Bank (2009) has also conducted a similar study, which examines factors that could explain the changes in the actual GDP growth in 2007 and in the projected growth in 2009. However, this approach does not provide an accurate picture since many countries were expected to show a large decline in growth even before the crisis. But, what fits with the IMF study is that the World Bank approach also comes to the conclusion that trade is a significant factor, which has been affected by the crisis.

Another study has been done to analyze the impacts of the global crisis on the emerging Europe. In this study, Berglöf, Korniyenko, and Zettelmeyer (2009) use actual growth rates instead of forecasts for a number of countries. It was found out that: "... external debt liabilities, a decline in export volumes in 2008 Q4, real effective exchange rate appreciation relative to 2002, FDI liabilities as a share of GDP, and political instability tended to add to the depth of the output declines in Q4 2008 and Q1 2009" (Berkmen, Gelos, Rennhack, Walsh, 2009, p. 4).

According to an IMF paper (2009), Rose and Spiegel find no evidence that international linkages have an effect on the crisis. This contradicts most of the studies that the world is interconnected, and events in one country affect many other countries. This is how the crisis spread. Usually, according to the studies, the financial and trade linkages are the foundation of the shock transmission. Then, the existing domestic financial system, and the response of the monetary and fiscal policies, define the extent to which the crisis gets transmitted. Different studies indicate that the transmission channels and their implications are different for each country case. This is why this paper will try to study the differences in the impact of the crisis between different countries.

Another study has been done on the impact of the expected decline of FDI on the economics growth of Rwanda and Burundi. FDI is one of the channels of transmission of the crisis and is of great importance to my study. According to Macias and Massa (2009): "Reisen and Soto (2001) measured the effect on growth of FDI, portfolio equity flows, and short-term and long-term bank lending by using a sample of 44 countries through the period 1986-1997 … they find that FDI and portfolio equity flows exert a significant impact on growth…" (p. 8). A significant

positive relationship between growth and different measures of capital flows such as FDI, equity investment, and debt has also been found out by Gheeraert and Mansour (2005) in the paper by Macias and Massa (2009).

The 'Global Monitoring Report' by UNESCO estimates that: "the cost to sub-Saharan Africa of the fall in exports, commodity prices and investment caused by the financial crisis could be up to US18 billion- or in other words, US46 per person - a huge figure" (Alagiah, 2009).[8]

Macias and Massa (2009) studied the effect of slowing private capital inflows on the growth of Sub-Saharan African countries. They used a panel cointegration analysis in their paper on a sample of Sub-Saharan African countries over the period 1980-2007. In their paper they analyzed the relationship between growth and four types of private capital inflows (FDI, cross-border bank lending, portfolio equity investments and bond flows). The results indicated a significant impact and importance of FDI and bank lending on the countries' growth, whereas the other two variables indicated no impact on growth. According to this study, the global financial crisis is likely to have an important impact on the growth of sub-Saharan Africa through the private capital inflows channel.

It has been observed that there was a tendency for developing countries not to be touched by the crisis in the early months of transmission (when some developed countries were facing recession). However, no country can avoid the crisis.

[8] News extracted from: http://allafrica.com/stories/200905140350.html

Unfortunately, developing countries who started showing crisis symptoms later, started going back again just when their growth trends were improving. Many South-Eastern European countries have followed the same path.

The literature review, on both the theories of crises and other channels of crisis, indicates that the main channels of transmission of the current global crisis are: FDI, portfolio investments, loans, exports, remittances, and trade. Different methodologies have been used to measure the impact of these transmission channels on the economic growth of the countries. Some studies have used descriptive analysis, some others have used panel data and regression analysis.

In this study, Johansen cointegration techniques will be used to measure the degree of crises' impact on the growth of South-eastern European (SEE) economies. This will be done by using the macroeconomic indicators - FDI, foreign portfolio investment, credits, exports, openness, remittances - as important channels of transmission.

Chapter 3

OVERVIEW OF THE SOUTH EASTERN EUROPEAN COUNTRIES

3.1 Albania

Between 1944 and 1990 Albania was under a communist dictatorship regime, which isolated the country from the rest of the world and controlled every economic activity. After moving away from the isolation of the communism, the private sector in Albania has been growing continuously. By 2005, it accounted for approximately 80 percent of GDP.

Albania's economy is dominated by agriculture, which contributed to 53 percent of GDP by 1999. Whereas, industry's sector share slipped from 45 percent to 26 percent between the years 1989 and 1999. Prior to 1990, the service sector was underdeveloped. New services such as tourism and banking sector started developing only after the 1990s. According to IMF data (2009), agriculture constitutes 20.6 percent of GDP, industry 18.8 percent and services 60.6 percent. In addition, Albania has an informal sector which contributes to 50 percent of the GDP.

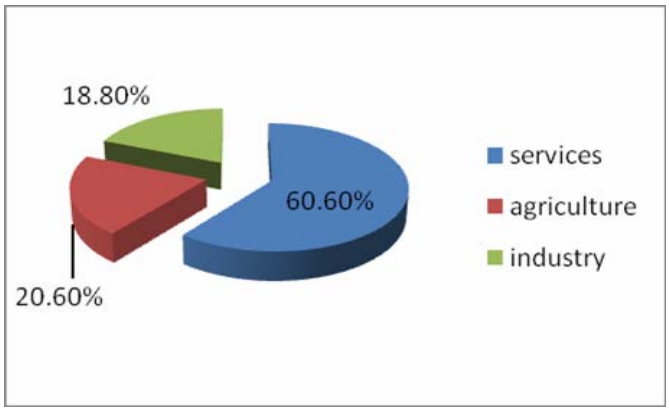

Figure 2: Structure of the economy
Source: IMF (2009)

Albania has been developing and at the same time offering incentives to investors: "low labor/property costs, a young well-educated and multi-lingual workforce, and an appealing geographical location in Europe with accessibility to the major EU markets" (ANIH, 2005, p. 3)[9]

Albania has a unique opportunity to attract export-oriented services, especially by Italian and Greek markets. In addition to Italy and Greece, Turkey and Germany are two other major trading partners of Albania. Actually, Albania has been reaching free trade agreements with a lot of its neighboring countries across the Balkans. All these trade links have been improving its FDI position. An increasing trend has been noticed in the foreign direct investment (FDI) flows as well. However, this trend is still low when compared to other South Eastern European states.

According to the Economic Bulletin of Bank of Albania (2006), Italy and Greece dominate the FDI in Albania, with 51 percent and 24 percent, respectively. Turkish capital represents 4 percent of investment enterprises in Albania, and the American one 3 percent.

[9] The report has been prepared on behalf of the Foreign Investment Promotion Agency (ANIH)

According to the same Bulletin (2006), the geographical distribution of FDI seems to be in Tirana and some other west areas, which are the zones with the highest income and most developed infrastructure. The chart below represents the distribution of FDI in Albania in different regions:

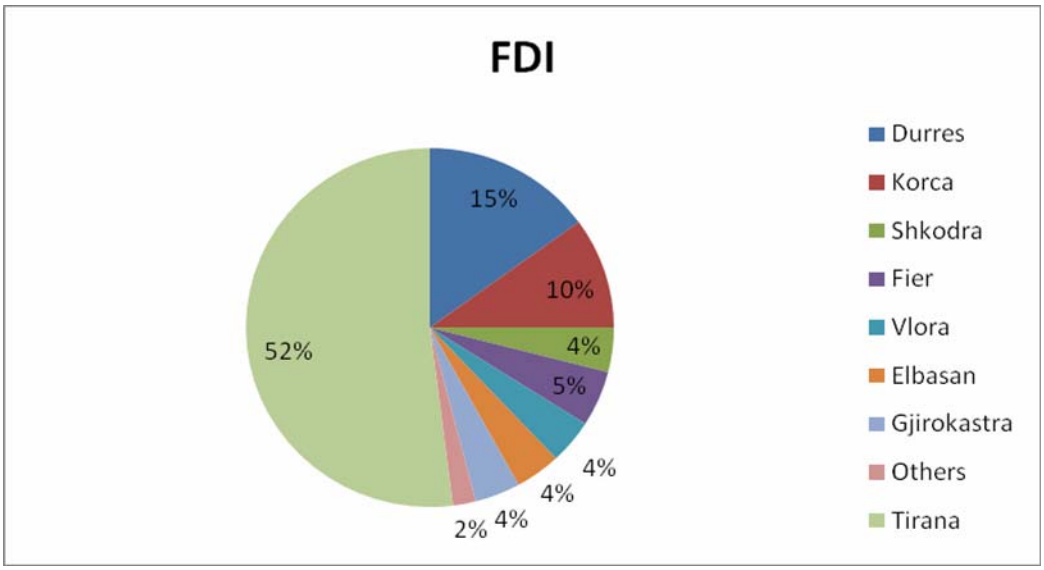

Figure 3: Regional distribution of FDI
Source: INSTAT (2006)

Albania is undergoing an intensive restructuring with the help of IMF and the World Bank in order to become a more open economy. A memorandum was signed between Albania and IMF in 2003, which tries to help the country in improving its machinery, become more productive and overcome trade deficits. According to INSTAT data, Albanian exports and imports have been growing in the recent years. EU has become the most important trade partner, receiving 96.6 percent of Albanian exports in 2008 and supplying 84 percent of imports. After the introduction of bilateral trade agreements, trade has become important with other South East European countries as well. According to INSTAT statistics, Albanian exports are concentrated as shown in the figure below:

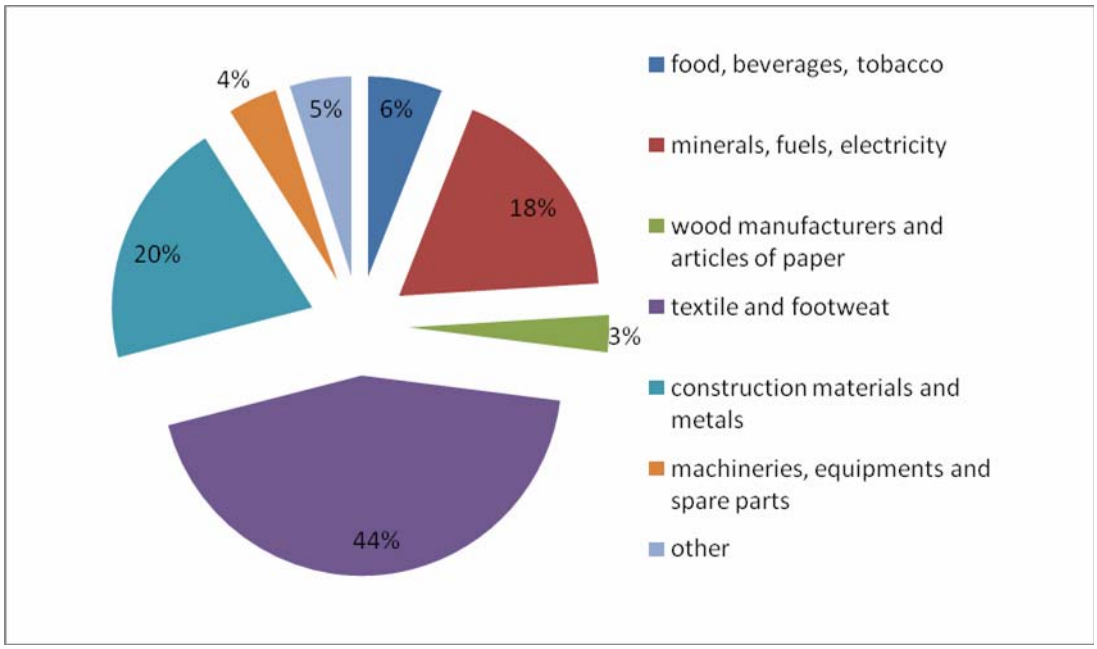

Figure 4: Sectors of exports' concentration
Source: INSTAT (2006)

According to ANIH report (2005), Albania was considered as one of the fastest growing economies in Europe, by 2005 (averaging 6 percent per year over the last 4 years), with inflation being kept under control for more than 7 years (ranging 2-4 percent). According to World Bank Data Profile Tables (2008), between 2000 and 2006, the GDP growth was as following:

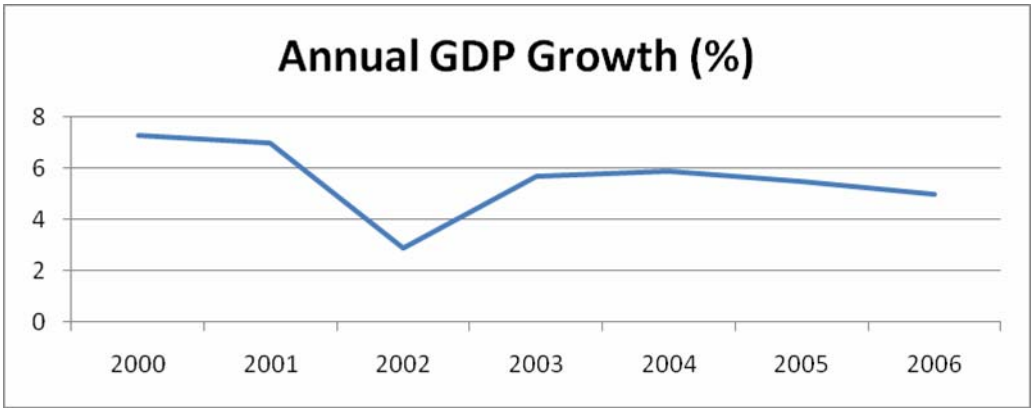

Figure 5: Annual GDP growth
Source: World Bank (2008)

According to World Bank Data Profile Tables (2009), the inflation in Albania had the following trends:

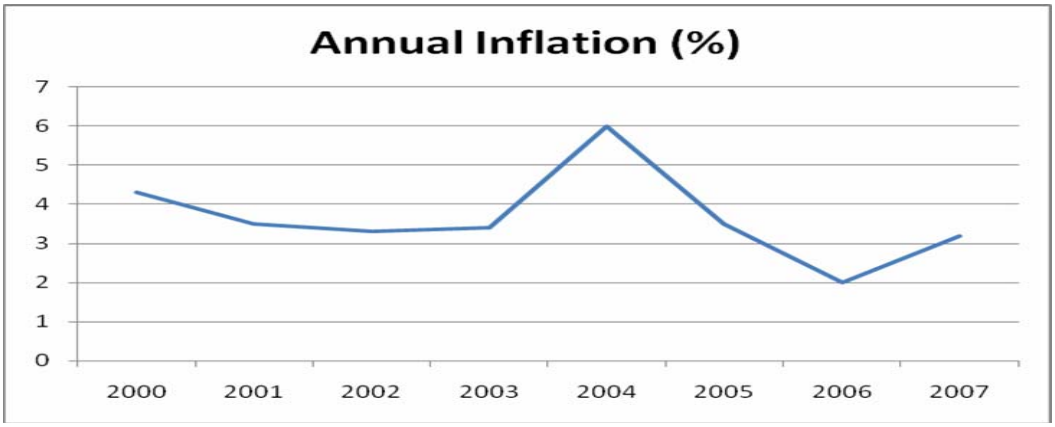

Figure 6: Annual Inflation, 2000-2007
Source: World Bank (2009)

