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EXCHANGE RATE STABILITY SYSTEM AND USED AS A TOOL IN TURKEY

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EXCHANGE RATE STABILITY SYSTEM AND USED AS A TOOL IN TURKEY
TÜRKİYE'DEKİ KUR SİSTEMİ VE KURUN İSTİKRAR ARACI OLARAK
KULLANILMASI

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ABSTRACT

The exchange rate policies, followed in an economy, have the fundamental role in determining the main macroeconomic parameters such as balance of payments, inflation, stability.

In this study, the answer is sought for the question whether the exchange rate regimes, applied in Turkey, may be used as a stability policy instrument within the scope of causality relations between the exchange rate and inflation and between the exchange rate and growth. In this context, Engle-Granger co-integration analysis is used in studying of such relations.

In the analysis which is made by using the quarterly data from the period of 1990:1-2004:1, it is found the double direction causality relations between the exchange rates and inflation and the exchange rate and growth in Turkey. The analysis results show that providing the stability of exchange rates in Turkey is an important factor in bringing down the inflation rates.

Keywords: Exchange rate, Inflation, Stability, Causality, Cointegration

ÖZET

Bir ekonomide izlenen döviz kuru politikaları ödemeler bilançosu dengesi, enflasyon, istikrar gibi temel makro ekonomik parametrelerin belirlenmesinde temel bir role sahiptir.

Bu çalışmada, Türkiye'deki döviz kuru rejimlerinin ülke için bir istikrar politikası aracı olarak yer alıp almayacağı sorusuna, döviz kuruyla enflasyon ve buna ek olarak döviz kuruyla büyüme nedensellik ilişkileri kapsamında cevap aranmaktadır. İlgili ilişkilerin araştırılmasında Engle-Granger eş-bütünleşme analizine yer verilmiştir.

Üç aylık veriler 1990:1-2004:1 tarihleri arası kullanılmıştır. Türkiye'de döviz kurları ile enflasyon ve döviz kurları ile büyüme arasındaki nedensellik ilişkisine rastlanmış olup, bu analizin sonuçları, Türkiye'de döviz kuru istikrarının sağlanmış olmasının enflasyon oranlarının düşürülmesinde önemli bir faktör olduğunu göstermiştir.

Anahtar Kelimeler: Döviz kuru, Enflasyon, Sabitlik, Eşbütünleşme, Nedensellik

INTRODUCTION

PART 1:

It is seen that the empirical works on determining the relations between exchange rate and inflation and growth mostly concentrate on uncertainty of exchange rate.

(Rose and Yellen, 1989) studied the relation between the real exchange rate, domestic income, foreign income and foreign trade balance regarding the short- and long-term periods using the data related to the period of 1960:01-1985:04, and concluded that real exchange rate had not any statistically significant impact on foreign trade balance.

Increasing of interest rates in a country also increases the demand of both domestic investors and foreign investors to the local currency. The investors move toward the domestic investment instruments and local currency by selling the foreign currencies or assets in foreign currency that they hold. This transition from foreign assets to domestic assets increases the value of local currency and decreases the exchange rate. Since the decreasing in interest rates increases the demand from domestic assets to foreign assets or foreign currency, as the local currency depreciates, the foreign currency appreciates. Namely, there is a negative relation between the increasing interest rates and exchange rates (Taylor, 1995).

Similar works were also carried out in Turkey. (Zengin and Terzi, 1995) studied the relation between the nominal exchange rate, export, import and foreign trade balance by dividing the period of 1950-1994 into two periods as 1950-1979 and 1980-1994.

In a study executed by (Erlat and Erlat, 1998) on real exchange rates, real interest difference and terms of trade, the findings were obtained that when the interest difference and terms of trade were in favor of Turkey, the value of real exchange rates increased.

(Furman and Stiglitz, 1998) studied the impact of increasing in mostly non-monetary factors, inflation and interest rate on exchange rate in 9 developing countries during 1992-1998. Any immediate increase in the interest rate was associated with decreasing of exchange rate value. Daily increase in the interest rate coarsely was leading to additional 3

percent decrease in the exchange rate value in the countries with lower inflation. This effect is insignificant in the countries with higher inflation. Namely, it was concluded that the effect was higher in the countries with lower inflation than with higher inflation.

In the study (Duygulu, 1998), he discusses the relation of economic stability with the stability of exchange rate, and emphasizes the importance of providing the stability in exchange rates that are the important economic indicator regarding the economic stability. As a result of this analysis, effecting of exchange rate movements on economic activities suggests that the exchange rate stability should be evaluated together with price stability in achieving the economic stability.

(Özbay, 1999) found that uncertainty of exchange rate had the statistically significant negative impacts on export in Turkey in his work which he used each of quarterly obtained data during 1988-1997.

PART 2. REVIEW OF THE LITERATURE

It is seen in the empirical literature that the relation between exchange rate and interest rate is mostly studied for crisis periods. In these works, it was studied whether the exchange rate might be maintained with the higher interest rate policy that was applied during the crisis periods. (Kraay, 2000) studied the relation between the interest rate and exchange rate during the speculative attack periods within 75 developed and developing countries in the period of 1960-1999, and concluded that the exchange rate might not be maintained with the higher interest rate policy. Furthermore, he also studied the situations of interest rates against the successful speculative attacks which ended with devaluation and unsuccessful speculative attacks not causing the devaluation during such period. The result of this study did not provide the important evidences verifying the traditional view.

(Aristotelous, 2001) revealed that the exchange rate change did not have any impact on export from UK to US during 1989-1999.

In the work which (Sukar and Hassan, 2001) tried to find any relation between US' foreign trade volume and exchange rate fluctuations, they found a positive relation between the

export volume and foreign trade income and between exchange rate and uncertainty of exchange rate.

The relations between interest rate and exchange rate were subject of researches in Turkey and different studies were executed on this subject. (Berument, 2001) estimated the relation between interbank interest rates as an indicator of monetary policy and exchange rates using VAR analysis for 1986-2000 period. As a result, it was found that the tight monetary policies caused the valuation of exchange rates.

(Gümüő, 2002) found a positive relation between two variables. Any increase in the interest rate leads to increasing in value of exchange rate.

(Okur, 2002) studied the effect of flexible exchange rate policy that was applied after February 2001 crisis on economic stability in Turkey. And all economic crises developed by transforming to the foreign currency crises in Turkish economy. When these crises were analyzed, it was found that the pre-crisis TL was always over value and therefore, the balance of payments destroyed.

Failing to meet the expectations related to inflation is based on “being persuaded” by the economic units, governments on the results of economy policy for several periods and based on failing to meet their own expectations by this way and changing their attitude.

(Aktaő, 2004) points out that the relation between the exchange rate and overnight interest rates of Turkish Central Bank is weak during January 2002-April 2004.

(Özçam, 2004) observed that increasing in the exchange rates did not have the adverse impact on the interest rates and prices of stocks as expected as a result of findings, when volatility structures of exchange rates, interest rates and prices of stocks were examined through the GARCH process-based models in Turkey during 1996-2003. When the relation between the volatility changes was considered, it was found a powerful relation both between the volatility of exchange rates and interest rates and between the volatilities of prices of stocks during the period after February 2001.

(Karaca, 2005) did not find any statistically significant relation between interest rate and exchange rate and short-term interest rate during the analyses on relation between interest rate and exchange rate in Turkey with the data related to January 1990-July 2005. When the study was executed only for floating exchange rate regime (March 2001-July 2005), it was found a statistically significant, positive, but weak relation between exchange rate and interest rate.

In the studies that were executed by (Baldemir and Keskiner, 2004) and (Yaldız, 2006), the findings were obtained that the monetary policy was effective on the foreign balance. There are studies which obtain the results that the national currency depreciation has the positive impact on the foreign balance regarding the exchange rate policy.

(Harrigan, 2006) reviews evidence suggesting that for low-income countries with good fiscal discipline, it is a fixed rate which is likely to bring the biggest benefits in terms of economic performance. The counter-argument that such a regime distorts a key price variable which is an important determinant of both exports and imports is not strong in the context of low income countries. Econometric work shows that for developing countries, the domestic output levels are much more important determinants of exports and imports than the real effective exchange rate.

(Suslu, 2012), Efficiency of intervention to the exchange rate under the inflation targeting is studied from three points. These are the expectations of economic units and exchange rate variance, reserve accumulation and sterilization cost. He studies the reasons and results of intervention to the exchange rate under the inflation targeting in the study. In this context, The reasons and results of both selling the foreign currency and direct intervention by Turkish Central Bank were revealed between 2003 and 2010.

(Ertem, 2011) stated that the pressure of foreign currency market is affected by the curve of income from US Treasury bonds in Turkey and developing countries according to his study, and thus, it is expected that the decisions related to FED interest rate policy have the important effects on the foreign currency and exchange rate policies of country during the

future period. For this reason, as the individuals and institutions take the decision related to the foreign currency reserves and exchange rates of country, it will be beneficial that they analyze the global financial variables as well as the economic variables of country.

(Ozlu and Unalmis, 2012) In this study, we use historical Reuters surveys and real-time data in order to investigate the effect of economic fundamentals on exchange rates in Turkey for the period: January 5, 2004- July 18, 2012. The empirical evidence suggests that current account and monetary policy surprises in Turkey have been effective on daily changes in the value of the Turkish lira.

PART 3. WHAT ARE EXCHANGE RATE?

Exchange rate is one of the fundamental magnitudes which affect the macroeconomic prices in developing countries; especially, one of the costs of inflation targeting, which forms the basis of modern monetary policy, is that fluctuations in exchange rates increase the financial and real vulnerability. Occurring uncertainties facilitate the deviation of exchange rate and this destroys the price stability and relative prices as well as having the transition effect. (Hunt and Isard, 2003)

In the past, the main reason of economic crises in many developing countries such as Russia, Brazil and Argentina including Turkey was the exchange rate regime. Thus, showing interest by the economists in this issue also increased the number of empirical studies fast on macroeconomic impacts of exchange rate regimes. We see that those studies mostly focus on the exchange rate regime and relations between the inflation and growth.

For example, one of such studies was executed by Gosh et al. (1995), and in that study, the performance of exchange rate regimes on inflation and output was tested using data from 136 countries for the period of 1960-89. Yeyati and Sturzenegger (2001) evaluated the impacts of exchange rate regimes regarding the inflation, nominal money supply, real interest rates and growth performance using the annual data for the period of 1974-1999 in their study covering 154 countries. Another study, which the impacts of exchange rate regimes on inflation and real GNP were examined, was applied by Moreno (2001) to 98 developing countries during 1974-1998. Even though it is observed that inflation rates are

low under the fixed exchange rate regimes in many empirical studies related to the subject, it is suggested that the fixed and flexible exchange rate regimes may have the different impacts on economic growth depending on the economic structure characteristics of countries.

In this work, it is studied whether the exchange rate regimes, applied in Turkey, may be a significant political tool regarding the stabilities of inflation and growth rates, and revision of impacts of 2001 crisis. For this purpose, relations between the exchange rate and inflation and between the exchange rate and growth will be tested with econometric method for the period of 1990:1-2004:1. Furthermore, it shall be discussed whether the fluctuated exchange rate, implemented upon impact of 2001 crisis, would be the correct option.

The exchange rate between one country and another country's currency means that you must pay attention to how much money you have before exchanging it when going to another country. There is extended economic literature covering all types of questions related to exchange rate regimes from the times of the Gold Standard up to today's liberalized international financial market conditions from various perspectives.

The choice of exchange rate arrangements that countries face at the beginning of the twenty first century is considerably greater and more complicated than they faced at the beginning of the twentieth century yet the basic underlying issues haven't changed radically. (Bordo, 2004).

Each of the major international capital market-related crises since 1994 has in some way involved a fixed or pegged exchange rate regime. At the same time, countries that did not have pegged rates avoided crises of the type that afflicted emerging market countries with pegged rates (Fisher, 2001).

Countries choose their exchange rate regime for a variety of reasons, some of which have little to do with economic considerations. However, if the choice of exchange rate regime is to have any rational economic basis, then a first requirement must surely be to understand the properties of alternative regimes. (Gosh et al., 2002).

Nevertheless, few questions in international economics have aroused more debate than the choice of an exchange rate regime. Should a country fix the exchange rate or allow it to

float? And if pegged, to a single “hard” currency or a basket of currencies? Economic literature pullulates with models, theories, and propositions. Yet, little consensus has emerged on how exchange rate regimes affect common macroeconomic targets, such as inflation and growth.

Ultimately, the exchange rate regime is but one facet of a country's overall macroeconomic policy. No regime is likely to serve all countries at all times (Gosh, 1997). Countries facing disinflation may find pegging the exchange rate an important tool. But where growth has been sluggish, and real exchange rate misalignments common, a more flexible regime might be called for.

During the late 19th century and the early days of the 20th century, exchange rate regimes were dominated by fixed exchange rate regimes until the breakout of the First World War. In those days, the classical gold standard constituted the building block of the international monetary system. The classical gold standard may not be the beginning of exchange rate history, but it is a convenient starting point for considering the evolution of conventional wisdom on the subject. (Crockett, 1976).

Under the classical gold standard, the rate of exchange of the different currencies was given by the mint parity, i.e. the rate of exchange of the domestic currency vis-à-vis the price of gold related to the rate of exchange of the foreign currency against the price of gold. Because governments credibly committed themselves to the fixed gold price and because of the free flow of gold across countries, private sector agents started gold arbitrage as soon as market prices departed from the official price. (Officer, 2001).

