THE EFFECTS OF SUDDEN STOP PROBLEM IN EMERGING MARKET ECONOMIES: THE CASE STUDY OF TURKEY

MS Dissertation

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ÖZET

ANİ DURUŞ PROBLEMİNİN GELİŞMEKTE OLAN PİYASA EKONOMİLERİNDEKİ ETKİLERİ: TÜRKİYE ÖRNEĞİ

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Bu çalışma Türkiye örnekleminde ani duruş probleminin gelişmekte olan piyasa ekonomilerinin ekonomik performanslarına etkilerini incelenmektedir. Bu bağlamda, çalışma küçük açık ekonomi varsayımına dayanarak tasarlanmıştır ve ilgili lüteratürde dikkate alınarak fed efektif faiz oranı ani duruşu tetikleyen dışsal faktör olarak belirlenmiştir. Ani duruş probleminin yerel ekonomi üzerindeki etkilerini incelemek için faiz oranı, özel kesime açılan krediler, cari işlemler hesabı dengesi, sıcak para girişi, reel efektif döviz kuru, tüketici fiyat endeksi ve endüstriyel üretim endeksi içsel değişkenler olarak belirlenmiştir. Çalışmada kullanılan veriler aylık olup 2006:01 ile 2016:08 dönemini kapsamaktadır. Çalışmada ampirik yöntem olarak blok exogen yapısal VAR (SVAR) yöntemi tercih edilmiştir. Çalışmadan elde edilen sonuçlar dışsal değişken olarak tercih edilen fed efektif fon oranında beklenmedik bir artış yaşandığında sıcak para girişinde daralmanın gerçekleştiğini göstermektedir. Sıcak para girişinde daralmalar arttıkça reel efektif döviz kuru, özel kesime açılan krediler ve endüstriyel üretim endeksi daralmaktadır ayrıca faiz oranı, tüketici fiyat endeksi ve cari işlemler dengesinde artış yaşanmaktadır. Sonunçlardan da anlaşılacağı üzere, dışsal faktördeki beklenmedik değişmeler ani duruş problemini tetiklemektedir. Ayrıca devreye giren faiz politikası aracı makro ittihadi politika aracı gibi diğer politika araçları Türkiyede ani duruş probleminin tetiklediği sermaye çıkışlarını engellemek için kullanılabilir.

Anahtar Kelimeler: Sıcak Para, Ani Duruş, SVAR, Blok Dışsallık

ABSTRACT

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This study investigates the effects of the sudden stop problem on the economic performance of emerging market economies in Turkey sampling. In this context, this study is driven by small-open economy assumption and FED effective funds rate used as an external triggering factor that causes sudden stop by taking into account the related literature. To evaluate the effects of sudden stop problem on domestic economy, interest rate, credits to private sector, current account balance, hot money, real effective exchange rate, consumer price index and industrial production index are selected as domestic variables which supposed related to the resilience of sudden stops. Data, which used in the study, are monthly and they span from 2006:01 to 2016:08. In addition, the SVAR model with block exogeneity is applied as empirical method. The results of the study show that an unexpected increase in FED effective interest rate trigger to decreases in capital inflow. As capital inflow decreases, real effective exchange rate, credits to private sector and industrial production decreases, also interest rate and consumer price index and current account balance increase. These results suggest that interest rate policy tool that plays in role can be supported by other policy tool such as macro prudential tool in order to withstand capital outflow triggered sudden stop problem in Turkey.

Key Words: Hot Money, Sudden Stop, SVAR, Block Exogeneity

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26/05/2017

ETİK İLKE VE KURALLARA UYGUNLUK BEYANNAMESİ

Bu tezin bana ait, özgün bir çalışma olduğunu; çalışmamın hazırlık, veri toplama, analiz ve bilgilerin sunumu olmak üzere tüm aşamalardan bilimsel etik ilke ve kurallara uygun davrandığımı; bu çalışma kapsamında elde edilemeyen tüm veri ve bilgiler için kaynak gösterdiğimi ve bu kaynaklara kaynakçada yer verdiğimi; bu çalışmanın Anadolu Üniversitesi tarafından kullanılan "bilimsel intihal tespit programı'yla tarandığını ve hiçbir şekilde "intihal içermediğini" beyan ederim. Herhangi bir zamanda, çalışmamla ilgili yaptığım bu beyana aykırı bir durumun saptanması durumunda, ortaya çıkacak tüm ahlaki ve hukuki sonuçlara razı olduğumu bildiririm.

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ABBREVIATIONS

BOP: Balance of Payments

CAB: Current Account Balance

CAD: Current Account Deficit

CBRT: Central Bank of the Republic of Turkey

CPI: Consumer Price Index

CRDT: Credits to Private Sector

EMEs: Emerging Market Economies

FDI: Foreign Direct Investment

FPI: Foreign Portfolio Investment

GDP: Gross Domestic Product

GNP: Gross National Product

HOT: Hot Money

IMF: International Monetary Fund

IT: Inflation Targeting

OECD: The Organisation for Economic Co-operation and Development

REER: Real Effective Exchange Rate

TSI: Turkish Statistical Institute

UNCTAD: United Nations Conference on Trade and Development

INTRODUCTION

Since beginning of 1990s, emerging market economies have been heavily exposed to capital inflows. EMEs including Turkey have benefited from these capital inflows in a variety of areas, such as funding of investment, ensuring sustainable growth and protection of price stability. This case has made EMEs more dependent on capital inflows in the terms of several aspects. However, capital outflows from EMEs due to various reasons has caused serious problems for EMEs. For example, Mexico has experienced very large capital inflows in this process. In the last quarter of 1994 these capital inflows slowed down and unexpected outflows started. The capital outflows that happened have negatively affected exchange rate system and financial structure of Mexico so that peso depreciated by about 50%.

The developments in Mexico have affected emerging economies in negative way but this situation didn't last long. Since, EMEs have higher interest rate than developed ones and they have shown good economic performance, capital inflows into developing country economies has accelerated. The crisis that started in Thailand in 1997 affected an entire Asian area and Indonesia and South Korea, has come to the brink of bankruptcy. Although, South Korea is better than Indonesia and Thailand in terms of economic indicators such as low current account deficit, it has lived through same destiny. In this period, Malaysia was affected by these troubles in the region. However, the controls that applied on capital inflows and outflows by Malaysia mitigated the effects of the crisis and it was less affected by this process than other countries. The crisis that occurred in Russia in 1998 is the last ring of this chain in the terms of EMEs.

When it is evaluated in terms of Turkey which is one of emerging market economies, capital inflows have started in 1989 with legal regulations. Capital inflows have increased exponentially since this date. The structural problems that arise in Turkey during this process of financialization and external shocks caused sudden stops in capital inflows. Although the crises of 1994, 2000 and 2001 have different characteristics, problems of capital inflows lie at the heart of all. After EMEs crises, capital flows in EMEs has become a controversial subject. This case has prompted economists and policy makers to study the causes and consequences of international capital movements.

Especially, sudden stops in capital inflows are the center of these studies. From this viewpoint, in this study, it is investigated the effects of sudden stop problem on Turkish economic performance.

After the 2001 crisis, Turkish economy has passed a new monetary program with the implementation of disciplined monetary and fiscal policies, floating exchange rate regime and structural reforms to decrease fragilities against external shocks. The high growth rates, appreciation in Turkish Lira (TL) and price stability performed by means of the reforms that implemented by Turkey attract massive capital flows. However, appreciation in Turkish Lira causes to substitute domestic inputs with export products as well. This situation causes high current account deficit despite highly export performance.

Increasing current account deficit has brought the sustainability of current account deficit to the agenda. With the 2008 global financial crisis, the fluctuations in the world economy have become problematic for Turkey due to current account deficit financed by short-term capital flows which is portfolio investments. This process makes Turkish economy vulnerable to external shocks and sudden stop. Especially, the slowdown in short-term capital flows and the capital flows which are mostly portfolio investments have made these external vulnerabilities more prominent in Turkey.

In this study, the effects of sudden stop in capital flows on Turkish economic performance at period between 2006:01 and 2016:08 with monthly data is investigated. Data span started from 2006:01 because Turkey passed inflation targeting regime in this term. Moreover, the study is driven by small-open economy assumption and our variables are selected as previous studies in the literature. The SVAR model with block exogeneity is employed as empirical method that used in Sims and Zha, (1999); thus providing simultaneous interaction between internal and external variables in the model. By means of this method, while the external factor is FED funds rate which is proxy for world interest rate has effects on domestic variables, domestic variables have not effects on it and also domestic variables have interaction among each other. Therefore, small-open economy assumption is satisfied.

This study consists of two chapter. In the first chapter, it is investigated balance of payments, its sub-accounts and theoretical background of foreign direct investments. Afterwards, it is expressed theoretical background of sudden stop, its definition, reason and effects. In addition, in Chapter 2, the effects of sudden stop problem are investigated for Turkey.

CHAPTER 1

BALANCE OF PAYMENTS AND SUDDEN STOP PHENOMENA

In this chapter, balance of payments and its sub-accounts investigated. In addition, foreign direct investment (FDI) and foreign portfolio investments(FPI) are described; and types, determinants and effects of FDI and FPI are detailed. Moreover, sudden stop phenomena is expressed in the terms of theoretical aspect and special situation for EMEs.

1. BALANCE OF PAYMENTS

Balance of payments is the systematic recording of the economic transactions that occur between real persons, legal entities and other authorities in an economy and foreigners in a certain period (Krugman and Obstfeld, 2011, p.308). The most comprehensive definition of balance of payments is made by International Monetary Fund (IMF). According to IMF, balance of payments is the statistical documents that saved values, changes in transfer payments and reserves of the economic transactions between the resident countries and the residents of the outside world in certain period. Technically, the balance of payments is not a stock variable but a flow variable due to the fact that it shows economic transactions carried out during a certain period. That is, the balance of payments does not indicate the amount of accumulated foreign debt and assets of the country, but reveals the annual change in them.

Balance of payments are held according to double entry accounting method. After each transaction in the balances of payments is recorded to the debtor or creditor part of the related account, they are also recorded in the creditor or debtor portion another account. Therefore, balance of payments will always equal in the terms of accounting. While each debtor transaction that recorded in balance of payments showing the amount of foreign currency purchased by residents to cover imports of goods and services, each creditor transaction shows the foreign currency that the residents of the country receive as a result of goods and services exports (BMP6, 2009, p.31). For this reason, while debtor transactions recorded in balance of payments represent foreign exchange outflows from the country, creditor transactions registered in the balance of payments express foreign currency flows into the country. Transactions which are registered in balance of payments are included in certain account groups according to their common characteristics. The

capital account, current account, official reserve transaction account and net error omissions are main account groups under balance of payments.

1.1. Current Account Balance: The Theory

Balance of payments is an account plan which systematically express the situation of a country that occurs as a result of commercial and economic activities with other countries in certain period. It is an important report that shows the general situation of the economy and, in particular, the state of economic activities with other countries.

In this context, balance of payments consists of three main sub-account (Rødseth, 2004, p.13). These are current account, capital account and official reserves. Current account shows the transactions of the goods, services and income and the current transfers whereas capital account shows real assets flows. Current account balance consists of sum of goods and services balance, investment income balance and current transfers. If this total is negative, there is current account deficit and if this total is positive then there is current account surplus (TCMB, 2006, p.44).

From the national income account framework, current account balance can be better understood. In a closed economy, any good or service surplus that is not used by government or household must be used by entities to produce new plant, equipment, and inventories. We can obtain main identity for closed economy by means of this information. The national income accounting identity for closed economy in following way;

$$Y=C+I+G \tag{1.1}$$

where Y, C, I and G respectively represents GDP, Consumptions, Investments and Government purchases.

In this frame work, the main idea is that all of output must be consumed, invested or brought by government. From this viewpoint, this identity can be rearranged in following way;

$$Y-C-G=I, \text{ or } I=S \tag{1.2}$$

where S stands for total national saving. Total saving must equal to investments

On the other hand, in the open economy, residents can purchase some goods and services from abroad while some output purchased by foreigners. As some residents use

some of their income to purchase foreign goods and services (i.e. import), these values that goes to abroad must add to foreign countries GDPbut it is not added directly domestic GDP. These spending, denoted by M, must be emitted from total domestic spending. At the same way, the goods and services that sold to foreigners stand for a country's export. Export denoted by X and it add to national income of domestic economy. In this case, national income of an open economy can be shown as;

$$Y=C+I+G+X-M \tag{1.3}$$

As stated above, current account is a sub-account of balance of payments that show transactions of goods and services. In accordance with this information, current account balance consists of difference between export and import.

At the same time, current account balance is equal to change in its net national wealth. We can show current account in following way;

$$CA=EX-IM \tag{1.4}$$

where CA is current account. As understand from equation (1.4), when a country's export is more than its import, it can be said that country has surplus. If a country's import is more than export in that case it can be said that country has current account deficit. When this phenomenon is handled in the terms of national income accounting, it can be said that current account is equal to difference between domestic spending and national income.

$$Y-(C+G+I)=CA \tag{1.5}$$

If a country is spending more than it has gained, then it will have to be borrowed. In addition, if a country spends less than its output, then it has current account surplus and lend this surplus to foreigners. In the equation (1.5), (C+G) is equal to total consumption in the economy. When this equation is rearranged, we can obtain new current account identity;

$$Y-(C+G)-I=CA \text{ or } S-I=CA$$

where S is total savings. The total savings in a country is consist of public sector and private sector savings. In addition, investments are divided two groups as public

sector investment and private sector investment. In this case, current account equation can be written as following way;

$$CA = S\text{-}I = (S^P - I^P) - (S^G - I^G) \quad (1.6)$$

As seen from equation (1.6), current account shows gaps between the saving and investment of public sector and private sector. If savings are not meet desired investments, either public or private sector has to borrow from foreigners (Obstfeld and Rogoff, 1994).

1.1.1. Sustainability of current account balance

Since beginning of 1990s, developing countries that have faced a high rate of foreign capital inflows and current account deficits have brought question of whether current account is sustainable and if is not sustainable, questions for sustainability came on the agenda. After the Mexican Crisis in 1994 and the Asian Crisis in 1997, large current account deficits have been recognized by many economists as the most important cause of the emerging market crises. This situation has accelerated the efforts to determine what is the threshold level on current account deficit. However, although there have been a number of studies on the sustainability of current account deficits in recent years, the concept of sustainability has not been clearly defined and economists have provided different sustainability measure in their works. In determining the sustainability of the current account deficits, the most commonly used criterion is the 5% rule. According to this rule that expressed by the US Treasury Secretary L. Summers after the Mexican Crisis in 1994, it is assumed that current account deficits exceeding 5% of GDP are considered to have serious problems if they are financed by short-term capital flows or international reserves, and also these deficits must be closely monitored.

However, unlike this rule, which is regarded as classical opinion, there are different inferences regarding with sustainability of current account deficit. From this viewpoint, it is very important to determine that what is the effectual threshold level that causes to problems regarding with current account deficit. Furthermore, it is necessary to determine which factors contribute to the crisis in cases where the current account deficit is available (Milesi-Ferretti and Razin, 1998, p.8).

There are many studies asserting that there is a threshold level of sustainable current account over GDP ratios. In this context, Milesi-Ferretti and Razin (1998) carried out one of the first studies regarding with the case. According to their studies, threshold

level for sustainability of current account deficit vary changes to structure of countries. They claimed that even if there is a 5 percent threshold level for sustainable current account, there are different situations as well. For example, while Australia, Ireland, Israel, Malaysia and South Korea have sustained their large current account deficits for several years, Mexico and Chile haven't been able to sustain their current-account deficits and have experienced severe crises. At this point, they stated that the threshold level is not enough to express this situation. Moreover, several factors play role in sustainability of current-account deficit as exchange rate policy, the maturity and components of external debts, the health of the financial system, levels of savings and investment and, trade openness. In the another study, Carranza (2002) found same results with Milesi-Ferretti and Razin (1998).