"According to de Soto et al. (2002) and King (2005) on the macroeconomic level, remittances have been crucial for the economic survival and poverty alleviation in Albania" (Hoti, 2009, p. 46). According to Hoti (2009), they are an important source of income, being the second after the FDI flows. Moreover, Hoti (2009) explains that there is a high degree of dependency on remittances in Albania. According to the World Bank (2005), 27.5 percent of the population is emigrants abroad. During 1993-2005, the remittances as a percentage of GDP were as follows (Bank of Albania, 2006):

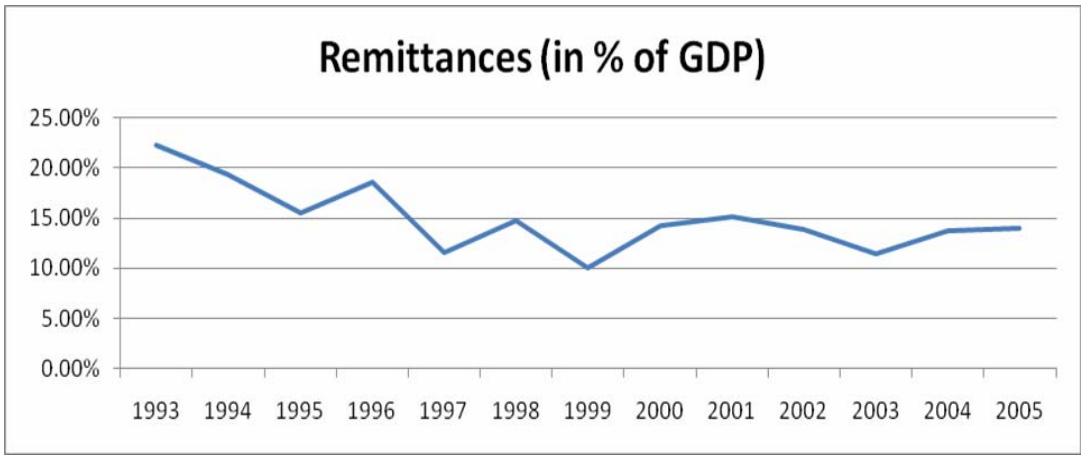

Figure 7: Remittances (%GDP)
Source: Bank of Albania (2006)

According to Hoti (2009), remittances have benefited two main sectors of the Albanian economy, construction and tourism. In addition, Hoti (2009) states that there is an indirect effect of remittances as well: they have contributed to the reduction of the trade deficit by financing more than 50 percent of it.

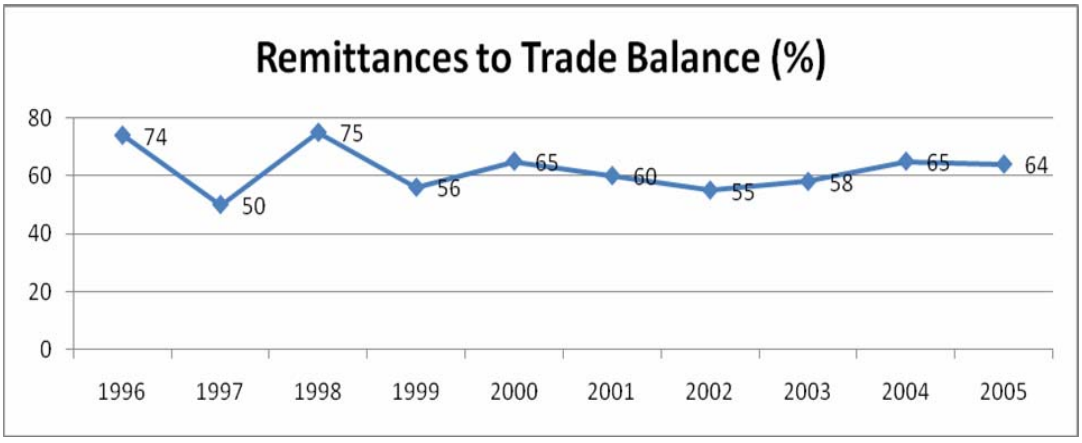

Figure 8: Remittances in relation to trade balance
Source: Bank of Albania (2005)

During the years of communist dictatorship, the Albanian economy was completely centralized. Therefore, financial intermediation was hardly existent. 1992 brought a fundamental change in the Albanian Banking System through the approval of the

laws that introduced: "... the two-tier banking system and laid down the institutional and legal basis for a free market structure and initiative-based banking system" (Economic Bulletin, 2009, p. 130). Kalluci, (2009) states that: "The banking system is the most important element of the Albanian financial system, whose assets account for 97 per cent of the financial system assets" (p. 90).

From being hardly inexistent, the bank activities have been growing in Albania. One of the main activities is bank lending which has been growing as a percentage of GDP and total assets. According to Odekun (1989), the ratio of domestic credit to income can be used as one of the measure of financial development. According to the Economic Bulletin of Bank of Albania (BOA), this ratio has experienced a growth from 5.7 percent of GDP during 1994-1996 to 6 percent of GDP by the end of 2007. But, it is thought that the private sector credit ratio is a more direct measure of financial intermediation. "It is assumed that credit provided to the private sector generates increases in investment and productivity to a much larger extent than do credit to the public sector" (Economic Bulletin, 2009, p. 128). So, in the case of Albania, this ratio was about 3.5 percent of GDP during 1994-2001. It increased to 14 percent during 2002-2007. By the end of 2007, it reached its highest values with 27 percent of GDP.

The graph below represents the net external debt of the Albanian government during 1996 to 2007 (IMF country report, 2007). According to this graph, the external debt has followed a decreasing trend, most of which goes to the public sector rather than the private one.

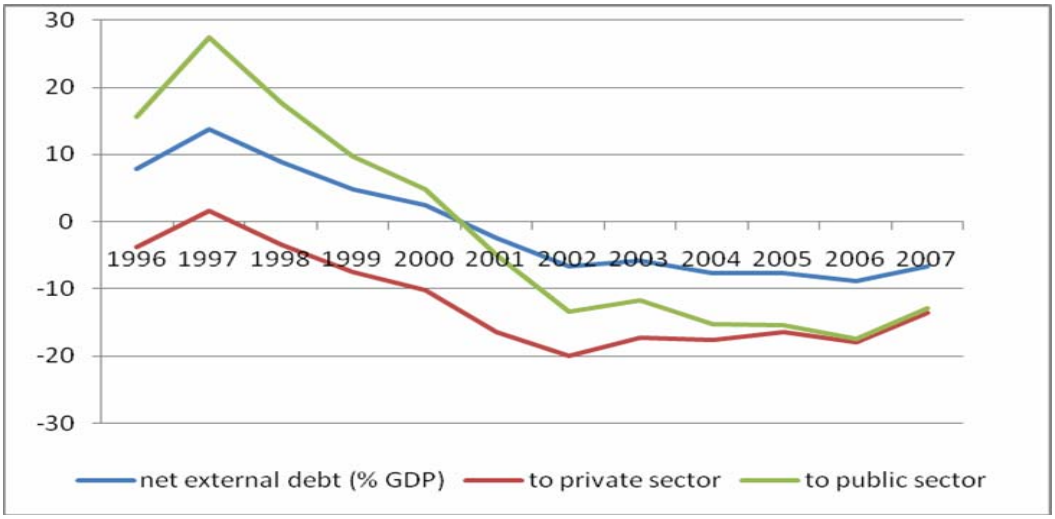

Figure 9: Albanian net external debt
Source: IMF (2007)

The current account has always been in deficit since the beginning of 1990s, as stated by Tanku, Rucaj and Frasheri (2007). "… current account has varied frequently during the 1990s, which was a period of high and low deficits around 7.9 percent of GDP. During this period, current account deficit peaked to 15.7 percent in 1993 and 12.2 percent in 1997. However they reversed respectively to 4.1 percent of GDP between 1994 and 1995 and 5 percent in 1998. During 2000s the level of current account deficit has always been above the threshold of 5% of GDP. Along this period, current account deficit ranged between 6 and 10 per cent of GDP, reaching the maximum level in 2002" (Tanku, Rucaj, and Frasheri, 2007, p. 9). The deficit continued after 2003 as well according to IMF estimates (2007).

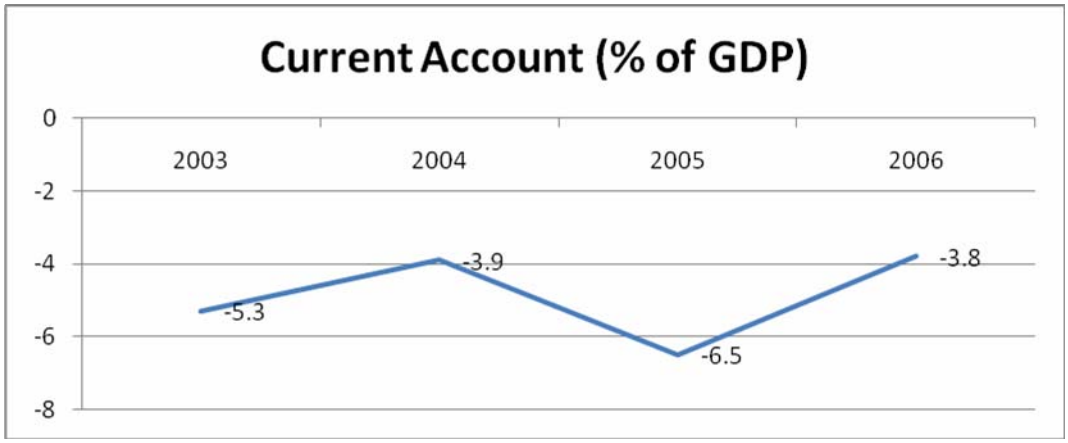

Figure 10: Current Account (% GDP)
Source: IMF (2007)

Albania has been characterized by a stable and moderately decreasing unemployment rate through the years 2000-2006.

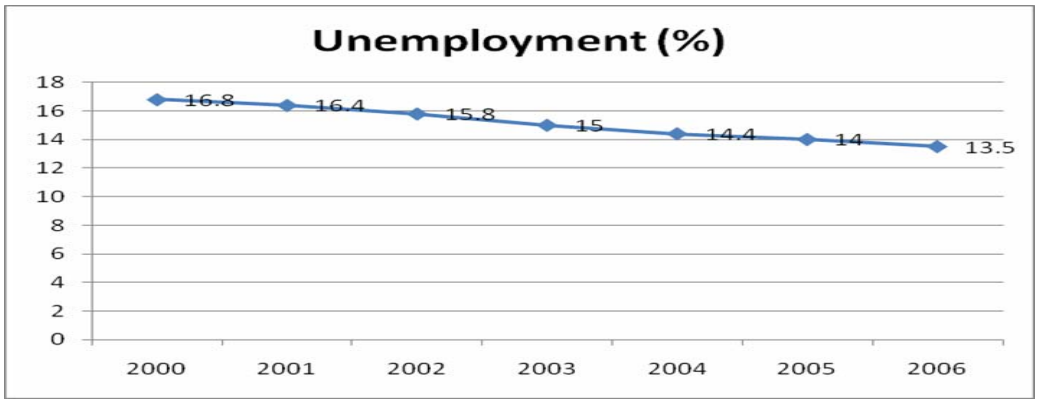

Figure 11: Unemployment (%)
Source: ANIH (2005)

"Albania obtained its first ever credit ratings from Moody's. The rating for government debt obligations was B1, which is four steps below investment grade rating, reflecting the economy's continued transition**.** This is a huge step toward entering financial markets and Eurobond perspective for Albania, at the same time it shows that the macroeconomic picture and debt sustainability are in favorable conditions" (IMF Country Report, 2007, p. 75).

3.2 Romania

After Communism, the transition towards a free market economy started in Romania in 1989. The year 1989, known also as the fall of the Iron Curtain, was characterized by an obsolete industry base in the country, and output not fitting to the needs of the society.

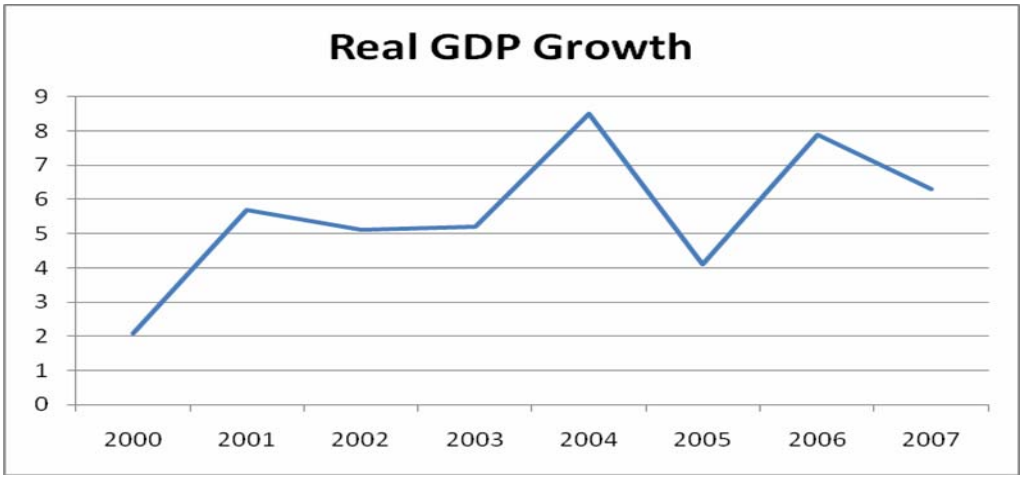

Figure 12: Real GDP Growth
Source: Romanian authorities, and Fund staff estimates (2007)

According to IMF (2007), Romania stands at a historical point, as it accessed the European Union on January 1, 2007. This represents a significant achievement for the country. Businesses in Romania now struggle to maintain competitiveness in the EU market. Romania was one of the fastest growing states of the European Union. For this reason, it has been called the "Tiger of the Eastern Europe". According to statistics in the European Economic Forecast (2010), it had an average annual GDP of 6.8percent between 2004 and 2008.

Inflation has remained relatively flat, at 4.5 percent, and it has benefited from favorable agricultural prices and currency appreciation (IMF, 2007). Tudor (2010) states that Romania continues to be a market leader in construction, retail, food and

beverage production, advertising and agriculture. The structure of the economy is as given in figure 13:

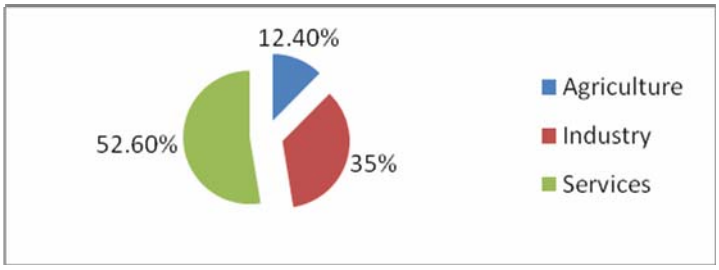

Figure 13: Structure of the economy
Source: Romanian authorities (2010)

There has been a strong credit growth associated with increasing domestic demand. "The real domestic credit grew by 66 percent in 2006" (IMF, 2007, p. 8). This credit growth has paralleled an increasing current account deficit (as shown in Figure 13). However the overall balance of payments remains still strong by 2006 (IMF, 2007).