The eruption of the First World War in August 1914 led to the dissolution of the classical gold standard chiefly due to a run on the sterling. By that time, the reserve ratio in Britain, which is the ratio between gold reserves and liabilities to foreign governments (foreign sterling reserves) was extremely low. In this situation, the Bank of England decided to impose exchange rate controls, which led to the breakdown of the system. With the end of the war, most countries sought to reestablish exchange rate stability and returned, one after another, to a (sort of new) gold standard rule by the mid-1920s (Eichengreen, 1989).

Another era of fixity came to be decided at the Bretton Woods conference in 1944 that lasted until 1973. The Bretton Woods conference represented the first successful attempt to consciously design an international economic system. It reflected lessons drawn from

both the fixed and floating period. The floating rate period seemed to teach that exchange rates should be viewed as matters of mutual concern, since individually determined exchange rate policies could be inconsistent and unstable (McKinnon, 2005).

The gold standard experience seemed to show that fixed exchange rates were more stable, but required a credible domestic adjustment mechanism, a cooperative international environment, and an absence of destabilising capital flows. The Bretton Woods system worked well as long as capital flows were modest, international inflationary and deflationary pressures were limited, and countries accepted an obligation to direct domestic macroeconomic policies towards achieving external balance (Crockett, 1997).

(Eichengreen, 1993) Indeed argues that the sequence of fixed to float and back again to fixed exchange rate regimes can be explained by (1) the presence or absence of a dominant power that takes the lead in securing fixed exchange rates, (2) the degree of international cooperation, (3) the intellectual consensus regarding the desirability of either systems, (4) macroeconomic volatility and (5) the coordination of fiscal and monetary policies.

The wide range of observed exchange rate regimes begs the question whether large shifts occurred in the composition across fixed, intermediate and flexible exchange rate regimes over time. This is an interesting question, in particular in the light of the paradigms often aired in policy circles with regard to exchange rate regimes. The first paradigm, the so-called bipolar view, or the excluded middle in the words of (Reinhart and Reinhart, 2003), asserts that intermediate regimes are not sustainable and tend to disappear if capital flows are liberalised. The second paradigm, among others advocated by the IMF, emphasises the vulnerability of pegs to speculative attacks (the “crisis view”) and suggests a move from pegs towards more flexibility take place over time.

Although the nature of exchange rate regimes is rather difficult to characterise in practise, (Eichengreen and Razo-Garcia, 2006) – among other – show the decline of intermediary regimes since the early 1990s from about 70% to 45% in 2004. In particular, they conclude that among the advanced countries intermediate exchange rate regimes have almost disappeared. This tendency clearly supports the “bipolar view” related to a country’s degree of development and is reflecting monetary unification in Europe at the same time.

They assert that the number of de facto pegs remained fairly stable between 1991 and 2000 but the officially announced pegs recorded a dip. This phenomenon – “the hidden pegs” –

can be observed for countries with liberalised capital accounts but not for countries with limited access to capital markets. (Reinhart and Rogoff, 2002) apply a different identification technique which looks at parallel exchange rate data for 153 countries starting from 1946 and come to even more straightforward results. They find that half of the officially announced pegs are not pegs, but rather a variant of float. Similarly, regimes that are officially labelled as float often turn out to be pegs in practice. On the basis of the Reinhart and Rogoff dataset, (Husain, Mody and Rogoff, 2004) undertake an even more scrupulous analysis of the data. Their results shed even more light on that issue. They show that pegs are very much long-lived in countries with limited access to capital markets, but are vulnerable in emerging markets, mainly due to sudden stops of capital flow.

It has to be stressed that a considerable change in how the role of exchange rate developments is qualified has taken place, which broadly influences the hierarchy and sequence of economic policy strategies to be followed. After the breakdown of the Bretton Woods system and under the impression of the difficulties the system faced during its final decade, exchange rate movements and exchange rate flexibility were mainly seen as important economic policy tools to address important macroeconomic imbalances successfully. This perspective is also a dominant ingredient of the famous Mundell-Fleming (OCA) approach of open economy macroeconomics, which attributes a rather strong position to the exchange rate as a policy instrument (Frankel and Rose, 1998).

However, standard theory is not very appealing to emerging market economies because “no exchange rate regime can prevent macroeconomic turbulence” (Calvo and Mishkin, 2003). As a matter of fact, the choice of the exchange rate is of secondary importance in emerging market economies. What really matters is the quality of institutions, including fiscal, financial and monetary institutions.

Notwithstanding these arguments, both types of exchange rate regimes have their merits and shortcomings. Generally, pegs are thought to be as a disciplining device for fiscal policy. At the same time, pegs reduce exchange rate premium that opens the way to financing public spending at cheaper rates, a possible recipe for disaster. (Frankel and Rose, 2002).

(Husain, Mody and Rogoff, 2004). Fixed exchange rates are more useful than floats for developed countries if they engage in economic integration and if adjustments due to asymmetric shocks can be adjusted by factor mobility, labour market flexibility or

increasing intra-industry trade. Finally, keeping the exchange rate stable also promotes financial and macroeconomic stability if the share of foreign currency denominated private and public debt is high.

On the other hand, a floating exchange rate regime makes possible the conduct of an autonomous domestic monetary policy if capital flows are fully liberalised. Finally, large external imbalances that can build up easier under a peg if exchange rate misalignments become persistent can be handled not only via internal adjustment, as in a pegged regime, but also through the external adjustment channel (Calvo and Mishkin, 2003).

A different set of criteria for exchange rate regime choice than that based on the benefits of integration versus the benefits of monetary independence, is based on the concept of a nominal anchor (Bordo, 2004). In an environment of high inflation, as was the case in most countries in the 1970s and 1980s, pegging to the currency of a country with low inflation was viewed as a precommitment mechanism to anchor inflationary expectations. This argument was and is used to make the case for the Exchange Rate Mechanism (ERM) in Europe and for currency boards and other hard pegs in transition and emerging countries.

Participation in ERM II, which is a multilateral arrangement of fixed, but adjustable, exchange rates between the currencies of Member States participating in the mechanism and the euro, involves an explicit exchange rate commitment. This commitment must be compatible with the other elements of the overall policy framework, in particular with monetary, fiscal and structural policies. Countries that submit a request for ERM II entry have, thus, to be appropriately prepared: “To ensure a smooth participation in ERM II, it would be necessary that major policy adjustments are undertaken prior to entry into the mechanism and that a credible fiscal consolidation path is being followed.” (European Central Bank, 2003).

As underlined by the EU Council in November 2000, any unilateral adoption of the single currency outside the Treaty framework – by means of unilateral euroization – would run counter to the economic reasoning underlying Economic and Monetary Union, which perceives the adoption of the euro as the end-point of a structured convergence process within a multilateral framework.

Potentially sustainable exchange rate regimes can be related to four different groups (Crockett, 2003) (i) fully fixed rates, in particular if they come close to abandon the individual exchange rate of a country, (ii) pegging regimes, when they are supported by appropriate economic policies or framework conditions, (iii) managed floating regimes, when market expectations concerning exchange rate “moves” or “instability” never become too strong and (iv) free floating regimes, where countries have to accept the potentially real economy.

PART 4. CLASSIFICATION OF EXCHANGE RATE REGIMES

How should a country’s exchange rate regime be classified? The textbook answer is simple: either the exchange rate is “fixed” or it “floats.” The richness of real world regimes belies this elegant dichotomy as most governments try to reach some (often uneasy) compromise between the different elements of the impossible trinity independent monetary policy, rigidly fixed exchange rates and complete capital mobility (Frankel, 1999)

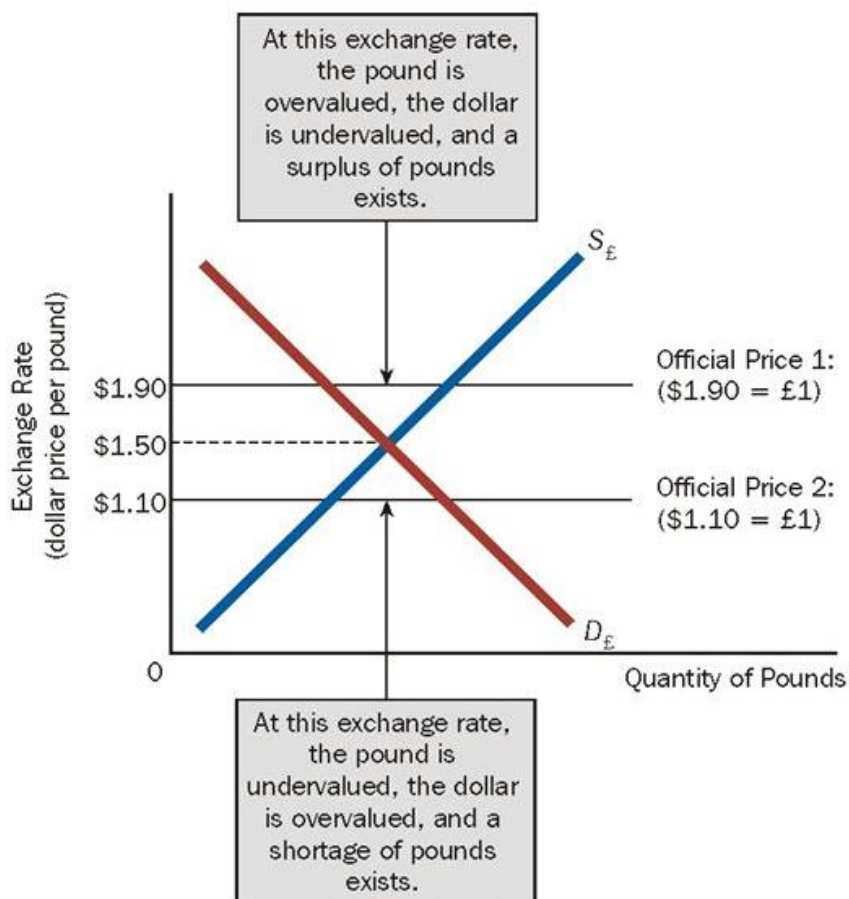
Increasing the globalization tendency and specialization in the production which is accelerated with the globalization in the world economy, increasing the demand and dependency of countries to the goods each other. In order to maintain such commercial relation, there should be the existence of money of almost every country and it should be known the price of good of each country in the currency of other countries. Such requirement caused the occurrence of exchange rates which indicate the rate of foreign country’s currency to the currency of that country (Barışık and Demircioğlu, 2006).

4.1. FIXED EXCHANGE RATE REGIME

Fixed exchange rate regimes are classified as a series of regime which is applied in a wide range that is the fixation of exchange rate parity at a certain rate from the official dollarization which the national currency is removed completely and instead of it, the foreign currencies that are acceptable in the international markets are accepted as the official currency of country. Similarly, in the systems which the exchange rate is not fixed at a certain rate, but the increasing rate is determined or fixed, it is evaluated within the systems of fixed exchange rate regime, again. In addition to them, since the local money

also includes the commitment of meeting the monetary base over the fixed exchange rate, the currency board is also considered within the fixed exchange rate regime. In this chapter, the fixed exchange rate regime is studied under the headings of (i) official dollarization and (ii) currency board. (Berg, 2001).

Figure 1: A Fixed Exchange Rate System



Source : Investopedia.com

As a result, countries with fixed exchange rates have limited freedom to use monetary and fiscal policy to pursue domestic goals without causing their Exchange rate to become unsustainable. This is not true for countries that operate currency boards or participate in currency unions. For this reason, these regimes can be thought of as “soft pegs,” in contrast to the “hard peg” offered by a currency board or union. But compared to a country with a floating exchange rate, the ability of a country with a fixed exchange rate to pursue domestic goals is highly limited. If a currency became overvalued relative to the country to which it was pegged, then capital would flow out of the country, and the central bank would lose reserves. When reserves are exhausted and the central bank can no longer meet

the demand for foreign currency, devaluation ensues, if it has not already occurred before events reach this point. The typical reason for a fixed exchange rate to be abandoned in crisis is due to an unwillingness by the government to abandon domestic goals in favor of defending the exchange rate. (Labonte, 2004).

Fixed exchange rates are more useful than floats for developed countries if they engage in economic integration and if adjustments due to asymmetric shocks can be adjusted by factor mobility, labour market flexibility or increasing intra-industry trade. Finally, keeping the exchange rate stable also promotes financial and macroeconomic stability if the share of foreign currency denominated private and public debt is high. Finally, large external imbalances that can build up easier under a peg if exchange rate misalignments become persistent can be handled not only via internal adjustment, as in a pegged regime, but also through the external adjustment channel (Calvo and Mishkin, 2003).

Under a fixed exchange rate regime, the combination of increased credibility and the elimination of exchange risk can lead to encouraged foreign investment, particularly from other countries within the common currency zone. Because investors know with absolute certainty what exchange rate they will receive in terms of the reserve currency they do not have to worry about moving around profits. A fixed exchange rate will also enable the currency board country to mirror the financial markets of other countries in the common currency zone. (Aziz, 1998).

Economic Advantages of a Fixed Exchange Rate. As with a hard peg, a fixed exchange rate has the advantage of promoting international trade and investment by eliminating exchange rate risk. Because the arrangement may be viewed by market participants as less permanent than a currency board, however, it may generate less trade and investment. (Labonte, 2004).