He asserted that macroeconomic environment, policies and structural factors such as; economic growth, investment-saving gap, openness and trade patterns and size and composition of external liabilities are important factors for current-account sustainability. In this sense, the threshold level for sustainability of current account deficit is not enough criteria for a crisis to whether occur or not. In the study that investigates current account imbalances, Dornbusch (2001) supported results of previous studies. According to his perspective, countries where have experienced 4% current account deficits over GDP ratio for 2 or 3 years have become vulnerable to crises that may be experienced.

On the other hand, there are several studies that demonstrated different results in the literature. For example, contrary to classical wisdom, in the study that covered 120 countries and 25 years, Edwards (2001) stated that large current account deficit tends not to be persistent. According to analysis of his study, a few countries have experienced large deficit for five years because after a while these imbalances are reduced and current account reversal is occurred. However, this is does not mean that current account deficit is not important nor doesn't mean large deficit leads to a crisis. In the next study, Edwards (2003), expressed that this situation is sensitive to the definition of the crisis and to the region being studied. According to Frankel and Saravelos (2010), while current account deficit may be early warning indicator for currency crises, it is not as effective as international reserves and real exchange rate as a triggering factor.

In addition to 5% rule, another model that can be used to determine the sustainability of current account deficits is GS-SCAD Model which developed by

Goldman and Sachs. In this model, Goldman and Sachs tried to calculate the current account deficits that would not increase the foreign debt / GDP ratio by moving from the portfolio approach.

Goldman and Sachs calculated long-term sustainable current account deficits using a 25-country data set in their model framework and noted that long-term sustainable current account deficits were between 1.9% and 4.5% of GDP.

Another model that can be used to determine the sustainability of current account deficits is the Arithmetic of Insolvency Model, which resembles the GS-SCAD Model, developed by J. Pitchford (Belkar et al., 2007, p.14). The main features of this model that based on a few assumptions aimed at identifying the presence of sustainable current account can be specified as following way.

1. By definition, the current account deficit is added to the net foreign debt stock of the country. Therefore, the ratio of current account balance to GDP for any given year will be equal to the ratio of change in net external debt stock to GDP.

   $$CAB_t/GDP_t = \Delta DOD_t/GDP_t \quad (1.7)$$

   where CAB is current account balance and DOD is net external debt stock

2. Sustainable current account deficit can be defined as current account that does not cause to changes in the net foreign debt stock

   $$\Delta DOD_t/GDP_t = 0, \quad DOD_t/GDP_t = DOD_{t-1}/GDP_{t-1} \quad (1.8)$$

3. Where economic growth is the case, current account deficit would increase accordance with economic growth rate of net external debt and deficit

   $$CAB_t/GDP_t = (\Delta GDP_t/GDP_{t-1}) \text{ X } (DOD_t/GDP_t) \quad (1.9)$$

In fact, all of the above mentioned practical rules and models regarding the sustainability of the current account deficits are inaccurate because none of these rules or models take into account the savings capacity and current account deficits of countries facing current account deficits and macroeconomic factors that underlying current account deficit. In addition, these models do not take into account the changes in the

expectations of foreign investors who provide capital flows that finance current account deficits.

1.2. Capital Account

The capital account is an account where all short-term and long-term capital transactions that carried out internationally are recorded. Unlike the current account, transactions recorded in this account are registered as a net balance of these transactions, not separately in the form of creditor and debtor transactions.

Transactions recorded in the capital account can be grouped in various forms. However, generally accepted grouping is based on the functional separation of transactions (IMF, 2000). Transactions in capital account refer to purchase or sale of financial assets. An asset means to have wealth, such as money, bonds, stocks, public debt, production facilities or real estate (Krugman and Obstfeld, 2011, p.310). The financial assets or capital can be divided into three groups in following way; direct investments, securities and debt flows. All of these groups can be considered as an inflow or outflow of capital for a country. Moreover, all of them have different duration periods. Direct investments mean the purchase or sale of shares or some ownership which is sufficient to perform managerial control on an enterprise. Direct investments are generally considered as long-term capital flows, less subject to volatility risk and they carry out in the form of purchasing production facilities. Other assets are used to utilize from interest-rate in the other country in short-term. While deficit in capital account shows capital outflow, surplus represent to capital inflow. These capital flows in capital account are generally carried out as foreign direct investments, portfolio investments and other investments.

1.2.1. Foreign direct investments

Foreign direct investments (FDI) means a process that an investor has ownership of a firm in order to control its manufacture, disposition and other activities in another country (domestic country) (Imad A. Moosa, 2002, p.1). In the balance of payments manual of IMF, FDI is described as the aim of the investor is to have an effective level of management of the company rather than preferring a permanent interest-rate-like investment in a business operating in an economy. In other words, direct foreign investment is described as net investment flows that used by investor to obtain a

permanent management interest in an entity operating in another economy (BMP6, 2009, p.22)

In addition, according to Organisation for Economic Co-operation and Development (OECD), a direct investment enterprise can be considered as a foreign investor has 10 % or more of ordinary shares or voting power of a firm or owns less than 10 % of ordinary shares or voting power of a firm, thus maintaining his/her position in management. The concept of having an effective power in management expresses the level of influence on the management of the company, rather than the investor's complete control of the company.

When bringing together conceptual considerations, there are basically three components of foreign direct investment. These are equity investments, turning to the reinvestment of profits and other capital movements (mainly intercompany loans). Considering the above information, foreign direct investment is summarized as the management of the company by an investor in a country or taking part in the control mechanism to direct the maximization of profit by having the right to distribute capital (money, machinery, equipment, technology, real state, human capital) in a company in other countries.

1.2.1.1. Type of foreign direct investment

Foreign direct investments can be distinguished from some aspects, such as the perspective of the source country or the domestic country, the motivation reason, the field of expertise of the parent company. Types of foreign direct investment are evaluated in following way on the basis of distinguishing criteria (Hill, 2011, p.232).

- FDI by control level

a.) Companies with small foreign share (subsidiaries): There is a share of between 10% and 50% for equity or voting rights.

b.) Companies under foreign control (subsidiary): The control and ownership of the company belongs to a foreign company

- FDI by purpose of entry

a.) Market search: The main goal is to increase market share and reduce production costs. Another purpose is to export domestic product to abroad.

b.) Effectiveness search: The main goal is to optimize production for lower costs and produce products for export.

c.) Entity search: The goal is to make certain assets patent or trademarks.

- FDI by means of entry

a.) Green Field Investment: Investments in new assets

b.) Brown Field Investment: Investments in existing production facilities to launch new production activity

c.) Mergers and Acquisitions: Merger means joining two forces to each other to become a new business although acquisitions mean one business buy another one which is smaller and it is ruled as a subsidiary.

- FDI by the expertise's areas of parent company

a.) Vertical FDI: Product-based specialization is desired. It occurs particularly at different stages of the production chain in subsidiaries / affiliates.

b.) Horizontal FDI: Process-specific specialization is desired. It occurs similar stages of the production chain in subsidiaries / affiliates.

c.) Conglomerate FDI: It is expressed as a foreign investment that made by a company or person to a business which is not interested his/her current business in home country.

1.2.1.2. The characteristics of foreign direct investment

It can be said that there are more than 6 special features of foreign direct investments besides the generally accepted structure of it and the characteristics of investment activities (Petrovic and Cerovic, 2011, p.3). They are as follows;

1. Foreign private investors or organizations decide to invest, operate and take responsibility for their operation by themself in another country.
2. In addition to circulating capital, technology is transferred between the source country and the host country
3. Foreign investors must provide "adequate capital" in order to have the right to manage their business activities. "Adequate capital" depends on the regulation of each country.
4. Control rights of foreign investors in foreign direct investments depend on the ratio of own funds.
5. The amount of dividends depends on the activities and the equity ratio. Therefore, return of foreign investor in FDI is unstable.

6. Foreign direct investments have high risks. Since the investor's capital is generally transferred to fixed assets, the difficulties that may arise in the withdrawal of the capital determine this level of risk

1.2.1.3. Form and essence of foreign direct investment

Foreign direct investments can emerge in many different forms. Despite the fact that countries are likely to differ in their legal frameworks, FDI generally takes place in the following forms;

1.2.1.3.1. Joint venture enterprise

A joint venture is called as a business structure in which two or more legal entities come together to take common decision for their operations. For example, a "new firm" that two firms set up at different share percentages in their own country or in a foreign country is included in the joint venture. The working principle of joint venture companies takes place in the form of participation in capital. The main advantages of the joint venture company are as follows. In addition to compensating the lack of capital for host country during the time that source country uses, it helps to product diversification. Moreover, it helps to the development of technology, collaborate with the new market, reduce the unemployment rate, transfer managerial experience, save cost and time. The disadvantages of the Joint Venture Company are; it takes so long time for host country, leads to many contradictions in managing the business, causes the enterprise to lose its focus on source country basis (OECD, 2003).

1.2.1.3.2. 100 percent foreign-funded company (100% foreign investment company)

In the perspective of foreign direct investment, an enterprise with 100% Foreign Invested Capital is expressed as an enterprise in which the company that foreigners have 100% of its capital is managed by the foreign and the it operates under the laws of the host country (UNCTAD, 2014).

The advantages of the 100% Foreign Invested Enterprise are as follows. It allows obtaining tax or rent for host country, helps solving the problem of capital deficiency and unemployment, encourages the export industry and contributes to the development of technology.

The disadvantages of the 100% Foreign Investment Enterprise are; host country may have difficulties in adapting to high technology and company that carries out the

investment undertakes all the risks during the process of raising the qualified domestic personnel.

1.2.1.3.3. Business co-operation contract

A business Co-operation contract is expressed as cooperation agreement between foreign investor and at least one domestic partner to carry out operations. In this agreement, the benefits and needs of each partner should be clearly stated**.**

The advantages of a Business Co-operation Contract are as follows. It quickly solves the lack of capital and technology in the host country. In addition, there is no need for new market research and new relationships by means of it.

The disadvantage of the Business Co-operation Contract is that the host country faces difficulties in attracting investments and there is only interest for high profit sectors.

1.2.1.3.4. Build-operate-transfer (BOT), build-transfer-operate (BTO) and build-transfer (BT) models

Build-Operate-Transfer (BOT) agreements can be defined as contracts signed between an authorized government agency and an investor to establish and operate an infrastructure facility within a specified period. After this period expires, the investor will transfer the investment to the state without compensation.

Build-Transfer-Operate (BTO) is similarly defined as a contract signed between an authorized government agency and an investor to establish an infrastructure facility. Once this infrastructure is completely built, the investor transfers it to the state.
The state transfers right to use of this facility to the investor for a certain period of time so that the investor can improve its investment capital and gain profits.

Build-Transfer (BT) contracts inherently have the same characteristics. The BT contract can be expressed as a signed contract between an authorized government agency and an investor to establish an infrastructure facility. The investor transfers this infrastructure facility to the state after fully constructing it. The government creates conditions for the investor to apply the other projects in order to improve the investment capital and gain profits or make the agreed payment at the Build-Transfer contract to the investor. The advantages of BOT, BTO and BT contracts are that host country attracts the high investment capital and by means of it pressure on national budget reducing.

The disadvantages of such contracts are that host country can face problems in management process and control mechanism. When there is any negative situation that could affect investments, host country has to compensate these difficulties.

1.2.1.3.5. Mergers and acquisitions

Mergers and Acquisitions are a concept regarding with area of corporate finances, management and strategy that perform an action with other firms purchasing or joining. In the merger, the two companies usually combine their strengths under the name of a new business. In acquisition, the parent company buys a second, usually smaller, company that may be located within it or be operated as a subsidiary.

The company to which another entity plans to merge or purchase is often referred to as the target company (Imad A. Moosa, 2002, p.50)

The advantage of mergers and acquisitions is that it helps to improve competitive ability, increase market awareness and reduce R&D and delivery cost. On the other hand, the disadvantages of M&A are that it not only creates jobs but also increase the unemployment rate for the host country and affect the security of host country due to the fact that the assets of the host country will go to foreign investors.

1.2.1.4. The role of foreign direct investment on the development of the economy

It is known that there are many important benefits of FDI that help to improve the economy, such as the reduction of direct and indirect poverty. As is known, while the increase in wealth, the increase in the income of employees and the new job opportunities are the main factors that can be regarded as a direct effect, technology, market structure and integration in the international economy can be expressed as indirect effects (Jian and Xiao, 2015). In this context, the impact of foreign direct investment on the economy can be listed as follows.

1. Foreign direct investment helps to create new business areas, as well as to increase the income of employees.
2. Foreign direct investment is the most important resource for compensating the capital outflow in the host country.
3. Foreign direct capital investments help to improve and renew technology.
4. Foreign direct investment facilitates and supports global economic integration.
5. Foreign direct investment has significant contributions to the government budget.
6. Foreign direct investment encourages adaptation to changing market conditions.

Generally, developing countries can produce products that can compete with products which produced by developed countries but there are difficulties in the mechanics to bring sellers and buyers together in order to market these products on the international markets. For this reason, the priority of foreign direct investments should be for export-oriented

investments in the terms of developing countries because foreign direct investment will help to meet product of the host country with the global market.

1.2.1.5. The determinants of foreign direct investments

It can be said that foreign direct investment occurs if there are three main determining factors exits at the same time (Dunning, 1993a). These are the existence of ownership certain competitive advantages in a multinational company, the existence of locational advantages in a host country, and the existence of outstanding commercial benefits. In this general perspective, the determinants of FDI can be categorized as follows;

Policy framework for FDI

- Economical, political and social stability
- Rules for entry and transactions
- Standards of treatment of the foreign affiliates
- The function and structure of markets
- International agreements related to FDI
- Privatization policy
- The trade policy (tariffs etc.) and FDI and trade policies and consistency of trade policy
- Tax policy

Economical determinants;

a. Market-seeking

- Magnitude of market and per capita income
- Market development
- Reach to regional and global markets
- Special consumer choices for countries
- Structure of markets

b. Asset-seeking

- Raw materials
- Low-cost unskilled worker
- Skilled labour
- Technological and innovatory assets

- Physical infrastructure (harbours, tracks, power, telecommunication)

c. Efficiency-seeking

- Cost of resources and assets
- Other input costs (e.g. Costs of transportation and communication)
- Regional integration agreement membership that allows the establishment of regional corporate networks

Business facilitation;

- Investment promotion (including image creation and investment creation activities and investment facilitation services)
- Investment incentives
- Costs of hassle (regarding with corruption, efficiencies of administrative activities, etc.)
- Social facilities (bilingual schools, quality of life, etc.)
- After-investment services

1.3.1. Portfolio investments

It is possible to define foreign direct portfolio investments as transactions that foreign real and legal persons purchase or sale stocks and bonds belonging to public and legal entities in order to be obtained interest and / or returns by or they will be a partner with them. In other words, investment in foreign countries may be in the form of financial assets such as foreign bonds, stocks, financing bills, in addition, it may also be for the purpose of physical production. Investments in financial assets are called financial investments, portfolio investments or indirect investments. The portfolio investments are made in the form of purchase of shares and bonds by the savers. The stocks provide partnership rights to investors therefore, investors will receive a share of company profits. Bonds are a form of borrowing funds and they do not give the right to partnership that's why owner of bonds will receive an interest income on the funds that they provided (UNCTAD, 1998).

1.3.1.1. The determinants of portfolio investments

While the determinants of foreign direct investment can be clarified more clearly, determinants that guide portfolio investors have a more complex structure that includes factors regarding with the external environment, investor strategies, and host country

determinants. When investment decisions are made in developing countries, the distribution of funds to certain markets will depend on the host country determinants. The determinants of homeowners are critical for fixed-income investors, while they are unimportant for equity investors. The determinants of the FPI can be divided into two groups, economical determinants and political or regulatory determinants. Economic determinants do not depend on policy that attract foreign direct portfolio flows.

On the contrary, the general condition of the economy, earnings potential of firms, desire to obtain a satisfactory return for fixed income investments come to the forefront. In this framework, determinants of foreign direct investment can be listed as follows.

