CURRENT ACCOUNT DEFICITS AND FINANCIAL CRISES SIGNALS IN EUROPEAN EMERGING MARKETS

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2)Finansal kriz
3) Avrupa'daki yükselen piyasalar
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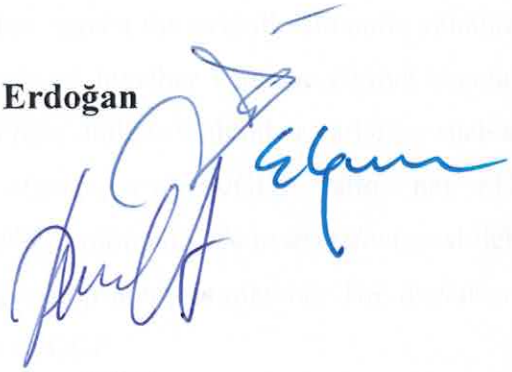

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ABSTRACT

The aim of this paper is to analyze the possible relationship between the current account deficits and financial crises indicators with a comparative perspective to European emerging markets. Current account deficits reaching the conventional threshold of 5% of GDP (Milesi-Ferretti and Razin, 1996) cause a debate regarding the current account positions and the possibility of a crisis. A high current account deficit alone is not a message for economic crises. There are other macroeconomic indicators that impact the overall economic situation of the country and that should be analyzed together with the current account position. The interaction of current account deficits with other variables such as GDP growth rate, inflation rate change, exports/GDP ratio, net FDI inflows/GDP ratio, total external debt/GDP ratio and FX reserves/external debt ratio are examined using multiple regression analysis method. The dependent variable is CA balance as a percentage of GDP.

ÖZET

Bu çalışmanın amacı, cari açıklar ve finansal krizler arasındaki olası ilişkiyi, Avrupa'daki yükselen piyasalarla karşılaştırmalı olarak analiz etmektir. Cari açıklar, geleneksel olarak kabul görmüş oran olan, GSYİH'nın %5 'ine denk gelen eşiğe (Milesi, Ferretti ve Razin, 1996) ulaştığında, cari işlemler hesabının durumu ve kriz olasılığı tartışmalarına sebep olmaktadır. Tek başına yüksek bir cari açık kriz göstergesi olarak kabul edilmemelidir. Ülkenin genel ekonomik durumunu etkileyen diğer makroekonomik göstergeler de cari işlemler hesabının durumuyla beraber analiz edilmelidir. Cari açıkların diğer değişkenlerle, örneğin GSYİH büyüme oranı, enflasyon oranı değişimi, net doğrudan yabancı yatırımlar akışı/GSYİH oranı, ihracat/GSYİH oranı, toplam dış borç/GSYİH oranı ve döviz rezervleri/toplam dış borç oranı etkileşimi, çoklu regresyon analizi ile incelenmiştir. Bağımlı değişken, cari işlemler dengesinin GSYİH yüzdesi olarak ifadesidir.

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LIST OF ABBREVIATIONS

CAD: Current Account Deficit

EU: European Union

EUR: Euro

FDI: Foreign Direct Investment

FX: Foreign Exchange

GDP: Gross Domestic Product

GNI: Gross National Income

IMF: International Monetary Fund

US: United States

USD: United States Dollars

1. INTRODUCTION

Nowadays, financial crises are not only the main problem of the developing economies like in 1970s and 1980s debt crises as well as in 1990s banking crises, but also of the developed countries like in financial bubbles and credit crises. Therefore, the factors of the financial crises have become an important subject to analyze economic activity of a country and the developments and trends in international finance. One of these factors is the current account deficit which is shown as the main dominator of these crises, in fact, this should be examined in details, especially since 1990s, the beginning of the financial liberalization. The economies have started to be dependent on each other and capital flows become more volatile with the rise of the financial liberalization.

Today's financial crises confronted all developed and emerging countries including transition economies with decreasing capital inflows and export demand (Ghosh, 2006) as well as high capital building (Herrmann and Jochem, 2005). Dynamics of financial crises cannot be examined in isolation of one economic factor from another (Milesi-Ferretti and Razin, 1998). According to this observation, both domestic factors and external factors (shocks) (Eichengreen and Adalet, 2005; Nuti, 2009) lead to financial crises. This paper aims to define a critical analysis on financial crises in order to provide an understanding that current account deficit is not the sole reason of crises.

The study will be structured as follows: the first part intends to describe the current account and current account sustainability concepts. The second part illustrates the causes and consequences of the financial crises. The third part explains the dynamics of crisis indicators and the final part provides an analysis on selected countries' economies in terms of their economic indicators in relation to financial crisis. A model representing the factors that have impacts on current account balance is constructed. As methodology, multiple regression analysis is utilized with SPSS statistics program. The country samples

compromise the Central and Eastern European accession countries (Bulgaria, Czech Republic, Hungary, Romania, Slovenia) to the EU plus Russia and Turkey. The purpose of this selection is related to the fact that these countries provide an excellent description and comparison both in terms of liberalization and globalization.

As regards to the data gathering technique, data mining among published works is provided through the analysis, especially Eurostat, IMF, Worldbank statistics and country reports published by international institutions, universities and countries' ministries.

2. LITERATURE REVIEW ON CURRENT ACCOUNT DEFICIT AND ITS SUSTAINABILITY

"No country was failed because of trading."

Benjamin Franklin

The balance of payments shows of all the economic transactions between the residents of a country and the rest of the world for a specific time period. This is composed of three elements: current account balance, capital balance and international (official) reserves changes. The current account balance denotes international flows of goods and services and transfer payments. The capital balance records the borrowing and lending transactions between the residents of a country and outside residents of the country and stable capital investments. This balance helps to finance the current account balance. The balance of payments displays the net flow of money to the country before the changes in official reserves. The below balance of payments definition is always correct under the normal conditions:

Current Account Balance + Capital Balance = International (official) reserves changes.

It can be said that current account balance is a part of the general economic equilibrium.

The basic national income equation is;

$$Y = C + I + G + (X-M) \qquad (1)$$

In this equation Y represents gross domestic product, C private sector's consumption expenditures, I public and private sectors' investment expenditures, G government purchases of goods and services, X imports of goods and services and M exports of goods and services. (X -M) is the current account balance accordingly.

The disposable income which is not consumed can be accepted as saving. Thus, the disposable income equation becomes;

$$Y - T = C + S \qquad (2)$$

Y represents national income, T taxes, C consumption and S total private sector's savings.

It can be concluded from equation 1 and 2:

$$(S - I) + (T - G) = (X - M) \qquad (3)$$

In this equation, (S – I) represents private sector's saving-investment balance, (T -G) government financing balance and (X – M) current account balance. If the private sector invests more than its savings and the public sector runs financing deficit, current account deficit is inevitable. This means that total savings deficit is financing through the import of foreign savings.

Private sector’s saving balance depends on various economic developments; however, public sector’s saving balance is a political variable. Public sector can give a financing surplus while private sector is running a saving deficit. This prevents a current account deficit and thus, private sector’s saving deficits are financed hugely by public sector’s saving surplus.

Obsttfeld and Rogoff (1995) stated that the current accounts widen and narrow according to the performance of national output, investments, government spending and world interest rate according to their permanent levels. If a country is a net foreign debtor and the world interest rate exceeds its permanent level, the current account deficit will increase.

The importance of the current account imbalances as a warning signal of currency crisis has been generally accepted. It has been also shown that a widening current account deficit is usually present before an exchange rate crisis.

Current account balance is an important indicator of an economy. It reflects the saving-investment ratio which is related with the fiscal balance and private savings which are the main signs of the economic growth. It is important to monitor the current account balance data and to be informed on how it will be in the future for the economy. Policy makers should initiate new policies where and when needed to secure the current account sustainability. CAD/GDP ratio level has to be considered at this point. It has been discussing that different countries may have different acceptable sustainable CAD/GDP ratio levels. Current account deficits above 5% GDP should be considered as an alarming signal (Milesi- Ferreti and Razin, 1996).

Roubini and Watchel (1998) argued that the current account deficits seen in transition economies reflect two important aspects. On one hand, these deficits reflect the success of structural changes that have enabled capital and investment inflows which has been the reason of the fast economic growth. On the other hand, current account deficits reflect mismanaged transition processes that become a source of a balance of payment crisis (e.g. Czech Rep. (1997), Russia (1998)).

Milesi-Ferretti and Razin (1996) ask three questions on the current account sustainability: Is a debtor country solvent? Are current account imbalances sustainable? Is the current account deficit excessive? They define the current account balance equation as below:

$$CA_t = F_t - F_{t-1} = Y_t + rF_{t-1} - C_t - I_t - G_t. \qquad (4)$$

In this equation, CA represents current account balance, F net foreign debt, r world interest rate, Y gross domestic product, C private sector's consumption

expenditures, I public and private sectors' investment expenditures, G government purchases of goods and services. When private sector and government's budget constraints are added to the above equation, the new equation will be:

$$CA_t = (Y_t - Y_t^p) - (C_t - C_t^p) - (I_t - I_t^p) - (G_t - G_t^p) \quad (5)$$

For a country which fulfills its obligations, a current account balance is defined being the permanent value deviation of the output, consumption, investment and government's expenditures (Milesi-Ferreti and Razin, 1996). They figured out that CA/GDP ratio is composed of the foreign trade deficit and the debt dynamics terms. This statement shows that the debt dynamics have positive relations with the world interest rate and negative relations with the real appreciation of local currency and domestic growth rate.

Milesi-Ferreti and Razin (1996) stated that, to define the sustainability in relation to solvency for fiscal imbalances is easier because they depend on the direct policy decisions on taxation and government expenditure. According to them, to define the sustainability in relation to solvency for current account imbalances is more difficult because the current account imbalances show the interaction among the savings and investment decisions of the government and domestic private agents, and additionally among the savings and the lending decisions of the foreign investors. Another key indicator to ensure sustainability is the exchange rate which depends on future evolution of policy variables.

Another way to determine a current account imbalance is to determine if the pursuance of the present status quo will oblige a policy shift like sudden tightening of monetary and fiscal policy causing a large recession, or will lead a crisis like an exchange rate collapse, ending up with the inability to cover external debts. The current account imbalance is said to be unsustainable if the above circumstances are verified. The policy shift may be driven by an external or domestic shock which will result in the lack of confidence of the foreign investors and the reversal of international capital flows.

In 1998, Reisen widened Milesi-Ferreti and Razin's work and studied the current account deficit in the long-run. He denoted that a country needs to collect reserves in order to meet the increasing imports due to the economic growth in the long-run and in order to cope with the changes in the balance of payments.

Robischek (1981) argued that if the public sector accounts were under control and domestic savings were increasing, there was no reason to worry about large current account deficits. The Lawson Doctrine states that the current account deficits that result from a shift in private sector behavior should not be a public policy concern (Edwards, 2001). The crises in the developing countries in the 1980s showed this doctrine's defects. A large current account deficit was accepted as a sign of trouble coming. Fischer (1998) pointed out that the matter is not a large deficit but an "unsustainable" external deficit.

Milesi-Ferretti and Razin (1996) argue that especially when the current account deficit is financed with short-term debt or foreign exchange reserves and when it reflects high-consumption spending, any excess above 5% of GDP has to be considered as an alarm.

When a country experience large and persistent current account deficit for a long period, this is something that should be analyzed carefully. This means that this country's economy will need more foreign investment to finance this deficit and thus, the local currency will be under the risk of depreciation. The use of the national reserves will damage the economy and the investors start to have some doubts on the countries near future performance to meet its external debt obligations. These indicators may create a critical atmosphere in the economic environment and exchange rate and external debt crises may become inevitable. On the other hand, the country may have a permanent current account deficit and may cover its external debt smoothly and grow in the course of time. It can be said that the CAD/GDP ratio provides inadequate information on the current account status without considering the other macroeconomic

indicators such as sources of deficit, external debt, fiscal deficit and exchange rate policy.

Milesi-Ferretti and Razin (1998) determined some variables that anticipate the current account deficits' narrowings as follows:

- current account balance level, how much larger the CAD is, so is the possibility of narrowing,
- foreign exchange reserves, how much lower the foreign exchange reserves are, so is the possibility of narrowing,
- GDP per capita, how much larger the GDP per capita is, so is the possibility of narrowing,
- foreign trade limits, when the foreign trade limits fall off, the possibility of narrowing increases,
- investments, how much higher the investments are, so is the possibility of narrowing.

They additionally highlight the importance of the solvency of a country to sustain a current account deficit. The country has to generate sufficient trade surpluses to cover existing debt but, the solvency depends also on the willingness of the creditors to lend under the present conditions which is related with the country's willingness to cover its debt obligation at the time of an external shock. To evaluate current account sustainability, they classify the necessary variables into four categories: savings – investment propensity, economic growth rate, foreign trade openness and volume, composition of the external debt, fiscal status and capital flows that finance the deficit. High investment rates lead high growth rates in the future. This increases the solvency of the country. On the other hand, foreign trade related goods production becomes important in order to minimize foreign debt because more production means more FX gain. However, how much open the foreign trade is, so is higher the risk of turndown in the foreign demand or the risk of

deterioration in the foreign trade limits. The maturity structure and the form of the foreign debt, FX and interest rate composition are also considered as the important indicators. A liberal capital account makes the country more sensitive to the foreign shocks but at the same time, a liberal capital account has a disciplinary role on the domestic policies depending on the development level of the country (Tiryaki, 2002).

Roubini and Watchel (1998) studied the current account sustainability in their works and suggested different variables such as current account composition, size and composition of the capital flows, country risk and FX reserves.

Obstfeld (1994) and Eichengreen, Rose and Wyplosz (1997) have shown the importance of trade and investment factors that make a country susceptible to contagion crises, as was seen during the East Asian crises. If a country's exports decrease because of its trading partners' crisis situation, this have effects on the country's trade balance and can lead to an unsustainable current account position. Similarly, a country can face a crisis through contagion capital outflows from neighboring countries. This is very important for emrging market economies.

3. FINANCIAL CRISES

Mishkin (1996) defined the financial crisis as following:

> "A financial crisis is a nonlinear 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. A financial crisis thus results in the inability of financial markets to function efficiently, which leads to a sharp contraction in economic activity".

3.1. Economic factors that lead to a financial crisis

It is important to understand asymmetric information concept to analyze the reasons that lead to the financial crisis. Asymmetric information is a situation in which one party to a financial contract has much less accurate information than the other party (Mishkin, 1996). For example, a borrower has much more detailed information than the lender on the return and on the risk of the investment project. Asymmetric information cause two important problems in the financial system: adverse selection and moral hazard. Adverse selection arises in the credit market. The potential borrowers who have much more risky projects will be the most gainful party. They are the most ambitious investors to borrow money but at the same time the most risky in terms of repayment. Moral hazard problem appears also in the credit market and is defined as undesirable activities of the borrower that decrease the possibility of loan repayment in the eyes of the lender.