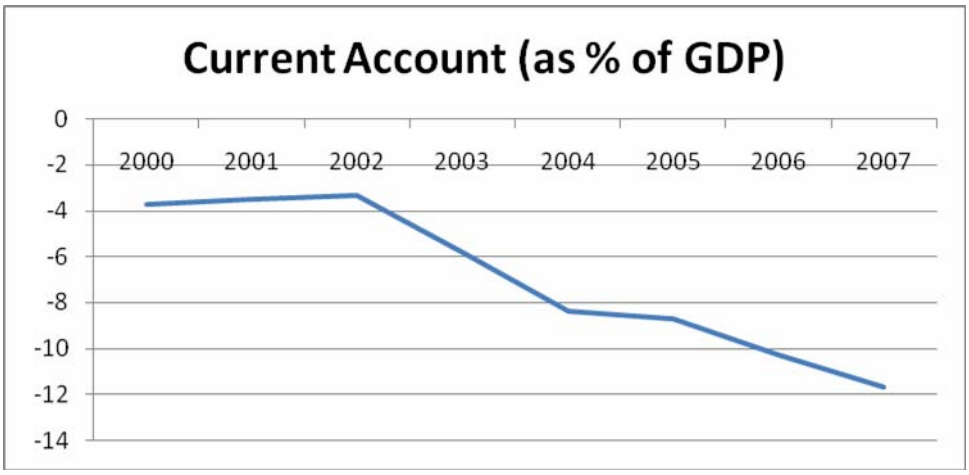

Figure 14: Current Account (% GDP)
Source: Romanian authorities, and Fund staff estimates (2007)

Exports have been increasing continuously since 2003. In addition, because of the accession to the EU, trade has been driven by the easing of trade barriers and the financial support coming from EU.

Moreover, Romania has been assisted by the IMF in achieving macroeconomic stability. The main vehicle of their relationship has been the Stand-by Arrangement (SBA) during October 31, 2001 to October 15, 2003, and a precautionary SBA which ended in June 2006. The World Bank as well has been supporting Romania in different issues such as: poverty reduction measures, restructuring for EU integration, institution building and governance, and private sector development (IMF, 2007).

FDI flows are an important income source for Romania, covering 90 percent of the account deficit in 2006 according to IMF (2007) data. The same data also show that external debt has been low (as shown in figure 16).

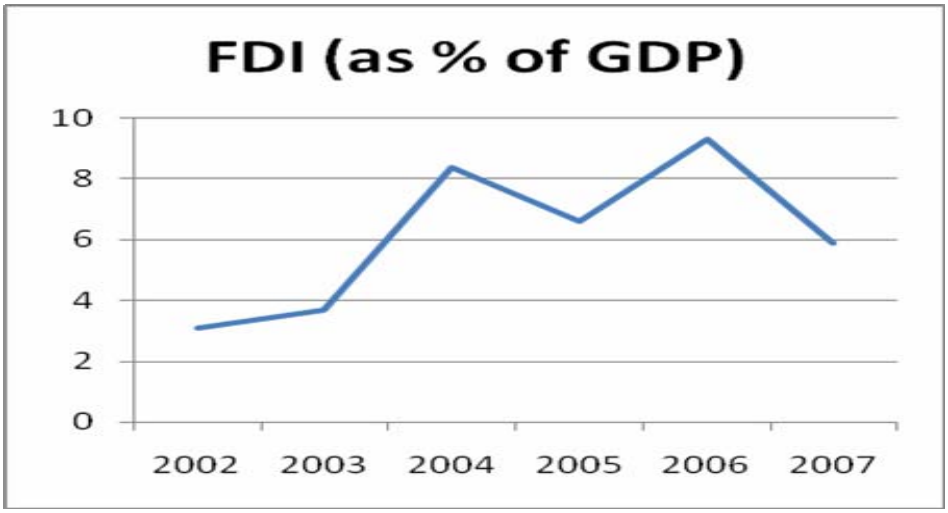

Figure 15: FDI (%GDP)
Source: Romanian authorities, and Fund staff estimates (2007)

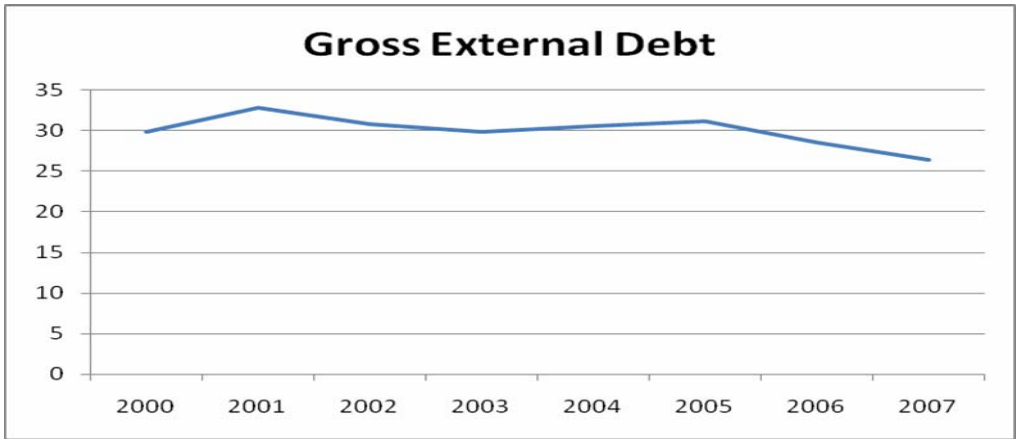

Figure 16: Gross External Debt
Source: Romanian authorities, and Fund staff estimates (2007)

The decrease in public debt shown in figure 17, demonstrates that Romania has been relying less in debt during the recent years.

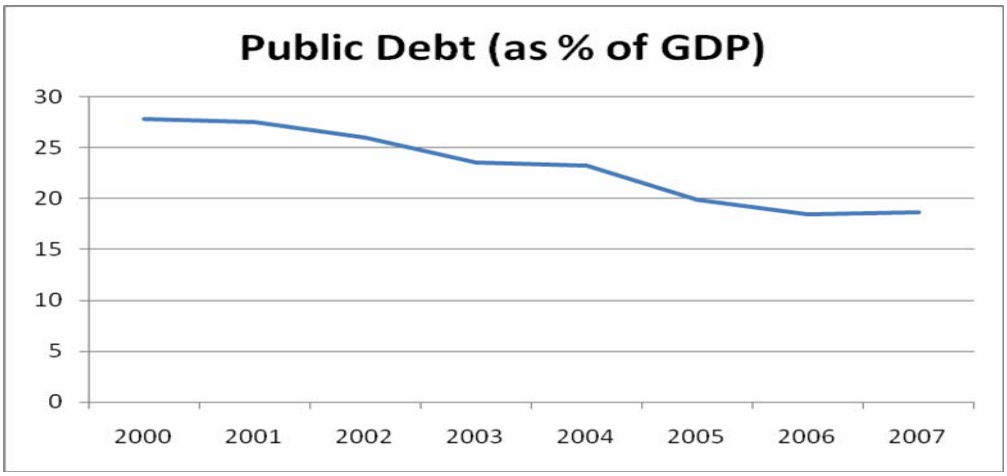

Figure 17: Public Debt (%GDP)
Source: Romanian authorities (2007)

Unemployment rate has been decreasing during 2002-2007.

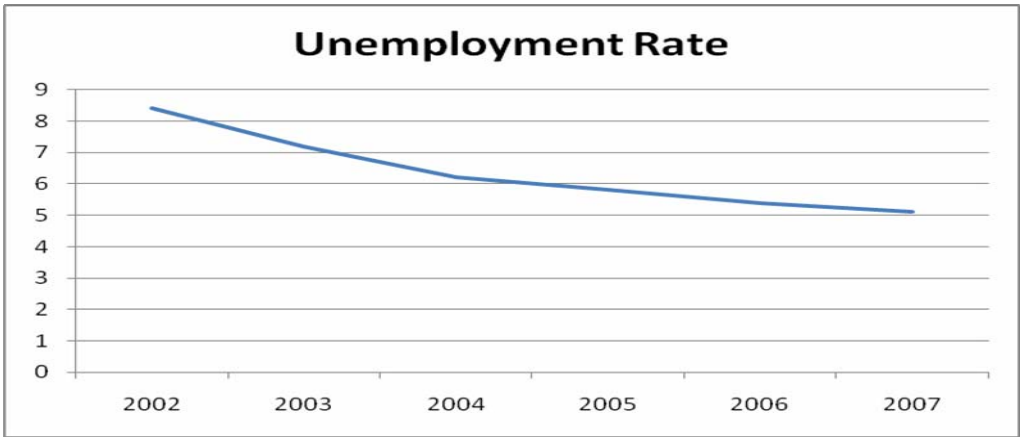

Figure 18: Unemployment Rate
Source: Romanian authorities (2007)

According to the Romanian Commercial Bank, remittances to Romania come mainly from migrants in Spain and Italy. By 2007, remittances have increased more because of labor migration after the accession to the EU. This has caused a drop in the FDI flows during 2007.

3.3 Bulgaria

Bulgaria has an open free market economy, with a large private sector. The World Bank classifies Bulgaria as an upper middle income economy. Steady growth has been observed in the recent years. However, Bulgaria still remains one of the least developed countries of Europe. Like Romania, Bulgaria was a Communist country and it joined the EU on January 1, 2007.

According to the CIA World Factbook, Bulgaria's average GDP growth from 2004 to 2008 was 6 %. This growth has been helped mainly by Foreign Direct Investment. The composition of GDP by sectors is as given in figure 19:

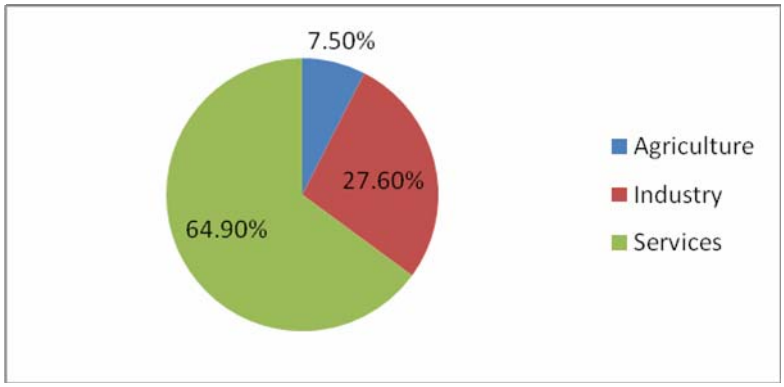

Figure 19: Structure of the economy
Source: CIA World Factbook (2009)

Mazurek (2008) points out that the Bulgarian economy has been growing steadily since 2000, and the GDP has been stable during 2000-2007 at a rate of 4 to percent. High growth of GDP has contributed to the budget surplus and the reduction of public debt. But, inflation remains an unsolved problem in Bulgaria. So does current account balance. However, Mazurek (2008) says that Bulgaria is attracting high volumes of FDI, which compensate for the negative CA balance. According to BICA (2008), most of the FDI flows went to investments in real estate, financial services and trade.

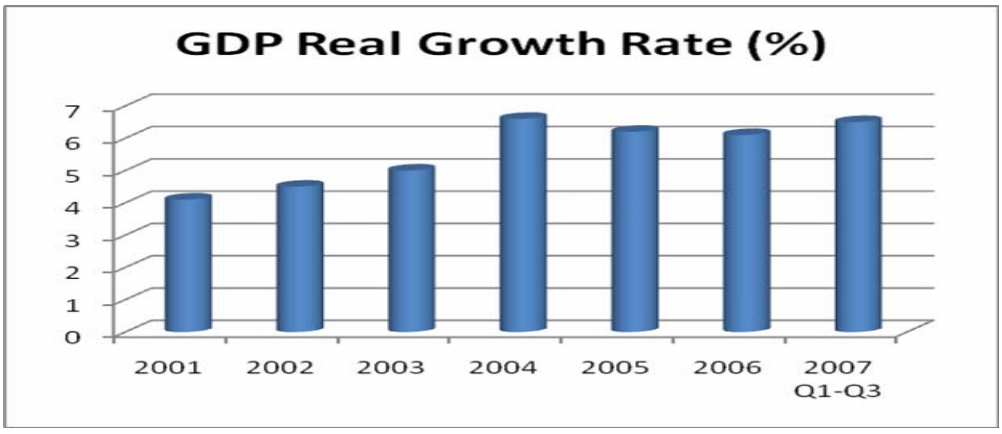

Figure 20: GDP Real Growth Rate
Source: BNB, Intelace Research (2008)

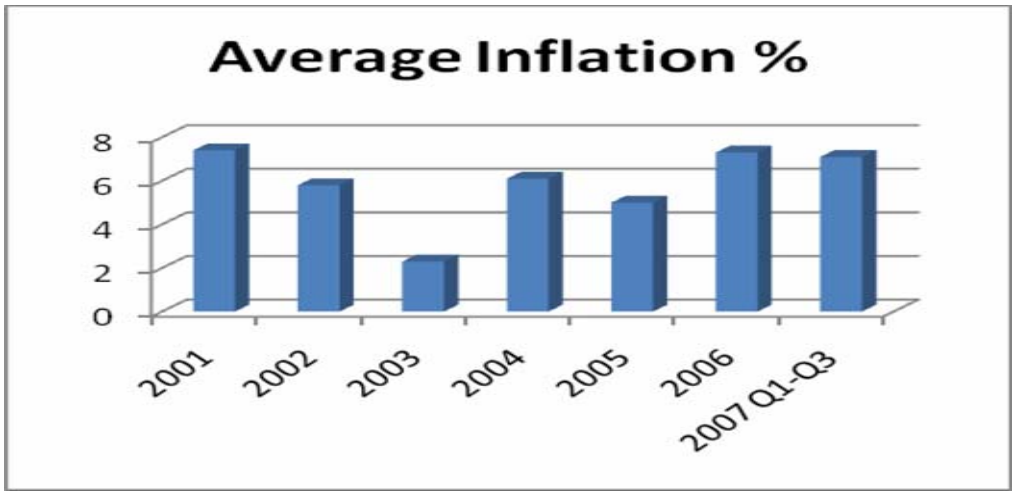

Figure 21: Average inflation (%)
Source: BNB, Intelace Research (2008)