General Economic Conditions

- Sustainable economic growth rate
- Stability of Exchange rate
- Macroeconomic stability
- Level of foreign exchange reserves
- The health of the banking system
- Real interest rate

Specific Terms

- Dividends and ease of returning capital
- Domestic capital gains tax
- Stock and bond market regulations
- Quality of domestic accounting and disclosure standards
- Speed and reliability of the reconciliation system
- Availability of domestic custodians and brokers
- Standarts of investor rights protection

There are many differences between foreign direct investments and foreign direct portfolio investments. However, we can summarize the essential differences in the following way.

- The most important difference between foreign direct investments and foreign direct portfolio investment relates to management. In the foreign direct

investment, the company established outside of the country is under the management of the main company. Generally, the top management of the affiliated company is created by the persons appointed by the parent company. There is no direct intention to intervene in the management of companies that invested in financial assets in foreign direct investments.

- In foreign direct investments, foreign investors bring not only capital but also values like production technology, management knowledge and etc. However, capital investment is a matter in foreign direct portfolio investment.
- While investors in foreign direct portfolio investment are generally real persons, investors are big firms in foreign direct investments
- Another difference between foreign direct portfolio investments and foreign direct investments is related to their returns. If foreign direct portfolio investments are in the form of bonds, their returns are occurred in the form of interest and principal payments and if the investments are in the form of shares, in that case returns are in the form of profit share and the capital gain. Apart from profit share and capital gains, returns vary, such as royalties, service fees, commissions, transfer pricing.
- While the duration is long in foreign direct investments, the duration in foreign direct portfolio investment can be reduced to several days.
- The risk encountered in foreign direct investments is higher in terms of both diversity and size.

1.4.1. Other investments

All other financial transactions apart from direct investment, portfolio investments, financial derivatives and reserve assets are handled in this section. As in other financial accounts, there are subdivisions in separation of assets and liabilities according to type and sector (CBRT, 2005, p.50).

- Currency and deposits
- Credits
- Insurance, retirement and standardized guarantee schemes
- Commercial loans and advances
- Other receivables and payables
- Special Drawing Rights

2. SUDDEN STOP PHOENEMA

In this part, it is investigated sudden stop phenomena is investigated for theoretical aspect and special situation for emerging market economies.

2.1. Theoretical Background of Sudden Stop

Since the 1990s, EMEs have entered a period of crises that repeated frequently dissimilar to currency crises as experienced in developed economies. Especially, after the 1994-95 Mexico's Tequila crises, a number of researchers begun to investigate international capital movements in order to clarify reasons of EME crises. In the results of the investigates, it is concluded that high capital mobility can pose a threat to world economy especially for EMEs. In this regard, it has seemed sudden stop in capital flow as common reason of EME crises.

Sudden Stop concept is firstly introduced by Dornbusch, Goldfajn and Valdes (1995), quoting in banker's aphorism "it is not that speed kills, it is Sudden Stop". However, in the analytical manner, the first study for sudden stop is conducted by Calvo (1998). Sudden stop refers abrupt loss of access to international capital markets, since private foreign investors change their behaviours against unexpected events (Mendoza, 2001).

From this viewpoint, large and unexpected negative swings in capital inflow can be considered as defining characteristics of sudden stop phenomenon (Reinhart and Calvo, 2001). In the study of investigating emerging market economies crises (EME), Mendoza (2002) asserted that EME crises have several empirical regularities. The regularities which defined as main characteristics of sudden stop include sudden access loss to international capital market, large reversal in current account deficit, reductions in output and aggregate demand, corrections in asset prices and fall in exchange rate. Similar to the previous definitions, Edwards (2004) provided that a sudden stop definition that states abrupt and major decreases in capital inflow. These definitions later were broadened by Calvo, Izquierdo and Mejía (2004) by adding new criteria that requires output contraction at the same time sudden stop. In addition, Hutchison and Noy (2006) presented a definition that sudden stop causes a sharp drop in domestic investment, output and employment due to realignment process in the real exchange rate in analogous manner.

Afterwards, Calvo et al. (2008) added a new concept that means systematic sudden stop to literature. This new concept, also called as (3S), is taken into account external financial factors rather than domestic ones. The main starting point of this approach is necessity of increasing domestic interest rate when the sudden stop which originating from external financial shocks occurs. That is, domestic interest rate will sharply increase because of capturing global component.

To call capital outflows as a sudden stop, some quantifying studies also have been performed in the literature. For example, Edward (2004) asserted that sudden stop can occur when the net capital inflow decreases at least %5 of GDP in one year. Nevertheless, Guidotti et al. (2004)'s definition is a good example to identify sudden stop in quantifying manner. As to them, if annual change in capital account is below one standard deviation from average of capital account and more than 5% of GDP, in that case it can mentioned that there is sudden stop. In the another quantifying definition, Hutchison and Noy (2006) emphasized that if current account losses at least %3 of GDP, it can be said that there is sudden stop, also they added a criterion that needs currency crises at the same time sudden stop in order to refer a capital inflow as a sudden stop.

As for Calvo, Izquierdo and Talvi (2006) carried a step further the quantifying definitions. According to them, sudden stop can be described as large drop in capital flows that calculated for a year in the current account/GDP ratio by more than two standard deviations above the average change in this ratio. Moreover, Rothenberg and Warnock (2011) and Calvo et al. (2008)'s studies can be considered as other good examples for quantifying studies in literature. The following figure can be considered as a good example to understand what is the sudden stop and see the effects of sudden stop in the terms of quantifying manner.

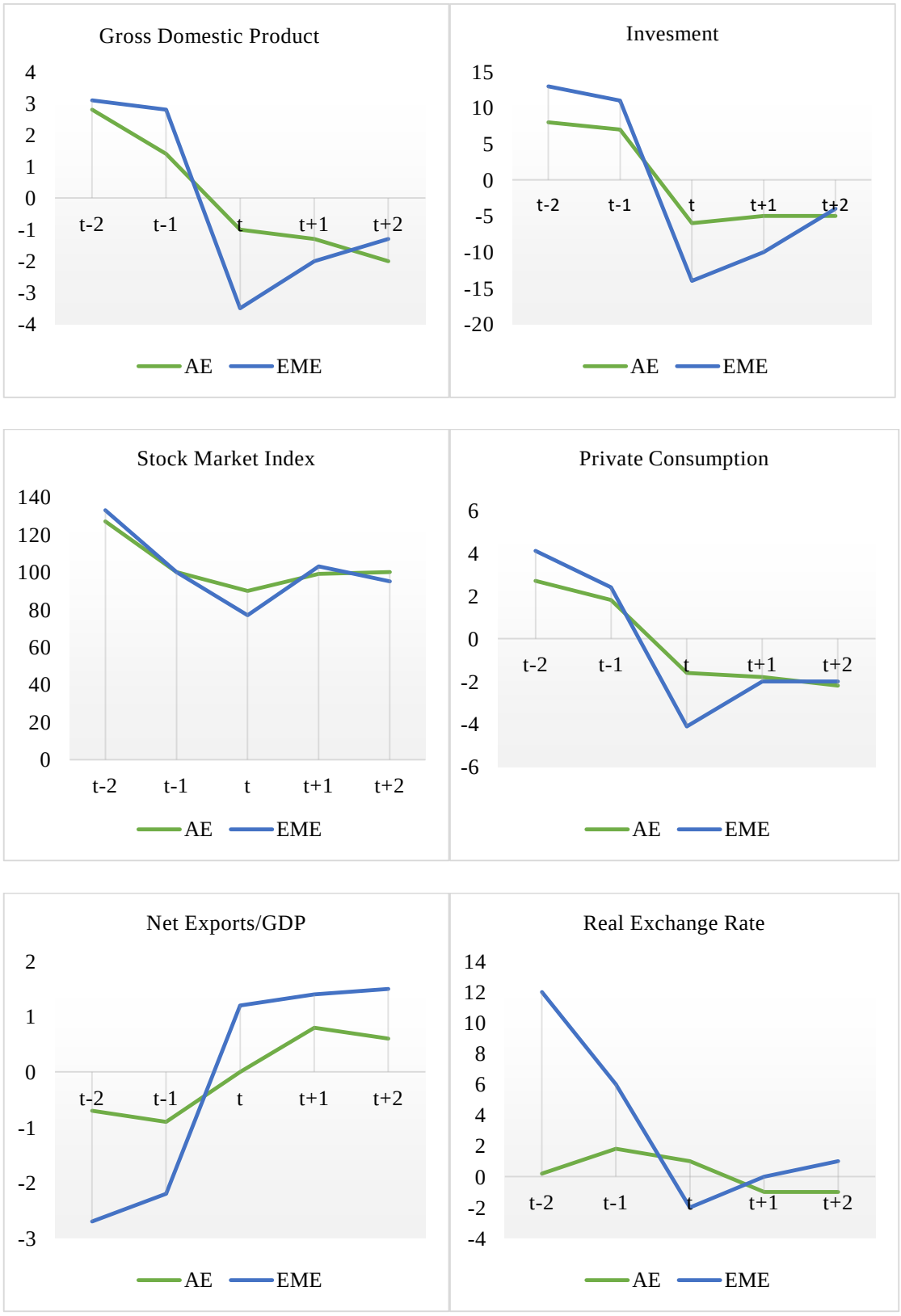


Figure 1. *The dynamics of sudden stop*

Source: Menzoda 2010

In the figure-1, AE and EME lines respectively represents Advanced Economies and Emerging Market Economies. Five-year event windows centred around starting point of sudden stop events at date t. It can be seen from figure that when the sudden stop occurs, output and investment fall and real exchange rate depreciate. Sudden stop phenomena have negative effects on both AEs and EME but these effects are less effective for AEs.

2.1.1. The reason of sudden stop

The recent big recession in both EMEs and AE reveals increasing fragility threats for financial markets and institutions. In the previous studies, researchers have ignored role of financial fragility regarding with recessions until recent financial crisis. However, recent global crises show that there is no doubt that financial fragility could cause in a major interruption of credit flows in spite of efforts to prevent it through standard macro policy. This situation brings up sudden stop problem that emerged after the Mexican crisis to agenda.

Several studies conducted to determine its reasons, effects and results. In this part, it is deeply investigated reasons of sudden stop problem. The reasons of sudden stops are important as much as effects of it. In fact, it may be said that reasons of sudden stops are more important than its effects because the effects of sudden stops are observable, while the reasons of it are not observable and determining of them are difficult. However, several factors which may contribute to sudden stops are discussed in the literature. These debates are usually driven by internal and external factors among researchers. Moving from previous studies, the changes in the international interest rates, contagion effect and imperfect international capital market can be seen as external factors, on the other hand, political changes, imperfect institutional structures and governance scandals can be taken consideration as internal factors.

From the theoretical viewpoint, sudden stop is a phenomenon that arise from drastic negative shifts in supply of foreign funds. In this sense; even though there are several studies to investigate the issue in the terms of internal factors, the sources of sudden stop are generally considered as external developments and thus researches have been conducted on this line in the literature. The EMEs need external sources more than AEs in order to meet investments, to ensure sustainable growth but this situation may cause a threat in terms of current account deficit. As current account deficit increases,

countries need more external resources and it becomes more dependent to sustain current account deficit. At this point, the any stop that may be experienced in capital inflows can lead to irreparable results. In this regard, Calvo (2005) states that the main problem that causes to sudden stop in the EMEs is malfunctioning of international capital market. However, this should not mean that the only reason for the sudden stop is the problems that come from international capital market, they can be considered as a triggering factor in accordance with domestic vulnerabilities. When the any negative circumstance occurs in capital market, international investors start to test EME's. This period is also called as "Incipient Sudden Stop". If the country can pass this period, sudden stop will not take place but if the county cannot pass this period, in that case sudden stop will take place.

Whether or not this period passed by EME's depends on domestic vulnerabilities of their economies. Moreover, policies that implemented by governments and institutional structure of EME's are important to carry out healthy process as well. For example, Chile, where there were no problems in the terms of economical position, it was exposed to sudden stop after the Russian crises. Nevertheless, policy that implemented by governments during this period caused to negative atmosphere among investors. The contractionary monetary policies enacted by the government increased interest rate and foreign exchange rate and so currency mismatch occurred.

Because of these misguided policy choices, Chile has been seen same as other Latin America countries and it has experienced capital outflow. In the another study, Mendoza (2001) asserted that sudden stop can be stimulated by policy shocks that affects to domestic productivity or international liquidity. However, main factor that play role in sudden stop is financial frictions. When perception of foreign investors changes against country, accessing to international credit market getting difficult in the terms of EME's. In this case, EME's experience sudden stops in capital flows and thus they will encounter with drops in total factor productivity, output and real exchange rate, since EME's have not enough international reserves in order to sustain deficits that arise from credit constraints. Unlike the previous studies, Caballero and Krishnamurthy (2001) defined the main reason of sudden stops for EME's as weakness in the domestic financial markets and inappropriate behaviours of domestic agents.

During capital inflow booms, domestic agents don't take any precautions against negative conditions that may occur and they choose to over borrowing by increasing

foreign liabilities. This case may bring about solvency problem and default risk in terms of EME's during sudden stop. In the later study, Caballero and Krishnamurthy (2003) improved this approach and stated that main problem which make vulnerable to sudden stops in capital flow to EME's are weakness in domestic financial market and limited financial integration with international capital market. In their study that investigates crisis in Argentina, Calvo, Izquierdo and Talvi (2002) figured out that a relatively closed economy that is an economy with a small share of tradable goods relative to non-tradable goods in output is an important factor that contribute to sudden stop. In addition, liability dollarization in both private and public sector is another important factor that may cause to harmful effects during sudden stop period. In such a way that the closed economy poses dangers that means sharp depreciation in the equilibrium real exchange rate. As real exchange rate depreciates, liability dollarization contributes to solvency risk and when these two factors binding, they can be called as "dangerous financial cocktail" for private sector and government. In fact, it is expected that government will be part of solution rather than part of problem in these cases. However, this process is reversed in the Argentina, government exposed to same financial problems with private sector. Since, Argentina was weak in the financial aspect and it had huge current account deficit, it was unable to make regulations in order to offset main vulnerabilities regarding with liability dollarization and closeness structure of its economies. As understand from Argentina case, liability dollarization and huge current account deficits seem as main domestic factors that make EME's vulnerable to sudden stop in the literature.

There are many discussions regarding with main determinants of sudden stops in capital especially for EME's. For example, whether or not openness brings on to sudden stops has been a fairly controversial issue in the literature. There are two different perspectives about the issue. For a groups of authors, openness makes a country more vulnerable against sudden stop while, another groups authors claim that openness makes developing countries less vulnerable to sudden stop. For Aizenman (2003) argued that openness especially in the terms of financial opening may make developing countries helpless against sudden stop by increasing cost of public deficits. The crisis in Argentina is a sad example of this case.

According to Stiglitz (2002), openness may be a problem for developing countries in terms of the sustainability of public deficits: Therefore, the restrictive policies for degree of capital mobility can reduce the possibility that occurrence of external crises such as sudden stop. Moreover, the first analysis to determine negative effects of openness is conducted by Winters (2002). In this study, he concluded that when developing countries encounter external financial shocks, effects of these shocks change for openness degree of trade liberalization. Loayza & Raddatz (2007) asserted that the most important characteristic of developing countries that contributes to negative effects on output is trade openness.

On the other hand, Frankel and Rose (2002) provided an empirical study that investigate the role of openness in vulnerabilities against external financial shocks for EME's. According to results of his study, if a country has high trade/GDP ratio, investors less likely to run off from this country because this country has less risk for default. After this study, Guidotti et.al (2004) expressed similar results and concluded that economies that more openness recover more quickly against output contractions which caused by sudden stops. In another empirical study, Cavallo and Frankel (2008) provide that as a country have more trade openness, it will be less vulnerable against both external shocks and currency crashes.