Three common indicators of the financial crises are first of all, to be deeply dependent on the short term capital inflows, secondly, chronic appreciation of real exchange rate and high current account deficits and lastly misuse of the

funds which are borrowed in an inadequately regulated environment (Öniş and Aysan, 2003).

The following factors can trigger the banking and the financial crises: increase in interest rates, increase in uncertainty, fall in stock exchange, asset market effects on balance sheets and government fiscal imbalances:

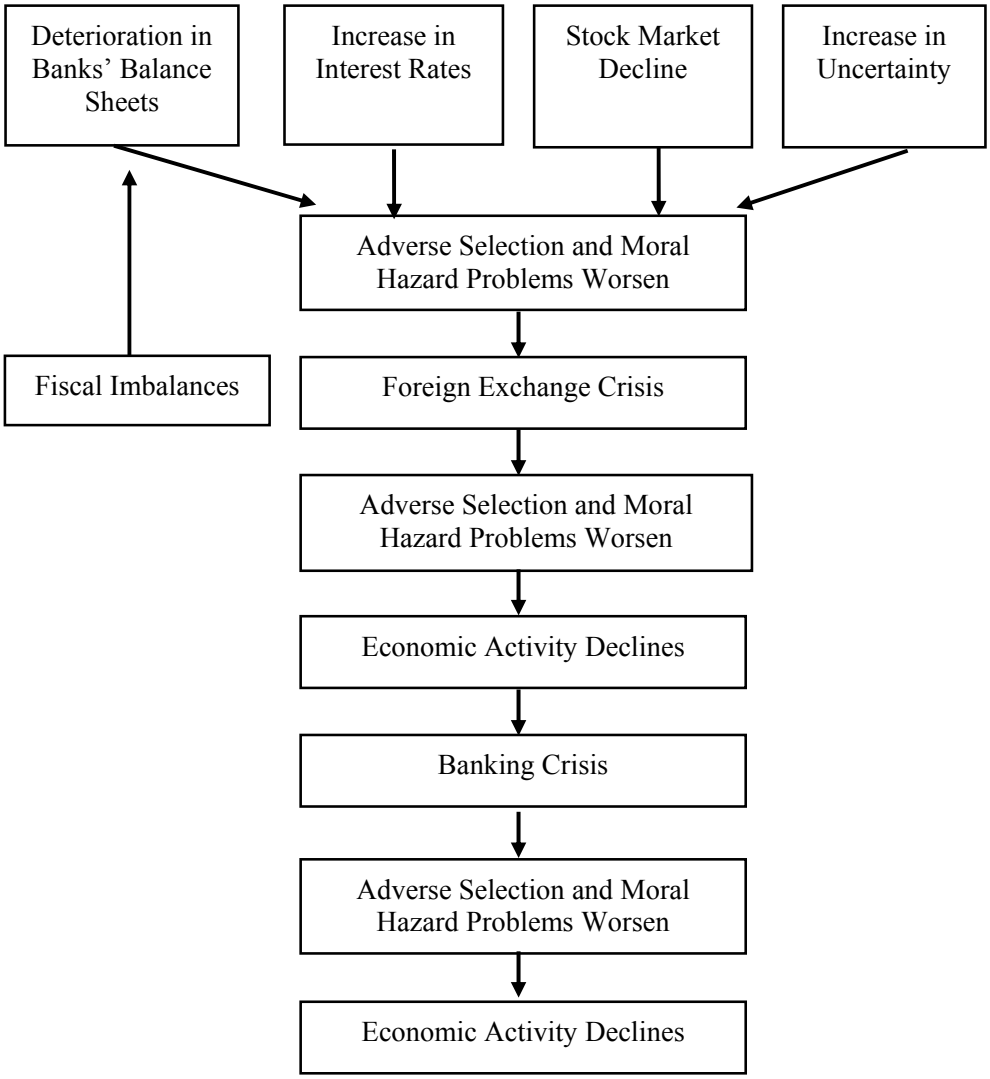
- **Increases in interest rates:** Asymmetric information and the resulting adverse selection problem can lead to credit rationing in which some borrowers do not accept to contract a loan even they are willing to pay higher interest rates. This happens because borrowers with higher risk projects are the ones who are ready to pay higher interest rates. Higher interest rates will cause a greater adverse selection and the lenders will not be ambitious to give credits. Decrease in the credit portfolio will end up with the fall in investment and have impacts on overall economy.
- **Increases in uncertainty:** As a result of an increase in uncertainty in financial markets due to a recession, failure of a financial institution or political instability, the lenders will have difficulties to distinguish between high risk project and low ones. The adverse selection problem will grow and the lenders start to give less credit.
- **Asset market effects on balance sheets:** Balance sheets of the non-financial companies and banks have effects on the emphasis of asymmetric information problem on the financial system. Deterioration of the balance sheets will trigger a chain reaction and worsen the adverse selection and moral hazard problems. At the beginning, this will result in the fall in credit willingness of the lenders and then the bank failures may come up. If there are more than one bank failure in the system, bank panics will come into being. The source of the contagion is asymmetric information. Asymmetric information problem can be solved in the financial markets with the use of collateral (Mishkin, 1996). Collateral reduces the potential losses of the lender in case of a

default. The lender can sell this collateral and recover its losses if the borrower defaults. If the collateral is in good quality, asymmetric information between the lender and the borrower lose its importance.

- **Fall in Stock Exchange:** A fall in stock exchange will have negative impacts on companies' balance sheets and this will give rise to adverse selection and moral hazard problems which will pave way to a financial crisis. A decline in the stock market means a decline in the market values of the companies' net worth. As a result of this, the banks will be less ambitious to give loans to the borrowers and will feel less comfortable because of the loss in the value of the collateral. Due to the adverse selection problem consequences, the banks will reduce their credit exposure. The fall in stock exchange will also force the borrowers to be directed into the high risk investments which will raise the moral hazard problem because the firms will have less to lose (due to the decline in their net worth) if their investment defaults. This will result in the decrease in the investments and in the overall economic activity.
- **Government Fiscal Imbalances:** In emerging markets, government fiscal imbalances may create impressions of default on government debt. Thus, government may have difficulties to sell its bonds and may put pressure on banks to purchase them. If the government defaults, the banks' financials will weaken. Additionally, the default fear on the government debt can cause a foreign exchange crisis. The domestic currency starts to suffer depreciation due to the investors who carry off the funds outside the country. The fall in the domestic currency will affect negatively the balance sheets of the companies which have large amounts of foreign currency debts. This situation will lead to an increase in adverse selection and moral hazard problems which cause a decrease in lending (Mishkin, 2007).

A currency crisis and then a banking crisis become inevitable when adverse selection and moral hazard problems are accompanied with these factors (Mishkin, 2007). Asymmetric information analysis, which has been using to understand the structure of the financial system, has been also the source of a theory on banking and financial crises. This theory has been utilized to expand the crisis in the developed countries like the United States but also, with some amendments, has been applied to the emerging markets (Mishkin, 1996).

Figure 3.1: Sequence of Events in the Emerging Markets Financial Crises



Source: Mishkin (2007)

3.2. Currency Crises

This model was firstly introduced by Krugman in 1979. Zavala (1999) claims that the below items should be considered as the main indicators of the currency crises:

- Fiscal situation
- Level of International Reserves
- Current Account Sustainability
- Real Exchange Rate

Currency crises can be analyzed in three categories: first generation crises, second generation crises and third generation crises.

3.2.1. First generation crises

Governments follow fiscal and monetary policies which are not compatible with a fixed exchange rate regime. This creates some problems in balance of payments. Speculators, at one point, recognize that Central Bank can not maintain anymore foreign exchange parity and then a speculative attack comes into the currency. In the first generation models, fixed exchange regime is determined by the external basic indicators which are not related with the individual behaviors in the economy. According to these models, individuals' expectations do not have any influences on fiscal imbalances and on credit policies (Pesenti-Tille,2000). First generation currency crises occur due to the inconsistency between the economic policies imbalances and the effort to fix the foreign exchange rate. If the Central Bank has enough FX reserves, this does not create any problems but if not, the Central Bank will stay in a difficult situation (Krugman, 2000).

Calvo (1995) argued that one of the most remarkable features in the Krugman model is the sudden loss in reserves at a specific point in time, even though market participants have perfect foresight and, thus, nobody is taken by surprise. The central bank does not take any action to sterilize the capital outflows; therefore, facing the reduction of the monetary base and lacking the reserves to maintain the nominal value of the exchange rate, the, fixed exchange regime collapses and the central bank is obliged to float its currency.

In 1994 Mexican crisis, the Central Bank lost its reserves against a speculative attack to Mexican peso. The Central Bank intervened to the market to defend monetary base and injected liquidity. This intervention of the Central Bank to the market is called sterilization (Zavala, 1999). Flood, Graber and Kramer (1996) showed that in the real world, reserves losses at the time of the speculative attach are sterilized contrarily to Krugman speculative attack scenario. They state that speculative attack scenario can be widened to cover bond markets that are affected by the sterilization policies which are implemented by the monetary authorities. The Central Bank will use its authority to issue money and expand domestic loan by the same amount of their loss in reserves. This will be supported by the monetary authorities' open market operations (to buy government bonds held by the private sector). If the monetary authorities do not sterilize the currency attack, the monetary base will shrink and interest rates will increase (Zavala, 1999). Interest rate increase may sometimes be very high which may be resulted in banking crisis. If the government domestic debt is linked to short term interest rates, the debt service will become more costly. In this situation, the Central Bank will restart sterilization or will let the currency to float.

Krugman (1998) argues that, in the first generation crisis models, the domestic credit expansion is unsustainable due to the limited stock of international reserves to maintain the peg. Investors expect an explosion and create a

speculative attack on the domestic currency when reserves fall into a critical level.

3.2.2. Second Generation Crises

Obstfeld (1996) states that even sustainable currency pegs may be attacked an even broken. In this model, the government wants to devalue the currency (because of the expansionist monetary policies due to the high domestic debt or high unemployment rate) and to try to sustain exchange rate peg (to revive international trade or to control inflation or just because of the national feelings) at the same time (Chowdhry-Goyal, 2000).

According to Obstfeld (1996), to try to sustain exchange rate peg is costly, if the majority of the public expects devaluation. This is when the speculator attack arises. The devaluation expectations cause higher interest rates to sustain exchange rate peg but at the end, the government abandons the exchange rates due to the slowdown in the economic growth and due to the cost increase in the state debts. It can be concluded that the currency crises may be developed by the self-fulfilling expectations (Zavala, 1999).

The below factors are used to define the reasons of the second generation crises:

- Real exchange rate appreciation
- M2-to-Reserves expansion
- Terms of trade deterioration
- Domestic credit expansion
- Wage flexibility
- Output growth
- Contagion effects

- Herd behavior (Zavala, 1999).

3.2.2.1. Contagion

Macroeconomic imbalances are generally the main reason of the currency crises. Unsustainable current account deficits may change the direction of the capital inflows and cause big changes in the FX rates. Inelastic FX regimes pave the way to the high appreciation of the currency which results in the high foreign deficits. Instability in the FX market is transmitted from one country to another (IMF, 1998).

Table 3.1: Mean Correlations of Monthly Equity Market Returns, 1970s-1990s

	Among countries in the region			Among countries in other regions		
Region	1970s	1980s	1990s	1970s	1980s	1990s
Asia	0.11	0.11	0.41	0.08	0.25	0.41
Europe	0.14	0.33	0.38	0.07	0.24	0.37
G-7	0.15	0.3	0.29	0.11	0.17	0.22
Latin America	0.07	-0.01	0.26	-0.14	0.25	0.32

Source: Global Economic Prospects and the Developing Countries. World Bank 1998 from Zavala, 1999.

The mean correlations of monthly equity market returns in the Latin America and Asia have been increasing since 1970s for the countries in the region and outside the region. In the 1980s, Latin America has had an inverse correlation between the countries in the region. In the 1990s the coefficient has increased to 0.26. The coefficient has had a rising trend for the countries outside the region as well. In Asia, the coefficient is very high for the countries in the region and for the countries outside the region. The capital market integration in this table shows the contagion effects that financial crises can have across markets due to the shifts in expectations (Zavala, 1999).

3.2.2.2. Herd Behavior

Krugman (1998) argues that exchange markets are not efficient (characteristic of the first and second generation models). Its basic indicator is herding which is the tendency for individuals to mimic the actions of a larger group. As a result of the financial integration, speculative attacks to the currencies in the financial markets spread from one country to another. Exchange markets can create a self-fulfilling expectation that a central bank would not sustain the exchange rate peg at the time of a successful speculative attack, leading to contagion and herd behavior (Zavala, 1999).

3.2.3. Third Generation Crises

In the third generation crisis model, the banking sector becomes another source of instability in the country in addition to the deprecation of the country's basic economic indicators, to the shift on the market expectations and to the government's failure to maintain the foreign exchange peg (characteristics of the first and second generation crises). Third generation crisis model does not deal only with the currency crises. Banking and currency crises are monitored at the same time in this model.

In the first and second generation crises' models, there are not any policy recommendations to the Central Bank at the time of a crisis. According to Krugman's first generation crisis model, the crisis is inevitable when there is a devaluation expectation. In the third generation crises model initiated by Krugman (1999) and Aghion, Bacchetta and Banarjee (2000, 2001), monetary policy's effects on currency crisis is analyzed (Chiodo-Owyang, 2002). These models argue that banking and finance sectors' fragility causes a decline in the credits which are allocated for the companies and this strengthens a crisis possibility. Third generation crises models also show that a currency crisis will arise by a combination of high debt, low foreign reserves, decreasing

government revenue, increasing expectations of devaluation and domestic borrowing constraints (Chiodo-Owyang, 2002).

To cure a currency crisis, the best thing to do is to increase the interest rates and increase the demand for domestic currency. However, in the third generation models, an interest rate increase can influence the amount of lending and impede the companies to fully access to financial capital. A rise in the nominal interest rate may be destructive when the lending is highly sensitive to interest rates by changing economic productivity as a result of the depressing investment. A fall in the output, with the decreased tax income, puts an additional pressure on FX rate and deepens the crisis. In this situation, Central Bank will decrease the interest rates to vitalize the investments (Chiodo-Owyang, 2002).

All generation of models suggest four factors that can impact the starting and magnitude of a currency crisis: domestic and private public debt, expectations, status of the financial markets, determination of the magnitude of the speculative attack and probability of its success and possibility of a currency crisis with a pegged exchange regime (Chiodo-Owyang, 2002).