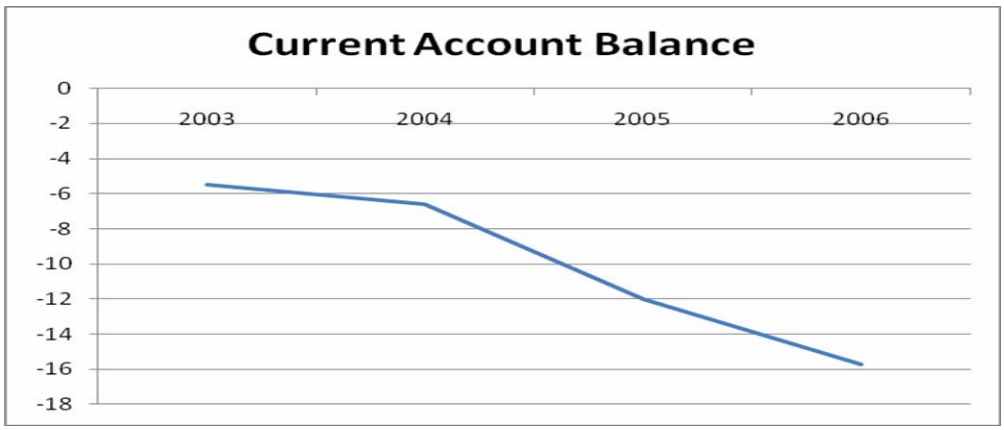

Figure 22: Current Account Balance
Source: BNB and IMF INS (2007)

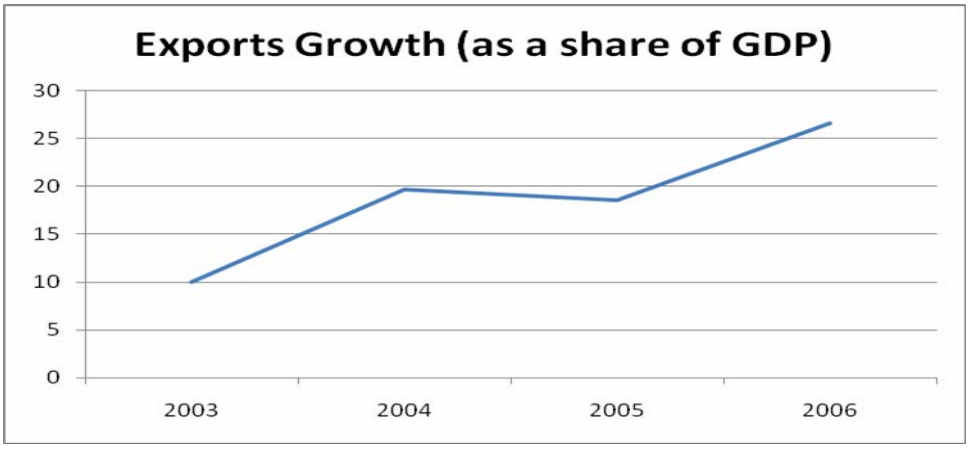

Figure 23: Exports Growth
Source: BNB, and IMF INS (2007)

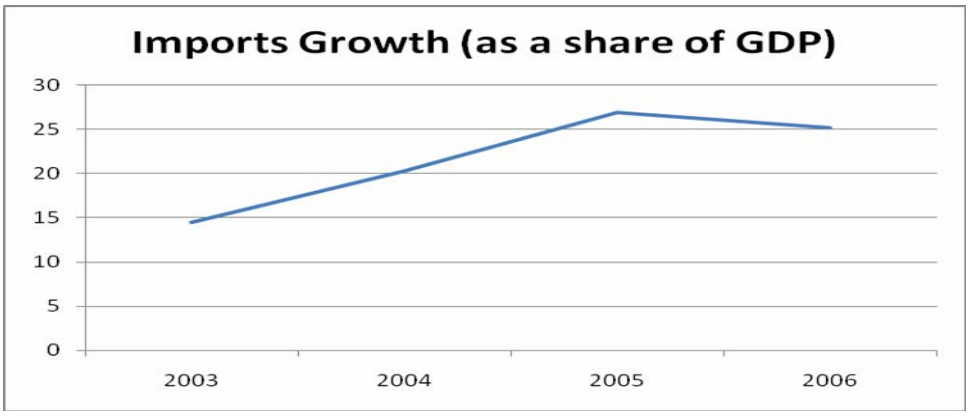

Figure 24: Imports Growth
Source: BNB, and IMF INS (2007)

According to Mazurek (2008), the fiscal policy has been recently eased, by means of a low corporate tax of 10% (in order to make the country more competitive and an attractive place for investment) and a personal income tax flat rate of 10%.

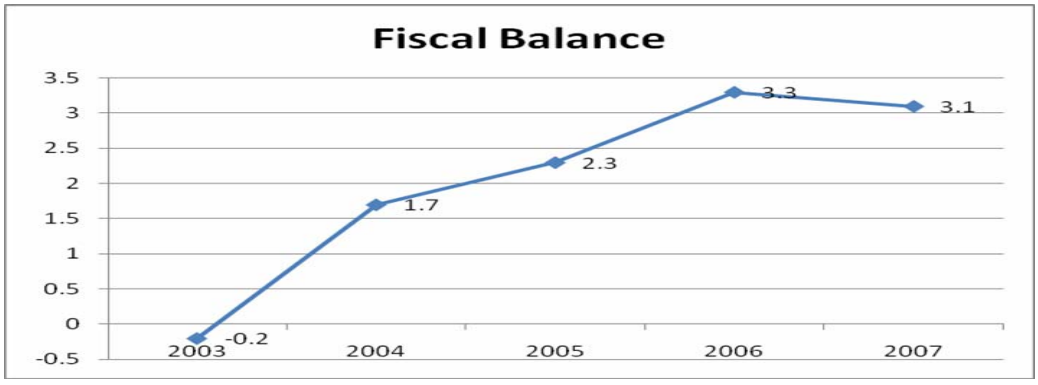

Figure 25: Fiscal Balance
Source: Ministry of Finance, EC, and Fund staff estimates (2007)

Mazurek (2008) states that the banking market has been developing quickly since 2001, with the annual assets growth rate exceeding 28%. “Moreover since 2004 a surge in both: retail and corporate volumes could be observed. Already in 2005 the Central Bank has addressed acceleration in lending with introduction of penalties on excessive credit growth. Applied measures proved to be successful and contributed

to moderating of lending growth. As a side-effect the unsatisfied demand for loans (especially in corporate sector) moved to other financing forms as: leasing, corporate bonds or equity markets" (Mazurek, 2008, p. 5).

Employment has been another concern in Bulgaria. Mainly the construction sector has helped the country to decrease its unemployment rate during the last years. From 2003 to 2006, unemployment showed a sharp drop from 18% to approximately 7%, according to BICA (2008).

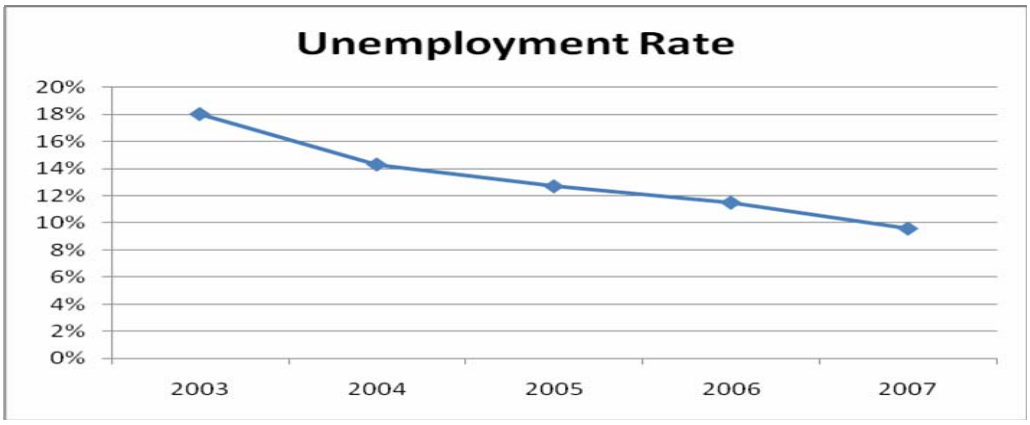

Figure 26: Unemployment Rate
Source: CIA World Factbook

Remittances are not a very important income source to Bulgaria because surveys have shown that 80 percent of Bulgarian migrants do not send remittances back to their home country.

3.4 Croatia

Croatia was one of the wealthiest state of the Yugoslav republics, but it suffered badly during the 1991-1995 war. According to CIA World Factbook, the economic situation of Croatia started improving between 2000 and 2007, characterized by a steady GDP growth between 4 percent and 6 percent. During the same period, inflation as well has remained steady.

"The growth performance was primarily domestic-demand driven, fuelled by large capital inflows and strong credit growth. This was accompanied by a marked expansion of non-tradable industries, such as retail, construction and the financial sector" (European Economic Forecast, 2010, p. 152).

However, CIA states that some problems are still persistent in the Croatian economy. These are the growing trade deficit, high unemployment rate and uneven regional development. The sectors of the economy are represented by the following shares:

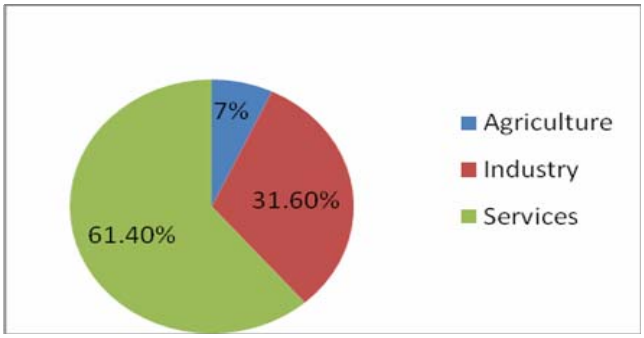

Figure 27: Structure of the Economy
Source: CIA World Factbook (2009)

According to the World Bank (2006) classification, Croatia is an upper-middle income economy, which has benefited a lot after the industrialization process.

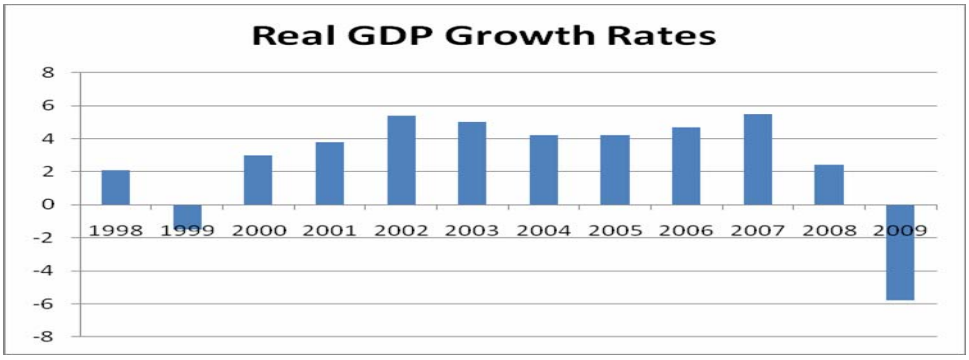

Figure 28: Real GDP growth rate
Source: CBS (2007)

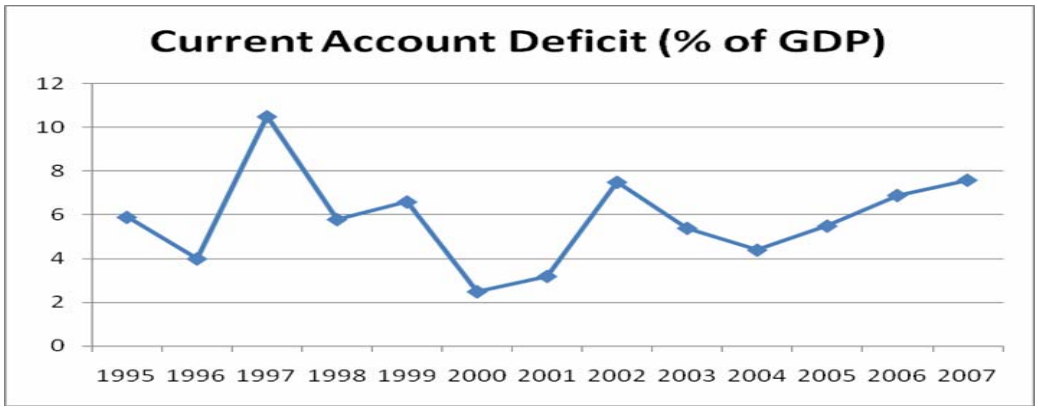

Figure 29: Current Account Deficit (% GDP)
Source: CNB (2007)

According to Croatia National Bank, FDI are concentrated in banking sector, manufacturing, telecommunication and transports, wholesale and retail, real estate and tourism. Croatia has the fifth largest FDI stock and the fifth largest FDI per capita EUR (2,970) between the new members of EU and other South Eastern European countries. Over 60% of FDI in years 1993-2005 was in the form of equity investment. The unemployment rate shows has been high. It decreased in 2005, but increased again in the next years.

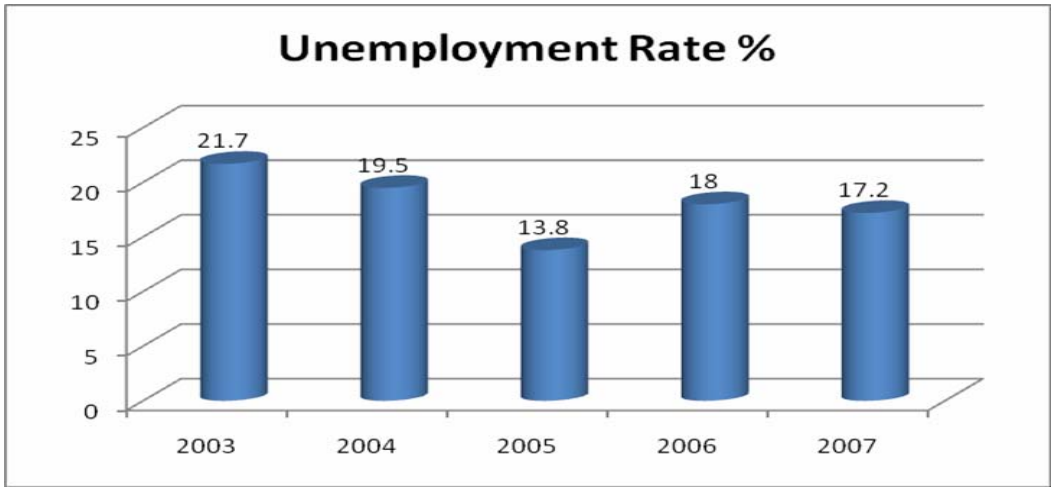

Figure 30: Unemployment Rate
Source: Indexmundi (2010)

About 2 and a half million Croats live abroad. Therefore, inflows of remittances are significant for the Croatian Economy. According to Poprzenovic (2007), the remittances in Croatia have on average been 3.1 percent of GDP during 1997 – 2005. This percentage is higher than the average, which stands at 1 percent for most countries. This is due to the fact that Croatia is a small economy and has a large remitting diaspora. "Examining remittance flows for the period 1997-2005, Croatia has experienced a stable inflow increasing for every year. From the beginning to the end of the period, remittances have doubled. The only exception is in year 1999 when Croatia experienced a decrease in remittances from the previous period. This is probably due to the banking crisis and recession in 1998, which lasted until the end of 1999. For the period 1999-2002, Croatia experienced its fastest rise in remittances. The reason is probably the economic recovery. From 2002, remittances slowed down remarkably compared to the previous up rise but the inflows are still increasing." (Poprzenovic, 2007, p. 24)

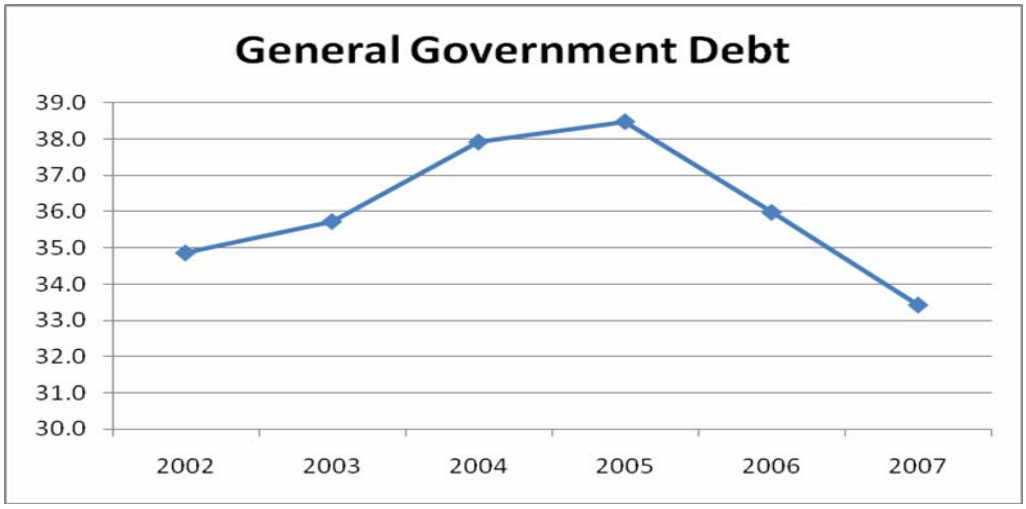

Figure 31: Government Debt
Source: Ministry of Finance (MoF), Croatia (2007)

According to data from the Ministry of Finance in Croatia, the government debt has been increasing from 2002 to 2005. This trend reversed after 2005, by decreasing in the following next two years.