The absence of domestic vulnerabilities doesn't mean that a country is not vulnerable against external shocks. For example, 1997/98 Asia crisis is seen as a different case from previous emerging market crises. In opposition to Mexico and Latin America, Asian countries have not domestic vulnerabilities even they have high saving rates and low current account deficits especially in Indonesia, Malaysia and South Korea. The external capital needs of these countries were generally met by USA, Japanese and European banks loans. Japanese banks had the biggest share of banks loans among these countries due to decreasing domestic loan demand and shrinking economy and particularly Thailand utilized from these loans. When Thailand, where uses fixed exchange rate regime, is helpless against speculative capital movements, it suffered currency crises. This situation brought on large devaluations in Thai baht. Following currency crises occurred in Thailand, Japanese banks started to pull out its loans from Emerging Asia because of increasing risk in Thailand. However, not only Thailand utilized from Japanese banks loans also other Asian countries used Japanese loans.

Therefore, the departure of Japanese capital affected other Asian countries and this process accelerated the withdrawal process of other country banks.

Since, capital flows in these countries tightened, sudden stops were became unavoidable result for these countries. The case that began Thailand and then spread to other Asian countries, is called as contagion effect in literature. Although, there is no clear definition about what exactly it means, contagion is defined as closely markets movements during period of crisis (Forbes and Rigobon, 2002).

2.1.2. The effects of sudden stop

As understood from theoretical backgrounds of sudden stop, sudden stop is a phenomenon that has important negative effects on economies. Accordingly, there are many studies investigating which effects could be linked to sudden stop. For example, study of Calvo (1998) can be seen as the first and the best an example in the terms of theoretical perspective. In this study, the issue is held two different angles as non-monetary and monetary. When looking from the non-monetary perspective, by isolating errors and omissions, following equation can be considered accounting identity.

$$KI=CAD, \quad (2.1)$$

where KI and CAD, respectively, stands for capital inflow and current account deficit. In order to show effects of lowering aggregate demand, current account deficit can be derived from following national income identity,

$$Y=C+I+G+CA \quad (2.2)$$

where CA stands for (X-M) (i.e. export-import). From the equation (2.2), by deriving CAD,

$$CAD=Y-(C+I+G) \quad (2.3)$$

where Y represents for GDP and (C+I+G) is aggregate demand.

A capital-inflows episode is a period during which KI demonstrate high and constant increments. As understand from equation (2.1), increases in capital-inflows

means a period of high CAD. That is why, when the current account reversal connected with sudden stop take place, it also requires same amount drops with CAD in aggregate demand. The reduction in aggregate demand causes to decrease in demand of tradable goods and non-tradable goods. The contraction in aggregate demand means lowering demands of tradable goods and non-tradable goods at the same time and lowering demand bring on to decrease relative prices of them, especially for non-tradable goods, since excess of tradable goods can be exported to abroad. The decrease in relative price of non-tradable goods result in deprecation of real exchange rate (Calvo and Reinhart, 2000). In this regard, Mendoza (2001) supported this approach by asserting sudden stop problem causes a major reversal in private capital inflows, or a shift to large outflows and these unexpected reversals in foreign financing compelled in turn sharp contractions of domestic production and private expenditures. In addition, the study that supporting to these viewpoints conducted by Guillermo Calvo, Alejandro Izquierdo and Luis Mejia (2008). They argued that reduction in capital-inflow had to meet by decreasing in current account deficit and this lead to drops in output and real exchange rate.

In this manner, many empirical studies have been conducted to test this theoretical background. For example, Huchison and Noy (2002) tested this approach by using panel regression method to determine whether current account reversal connected with sudden stop bring on reduction in output or not for 24 emerging market economies. As their results, output decreases about 10% in a period of two years because of current account reversal connected with sudden stop. In addition, Edwards (2003) came up with same results that obtained with dynamic panel regression approach and asserted that current account reversal has negative effects on investment and GDP per capita growth.

In the another study, Edwards (2007) revealed that current account reversal connected with sudden stop bring about to decrease in GDP growth on average 4%. These drops in real activity are bring about large exchange rate depreciations and increases in unemployment and sharp increases in real interest rate as well.

On the other hand, when the looking at the issue from monetary perspective, accounting identity is seen as following,

$$KI=CAD+RA \quad (2.4)$$

where RA represent for international reserve accumulation per unit of time.

In contrast to non-monetary perspective, reduction in capital inflow can be met by loss of reserves in the place of CAD: Thus, output and credit drops connected with decrease in CAD could be eased. However, in the practice, this method has several difficulties. For example, when the central bank chooses to use its international reserve by providing loans to firms that face credit constraint, it has to be well known which firm experiences credit rationing. Also, lower reserve could stimulate to flight from domestic assets and policies based on using reserve may increase reduction in capital inflow (Calvo, 1998). In the another study, Calvo (2006) asserted that moral hazard can emerge when the applying this method. That is, expectations regarding with providing cheap credits by central bank in the sudden stop episode may cause large risk-taking approach to be adopted by private sector. This situation is taken into consideration when carrying out regulations related to banking sector.

One another study investigating effects of sudden stop problem relates to the transmission channels that explain how sudden stop affect to real economy. In this regard, Reinhart and Calvo (2000) asserted that effects of sudden stop are transmitted in two ways such as (1) Keynesian Channel and (2) Fisherian Channel to real economy. The Keynesian Transmission Channel is quite familiar. This approach acts from an assumption that wages and prices are sticky. That is, a fall in the aggregate demand causes to decrease in output and employment because of the fact that wages/prices are inflexible downward.

Even though Keynesian Channel is intelligible, Fisherian Channel is less known but more dangerous. In order to explain Fisherian Channel, we can consider a bank loan example. Suppose that all loans are lended at a fixed predetermined interest rate. When the sudden stop happens, exchange rate will depreciate and real interest rate faced by producers or households will increase due to a surge between ex-post real interest rate and ex ante real interest rate.

This gap can contribute to payment difficulty for economic agents and bring about to increase share of non-performing credits. Certainly, this negative effect, which arisen from depreciation in exchange rate, can alleviate if currency is devaluated. However,

devaluation may not be remedy for EMEs during the recovery process. Generally, liabilities in EMEs are denominated in the terms of foreign currency (i.e. liability dollarization), that's why devaluation is less effective in the terms of EMEs. We will discuss challenges that may arise for EMEs in more detail at next sections.

As a result, Fisherian Channel is more dangerous than Keynesian Channel because it affects to financial sector. Because of increasing share in non-performing credits, banks cannot provide loans, investments go off and these negative effects can contribute to recession. (Calvo, 1998)

When the literature investigating in detail, it is seen that empirical studies which investigating effects of sudden stop consist of two parts. Studies in the first part are tried to determine whether sudden stop is effective on output or not. In this part, theoretical propositions and stylized facts are tested. Afterwards, if results of studies support to theory, then it should be focused on investigation of factors lead to output decreases in the second part. Surely, these factors can vary depending on economic structure of countries. In this respect, Huchison and Noy (2001) conducted a study to test relationship between sudden stop and output consequences. In this study, they investigated 24 emerging market economies during the period 1975-1997. According to results, sudden stop causes an output fall by 10% over a period of two years and they suggested that decreases in output arise from falls in domestic investments.

On the other hand, Sturzenegger et al. (2003) examined which factors cause to different output performance after sudden stop. They founded that floating exchange rate and higher degree of openness affect output performance in positive way but high current account deficit and liability dollarization affect in negative ways to output performance.

In the one another empirical study which investigating factors that have effects on output, Calvo and Talvi (2005) asserted that sudden stop causes to a problem regarding with accessing external credit. In order to overcome this dilemma, a country will have to increase domestic interest rate. As the domestic interest rate hikes, the economic agents within the country can increase saving rates or lower investments. Whichever decision is preferred; this will cause to decrease in output in the short-run.

In fact, in the literature, sudden stop is generally considered a financial matter that seen as a component of factors which affect indirectly on output. That is, especially recent studies focus on factors that they cause to output loss rather than directly output consequences. In this manner, Korinek and Mendoza (2013) provided an integrated schematic approach to show how financial factors play in role for ouput losing when sudden stop occurs. Following figure is a good example in order to clarify the role of financial factor on output loss.

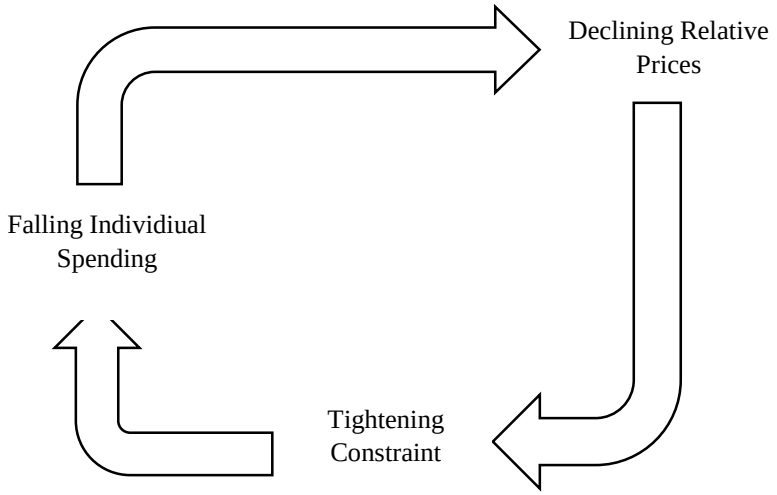


Figure 2. *Financial amplification effect*

Source: Korinek and Mendoza 2013

Figure 2 indicates the main mechanism of financial amplification in schematically. Suppose that EMEs borrow from abroad and then face constraint problem. As current account is countercyclical, expansion periods means increasing leverage. That is, when the increasing leverage and constraints becomes binding, it forces agents to decrease their spending. After the decreases in spending bring on falling aggregate demand, depreciation of real exchange rate, decreasing in asset prices and finally leads to output loss.

2.2. Sudden Stop in Emerging Market Economies

At the recent times, financial crises in emerging market economies have become major discussion topic in the world. After the 1994 Tequila Crisis in Mexico, 1997 Asia Crisis and 1998 Russia Crisis, many researchers who strive to determine reasons of crises started to study problems in EMEs.

Accordingly, the studies that conducted to investigate financial crises in emerging markets have particularly focused on international capital flows. Because, at the beginning of 1980s, emerging financial markets in the world have entered to a major expansion era. Especially, structural reforms that made by EMEs such as financial liberalization, reduction of fiscal imbalances as well as higher return rates in these economies have allowed easy access to international capital markets for them. Following this financial liberalization process, international capital flows have considerably increased in EMEs and they have benefited greatly from this situation during 1990s. Capital inflows to emerging markets generally take place as foreign direct investments, but recently occurred as portfolio equity and bank-related flows as well. For a better understanding of the development of capital inflows in emerging markets, following figure illustrates foreign direct investment flows as groups to EMEs

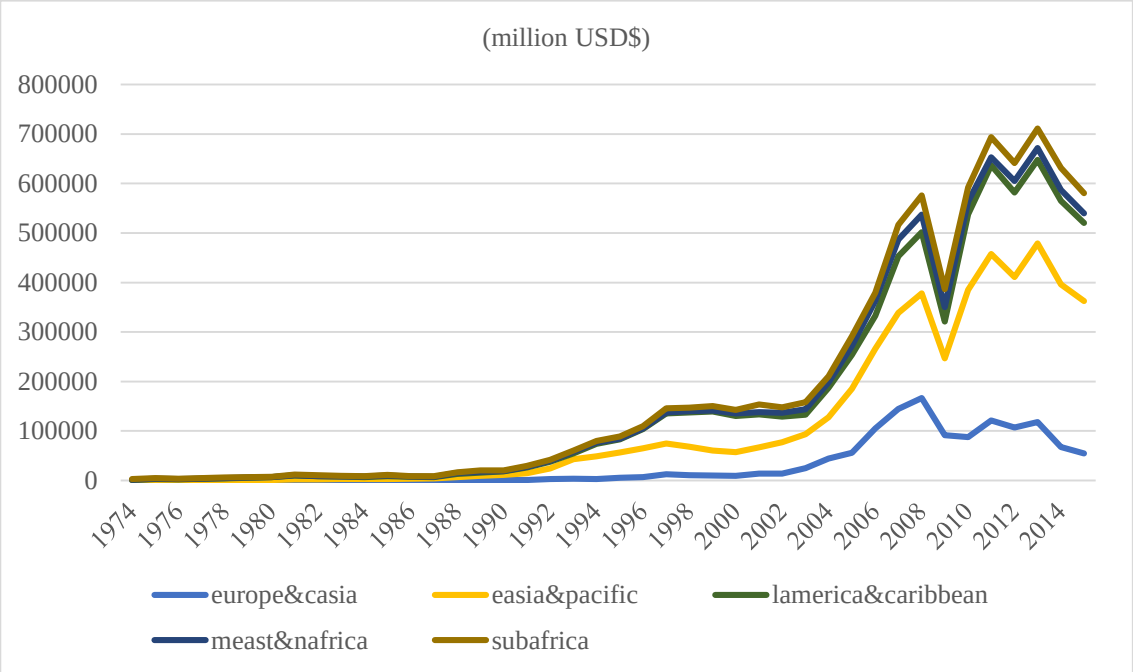


Figure 3. *Foreign direct investment in emerging markets*

Source: World Bank

The above figure shows that the development of foreign direct investment (million usd $) for developing countries in Europe & Central Asia, East Asia & Pacific, Latin America & Caribbean, Middle East & North Africa, Sub-Saharan Africa from 1974 to 2015. As seen from figure, foreign direct investments to EME's have begun to increase since 1990s and gradually risen over time.

Although the 2008 global financial crisis reversed the upward trend of foreign direct investments, foreign direct investment has started to rise again since the beginning of 2010.

The following figure shows that development of portfolio investments in emerging markets economies for selected countries from 1994 to 2015.

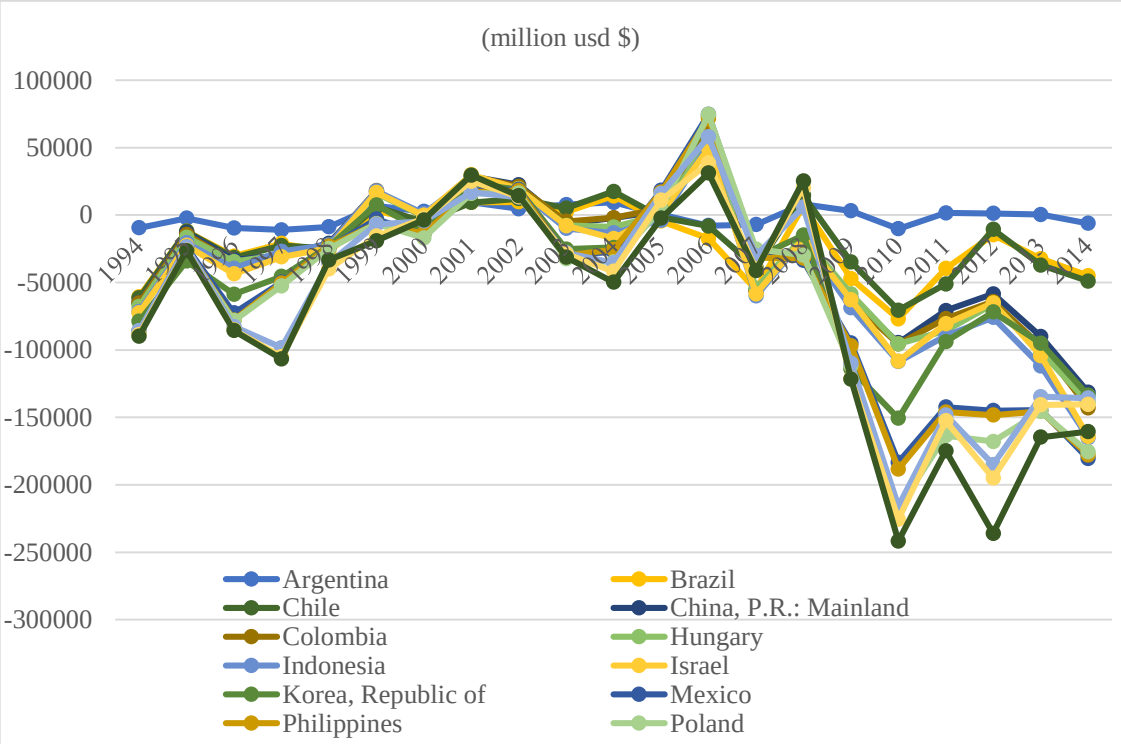


Figure 4. *Foreign portfolio investment in emerging markets*

Source: World Bank

According to figure 4, portfolio investments in EMEs follows a stable process until the 2008 financial crises, after this global financial crisis, direction of portfolio investments turned negative and except for a few countries this trends continues.