3.3. Banking Crises

A currency crisis may result in a banking crisis. Banking regulations force the banks to equalize the value of its FX denominated assets to FX denominated liabilities. In this respect, it is not sure that the depreciation of the currency will affect the banks' balance sheets negatively or not. The risk still exists in spite of the equalization of FX denominated assets to FX denominated liabilities. In an emerging market like Mexico, banks' FX assets are the FX loans that are lended to the companies in the country. Once devaluation realizes, the balance sheets of the companies, which have FX loans in their credit portfolio, will start to deteriorate because their liabilities become more valuable. As their assets are in national currency, they will not improve in value. These companies will not

be able to pay its debts to the banks and this will influence banks' financials negatively. The FX risk for the borrowers will become credit risk for the banks (Mishkin, 1999).

Banking crisis is longer and more costly than the currency crises: average amount of time until GDP growth returned to trend is 3 years and output growth loss is 11.5%. If a banking crisis happens after a currency crisis in one year, the output growth loss increase to 14.5%. Recovery period after currency and banking crises in emerging countries is shorter than in the industrialized countries. The reason is that the emerging markets have higher output growth average and variance (IMF, 1998).

A pegged exchange rate regime can be dangerous for an emerging economy if its banking system is not powerful enough (with short term debt contracts and big amounts of FX denominated debt). Depreciation of the domestic currency will result in devaluation and increase in the interest rates and in indebtedness which will deteriorate the banks' and the companies' balance sheets. Thus, the developing economy will tumble into a full scale financial crisis. Some developing economies chose to peg their domestic currency to a stable currency because they need a nominal anchor to secure the price stability. This may be a very dangerous strategy if the banking system of the developing country is fragile (Mishkin, 1996).

3.4. Early Warning Signals

A depreciation of the exchange rate may provide an early warning signal to policymakers to adjust their policies to limit the possibility of a crisis (Mishkin, 1996).

The below study was prepared by IMF in 1998, using a data of fifty countries for the period 1975-97. This was found out that some indicators correctly signaled crises a number of times and did not sound frequent false alarms.

These were the real exchange rate, credit growth and M2-to-reserve ratio. Additionally, the study showed that the over valuation of the exchange rate was one of the earliest signals of vulnerability. Real exchange rate appreciation signals a currency crisis 13 months before the beginning of the crisis. The other leading indicator was the broad money indicator (M2) to international reserves. The reason is that the countries implementing domestic policies which are not consistent with the exchange rate system and this result in the increasing loss in international reserves. Because of the sterilization policies of the central bank to prevent the narrowing of the money base, the value of the indicator raises, which shows that the level of international reserves are inadequate to cover the liquidity of the economy in case of a speculative attack (Zavala, 1999).

In 1995, Dornbusch, Goldfajn, and Valdés studies four currency crises that have common characteristics: Chile 1978-82, Mexico 1978-82, Finland 1988-92, Mexico 1990-94. Exchange rate overvaluation had a direct impact on the external deficit and on high interest rates. In both Mexican crises fiscal expansion contrasts with the first generation models variables. In Chile, Mexico and Finland, foreign exchange appreciation with high interest rates had negative effects on the banking system.

Kaminsky, Lizondo and Reinhart (1997) have showed 103 indicators which are analyzed in six categories: external sector, financial sector, real sector, public finances, institutional and structural variables, political variables. They suggest an early warning system which monitors several indicators showing unusual behavior before the times of the crisis. An indicator lapsing a certain value has to be interpreted as a warning signal that a currency crisis may occur within the following twenty four hours. The variables with best track record in the study are exports, deviation of the real exchange rate, the ratio of broad money to gross international reserves, output, equity prices. Imports, bank deposits, the difference between foreign and real domestic real deposit interest rates, ratio of lending to deposit interest rates are the indicators which are not

supported the study's evidence. The authors have determined a signal that is followed by a crisis within twenty four months a 'good signal', a signal which is not followed by a crisis is called a "bad signal" or a "noise".

Table 3.2: Significance of Early Warning Indicators of Vulnerability to Currency Crises

Indicator	Country Group	13 months	Months Prior to a Crisis 8 months	3 months
Real exchange rate appreciation	Industrial	•	•	•
	Emerging market	•	•	•
Domestic credit expansion	Industrial		•	•
	Emerging market		•	•
M2-to-reserves expansion	Industrial	•	•	•
	Emerging market	•	•	•
Stock price decline	Industrial	•	•	•
	Emerging market			
Low domestic real interest rates	Industrial	•	•	
	Emerging market			
Terms of trade deterioration	Industrial			
	Emerging market		•	
World real interest rate increase	Industrial			•
	Emerging market			•

Source: IMF. World Economic Outlook, May 1998.

Table 3.3: Common Factors of Currency Collapses

	Chile	Mexico	Mexico	Finland
Factor	1982	1982	1994	1992
Appreciation	yes	yes	yes	yes
Disinflation	yes	yes	yes	yes
External Deficit	yes	yes	yes	yes
Fiscal Expansion	no	yes	yes	no
High Real Interest Rates	yes	yes	yes	yes
Trade Liberalization	yes	yes	yes	yes
Financial Opening	yes	yes	yes	yes
Domestic Credit Creation	yes	yes	yes	yes
Opening to External Capital	yes	yes	yes	yes

Source: Dornbusch, Goldfajn, and Valdés (1995).

3.5. Financial Liberalization and Capital Flows

After the World War II, international monetary system was regularized by Bretton Woods. According to the agreement, central banks, to maintain the exchange rate, could sell and buy national currencies. This was called pegged rate currency regime. Member states were required to establish a parity of their national currencies in terms of gold (a "peg") and to maintain exchange rates within plus or minus 1% of parity (a "band") by intervening in their foreign exchange markets. The U.S. dollar was the currency with the most purchasing

power and it was the only currency that was backed by gold. Additionally, all European nations that had been involved in World War II were highly in debt

Table 3.4: Average Lead Time

Indicator	Number of months in Advance of the Crisis When First Signal Occurs
Real Exchange Rate	17
Real interest rate	17
Imports	16
M2 multiplier	16
Output	16
Bank deposits	15
Excess M1 Balances	15
Exports	15
Terms of Trade	15
International reserves	15
Stock prices	14
Real interest differential	14
M2/international reserves	13
Lending rate/deposit rate	13
Domestic credit/GDP	12

Source: Kaminsky, G., Lizondo, S., Reinhart,C.(1997)

and transferred large amounts of gold into the United States, a fact that contributed to the supremacy of the United States. Thus, the U.S. dollar was strongly appreciated in the rest of the world and therefore became the key currency of the Bretton Woods system. There are two important institutions in Bretton Woods system: International Monetary Fund (IMF) and World Bank. The main assignments of IMF are to control the fluctuation in the rates of exchange, to decrease the balance of payments deficits, to facilitate the member states' growth and help to increase the international trade volume. World Bank is standing by the developing countries with long term credits. These credits are

secured by the bonds which are sold by World Bank in the capital markets (Mishkin, 2007). Foreign exchange rates shift only when the member states run balance of payments surpluses or deficits. Once a member state was running a balance of payments deficit and lost their international reserves, to maintain the pegged rate, IMF was helping the problematic country by lending funds that the other member states derived. Tight monetary policy was suggested to the debtor country by IMF to close the deficit. If IMF loans could not help the debtor country to stop the national currency depreciation, devaluation was allowed (Mishkin, 2007).

After the collapse of Bretton Woods system at the beginning of the 1970s, the liberalization moves and technological developments have strengthened the international financial markets. Financial liberalization concept is composed of the removal of the control on interest rates, the privatization of the financial institutions, the encouragement of the competition between the institutions and the entrance authorization into the financial markets, the decrease in the reserve requirements and the reliance on open market operations as a money market policy (Zavala, 1999).

At the end of the 1980s and the beginning of the 1990s, the liberalization of the capital account has become a part of the enforced policies in the industrialized and emerging economies. In the 1990s, the composition and the buyers of the capital flows have been changed. Today, capital flows are from private to private; the main buyer is the private sector. In the past, the capital flows were from private to state or they were the loans for the government projects. As to the composition of the capital flows in the 1980s, they were in the form of syndicated loans or direct debts to the state. In the 1990s, these are replaced by direct foreign investment, bank to bank loans, portfolio investment on bonds and on equity securities and trade finance. Total net capital inflows into emerging markets were USD 30 billion in 1990 and USD 173.7 billion in 1997. In 1990, net private capital flows composed 58.3% of the total flows and state's

loans composed the rest 41.7% of the total flows. In 1995, the net private capital flows were increased to 84.7%. In 1996 before the Asian Crisis, private sector's shares reached 100% of the total flows. International fund resource of USD 1.04 trillion was utilized by the emerging markets between the years 1990-1996 (42.6% foreign direct investment, 36.5% portfolio investment, direct bank flows 20.9%). Direct foreign investment is more stable and can be recovered easily at the time of a crisis due to the long maturity. On the contrary, short term capital flows, portfolio investment and direct bank loans are more volatile (Zavala, 1999).

Deregulation and liberalization may be dangerous in the emerging market economies if they are not managed carefully. Banks' regulatory and supervisory structure should be in place when the liberalization comes into the country. If not, banks may take unlimited risks which may be resulted in deterioration in their balance sheets in the near future. The loan expertise is also very important for the banks at the time of liberalization (Mishkin,1996).

After the 2008, financial crises became a more significant topic than ever due to its global nature. In fact, since 1990s, several *ad hoc* crises on country basis have been observed, yet needed to be recovered each time. US GDP is expected to fall by about 3 % and by a decrease of 5.75 percent in Japan in 2009. Moreover, the economic recession has increasingly spilled over to the emerging and developing economies. Following the impact of the significant policy motivation worldwide, gradually recovery and downturn in trade flows, global growth is expected to improve to close to 2 % in 2010 (Economic Forecast, 2009).

Studies on developed and developing countries focus of the link between devaluation, current account and output indicators (Edwards, 2001; 2007) as well as the relationship between balance-of-payments and banking crisis (Demirgüç-Kunt and Detragiache, 1997; Öniş, 2007). However, today's 2008 global financial crisis refer to further studies that provided results that are related to not only foreign exchange reserves, real exchange rate but also US

interest rates, economic situation in the industrialized countries and openness (Milesi-Ferretti and Razin, 1998). Nevertheless, considering common mechanisms of financial crises, especially in developing countries, since 1990s, a number of financial crises occurred in emerging markets share familiar characteristics. These crises are mostly the consequences of a rapid economic growth. Roubini (2007) discloses various alternative explanations of global imbalances. These are US fiscal deficits, US Central Bank's savings, global investment deficiency, structural factors, long run productivity and demographic trends, housing booms, financial globalization and asset shortage, easy monetary policy in the US, oil price shocks, and uncertainty.

4. DYNAMICS OF FINANCIAL CRISES IN EMERGING MARKETS

The dynamics of financial crises in emerging markets can be analyzed within three motives of national economies: 1. Economic growth, 2. Liberal economic policies, and 3. Economic openness.

4.1. Economic Growth

Economic growth is one of the main signs of the impacts, extension and results of a possible financial crisis. It might be related with possible rises in gross domestic product as well as the quantity of goods and services produced (Henderson, 2007). Economic growth dynamics are analyzed through indicators of real GDP growth rate and current account in percentage of GDP.

4.1.1. GDP Growth Rate

GDP is one of the significant indicators in terms of an analysis on financial crises. As such, it is one representation of the global expansion in relation to country's expectations that depend on the maintenance of the expansion. For instance, growth might be strong in one country but not in the other; hence, a common concern has come into being on global markets. On the one hand, considering the large EU countries, namely France and Germany's rigid economic policies and stable GDP might provide a secure place for investors. On the other hand, for example, Russia's falling indicators might create an insecure environment in global markets that might lead to unexpected attacks of investors. Considering the crisis indicators, especially in relation to economic growth, GDP growth rate is another dynamic to be analyzed in order to clarify credit position of governments, budget deficit, associated with expansionary credit or monetary policy of governments which might become inconsistent with fixed exchange rate (Krugman, 1979).

4.1.2. Current Account in percentage of GDP

Following the fall in imports in parallel with exports during the recession, the current account deficit widens in the emerging countries. The main characteristic of these countries is to possess heavy large current account deficits, together with decreasing GDP indicators. The reliance of these countries on foreign savings makes them vulnerable against external shocks. The factor of current account deficit must be analyzed in relation to further investment opportunities, possible FDI, external debt obligations, FX reserves, export volume GDP growth rate, their agenda of the EU accession and integration, rapid credit and consumption growth as well as exchange rate policies.

4.2. Liberal Economic Policies

Liberal economic policies are the main motives of developing countries to achieve and maintain economic growth. However, uncontrollable and unsustainable liberal policies might lead to destruction of the pillar of economic production. In other words, national governments of emerging economies adopt a secured exchange rate regime in order to overcome with inflation as well as to attract more foreign capital. However, this kind of control results in an exchange rate-based stabilization of prices to be able to eliminate exchange risk that is perceived by foreign investors. Therefore, capital inflows are appreciated together with not only financial opening but also attractive interest rates.

4.2.1. Inflation

Considering the emerging countries with their weak position in macroeconomic fundamentals, fiscal policies together with central bank monetization of government debts might lead to high inflation as well as high current account deficits. In these countries, inflation has continued to increase rapidly that also damaged the credibility of exchange rate and thus triggered speculative attacks, that resulted in exchange rate crisis. Therefore, chronic inflation (Calvo and

Végh, 1992) that showed the way of pressure on the exchange rate that eroded countries' competitiveness in external trade (Kregel, 1998).

Contrary to Asian crisis where the currencies of Singapore and Taiwan were devalued in 1997 without any drastic financial destruction(Fischer, 1998), the pegged currency suffered a harsh speculative attack in 1997 which resulted in the devaluation in the Czech Republic(Corsetti, et.al., 1998).

4.2.2. Interest Rates

The term structure of interest rates is determined by the riskiness of different debt maturities, and these reflect the possibility of a crisis associated with illiquid portfolios. Consequently, the role of short term debt in generating a crisis can only be analyzed in terms of debt maturity and the term structure of interest rates. (Rodrik and Velasco, 1999).

For instance, borrowing money from a country where the interest rate is lower, a country with pegged interest rates might profit from the lower interest rate. In the case of pegged exchange rates, investors may not be concerned about earning domestic currency to refund the loans in dollars. However, if the US dollar is weak, the country's currency and private sector might lose a considerable amount of money in relation to interest rate. Therefore, during the crisis, countries' currency conditions coupled with their interest rate policies affect the country' position against foreign currencies.

4.3. Economic Openness

Financial crises are mostly preceded by a considerable growth of capital inflows in a context of a nominal exchange rate which was softly pegged (Mexico, East Asia and Turkey) or hardly pegged (Argentina). Therefore, economic openness needs to be analyzed in relation to capital movements, exchange rate regime and trade balance.