Chapter 4

DATA AND METHODOLOGY

4.1 The Model

The main focus of this research is not to identify the sources of growth but to determine the importance and degree of the impact of the variables on growth in the four countries of Southeastern Europe.

The study develops the following model:

$$GDP = f(FDI, X, OPN, PI, REM, CR)$$

where GDP is the dependent variable that measures the economic growth. According to the model above, GDP is a function of foreign direct investment (FDI), exports (X), openness (OPN), portfolio investment (PI), remittances (REM) and credit (CR).

This model will be used for the four countries of the sample: Albania, Bulgaria, Croatia and Romania. Thus, the thesis will try to see how the variables have affected the economic growth (GDP) in the four countries. In other words, the model will try to measure the significance of each variable on the growth and the impact of the global crisis.

4.2 Data

Contessi (2008) states that GDP is the total market value of the newly produced goods and services in a given period in a country. GDP is divided into four main components: private business and residential investment, consumption expenditure,

government consumption expenditures and investment, and net exports. So, each of these components contributes to the GDP growth. Contessi (2008) shows that in the second quarter of 2008, a large increase in exports in USA and a large decrease in imports more than contributed to GDP growth. Another such instance in USA was observed in the second and third quarters of 1980, when GDP grew by 4.1 and 3 percent respectively because of the contributions of net exports.

FDI is an important variable as it is considered as one indicator that promotes growth and sustainable development. Despite some views which argue that FDI does not contribute much to the growth of the economy, there exist many studies that show evidence of a positive role of FDI in generating economic growth. Carkovic and Levine (2004) argue that FDI helps the transfer of technological advances and business practices, especially to poorer countries. However, it is assumed that foreign capital inflows produce their positive impact in some particular environments. For example, Borensztein, De Gregorio and Lee (1996) say that FDI' impact on the economy is positive when the country has a well educated workforce. According to Carkovic and Levine (2004), trade openness is an important factor in order to obtain the desired effects of FDI. Thus, there is a relationship between FDI and openness. According to Nowak-Lehman[10], economic theory usually supports the fact that trade liberalization has positive effects on economic growth. Nowak-Lehman state that trade liberalization has a positive effect on the level of income. The neoclassical growth theory confirms this view when applied to open economies. According to this

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http://www.google.com.tr/#hl=tr&q=Trade+policy+and+its+impact+on+economic+growth%3A+Can+openness+speed+up+output+growth%3F+Felicitas+Nowak-Lehmann+D.&aq=f&aqi=&aql=&oq=&gs_rfai=&fp=cc615f2b543a4620

theory, an increase in the savings rate because of openness leads to an increase in investment, which in turn will raise the level of per capita income and its growth rate.

Workers' remittances, which has been identified as another important variable that can indicate a transmission channel of the crisis is defined as: "… transfers from international migrants to family members in their country of origin" (Barajas, Chami, Fullenkamp, Gapen, Montiel, 2009, p. 3). " … [workers' remittances] represent one of the largest sources of financial flows to developing countries" (Barajas, Chami, Fullenkamp, Gapen, Montiel, 2009, p. 3).

According to the same authors, the average remittances to GDP ratio for all developing countries over the period 1995-2004 was 3.6 percent. However, 7 countries out of a sample of 60 countries reported a workers' remittances-to-GDP ratio of 15 percent during the same period.

Private credit, which is a source for investment, is another important indicator which affects GDP growth. Changes in the supply of credit, in terms of volume and in terms of credit standards applied on loans, have significant effect on real economic activity, as stated by Cappiello, Kadareja, Sorensen and Protopapa (2010). The authors reached this conclusion by studying the euro area, and the conclusion of the significant impact of credit on GDP was in contrast with the recent findings in USA. In their paper, Cappiello, Kadareja, Sorensen and Protopapa (2010) provide evidence that credit growth remains a significant determinant of changes in GDP growth even when its weight decreases. Moreover, they find out that changes in credit standards (such as tightening of credit) has a negative impact on real GDP growth. Foreign portfolio investment is another indicator of interest in this study. Foreign portfolio investment expands funds and financial sources of economies where capital is not

abundant. It also helps reduce the "crowding out" effect of governments as they will liberalize the movement of funds for the private sector.

According to Pal (2006), portfolio investment interacts with the economy via the stock market. "… increased inflow of foreign capital increases the allocative efficiency of capital in a country. According to this view, FPI, like FDI, can induce financial resources to flow from capital-abundant countries, where expected returns are low, to capital-scarce countries, where expected returns are high. The flow of resources into the capital-scarce countries reduces their cost of capital, increases investment, and raises output" (Pal, 2006, p. 3). Table 1 gives a summary of the variables to be used in the model. Time series quarterly data of these variables will be used for the period 1990-2009.

Table 1: Explanatory Variables and Data Sources

Variable	Data Source	Symbol
GDP	World Bank's World Development Indicators, BoA, CNB, NBR, IMF, EconomyWatch, HDR	GDP
FDI	World Bank's World Development Indicators, BoA, CNB, NBR, IMF, EconomyWatch, HDR	FDI
Exports	World Bank's World Development Indicators, BoA, CNB, NBR, IMF, EconomyWatch, HDR	X
Openness	World Bank's World Development Indicators, BoA, CNB, NBR, IMF, EconomyWatch, HDR	OPN
Portfolio Investment	World Bank's World Development Indicators, BoA, CNB, NBR, IMF, EconomyWatch, HDR	PI
Remittances	World Bank's World Development Indicators, BoA, CNB, NBR, IMF, EconomyWatch, HDR	REM
Credit	World Bank's World Development Indicators, BoA, CNB, NBR, IMF, EconomyWatch, HDR	CR

4.3 Methodology

The method of Least Squares, or the Ordinary Least Squares (OLS) is a major tool used in econometric analysis. OLS is a statistical technique that uses sample data in order to estimate the relationship between two variables (Hoyt, 2003).

However, in order to be able to carry out such an analysis, it is required that certain tests are done. The data has to be checked for its stationarity in some cases. Therefore, other techniques have been developed to eliminate the non-stationarity, autocorrelation and other problems that impede the authenticity of econometric analysis. In contemporary econometrics, two steps are followed: first, unit root test is used to check if the data is stationary or not, next, cointegration test is conducted.

4.3.1 Unit Root Test

For a series to be stationary, it should have a constant mean, constant variance and constant covariance for each lag. A popular test of stationarity is the unit root test. Many unit roots test are available. In this study, the augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) unit root tests in Eviews software will be used.

In the following model:

$$Y = \beta_0 + \beta_1(X) + \varepsilon_t$$

if Y and X variables are stationary, then they are denoted by I(0) and it is accepted that these variables naturally cointegrated. According to Gujarati (2003): "Economically speaking, two variables will be cointegrated if they have a long-term, or equilibrium, relationship between them" (p. 822).

Gujarati (2003) explains that if the variables are not stationary, then the first difference of the times series is taken in order to make them stationary. This will be

denoted by I(1), which means that the time series is integrated of order 1. If the time series are still non stationary and their differences have to be taken for the second time to make them stationary, then an integrated of order 2, I(2), time series is obtained. In other words, if a time series has to be differenced *d* times until it becomes stationary, then it is called as integrated of order *d.*

According to Gujarati (2003), most economic time series are integrated of order 1, I(1), which means that they become stationary after their first difference has been taken. The Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP)[11] Unit Root Tests are used in this study in order to test for stationary property of the variables (Dickey and Fuller 1981; Phillips and Perron 1988). The PP procedures compute a residual variance and are robust to auto-correlation, and are applied to test for unit roots as an alternative to ADF unit root test (Katircioglu, 2009).

As also suggested by Enders (1995), it is better starting unit root tests from the most general (including intercept and trend) to the most restricted one (without intercept and trend). The most general model is given below:

$$\Delta y_t = a_0 + \gamma y_{t-1} + a_2 t + \sum_{i=2}^{p} \beta_j \Delta y_{t-i-1} + \in_t$$

where y is the variables under consideration; t is time (trend factor); a is constant term (drift); ε_t represents Gaussian white noise and p represents the lag order. The number of lags "p" in the dependent variable can be chosen by the Akaike Information Criteria (AIC) or some others (See Enders, 1995) to ensure that the errors are white noise (Katircioglu, 2009). However, Pindyck and Rubinfeld (1991)

[11] PP approach also allows for the presence of unknown forms of autocorrelation with a structural break in the time series and conditional heteroscedasticity in the error term.

point out that it is better to run the tests for a few different lag structures and make sure that the results were not sensitive to the choice of lag length. Thus, the comments of Pindyck and Rubinfeld (1991) will be taken into consideration in the present study.

4.3.2 Cointegration

If variables are integrated of the same order (I (1) or I (2)), then, in the next step, cointegration test is done, i.e. that is the test for the long-run relationship between variables. Johansen approach (Johansen, 1990; Johansen and Juselius, 1991) is a popular cointegration technique that must be used in order to identify the long-run relationship between variables (See Enders, 1995)[12]. If there is no cointegration between variables, then results for the short-run only can be explained. If there is cointegration between variables, then the error correction mechanism (ECM) is incorporated.

4.3.3 Error Correction Mechanism

ECM was first used by Sargan and later popularized by Engle and Granger and it is used to correct for disequilibrium. "An important theorem, known as the Granger representation theorem, states that if two variables Y and X are cointegrated, then the relationship between the two can be expressed as ECM" (Gujarati, 2003, p. 825). This can be expressed as in the model below:

$$\Delta Y = \beta_0 + \beta_1(\Delta X) + \beta_2(u_{t-1}) + \varepsilon_t$$

Where Δ represents the first difference, ε_t is a random error term and u_{t-1} is the one-period lagged value of the error from the cointegrating regression. The ECM equation means that Y depends on X and the equilibrium error term. The coefficient β_2 represents the speed of adjustment between the long-run and the short-run values

[12] Please refer to Enders (1995) for the technical details and methodology about cointegration test using the Johansen Methodology.

of Y. According to Gujarati (1992), this is the reason why the error term is used: to reconciliate the short-run behavior of a variable with its long-run behavior. The higher the value of the coefficient $\beta_{2,}$ the better it is because it means that there is a high speed of adjustment.

The explanatory variables will enable the study to measure the significance of crisis transmission channels. Thus, for each country, whichever channel had relative significant effect on growth will be determined by the previously mentioned methodology and techniques. This is expected to help policy makers in the process of developing policies aiming at reducing the impact of the global crisis.

Chapter 5

THE IMPACT OF THE GLOBAL FINANCIAL CRISIS ON SEE: EMPIRICAL RESULTS

Based on the literature review and approaches explained in the previous chapter, the time series data is incorporated in the model and all the necessary tests are run in Eviews. The empirical results of the tests are presented in the next sections of this chapter.

5.1 Unit Root Tests

The first step of time series analysis is to test the unit root in order to indentify the nature of the variables in terms of stationarity. The two accepted popular methods of unit root testing are the Augmented-Dickey Fuller (ADF) and Phillips-Perron (PP) tests as stated and introduced in the previous chapter. The ADF and PP tests have been run for the sample of the four countries comprised in the study (Albania, Bulgaria, Croatia, and Romania). Tables 4-7 (see appendices A-D) show the results of the two tests which have been performed at the levels and at the first differences of the variables under consideration.

Portfolio investment has been eliminated from the model because of its negative values in most of the years for the four countries, since it is not possible to convert

the negative values into logarithmic form. As it can be seen from table 4[13], in the case of Albania, GDP, exports, FDI, credit and remittances become stationary at their first differences. Thus, these variables are integrated of order one, and they are denoted by I(1). But, openness becomes stationary at level, which means it is I(0). Because the other variables are all I(1) and openness is I(0), it is eliminated from further analyses. The models have to be carried out further without the openness variable because the variables need to be of the same order of stationary nature. So, it is not acceptable to use a stationary-at-level variable at the same time with the integrated-of-order-one variables.

In the case of Bulgaria, the results in table 5 show that all the variables are integrated of order one, I(1).[14] This means that they become stationary at their first differences. The same conclusion is obtained in the case of Croatia (see table 6, appendix C). All the variables become stationary at their first differences, which means that they are integrated of order one.

In the Romanian case, the variables are all integrated of order one, I(1), expect for openness. Openness becomes stationary at level, i.e. it is I(0). Thus, it has to be eliminated from further analyses as well (see table 7, appendix D).

5.2 Johansen Cointegration Test Results

If as a result of running unit root tests, series are I(0), then simple OLS regression could have been run as a long run estimation. But, the variables under consideration are mainly I(1), which means that the first difference of the time series has been taken. Because of taking their first differences, the long-run properties of series are

[13] See Appendix A.
[14] See Appendix B.

eliminated and they are due to the further cointegration tests. This is why Johansen Test is run in order to check for cointegration, i.e. to identify the long-run relationship between the variables present in the model.

Table 2 shows that in the case of the four countries, trace statistics are greater than the critical values at 5 percent and 1 percent. So, in those four cases the null hypothesis ($r = 0$) is rejected. The null Hypothesis (H_0) indicates no cointegrating vector (long run relationship) in the selected model, whereas alternative hypothesis (H_1) indicates the presence of at least one cointegrating vector (long-run relationship), that is ($r \geq 1$).

The rejection of H_0 proves the presence of cointegration, i.e. there exists a long-run relationship between real income and its determinants in the case of the four countries in the sample.