As seen from both figures, capital flows to EMEs have increased since 1990s especially in the terms of foreign direct investments. The reason is that it can be thought as the requirements of alternative capital for EMEs in the wake of regulations that are implemented by them (Claessens, 1993). Since, free movement of capital across the countries contributes to increases in effectiveness of reallocation resources, raises productivity and economic growth, it is approved as beneficial in the terms of economic

theory. However, in practice, this case has led to the opposite results (Ahmed S. and Zlate A., 2013). For example, according to Stiglitz (2002), uncontrolled capital flows in emerging markets were a huge mistake during 1990s, as easing of controls on capital movements was main trigger factor for currency crises in emerging markets such as Mexico 1994, Asia 1997, Russia 1998, Turkey 2001, and Argentina 2002. Moreover, capital control makes the country less vulnerable to external shocks and it give additional time to countries to find a solution. That is capital inflows to EMEs may not generally produce positive results. When a sudden stop occurs in capital inflows, it may result in many negative situations. For example, financial liberalization in financial markets which started from 1980s and financial crises at 1990s forced developing countries to switch from the fixed exchange rate regime to the floating exchange rate regime and inflation targeting. But this transition process usually becomes a painful process in terms of developing economies. Since these economies have some structural problems, they cannot literally apply major changes in their monetary policy. In following parts, it is investigated special situations that arise in EMEs.

2.2.1. Original sin

Original Sin can be described as failure to borrow from international capital markets with domestic currency or failure to borrow from domestic capital markets with fixed exchange rate in long-term (Eichengreen and Hausmann, 1999). As understand from definition, original sin hypothesis is examined in two dimensions as international and domestic. If a country cannot borrow from international capital markets with domestic currency or when borrowing can be carried out in foreign currency with short-term interest rate from international capital markets, it faces international original sin problem. Moreover, if a country cannot borrow from domestic markets with domestic currency in long-term fixed interest rate, this case is expressed as domestic original sin problem (Mehl and Reynaud, 2005). The original sin problem, which arising from underdeveloped financial system causes to more fragile structure in the terms of financial sector. In addition, original sin problem that especially faced by the countries, which have too high foreign liabilities in foreign currency to save their financial structures can lead to a destruction for financial system.

In economic environment where there is original sin, if the investments in domestic currency are financed by foreign currency, there is currency mismatch or if long-term projects are financed by short-term credits, there is a maturity mismatch problem. Currency mismatch and maturity mismatch lead to financial fragility (Eichengreen and Hausmann, 1999). The concept of the original sin hypothesis is different from concepts of debt intolerance and currency mismatch. Debt intolerance can be defined as the inability to manage the level of foreign debts of developing countries according with developed countries criteria (Reinhart et al, 2003). In fact, original sin that a reason for inability to manage external debt is only a determinant of external debt problem. Currency mismatch problem is that economic decision-making units, especially banks, borrow from abroad with a foreign currency at a low interest rate and these resources are loaned with domestic currency at a higher interest rate in home or using of these resources in the domestic currency to finance income-generating economic activities. In this case, volatilities in foreign exchange rate can bring about to rise effects of currency mismatch problem. As result, depreciations in real exchange rate increases value of the country's net external debt and it can adversely affect the balance sheets of economic decision-making units as well. Even though currency mismatch is a result of original sin, it is not inevitable.

In order to evaluate original sin in the terms of analytical manner, Eichengreen, Hausmann and Panizza (2003a) provided that several indicators to measure original sin. The following index shows first indicator to calculate

$$OSIN1_i = 1 - \left(\frac{\text{Securities issued by country in currency i}}{\text{Securities issued by country i}}\right) \quad (2.5)$$

Original sin index is between 0 and 1. If the index takes value “0”, the country completely borrows with own currency (no original sin problem) and if the index takes value “1”, the country only can borrow with foreign currencies (original sin problem). OSIN1 has two disadvantage.

First, while it only encompasses securities, it does not encompass other debts. Second, it doesn’t consider opportunities for hedging currency. To overcome these disadvantages, $OSIN3_i$ third original sin index was provide.

$$OSIN3_i = \max\left(1 - \frac{\text{Securities issued by country in currency i}}{\text{Securities issued by country i}}, 0\right) \quad (2.6)$$

From this analytical approach, several studies were conducted to calculated original sin index of countries. In this context, Eichengreen, Hausmann and Panizza (2003a) calculated original sin index of 45 countries that covering financial centers, Eurozone, other developed countries, coastal banking regions, developing countries, Latin America, Middle East, Africa, Asia-Pacific and Eastern Europe for the years 1993-1998 and 1999-2001. According to results of their study, the OSIN1 index was obtained the lowest value with 0.53 and 0.58 at financial centers in that period. Furthermore, the OSIN3 index was calculated as 0.07 and 0.08 in that period. The point of interest in the study is that OSIN indexes are not as low as expected for developed countries that except for financial centers.

For example, OSIN1 index and OSIN3 index in Eurozone countries were calculated respectively 0.86 and 0.53 and they were significantly higher than the index values in financial centers. However, after the Union completed the monetary integration process, these index values started to significantly decline during the period 1999-2001. In this period, while OSIN1 index was calculated as 0.52, OSIN3 index was calculated as 0.09. In Latin America, the Middle East, Africa, Asia Pacific and Eastern Europe, the indexes have the highest value and they were calculated as 0.09. However, OSIN3 index was calculated as 0.84 in Eastern European countries for the period 1999-2001. The results of the study that conducted by Hausmann and Panizza (2003) show that as the level of development and size of the countries increase, OSIN indexes decrease.

In another study, Bordo and Meissner (2007) carried outed a study that aims to determine factors which cause to original sin and balance of payment crises in 56 countries for 1880-1997 periods by using panel data analysis. They divided this period into two parts as 1880-1913 and 1972-1997. They analysed 20 countries in fist part and analysed 36 countries in second part. According to results of study, high monetary debt level will generally cause financial turbulences.

Furthermore, they divided countries that experiencing the original sin problem into two groups as developing and developed countries and they claimed that developed

countries are less likely to face crises, while financial vulnerabilities that caused by original sin problem in developing economies causes financial crises.

Therefore, the findings of the analysis revealed that there is inverted U-shaped relationship between the debt crisis and the original sin. Following figure shows calculated original sin index of several countries. This figure is generated in accordance with data that obtained from study of Eichengreen, Hausmann and Panizza (2003). In the study, they calculated OSIN indexes of countries for the period between 1993 and 1998. OSIN3 index is taken into account in the current figure.

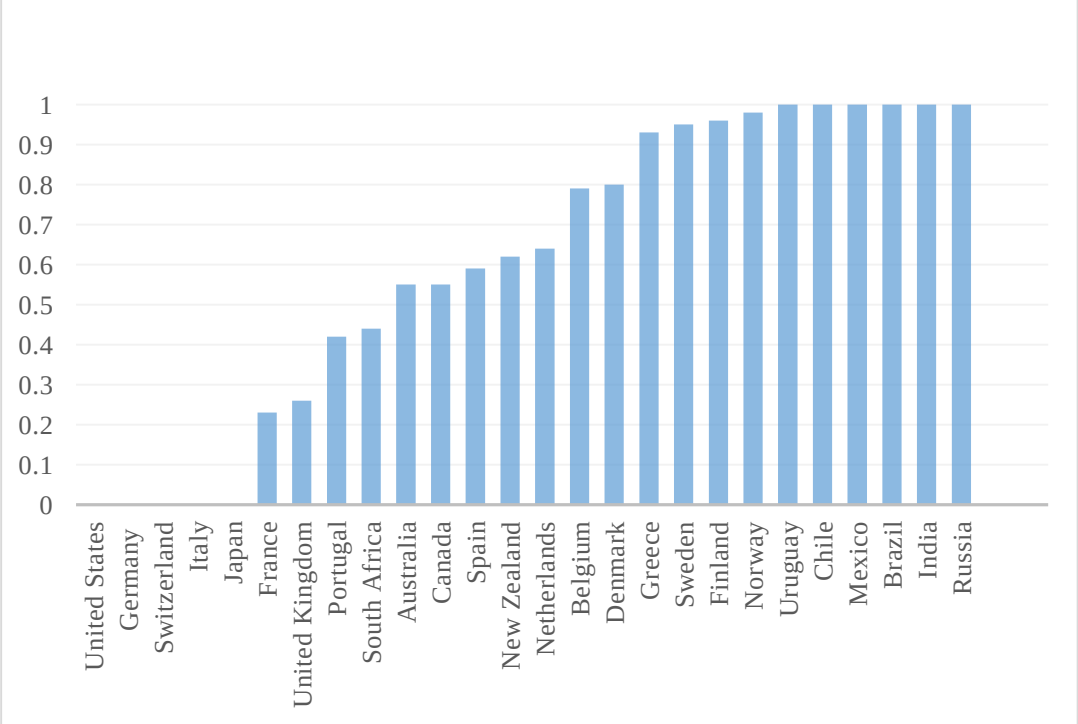


Figure 5. *Average level of original sin between 1993 and 1997*

Source: Eichengreen, Hausmann and Panizza 2005

As mentioned previously, original sin problem is generally experienced by EME's also, it is possible to understand this situation from figure. While original sin index of developed countries takes 0 value, developing ones take 1 value. In this direction, it can be said that original sin is a problem encountered by developing countries. Other studies in the literature support this results such as Bordo and Meissner and Bordo (2006a), Bordo M. (2007), Reinhart et al. (2003).

2.2.2. Dollarization and currency mismatch

The currency mismatch in the emerging market crises is an important issue that should be addressed. In the systematic financial crises that occurred in developing market economies after 1990's, role of currency mismatch is remarked (Chang and Velasco, 2000, Corsetti, Pesenti and Roubini, 1999a). Currency mismatch is a concept that arise from differences in values of debt and revenue. For example, if a country's liabilities are denominated in a foreign currency and its revenues are overwhelmingly expressed in local currency, in this case it can be said that there is currency mismatch (Goldstein and Turner, 2004). In the terms of firms, currency mismatch emerges from the relationship between liabilities denominated in foreign currency and cash flow denominated in domestic currency. In the case of facing currency mismatch, adverse effects will occur in balance sheet for firms because exchange rate depreciation increases burden of liabilities denominated in foreign currency relative to cash flow. Furthermore, currency mismatch is familiar concept in the terms of banks. It is difference between liabilities and assets.

Currency Mismatch is a dangerous situation in the terms of financial stability and banking sector. Debt in many developing countries is denominated in a foreign currency, though revenues of them depend on domestic production and local currency. A sudden depreciation in the foreign exchange rate can leads payment problems for foreign currency debt. On the other hand, depreciation in domestic currency would motivate exports and reduce default risk. Which of these factors will dominate another one depends on degree of currency mismatch, amount and maturity of debt, openness etc. While depreciation in domestic currency leads to an opportunity that provide easy access to international market for developed countries, it may lead to opposite effects (contraction) for developing countries. In the case of depreciation in domestic currency, a country faces a case, causing payment problems, in the terms of debt denominated in foreign currency and it means credit risk.

On the other hand, currency mismatch is different from original sin. A country suffering from original sin borrow from abroad and this case leads to high foreign debt denominated in foreign currency. However, high external debt does not always mean that there will be currency mismatch. The implemented policies like accumulating international reserves to prevent destabilizing financial consequences is result of origin sin because countries where high international reserve accumulation have original sin

problem. In addition to this case, s international reserve accumulation increases, possibility of currency mismatch will decrease. Thus currency mismatch is a possible result of original sin.

By all means, original sin is not only reason of currency mismatch. In sufficient international reserves, infrastructural problems that causes misleading political implementations and undercapitalized financial system bring about to currency mismatch. After understanding the role of currency mismatch in emerging market economies, many studies have been conducted in order to reveal how currency mismatch mechanism occur. For example, Goldstein and Turner (2003) provided a measure method to show whether countries are facing the currency mismatch problem or not. According to their suggestion, usage of the original sin as a proxy for currency mismatch is not proper.

While evaluating currency mismatch, currency composition of domestic debt should take into account. They provide their measure as effective currency mismatch (AECM);

$$AECM = \frac{\text{NFCA}}{\text{EXP}} \times FCSHARE \tag{2.7}$$

where NFCA is net foreign currency assets, EXP is export and FCSHARE is the foreign currency share of total debt (domestic and international).

However, this measure is criticised by (Eichengreen, Hausmann and Panizza, 2003) due to the fact that there is not enough data to use this measure. In this context, they provided a new measure similar to AECM and it is easy than previous method in the terms of accessibility to data. In the following equation, it can be seen their model;

$$MISMATCH = \frac{\text{RES}-\text{DEBT}}{\text{EXP}} OSIN \tag{2.8}$$

where RES is international reserves, DEBT is international debt and OSIN represent OSIN index.

They suggested that there is significant correlation between MISMATCH and AECM although AECM and MISMATCH is not identical. Moreover, in this model, it is easier to access data than AECM model. From these theoretical viewpoints, studies have been carried out to expand and develop these measures.

For example; Morris Goldstein and Philip Turner (2004) elaborated previous study by making estimates of net foreign-currency debt assets. Afterwards, Tille (2003), Lane and Milesi-Ferretti (2007b) and Lane and Shambaugh (2010a) conducted several studies regarding with the issue.

Another an important issue related to exchange rate changes is the dollarization. Dollarization can be defined as the largely holding asset in foreign currency and borrowing with foreign currency by economic actors in a country (Basso et al., 2007). According to (Gale and Vives, 2002), dollarization is the usage of another country's currency by a country as an its unit of payment and account. Dollarization, or currency substitution, is a common feature of emerging markets. Dollarization is a important matter to be considered by policy makers, since it can lead to reducing effects of domestic monetary and fiscal policies.

The concept of dollarization differs when the role of money in the economy is taken into consideration. As it is known, there are three basic characteristics of money in the economy. These are unit of account, medium of exchange and store of value. By one or more of these functions to be carried out with foreign currency instead of national currency causes to existence of multiple currencies at the same time in the system. In this case, it is not talked about a single dollarization concept. Dollarization is divided into two groups as partial and full dollarization. If foreign currency and domestic currency are in effect at the same time, in that case it is called partial dollarization. If the domestic currency is officially removed from circulation and a foreign currency begins to fulfil all functions of the domestic currency, this is called full dollarization. In this context, in the study of IMF that carried out in 2005, dollarization divided into the three groups. According to its study, real dollarization is the indexing of the prices and salaries to the foreign currency, which is official or not official. While official dollarization is defined as the legal currency of foreign currency, partial dollarization is defined as domestic currency as legal currency, but transactions can be made in both currencies. Due to the rapid rises in inflation and its reaching three digits' economic agents have started to use dollars in their portfolios in Mexico, Chile, Peru and many other developing countries during the 1980s. Over time, these countries began to hold statistics of deposits in dollars and cash-dollar accounts of residents in the country.

After the 1994 Mexico and 1997 Asia crises dollarization, the experienced devaluation problem in emerging markets brought the official application of the dollarization to the agenda.