4.3.1. Openness to International Finance

Depending on the characteristics of economic policies, rigid or flexible, proactive or reactive, transition economies might experience more prolonged decline due to their direct exposure to the financial crisis. Similarly, these countries might confront misalignments in their external financing conditions that make the national economy more vulnerable to external volatility.

4.3.2. Capital Movements

One of the most fragile factors in financial crises is capital inflows and outflows that most probable lead to speculative attacks in national economies. More specifically, private capital flows to emerging market and developing countries might be decreasing during 2008. In fact, with the overall net current account surplus of these countries rising further might help keep the accumulation of international reserves high.

Wachtel (1998) explains three main drives of financial crises in transition countries during 1990s. Therefore, these are first the collapse of output and production that lead to the decrease in national savings as well as unsustainable in relation to private and public consumption. Second, the other is capital outflow with an extensive capital flight that results in capital account surplus that turns into domestic investment. The third is capital inflows come from foreign borrowing, portfolio investments, deposit inflows and foreign direct investments and finance both investment and consumption.

4.3.3. Exchange Rate Regime

According to the research on the crisis indicators, a rapid growth of money supply might lead to the currency overvaluation, which is associated with decreasing reserves coupled with high exchange rate. Accordingly, the banking system under the routes of international reserves manipulates investors' expectations about the exchange rate credibility. Therefore, these expectations dependent on exchange rate movements affect the country's vulnerability

against an external financial shock (Dabrowski, 2003; Sachs, Tornell and Velasco, 1996).

4.3.4. External Trade

As a reference to Krugman (1979), trade balance deficit as a percentage to GDP is related to appreciation of the exchange rate (which might result in financial crisis). In light of this observation, financial crises are also related to terms-of-trade shifts for example in oil price increases; to currency over-valuation under pegged exchange rate regimes; to stock market crash; and to simultaneous political and economic shocks (Patel and Sarkar, 1999).

National economies that are highly export-oriented have been considerably affected by the collapse in global production and thus the movement of goods and services. The following tables apparently provide an overview of this collapse, especially after 2008.

4.4. Current Account Deficits and Current Account Sustainability

Countries with healthy government reserves and stable export performance lead to strong current account position for the country. However, external financial and economic conditions, for example, which emerge along with a global recession might directly or indirectly effect country's stance against the outside markets. Therefore, current account situation may not explain the whole processes of recession in a given country.

The rise in current account deficits in these economies has raised concerns about their sustainability in relation to the impacts of deficit on economic downturn and its recovery (Aristovnik, 2007).

According to Roubini and Wachtel (1998), the current account deficits in transition economies are related to both negative and positive factors. On one hand, the current account deficits may represent positive structural changes in order to increase capital and investment inflows for rapid economic growth. On the other hand, these deficits may lead to unsustainable imbalances resulted in a

currency crisis or a balance of payments crisis, like in Czech Republic in 1997 or in Russia in 1998 (Roubini and Wachtel (1998) in Aristovnik, 2007). Therefore, an unsustainable deficit should be distinguished from an excessive one (Edwards, 2001; 2007; Milesi-Ferretti and Razin, 1996).

Aristovnik (2007) argued that, an "arbitrary threshold of 4 percent of GDP" for future FDI resulted in a more sustainable current account deficit. However, some countries may reveal unsustainable levels of current account deficits in the medium term. Accordingly, on the assumption of the medium level of FDI flows, a higher level of external deficit revealed, like in Hungary and Romania. As a result, the current account deficits of transition economies in excess of 5 percent of GDP generally pose external sustainability problems. Therefore, a strong external position for FDI coupled with a cautious fiscal policy might lead to current account sustainability.

Milesi-Ferretti and Razin (1996) studied the experience of persistent current account imbalances in seven countries: Australia, Chile, Ireland, Israel, Malaysia, Mexico and South Korea. They outlined three types of persistent current account balances. A country can have a persistent current account deficit for several years with no crisis such as the case for Australia in 1981-1994 and in Malaysia in 1991-1995. In the second case, a country's persistent current account deficits will cause a policy reversal. This policy reversal increases ameliorate the current account position such as in the case of Ireland in 1979-1990, Israel 1982-1986, Malaysia in 1979-1986 and South Korea in 1978-1988. In the third case, a persistent current account deficit leads a crisis. The country can not fulfill its debt obligations such as in the case of Chile 1977-1982, Mexico in 1977-1982 and 1991-1995. Milesi-Ferretti and Razin (1996) categorized the factors that affect the crises into four: structural features, macroeconomic policy position, political factors and market expectations. Structural features included economic growth, investment, trade, foreign investment and external liabilities. Macroeconomic policy position covered

exchange rate policy and fiscal policy. Political factors denoted credibility and stability and market expectations bond prices and interest rate spreads.

The sustainability of the current account position of the selected countries with a referral to pre-crisis and post crisis years' indicators are analyzed. Additionally, based on empirical literature, a model has been constructed for describing factors that have impact on current account balance. This study's structural features include real GDP growth rate, real net foreign direct investment inflows/GDP, real exports/GDP, real external debt/GDP and foreign exchange reserves/external debt. As a macroeconomic policy indicator, inflation rate is added into the study. Data from 1992 to 2005 is used.

5. COUNTRY ANALYSIS ON THE RELATIONSHIP BETWEEN CURRENT ACCOUNT DEFICITS AND FINANCIAL CRISES

The sample includes seven countries which have experienced financial crises in the 1990s:

- Bulgaria, February 1997. To break the hyperinflation, the introduction of a currency board with stabilizing effects on the value of the currency.
- Czech Republic, May 1997. Large macroeconomic balances, due to a real appreciation and a lack of structural reforms caused an increase in the current account deficit and put speculative attacks on Koruna.
- Hungary, second half of 1993 and 1997. Eight banks, 25% of the financial system assets, were insolvent in 1993. The fall in output caused a sharp decline in national savings and significant budget deficit were the main characteristics of 1997 crisis.
- Romania, February 1997. Decline in the output and investment and structural weaknesses in the banking sector triggered off a depreciation by nearly 20% against USD within two weeks.
- Russia, August 1998. After the pressure on Ruble, Central Bank raised the interest rates from 30% to 150% to defend the currency. Increased speculative attack caused the devaluation.
- Slovenia,1992-1994. Two-thirds of banking system assets were restructured. Recapitalization cost totaled USD 1.3 billion.
- Turkey, April 1994 and November 2000 – February 2001. High current account deficits associated with public sector expenditures booming, inflation rose to three-digit levels, Central Bank lost half of its reserves in 1994 crisis. 19 banks have been taken over by Savings Deposit Insurance Fund during 2001 crisis. (Reinhart, C.M. and Rogoff, K., 2009).

5.1. Bulgaria

During the 1990s, Bulgaria witnessed three financial crises that caused the currency depreciation, banking crises, economic downturn together with the collapse of the exchange rate and hyperinflation (Ganev, 2003 and Dabrowski, 2003). The country had large current account deficits problems at the beginning of 1990s. The current account deficit in 1990 was 8.25% of GDP. The country suspended its principal and interest on its hard currency debt. The size of the current account imbalance in 1996 and in 1997 was modest as a share of GDP. In early 1997, a serious economic and financial crisis broke out. GDP collapsed, the risk of hyperinflation came into being and the gross foreign reserves decreased to USD 500 mio at the end of 1996. The country risked a foreign debt crisis at the beginning of 1997 (Roubini and Watchel,1998). A financial support program was introduced by IMF in the same year. The stabilization started to take place with the help of the IMF program at the end of 1997. FDI rose to 7.92% of GDP in 2000 and 7% in 2003. Current account deficit widened due to the increase in the investments during these years. In the meantime, external debt increased to 68% of GDP in 2004 and short-term external debt to 28% in 2004 from 12% in 2001. Debt service problem was continuing to put on pressure to the economy. External deficit had been financing with the high FDIs which helped also to a jump in the foreign exchange reserves.

While looking at the structural features of current account sustainability indicators in the country, it can be said that GDP growth rate has been increasing after the crisis periods and has caught a stable trend during 2000s. A higher GDP growth rate shows that a country can sustain a higher current account deficit. Thus, the current account/GDP ratio will decrease and the country's ability to pay will continue to rise.

Table 5.1: Bulgaria's current account position

CRISIS PERIODS						
	1992	**1993**	**1994**	**1995**	**1996**	**1997**
CA/GDP (%)	-4,39	-24,69	-0,41	-0,2	0,16	4,12

NON-CRISIS PERIODS								
	1998	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
CA/GDP(%)	-0,48	-5,03	-5,59	-5,63	-2,44	-5,51	-6,59	-12,40

Source: Data was obtained from World Bank , IMF and Bulgarian National Bank

One of the other important components of current account sustainability is foreign investment. Net FDI inflows into Bulgaria have been rising since the beginning of the 1990's especially after the EU accession. Higher foreign investment can sometimes have negative effects and can increase a crisis probability in the country. On the one hand, high dependence on the foreign portfolio will leave the country open to the global financial instabilities. On the other hand, short- term FDIs can have negative effects on the current account sustainability.

Real export/GDP ratio has been always at satisfactory level since the beginning of the 1990s. The ratio reached the peak level in 1994 with 94.54% and had a minimum in 1993 with 43.40%. Higher real export/GDP rate means that a country is able to pay more debt.

The country's real external debt/GDP ratio has been always very high especially in 1992, 1993 and 1994 with the 160.58%, 127.79% and 116.79% levels respectively. This reflects that Bulgaria has an unsustainable external position. The composition of the debt and availability of the FX reserves should also be considered. If most of the debts are short-term, the country becomes

more vulnerable to a crisis situation. Additionally, a low FX reserves/external debt ratio makes the country more delicate to crisis.

Referring to the macroeconomic indicators, Bulgaria's inflation rate became hyper in the crisis year 1997. The rate has been always high in the non-crisis years as well. High inflation rate causes uncertainty and declines the value of the national currency. This situation affects the country's international competitiveness and leads an unsustainable current account.

After becoming an EU member state, Bulgaria has experienced a high performance on economic growth. However, in 2008 crisis, real GDP growth decreased due to the falls in domestic demand and exports. As far as annual percentage change in GDP as compared to previous year prices, 6 % growth rate has decreased to -1.6%. According to Euro stat estimations, in 2010, the percentage will be -0.1 (Economic Forecast, 2009). Similarly, domestic demand has fallen from 9.4% change in 2008 to -4.4% in 2009. Following with the considerable decline in FDI and low credit growth compared with 2007, Bulgaria's gross fixed capital formation change has become stable around 20% in 2008 but decreased by -12.7% in 2009.

Considering the trade balance, the current account balance seems significantly stable even though these indicators remain negative. In 2008, annual percentage change in trade balance was -25.8% and in 2009 -19.9%. Similarly, in 2008, annual change in current account balance was -24.8% and in 2009 -18.8%. Therefore, recovery in the trade balance and current account balance has contradicted with other financial and economic indicators that cause the economic downturn.

5.2. Czech Republic

Towards the end of 1990s, an unsustainable high current account deficit and a considerable slowing down in growth in Czech Republic created an environment in which political instability, contagious effects and shift in

expectations resulted in currency crisis (Sujan and Sujanova, 1993). In 1994-1995, 38% of banking system loans were non-performing (Caprio and Klingebiel, 2003). In that sense, unlike other transition economies, which experienced large current account deficits after the collapse of the Soviet system, the Czech Republic's current account exhibited relatively small surpluses and deficits in the 1990s, especially due to high investment demand over "inefficient" private savings rather than public saving (Horvath, 2009). At the beginning of the transition period (1990-1993), current account deficits were floating. The negative growth rate of output caused a drop in the investment and saving rates. The country had a current account surplus in 1993. GDP growth in 1994 ensured an increase in the savings and investment rates. The increase in the investment rate was larger than the increase in the savings rates which resulted in current account deficits in 1994 and 1995. In 1996, the current account deficit rose to 6.75% of GDP. In 1997, current account imbalance problem became significant and in May 1997, the central bank abandoned its exchange rate peg. Current account deficits between 1994-1997 were financed by external debt which rose to 26% of GDP in 1994 to 41% in 1997. Economic reform package helped to reduce the current account imbalance from its unsustainable level in 1998 and 1999.

In 1998, Czech Republic started the accession negotiations with EU. In 2000-2002 period, the current account increased due to the fall in saving rates and it is mainly financed by increased FDI inflows. In 2003, current account deficit reached 6.3% of GDP due to the high outflows income from FDI. The country started to finance its external debit from non-FDI sources as the privatization activity became slower. Saving rates decreased in 2003 and IMF advised the government to apply new policies to increase savings in 2005. Increasing exports and related investment helped to sustain the low current account deficit in 2004, 2005 and 2006. The country's inflation rate has not been problematic comparing to Bulgaria's and has been ruling at low levels after 1993.

Table 5.2: Czech Republic's current account position

CRISIS PERIODS						
	1992	**1993**	**1994**	**1995**	**1996**	**1997**
CA/GDP (%)	-0,16	1,24	-1,85	-2,49	-6,66	-6,34

NON-CRISIS PERIODS								
	1998	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
CA/GDP (%)	2,12	-2,43	-4,74	-5,29	-5,66	-6,33	-5,25	-1,34

Source: Data was obtained from World Bank , IMF and Czech National Bank.

The current account balance is negative especially since 2008 which has also impacts on high general government balance and high unemployment. The effects of the 2008 financial crisis has been felt deeply on external trade with the percentage change in exports of goods and services in 2009 as -11.6% and imports of goods and services in the same year as -10.4%. The export performance of Czech companies is being driven down by the collapse of external demand and export growth is thus anticipated to contract by around 11.6 % in 2009. The trade surplus is anticipated to decline, yet the 2010 estimation remains positive (Economic Forecast, 2009). The economic downturn has a strong impact on the labor market with the production sector particularly affected by unemployment. As such, unemployment has been rising at the end of 2008 and this increasing trend is expected to continue in 2009 and 2010.

As far as the vulnerabilities of the country, the year 2008 represents a general government deficit that is indicated as 1.5 % of GDP. In 2009, public finances are set to deteriorate due to the downturn in the economy.

5.3. Hungary

Following the process of macroeconomic adjustment and structural reform during the 1990s, Hungary's economic performance has improved. Referring to the favorable external developments, the country held a considerable success in structural policies and economic indicators. However, since the transition period has not yet been over, the country is open to external vulnerabilities in the case of external economic downturns. Therefore, apart from current account deficits, the country suffered from "output shocks" (Cottarelli, 1998) and thus external and internal debt crisis (Kornai, 1997).