Political Advantages of a Fixed Exchange Rate. In previous decades, it was believed that developing countries with a profligate past could bolster a new commitment to macroeconomic credibility through the use of a fixed exchange rate for two reasons. First, for countries with inflation rates that were previously very high, the maintenance of fixed

exchange rates would act as a signal to market participants that inflation was now under control. (Labonte, 2004).

4.1.1. Official Dollarization

It is called the dollarization that the countries demonetize the national currency and begin to use the currency of another country as an official currency. The countries completely lose their opportunity to apply the independent monetary policy under this regime. Since the central banks may not issue the currency of another country, they lose their opportunity to apply the monetary policy independently. The official dollarization is considered as a system which the application of arbitrary monetary policy is completely impossible within the discussions on the application of rule-based-arbitrary monetary policy in monetary policy application (Berg, 2001).

Official dollarization, also called full dollarization, occurs when foreign currency has exclusive or predominant status as full legal tender. That means not only is foreign currency legal for use in contracts between private parties, but the government uses it in payments. If domestic currency exists, it is confined to a secondary role, such as being issued only in the form of coins having small value. Officially dollarized countries vary concerning the number of foreign currencies they allow to be full legal tender and concerning the relationship between domestic currency—if it exists—and foreign currency. Official dollarization need not mean that just one or two foreign currencies are the only full legal tenders; freedom of choice can provide some protection from being stuck using a foreign currency that becomes unstable. Most officially dollarized countries give only one foreign currency status as full legal tender, but Andorra gives it to both the French franc and the Spanish peseta. In most dollarized countries, private parties are permitted to make contracts in any mutually agreeable currency. (Mack, 2000).

Table 1 : Officially Dollarized Conyries

Country	Popu- lation	GDP (\$bn)	Political status	Currency	Since
Andorra	73,000	1.2	independent	French and Spanish currencies, own coins	1278

Cocos (Keeling) Islands	600	0.0	Australian external territory	Australian dollar	1955
Cook Islands	18,500	0.1	New Zealand self-governing territory	N.Z. dollar	1995
Cyprus, Northern	180,000	1.4	de facto independent	Turkish lira	1974
<i>East Timor</i>	<i>857,000</i>	<i>0.2</i>	<i>independent</i>	<i>U.S. dollar</i>	<i>2000</i>
Greenland	56,000	0.9	Danish selfgoverning region	Danish krone	prior to 1800
<i>Guam</i>	<i>160,000</i>	<i>3.0</i>	<i>U.S. territory</i>	<i>U.S. dollar</i>	<i>1898</i>
Kiribati	82,000	0.1	independent	Australian dollar, own coins	1943
Liechtenstein	31,000	0.7	independent	Swiss franc	1921
<i>Marshall Islands</i>	<i>61,000</i>	<i>0.1</i>	<i>independent</i>	<i>U.S. dollar</i>	<i>1944</i>
<i>Micronesia</i>	<i>120,000</i>	<i>0.2</i>	<i>independent</i>	<i>U.S. dollar</i>	<i>1944</i>
Monaco	32,000	0.8	independent	French franc/euro	1865
Nauru	10,000	0.1	independent	Australian dollar	1914
Niue	1,700	0.0	New Zealand self-governing territory	N.Z. dollar	1901
Norfolk Island	1,900	0.0	Australian external territory	Australian dollar	Prior to 1900?
<i>Northern Marianas</i>	<i>48,000</i>	<i>0.5</i>	<i>U.S. commonwealth</i>	<i>U.S. dollar</i>	<i>1944</i>
<i>Palau</i>	<i>17,000</i>	<i>0.2</i>	<i>independent</i>	<i>U.S. dollar</i>	<i>1944</i>

<i>Panama</i>	<i>2.7 mn</i>	<i>8.7</i>	<i>independent</i>	<i>U.S. dollar, own coins</i>	<i>1904</i>
<i>Pitcairn Island</i>	<i>42</i>	<i>0.0</i>	<i>British dependency</i>	<i>N.Z. and U.S. dollars</i>	<i>1800s</i>
<i>Puerto Rico</i>	<i>3.8 mn</i>	<i>33.0</i>	<i>U.S. commonwealth</i>	<i>U.S. dollar</i>	<i>1899</i>
Saint Helena	5,600	0.0	British colony	British pound	1834
<i>Samoa, American</i>	<i>60,000</i>	<i>0.2</i>	<i>U.S. territory</i>	<i>U.S. dollar</i>	<i>1899</i>

San Marino	26,000	0.1	independent	Italian lira, own coins	1897
Tokelau	1,500	0.0	New Zealand territory	N.Z. dollar	1926
<i>Turks and Caicos Is.</i>	<i>14,000</i>	<i>0.1</i>	<i>British colony</i>	<i>U.S. dollar</i>	<i>1973</i>
Tuvalu	11,000	0.0	independent	Australian dollar, own coins	1892
Vatican City	1,000	0.0	independent	Italian lira, own coins	1929
<i>Virgin Is., British</i>	<i>18,000</i>	<i>0.1</i>	<i>British dependency</i>	<i>U.S. dollar</i>	<i>1973</i>
<i>Virgin Is., U.S.</i>	<i>97,000</i>	<i>1.2</i>	<i>U.S. territory</i>	<i>U.S. dollar</i>	<i>1934</i>
<i>United States</i>	<i>268 mn</i>	<i>8,100</i>	<i>independent</i>	<i>U.S. dollar</i>	<i>1700s</i>

Sources: CIA 1998; *The Statesman's Year-Book*; IMF 1998; World Bank 1999.

Notes: *Italics* indicate countries using the U.S. dollar. Population and gross domestic product (GDP) are 1997 or most recent prior year available. The United States (***bold italics***) is included for comparison.

Performance of dollarized countries. The economic performance of unofficially and semiofficially dollarized countries has been highly variable, but generally unimpressive. One reason is that their domestic currencies have often been of low quality, and have hampered economic growth by causing high inflation and other problems. Laws that compel people to use the domestic currency, especially for payment of wages and taxes, create some artificial demand even for a low-quality domestic currency. (Moreno-Villalaz, 1999).

It has also been claimed that there is a cost of losing flexibility in monetary policy, such as when the issuing country is tightening monetary policy during a boom while an officially dollarized country really needs looser monetary policy because it is in a recession. In a dollarized monetary system the national government cannot devalue the currency or finance budget deficits by creating inflation, because it does not issue the currency. But in practice, lack of flexibility has been beneficial rather than costly. Contrary to a standard theoretical

justification for central banking, in Latin America greater flexibility in monetary policy has made interest rates more rather than less volatile in response to changes in U.S. interest rates (Frankel 1999, Hausmann and others 1999)

4.1.2. Currency Board

The currency board is described as an institution which provides exchanging of local currency with the defined foreign currency over a fixed exchange rate under a clear commitment. In this system, the money, which the local currency is indexed over a fixed exchange rate, is called “reserve money”. However, the currency, which will be accepted as “reserve money”, should be the fully convertible currency which is generally accepted in the international markets. In this context, it is seen that USD and Euro are used as the reserve money in the today’s currency boards.

Another characteristic, which differentiates the currency board from other regimes, is that seigneurage income is obtained from interest only. Since the money supply is provided against the foreign currency in the currency board, it is possible that the government may use the monopoly of issuing money by issuing the credit money and benefits from it. (Edwards, 2002).

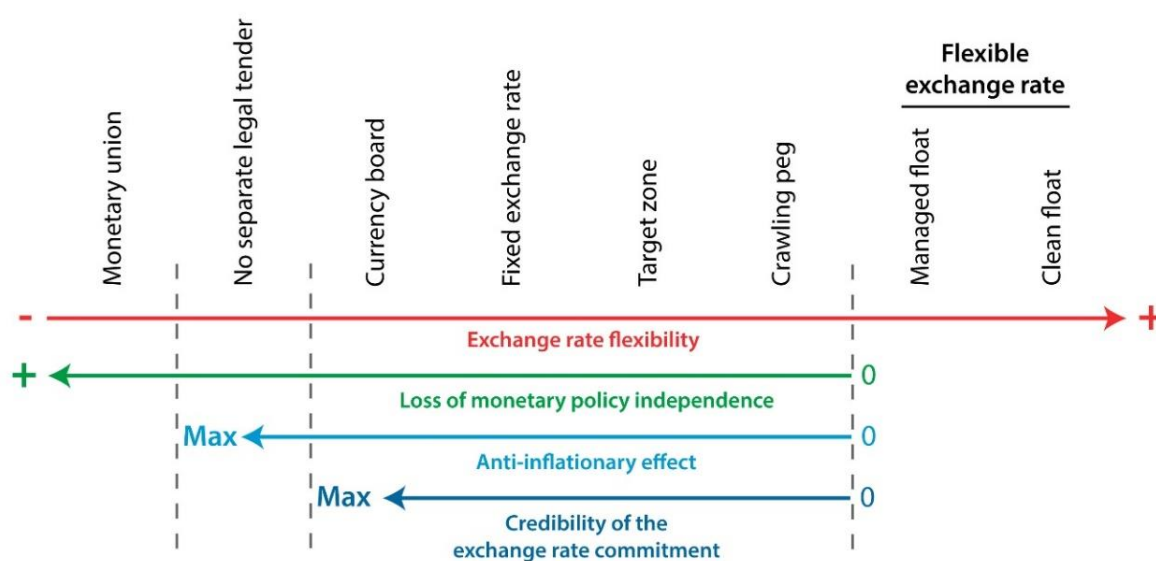
Currency boards are, by definition, passive monetary institutions whose operating is primarily based on automatism, unlike the standard central banks that have a large dose of discretion. This nature of currency board gives rise to different reactions of experts. (Hanke and Schuler, 1994).

4.2. FLEXIBLE EXCHANGE RATE REGIMES

The flexible exchange rate regimes are defined as the regimes which the exchange rates are determined according to the supply and demand conditions in the market, and the central banks don’t change the exchange rate level by purchasing-selling the foreign currency in the foreign currency markets. The flexible exchange rate regimes shall be studied under the headings of (i) free floating exchange rate regime and (ii) managed floating exchange rate regime. Even though there are not foreign currencies which the central banks don’t

intervene anyway in actual meaning and are fully determined according to the supply and demand conditions, US Dollar, Japanese Yen and Euro are indicated as the foreign currencies which are closest to the full flexible exchange rate regime (to the free floating exchange rate regime). (Calvo and Reinhart, 2000)

Figure 2 : Flexible exchange rate



Source : Investopedia.com

4.2.1. Free Floating Exchange Rate Regime

The free floating exchange rate regime is a regime which the currency itself is considered as the nominal anchor and the central bank doesn't intervene to the exchange rate in the foreign currency markets. As the free floating exchange rate regime is applied almost in all industrialized big economies, it becomes a regime which is also preferred in the developing market economies. However, it is seen that there are differences between the jure exchange rate regime which the countries declare that they apply and de facto exchange rate regime which they actually apply.

Even though many countries state that they apply officially the free floating exchange rate regime, the managed floating in application arises from the crawling pegs or from which the countries, being the subject of crawling band, are afraid of excessive floating of exchange rates. (Calvo and Reinhart, 2000),

4.2.2. Managed Floating Exchange Rate Regimes

Managed floating exchange rate regimes include all other regimes, except the free floating exchange rate regime and fixed exchange rate regime. As some of such exchanged rate regimes, also called interim exchange rate regimes, have the characteristics of free floating exchange rate regime, some have the characteristics of fixed exchange rate regimes. In fact, managed floating exchange rate regimes include many exchange rate regimes available in a wide range. As some of these regimes have the separate names bringing the significant characteristics into the forefront, some are not classified specially, but are described as the interim exchange rate regime.

In this context, the managed floating exchange rate regimes are defined as the regimes which don't have any official exchange rate target, but the exchange rate is determined by the government *de facto* instead of markets. Increasing the intervention by currency authorities to the exchange rates, the regime closes to the fixed exchange rate regime, and decreasing the intervention to the exchange rates, closer to the free floating exchange rate regime.

Even if it is not possible to classify the managed floating exchange rate regimes in the main patterns due to the applications by different countries, some sub-regimes are defined under the managed floating exchange rate regimes. Another name, given to these regimes, is the fixed but adjustable exchange rate regimes (Corden, 2002).

PART 5. EXCHANGE RATE REGIMES IN TURKEY AFTER 1980

In 1980, the radical change in comprehension occurred in the economy administration with 24 January Decisions, and the market economy and export-based growth policy were adopted. Based on this program, the restrictions on import were loosen, the flexible

exchange rate regime was adopted, and export incentive package came into the force. In fact, there were initiatives for liberalization in Turkey during 50s and 70s, but such initiatives failed due to the reasons such as external factors, domestic disturbances and political instabilities. Different views were suggested about the reasons of explosion in the export during 1980s. Some of them are the export incentives, expiring of lower exchange rate policy which the import-substitution understanding imposed and opening of Turkey to the Middle East and North African countries with the liberalization after 1980, and using the capacity which was established during 70s, but then, became idle. Exchange rate regime was also used actively for export incentive during 1980-88 (Utkulu and Seymen, 2004).

On the financial and monetary sides, the Central Bank of the Republic of Turkey (Henceforth, CBRT) took important steps to reform the local financial sector by removing interest rate ceilings and freeing bank lending and borrowing. Reforms have increasingly focused on using indirect monetary policy instruments and introducing more flexibility into exchange rate management towards achieving a competitive real exchange rate policy, supported by a repressed real wage regime throughout the period 1981–1988. However, following significant losses on capital and foreign debt and imbalances in public sector finances, the exchange rate policy was replaced later by a broader financial reform package in August 1989 to better align the policy with the underlying economic fundamentals (Berument and Dincer, 2004).