2.2.3. Fear of floating

Following the financial crisis of the late 1990s and early 2000, many emerging market economies started to move away from exchange rate rigidity and adopted flexible exchange rate regimes and inflation targeting (IT), though this process was not an easy it as predicted. The disruptions experienced during the transition period and the reluctance of the countries to pass flexible exchange rate caused emergence of "fear of floating" concept. Fear of floating can be described as interventions to be made by central banks in economies where there are floating exchange rate regime to foreign exchange market because of volatilities (Calvo and Reinhart, 2000). While the many emerging countries claim to use flexible exchange rate regime, they use their policy instruments to prevent large fluctuations in their currency's value especially during the financial crises. That is why, interventions to made by central bank to foreign exchange rate market are considered as a respond against exchange rate depreciations and these arrangements in exchange rate are addressed as "Fear of Floating" Calvo and Reinhart (2001) and Calvo and Reinhart (2002).

Central banks acting with fear of floating intervene to foreign exchange market by using international reserves or intervene to foreign exchange market through interest policy. The main feature that separates central banks acting in this direction from the rest of central banks is volatilities in interest rates and international reserves. In this context, Calvo and Reinhart (2002) provide an evidence that volatilities in interest rates and international reserves are higher than developed counterparts for emerging markets economies. Thus, it can be said that the usage of reserves is still high in the terms of EME's. In fact, this case shows that emerging market economies insist on intervention to foreign exchange rate market despite the fact that they switch to a flexible exchange rate regime. However, the only reason in here may not be fear of floating because countries that prefer inflation targeting are sensitive to changes in exchange rate as well. The changes in exchange rate not only cause depreciations also it causes to changes in price level because of exchange rate pass through effect (ERPT).

ERPT means that changes in imports prices due to volatilities in exchange rate are translated into higher domestic prices. There are many studies in literature regarding with the ERPT and importance of the subject has increased since advent of IT. As examples; Dornbusch (1987), Fischer (1989), Klein (1990), Feenstra and Kendal (1994), Goldberg and Knetter (1997) studies are considered. Moreover, in particular, there are studies providing evidences that shows ERPT is higher for EMEs than for developed ones. At this point, it is difficult to show whether interventions were caused by fear of floating or inflation targeting, since FF and IT may resemble each other at the first glance. In both cases, it is intervened to exchange rate through the interest rate policy. Ball and Reyes (2004) stated that previous studies which investigates fear of floating don't take in consideration difference between fear of floating and inflation targeting and they assumed all of the intervention as a reaction against fear of floating. To understand whether intervention to exchange rate is caused by fear of floating or inflation targeting, the real reason for interventions made by central bank is investigated.

When the looking difference between FF and IT in detail, as there are more interventions to exchange rate in fear of floating and it can be seen that the changes in exchange rate in FF are more than IT. In addition, changes in inflation is high for FF than for IT because IT don't allow to fluctuations in inflation. As direct interventions to foreign exchange rate by using reserves is not preferred in IT, the change in reserves is very small (Ball and Reyes, 2004). On the other hand, studies that investigates to reasons and factors that play role in occurrence of fear of floating conducted in the literature. For example; Calvo and Reinhart (2000) developed a model to determine whether fear of floating is present or not and which reasons play a role in fear of floating in the analytic manner. Their model shows that lack of credibility could bring about to fear of floating and high interest rate volatility investigating behaviours of exchange rates, the monetary aggregates, nominal and real exchange rates.

$$m_t - e_t = \alpha E_t(e_t - e_{t+1}), \alpha > 0 \tag{2.9}$$

where *m* and *e*, respectively, stands for logs of money supply and nominal exchange rate, E_t is the mathematical expectations operator conditional on information available in t period and α denotes interest-semi-elasticity parameter. To simplify equation (2.9), supposing a constant money supply $\overline{m}$ in 2 periods away under the rational expectations exchange rate equilibrium becomes weighted average of present and future money supply

$$e_1 = \frac{m_1 + \alpha\bar{m}}{1+\alpha} \tag{2.10}$$

As understand from equation (2.10), exchange rate in period 1 is weighted average of present and future money supply. On the other side, $e_t = \bar{m}$ for t=1,2,3,... in addition, for simplicity under the assumption of international interest rate and perfect capital mobility equal to zero, nominal interest rate $i_t = e_{t+1} - e_t$ satisfies

$$i = e_2 - e_1 = \frac{\bar{m} - m_1}{1+\alpha} \tag{2.11}$$

According to equation (2.11), a once-and-for-all increase in money supply in the period 1 would cause to a permanent devaluation but not leads to increase in interest rate. In addition, an increase in future money supply $\bar{m}$ (holding m_1 constant) results in increase in current exchange rate and interest rate. In the case of poor credibility, policy makers face a dilemma to prevent currency depreciation. If money supply is not increased in period 1, interest rate will increase and this case can bring about to difficulties for financial and real sector.

If m_1 is increased to prevent a rise in interest rate, this action may lead to negative consequences for credibility. From this model, Calvo and Reinhart (2000) investigated whether fear of floating is presence or not examining monthly percentage change in exchange rate, reserves, interest rates and money supply for 39 countries in Africa. According to result of the study, they strive to prevent depreciations in exchange rate, even though many countries especially developing ones announced to prefer floating exchange rate regime. As a result, structural problems in emerging market economies and preferred incorrect policies by them are main problems that cause to fear of floating.

CHAPTER 2

TESTING THE EFFECTS OF SUDDEN STOP PROBLEM ON TURKISH ECONOMY

In this chapter, it is empirically investigated the effects of sudden stop problem on Turkish Economy. Then obtained results are interpreted and policy advices put are forwarded

1. DEVELOPMENTS IN TURKEY ECONOMY FROM 2006 TO 2016

The Turkish economy has experienced important crises that stemming from structural problems and sudden stops in capital inflows. These are can be expressed as 1994, 2000 and 2001 crises. In particular, the 2001 crisis, is different from the others due to its effects and the its consequences. In this period, Turkish economy has shrunken about 7% and inflation has reached about 80%. Increased foreign exchange demand owing to the depreciation of the real exchange rate has reached an uncontrollable point and overnight interest rate rose to 5,000%. The new regulations such as passing to floating exchange rate regime and the tight fiscal and monetary policy that came into force after the banking crisis in 2001 have produced significant results for the Turkish economy. In addition, The Council of Ministers adopted a reform program for the improvement of the investment environment and new regulations have been made in order to reduce bureaucratic procedures and administrative barriers in this year. These reforms were expressed as a transition program to strong economy at that time. By means of these regulations, Turkish economy has gained a good momentum and entered a fast recovery period. The achieved high growth rate, regulations and positive situation in the economy have accelerated capital inflows. In this context, following table shows economic growth performance of Turkey between 2001 and 2006.

Table 1. *% Change in Real GDP between 2001 and 2006 for Turkey*

Year	% change in Real GDP
2001	-7.49547
2002	7.94192
2003	5.79442
2004	8.93125
2005	7.38015

2006	6.09874

Source: Central Bank of Turkey

As seen from table-1, Turkey has gained a good performance in terms of economic growth with the transition program to strong economy. As mentioned above, with increasing economic growth performance and tightening fiscal structure affected capital inflows in positive way and huge amount capital inflow experienced.

In the following figure, it is showed that developments in capital flows for Turkey between 2001 and 2006.

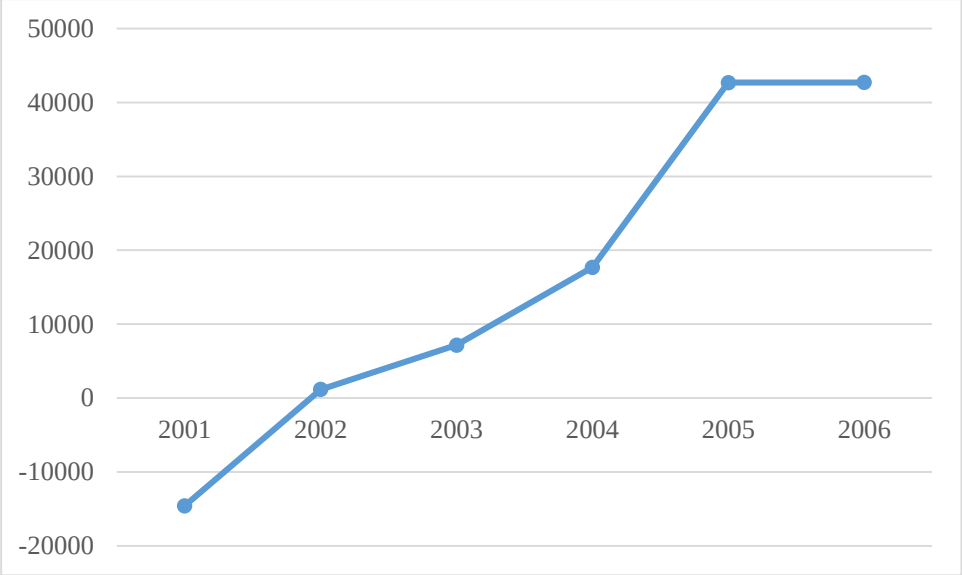


Figure 6. *Current financial account for Turkey between 2001 and 2006*

Source: Central Bank of Turkey

In order to better demonstrate the period covered in the study, it is separated as 2006-2009 and 2009-2016 because in the 2006, Turkey passed to inflation targeting regime as to 2009 is a year to show in the wake of global financial crises.

1.1. Turkey Economy From 2006 To 2009

Since the beginning of 2006, Turkey has started to applied inflation targeting regime. In this period, real exchange rate has appreciated, inflation has been decreased, risk premium has dropped and balance sheets have strengthened (IMF Staff Report, 2007). However, appreciation in real exchange rate and production sector based on

exporting inputs stimulates to increases in domestic demand for export goods. In addition, slowdowns in capital inflow starting with the global financial crisis that started to affect the world markets in 2007 caused external fragilities brought to agenda again in terms of Turkey. Moreover, it has been difficult to achieve inflation targets in this period (Ermişoğlu, 2011:23-24). From this viewpoint, following figure shows current account over gdp ratio which is one of the indicators of external vulnerability

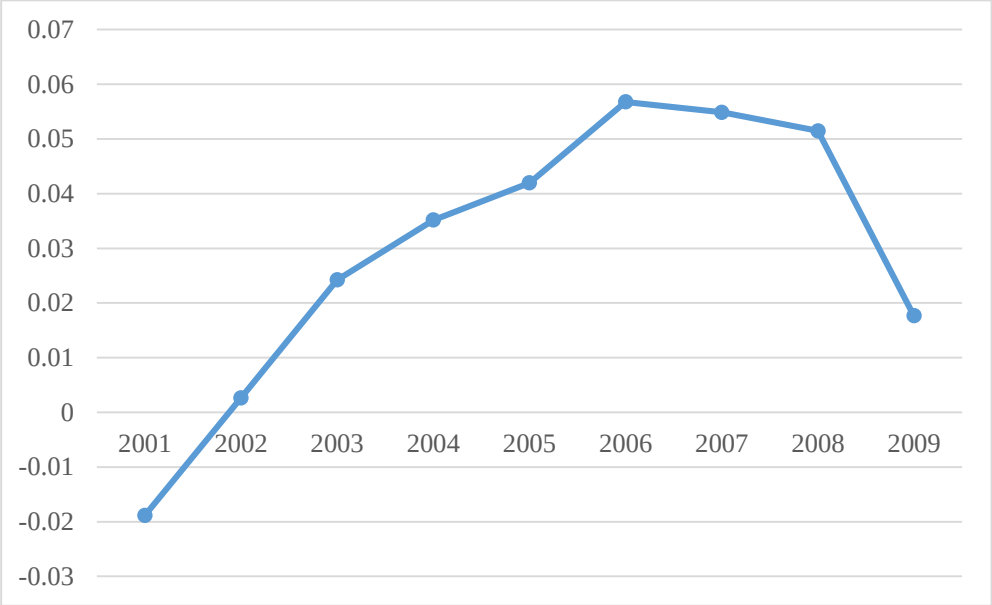


Figure 7. *Current account balance over GDP ratio between 2001 and 2009*

Source: Central Bank of Turkey

The pressures that arise from increasing uncertainty and slowdown in capital inflow on inflation has brought on to increases in domestic interest rate. Therefore, in this period, central bank of turkey couldn't achieve targeting inflation rate.

Table 2. *Inflation Targeting between 2006 and 2009 for Turkey*

Date	Targeting Inflation Rate	Actual Inflation Rate
2006	5	9.7
2007	4	8.4

2008	4	10.1
2009	7.5	6.5

Source: Central Bank of Turkey

1.2. Turkey Economy From To 2009 And 2016

The global financial crisis, which started in U.S.A in 2007, has been increasingly affected to global markets. The crisis that first started in financial markets and then it resulted in corporate bankruptcies by affecting real markets. The reason that led to crises can be described as revision of financial instruments, funding sources which created with securities-like instruments based on assets in the banking system (Tokucu, 2010:32).

In this period, Turkey experienced decreases in external demand, contractions in internal and external loans and this situation affected real economy in negative way. Because of decreasing in external demand and increases in nominal exchange rate, current account deficit decreased. The fight against inflation that started in this period and the new policies that took effect turned the process back to positive direction. Figure 8 shows developments in capital flow between 2009 and 2016 for Turkey.

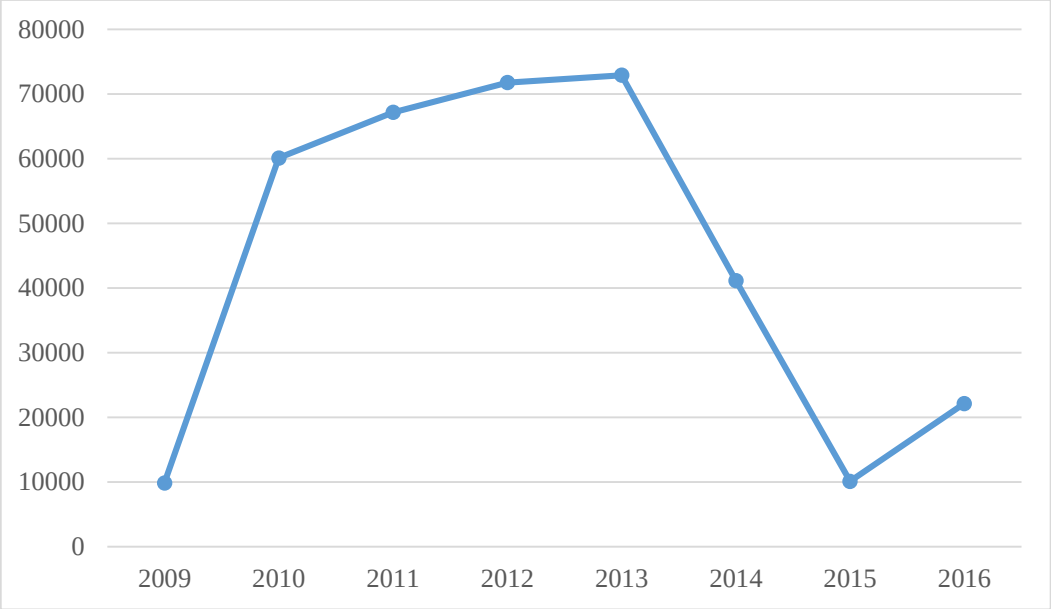


Figure 8. *Current financial account between 2009 and 2016 for Turkey*

Source: Central Bank of Turkey

According to figure 8, Turkey has quickly gotten over the effects of 2007 financial crises and capital inflow has increased. However, after 2013 capital inflows have substantially begun to decrease.