The positive current account balance status of Hungary had deteriorated between the years 1993-1995. The fall in output caused a sharp decline in national savings with the transition to the market economy. An austerity program was launched by the government in 1995. Saving rates rose to 19%. By the second half of 1993, eight banks (with 25% of the financial system assets) were accepted as insolvent (Caprio and Klingebiel, 2003). The investment rate remained at 23% and the current account deficit sustained with the increase in saving rates until 1997. Investments were accelerated with the start of the EU accession talks in 1998 and reached 31% in 2000.

In 2003, due to the significant structural reforms, privatization efforts, increasing FDI, strong export performance and accurate banking system, the country' economy started to become more resistant to the external vulnerabilities. Wage increases in the public sector together with the national currency appreciation aggravated external competitiveness. 2003 GDP growth was the result of the domestic consumption. Current account deficit widened. The external debt was high as a share of GDP.

Table 5.3: Hungary's current account position

CRISIS PERIODS						
	1992	**1993**	**1994**	**1995**	**1996**	**1997**
CA/GDP (%)	0,95	-11,04	-9,77	-3,67	-3,91	-4,48

NON-CRISIS PERIODS								
	1998	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
CA/GDP (%)	-7,23	-7,83	-8,37	-6,02	-6,98	-7,95	-8,42	-7,52

Source: Data was obtained from World Bank , IMF and National Bank of Hungary.

Considering the structural features of current account sustainability indicators in the country, GDP growth rate has been increasing after the crisis periods. Net FDI inflows into Hungary have been following an increasing trend especially during the EU accession talks period. Real export/GDP ratio was not at satisfactory level until the end of 1990s but accelerated with the start of the EU accession talks. Real external debt/GDP ratio has not been at an alarming level in the non-crisis periods. Hungary's inflation rate was in two digits between the years 1992-1999. After 2000, the rate has caught a stable trend with one digit.

Following a stable growth pattern during the 2000s, in 2009, the country faced with the shocks of 2008 global crisis, with -6.3 % changes in GDP growth rate. However, in light of this decrease, current account balance seems to recover itself as compared to the previous year. In 2008, the change in current account balance was -8.4 percent; but, in 2009, it was -5.0 %, which represent a decrease in current account deficit.

More importantly, for the year 2009, it is necessary to refer to the indicators of gross fixed capital formation (-10.6% as compared to -2.6% in 2008) as well as trade indicators. In other words, exports indicators of goods and services in 2009 turned into negative numbers (-11.9%) in the same way of imports (-

12.3%). Therefore, similar to the Czech Republic, Hungary's confrontation with the 2008 financial crisis is mostly correlated to trade balances.

In light of this observation, it can be argued that current account deficit is not the remarkable crisis indicator, which gives its place to trade indicators. Labor demand is likely to be reduced significantly on the way of economic recession. The decrease in private sector employment is expected to be 3% annually. Therefore, unemployment is likely to rise by 1.7 %.

Nevertheless, the increasing negative output is accompanied with the price inflation and the weakening exchange rate. Besides, the decrease of 6.4 % in domestic demand might affect not only private consumption (with the decrease of 6.6 %) and low sustainability of this weakness with general government gross debt of 80.8 as % of GDP.

5.4. Romania

Romania experienced major banking crises in 1990 and in 1997 with the transition to a market economy. This transition period caused the deterioration of the current account balance. The country had a high external deficit problem in the crisis years. In 1993-1994, the current account balance was improved. A structural reform program including the tightening of monetary policy, liberalization of the official exchange rate and acceleration of privatization was launched after the crisis. However, the country suffered from problems in accommodating monetary policy (Crespo-Cuaresma, 2005). Therefore, the fall in real GDP and the rise of inflation led to significant difficulties with the repayment of foreign debt. Nevertheless, with the strong demand in EU export markets, since 2001, the GDP growth has started to increase.

To discuss the structural features of the current account sustainability in Romania, the remarkable indicators, GDP growth rate and external debt should be considered. GDP growth seemed to be recovered after the 1990 crisis until the sharp decline in 1997. Afterwards, the growth rate took a stable trend in the

2000s. External debt has been increasing rapidly in the non-crisis years. Current account deficit has been financing with the FDIs. Inflation rates ranged from over 150% to over 250% during crisis years. In the non-crisis periods, the rates were significantly lower.

Similar to the general outline of transition countries observed so far, Romania also provides an example on the parallel relationship between current account deficit and further crisis indicators. Although current account deficit seems to be a chronic problem in the country, the account imbalances become recovered during the crisis. If FDIs continue to be at the 2005's levels, current account deficit can be considered as sustainable.

Table 5.4: Romania's current account position

CRISIS PERIODS						
	1992	**1993**	**1994**	**1995**	**1996**	**1997**
CA/GDP (%)	-7,75	-4,7	-1,72	-4,47	-6,65	-5,4

NON-CRISIS PERIODS								
	1998	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
CA/GDP (%)	-7,1	-4,12	-3,7	-5,49	-3,33	-5,82	-8,36	-8,88

Source: Data was obtained from World Bank , IMF and National Bank of Romania.

Net exports maintain the positive position and contribution to growth, coupled with weak demand due to the stagnant economic performances of EU internal market. Therefore, net external borrowing is expected to decrease by 11,8 % of GDP in 2008 and in 2009 this rate will increase to -6,5 %.

Regarding the further crisis indicators, the budget deficit was 5,4 % of GDP in 2008 (more than 2,5 % of GDP in 2008). The deficit is estimated to decline to 5,1 % of GDP in 2009. Similarly, following the decline in economic activity,

unemployment is expected to rise from a record low of 5 % in 2008 to about 8 % in both 2009 and 2010 while inflationary pressures decreased in 2009 on the back of downturn in global markets and commodity prices, inflation raised in 2009 (by 5, 8 %).

5.5. Russia

The collapse of the Soviet regime at the end of the 1980s resulted in the economic slowdown experienced by the Soviet bloc countries in the following years. The transition to the market economy had been very difficult for Russia as the country was the first to launch into this new economic formation (Svejnar, 2002).

In 1998, Russian Government's short-term external financing needs revealed a balance sheet vulnerability that resulted in the failure to implement budget deficit as well as terms of trade deterioration (Ghosh, 2006). Moreover, the poor fiscal performance coupled with a weak tax administration due to corruption lead to unsuccessful attempts to control expenditures and taxes (Antezak, 2003 in Dabrowski, 2003). Russia's currency crisis resulted in the devaluation of the ruble and the default in public and private debt (Chiodo and Owyang, 2002).

Russia generated sustained economic growth in the non-crisis periods. The country suffered GDP decline until 1996. In 1997, some signs of growth had been recognized but in 1998, the growth rate had decreased to -5.3%. The inflation rate was in triple digit during 1993, 1994 and 1995. By 1996, the rate had declined until the 1998 financial crisis. After this sharp rise, Russia's inflation started to follow a decreasing trend (excluding the year 2001 with a slight increase). Russia is an important exporter of natural resources, experiencing net outflows of investment funds. This is the main reason of their current account surpluses. Most of the transition countries started the 1990s

with high indebtness ratios. Russia's external debt was 91.38% of GDP in 1992. By the mid-1990s the country reduced its debt relative to GDP. The increasing trend seemed to be restarted in 1998 and Russia defaulted its sovereign debt in the same year. Since 2001, the ratio has been declining. This level of debt is not alarming but high level of short-term debt of the country should be considered (Svejnar, 2002). FDI inflows have been rising gradually since 1994. FDI inflows/GDP ratio has been fluctuating between the minimum 02.5 percent and the maximum 2.69 percent interval.

Table 5.5: Russia's current account position

CRISIS PERIODS						
	1997	**1998**	**1999**	**2000**	**2001**	**2002**
CA/GDP (%)	-0,02	0,08	12,57	18,04	11,07	8,44

NON-CRISIS PERIODS								
	1992	**1993**	**1994**	**1995**	**1996**	**2003**	**2004**	**2005**
CA/GDP (%)	-1,4	1,41	2,83	2,22	2,77	8,21	10,06	11,05

Source: Data was obtained from World Bank and IMF.

5.6. Slovenia

The Slovenian transition of the 1990s was characterized by a gradual approach to a market economy. The most important reforms were stabilization of the economy, liberalization of trade and increased market competition. Unlike Russia and other countries of the former Soviet Union, the Yugoslav socialist system experimented with different forms of a decentralized economy, based on the self-management of employees in socially-owned firms (Prasnikar, et,al,, 2002). After the Privatization Law was passed, Slovenia established a system of

privatization based on firms' initiatives and the transparent operation of regulatory institutions, such as Privatization Agency, Development Fund.

Slovenia's current account deficits were at low levels at the beginning of the 1990s. The country had a current account surplus in 2001 and 2002. At the same years, FDIs were considerably high comparing to the other years' inflows. Current account position has worsened since 2004 but never been at critical levels. GDP growth rate of the country has been always at satisfactory levels and this positive trend has been continuing in the 2000s. The same trend has been observed in FX reserves ratios as well. Rising inflows and high FX reserves helped the country to keep the current account low. The inflation rate reached the peak level in 1993 and started to decline in the following years excluding the years 2000 and 2001 with low increase.

Table 5.6: Slovenia's current account position

CRISIS PERIODS						
	1992	**1993**	**1994**	**1995**	**1996**	**1997**
CA/GDP (%)	5,79	1,74	4,26	-1,48	0,27	0,32

NON-CRISIS PERIODS								
	1998	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
CA/GDP (%)	-0,72	-3,95	-3,16	0,18	1,07	-0,78	-2,66	-1,73

Source: Data was obtained from World Bank , IMF and Bank of Slovenia.

5.7. Turkey

In 1989, with the full liberalization of capital account movements and removal of the controls over foreign exchange transactions, Turkish economy has entered in a new period. Until 2001, unstable and low growth rates, large fiscal

deficits, high public sector debt, high inflation rates and dollarization were the main characteristics of the economy. 1994 and 2001 balance of payments crises increased the vulnerability of the economy. These crises were mostly related to short-term capital inflow, liquidity shortage, exchange rate based inflation, unsustainable trade and current account deficits, financial fragility and external vulnerability (Boratav and Yeldan, 2006; Akyüz and Boratav, 2003; Voyvoda and Yeldan, 2002; Yeldan, 2002; Ertuğrul and Selçuk, 2001; Eichengreen, 2001; Alper, 2001).

The country suffered two financial crises in 1994 and 2001. High current account deficits have been associated with these crises. Özatay (2000) states that high current account deficits in Turkey were not a trend prior to these crises, but rather a one-shot problem. Since 2002, with the high growth rates, the current account deficit has raised both in nominal terms and as a share of GDP. The import dependency of the economy also increased, turning current account deficits into a chronic structural problem (Onaran, 2006). Starting the early 1990s, Turkey has experienced high current account deficits, with the figure in 2007 reaching an increase by -5.8 %.

Table 5.7: Turkey's current account position

CRISIS PERIODS	**1994 crisis**			**2001 crisis**			
	1992	**1993**	**1994**	**1998**	**1999**	**2000**	**2001**
CA/GDP (%)	-0,46	-3,21	0,29	0,80	-0,37	-3,72	1,92

NON-CRISIS PERIODS							
	2002	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**
CA/GDP(%)	-0,27	-2,48	-3,68	-4,59	-6,03	-5,81	-5,66

Source: Central Bank of Turkey

Even though the high increases in the current account deficit after 2002, its reason and its financing should be taken into consideration to evaluate the current account sustainability. Before 2001, the negative public savings-investment gap was increasing continuously. After 2001, this gap has started to decrease and become positive together with a change in private sector savings-investment gap. Additionally, before 2001 crisis, total domestic savings and investments followed a downward path. The implementation of the tight monetary and fiscal policies, accompanied with the high growth rates, has resulted in a jump in total domestic investments relative to the increase in total domestic savings. This is the main reason of the high current account deficits in the recent years.

It is examined that the share of consumption goods in total imports has been always limited and the increase in imports has been due the imports of investment and intermediate goods. This situation has caused the rise in domestic production capacity of Turkey which has helped to sustain the current account deficit. Babaoğlu (2005) has argued that the sectors in which these imported investment and intermediate goods are used are also very important. High investment in non-tradable goods' sectors raises domestic demand but does not develop the productive capacity in exporting and in import- competing sectors. However, private sector investment in tradable goods' sectors assists in the reduction of current account deficit (World Bank, 2008). World Bank (2008) emphasizes a significant shift in the composition of investment towards tradable sector in Turkey has taken place since 2001. Compared to the new EU members, the amount is still low but this can be considered a positive progress for the sustainability of current account deficits in Turkey.

Referring to the current account stability indicators, it can be concluded that GDP growth rate had been negative during the crisis periods. This rate has always showing an upward trend during non-crisis periods. Poor FX reserves/ external debt ratio which was less than 10% prior to 1994 crisis implied

significant vulnerability. Macroeconomic instability was due to the high inflation rates at the beginning of the 1990s. Net FDI inflows into the country were at very low levels at the beginning of the 1990s. Except the crisis periods, FDIs has reached an acceptable level in the 2000s. Real external debt/GDP ratio had jumped during the crisis years and reached a maximum level of 75.52% in the 2001 crisis. Real export/GDP ratio started to increase after 1994 crisis and has been fluctuating between 19% and 7% interval.

6. MODEL AND METHODOLOGY

Based on empirical literature, a model is constructed for describing factors that have impacts on current account balance. CAD has been accepted as a crisis signal by many economists. The regression analysis study gets CAD as percent of GDP as dependent variable and all the other variables are explanatory (independent) variables.

Milesi-Ferretti and Razin (1996) analyzed the countries that faced large and persistent current account deficits and identified the key factors that led them to crises. Referring to their work, the following variables are accepted as explanatory variables in this study:

- GDP Growth Rate: Gross domestic product growth rate as percentage.
- Inflation Rate Change: Annual inflation rate as percentage(inflation rate change is not determinded as an indicator in Milesi-Ferretti and Razin's work, we added this indicator as this is an important segment of macroeconomic stability).
- Export/GDP: Total annual exports as percentage of GDP.
- Net FDI Flows/GDP: Net foreign direct investments flows as percentage of GDP.
- External Debt/GDP: Real external debt as percentage of GDP.
- FX Reserves/External Debt: Foreign exchange reserves as percentage of external debt.

The model will look as follows:

$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6$

Y = CA (% of GDP)

X_1 = GDP Growth Rate (%)

X_2 = Inflation Rate Change (%)

X_3 = Exports/GDP (%)

X_4 = Net FDI Inflows/GDP (%)

X_5 = External Debt/GDP (%)

X_6 = FX Reserves/External Debt (%)

The study uses annual data covering the period from 1992 to 2005 for CA/GDP, GDP growth rate, inflation rate change, export/GDP, net FDI inflows/GDP, external debt/GDP, FX reserves/external debt.