It was started to apply the liberal economy policies in Turkey after 1980s. In order to determine the cheaper prices than of other competitor countries to increase the agriculture and non-agriculture export, Turkey started to adjust the exchange rate daily against the important currencies after 1981. The exchange rate policy liberalized in Turkey after 1988, and Turkey adopted the floating exchange rate regime after 1990s (Demirel and Erdem, 2004)

As gradually destruction of macroeconomic stability during 1990s, higher inflation rates, frequent elections and populist domestic demand-stimulating adjustments caused by it affected the export adversely, the investments were also adversely affected due to the environment of uncertainty (Yeldan, 2001).

The 1990's witnessed the liberalization of capital movements and the Turkish Lira was made convertible on 22.3.1990. Along with all these developments, public deficit grew in Turkey's economy between 1991 and 1994, when the funding of public deficits from the Central Bank increased real growth, but also resulted in increased current balance deficits. Interest rates skyrocketed. In order to overcome these unfavorable conditions, a stabilization program was announced on April 5th, 1994, which was, however, not satisfactory enough in its stabilizing effects. (İşler, 2004).

It was urgently necessary to find the most suitable exchange rate regime for Turkish economy after crises during November 2000 and February 2001. As a result of this, the letter of goodwill was signed with International Monetary Fund (IMF). The most important point in the letter was applying the floating exchange rate regime instead of fixed exchange rate regime in Turkey (Öztürk and Acaravcı, 2003).

The overall economy did not change after the 2000 crisis. Private banks sought to reinforce themselves before a possible devaluation by calling back the loans granted to public banks and buy foreign currency with the cash. Public banks were unable to meet such sudden high demand. They requested loans from the Central Bank to fulfil their obligations. Yet, the Central Bank had stopped lending money to the market to protect its reserves, but interest rates skyrocketed to unprecedented levels as the banks' demand for TL did not stop (Gökçen, 2001).

The period between 2002 and 2006 witnessed a favorable financial environment. In this period, growth rates increased steadily and the country enjoyed low inflation rates and low real interest rates and benefited from increasing increased stock prices and returns. However, the 2008 crisis, which broke out in 2007 in the US as a mortgage loan crisis and later spread around the globe, did not leave Turkey's economy intact. Growth rates declined and unemployment increased. The most significant impact of this global financial crisis on Turkish business sector was shrinking domestic and foreign demand, which brought about various problems. The increase in the number of the unemployed due to

firms' insolvency and layoffs and decreasing purchasing power and demand as a result of increasing unemployment rates were among the newer problems (Danacı & Uluyol, 2010).

Turkey's economy underwent a rapid recovery by achieving a growth rate of 6% during the last quarter of 2009. In fact, its growth rate increased by 11.7% within the first quarter of 2010 in comparison to the same period of the previous year, by 10.3% in the second quarter, and by 5.5% in the third quarter of the year. Turkey's current account deficits showed a rapid increase trend in the wake of the global financial crisis and were financed by portfolio investments and other investments, which presents a risk for the country. In addition, the continued increasing trend of outstanding foreign debt in the post-crisis period and possible unfavorable conditions in foreign conjuncture may also add to the risk perceptions of foreign investors, which might become a significant problem that could interrupt economic growth (Taban, 2011:30).

PART 6. MACRO ECONOMIC IMPACTS OF FOREIGN CURRENCY RATES

The impacts of exchange rate regimes on inflation and growth rates are discussed below in the theoretical framework.

6.1. IMPACT OF EXCHANGE RATE REGIMES ON INFLATION TARGETING

Unforeseen fluctuations in the exchange rates damage to the economy both in the short-term and long-term. The most important result of this damage leads to the loss of confidence. The currency substitution process is accelerated with the loss of confidence. This limits the final lending power which is considered as the advantage of exchange rate (Calvo&Reinhart, 2002).

First, the exchange rate affects the inflation through foreign trade prices and expectations. Especially, the upward direction of inflation is a case which is not desired in the countries where the tight fiscal policy is applied due to main problem of budget and the tight money policy due to higher chronic inflation, and expectations toward future depend on the success of such applied policies. That's the reason why, the relation of exchange rate with the inflation and applied exchange rate system are very important (Gökçe, 2003).

In general, transition mechanisms of inflation occur in several manners in the fixed exchange rate system. Those are increasing in the goods and prices in the international trade, increasing in the foreign demands, balance of payments surpluses and other channels (OECD, 1973: 81).

One of the other transition mechanisms of inflation is the foreign demand pressures. Increasing in the total demand of a country means the increasing in export amounts of other countries. From Keynesian point of view, the multiplication mechanism will lead to increasing in the incomes and prices in the country where exports (Frisch, 1977: 1308).

Increasing in the money supply, caused by the balance of payments surplus, is another transition channel of inflation. Surplus in the balance of payments may occur due to the income increasing or loose monetary policy in other countries. In the cases where the central bank doesn't apply a policy which will sterilize the surplus in balance of payments, this will cause increasing in the money supply of such country.

As being in the fixed exchange rate systems, the flexible exchange rate systems also affect the inflation rates in several ways. One of them is spring gear effect, called "ratchet effect" in the literature. According to this effect, in the case where the currency of a country depreciates, the prices of staple foods, imported from abroad, increase. This directs the unions to demand the wage increase in order to protect the real incomes. On the other hand, once the currency depreciates, the prices of foreign raw materials and semi-finished goods, used in the industry, increase. Thus, increasing in the wages, on one hand, and in prices of imported inputs, on the other hand, pushes the domestic costs upward, and accelerates the inflation. However, in the cases where the currency appreciates, this mechanism doesn't reverse and no decreasing will occur in the wages and domestic prices of imported inputs (Seyidođlu, 2001: 323).

Another resource of inflation emerges from the flexible exchange rate system, itself. Since it provides the freedom of entrance and departure of foreign currency in the flexible exchange rate, the control of such countries on the monetary policy is looser and this may cause the money authorities to follow the more inflationist policies. It is considered that the higher inflation and credit lost are the cost which the system brings them to the system.

One of the arguments, which are used to explain the inflationist process as well as exchange rate flexibility during 1970s, is the vicious cycle hypothesis. Accordingly, any monetary shock arising from the country and abroad under the flexible exchange rate regime destroys the foreign trade rates. Depreciation of currency with this destruction makes the imported goods more expensive in the local currency, and since the imported goods take place in the domestic price index, it increases the inflation. Increasing in the price level causes the wages increasing more, and as a result of this, depreciation of currency again. Depreciation of currency is reflected to the prices, wages and exchange rate. The inflation becomes permanent as a result of interaction between, in general, the prices in the country and exchange rate (Bond, 1980).

The positive impacts of fixed or anchored exchange rates on the inflation depend on some reasons. One of them is discipline and other is confidence effect. The fixed or anchored exchange rate regimes include an open commitment, and for this reason, the political cost of abandoning the exchange rate regime will be higher. Accordingly, the stability programs are applied in a more disciplined manner in the fixed exchange rate regime (Konuk, 2001: 71). On the other hand, decreasing in the inflation rates based on the fixed exchange rate regime will increase the credibility of applied monetary policies. Furthermore, pegging of exchange rates allows the openness and controlling in the monetary policy and will be more effective in decreasing of inflation expectations (Moreno, 2001). If the exchange rate-based programs are associated with the independency of central bank, establishing of monetary board and providing the monetary discipline, then the credibility of stability programs is increased.

Another application in providing the price stability is the applications based on money supply. In the programs which one option is selected in a wide range of options from monetary board to the controlling of money supply, it is observed that the exchange rate-based applications are implemented after the first phase of stability policy (Bahçeci, 1997: 23).

In case of lower credibility in the money-based programs, the inflation will drop slower and economic cost of program will be much more. On the other hand, if the credibility is

higher, then the exchange rate program will be considered more meaningful and acceptable as the nominal anchorage.

6.2. INTERVENTIONS TO THE EXCHANGE RATES

Recently, effects of interventions of central banks to the exchange rates under the name of inflation targeting become frequently the subject of discussions in economics. The essential objective of intervention to the exchange rate under the name of inflation targeting is to follow the defensive monetary policy against the inflation expectation, and even though the objective of intervention is not absolutely to maintain a certain exchange rate, there are three reasons for intervention to the exchange rate under the inflation targeting.

1. As a reason, one may say that intervention to the exchange rate is to provide the financial stability. Instability in the financial markets will bring the fluctuations in the property prices. The fluctuations in the property prices do not affect the price expectations but also the real economy. If the debt stock or short-term credit supply of a country is higher, then immediate decreasing in the property prices will cause the decreasing both in consumption and investment expenditures, and will also cause the narrowing of balances of banking sector and credit supply and output deficiency will increase.
2. Exact opposite causes the occurrence of balloon economy. (Goodhart and Hofmann 2000).
3. Another reason of intervention to the exchange rates is to minimize the fluctuations in exchange rates. Since the exchange rate prices under the flexible exchange rate depend on the expectations of economic units, the destruction in the expectations damages to the inflation targeting as a reason of instability in prices through the above-mentioned channels. (Calvo&Reinhart, 2002).
4. Another reason of intervention to the exchange rates is to manage the international reserves. The countries that must close the deficits with the short-term capitals see the international reserves as the insurance of capital movements and try to increase the reserves even under the flexible exchange rates. In this case, they intervene to the exchange rates. (De Gregorio and Tokman, 2005, s.34).

Likewise, there are studies advocating that intervention by central bank is important regarding the signal. Among the researches related to this subject, the study executed by Ito in 2002 comes to the fore. In the study, efficiency of intervention by the Japanese Central Bank to the exchange rates under the flexible exchange rate is studied with probit analysis. Buying amount of Yen by the central bank is the main determinant. If the central bank doesn't intervene to the exchange rate, then the value will be zero and if intervenes, one. The answers are searched for two fundamental questions moving from said reaction function in this direction in Ito study. How and when does the central bank intervene to the exchange rate and what is the efficiency of intervention to the exchange rate? Ito and Yabu also executed a similar study in 2007. At the end of study, it was concluded that Japanese Central Bank intervened so as not allowing for appreciation of Yen and mostly intervened according to the long-term deviation in the exchange rate. (Ito and Yabu, 2007). Another study, examining the reasons of intervention to the exchange rate under the inflation targeting, is the co-study of Ballie and Osterbeg. In the study, the main reason of why the banks in G-7 countries intervene to the exchange rate is examined. In the study, the efficiency of intervention to the exchange rate was discussed regarding the signal quality similar as in the study of Ito. It was concluded that the intervention to exchange rates doesn't decrease the fluctuation but increase (Ballie and Osterberg, 1997).

Among the studies executed for Turkey, the study was executed by Tuna studying the impact of intervention by Turkish Central Bank to the exchange rate on the instability of exchange rate. Tuncay studied both entire period and post-crisis period between 1999-2008 with Srfima Garch and Arfima Figarch method in his work. At the end of work, it was concluded that intervention by the central bank to the exchange rates increased the instability of exchange rates both during entire period and post-crisis period. It was found that the fundamental factor, which affects the instability in exchange rates, was the interest rate and balance of payments (Tuna, 2008).

As known, Turkish Central Bank changed the exchange rate policy as a result of 2000 and 2001 crises, and let the exchange rate floating. However, the exchange rate policy, followed by the Turkish Central Bank, is not exactly the flexible exchange rate policy but the managed floating. In the managed floating, the central bank intervenes to the exchange rate in order to minimize the floating in exchange rate, affect the expectations and to

provide increasing in reserve. Turkish Central Bank has both directly purchased the foreign currency and made the foreign currency purchasing tenders from 2001 in order to minimize the floating in exchange rate, affect the expectations and to provide increasing in reserve without intervening to the long-term balance value of exchange rate on this basis. (Süslü, 2005).

The tensions that culminated in a crisis in late November 2000 were deeply rooted in Turkey's economic system, but the immediate cause was a combination of portfolio losses and liquidity problems in a few banks, which sparked a loss of confidence in the entire banking system. When the central bank decided to inject massive liquidity into the system in violation of its own quasi-currency board rules, it created fears that the programme and currency peg were no longer sustainable, and the extra liquidity merely flowed out via the capital account and drained reserves. The panic was arrested only with a \$7.5 billion IMF emergency funding package (over and above an original \$4 billion stand-by loan). The government then reaffirmed its commitment to the previous inflation targets, pledged to speed up privatisation and banking reforms, took over a major bank that had been at the origin of the liquidity problems, and announced a guarantee of all bank liabilities. (OECD, *Economic Survey: Turkey, 2000/2001*, Observer No 225, March 2001)

Apparently, the bank will continue the fluctuating exchange rate regime which has applied since 2001 as of 2016. Beside this – the exchange rates are determined by the demand and supply conditions in the market,

- Turkish Central Bank doesn't have any nominal or real exchange rate target,
- It doesn't remain unresponsive against the excessive appreciation or depreciation of TL toward financial stability,
- And over volatilities to be observed in the exchange rates as a result of speculative movements are also closely followed. (TCMB, 2016 Monetary and Exchange Rate Policy).