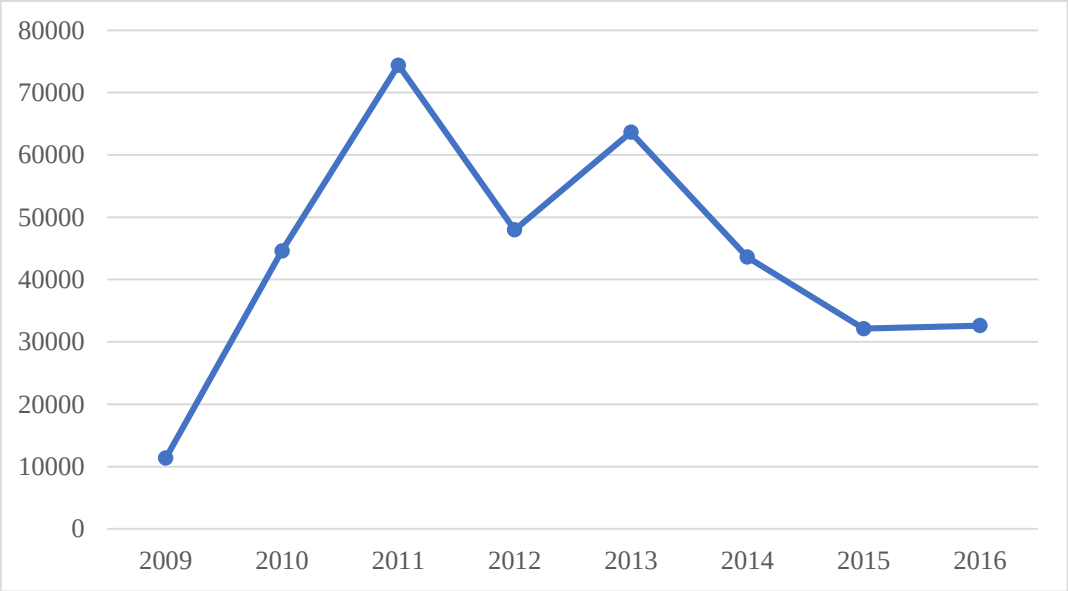


Figure 9. *Current account balance between 2009-2016 for Turkey*

Source: Central Bank of Turkey

As a result, Turkey economy entered a recovery period after the 2001 banking crises. The regulations and policy changes affected Turkey economy in positive way. Although the negative atmosphere due to the global crisis of 2009 affects the turkey economy negatively, recovery process was experienced fairly fast. However, it can be understood from the above figures that after the year 2013 turkey has entered a downturn period. The capital inflow has decreased and external demand has decreased. At this point, this study becomes important.

2. LITERATURE SURVEY FOR SUDDEN STOP

The starting with financial liberalization process in 1980s, capital flow-centered problems that occurred in the emerging market economies came to the agenda. While, there are differences regarding with taking part in crises, main reason of crises is same. I Therefore, the studies that investigates reasons and effects of imbalances in capital flow have started to been conducted. Especially, after the 1994 Mexico and 1997 Asia crises, sudden stops in capital flows became a major topic among researchers. Studies that investigates its reasons and effects have conducted in the literature. In this context, several

studies that investigates sudden stop phenomena in the literature are shown in the following table.

Table 3. *Literature Review*

Author	Sample	Method	Result
Calvo, Izquierdo and Mejía (2004)	Selected Developed and Developing Countries	Panel Probit Regression	It is asserted that sudden stop has significant effect on economic growth. Real exchange rate depreciations occur with sudden stop
Turgutlu (2015)	Turkey	GMM	It is showed that sudden stop in capital flow has caused significant decline in bank lending in Turkey
Agosin, Díaz-Maureira and Karnani (2016)	Selected Developed and Developing Countries	Multinomial Logit Model	It is provided that there is high correlation between booms in capital flow and future sudden stop.
Scholtens, de Haan, Zhao and Yang (2014)	Selected 59 Countries	Panel Logit Model and Event Study	They provide that economies with low trade openness, a shallow financial sector and current account imbalances are most prone to sudden stops with currency crashes
Bachmann and Leist (2013)	Indonesia and Mexico	Markov Switching VAR	It is stated that sudden stop has negative effects on growth.
Mahecha (2013)	Selected Emerging Markets Economies	OLS and Tobit	The countries with a lower level of external debt are less affected by sudden stop. A countercyclical fiscal policy and sale of international reserve to defend domestic currency helped to decreases in output loss that arose from sudden stop
Agosin and Huaita (2012)	42 Emerging Markets Economies	Probit Model	Sudden stop in capital flow has negative effects on economics
P. Joyce and Nabar (2009)	26 Emerging Market Economies	GMM	Strong banking system in an economy is an important factor against sudden stop. If banking system is strong, sudden stop in capital doesn't have effect on economy.

Neagu and Mihai (2013)	Romania	Stress Test	With the some burden, economies can withstand against shocks such as sudden stop.
Sula (2010)	Selected 36 Emerging Market Economies	Panel Regression Model	Increases in current account deficit and depreciated real exchange rate bring on to sudden stop and this economy has negative effects on real economy
Gallego and Tessada (2010)	Brazil , Chile , Colombia , Mexico, Argentina, Uruguay	Panel Regression Model	sudden stops cause decreases in job creation and, particularly, it causes increasing job destruction

3. METHODOLOGY

3.1. Data Set

In this study, we investigate the effects of sudden stop on emerging market economies. Since we design our study according to small-open economy assumption, the factors causing the sudden stop are selected as external factor as such in intensively mentioned in the literature (Calvo, 2003; Guidotti et al., 2004; Milesi-Ferretti and Razin, 1998; Mendoza, 2010). These external factors can be expressed as changes in international interest rates, contagion effect and imperfect financial markets. We determine FED effective funds rate as proxy variable to represent triggering external factor in the study. It represents changes in international interest rate in addition, it can be thought as a monetary policy tool for USA (Kim and Roubini, 2000). Our purpose in choosing this variable is that when fed effective funds rate increases, slowdown in capital inflows take places and it triggers to sudden stop for emerging market economies.

On the other hand, we determine current account balance, hot money, consumer price index, industrial production index that is proxy for real GDP, private sector credits, domestic interest rate and real effective exchange rate as macroeconomic variables. These variables are commonly used in the literature. For example, Agosin and Huaita (2012); Catão and Milnesi-Ferretti (2014); Christensen and Li (2014); Davis and Karim (2008a) and others. The industrial production index, consumer price index and domestic interest rate are well-known variables in monetary business cycle literature (Kim and Roubini, 2000). In addition, we use nominal GDP variables to transform current account balance and capital flow. In this context, “Higher GDP growth would be associated with a lower probability of the SS event, while a higher value for the interest rate and consumer price

index would be associated with a higher probability for EMEs (Suh, 2017)". The hot money variable in the study represent capital flows into domestic country.

This variable consist of net error and omissions + net flows of non-FDI and non-portfolio investments held by entities, banks and debt securities (Loungani and Mauro, 2001). Moreover, it is followed the related literature regarding with determinants of currency crises and included a set of control variables in order to control for the other possible reasons of sudden stops and contain measures for economic fundamentals These are current account balance, real effective exchange rate and domestic credits and they are considered indirect channel of potential effects of sudden stop. In this study, the sample spans from 2006:01 to 2016:08. Data are collected on monthly basis by using Thompson Reuters Data Stream software. The nominal and data that used in our study are interpolated and transformed from quarterly to monthly basis by utilizing cubic formulation.

Table 4. *Data*

Variables	**Process**	**Abbreviation**
Hot Money/GDP(-1)	Level	HOT
Real Effective Exchange Rate	Log+First Difference	REER
Nominal GDP	Interpolated+Seasonal Adj.	GDP
Domestic Interest Rate	First Difference	INT
Private Sector Credits	Log+First Difference	CRDT
Current Account Balance/GDP(-1)	Level	CAB
Industrial Production Index	Seasonal Adj+Log+First Difference	IPI
Consumer Price Index	Seasonal Adj+Log+First Difference	CPI
FED Effective Funds Rate	First Difference	FEDEF

3.2. Augmented Dickey Fuller Test

In time series analyses, the series that analysed must be stable in order to obtain meaningful econometric relationships between them. Unit root tests are often used to test whether the series have a stable structure or not. The most commonly used test among unit root testes is the Augmented Dickey-Fuller unit root test that developed by Dickey and Fuller (1981).

In the following equations shows models that used in this test;

$$\Delta Y_t = yY_{t-1} + \Sigma_{i=2}^{p} \beta_i \Delta Y_{t-i+1} + \varepsilon_t \quad (3.1)$$

$$\Delta Y_t = \beta_O + yY_{t-1} + \Sigma_{i=2}^{p} \beta_i \Delta Y_{t-i+1} + \varepsilon_t \quad (3.2)$$

$$\Delta Y_t = \beta_O + \beta t + yY_{t-1} + \Sigma_{i=2}^{p} \beta_i \Delta Y_{t-i+1} + \varepsilon_t \quad (3.3)$$

where equation (3.1) shows a structure that has not the fixed term and trend effect, equation (3.2) shows a structure that has only the constant term and equation (3.3) shows a structure that has fixed term and trend effect. The stationarity test is first performed at the level. If stationarity is not achieved at the level, the first difference of y series is taken. $\Delta Y_t = Y_t - Y_{t-1}$ if the series is stationary, it is rendered stationary at the first series difference, denoted by I (1). If stationarity is not achieved in the first level of the series, the second difference is taken.

In general, two hypotheses are used in practice for unit root test;

$H_0: y = 0$ (p=1) (series has unit root / series is not stationary) (3.4)

$H_0: y < 0$ (p<1) (series has not unit root / series is stationary

3.3. The Structural Vector Autoregressive Model (SVAR)

Contrary to the classical VAR model, the Structural VAR (SVAR) model allows to transform a VAR model in a reduced form into a system of structural equations by taking advantage of economic theory. In the classical approach, arbitrary constraints on parameters and changes in outcomes depending on order of variables in the model have been the subject of debate.

In structural VAR models developed by Sims and Bernanke (1986) as alternative to unconstrained VAR models, structural parameters and structural shocks are determined by identifying constraints supported by the economic theory on the variables in the model.

Considering following equation;

$$Y_t = AY_{t-1} + \ldots\ldots + A_p Y_{t-p} + \Psi D_t + \mu_t \quad (3.5)$$

where p is optimal lag for VAR, Y is the nx1 dimensional endogenous variable matrix, μ is nx1 dimensional residuals matrix and D_t represent deterministic component. D_t, which is the deterministic compound, can easily be neglected because it is not affected by a shock in the system. So the SVAR model can be written as following way;

$$AY_t = A^* Y_{t-1} + \ldots\ldots + A_p^* Y_{t-p} + B\epsilon_t \quad (3.6)$$

In this equation, A matrix is used to model instantaneous relations, B matrix contains the structural formation parameters of the model. ϵ_t is matrix of structural problems in nx1 dimension and var(ϵ_t) =Λ. Λ is the diagonal matrix. Since some shocks cannot be directly observed, it must be applied certain identifications. $B\epsilon_t$ in equation (2) multiply by $A^{-1}$and write the residual vector as follows;

$$\mu_t = A^{-1} B\epsilon_t \quad (3.7)$$

If A^{-1}in equation (3.7) is passed to left side of equation

$$\mu_t A = B\epsilon_t \quad (3.8)$$

3.3.1. The structural var with block exogeneity

Since we investigate relationship between sudden stop in emerging market and triggering external factor in this study, we utilize from block exogeneity assumption that come from Cusman and Zha (1997). Our purpose in benefiting from this approach is that we have devised to our framework by starting from the assumption of a small open economy.

In the block exogeneity approach, there is a structure that provide meaningful results because in this approach, while external variables have effects on domestic variables, domestic variable cannot affect external variables (Kim and Roubini, 2000).

In this context, there are the studies that investigates relationship between open small economy and world exploited this identification structure in literature as well. For example; the structural VAR model with the block exogeneity is used by Mackowiak (2007) to analyse the impact of external shocks on developing countries. In addition, this method is used by Franken et al. (2008) to investigate the Chilean economy.

Considering following structural form equation;

$$\mathrm{A(L)y(t)} = \varepsilon(t) \tag{3.9}$$

where y(t) is an m x 1 vector of observations at time t, A(L) is a non-singular m x m matrix in lag operator L, and $\varepsilon(t)$is m x 1 structural disturbances. We can rearrange the matrices in accordance with block exogeneity assumption.

$$y(t) = \begin{bmatrix} y_d(t) \\ y_e(t) \end{bmatrix}, \tag{3.10}$$

$$A(L) = \begin{bmatrix} A_{11}(L) & A_{12}(L) \\ A_{21}(L) & A_{22}(L) \end{bmatrix}, \tag{3.11}$$

and

$$\varepsilon(t) = \begin{bmatrix} \varepsilon_d(t) \\ \varepsilon_e(t) \end{bmatrix}, \tag{3.12}$$

where $y_d(t)$ is m1 x 1 vector of domestic variables, and $y_e(t)$ is m2 x 1 vector of exogenous variables at time t. The dimension of $A_{11}(L)$ is m_1 x m_1, $A_{12}(L)$ is m_1 x m_2, $A_{22}(L)$ is m_2 x m_2, $\varepsilon_d(t)$ is m1 x 1, and $\varepsilon_e(t)$ is m_2 x 1. As a result, structural distributions meet the following conditions;

$$E[\varepsilon(t)\varepsilon(t)'|y(t-s), s>0] = I, E[\varepsilon(t)|y(t-s), s>0] = 0 \tag{3.13}$$

When we describe reduced form in following way;

$$B(L)y(t) = u(t), \tag{3.14}$$

then, structural disturbances are associated with reduced form equation residuals by $\varepsilon(t) = A_0 u(t)$. In this case equation can be written matrix form;

$$\begin{bmatrix} \varepsilon_{\mathrm{hot}} \\ \varepsilon_{\mathrm{reer}} \\ \varepsilon_{\mathrm{int}} \\ \varepsilon_{\mathrm{crdt}} \\ \varepsilon_{\mathrm{rgdp}} \\ \varepsilon_{\mathrm{cab}} \\ \varepsilon_{\mathrm{cpi}} \\ \varepsilon_{\mathrm{fedef}} \end{bmatrix} = \begin{bmatrix} 1 & \mathrm{a12} & \mathrm{a13} & 0 & \mathrm{a15} & \mathrm{a16} & 0 & \mathrm{a18} \\ \mathrm{a21} & 1 & \mathrm{a23} & 0 & 0 & \mathrm{a26} & 0 & \mathrm{a28} \\ \mathrm{a31} & \mathrm{a32} & 1 & \mathrm{a34} & 0 & 0 & 0 & \mathrm{a38} \\ \mathrm{a41} & 0 & \mathrm{a43} & 1 & \mathrm{a45} & 0 & 0 & \mathrm{a48} \\ \mathrm{a51} & \mathrm{a52} & \mathrm{a53} & \mathrm{a54} & 1 & 0 & 0 & \mathrm{a58} \\ \mathrm{a61} & \mathrm{a62} & \mathrm{a63} & 0 & \mathrm{a65} & 1 & \mathrm{a67} & \mathrm{a68} \\ 0 & \mathrm{a72} & \mathrm{a73} & 0 & 0 & 0 & 1 & \mathrm{a78} \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 \end{bmatrix} \begin{bmatrix} \mathrm{u_{hot}} \\ \mathrm{u_{reer}} \\ \mathrm{u_{int}} \\ \mathrm{u_{crdt}} \\ \mathrm{u_{ipi}} \\ \mathrm{u_{cab}} \\ \mathrm{u_{cpi}} \\ \mathrm{u_{fedef}} \end{bmatrix}$$

This identification structure is more accurate and realistic compared to Choleski decomposition therefore it provides meaningful results. Above matrix form shows restriction matrix. These restrictions are determined by the economic priors. By means of these identifications, variables simultaneously react to other domestic and external

variables. For example, capital inflow can respond to both endogenous and exogenous variables respectively interest rate and federal reserve funds rate. However, in the choleski decomposition is not possible to obtain inference in such way (Tunc and Kilic, 2014). According to this identification scheme, while fed effective funds rate variable affecting domestic variables, it cannot be affected by domestic variables. The domestic variables are in simultaneous interaction with each other and with external variables

Moreover, the block exogeneity assumption allows to include exogenous variables in the model. In this way, as external variable affect to domestic variables, it cannot be affected by domestic variables. The block exogeneity restriction, $A_{21}(L)= 0$, means that the endegenous variables do not affect the structural forms of external variables neither simultaneously nor for lagged forms. It can be said that this assumption is appropriate for small-open economy framework and play important role in identification structure (Tunc and Kilinc, 2016).