The analysis contains three steps: tests of normality with Kolmogorov–Smirnov, Shapiro-Wilk, Pearson correlation analysis and multiple regression analysis with SPSS.

Normal distribution hypothesis is tested for each group:

H_0: Data shows normal distribution.

H_1: Data does not show normal distribution.

SPSS results:

Test of Normality table is reviewed to test the normality. In each group, the result variable is tested to designate if this is normally distributed or not with Kolmogorov-Smirnov or Shapiro Wilk tests. Shapiro-Wilk test is usually preferred because it is a more powerful test. According to Shapiro-Wilk results for all groups p is >0.05 (H_0 can not be rejected). Normal distribution is obtained.

α = constant.

β = coefficient values in the regression equation.

SE β = Standard errors of the coefficient values in the regression equation.

t = t values of the coefficient values in the regression equation.

Sig. t = t values of the coefficient values in the regression equation and significance tests of these t values.

- **BULGARIA:**

Table 6.1: Tests of Normality for Bulgaria

GROUP	Kolmogorov-Smirnov(a)			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
GDP GROWTH RATE (%)	,246	14	,021	,867	14	,078
INFLATION RATE (% change)	,395	13	0	,620	13	,080
CA (% of GDP)	,263	14	,01	,820	14	,059
EXPORTS/GDP (%)	,233	14	,038	,765	14	,072
NET FDI INFLOWS/GDP (%)	,153	14	,200(*)	,925	14	,263
EXTERNAL DEBT/GDP (%)	,336	14	0	,809	14	,066
FX RESERVES/ EXTERNAL DEBT (%)	,178	14	,200(*)	,890	14	,080

* This is a lower bound of the true significance.
A Lilliefors Significance Correction

Table 6.2: Results of the multiple regression analysis (for variables) for Bulgaria

Variables	**β**	**SE β**	**t**	**Sig. t**
EXTERNAL DEBT/GDP (%)	-,379	,138	-2,747	,002
INFLATION RATE (%)	,004	,004	,807	,440
NET FDI INFLOWS/GDP (%)	-,460	,419	-1,097	,301
CONSTANT	34,846	14,310	2,435	,038

Table 6.3: Correlation Table for Bulgaria

		GDP Growth Rate (%)	Inf. Rate (% change)	Exports/GDP (%)	Net FDI Inflows/ GDP (%)	External Debt/GDP(%)	FX Reserves/External Debt (%)	CA Balance/ GDP (%)
GDP Growth Rate (%)	Pearson Correlation	1	-0,348	0,013	,808**	-,550*	,913**	0,124
	Sig. (2-tailed)		0,244	0,965	0	0,042	0	0,673
	N	14	13	14	14	14	14	14
Inf. Rate (% change)	Pearson Correlation	-0,348	1	0,03	0,025	0,1	-0,055	0,121
	Sig. (2-tailed)	0,244		0,924	0,935	0,745	0,859	0,693
	N	13	13	13	13	13	13	13
Exports/GDP (%)	Pearson Correlation	0,013	0,03	1	-0,137	0,182	-0,202	0,236
	Sig. (2-tailed)	0,965	0,924		0,641	0,533	0,488	0,417
	N	14	13	14	14	14	14	14
Net FDI Inflows/GDP (%)	Pearson Correlation	,808**	0,025	-0,137	1	-0,374	,885**	-0,132
	Sig. (2-tailed)	0	0,935	0,641		0,187	0	0,654
	N	14	13	14	14	14	14	14
External Debt/GDP (%)	Pearson Correlation	-,550*	0,1	0,182	-0,374	1	-0,494	-0,346
	Sig. (2-tailed)	0,042	0,745	0,533	0,187		0,073	0,225
	N	14	13	14	14	14	14	14
FX Reserves/ External Debt (%)	Pearson Correlation	,913**	-0,055	-0,202	,885**	-0,494	1	0,059
	Sig. (2-tailed)	0	0,859	0,488	0	0,073		0,842
	N	14	13	14	14	14	14	14
CA Balance/GDP (%)	Pearson Correlation	0,124	0,121	0,236	-0,132	-0,346	0,059	1
	Sig. (2-tailed)	0,673	0,693	0,417	0,654	0,225	0,842	
	N	14	13	14	14	14	14	14

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

We added only the variables that have a significant t into the equation:

$Y= 34,846 -0,379 *X_5$

Y = CA (% of GDP)

α = constant

X_5 = External Debt/GDP (%)

R^2 is calculated as 0,474. The independent variables contribute the dependent variable with a percentage of 48,00%. This means that the independent variables are explaining the variation in the dependent variable by very low level. To test the general significance, F-test is determined as 2,702. This value is smaller than the value in the F table. Thus, it is concluded that the equation is insignificant.

- **CZECH REPUBLIC:**

Table 6.4: Tests of Normality for Czech Republic

GROUP	Kolmogorov-Smirnov(a)			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
GDP GROWTH RATE (%)	,120	14	,200(*)	,964	14	,795
INFLATION RATE (% change)	,169	13	,200(*)	,932	13	,359
CA (% of GDP)	,196	14	,148	,910	14	,158
EXPORTS/GDP (%)	,183	14	,200(*)	,902	14	,122
NET FDI INFLOWS/GDP (%)	,182	14	,200(*)	,869	14	,071
EXTERNAL DEBT/GDP (%)	,128	13	,200(*)	,943	13	,495
FX RESERVES/ EXTERNAL DEBT(%)	,185	13	,200(*)	,963	13	,792

* This is a lower bound of the true significance.
A Lilliefors Significance Correction

Table 6.5: Results of the multiple regression analysis (for variables) for Czech Republic

Variables	**β**	**SE β**	**t**	**Sig. t**
EXTERNAL DEBT/GDP (%)	-,148	,178	-,827	,430
FX RESERVES/ EXTERNAL DEBT (%)	-,134	,073	-1,842	,004
NET FDI INFLOWS/GDP (%)	,299	,303	,990	,348
CONSTANT	7,891	7,759	1,017	,336

We added only the variables that have a significant t into the equation:

$Y = 7,891 - 0,134 * X_6$

Y = CA (% of GDP)

α = constant

X_6 = FX Reserves/External Debt (%)

R^2 is calculated as 0,281. The independent variables contribute the dependent variable with a percentage of 28 %. This means that the independent variables are explaining the variation in the dependent variable by very low level. To test the general significance, F-test is determined as 1,170. This value is smaller than the value in the F table. Thus, it is concluded that the equation is insignificant.

Table 6.6: Correlation Table for Czech Republic

		GDP Growth Rate (%)	Inf. Rate (% change)	Exports/ GDP (%)	Net FDI Inflows/ GDP (%)	External Debt/GDP(%)	FX Reserves/External Debt (%)	CA Balance/ GDP (%)
GDP Growth Rate (%)	Pearson Correlation	1	-0,16	0,363	0,123	-0,41	0,452	-0,295
	Sig. (2-tailed)		0,601	0,202	0,676	0,165	0,121	0,305
	N	14	13	14	14	13	13	14
Inf. Rate (% change)	Pearson Correlation	-0,16	1	0,13	-0,284	-0,297	-0,211	0,206
	Sig. (2-tailed)	0,601		0,673	0,347	0,324	0,49	0,499
	N	13	13	13	13	13	13	13
Exports/ GDP (%)	Pearson Correlation	0,363	0,13	1	,548*	-0,183	0,322	-0,244
	Sig. (2-tailed)	0,202	0,673		0,042	0,55	0,283	0,4
	N	14	13	14	14	13	13	14
Net FDI Inflows/ GDP (%)	Pearson Correlation	0,123	-0,284	,548*	1	0,433	0,42	-0,076
	Sig. (2-tailed)	0,676	0,347	0,042		0,139	0,153	0,796
	N	14	13	14	14	13	13	14
External Debt/GDP (%)	Pearson Correlation	-0,41	-0,297	-0,183	0,433	1	-0,166	-0,02
	Sig. (2-tailed)	0,165	0,324	0,55	0,139		0,589	0,948
	N	13	13	13	13	13	13	13
FX Reserves/ External Debt (%)	Pearson Correlation	0,452	-0,211	0,322	0,42	-0,166	1	-0,432
	Sig. (2-tailed)	0,121	0,49	0,283	0,153	0,589		0,141
	N	13	13	13	13	13	13	13
CA Balance/ GDP (%)	Pearson Correlation	-0,295	0,206	-0,244	-0,076	-0,02	-0,432	1
	Sig. (2-tailed)	0,305	0,499	0,4	0,796	0,948	0,141	
	N	14	13	14	14	13	13	14

*Correlation is significant at the 0.05 level (2-tailed).

- **HUNGARY:**

Table 6.7: Tests of Normality for Hungary

GROUP	Kolmogorov-Smirnov(a)			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
GDP GROWTH RATE (%)	,272	14	,006	,747	14	,071
INFLATION RATE (% change)	,218	13	,090	,798	13	,082
CA (% of GDP)	,330	14	,000	,747	14	,081
EXPORTS/GDP (%)	,238	14	,030	,871	14	,063
NET FDI INFLOWS/GDP (%)	,146	14	,200(*)	,962	14	,749
EXTERNAL DEBT/GDP (%)	,178	14	,200(*)	,962	14	,762
FX RESERVES/EXTERNAL DEBT (%)	,230	14	,043	,910	14	,159

* This is a lower bound of the true significance.
a Lilliefors Significance Correction

Referring to the Hungary correlation table, we have excluded from the regression analysis Inflation Rate, Exports/GDP and Net FDI Inflows/GDP variables as their correlations are not significant and FX Reserves/External Debt variable as its correlation is higher than 75%.

Table 6.8: Results of the multiple regression analysis (for variables) for Hungary

Variables	**β**	**SE β**	**t**	**Sig. t**
GDP GROWTH RATE (%)	,871	1,118	,779	,452
EXTERNAL DEBT/GDP (%)	-,299	,263	-1,135	,280
CONSTANT	45,364	16,118	2,814	,017

According to the results of the analysis, none of the regressed variables is statistically significant. We do not include any of them to the regression equation. R^2 is calculated as 0.186. The independent variables contribute the dependent variable with a percentage of 19.00%. This means that the independent variables are explaining the variation in the dependent variable by very low level.

- **ROMANIA:**

Table 6.9: Tests of Normality for Romania

GROUP	Kolmogorov-Smirnov(a)			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
GDP GROWTH RATE (%)	,222	14	,060	,895	14	,095
INFLATION RATE (% change)	,283	13	,005	,883	13	,078
CA (% of GDP)	,088	14	,200(*)	,982	14	,986
EXPORTS/GDP (%)	,198	14	,142	,915	14	,189
NET FDI INFLOWS/GDP (%)	,203	14	,122	,884	14	,067
EXTERNAL DEBT/GDP (%)	,142	14	,200(*)	,916	14	,194
FX RESERVES/EXTERNAL DEBT (%)	,166	14	,200(*)	,926	14	,269

* This is a lower bound of the true significance.
A Lilliefors Significance Correction

Referring to the Table 6.12., we have excluded from the regression analysis Exports/GDP and External Debt/GDP variables as their correlations are higher than 75%.

Table 6.10: Correlation Table for Hungary

		GDP Growth Rate (%)	Inf. Rate (% change)	Exports/ GDP (%)	Net FDI Inflows/ GDP (%)	External Debt/GDP(%)	FX Reserves/External Debt (%)	CA Balance/ GDP (%)
GDP Growth Rate (%)	Pearson Correlation	1	-0,039	,729**	0,225	-0,255	,718**	0,301
	Sig. (2-tailed)		0,9	0,003	0,439	0,379	0,004	0,296
	N	14	13	14	14	14	14	14
Inf. Rate (% change)	Pearson Correlation	-0,039	1	-0,11	0,289	0,147	0,346	0,098
	Sig. (2-tailed)	0,9		0,72	0,338	0,631	0,246	0,75
	N	13	13	13	13	13	13	13
Exports/ GDP (%)	Pearson Correlation	,729**	-0,11	1	0,155	-,548*	,789**	0,416
	Sig. (2-tailed)	0,003	0,72		0,598	0,042	0,001	0,139
	N	14	13	14	14	14	14	14
Net FDI Inflows/ GDP (%)	Pearson Correlation	0,225	0,289	0,155	1	0,473	0,291	0,021
	Sig. (2-tailed)	0,439	0,338	0,598		0,087	0,312	0,943
	N	14	13	14	14	14	14	14
External Debt/GDP (%)	Pearson Correlation	-0,255	0,147	-,548*	0,473	1	-0,384	-0,375
	Sig. (2-tailed)	0,379	0,631	0,042	0,087		0,175	0,186
	N	14	13	14	14	14	14	14
FX Reserves/ External Debt (%)	Pearson Correlation	,718**	0,346	,789**	0,291	-0,384	1	0,253
	Sig. (2-tailed)	0,004	0,246	0,001	0,312	0,175		0,382
	N	14	13	14	14	14	14	14
CA Balance/ GDP (%)	Pearson Correlation	0,301	0,098	0,416	0,021	-0,375	0,253	1
	Sig. (2-tailed)	0,296	0,75	0,139	0,943	0,186	0,382	
	N	14	13	14	14	14	14	14

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Table 6.11: **Results of the multiple regression analysis (for variables) for Romania**

Variables	**β**	**SE β**	**t**	**Sig. t**
NET FDI INFLOWS/GDP (%)	-,606	,184	-3,295	,002
INFLATION RATE (%)	-,006	,007	-,799	,443
CONSTANT	-3,534	,730	-4,844	,001

We added only the variables that have a significant t into the equation:

$Y = - 3{,}534 – 0{,}606^* X_4$

Y = CA (% of GDP)

α = constant

X_4 = Net FDI Inflows/GDP (%)

R^2 is calculated as 0,547. The independent variables contribute the dependent variable with a percentage of 55,00%. This means that the independent variables are explaining the variation in the dependent variable by satisfactory level. To test the general significance, F-test is determined as 6,047. This value is bigger than the value in the F table. Thus, it is concluded that the equation is significant.