6.3. IMPACT OF EXCHANGE RATE REGIMES ON GROWTH

Impact of exchange rate regimes on economic growth may occur via several channels same as on the inflation. The most important characteristic of flexible exchange rate regime is to

eliminate the imbalances of international payments with the free changes in exchange rates and to provide the international balance itself without any government intervention. For example, in the cases where there is an increasing in the demand to foreign currency as foreign currency supply is fixed in the market, the exchange rate will increase immediately and the local currency will depreciate. As this encourages the short-term capital inflow through exporting the good and service, it will have the deterrent impact on short-term capital outflow from the country through importing the good and service by the country (Seyidoğlu, 2001: 318). Consequently, as the depreciation of local currency as well as increasing of foreign currency demand will increase export in the flexible exchange rate regime, it will decrease import and then, may affect the economic growth positively. On the other hand, the exchange rate is maintained at a certain level in the fixed exchange rate regimes whatever the demand supply change is in the market. For instance, as a result of application of the fixed exchange rate system by the government in order to bring down the rate of inflation, failing to bring down the rate of inflation to a certain level will cause increasing the import as decreasing the export depending on the appreciation of local currency and such situation may negatively affect the economic growth.

Exchange rate regime may also affect the economic growth via investment or increasing productivity. The economic growth may positively be affected by which the fixed exchange rate regime encourages the investments through decreasing the political uncertainty in economy and relative price variability. Furthermore, lower price level will provide the decreasing of real interest rates and will have the same positive impact on the growth. However, causing an international economic uncertainty by a negative external shock in the fixed exchange rate regime will be a risk increasing factor. In this regime, if the nominal wages and prices are not flexible, then the damage in economy will be higher and since the export and import relative prices cannot be adjusted in short-term, the employment and production will decrease in the country (Parasız, 1996: 354).

In the flexible exchange rate regime, the external shock in economy will both allow for necessary immediate adjustments in the prices and contribute to minimizing of output fluctuations, and this will affect the growth positively (Levy- Yeyati and Sturzenegger, 2001, 63) Consequently, the flexible exchange rates will provide more protection to the domestic economy than fixed exchange rates against the external shocks. As a result of

this, as the flexible exchange rates will become more attractive, especially for the countries that are open to the big external shocks, the fixed exchange rates will provide more stability to an economy that is open outward and is candidate for big internal shocks (Parasız and Yıldırım, 1994: 81).

Another factor, which affects the economic growth, is the openness degree of an economy to the international markets depending on the exchange rate regime. International trade is affected by the exchange rate regimes. However, it is not possible to make a clear estimation on which regime may develop the international trade more. Trade will increase due to less variability and uncertainty under the fixed exchange rate regulations and decreasing of transaction cost. But it is considered that the flexible exchange rate regulations have also a significant impact on increasing of export, because it is emphasized that the possibility of meeting the permanent instability is lesser in such regimes. Moreover, prevention of speculative capital flows in the flexible exchange rate regime rather than in the stricter exchange rate regimes may increase the growth faster (Bailliu, Lafrance and Perrault, 2000: 321-322).

Another advantage of fluctuating exchange rate regime than fixed exchange rate regime is to make the monetary policy more efficient in stabilizing the domestic economy. The reason of it is that the monetary policy as well as the good and service movements affects the country's economy through domestic spending level under the flexible exchange rate regime. For example, let's assume that the country brings down the interest rates in order to struggle with recession. Increasing of investment expenditures in parallel to bringing down the interest rates will revive the economy under the fixed exchange rate regime. However, within the fluctuating exchange rate regime, the monetary policy will also actuate the good and service flows. Conversion causes the outflow of foreign capital. Such outflow of capital depreciates the currency, and as this encourages the export of country, it prevents the import. These developments in the balance of foreign trade stimulate the country and increasing of expenditure through multiplication channel, and strengthen the domestic impacts of lower interest rates and help the struggle with the recession (İyibozkurt, 1995: 301).

6.4. USD ACTIVITY AFTER 2001 IN TURKEY

In the first quarter of the year, with the February crisis, foreign exchange was left to fluctuate. New Stand-by agreement with IMF on May 28, 2001. New economic stabilization program initiated in 2002. Also 2002 was compiled after 2001, the year of the crisis, and it was a year of recovery. As the economy began to grow again, many of the improvements in the economy began in the economy, with the economic program being implemented steadily.

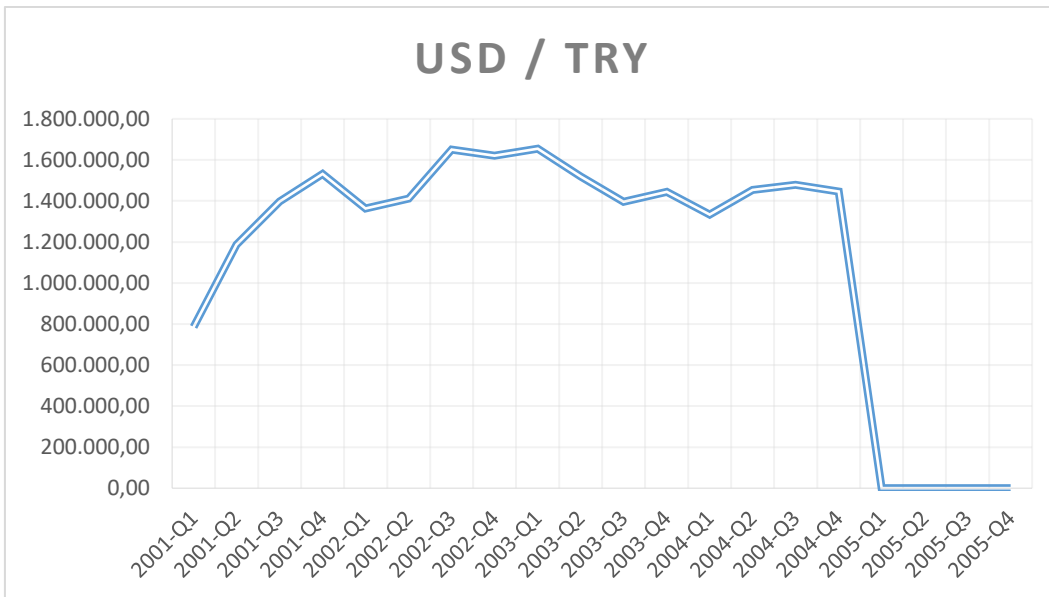
2003 was a year in which the confidence environment in the economy began to emerge, especially with the success of the decline and growth in the economy, and the persistence in stability was now being talked about. Some items including improvements in inflation and growth, including industrial production, capacity utilization, return to Turkish lira, exports and interest rates, were improved. In 2004, the fastest growth was achieved while households were living in inflation. In 2005 from the Turkish Lira (TL) 6 zeroes were taken. New Turkish Lira (YTL) he entered with the intervention. (milliyet.com.tr)

Table 2 : 2001-2005 USD / TRY Exchange Rate

YEAR	USD/TRY
2001-Q1	785.492,62
2001-Q2	1.186.797,30
2001-Q3	1.398.185,50
2001-Q4	1.531.640,92
2002-Q1	1.362.588,41
2002-Q2	1.411.372,81
2002-Q3	1.650.667,69
2002-Q4	1.620.250,10
2003-Q1	1.654.776,90
2003-Q2	1.519.518,25
2003-Q3	1.395.550,70
2003-Q4	1.445.152,18
2004-Q1	1.333.971,33
2004-Q2	1.453.929,70
2004-Q3	1.478.473,86
2004-Q4	1.445.844,33
2005-Q1	1,33
2005-Q2	1,36
2005-Q3	1,34

2005-Q4	1,36
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Source: Tcmb.gov.tr



In 2006, TL started at 1.33 against the dollar. At the end of 2010, the inflation rate declined to 1.46. Limited Central Bank intervention in the foreign exchange market – to prevent excessive volatility. Formal inflation targeting adopted in 2006. Adoption of new regulations to ensure the efficiency in the foreign exchange market and to reinforce foreign exchange liquidity in the banking system in 2008. Expansionary monetary policy was abandoned with announcement of the Monetary Policy Exit Strategy on April 14, 2010. In the fourth quarter of 2010, inflation targeting was augmented with an additional financial stability orientation.

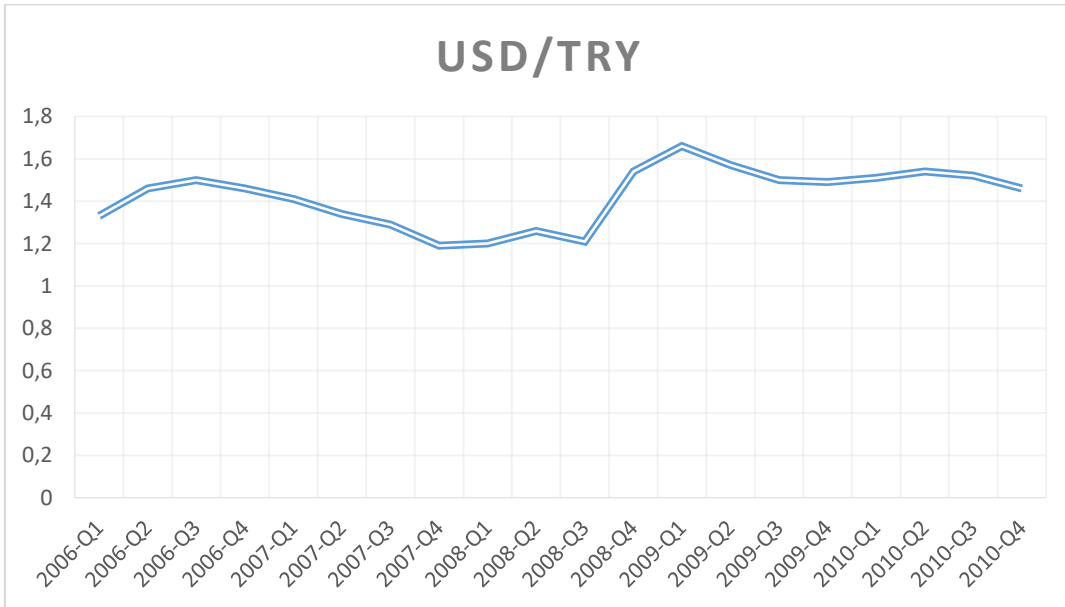
Turkey's economy in 2004 and 2005 exhibited a growth performance exceeding 8-9% but within 3 years following the economic growth performance has slowed gradually. As a matter of fact, in 2009, there was a 4.8% economic shrinkage as a result of the global crisis. (Sungur, 2015)

Table 3 : 2006-2010 USD / TRY Exchange Rate

YEAR	USD/TRY
------	---------

2006-Q1	1,33
2006-Q2	1,46
2006-Q3	1,50
2006-Q4	1,46
2007-Q1	1,41
2007-Q2	1,34
2007-Q3	1,29
2007-Q4	1,19
2008-Q1	1,20
2008-Q2	1,26
2008-Q3	1,21
2008-Q4	1,54
2009-Q1	1,66
2009-Q2	1,57
2009-Q3	1,50
2009-Q4	1,49
2010-Q1	1,51
2010-Q2	1,54
2010-Q3	1,52
2010-Q4	1,46

Source: Tcmb.gov.tr

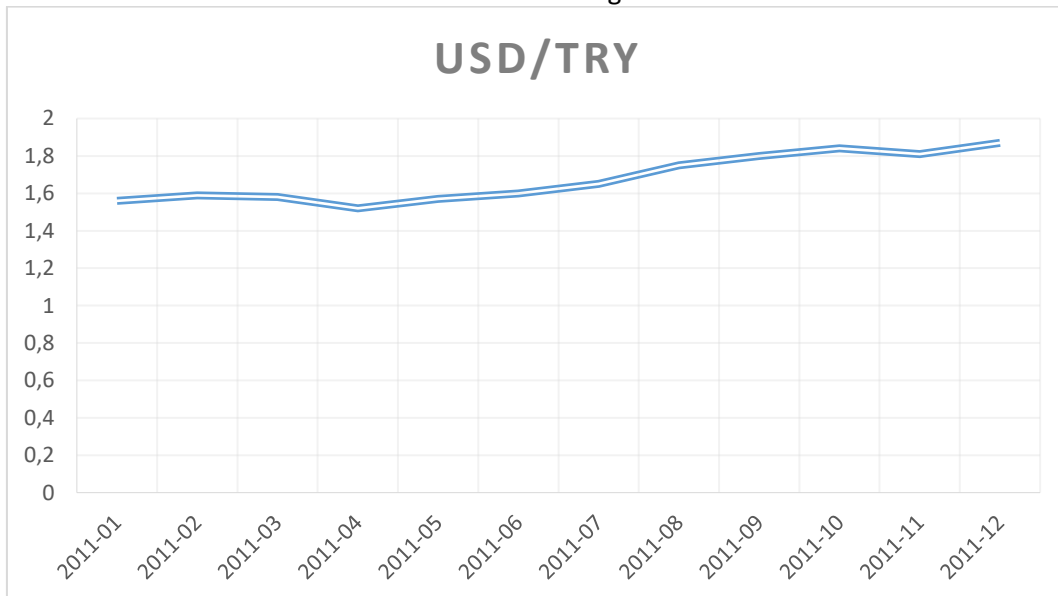


2011 has been a year of economic growth that is more than 9% as a post-crisis recovery period In 2011, USD increased from 1,56 to 1,87