Table 2: Co-integration Tests using the Johansen (1988) and Johansen and Juselius (1990) Approach

Variables	Trace Statistic	5% Critical Value	1% Critical Value
Albania			
Ln GDP= *f*(lnexport, lnFDI, lncredit,lnremit)			
(VAR lag = 1)			
H_0: r = 0**	76.31**	68.52	76.07
H_0: r ≤ 1*	48.35*	47.21	54.46
H_0: r ≤ 2	24.69	29.68	35.65
H_0: r ≤ 3	10.41	15.41	20.04
H_0: r ≤ 4	3.50	3.76	6.65
Bulgaria			
lnGDP=*f*(lnexport,lnFDI,lnopen,lncredit, lnremit)			
(VAR lag = 1)			
H_0: r = 0*	102.55*	94.15	103.18
H_0: r ≤ 1	51.25	68.12	76.07
H_0: r ≤ 2	32.34	47.21	54.46
H_0: r ≤ 3	15.95	29.68	35.65
H_0: r ≤ 4	6.62	15.41	20.04
H_0: r ≤ 5	0.99	3.76	6.65
Croatia			
Lngdp=*f*(lnexport,lnFDI,lnopen,lncredit, lnremit)			
(VAR lag = 2)			
H_0: r = 0**	132.78**	94.15	103.18
H_0: r ≤ 1	59.34	68.52	76.07
H_0: r ≤ 2	37.34	47.21	54.46
H_0: r ≤ 3	23.07	29.68	35.65
H_0: r ≤ 4	11.84	15.41	20.04
H_0: r ≤ 5	3.58	3.76	6.65
Romania			
Ln GDP= *f*(lnexport, lnFDI, lncredit,lnremit)			
(VAR lag = 1)			
H_0: r = 0*	68.76*	68.52	76.07
H_0: r ≤ 1	39.33	47.21	54.46
H_0: r ≤ 2	22.51	29.68	35.65
H_0: r ≤ 3	11.07	15.41	20.04
H_0: r ≤ 4	3.70	3.76	6.65

Notes: 1. r denotes the number of co-integrating vectors.
2. Akaike Information Criterion (AIC) and Schwartz Criteria (SC) were used to select the number of lags required in the co-integration test. Both gave the same level of lag order.
3. *, **, and *** denote statistical significance at 1%, 5% and 10%, respectively.

5.3 Level Coefficients and Error Correction Technique

Once cointegrating relationship was obtained in the case of the four countries, the next step is to estimate level coefficients of variables with respect to real income growth in the long run. Furthermore, error correction terms will also be estimated from the vector error correction models.

Table 3, shows that in the case of Albania, the long-run coefficients for exports (1.06), FDI (-5.81) and credit (4.98) are statistically significant at 5%, 1% and 1%, respectively. The coefficients of exports and credit are positive, which means they have a direct relationship with GDP, whereas since FDI coefficient is negative, it proves an inverse relationship with GDP. On the other hand, remittances are not statistically significant, meaning that they do not affect the GDP of Albania. The error correction coefficient in Albania is 0.03. The error coefficient is negative (as it is expected) and it is significant at 5%. This coefficient shows the speed of adjustment between the long-run and the short-run values of real income. In other words, the discrepancy between the long-run and the short-run equilibrium values of real GDP is eliminated by 3% every quarter.

In Bulgaria, all the variables included in the model came out to be significant. Thus, exports (0.17), FDI (0.16), openness (-0.55), credit (0.16) and remittances (0.03) are significant at 10%, 1%, 1%, 1% and 1%, respectively. Exports, FDI, credit and remittances have positive coefficients, i.e. they positively affect the GDP. In contrast, there is an inverse relationship between openness and GDP in Bulgaria. The error coefficient is -0.44 and significant at 1%. This is a very high value, and actually it is the highest between the countries of the sample. Thus,

Bulgaria has the highest speed of adjustment between the long-run and short-run values of real GDP when compared to Albania, Croatia and Romania. So, the differences between the long-run and the short-run equilibrium values of GDP in Bulgaria are eliminated by 44% every quarter.

In Croatia, just exports and openness are significant. The coefficients, 0.93 (exports) and -1.53 (openness), are statistically significant at 1% for both variables. Exports have a positive relationship with GDP as the coefficient is positive, whereas openness has an inverse relationship with GDP since the coefficient is negative. The error correction coefficient is -0.08. It is significant at 5% and it shows that the difference between the long-run and the short-run equilibrium values of real GDP is eliminated by 8% every quarter.

FDI, credit and remittances are three significant variables affecting the GDP in Romania. FDI (0.08), credit (0.34) and remittances (0.04) are all statistically significant at 1%. The coefficients are all positive, showing that the three variables have a positive relationship with GDP. The coefficient of exports is not statistically significant, which means that exports do not affect the GDP of Romania. The error correction coefficient (-0.32) is significant at 10%. This shows that the speed of adjustment between the long-run and the short-run values of GDP is 32% every quarter.

Table 3: Level Coefficients and ECT in ECM Models

Variables	Level Coefficient	ECT (t-stat)
Albania		
Ln GDP=β_0+ β_1(lnexport)+ β_2(lnFDI)+ β_3(lncredit)+ β_4(lnremit)	Lag =3	
lnExport	1.06 (2.24**)	-0.03 (-2.25**)
lnFDI	-1.54 (-5.81*)	
lnCredit	1.89 (4.98*)	
lnRemit	-0.63 (-1.11)	
Bulgaria		
Ln GDP=β_0+ β_1(lnexport)+ β_2(lnFDI)+ β_3(lnopen)+ β_4(lncredit)+ β_5(lnremit)	Lag = 1	
lnExport	0.17 (1.79***)	-0.44 (-4.34*)
lnFDI	0.16 (8.28*)	
lnopen	-0.55 (-6.14*)	
lnCredit	0.16 (6.98*)	
lnRemit	0.03 (3.03*)	
Croatia		
Ln GDP=β_0+ β_1(lnexport)+ β_2(lnFDI)+ β_3(lnopen)+ β_4(lncredit)+ β_5(lnremit)	Lag = 1	
lnExport	0.93 (5.04*)	-0.08 (-2.29**)
lnFDI	0.02 (0.52)	
lnopen	-1.53 (-7.52*)	
lnCredit	0.009 (0.12)	
lnRemit	-0.01 (-0.10)	
Romania		
Ln GDP=β_0+ β_1(lnexport)+ β_2(lnFDI)+ β_3(lncredit)+ β_4(lnremit)	Lag = 5	
lnExport	-0.01 (-0.13)	-0.32 (-1.84***)
lnFDI	0.08 (5.03*)	
lnCredit	0.34 (18.64*)	
lnRemit	0.04 (2.86*)	

Notes: Since intercepts are also estimated in EVIEWS, they are not presented here due the fact that they are not the main focus in the models and significance tests are not available in the software program.
*, ** and *** represent the statistical significance at 1%, 5% and 10 % respectively

5.4 Empirical Results

Exports showed a positive relationship with GDP in the case of Albania, Bulgaria and Croatia. As we can see in figure 32, there has been a sharp decrease in exports in Albania and Croatia during the years of the crisis, and a slight decrease in Bulgaria. This means that the GDP has been affected as well, i.e. decreased, in these countries in the last years. The same result is found by Sanfey (2010) who showed that exports have dropped during the global crisis in the SEE region. Sanfey (2010) explains that many countries in the region have developed a specialization in the certain industries, such as tourism in Croatia and Bulgaria, and the car industry through the Dacia plant in Romania. According to Sanfey (2010), these industries have been hit hard by the global recession, thus causing exports to perform badly which in turn negatively effects the growth in Albania, Bulgaria and Croatia. As a result, exports are an important crisis transmission channel in the sample countries, except for Romania, where exports were insignificant in relation to GDP. Data in figure 32 also shows that exports in Romania decreased slightly during 2008-2009. As we see, more research should be done on policies regarding exports in order to reduce their negative impact in cases of crises. Diversification of exports is one measure that can be taken in this regard.

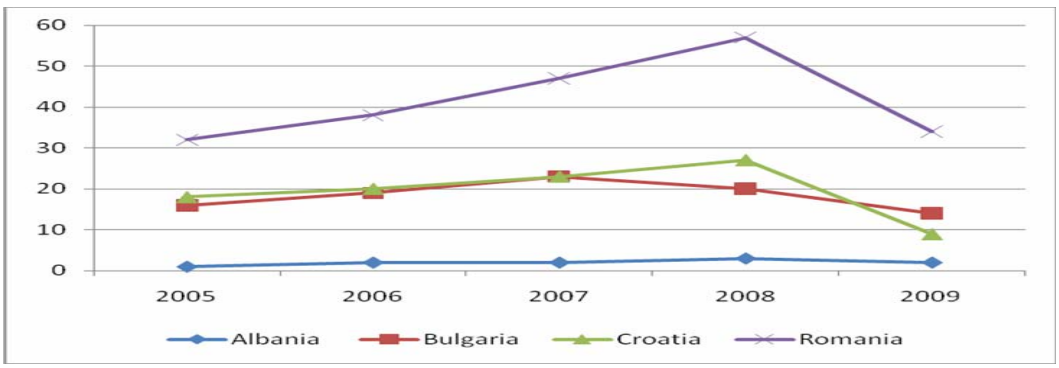

Figure 32: Exports (billion US$ real prices)
Source: WDI, BoA, BNB, CNB, NBR (2008)

Figure 33 shows a sharp decrease of FDI during the crisis years in Romania, Croatia and Bulgaria. Whereas, in Albania FDI has followed a stable path. The results of the econometric analysis in this study showed that FDI has a positive effect in Bulgaria and Romania. So, the sharp decrease in FDI has led to a negative growth in the two countries, making FDI an important channel of the transmission of the crisis. This is consistent with Sanfey (2010) who shows that there has been a steep drop of FDI flows in the SEE, except Albania. In addition, the positive relationship between GDP and FDI is consistent with Seetanah and Khadaroo[15], who say that FDI may have a positive effect on economic growth, leading to an enlarged market size, which attracts even more FDI flows. Moreover, a Deutsche Bank Research (2005) states that research has confirmed that FDI has been the engine of growth of CEE and SEE countries in the last 10 years.

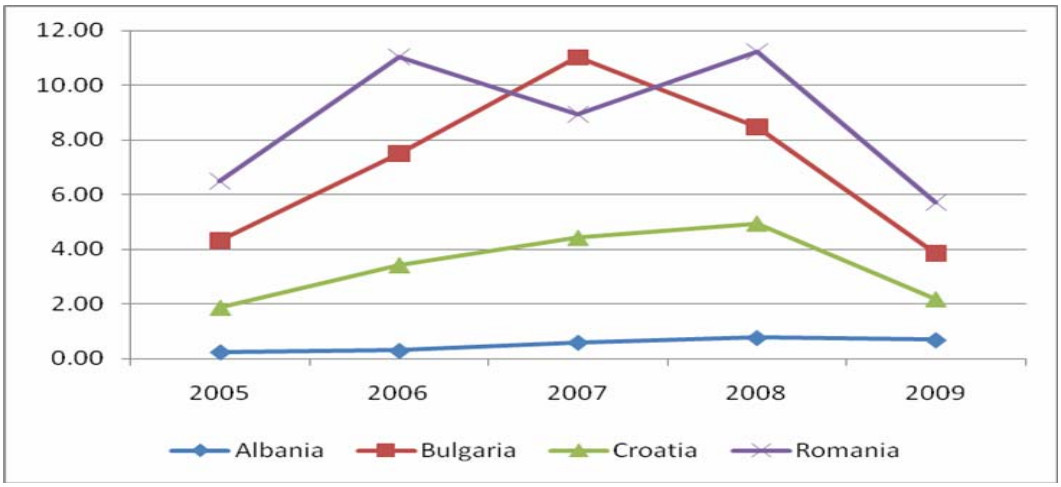

Figure 33: FDI (billion US$ real prices)
Source: WDI, BoA, BNB, CNB, NBR (2008)

[15] http://-www.google.com.tr/#hl=tr&q=Foreign+Direct+Investment+And+Growth%3A+New+Evidences+from+Sub-+Saharan+African+countries+B+Seetanah+A+J+Khadaroo++&aq=f&aqi=&aql=&oq=&gs_rfai=&fp=cc615f2b543a4620

In contrast to Bulgaria and Romania, analysis showed a negative relationship between FDI and growth in Albania. Such a negative relationship has been discussed by Lyroudi, Papanastasiou, and Vamvakidis (2004) who show that early studies claim that target countries of FDI receive very few benefits because most of the benefits are transferred to the multinational company's country. Furthermore, same authors argue that although FDI raises the level of investment and maybe its productivity too, as well as the consumption in the host country, the effect on growth is lowered because of price distortions and misallocation of resources. Moreover, FDI has a negative effect if it causes monopolization and under-utilization of labor. Demirel[16] mentions studies that have found a negative relationship between economic instability and FDI flows. Demirel states that this is the case in Albania, economic instability that leads to a negative relationship between FDI and GDP in the country. Economic instability is used in terms of unstable debt service, interest rates, high manager transfer frequency or operation risk indices. In addition, for example, according to Demirel, the domestic currency appreciation in Albania may deter FDI. "The Lek/US dollar parity decreases, from 121.9 in 2003 to 92.7 in 2007 (Central Intelligence Agency) which is the depreciation of inflowing capital in Albania" (Demirel, p. 34).

A main reason that might explain the resulting FDI significance on the Albanian growth is the limited share of FDI in the country. Compared to the other countries of the region, FDI composes a small percentage of GDP, averaging 3.26% for the

[16] http://-www.google.com.tr/#hl=tr&source=hp&q=NATIONAL+SWOT+ANALYSIS+OF+ALBANIA+FOR+FOREIGN+DIRECT+INVESTMENT+Onur+DEM%C4%B0REL%2C+TURKEY&aq=f&aqi=&aql=&oq=&gs_rfai=&fp=cc615f2b543a4620

period 1990-2009. Because of this, the statistical analysis produce a negative effect, meaning that FDI has not been able to produce a positive effect to Albania yet. This argument is consistent with the findings of Rusuhuzwa and Baricako (2009) regarding the economies of Rwanda and Burundi, which are also characterized by a limited share of FDI and an insignificant FDI impact on growth. Another argument is that foreign companies invest mainly in fields which have been already developed to some extent by the Albanian population. So, fields to which the Albanian citizens and government cannot contribute, still remain unexploited, causing a resource misallocation. So, instead of bringing something new to the country, which could increase FDI inflows, a crowding effect is produced. Big foreign companies substitute the local small and medium-sized companies. This might cause monopolization in some areas, for example in fields where advanced technology is required, and the country does not have the capacity to afford it, whereas the foreign company does. In addition, some foreign companies require a highly educated workforce. The country might lack such an educated workforce, resulting in the company bringing labor from its own country. This causes and under-capitalization of labor and again produces a negative effect of FDI. Croatia showed no significance of FDI on growth. According to Lyroudi, Papanastasiou, and Vamvakidis (2004), Croatia has not been able to attract FDI because of political instability and slow economic reform.