Table 6.12: Correlation Table for Romania

		GDP Growth Rate (%)	Inf. Rate (% change)	Exports/ GDP (%)	Net FDI Inflows/ GDP (%)	External Debt/GDP(%)	FX Reserves/External Debt (%)	CA Balance/ GDP (%)
GDP Growth Rate (%)	Pearson Correlation	1	-0,316	0,486	0,226	0,454	0,304	0,159
	Sig. (2-tailed)		0,292	0,078	0,437	0,103	0,291	0,588
	N	14	13	14	14	14	14	14
Inf. Rate (% change)	Pearson Correlation	-0,316	1	0,257	0,094	0,264	0,147	-0,236
	Sig. (2-tailed)	0,292		0,397	0,761	0,384	0,633	0,437
	N	13	13	13	13	13	13	13
Exports/GDP (%)	Pearson Correlation	0,486	0,257	1	0,529	,898**	0,519	-0,193
	Sig. (2-tailed)	0,078	0,397		0,052	0	0,057	0,508
	N	14	13	14	14	14	14	14
Net FDI Inflows/GDP (%)	Pearson Correlation	0,226	0,094	0,529	1	,750**	,728**	-,552*
	Sig. (2-tailed)	0,437	0,761	0,052		0,002	0,003	0,041
	N	14	13	14	14	14	14	14
External Debt/GDP (%)	Pearson Correlation	0,454	0,264	,898**	,750**	1	,691**	-0,328
	Sig. (2-tailed)	0,103	0,384	0	0,002		0,006	0,252
	N	14	13	14	14	14	14	14
FX Reserves/External Debt (%)	Pearson Correlation	0,304	0,147	0,519	,728**	,691**	1	-0,419
	Sig. (2-tailed)	0,291	0,633	0,057	0,003	0,006		0,136
	N	14	13	14	14	14	14	14
CA Balance/GDP (%)	Pearson Correlation	0,159	-0,236	-0,193	-,552*	-0,328	-0,419	1
	Sig. (2-tailed)	0,588	0,437	0,508	0,041	0,252	0,136	
	N	14	13	14	14	14	14	14

** Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

- **RUSSIA:**

Table 6.13: Tests of Normality for Russia

GROUP	Kolmogorov-Smirnov(a)			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
GDP GROWTH RATE (%)	,231	13	,055	,903	13	,145
INFLATION RATE (% change)	,305	12	,003	,627	12	,056
CA (% of GDP)	,219	14	,067	,924	14	,251
EXPORTS/GDP (%)	,446	14	,000	,425	14	,089
NET FDI INFLOWS/GDP (%)	,162	14	,200(*)	,943	14	,463
EXTERNAL DEBT/GDP (%)	,223	14	,057	,850	14	,082
FX RESERVES/EXTERNAL DEBT (%)	,232	13	,055	,817	13	,091

* This is a lower bound of the true significance.
A Lilliefors Significance Correction

Table 6.14: Results of the multiple regression analysis (for variables) for Russia

Variables	**β**	**SE β**	**t**	**Sig. t**
EXTERNAL DEBT/GDP (%)	,108	,044	2,460	,036
INFLATION RATE (% change)	-,018	,006	-2,845	,004
GDP GROWTH RATE (%)	,882	,135	6,554	,000
CONSTANT	-,585	2,444	-,239	,816

We added only the variables that have a significant t into the equation:

$Y = -0,585 + 0,882 * X_1 - 0,018 * X_2$

Y = CA (% of GDP)

α = constant

X_1 = GDP Growth Rate (%)

X_2 = Inflation Rate Change (%)

R^2 is calculated as 0,848. The independent variables contribute the dependent variable with a percentage of 85,00%. This means that the independent variables are explaining the variation in the dependent variable by very high level. To test the general significance, F-test is determined as 16,722. This value is bigger than the value in the F table. Thus, it is concluded that the equation is significant.

- **SLOVENIA:**

Table 6.15: Tests of Normality for Slovenia

GROUP	Kolmogorov-Smirnov(a)			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
GDP GROWTH RATE (%)	,148	13	,200(*)	,929	13	,333
INFLATION RATE (% change)	,300	12	,004	,842	12	,070
CA (% of GDP)	,158	14	,200(*)	,947	14	,517
EXPORTS/GDP (%)	,112	14	,200(*)	,990	14	,999
NET FDI INFLOWS/GDP (%)	,275	14	,005	,599	14	,096
EXTERNAL DEBT/GDP (%)	,187	13	,200(*)	,934	13	,382
FX RESERVES/EXTERNAL DEBT (%)	,146	13	,200(*)	,968	13	,864

* This is a lower bound of the true significance.
A Lilliefors Significance Correction

Table 6.16: Correlation Table for Russia

		GDP Growth Rate (%)	Inf. Rate (% change)	Exports/ GDP (%)	Net FDI Inflows/ GDP (%)	External Debt/GDP(%)	FX Reserves/External Debt (%)	CA Balance/ GDP (%)
GDP Growth Rate (%)	Pearson Correlation	1	,751**	-0,351	,720**	0,042	,595*	,813**
	Sig. (2-tailed)		0,005	0,239	0,005	0,892	0,032	0,001
	N	13	12	13	13	13	13	13
Inf. Rate (% change)	Pearson Correlation	,751**	1	-0,323	,612*	0,229	0,346	0,34
	Sig. (2-tailed)	0,005		0,306	0,034	0,474	0,27	0,279
	N	12	12	12	12	12	12	12
Exports/GDP (%)	Pearson Correlation	-0,351	-0,323	1	0,032	,610*	-0,001	-0,383
	Sig. (2-tailed)	0,239	0,306		0,914	0,021	0,997	0,177
	N	13	12	14	14	14	14	14
Net FDI Inflows/GDP (%)	Pearson Correlation	,720**	,612*	0,032	1	0,043	,720**	0,388
	Sig. (2-tailed)	0,005	0,034	0,914		0,884	0,004	0,171
	N	13	12	14	14	14	14	14
External Debt/GDP (%)	Pearson Correlation	0,042	0,229	,610*	0,043	1	-0,354	-0,012
	Sig. (2-tailed)	0,892	0,474	0,021	0,884		0,215	0,967
	N	13	12	14	14	14	14	14
FX Reserves/External Debt (%)	Pearson Correlation	,595*	0,346	-0,001	,720**	-0,354	1	0,391
	Sig. (2-tailed)	0,032	0,27	0,997	0,004	0,215		0,167
	N	13	12	14	14	14	14	14
CA Balance/GDP (%)	Pearson Correlation	,813**	0,34	-0,383	0,388	-0,012	0,391	1
	Sig. (2-tailed)	0,001	0,279	0,177	0,171	0,967	0,167	
	N	13	12	14	14	14	14	14

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

Referring to the below correlation table , we have excluded from the regression analysis GDP Growth Rate as its correlation is not significant and External Debt/GDP and Exports/GDP variables as their correlations are higher than 75%.

Table 6.17: Results of the multiple regression analysis (for variables) for Slovenia

Variables	**β**	**SE β**	**t**	**Sig. t**
INFLATION RATE (% change)	-,495	,159	-3,122	,003
NET FDI INFLOWS/GDP (%)	,184	,384	,478	,646
FX RESERVES/EXTERNAL DEBT (%)	,094	,091	1,032	,332
CONSTANT	-6,169	3,616	-1,706	,126

We added only the variables that have a significant t into the equation:

$Y = -6,169 - 0,495 * X_2$

Y = CA (% of GDP)

α = constant

X_2 = Inflation Rate Change (%)

R^2 is calculated as 0,577. The independent variables contribute the dependent variable with a percentage of 58,00%. This means that the independent variables are explaining the variation in the dependent variable by satisfactory level. To test the general significance, F-test is determined as 3,638. This value is smaller than the value in the F table. Thus, it is concluded that the equation is insignificant.

Table 6.18: Correlation Table for Slovenia

		GDP Growth Rate (%)	Inf. Rate (% change)	Exports/ GDP (%)	Net FDI Inflows/GDP (%)	External Debt/ GDP (%)	FX Reserves/ External Debt (%)	CA Balance/ GDP (%)
GDP Growth Rate (%)	Pearson Correlation	1	-0,379	-0,115	-0,064	-0,239	-0,124	-0,057
	Sig. (2-tailed)		0,224	0,708	0,835	0,432	0,687	0,853
	N	13	12	13	13	13	13	13
Inf. Rate (% change)	Pearson Correlation	-0,379	1	0,268	0,213	0,495	0,444	-,615*
	Sig. (2-tailed)	0,224		0,399	0,507	0,102	0,148	0,033
	N	12	12	12	12	12	12	12
Exports/GDP (%)	Pearson Correlation	-0,115	0,268	1	0,402	,877**	0,335	-0,455
	Sig. (2-tailed)	0,708	0,399		0,154	0	0,263	0,102
	N	13	12	14	14	13	13	14
Net FDI Inflows/GDP (%)	Pearson Correlation	-0,064	0,213	0,402	1	0,398	,650*	0,032
	Sig. (2-tailed)	0,835	0,507	0,154		0,178	0,016	0,913
	N	13	12	14	14	13	13	14
External Debt/GDP (%)	Pearson Correlation	-0,239	0,495	,877**	0,398	1	0,437	-0,412
	Sig. (2-tailed)	0,432	0,102	0	0,178		0,135	0,162
	N	13	12	13	13	13	13	13
FX Reserves/ External Debt (%)	Pearson Correlation	-0,124	0,444	0,335	,650*	0,437	1	-0,096
	Sig. (2-tailed)	0,687	0,148	0,263	0,016	0,135		0,756
	N	13	12	13	13	13	13	13
CA Balance/GDP (%)	Pearson Correlation	-0,057	-,615*	-0,455	0,032	-0,412	-0,096	1
	Sig. (2-tailed)	0,853	0,033	0,102	0,913	0,162	0,756	
	N	13	12	14	14	13	13	14

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

- **TURKEY:**

Table 6.19: Tests of Normality for Turkey

GROUP	Kolmogorov-Smirnov(a)			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
GDP GROWTH RATE (%)	,289	14	,002	,769	14	,082
INFLATION RATE (% change)	,231	13	,055	,791	13	,097
CA (% of GDP)	,156	14	,200(*)	,963	14	,775
EXPORTS/GDP (%)	,159	14	,200(*)	,953	14	,610
NET FDI INFLOWS/GDP (%)	,331	14	0	,644	14	,069
EXTERNAL DEBT/GDP (%)	,150	14	,200(*)	,917	14	,198
FX RESERVES/ EXTERNAL DEBT (%)	,227	14	,048	,913	14	,174

* This is a lower bound of the true significance.
A Lilliefors Significance Correction

Referring to the below correlation table, we have excluded from the regression analysis External Debt/GDP and Exports/GDP variables as their correlations are higher than 75%.

Table 6.20: Correlation Table for Turkey

		GDP Growth Rate (%)	Inf. Rate (% change)	Exports/ GDP (%)	Net FDI Inflows/ GDP (%)	External Debt/GDP(%)	FX Reserves/External Debt (%)	CA Balance/ GDP (%)
GDP Growth Rate (%)	Pearson Correlation	1	-0,455	-0,243	-0,105	-0,316	0,251	-,708**
	Sig. (2-tailed)		0,118	0,402	0,722	0,271	0,386	0,005
	N	14	13	14	14	14	14	14
Inf. Rate (% change)	Pearson Correlation	-0,455	1	-0,066	0,075	-0,124	-0,457	0,359
	Sig. (2-tailed)	0,118		0,832	0,808	0,686	0,117	0,228
	N	13	13	13	13	13	13	13
Exports/GDP (%)	Pearson Correlation	-0,243	-0,066	1	0,455	,827**	,623*	0,222
	Sig. (2-tailed)	0,402	0,832		0,102	0	0,017	0,446
	N	14	13	14	14	14	14	14
Net FDI Inflows/GDP (%)	Pearson Correlation	-0,105	0,075	0,455	1	0,528	0,38	-0,095
	Sig. (2-tailed)	0,722	0,808	0,102		0,052	0,18	0,748
	N	14	13	14	14	14	14	14
External Debt/GDP (%)	Pearson Correlation	-0,316	-0,124	,827**	0,528	1	0,375	0,091
	Sig. (2-tailed)	0,271	0,686	0	0,052		0,186	0,756
	N	14	13	14	14	14	14	14
FX Reserves/ External Debt (%)	Pearson Correlation	0,251	-0,457	,623*	0,38	0,375	1	-0,341
	Sig. (2-tailed)	0,386	0,117	0,017	0,18	0,186		0,233
	N	14	13	14	14	14	14	14
CA Balance/GDP (%)	Pearson Correlation	-,708**	0,359	0,222	-0,095	0,091	-0,341	1
	Sig. (2-tailed)	0,005	0,228	0,446	0,748	0,756	0,233	
	N	14	13	14	14	14	14	14

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

Table 6.21: Results of the multiple regression analysis (for variables) for Turkey

Variables	**β**	**SE β**	**t**	**Sig. t**
GDP GROWTH RATE (%)	-,275	,076	-3,624	,004
NET FDI INFLOWS/GDP (%)	-,479	,568	-,844	,417
CONSTANT	,034	,633	,054	,958

We added only the variables that have a significant t into the equation:

$Y = 0, 34 - 0,275^* X_1$

Y = CA (% of GDP)

α = constant

X_1 = GDP Growth Rate (%)

R^2 is calculated as 0,548. The independent variables contribute the dependent variable with a percentage of 55,00%. This means that the independent variables are explaining the variation in the dependent variable by satisfactory level. To test the general significance, F-test is determined as 6,674. This value is bigger than the value in the F table. Thus, it is concluded that the equation is significant.

7. A COMPARISON OF COUNTRY FINDINGS

In the constructed model, it has been found out that Russia's independent variables has effects on the dependent variable with high percentage. Turkey, Romania and Slovenia's independent variables have influence on the dependent variable by moderate level. Bulgaria and Czech Republic's analyses results have denoted that the selected indicators do not affect significantly their CA balance/GDP ratio. Referring to Hungary's regression analysis, we can conclude that there is not any statistically significant variables that influence CA balance/GDP ratio. Russia, Romania and Turkey's regression equations have been found as meaningful while the other countries' equations have been determined as unmeaningful.

Table 7.1 reports that all the independent variables are not significant for all the selected countries but there are at least one variable for each country, except Hungary, that seem to be statistically significant. This indicates that CA Balance/GDP ratio can be used as a valid dependent variable to analyze the factors that have impacts on current account balance. Secondly, the results suggest that the external factors, which include openness to international finance, capital movements, exchange rate regime and external trade, behave differently in determining the current account balance in selected economies.