Table 4 : 2011 USD / TRY Exchange Rate

YEAR	USD/TRY
2011-01	1,56
2011-02	1,59
2011-03	1,58
2011-04	1,52
2011-05	1,57
2011-06	1,60
2011-07	1,65
2011-08	1,75
2011-09	1,80
2011-10	1,84
2011-11	1,81
2011-12	1,87

Source: Tcmb.gov.tr



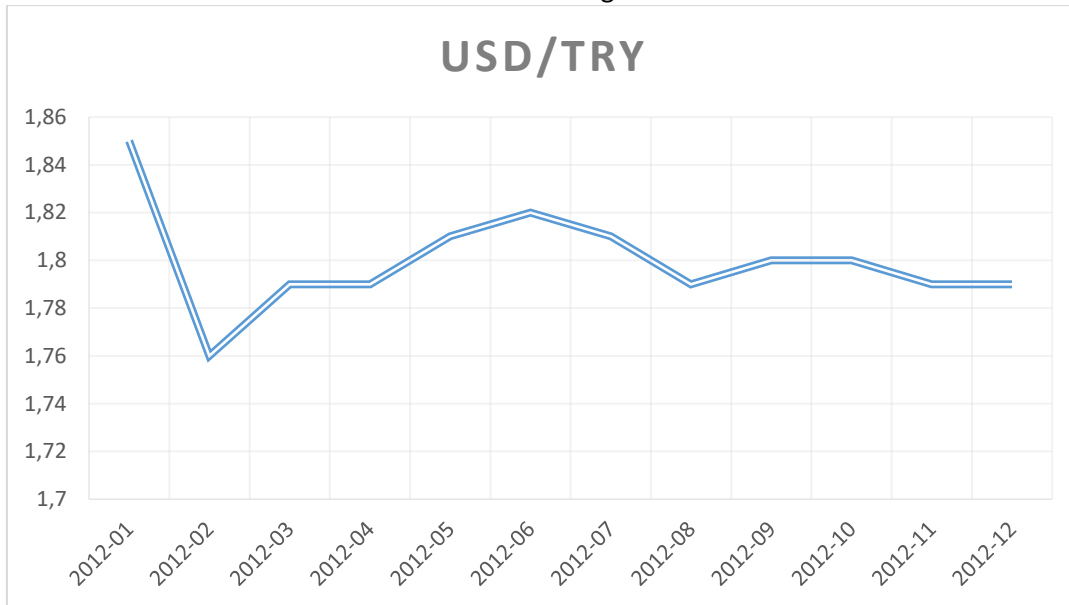
Turkey's economy grew by 2.1% in 2012. Also, USD decreased from 1,85 to 1,79

Table 5 : 2012 USD / TRY Exchange Rate

YEAR	USD/TRY
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2012-01	1,85
2012-02	1,76
2012-03	1,79
2012-04	1,79
2012-05	1,81
2012-06	1,82
2012-07	1,81
2012-08	1,79
2012-09	1,80
2012-10	1,80
2012-11	1,79
2012-12	1,79

Source: Tcmb.gov.tr



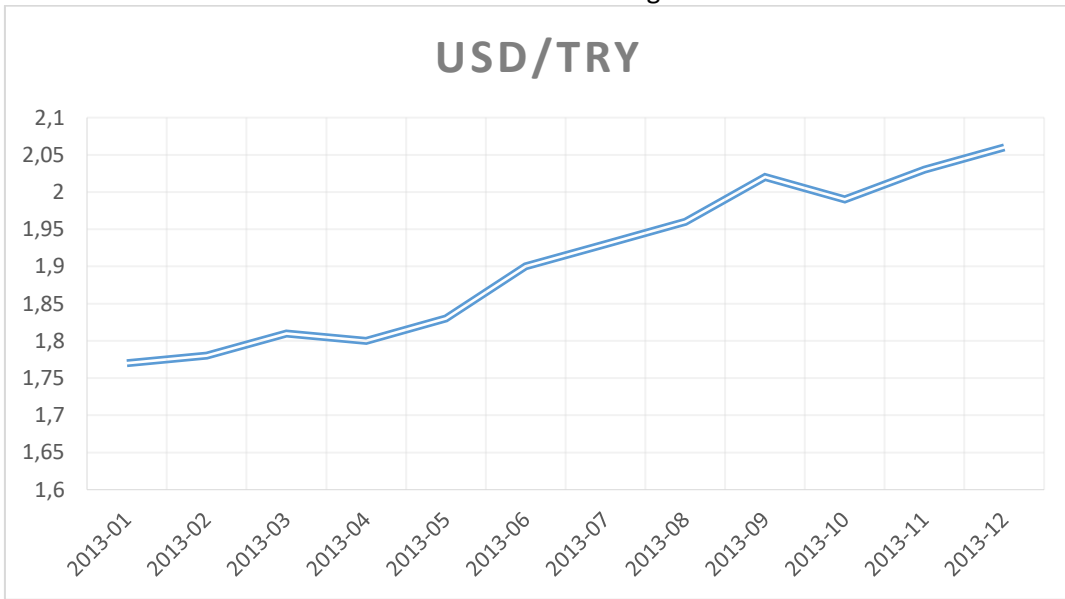
Turkey's economy grew by 4.2% in 2013. Also 2013, USD increased from 1,77 to 2,06

Table 6 : 2013 USD / TRY Exchange Rate

YEAR	USD/TRY
2013-01	1,77
2013-02	1,78
2013-03	1,81
2013-04	1,80

2013-05	1,83
2013-06	1,90
2013-07	1,93
2013-08	1,96
2013-09	2,02
2013-10	1,99
2013-11	2,03
2013-12	2,06

Source: Tcmb.gov.tr



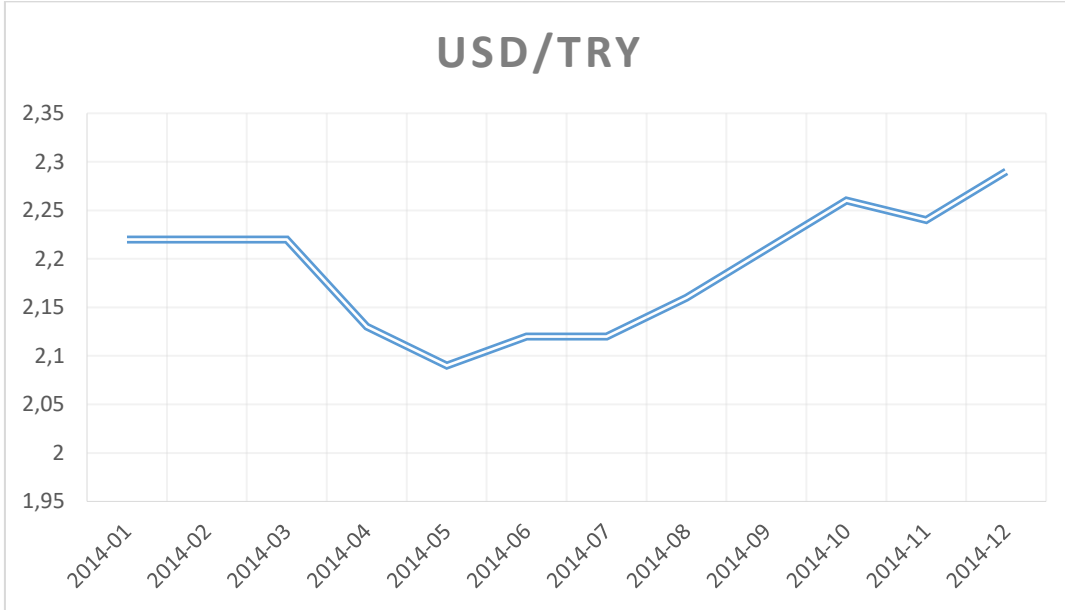
Turkey's economy grew by 2.9% in 2014. Also 2014, USD increased from 2,22 to 2,29

Table 7 : 2014 USD / TRY Exchange Rate

YEAR	USD/TRY
2014-01	2,22
2014-02	2,22
2014-03	2,22
2014-04	2,13
2014-05	2,09
2014-06	2,12
2014-07	2,12

2014-08	2,16
2014-09	2,21
2014-10	2,26
2014-11	2,24
2014-12	2,29

Source: Tcmb.gov.tr



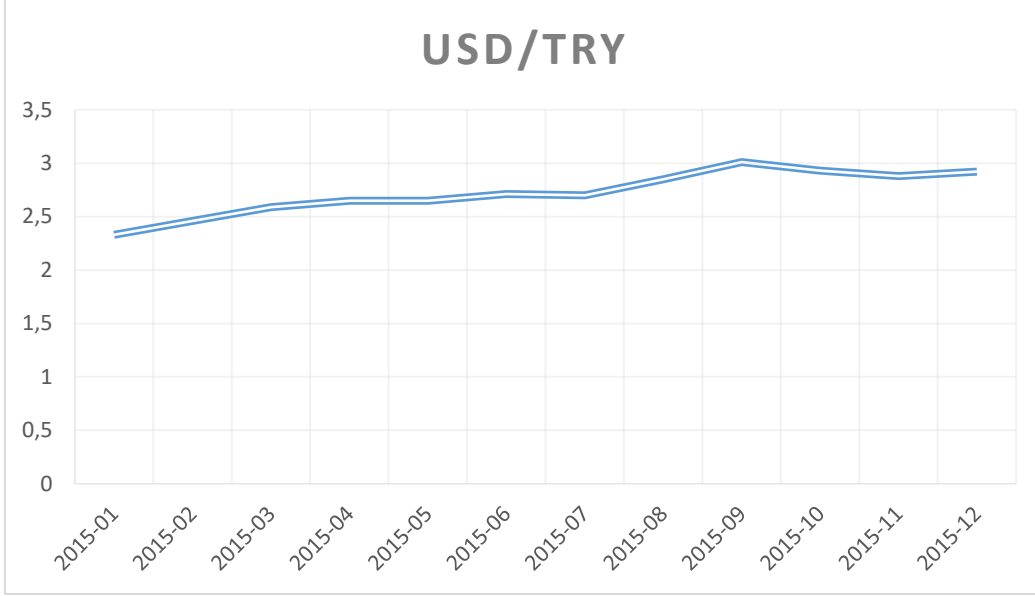
Turkey's economy grew by 4.0% in 2015. Also 2015, USD increased from 2,33 to 2,92

Table 8 : 2015 USD / TRY Exchange Rate

YEAR	USD/TRY
2015-01	2,33
2015-02	2,46
2015-03	2,59
2015-04	2,65
2015-05	2,65
2015-06	2,71
2015-07	2,70
2015-08	2,85
2015-09	3,01

2015-10	2,93
2015-11	2,88
2015-12	2,92

Source: Tcmb.gov.tr



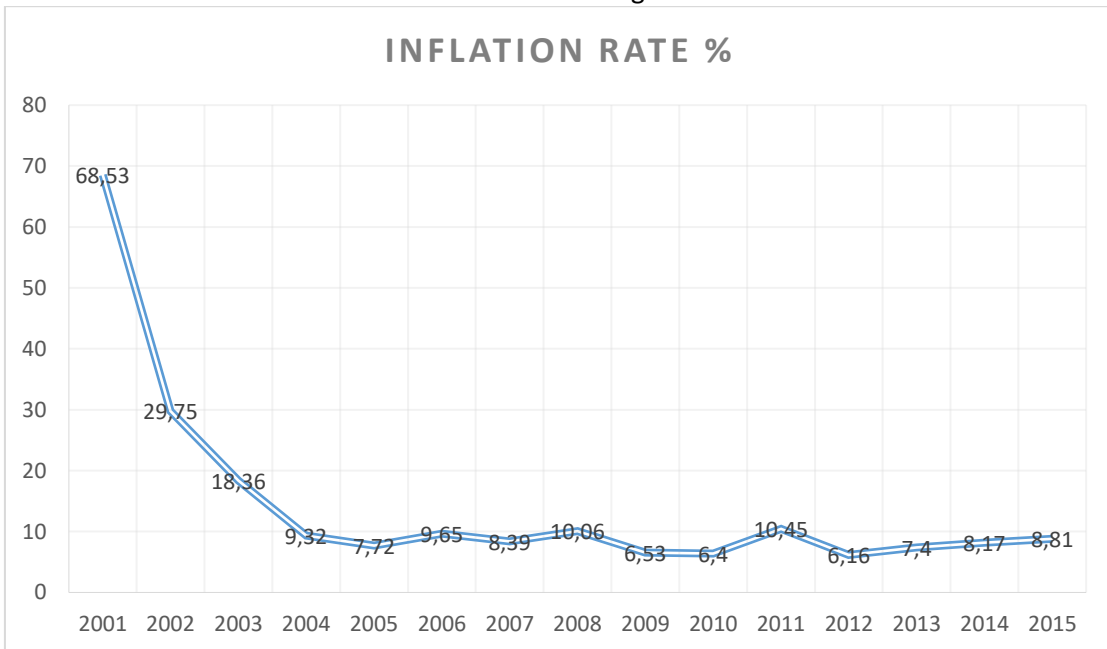
Also inflation after 2001 – 2015

Table 9 : 2001-2015 Inflation

Year	Inflation rate %	Changing
2001	68,53	29,5
2002	29,75	-38,78
2003	18,36	-11,39
2004	9,32	-9,04
2005	7,72	-1,6
2006	9,65	1,93
2007	8,39	-1,26
2008	10,06	1,67
2009	6,53	-3,53
2010	6,4	-0,13
2011	10,45	4,05
2012	6,16	-4,29
2013	7,4	1,24
2014	8,17	0,77

2015	8,81	0,64
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Source: Tuik.gov.tr



PART 7. METHODOLOGY AND DATA

7.1. METHODOLOGY

In our study, Engle-Granger (1987) Co-integration analysis will be used in testing of relations between the exchange rate and inflation and between the exchange rate and growth in Turkey. Before this test, it is determined with ADF testing technique, developed by Dickey-Fuller (1979) whether the variables are stable and if stable, at which level they are stable. ADF testing, used to examine the stability of variables, is applied to each series in this study:

$$\Delta y_t = \alpha + \beta y_{t-1} + \sum_{i=1}^k \gamma \Delta y_{t-i} + u_t \quad (1)$$

Where Δy denotes the first difference of y series, u_t denotes the error term. If the error term is stable, then it is understood that there is a long-term relation between the estimated variables. In other words, it is stated that the variables are co-integrated $I(1)$. In the equation, delaying length, denoted in 'k', is usually determined using the Akaike or Schwarz data criteria. In this paper, Schwarz data criteria are preferred. Engle-Granger co-integration test consists of two phases. At the first phase, the instable series (e.g. X and Y) are estimated with EKK method.

$$\log Y_t = \alpha + \beta \log X_t + u_t \quad (2)$$

Again, it is determined whether the error term (u_t) from equation (2) is stable with ADF unit root testing:

$$\Delta u_t = \gamma + \theta u_{t-1} + \sum_{i=1}^k \rho_i \Delta u_{t-i} + \varepsilon_t \quad (3)$$

If it is found that the error term is stable, this indicates that there is a long-term relation in the equation (3). Namely, it is concluded that these series move together in long-term, otherwise the series are not co-integrated, namely, they don't share the same stochastic trend in long-term.