3.3.2. A bayesian approach in estimation

In this study, we estimate our model by using Bayesian Gibbs sampling methodology as it is in Zha (1999) and Waggoner and Zha (2003). "The advantage of this approach is that it provides precise statistical results for models with a high degree of simultaneity among the simultaneous variables, besides for models with restricted variance-covariance matrices of the residuals and for models with restrictions on lagged coefficients because "when the degree of simultaneity in a structural model is high, the shape of the posterior density for the model parameters tends to be so non-Gaussian that importance sampling is prohibitively inefficient (Waggoner and Zha, 2003,)". In our model, since there is high simultaneity among variables that uses in model, Gibbs sampling is chosen in order to obtain meaningful inference from model.

When we estimating this structural model, The RATS 9.0 econometric software is used and two-lag chosen for system owing to small sample (Sato, Zhang and McAleer, 2010).

4. EMPIRICAL RESULTS

In order to conduct the SVAR analysis, firstly we must determine whether variables are stationary or not. To test stationary status of variables, we carry out Augmented Dickey-Fuller (ADF) unit root test. Above mentioned in the ADF

methodology, there are three options in order to investigate whether variable is stationary or not. In this study, all of them are tested and t-statistic is detailed. Furthermore, as series have trend, we use constant and linear version within ADF test.

Table 5. *Augmented Dickey-Fuller Test*

	Level			**First Difference**		
Data	**Intercept** (t-statistic)	**Trend and Intercept** (t-statistic)	**None** (t-statistic)	**Intercept** (t-statistic)	**Trend and Intercept** (t-statistic)	**None** (t-statistic)
HOT	-8.470529*	-8.523734*	-5.942522*	----	----	----
CPI	-0.666806	-3.133937	14.31875	-10.02468*	-10.00884*	-1.442059
REER	0.3008	0.0388	0.4672	-9.176631*	-9.139754*	-9.195476*
IPI	-1.592861	-2.551563	1.203167	-24.41241*	-24.33699*	-24.33604*
INT	-1.262207	-1.329485	-1.103201	-7.968191*	-7.955039*	-7.971068*
CRDT	-1.629673	-0.905912	2.309873	-3.431751*	-3.680118*	-2.566049*
CAB	-5.061647*	-5.068987*	-1.836673*	----	----	----
FEDEF	-1.737593	-1.193838	0.0382*	-5.094660*	-5.250551*	-4.975684*

* indicates that variables are stationary at % 5 significance level

After determining status of variables, we estimate SVAR model with block exogeneity using two lags. We impose twenty-five identifying restrictions on SVAR model specified by identification. Following figure shows impulse-response graph of estimating SVAR model.

The results of impulse-response estimates for the our SVAR model are exhibited in figure-10, where a one-standard deviation above the mean is defined as a positive shock, and a one standard deviation below the mean is defined as a negative shock. However, in the study, it is investigated one-standard deviation positive shock that come from fed funds rate is considered.

Figure 10. Impulse-Response Analysis-1

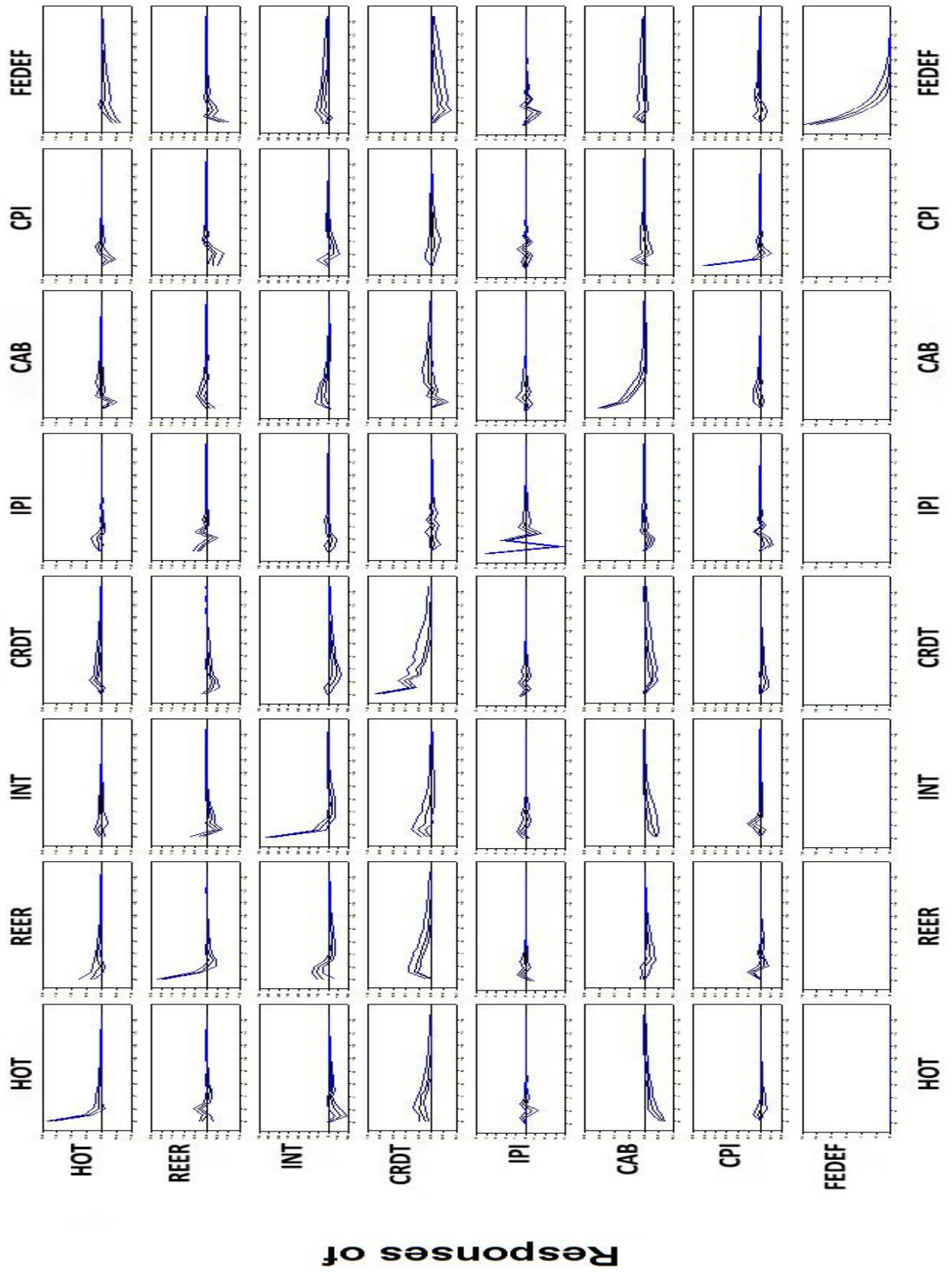
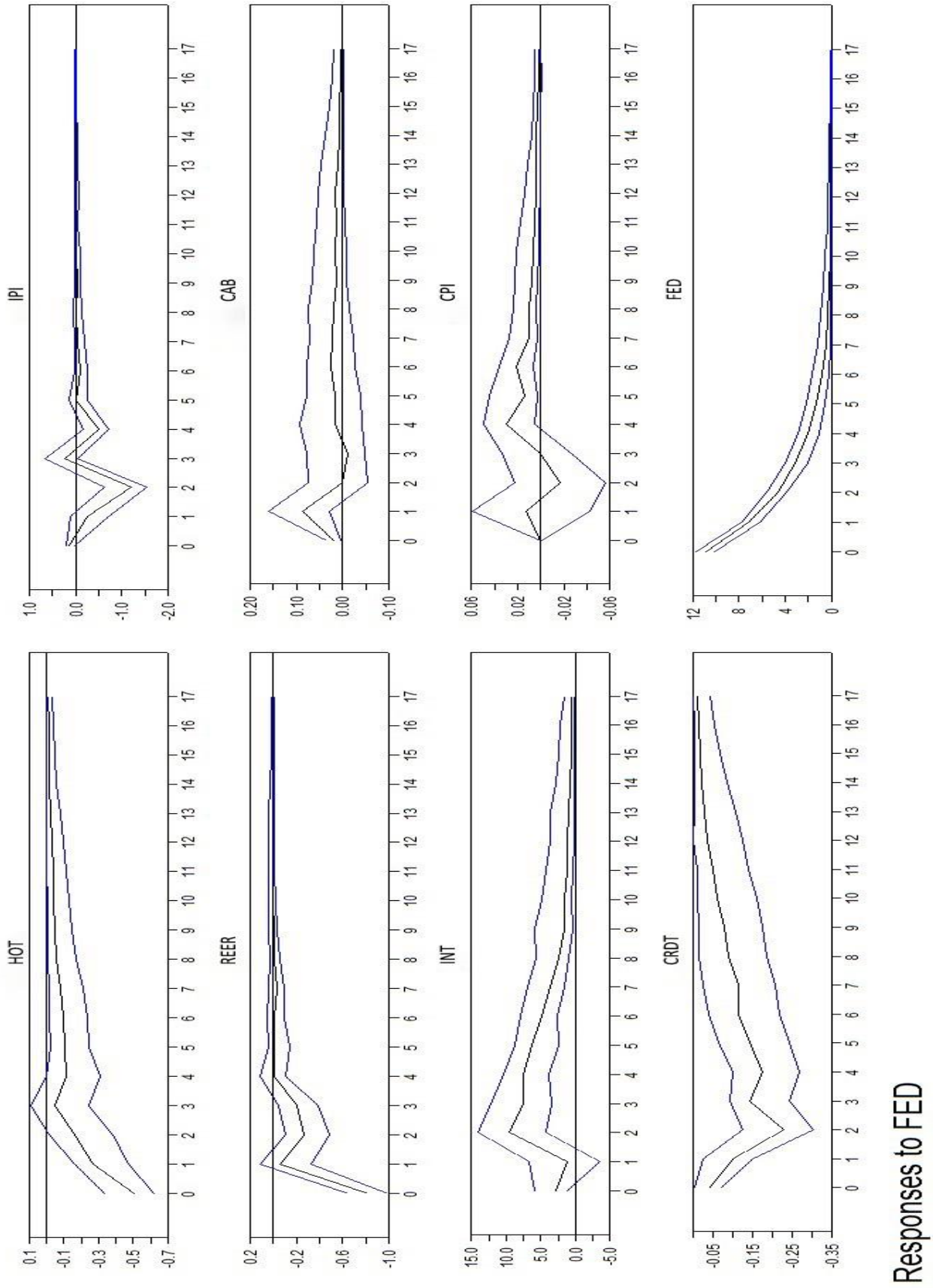


Figure 11. Impulse-Response Analysis-2



Impulse-response analysis can help to interpret the effects of one-standard deviation shock is given to fed funds rate on domestic variables and it shows their interactions. The figure 11 reports the one-standard deviation positive shock to Fed effective funds rate (fed interest rate). The increases in fed interest rate trigger to decreases hot money flows into Turkey in the first two periods. In addition, the real effective exchange rate depreciates about two period and then domestic interest rate increases statistically significant manner between two and ten periods. The credits to private sectors decreases about first eight period and industrial production index decreases about first one period against one-standard deviation positive shocks is given to fed interest rate. The current account balance increases in the first period. This case means current account deficit shrinks. The consumer price index is starting to increase after the first three periods with lag.

While the interest rate increases, the increases in exchange rate are called the as exchange rate puzzle. However, this is not the case in here. Since Turkish economy is small-open economy, increases in interest rate cannot prevent to deprecations that arise from external factor in real effective exchange rate because other factors play an active role in this situation. Furthermore, this situation also proves that the classical macroeconomic policies are not realistic in terms of Turkey sampling.

CONCLUSION

Emerging market economies have experienced intensive capital inflows since the beginning of 1990s. These capital inflows into EMEs have contributed to their economies in many respects such as funding of new investments, ensuring sustainable growth, protection of price stability. However, the rise in capital inflows actually have formed basis for future problems in terms of developing countries with structural problems such as high current account deficits. The peso crisis in Mexico in 1994 led attention to capital movements. Especially, after the 1997 Asian region crisis, the studies have steadily increased in this area. While, these crises differ in the terms of basic dynamics, starting point of all have been sudden stops in capital inflows. These sudden stops in capital inflows have had a negative impact on EMEs with structural problems. The decreasing capital inflow causes important slowdowns in real and financial sector. For example, firstly total aggregate demand decreases and although this case causes to shrink in current account and real exchange depreciates. The depreciations in real exchange rate increase the cost of imported inputs and after a while it causes drops in real production. This situation can be considered as the effects of sudden stop on real economy. On the other hand, in the financial manner, sudden stop in capital flow trigger to increases in interest rate. These increases mean more fragile financial system for EMEs. In addition, this case brings about to pressure on inflation targeting policy in terms of countries that prefer inflation targeting policy. Moreover, appreciations in foreign exchange rate increases debt burden of EMEs.

When looking from our sample, Turkey is one of emerging market economies. In this context, Turkey have experienced crises based on sudden stops in capital flows 1994, 2000 and 2001. After the 2001 baking crisis, Turkey passed floating exchange rate regime and implemented new regulations for monetary and fiscal policies. By means of these regulations and high growth rates, Turkey has experienced massive amount capital flows. The Turkish lira has appreciated in this term. In fact, despite tight monetary and fiscal policy, this situation causes to increases in import goods so that high export performance has not been met difference between import and export. Therefore, current account deficit of Turkey has considerably increased in this period. Especially, in the recent years, external fragilities of Turkey have come to agenda. With increasing external fragilities, recent global financial crises decrease international capital movements.

From this viewpoint, this study aims to investigate the effects of sudden stop problem on Turkish economy. In this context, in order to investigate sudden stop problem, this study is driven by small-open economy assumption. As in mentioned in this study sudden stop generally arise from external factors such as changes in world interest rate, imbalances in financial market, contagion effect and etc. Therefore, in this study fed effective funds rate is preferred as triggering factor for sudden stop event. To apply this approach, empirical approach of the SVAR model with block exogeneity is used. Our aim in using this methodology, the SVAR model with block exogeneity allows to apply small-open economy assumption. In this model, several variables can be used as exogenous and endogenous. In addition, in this model, while exogenous variable affects the endogenous variable, endogenous variable but not. Contrary to VAR model, this model theoretically improves the inferences of study. On the other hand, data used in study are monthly and it span from 2006:01 to 2016:08. Data span started from 2006:01 because in this period, Turkey passed to inflation targeting regime. The data set of this study consist of hot money that represent capital flows, real effective exchange rate, industrial production index, consumer price index, current account balance, domestic interest rate, credits to private sector and fed effective funds rate. Whereas fed effective funds rate is exogenous variable, others are endogenous variable.

The result of study meets our expectations for Turkey sample. The positive shock that come from fed effective funds rate launch sudden stop events. The sudden stop in capital inflows causes depreciations in real effective exchange rate and current account deficit shrinks. This situation is called as current account reversal in the literature. In this context, depreciation in the real effective exchange rate causes to decrease in industrial production index and it supports previous studies in the literature as well.

In addition, the domestic interest rate is increased to prevent capital outflows and depreciation in real effective exchange rate. Furthermore, the increases in interest rate may have occurred in keeping with price stability if taken into account during the increases in inflation.

On the other hand, it can be said that the problem of the currency mismatch, which is an important in terms of emerging market economies, arising from the real effective exchange rate depreciation exists in this economy. The increased real exchange rate will adversely affect the external debt burden.

As a result, it can be said that when fed funds rate hikes, it triggers to sudden stop event for Turkey in our sample. Firstly, capital flows decreases and then real effective exchange rate depreciates in order to mitigate the effects of them domestic interest rate is increased. This increases in domestic interest rate shows conventional monetary policy tool is used. However, it is understood that the only conventional monetary policy tool is not effective at alleviating this effects. If macro-prudential monetary policy tools is used with conventional monetary tools, the better results can be obtainable.

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