Table 7.1: Country Comparison of the independent variables

	BULGARIA	CZECH REP.	HUNGARY	ROMANIA	RUSSIA	SLOVENIA	TURKEY
LIST OF DEPENDENT VARIABLES							
GDP GROWTH RATE (%)	insignificant	insignificant	insignificant	insignificant	significant	insignificant	significant
INFLATION RATE (% change)	insignificant	insignificant	insignificant	insignificant	significant	insignificant	insignificant
EXPORTS/GDP (%)	insignificant	insignificant	insignificant	insignificant	insignificant	significant	insignificant
NET FDI INFLOWS/ GDP (%)	insignificant	insignificant	insignificant	significant	insignificant	insignificant	insignificant
EXTERNAL DEBT/GDP (%)	significant	insignificant	insignificant	insignificant	insignificant	insignificant	insignificant
FX RESERVES/EXTERNAL DEBT (%)	insignificant	significant	insignificant	insignificant	insignificant	insignificant	insignificant

8. CONCLUSION

The objective of this paper was to identify the factors that have impacts on current account balance of the seven selected European emerging economies. Yearly data from 1992 to 2005 was used in this study. The analysis was based on Milesi-Ferretti and Razin's (1996) work which the countries that faced large and persistent current account deficits and identified the key factors that led them to crises

Within the framework of the observations, the argument of this study is as follows: crises in emerging countries were not solely caused by large current account deficits, there were a variety of other factors such as GDP growth rate, inflation rate, FDI inflows, external debt, exports and FX reserves. Large deficits should be a cause for concern but this does not mean that every large deficit leads to a crisis; nor does it mean that only when there is a large current account deficit a crisis can take place. Most of the structural features and macroeconomic policy indicators of the selected countries' improved in the non-crisis periods.

The corresponding crisis indicator of current account balance depends on ad hoc situation of each national economy in terms of the extent to which the country's economy is open to external trade, sustainability of current account imbalances. Economic growth should be maintained by a sustainable current account deficit in emerging countries and thus economic openness should be controlled by effective economic policies depending on each country's economic structure in order to avoid vulnerabilities against external shocks.

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APPENDICES:

A. DATA RELATIVE TO CHAPTER 5 & 6 *:

BULGARIA	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
GDP (billion USD)	8,6	10,83	9,71	13,11	9,9	10,37	12,74	12,98	12,64	13,61	15,65	20,02	24,68	27,26
GDP GROWTH RATE (%)	-8,43	-11,63	-3,67	-1,6	-8,04	-5,84	4,12	2,28	5,4	4,1	4,5	5,0	6,6	6,2
INFLATION RATE (%)	79,42	72,8	96	62,1	123	1061,21	23,67	3,72	6,69	6,68	4,37	1,77	5,13	3,76
INFLATION RATE (%) CHANGE	NA	-6,62	23,20	-33,90	60,90	938,21	-1037,54	-19,95	2,97	-0,01	-2,31	-2,60	3,36	-1,37
CA BALANCE (% of GDP)	-4,389	-24,69	-0,41	-0,2	0,16	4,12	-0,48	-5,03	-5,59	-5,63	-2,44	-5,51	-6,59	-12,40
TOTAL EXTERNAL DEBT (billion USD)	13,81	13,84	11,34	10,15	9,6	9,76	11,40	11,01	11,21	13,60	15,60	19,99	24,65	27,19
EXPORTS/GDP (%)	59,19	43,40	94,54	64,76	47,98	47,64	47,00	45,00	56,00	56,00	52,00	53,00	57,00	60,00
NET FDI INFLOWS/GDP (%)	0,47	0,37	1,03	1,30	1,82	4,82	4,24	6,32	7,91	5,95	5,75	10,49	10,78	14,40
TOTAL EXTERNAL DEBT/GDP (%)	160,58	127,79	116,79	77,42	96,97	94,12	89,48	84,82	88,69	99,93	99,68	99,85	99,88	99,74
FX RESERVES/TOTAL EXTERNAL DEBT (%)	6,15	4,41	8,29	11,43	4,38	21,11	22,89	26,25	28,10	24,19	28,27	31,47	35,62	29,57

CZECH REPUBLIC	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
GDP (billion USD)	31,99	36,65	42,54	55,26	62,01	57,14	61,85	60,19	56,72	61,84	75,28	91,36	109,53	124,55
GDP GROWTH RATE (%)	-3,29	0,57	3,21	6,36	4,03	-0,73	-0,76	1,34	3,6	2,5	1,9	3,6	4,5	6,3
INFLATION RATE (%)	11,12	20,84	9,97	9,16	8,79	8,59	9,7	1,8	3,9	4,5	1,4	-0,1	2,6	1,6
INFLATION RATE (%) CHANGE	NA	9,72	-10,87	-0,81	-0,37	-0,20	1,11	-7,90	-4,00	0,60	-3,10	-1,50	2,50	-1,00
CA BALANCE (% of GDP)	-0,16	1,24	-1,85	-2,49	-6,66	-6,34	2,12	-2,43	-4,74	-5,29	-5,66	-6,33	-5,25	-1,34
TOTAL EXTERNAL DEBT (billion USD)	NA	9,6	12,21	17,19	21,18	21,62	12,78	11,47	24,30	21,30	24,60	23,80	28,00	36,28
EXPORTS/GDP (%)	51,39	52,61	48,99	50,74	48,94	52,08	54,22	55,46	63,37	65,35	60,22	61,78	70,15	72,21
NET FDI INFLOWS/GDP (%)	3,06	1,53	1,79	4,58	2,24	2,26	5,98	10,48	8,80	9,12	11,29	2,21	4,55	9,31
TOTAL EXTERNAL DEBT/GDP (%)	NA	26,19	28,7	31,11	34,16	37,84	39,82	38,64	42,84	34,44	32,68	26,05	25,56	29,13
FX RESERVES/TOTAL EXTERNAL DEBT (%)	NA	39,38	50,29	80,51	58,31	45	51,5	56,04	60,25	64,1	87,32	76,73	62,47	63,14

HUNGARY	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
GDP (billion USD)	37,25	38,6	41,51	44,67	45,16	45,72	47,05	48,04	47,94	53,30	66,62	84,44	102,19	110,44
GDP GROWTH RATE (%)	-3,06	-0,58	2,95	3,47	1,34	4,57	4,86	4,17	4,9	4,1	4,4	4,3	4,9	3,5
INFLATION RATE (%)	22,95	22,45	18,87	28,3	23,6	18,28	14,23	10,00	9,80	9,22	5,27	4,64	6,78	3,55
INFLATION RATE (%) CHANGE	NA	-0,50	-3,58	9,43	-4,70	-5,32	-4,05	-4,23	-0,20	-0,58	-3,96	-0,63	2,14	-3,23
CA BALANCE (% of GDP)	21,4	24,6	28,5	31,7	27,6	25,3	27,62	29,51	27	29,6	31,5	31,5	42,38	57
TOTAL EXTERNAL DEBT (billion USD)	0,95	-11,04	-9,77	-3,67	-3,91	-4,48	-7,23	-7,83	-8,37	-6,02	-6,98	-7,95	-8,42	-7,52
EXPORTS/GDP (%)	31,22	26,22	28,72	44,3	48,14	54,75	61,93	64,33	72,16	71,24	63,10	60,78	63,20	65,98
NET FDI INFLOWS/GDP (%)	3,97	6,06	2,75	10,75	7,29	9,08	7,10	6,89	5,78	7,39	4,52	2,58	4,42	6,91
TOTAL EXTERNAL DEBT/GDP (%)	57,45	63,73	68,66	70,96	61,12	55,34	58,70	61,43	56,32	55,53	47,28	37,30	41,47	51,61
FX RESERVES/TOTAL EXTERNAL DEBT (%)	20,33	26,91	23,33	37,51	34,93	32,92	33,45	37,11	41,44	36,25	32,86	40,48	37,56	32,54

ROMANIA	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
GDP (billion USD)	19,58	26,36	30,07	35,48	35,32	35,29	42,11	35,73	37,06	40,19	45,83	59,51	75,52	98,91
GDP GROWTH RATE (%)	-8,77	1,53	3,93	7,14	3,95	-6,05	-4,82	-1,15	2,4	5,7	5,1	5,2	8,5	4,2
INFLATION RATE (%)	210,39	256,11	136,74	32,27	38,8	154,76	59,10	45,80	45,67	34,47	22,54	15,27	11,88	9,03
INFLATION RATE (%) CHANGE	NA	45,72	-119,37	-104,47	6,53	115,96	-95,66	-13,29	-0,14	-11,20	-11,93	-7,26	-3,39	-2,86
CA BALANCE (% of GDP)	-7,75	-4,7	-1,72	-4,47	-6,65	-5,4	-7,10	-4,12	-3,70	-5,49	-3,33	-5,82	-8,36	-8,88
TOTAL EXTERNAL DEBT (billion USD)	3,28	4,28	5,6	6,83	8,45	9,64	10,10	9,00	11,10	12,65	16,70	22,63	29,57	38,86
EXPORTS/GDP (%)	26,92	22,23	24,11	26,63	27,15	28,19	22,62	28,02	32,87	33,31	35,44	34,71	35,93	32,92
NET FDI INFLOWS/GDP (%)	0,36	0,38	1,16	1,18	0,74	3,46	4,82	2,91	2,81	2,89	2,49	3,09	8,63	6,55
TOTAL EXTERNAL DEBT/GDP (%)	16,75	16,24	18,62	19,25	23,92	27,32	23,98	25,19	29,95	31,48	36,44	38,03	39,16	39,29
FX RESERVES/TOTAL EXTERNAL DEBT (%)	25	23,13	36,25	22,25	24,73	38,38	28,42	17,00	22,25	30,99	36,71	35,53	49,44	51,13

RUSSIA	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
GDP (billion USD)	85,59	183,82	276,9	313,45	391,78	404,95	270,95	195,91	259,70	306,58	345,49	431,43	591,90	764,26
GDP GROWTH RATE (%)	NA	-8,7	-12,7	-4,1	-3,6	1,4	-5,30	6,40	10,00	5,10	4,70	7,30	7,20	6,40
INFLATION RATE (%)	NA	874,62	307,63	131,3	47,74	14,77	27,68	85,74	20,78	21,46	15,78	13,67	10,89	12,68
INFLATION RATE (%) CHANGE	NA	NA	-566,99	-176,33	-83,56	-32,97	12,91	58,07	-64,97	0,68	-5,68	-2,12	-2,78	1,80
CA BALANCE (% of GDP)	-1,4	1,41	2,83	2,22	2,77	-0,02	0,08	12,57	18,04	11,07	8,44	8,21	10,06	11,05
TOTAL EXTERNAL DEBT (billion USD)	78,21	111,96	121,77	121,4	126,37	127,58	188,40	178,20	160,00	146,30	152,30	186,00	213,50	257,20
EXPORTS/GDP (%)	377,37	100,58	43,24	37,30	26,09	24,73	31,22	43,22	44,06	36,89	35,21	35,16	34,38	35,18
NET FDI INFLOWS/GDP (%)	1,36	0,66	0,25	0,66	0,66	1,20	1,02	1,69	1,04	0,90	1,00	1,85	2,61	1,69
TOTAL EXTERNAL DEBT/GDP (%)	91,38	60,91	43,98	38,73	32,26	31,51	69,53	90,96	61,61	47,72	44,08	43,11	36,07	33,65
FX RESERVES/TOTAL EXTERNAL DEBT (%)	NA	5,21	3,27	11,75	8,92	10,01	4,14	4,75	15,16	22,24	28,92	39,34	56,59	68,39

SLOVENIA	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
GDP (billion USD)	18,79	16,21	16,43	20,86	21,02	20,31	21,59	22,16	19,89	20,39	23,07	29,06	33,72	35,69
GDP GROWTH RATE (%)	N/A	2,8	5,3	4,1	3,6	4,91	3,567	5,366	4,4	2,8	4,0	2,8	4,3	4,5
INFLATION RATE (%)	N/A	31,93	20,75	13,66	9,88	8,36	7,9	6,1	8,9	8,6	7,5	5,7	3,7	2,5
INFLATION RATE (%) CHANGE	NA	NA	-11,18	-7,09	-3,78	-1,52	-0,46	-1,80	2,80	-0,30	-1,10	-1,80	-2,00	-1,20
CA BALANCE (% of GDP)	5,79	1,74	4,26	-1,48	0,27	0,32	-0,721	-3,952	-3,155	0,184	1,069	-0,779	-2,658	-1,734
TOTAL EXTERNAL DEBT (billion USD)	N/A	3,8	4,55	5,48	6,67	6,81	7,57	8,03	8,82	9,18	11,93	16,7	20,9	24,19
EXPORTS/GDP (%)	42,2	46,02	52,65	49,71	50,19	51,6	51,44	47,55	53,95	55,48	55,24	53,97	58	62,22
NET FDI INFLOWS/GDP (%)	0,59	0,68	0,73	0,72	0,81	1,62	1,02	0,5	0,7	2,45	7,2	1,03	2,46	1,51
TOTAL EXTERNAL DEBT/GDP (%)	N/A	23,44	27,69	26,27	31,73	33,53	35,06	36,24	44,34	45,02	51,71	57,47	61,98	67,78
FXRESERVES/TOTAL EXTERNAL DEBT(%)	N/A	20,26	32,53	32,85	34,18	48,46	47,16	39,48	36,28	47,17	58,51	50,9	42,06	33,4

TURKEY	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
GDP (billion USD)	213,58	242,14	174,45	227,51	243,9	255,07	269,00	250,48	267,19	196,44	232,94	304,14	392,99	483,92
GDP GROWTH RATE (%)	5,98	8,04	-5,46	7,19	7,01	7,53	3,09	-3,37	6,8	-5,7	6,2	5,3	9,4	8,4
INFLATION RATE (%)	71,95	65,25	104,29	89,57	80,24	85,65	84,72	64,87	55,04	54,25	45,13	25,34	8,60	8,18
INFLATION RATE (%) CHANGE	NA	-6,70	39,04	-14,72	-9,33	5,41	-0,93	-19,85	-9,84	-0,79	-9,11	-19,80	-16,74	-0,42
CA BALANCE (% of GDP)	-0,46	-3,21	0,29	-2,38	-0,99	-1,03	0,80	-0,37	-3,72	1,92	-0,27	-2,48	-3,68	-4,59
TOTAL EXTERNAL DEBT (billion USD)	56,55	68,6	66,25	73,78	79,83	84,72	96,30	103,10	118,60	113,60	129,70	144,30	160,80	168,70
EXPORTS/GDP (%)	12,63	12,01	18,85	17,44	18,88	21,56	21,34	19,44	20,10	27,44	25,22	22,99	23,55	21,86
NET FDI INFLOWS/GDP (%)	0,39	0,26	0,35	0,39	0,30	0,32	0,35	0,31	0,05	1,90	0,49	0,58	0,68	2,51
TOTAL EXTERNAL DEBT/GDP (%)	26,48	28,33	37,98	32,43	32,73	33,21	35,80	41,16	55,94	75,52	55,68	47,45	54,32	48,54
FX RESERVES/TOTAL EXTERNAL DEBT (%)	10,82	9,08	10,75	16,79	20,53	21,97	20,19	22,65	21,18	16,63	20,87	23,56	22,39	28,62

*All data are taken from the IMF International Statistics, World Economic Outlook databases and central banks statistics. The dataset consist of annual observations from 1992 to 2005 for 7 European emerging market economies (Bulgaria, the Czech Republic, Hungary, Romania, Russia, Slovenia and Turkey).