Determining the long-term relation between the variables allows forming the Error Correction Model (ECM) so as including the error correction term obtained from the co-

integration regressions at the next phase. The traditional Granger causality test is applied to the non-co-integrated time series.

$$\Delta Y_t = \alpha_1 + \sum_{i=1}^m \beta_{1i} \Delta Y_{t-i} + \sum_{i=1}^n \gamma_{1i} \Delta X_{t-i} + \sum_{i=1}^r \delta_{1i} \text{ECM}_{t-i} + u_t \quad (4)$$

$$\Delta X_t = \alpha_2 + \sum_{i=1}^m \beta_{2i} \Delta X_{t-i} + \sum_{i=1}^n \gamma_{2i} \Delta Y_{t-i} + \sum_{i=1}^r \delta_{2i} \text{ECM}_{t-i} + u_t \quad (5)$$

Where, Δ denotes that the variables are made stable taking their difference. Source of causality in ECM may be determined with:

- a) F or Wald χ^2 test which is applied in integrated manner to delaying total of each explanatory variable
- b) t-test applied to the delayed error correction term (ECM)
- c) the statistical significance of F or Wald χ^2 test which is applied manner to delaying total of each explanatory variable and delayed error correction term together (Charemza and Deadman, 1997; Masih and Masih, 1995, 1998).

For example, if γ_{2i} 's different than zero altogether, then the empty hypothesis, "Y doesn't cause X in Granger sense", is rejected. Again, the same empty hypothesis is rejected, if δ_{2i} is significant or δ_{2i} and γ_{2i} 's are different than zero altogether.

7.2. DATA

Data used in the study is the series of GNP of 1990:1-2004:1 quarterly with fixed prices of 1990 and the series of 1990=100-based WPI (Wholesale Price Index) and USD exchange rate (USD purchasing rate). Thus, there is possibility to examine the pre- and post-crises situations. This data is obtained from the data distribution system in internet site of Turkish Central Bank. Since it is considered the effect of seasonality important in said series, the seasonality is removed. Time series characteristics of data are examined with ADF unit root tests that are widely used in the empirical studies. LMG, LDK and LTF denote GNP, exchange rates and wholesale price index, respectively. As the time series characteristics of

variables are examined and used in the application, their logarithms are taken. Lower cases mean that concerned variable's logarithm is taken.

The result of ADF unit root test are given in the below Table. The critical values are generated by Eviews 7 econometric program and based on the MacKinnon (1991) values.

PART 8. ESTIMATION RESULTS

It is studied if the series are stable with the unit root test. If any time series (X) is not stable, then its differences ($\Delta=X_t-X_{t-1}$) are taken until it becomes stable. Then, it is stated that the time series is integrated from Δ . degree at this level and is indicated with $X_t \sim I(\Delta)$.

Table 10 : ADF Unit Root Tests

Variables	Test Statistics (Fixed and without trend)		Critical Values			Result
	Level Value	First Degree Difference	1%	5%	10%	
min	-1.70(1)	-5.62(0)*	-3.68	-2.82	-2.47	I(1)
mg	-0.83(2)	-9.23(1)*	-3.68	-2.82	-2.47	I(1)
tf	-1.39(0)	-5.68(0)*	-3.68	-2.82	-2.47	I(1)

Note: Values in brackets in the table denote the delaying lengths determined with Schwarz Data Criterion, and * denotes that the first differences of variables are stable at 1 percent level.

ADF test results, which are applied to the variables' levels, show that the variables are not stable. Upon applying the variables of same tests to the first degree difference (Δ), it is found that the difference of variables is stable. In technical statement, the series are I(1). These results meet the preconditions necessary to examine the co-integration relation between two series. Engle-Granger co-integration test results are given in the below Table 2.

Table 11 : Engle- Granger Co-integration Tests¹

Models	ADF Values	Critical Values			Result
		1%	5%	10%	
mg = f(min)	-5.45(0)*	-3.68	-2.82	-2.47	Co-integrated
min = f(mg)	-4.86(0)*	-3.68	-2.82	-2.47	Co-integrated
tf = f(min)	-1.60(0)	-3.68	-2.82	-2.47	Not co-integrated
min = f(tf)	-1.85(0)	-3.68	-2.82	-2.47	Not co-integrated

Note: Values in bracket denote the delaying lengths.

* indicates the significance of test statistic at 1 percent level.

According to the two-phased E-G method, the error term is estimated with Ordinary Least Squares (OLS) at the first phase. At the second phase, the unit root testing is executed by removing the obtained error term. If the result is stable, the co-integration is in question. Beside this, if two series are stable at I(0), one may say that these series are co-integrated. Namely, their level values and regressions will be significant. In this case, there will be a long-term balance relation between them.

According to the co-integration test results, even though it is seen that there is a long-term relation between the exchange rate and national income, the same relation may not be found between the inflation rates and exchange rate. In other words, being below the critical values of error terms, which are obtained from the estimated models between the inflation rate and exchange rate variables, indicates that there is not any co-integration in the context of Engle-Granger. As the co-integration results allow studying of causality relation between the exchange rates and real GNP so as including (ECM-1), it also allows

for application of traditional Granger test in studying of causality relation between the exchange rates and inflation rates. The causality test results are given in the Table 3.

Table 12 : Causality Test Results

Dependent Variable	$\Delta mg (1)$	$\Delta dk (1)$	$\Delta tf (1)$	$\Delta dk (1)$
Independent Variable	$\Delta dk (1)$	$\Delta mg (1)$	$\Delta dk (1)$	$\Delta tf (1)$
F-Test Statistics	6.80 [0.002]*	5.40 [0.006]*	11.23 [0.002]*	8.13 [0.003]*
Error Correction Term (ECM-1)	-0.468 [0.001]*	-0.056 [0.002]*	-	-

Note: The values in the brackets denote the delaying lengths determined according to the Schwarz Data Criterion, values in the square brackets the p-probability values and * shows that they are significant at 1% level. As the F-test statistics are applied to the total of delayed coefficients of each variable and delayed error correction term (ECM-1) together in the models including the real GNP and nominal exchange rate, they are only applied to the total of delayed coefficients of the independent variable in the models which WPI and exchange rate are used.

The results of causality analysis show a double direction causality relation between the exchange rates and inflation and between the exchange rates and growth. As the causality from exchange rates toward the inflation is explained with which increasing in the exchange rates also increases the price of imported goods in Turkish Lira, causality from inflation toward the exchange rates is explained with increasing of money substitution due to inflation as a result of the depreciation of Turkish Lira. We may say that the empirical studies related to the subject support the results of causality test. For example, in an empirical study executed by (Lim and Papi, 1997) covering the period of 1970-1995, it is explained that increasing in the exchange rates in Turkey during the last 15 years is an important factor that increases the inflation. On the other hand, the causality from inflation toward exchange rates is supported with an empirical study executed by (Şıklar, 1998). In

this study covering the period of 1986-1997, the findings, which increasing of inflation in Turkey intensifies the money substitution, are obtained, and the results show that 1 percent increasing in the inflation rate in Turkey causes about 3 percent increasing in the foreign exchange accounts.

The double direction causality relation between exchange rates and national income may be

explained as follows in Turkey. As other factors are fixed, increasing of export by increasing in the exchange rates depending on depreciation of TL may be considered as a factor which will affect the production positively. On the other hand, the causality from national income toward the exchange rates may be explained in the Keynesian point of view. According to such view, one may say that increasing in the import as well as in the national income may cause indirectly increasing in the exchange rates. Results of causality test from exchange rates toward the national income coincide with the empirical studies executed by (Yılmaz, 2000) and (Barrow and Senses, 1995). Empirical findings show that the exchange rate adjustments in favor of exchange rate in Turkey have the expanding effect in economy.

PART 9. CONCLUSION

In this study, the answer is sought for the question whether the exchange rate regimes, applied in Turkey, may be used as a stability policy instrument within the scope of causality relations between the exchange rate and inflation and between the exchange rate and growth. In this context, Engle-Granger co-integration analysis is used in studying of such relations. In the analysis which is made by using the quarterly data from the period of 1990-2004, it is found the double direction causality relations between the exchange rates and inflation and the exchange rate and growth. The analysis results show that providing the stability of exchange rates in Turkey is an important factor in bringing down the inflation rates, but any exchange rate policy, which will make TL over appreciated, would have the negative impacts on the growth. At this framework, when it is considered that real

appreciation in TL as well as flexible exchange rate in Turkey recently would affect the economic growth negatively through export in the future, it will be important that the government will take some steps which will prevent the over appreciation of TL based on the exchange rate regime.

Using the exchange rate as anchor in bringing down the inflation rate could not be maintained successfully and caused the crisis as seen in the application in Turkey, 2000 as well as in other countries. After February 2001 crisis, upon implementing the fluctuating exchange rate regime in Turkey, the growth rates increased as well as bringing down the rate of inflation during 2002 and 2003. Providing the stability in exchange rates based on the applied exchange rate regime intensified the reverse money substitution and the domestic demand was stimulated and as a result of resoluteness in struggle with inflation, the strict money and fiscal policies and developments, created by this process, allowed the private sector-based growth. Furthermore, with the flexible exchange rate regime, achieving the inflation target that was foreseen for 2002 and 2003 has significantly enhanced the nominal reliable anchor characteristic of inflation target; in other words, the inflation target supported the real economy as positively effecting both investment and consumption decisions of economic units and minimizing the uncertainty toward the future.

Despite of all these advantages provided by the flexible exchange rate regime, increasing of foreign trade deficit in parallel to the gradually appreciation of TL recently implies the discussions related to the sustainability of flexible exchange rate regime. It may be expected that the actual interest rates, which are still higher, have the impact on real appreciation of TL in the floating exchange rate environment and this creates the pressure on the exchange rate through short-term capital movements. In order to alleviate such pressure that is possible to occur in the future, it appears that some steps must be taken from now. For example, in order to limit the short-term capital movements on this subject, any tax over the exchange rate transactions (Tobin tax) may be beneficial regarding the prevention of speculative movements and possible exchange rate crisis.

REFERENCES

Aristotelous, K., (2001) " Exchange-rate volatility, Exchange-rate regime, and trade volume: Evidence from the UK-US export function (1989-1999), *Economic Letters* 72, pp. 87-89.

Aktaş, Z., (2004). "2001 Krizi Sonrası Dalgalı Döviz Kuru Rejimi Uygulaması", *TCMB Lira Dergisi*, pp.14-15.

Aziz, Jahangir. Caramazza, Francesco. (1998). "Fixed or Flexible? Getting the Exchange Rate Right in the 1990s. International Monetary Fund Economic. Issues 13. Washington. 1998. P.9.

Bahçeci, S., (1997). Ortodoks ve Heterodoks İstikrar Programları: Seçilmiş Ülke Örnekleri ve 1994 Türkiye Deneyimi, (Basılmış Uzmanlık Tezi), DPT 2477, Ankara.

Baillie, R., and Osterberg W., (1997). Why Do Central Bank Intervene. Journal of Interantional Money and Finance, 16 (6), pp.909-919.

Bailliu, J. R., Lafrance, R. and Perrault, J.F., (2000). Exchange Rate Regimes and Economic Growth in Emerging Markets, *Bank of Canada Conference Paper*, (1-3 November)

Baldemir, E. and Keskiner A., (2004), "Devalüasyon, Para, Reel Gelir Değişkenlerinin Dış Ticaret Üzerine Etkisinin Panel Data Yöntemiyle Üniversitesi SBE Dergisi, 6(4): 44-59.