According to Sanfey (2010), banks and other financial institutions have been major drivers of economic growth and the SEE countries have been facing four or more years in a row of credit boom. According to the empirical results of this study, Albania, Bulgaria and Romania showed a positive relationship between credit and growth. This means that credit has affected GDP during the crisis years, however, it

has been a positive effect because as Sanfey (2010) states, year-on-year credit growth has been positive as of November 2009. Since credit has been proven to have a positive impact on growth, then the governments in these countries should introduce credit incentives during crises' periods in order to minimize the impacts of crises.

Remittances are an important variable in the region. However, they were statistically significant only for the case of Bulgaria and Romania. Figure 34 shows a decline in remittances in all the countries. The positive relationship that resulted in the analysis means that the decrease of remittances during the crisis period has led to a negative impact on growth in Bulgaria and Romania. In the case of Albania, remittances did not come out as significant. Even though remittances are important to the economy of Albania, they still constitute an average of 15 percent of GDP, which is smaller compared to the other two countries. This is why they do not appear as statistically significant, even though they positively affect the Albanian economy.

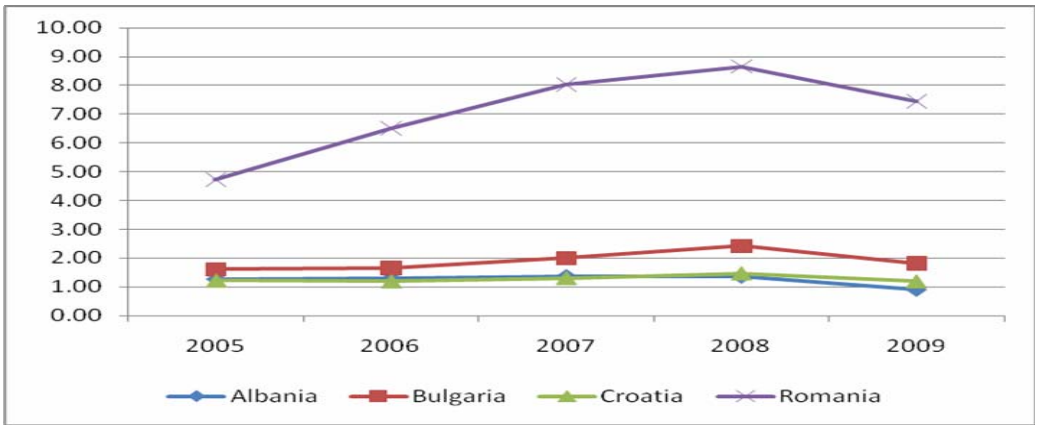

Figure 34: Remittances (billion US$ real prices)
Source: WDI, BoA, BNB, CNB, NBR (2008)

Openness does not seem to be an important transmission channel in Albania and Romania as it resulted to be statistically insignificant. However, it is significant on the growth of Bulgaria and Croatia. It has a negative impact on growth though. Thus,

this contradicts the economic theory that supports the fact that trade liberalization has positive effects on economic growth. (Nowak-Lehman). [17]

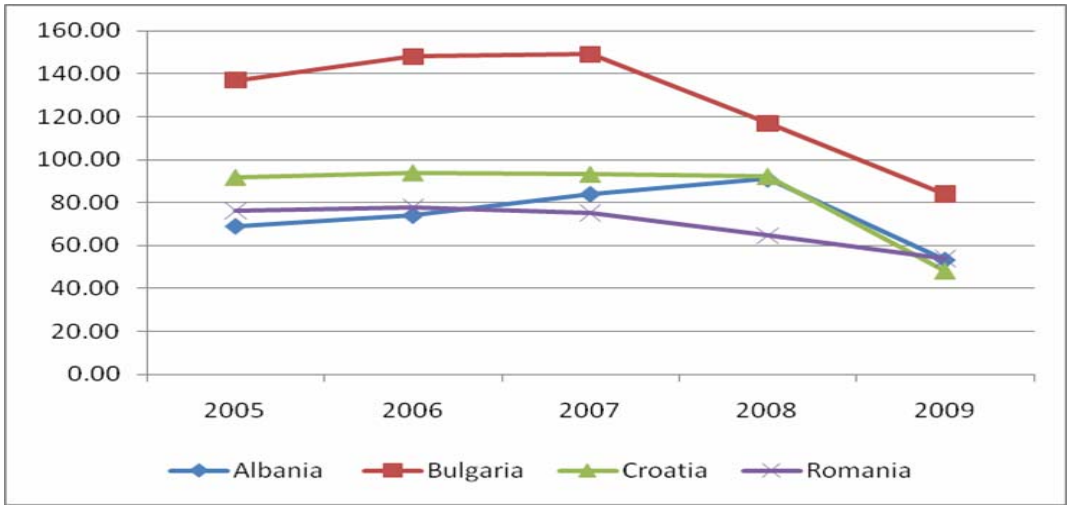

Figure 35: Openness (%GDP)
Source: WDI, BoA, BNB, CNB, NBR (2008)

However, openness has been decreasing after 2008 in Croatia, and after 2007 in Bulgaria. Since there is a negative relationship between openness and growth, this means that decrease in openness has produced a positive effect on growth.

17

http://ww.google.com.tr/#hl=tr&q=Trade+policy+and+its+impact+on+economic+growth%3A+Can+openness+speed+up+output+growth%3F+Felicitas+Nowak-Lehmann+D.&aq=f&aqi=&aql=&oq=&gs_rfai=&fp=cc615f2b543a4620

Chapter 6

CONCLUSION

The aim of this thesis was to investigate the impact of the global financial crisis on the economies of a sample of four countries from the Southeastern European region. The crisis started in the US housing and financial markets, but it was soon converted into a global one, hitting the four-fifths of humanity in developing countries (Watkins and Montjourides, 2009). According to the same authors, the global crisis caused the economic growth prospects to deteriorate day by day. And this slower growth was affected by different channels such as restricted trade opportunities, remittances, pressure on government budgets etc.

The thesis determined some main channels of transmission after research on different empirical studies and crises-related theoretical approaches. Then, these variables were incorporated into the growth regression model in order to measure their impact on growth. The aim of this study was not to identify the sources of growth but to determine the degree of significance of the variables on growth.

The empirical part of the thesis provided the results of the econometric analysis through Johansen Cointegration tests by using quarterly time series data from 1990 to 2009. The variables used were exports, credit, remittances, foreign direct investment, and openness. Foreign portfolio investment was identified as an

important variable as well, but it had to be omitted from the analysis because of its negative values for most of the years in all four countries.

The results suggested that exports have positive and statistically significant impact on growth in Albania, Bulgaria and Croatia. This means that exports are an important crisis transmission channel and governments should be cautious in this regard during crises' periods. Diversification of exports is one type of policy that can be considered. It is important to not be concentrated in one field only. Credit as well resulted in positive relationship and statistically significant impact on the growth of Albania, Bulgaria and Romania. So, credit is another channel of transmission for these countries in case of crisis. Thus, the governments of these countries should introduce credit incentives so that the economy continues to be funded and the impact of the crisis minimizes.

Openness is significant in Bulgaria and Croatia only, and it has a negative relationship with growth. This contradicts the economic theory that supports the fact that trade liberalization has positive effects on economic growth (Nowak-Lehman). Remittances resulted in a positive relationship and significant impact on growth in Bulgaria and Romania.

FDI is significant for the growth of Bulgaria and Romania and it has a positive effect. So, during crises, the governments of these countries should offer incentives in order to attract foreign inflows. On the other hand, a significant but negative impact of FDI is observed in Albania. This might be explained in terms of instability of the economy of Albania, which causes the FDI inflows' impact to deter. Or another explanation for this is that according to Lyroudi, Papanastasiou, and

Vamvakidis (2004), target countries of FDI receive very few benefits because most of the benefits are transferred to the multinational company's country.

The study has confirmed that the global financial crisis has had different impacts on different economies. It is expected that this study will be useful for policy makers in the process of developing policies so as to minimize the impact of the global crisis on the sample of the SEE economies.

REFERENCES

Aiginger, K. (2009). The Current Economic Crisis: Causes, Cures and Consequences. WIFO *Working Papers*, No. 341, August, pp. 1-3.

Alagiah, M. (2009), Rwanda: Effects of Global Financial Crisis on Poor Countries. News extracted from http://allafrica.com/stories/200905140350.html in June 2nd, 2010.

Albania: Third Review Under the Three-year Arrangement Under the Poverty Reduction and Growth Facility, Review Under Extended Arrangement, and Financing Assurances Review – Staff Report; Staff Statement; Press Release on the Executive Board Discussion; and Statement by the Executive Director of Albania. (2007) IMF Country Report. No. 07/244.

Allen, F., Babus, A., & Carletti, E. (2009). Financial Crises: Theory and Evidence.

Bank for International Settlements (BIS), 2009, Macroeconomic (Im)Balances: Current Account and Capital Flows.

Barajas, A., Chami, R., Fullenkamp, C., Gapen, M., & Montiel, P. (2009). Do Workers' Remittances Promote Economic Growth? *Working Paper,* International Monetary Fund. WP/09/153, July.

Berkmen, P., Gelos, G., Rennhack, R., & Walsh, J. P. (2009). The Global Financial Crisis: Explaining Cross-Country Differences in the Output Impact. *IMF Working Paper*. December.

Bordo, M. (2003). Stock Market Crashes, Productivity Boom Busts and Recessions: Some Historical Evidence. *Background paper* for the chapter on asset price busts in the April 2003 *World Economic Outlook,* pp. 2-6.

Cali, Massa & te Velde, (2008b). See Background Paper on http://blogs/odi-.org.uk/blogs/main/archive/2008/11/13/5701.aspx

Cappiello, L., Kadareja, A., Sorensen, C. K., & Protopapa, M. (2010). Do Bank Loans and Credit Standards Have an Effect on Output? A Panel Approach for the Euro Area. *Working Paper,* European Central Bank, No. 1150, January.

Carkovic, M. and Levine, R. (2004). Does Foreign Direct Investment Accelerate Economic Growth?

Center for Economic Policy Research (CEPR) , (2010), Macroeconomic (Im)Balances: Current Account and Capital Flows.

Central Intelligence Agency (CIA), The World Factbook, data for Bulgaria retrieved from https://www.cia.gov/library/publications/the-world-factbook/geos/bu-.html

Central Intelligence Agency (CIA), The World Factbook, data for Croatia retrieved from https://www.cia.gov/library/publications/the-world-factbook/geos/hr.-html

Cheong, W. E., (1974). China Agencies and the Anglo-American Financial Crisis, 1834-1837. Revue Internationale d'Histoire de la Banque 9, pp.134-159.

Contessi, S. (2008). Net Exports' Recent and (Surprising?) Contribution to GDP Growth. International Economic Trends, Federal Reserve Bank of St. Louis.

Corsetti, G. (1998). Interpreting the Asian Financial Crisis: Open Issues in Theory and Policy. *Asian Development Review,* vol. 16, no. 2.

Croatia, (2010). *European Economic Forecast*, Commission Staff Working Document.

Demirel, O. National SWOT Analysis of Albania for Foreign Direct Investment. Retrieved on July 25th, 2010 from http://www.google.com.tr/-#hl=tr&source=hp&q=NATIONAL+SWOT+ANALYSIS+OF+ALBANIA+FOR+FOREIGN+DIRECT+INVESTMENT+Onur+DEM%C4%B0REL%2C+TURKEY&aq=f&aqi=&aql=&oq=&gs_rfai=&fp=cc615f2b543a4620

Economic Bulletin, Bank of Albania, (December, 2006), Volume 9, No. 4.

Economic Bulletin, Bank of Albania, (September, 2009), Volume 12, No. 3.

Deutsche Bank Research. (2005) Foreign Direct Investment: the Growth Engine in Central and Eastern Europe. *EU Monitor,* July.

Dickey, D. and Fuller, W.A. (1981) Likelihood ratio statistics for autoregressive time series with a unit root, *Econometrica*, **49**, 1057-72.

Enders, W. (1995) *Applied Econometric Time Series*, John Wiley & Sons, Inc., U.S.A.

Fleming, S. (2010). Greece could bring down the Euro Zone. *Daily Mail.* Retrieved June 1st, 2010 from http://www.thisismoney.co.uk/news/article.html?in-_article_id=498260&in_page_id=2#ixzz0n0HLZiEy.

Foster, J. B. & Magdoff, F., (2009). The Great Financial Crisis: Causes and Consequences. New York, Monthly Review Press, pp. 17, 49-50.

Gandolfo, G. (1981). Quantitative Analysis and Econometric Estimation of Continuous Time Dynamic Models. Amsterdam, North-Holland Publishing Company.

Glick, R., Moreno, R., & Spiegel. M. M., (2001). Financial Crises in Emerging Markets. Cambridge, United Kingdom, Cambridge University Press, pp. 7, 110.

Griffith-Jones, S. & Ocampo, J. A., (2009). The Financial Crisis and its Impact on Developing Countries. *Working Paper,* no. 53, International Monetary Fund.

Gujarati, D. N. (2003). Basic Econometrics. New York, United States, McGraw-Hill/Irwin, pp. 792-825.

Hoti, E. (2009). Remittances and Poverty in Albania. Bachelor Thesis in Economics. 2009:6, No. 192, pp. 25-26, 46.

Hoyt, G. (2003). ECO391 Lecture Handout for 15.3. Spring 2003.

International Monetary Fund (IMF), (2009d), Macroeconomic (Im)Balances: Current Account and Capital Flows.

Jickling, M. (2008). Containing Financial Crisis. *CRS Report for Congress*. Updated November 24, 2008.

Johnson, A. M. & Supple B. E., (1967). Boston Capitalists and Western Railroads: A Study in the Nineteenth Century Railroad Investment Process. Cambridge, Massachusetts; Harvard University Press, pp. 24-32

Kalluci, I. (2009). Determinants of Net Interest Margin in the Albanian Banking System. Economic Bulletin, Bank of Albania, p. 90, March.

Kaszuba, S. (2010), East and Central Europe Stock Exchange Markets in the Ages of Globalization. *International Journal of Trade, Economics and Finance;* Volume 1; No. 1; p. 89, June.

Katircioglu, S. (2009), Trade, Tourism and Growth: The Case of Cyprus, *Applied Economics*, 41 (21): 2741-50.

Kindleberger, C. (1973), The World in Depression, 1929-39. University of California Press.

Krugman, P. (1991). International Aspects of Financial Crises. University of Chicago Press, p. 88.

Larson, H. (1936). Jay Cooke: Private Banker. Cambridge, Massachusetts; Harvard University Press, pp. 254-279, 383-411.

Lyroudi, K., Papanastasiou, J., & Vamvakidis, A. (2004). Foreign Direct Investment and Economic Growth in Transition Economies. South Eastern Europe Journal of Economic 1, pp. 98-101.

Macias, J. B.& Massa, I. (2009). The Global Financial Crisis and sub-Saharan Africa, The Effects of Slowing Capital Private Inflows on Growth. *ODI Working Paper,* no. 304, p. 8, June.

Mazurek, M. (2008). Banking Market in Bulgaria 2008 – CEE Banking Series. *Sample.*

Mishkin, F.S. (1991). Anatomy of a Financial Crisis. *NBER Working Paper.* No. W3934.

Nelson, S. R. (2008) The Depression of 1929 is the Wrong Model for the Current Economic Crisis. Published by Energy Bulletin (www.energybulletin.net), Dec 21, 2008.

Nowak, F. & Lehmann, D. Trade Policy and its Impact on Economic Growth: Can Openness Speed Up Output Growth? Retrieved on July 15th, 2010 from http://www.google.com.tr/#hl=tr&q=Trade+policy+and+its+impact+on+economic+growth%3A+Can+openness+speed+up+output+growth%3F+Felicitas+Nowak-Lehmann+D.&aq=f&aqi=&aql=&oq=&gs_rfai=&fp=cc615f2b543a-4620

Pal, P. (2006). Foreign Portfolio Investment, Stock Market and Economic Development: A Case Study of India. *Draft Paper* submitted for the Annual Conference on Development and Change Mission. Sao Paulo, Brazil. November 18 - 20, 2006.

PEST Analysis of Bulgaria. (2008). Bulgarian Investment Consulting Agency (BICA), August.

Pindyck, R. S. & Rubinfeld, D. L. (1991). Econometric Models and Economic Forecasts. McGraw-Hill Inc.

Poprzenovic, A. (2007). Remittances and Income Inequality in Croatia. Master's Thesis.

Reinhart, C. M. & Rogoff, K. S., (2008). Is the 2007 U.S. Sub-Prime Financial Crisis So Different? An International Historical Comparison. *Working Paper.*

Reinhart, C. M. & Rogoff, K. S., (2008). The Aftermath of Financial Crises. Paper prepared for presentation at the American Economic Association meetings in San Francisco.

Romania: 2007 Article IV Consultation – Staff Report; Public Information Notice on the Executive Board Discussion; and Statement by the Executive Director for Romania. (2007). IMF Country Report, No. 07/219.

Rusuhuzwa, T. K., & Baricako, J. (2009). The Global Financial Crisis, Slowing Private Capital Inflows and Economic Growth in Rwanda and Burundi. *African economic Conference*, Addis Ababa, November 11-13.

Sanfey, P. (2010). South-eastern Europe: Lessons from the Global Economic Crisis. *Working Paper,* no. 113, pp. 1, 5-15.

Seetanah, B. & Khadaroo, A. J. Foreign Direct Investment and Growth: New Evidence from Sub-Saharan African Countries. Retrieved on July 20th, 2010 from: http://www.google.com.tr/#hl=tr&q=Foreign+Direct+Investment-+And+Growth%3A+New+Evidences+from+Sub+Saharan+African+countries+B+Seetanah+A+J+Khadaroo++&aq=f&aqi=&aql=&oq=&gs_rfai=&fp=cc615f2b543a4620

Schultz, S. K. (1999). Crashing Hopes: The Great Depression. University of Wisconsin-Madison.

South East Europe: the Impact of the Global Financial Crisis. *Workshop Report*, June 2009, South East European Studies at Oxford, in association with the Bank of Greece and the European Bank for Reconstruction and Development (EBRD).

Tanku, A., Ruçaj E., & Frasheri, A. (2007). Albanian Current Account Deficit: Does it possess mean reverting properties? retrieved in june 15th, 2010 from http://www.google.com.tr/#hl=tr&q=current+account+has+varied+frequently+during+the+1990s+tanku+rucaj+frasheri&aq=f&aqi=&aql=&oq=&gs_rfai=&fp=cc615f2b543a4620, June, p.9.

Taylor, J. B. (2008). The Financial Crisis and Policy Responses: An Empirical Analysis of What Went Wrong. *Working Paper.*

te Velde, D. W. (2008). Effects of the Global Financial Crisis on Developing Countries and Emerging Markets, Policy Responses to the Crisis. ODI *Conference Note*, pp. 1-5, December.

te Velde, D. W. (2008). The Global Financial Crisis and Developing Countries. ODI *Background Note*, pp. 1-4, October.

The Services Sector in Albania: Sector Review and Inward Investment Opportunities. (2005) Report produced on behalf of the Foreign Investment

Promotion Agency, in association with the European Union, the United Nations Development Program, and the Trade Liberalization and Promotion Program.

Vaciago, G. E., (2009). Financial Crises and Economic Theory. *Article,* European View (2009), 8:313-318.

Watkins, K. & Montjourides, P. (2009). The Millennium Development Goals-Bankable Pledge or Sub-prime Asset? *Presentation,* Unesco Future Forum, March.

Yokoi-Arai, M. (2002). Financial Stability Issues: The Case of East Asia. London, UK, Kluwer Law International, pp. 6-7.

http://www.instat.gov.al/

http://www.imf.org/external/index.htm

http://data.worldbank.org/indicator

http://www.bnro.ro/

http://www.bankofalbania.org/

http://www.hnb.hr/eindex.htm

http://www.bnb.bg/

APPENDICES

Appendix A: Unit Root Tests (Albania)

Table 4: ADF and PP Tests for Unit Root

Statistics (Level)	ln y	Lag	ln Open	Lag	ln Exp	lag	ln FDI	lag	ln Credit	lag	ln Remit	
τ_T (ADF)	-3.38***	(1)	-3.47**	(1)	-2.99	(1)	-3.05	(1)	-2.01	(11)	-1.51	(11)
τ_μ (ADF)	-1.29	(1)	-3.56*	(1)	-1.46	(1)	-1.75	(4)	-1.03	(11)	-1.43	(11)
τ (ADF)	1.39	(1)	-0.61	(1)	1.68	(1)	2.12	(4)	1.65	(11)	-0.06	(11)
τ_T (PP)	-3.03	(5)	-3.53**	(5)	-2.92	(3)	-2.69	(4)	-2.05	(2)	-2.14	(3)
τ_μ (PP)	-0.73	(5)	-3.76*	(5)	-0.84	(1)	-1.16	(4)	0.19	(3)	-2.06	(2)
τ (PP)	1.54	(5)	-1.02	(5)	1.68	(1)	1.45	(4)	4.08	(3)	1.05	(3)
Statistics (First Difference)	Δln y	Lag	ΔlnOpen	lag	Δln Exp	lag	Δln FDI	lag	Δln Credit	lag	Δln Remit	
τ_T (ADF)	-4.75*	(0)	-5.20*	(0)	-6.80*	(0)	-5.86*	(0)	-1.48	(10)	-1.17	(11)
τ_μ (ADF)	-4.79*	(0)	-5.18*	(0)	-6.81*	(0)	-5.90*	(0)	-1.98	(10)	-0.91	(11)
τ (ADF)	-4.54*	(0)	-5.22*	(0)	-6.48*	(0)	-5.72*	(0)	-1.00	(10)	-1.61***	(11)
τ_T (PP)	-4.75*	(0)	-5.10*	(2)	-6.70*	(3)	-5.89*	(4)	-6.16*	(4)	-6.59*	(3)
τ_μ (PP)	-4.78*	(1)	-5.06*	(2)	-6.75*	(1)	-5.93*	(4)	-6.04*	(3)	-6.51*	(3)
τ (PP)	-4.39*	(2)	-5.10*	(2)	-6.39*	(2)	-5.75*	(5)	-5.42*	(1)	-6.27*	(4)

Appendix B: Unit Root Tests (Bulgaria)

Table 5:ADF and PP Tests for Unit Root

Statistics (Level)	ln y	Lag	ln Open	Lag	ln Exp	lag	ln FDI	lag	ln Credit	lag	ln Remit	lag
τ_T (ADF)	-1.57	(11)	-2.06	(3)	-2.46	(11)	-1.74	(1)	-1.16	(0)	-1.18	(1)
τ_μ (ADF)	-0.09	(11)	-2.24	(3)	-1.88	(11)	-1.15	(1)	-0.71	(0)	-0.56	(1)
τ (ADF)	1.85	(11)	-0.12	(3)	1.08	(1)	1.31	(1)	0.26	(0)	0.18	(1)
τ_T (PP)	-2.85	(2)	-1.31	(4)	-1.61	(4)	-1.66	(4)	-1.31	(4)	-1.29	(4)
τ_μ (PP)	0.15	(2)	-1.99	(4)	-0.97	(4)	-1.23	(4)	-1.00	(4)	-0.42	(4)
τ (PP)	1.29	(2)	-0.38	(4)	1.12	(4)	1.49	(4)	0.20	(4)	1.26	(4)
Statistics (1^{st} Difference)	Δln y	Lag	ΔlnOpen	lag	Δln Exp	lag	Δln FDI	lag	Δln Credit	lag	Δln Remit	lag
τ_T (ADF)	-3.16***	(0)	-4.95*	(5)	-0.40	(11)	-6.43*	(0)	-7.53*	(0)	-6.20*	(0)
τ_μ (ADF)	-2.54	(10)	-4.67*	(5)	-1.35	(10)	-6.42*	(0)	-7.33*	(0)	-6.25*	(0)
τ (ADF)	-1.71***	(10)	-4.70*	(5)	-1.30	(10)	-6.22*	(0)	-7.37*	(0)	-6.40*	(0)
τ_T (PP)	-6.36*	(2)	-6.00*	(1)	-5.97*	(1)	-6.54*	(4)	-7.57*	(4)	-11.46*	(17)
$\tau\mu$ (PP)	-6.41*	(1)	-5.78*	(0)	-5.99*	(1)	-6.54*	(4)	-7.41*	(4)	-11.57*	(17)
τ (PP)	-6.26*	(0)	-5.82	(0)	-5.77*	(2)	-6.36*	(4)	-7.45*	(4)	-11.67	(17)

Appendix C: Unit Root Tests (Croatia)

Table 6: ADF and PP Tests for Unit Root

Statistics (Level)	ln y	Lag	ln Open	Lag	ln Exp	lag	ln FDI	lag	ln Credit	lag	ln Remit	lag
τ_T (ADF)	-3.40***	(11)	-0.81	(11)	-1.72	(11)	-1.73	(1)	-2.14	(1)	-2.80	(7)
τ_μ (ADF)	-1.41	(11)	-0.86	(11)	-1.93	(11)	-1.48	(1)	-1.40	(11)	-3.22**	(10)
τ (ADF)	1.21	(11)	0.68	(11)	-0.16	(11)	0.88	(1)	0.62	(1)	1.91	(10)
τ_T (PP)	-1.97	(5)	-2.04	(4)	-1.45	(4)	-1.61	(4)	-1.87	(4)	-1.41	(5)
τ_μ (PP)	-1.14	(5)	-1.78	(4)	-1.72	(4)	-1.44	(4)	-0.65	(4)	-1.86	(5)
τ (PP)	2.13	(5)	1.26	(4)	0.08	(4)	0.99	(4)	0.81	(4)	1.72	(5)
Statistics (1^{st} Difference)	Δln y	Lag	ΔlnOpen	lag	Δln Exp	lag	Δln FDI	lag	Δln Credit	lag	Δln Remit	
τ_T (ADF)	-2.03	(10)	-0.83	(10)	-0.45	(10)	-5.64*	(3)	-1.22	(10)	-4.31	(9)
τ_μ (ADF)	-1.97	(10)	-1.36	(10)	-0.85	(10)	-6.64*	(0)	-1.70	(10)	-3.51**	(9)
τ (ADF)	-1.55	(10)	-1.16	(10)	-1.16	(10)	-6.57*	(0)	-1.58	(10)	-2.14**	(6)
τ_T (PP)	-5.25*	(2)	-5.95*	(3)	-6.09*	(4)	-6.66*	(4)	-5.71*	(4)	-5.51*	(1)
τ_μ (PP)	-5.25*	(2)	-5.99*	(3)	-6.06*	(4)	-6.65*	(4)	-5.71*	(4)	-5.14*	(2)
τ (PP)	-5.14*	(1)	-5.77	(3)	-6.10*	(4)	-6.60*	(4)	-5.70*	(4)	-4.88*	(2)

Appendix D: Unit Roots Tests (Romania)

Table 7: ADF and PP Tests for Unit Root (Romania)

Statistics (Level)	ln y	Lag	ln Open	Lag	ln Exp	lag	ln FDI	lag	ln Credit	lag	ln Remit	lag
τ_T (ADF)	-1.93	(11)	-2.66	(3)	-2.06	(11)	-2.30	(1)	-2.65	(1)	-1.51	(1)
τ_μ (ADF)	-1.00	(11)	-3.02**	(3)	-1.01	(11)	-2.06	(4)	-0.60	(1)	-0.71	(1)
τ (ADF)	1.25	(11)	0.20	(6)	1.39	(11)	1.57	(4)	0.50	(1)	0.86	(1)
τ_T (PP)	-2.20	(4)	-2.44	(3)	-1.72	(5)	-2.30	(4)	-2.55	(5)	-1.77	(4)
τ_μ (PP)	0.02	(5)	-3.17**	(4)	-0.93	(4)	-2.24	(4)	-0.46	(6)	-0.14	(4)
τ (PP)	1.70	(5)	-0.87	(4)	1.94	(4)	1.57	(4)	0.45	(6)	1.86	(4)
Statistics (1^{st} Difference)	Δln y	Lag	ΔlnOpen	lag	Δln Exp	lag	Δln FDI	lag	Δln Credit	lag	Δln Remit	
τ_T (ADF)	-1.49	(10)	-7.36*	(5)	-1.80	(10)	-6.66*	(0)	-4.74*	(0)	-6.28*	(0)
τ_μ (ADF)	-1.89	(10)	-6.89*	(5)	-2.03	(10)	-6.55*	(0)	-4.34*	(0)	-6.37*	(0)
τ (ADF)	-1.38	(10)	-6.96*	(5)	-1.49	(10)	-6.34*	(0)	-4.33*	(0)	-6.37*	(0)
τ_T (PP)	-5.40*	(0)	-6.29*	(2)	-5.50*	(3)	-6.76*	(3)	-4.77*	(4)	-6.55*	(3)
τ_μ (PP)	-5.38*	(0)	-6.11*	(1)	-5.50*	(3)	-6.55*	(4)	-4.26*	(4)	-6.64*	(3)
τ (PP)	-5.17*	(1)	-6.14*	(1)	-5.19*	(3)	-6.37*	(4)	-4.26*	(4)	-6.69*	(3)

Note: In appendices A-D, y represents real gross domestic product; Open stands for Openness and it is given as a percentage of GDP, Exp is real exports, FDI is real foreign direct investment; Credit as the name implies represents credit/loans in real prices, and Remits stands for remittances in real prices. All of the series are at their natural logarithms. τ_T represents the most general model with a drift and trend; τ_μ is the model with a drift and without trend; τ is the most restricted model without a drift and trend. Numbers in brackets are lag lengths used in ADF test (as determined by AIC set to maximum 3) to remove serial correlation in the residuals. When using PP test, numbers in brackets represent Newey-West Bandwith (as determined by Bartlett-Kernel). Both in ADF and PP tests, unit root tests were performed from the most general to the least specific model by eliminating trend and intercept across the models (See Enders, 1995: 254-255). *, ** and *** denote rejection of the null hypothesis at the 1%, 5% and 10% levels respectively. Tests for unit roots have been carried out in E-VIEWS 6.