Barışık S. and Demircioğlu E., (2006). Türkiye’de Döviz Kuru Rejimi, Konvertibilite, İhracat-İthalat İlişkisi (1980-2001). Uluslararası Yönetim İktisat ve İşletme Dergisi, 2(3), pp.71-84.

Barrow, R. and Senses F., (1995). The Turkish Export Boom : Just Reward or Just Lucky “, *Journal of Development Economics*, Vol.48, pp.111-133.

Berg, Andrew and Borensztein Eduardo. The Pros and Cons of Full Dolarization, IMF Working Paper, WP/01/50, 2001.

Berument, H., & Dincer, N., (2004). Do capital flows improve macroeconomic performance in emerging markets? *Emerging Markets Finance and Trade*, 40, 20–32.

Berument, H., (2001). “ Measuring Monetary Policy for A Small Open Economy: Turkey”, Bilkent University Working Paper, 2001

Bond, M.E., (1980). Exchange Rates, Inflation and Vicious Circles”, *International Monetary Fund Staff Papers*, 27, pp.679-711.

Bordo, M., (2004) Exchange Rate Regimes for the 21st Century: A Historical Perspective, in: 60 Years of Bretton Woods, Proceedings of OeNB Workshops, No. 3, Oesterreichische Nationalbank.

Calvo, G. A. and F. Mishkin., (2003) The Mirage of Exchange Rate Regimes for Emergine Market Economies, NBER Working Paper No 9808

Calvo G. and Reinhart C., Fear of Floating, NBER Working Paper Series 7993, 2000.

Calvo, G. and Reinhart, C., (2002). Fear of Floating. *Quarterly Journal of Economics*, 117(2), pp.379-408

Charemza, W.W. and Deadman D.F., (1997), *New Directions in Econometric Practise*, Cheltenham: Edvard Elgar.

Corden, W. Max. Too Sensetaional: On the Choice of Exchange Rate Regimes, London, The MIT Press,2002.

Crockett, A. and M. Goldstein., (1976) Inflation under Fixed and Flexible Exchange Rates, *International Monetary Fund, Staff Papers*, vol. 23, November, pp. 509– 544.

Crockett, A., (2003) Exchange Rate Regimes in Theory and Practice, in: Mizon, P. (ed.), *Monetary History, Exchange Rates and Financial Markets*, Edward Elgar, Cheltenham.

Danacı, C.& Uluyol O., (2010). Evaluation of the effects of the least global financial crisis and a case study: A business went bankruptcy. Retrieved from <http://web.inonu.edu.tr/~ozal.congress/pdf/52.pdf>.

De Gregorio, R. and Andrea, T., (2005). Fear of Floating and Exchange Rate Policy in Chile. *Journal Economia Chilena*, 8(3), pp.29-54.

Demirel, B. and Erdem, C., (2004) “ Döviz kurlarındaki dalgalanmaların ihracata etkileri: Türkiye Örneği,İktisat İşletme ve Finans, Yıl.19 pp.116-127.

Dickey, D.A. and Fuller, W.A., (1979). Distribution of the Estimators for Autoregressive Series with a Unit Root, *Journal of the American Statistical Association*,49, pp.1057-1072.

Domaç, İ., (2003). Does the Exchange Rate Rejime Matter for Inflation? Evidence from Transition Economies, pp.1-29.

Duygulu, A.A., (1998) Döviz Kuru İstikrarının Ekonomik İstikrar Açısından Değerlendirilmesi D.E.Ü.İ.İ.B.F.Dergisi Cilt:13, Sayı:I, Yıl:1998, pp.107-118

Edwards, S., The Great Exchange Rate Debate After Argentina, NBER Working Paper 9257, 2002.

Eichengreen, B., (1989) The Gold Standard since Alec Ford, NBER Working Paper No.3122.

Eichengreen, B., (1993) The Endogeneity of Exchange Rate Regimes, NBER Working Paper No. 4361.

Eichengreen, B. and R. Razo-Garcia., (2006) The International Monetary System in the Last and Next 20 Years, Economic Policy, (July).

Engle, R. F. and Granger C.W.J., (1987). Co-integration and Error Correction: Representation, Estimation and Testing, *Econometrica*, (55), pp.251-276.

European Central Bank (2003) Policy Position of the Governing Council of the European Central Bank on Exchange Rate Issues Relating to the Acceding Countries. Frankfurt am Main, 18 December.

Erlat, G. and Erlat, H., (1998).” Real Exchange Rates, the real Interest Differential and the terms of Trade: THE Turkish Case”, *Yapı Kredi Ekonomik Review*, Volume:9, Number:1, 27-40.

Etem O., (2011) “Küresel Finansal Dalgalanmaların Gelişmekte Olan Ülke Döviz Rezervleri ve Kurları Üzerine Etkisi” Türkiye Cumhuriyet Merkez Bankası Piyasalar Genel Müdürlüğü Ankara, Haziran 2011 Uzman Yeterlilik Tezi pp.40-41

Fisher, St. (2001) Exchange Rate Regimes: Is the Bipolar View Correct?, *Journal of Economic Perspectives*, Vol. 15

Frisch, H., (1977). Inflation Theory 1963-1975: A Second Generation Survey” *Journal of Economic Literature*, 15(4), 115-130.

Furman, J. and Stiglitz, J., (1998). “ Economic Crisis: Evidence and Insights From East Asia, Broking Paper on Economic Activity, Vol.2, PP,pp.1-135.

Frankel, Jeffrey., (1999). “No Single Currency Regime is Right for all Countries at all Times,” *Essays in International Finance*, No. 215. (Princeton, N.J.: Princeton University International Finance Section).

Frankel, Jeffrey., 1999. "The International Financial Architecture." Brookings Institution Policy Brief 51, June.

Goodhart, C., & Hofmann, B., (2000). Financial Variables and the Conduct of Monetary Policy. Sveriges Riskbank Working Paper, No:12.

Gökçe, D., (2003). Enflasyon Kur İlişkisi Üzerine.
www.aksam.com.tr/arsiz/aksam/2003/10/30/yazarlar/yazarlar30.html
(30.10.2003).

Gökçen, A., (2001). İstikrar tedbirleri ve ekonomik kriz (Stabilization precautions and economic crises). Yeni Türkiye Dergisi, 1(41), p.595.

Gümüş, İ., (2002). Effect of the Interest Rate Refense on Exchange Rates during the 1994 Crises in Turkey, TCMB Working Paper, No: 14, pp.1-16.

Hanke, S.H. and Schuler, K. (1994). Currency Boards for Developing Countries: A Handbook, San Francisco: Institute for Contemporary Studies Press

Harrigan, J., (2006). 'Time to Exchange the Exchange Rate Regime: Are Hard Pegs the Best Options for Low-income', Development Policy Review 24 (2): 205-223

Hunt, B., and Isard P., (2003). Some Implications for Monetary Policy of Uncertain Exchange Rate Pass-Through. IMF Working Paper, No:03/25.

Husain, A., Mody, A. and K. Rogoff., (2004) Exchange Rate Regime Durability and Performance in Developing versus Advanced Economies.

İşler, D. (2004). Türkiye'deki krizler ve çözüm önerisi olarak: E ticaret uygulamaları (Crises in Turkey and a solution proposal: E-commerce applications). (Unpublished master's thesis). Süleyman Demirel University, Turkey

İyibozkurt, E., (1995). *Uluslararası İktisat*, Bursa: Ezgi Kitabevi Yayınları.

İto, T., (2002). Is Foreign Exchange Intervention Effective?: The Japanese Experiences in the 1990s. Nber Working Paper, No.8914.

İto, T., and Tomoyoshi, Y., (2007). What prompts Japan to intervene in the Forex market? A new approach to a reaction function. Journal of International Money and Finance, pp.193-212.

Konuk, H., (2001). İstikrar Politikası Aracı Olarak Döviz Kuru Rejimleri,

Vergi Dünyası, 235, pp.71-78.

Karaca, O., (2005). "Türkiye'de Faiz Oranı ile döviz kuru arasındaki ilişki: Faizlerin düşürülmesi kurları yükseltir mi? ", Türkiye Ekonomi Kurumu, Tartışma Metni, 2005/14, Ekim 2005,pp.1-17.

Kraay, A., (2000). " Do High Interest Rates Defend Currencies against Speculative Attacks?", Word Bank Working Paper, no.2267

Labonde M., (2004). CRS Report for Congress "Fixed Exchange Rates, Floating Exchange Rates, and Currency Boards: What Have We Learned?"

Lim, C.H. and Papi, L., (1997). An Econometric Analysis of the Determinants of Inflation in Turkey, *IMF Working Paper*, WP/97/170.

Mack, C., (2000). "Basic of Dollarization" Joint Economic Committee Office of the Chairman.

Masih A.M.M. and Masih R., (1995). Temporal Causality And The Dynamic Interactions Among Macroeconomic Activity Within A Multivariate Cointegrated System: Evidence From Singapore And Korea, *Weltwirtschaftliches Archiv*, 131(2), pp.265-285,

McKinnon, R., (2005), Exchange Rates under the East Asian Dollar Standard, Cambridge MA: MIT Press.

Moreno, R., (2001). Pegging and Stabilization Policy in Developing Countries, *FRBSF Economic Review*, pp.17-29.

Moreno-Villalaz, Juan Luis., (1999). "Lessons from the Monetary Experience of Panama: A Dollar Economy with Financial Integration." *Cato Journal*, v. 18, no. 3, Winter, pp. 421-39.

OECD., (1973). "The International Transmission of Inflation", *OECD Economic Outlook*, Special Section 7.

Okur A., (2012) "Türkiye'de İzlenen Esnek Kur Politikasının Ekonomik İstikrar Üzerine Etkisi" Yönetim ve Ekonomi Cilt 9 Sayı:1-2 Celal Bayar Üniversitesi İ.İ.B.F. pp.50-51

Özbay, P., (1999), " The effect of Exchange rate uncertainty on exports a case study for Turkey."Türkiye Cumhuriyeti Merkez Bankası, Tartışma Tebliği, Ankara.

Özçam M., (2004) “Döviz Kuru Politikaları ve Türkiye’de Döviz Kuru Oynaklığının Etkileşimleri” SPK Araştırma raporu pp.30-31

Özlu P. and Ünalmış D., (2012), “Makroekonomik Göstergelerin Döviz Kurları Üzerine Etkisi” TCMB Ekonomi Notları Sayı: 2012-21 / 31 Ağustos 2012

Öztük İ., Acaravcı A., ,(2002-2003)” Döviz Kurundaki Değişkenliğin Türkiye İhracatı Üzerine Etkisi: Ampirik Bir Çalışma”, Review of Social, Economic and Business Studies, Vol.2,Fall 2002-2003, pp.197-2006.

Parasız, İ. and Yıldırım, K., (1994). *Uluslararası Finansman*, Bursa: Ezgi Kitabevi Yayınları.

Parasız, İ., (1996). *Uluslararası Para Sistemi*, Bursa: Ezgi Kitabevi Yayınları.

Rose, A.K. and Yellen, J.L., (1989), “ Is there a J-Curve?”, Journal of Monetary Economics,24, 53-68.

Seyidoğlu, H., (2001). *Uluslararası İktisat*, İstanbul: Güzem Yayınları.

Sungur, O., (2015). “2000 Sonrası Türkiye Ekonomisi: Büyüme, Enflasyon, Ğsizlik, Borçlanma ve DıĖ Ticarete Geliřmeler”, Toplum ve Demokrasi, 9 (19-20), Ocak-Aralık, s.243-269

Sukar, A.H. and Hassan, S., (2001)” US Exports And Time-Varying Volatility of Real Exchange Rate.” Global Finance Journal, 12:109-119.

Süslü, B., (2005). Enflasyonu Engellemede Nominal Çapaların Olası Rolü, Muğla Üniversitesi Sosyal Bilimler Enstitüsü, Yayınlanmamış Doktora Tezi.

Süslü, B., (2012) “TCMB’nin Döviz Kuruna Müdahalesinin Nedenleri ve Sonuçları” Gaziantep Üniversitesi Sosyal Bilimler 2012 11(1):263-292 ISSN: 1303-0094

Şıklar, İ., (1998). Currency Substitution and Seignorage Revenue in a Developing Country: The Turkish Case, *Yapı Kredi Economic Review*, 9 (1), 3-14.

Taban, S., (2011). Küresel finans krizi öncesi ve sonrası dönemde Türkiye’de ekonomik büyümenin dinamikleri (Economic growth dynamics of Turkey in pre and post periods of global financial crises). SETA Analysis, 37.

Taylor, J. B., (1995). Economics, Boston, Houghton Mifflin Company.

TCMB., (2016). Para ve Kur Politikası. pp.18

TCMB., *Elektronik Veri Dağıtım Sistemi*, (Electronic Data Distribution System)

<http://www.tcmb.gov.tr>

Tuna, K. B., (2008). Türkiye’de Merkez Bankası Müdahalelerinin Döviz Kurlarının Onaylığına Etkisi. *BDDK Dergisi*, 2(2), pp.77-105.

Utkulu, U. and D. Seymen., (2004), “Trade and Competitiveness between Turkey and the EU: Time Series Evidence”, TEA Discussion Paper, 2004/8.

Yaldız, E., (2006), “İkiz Açık Hipotezi ve Türkiye,” İzmir İktisat Kongresi Araştırma Merkezi Bilimsel Çalışma Raporları Serisi, 1: 1-18.

Yeldan E., (2001), Küreselleşme sürecinde Türkiye Ekonomisi, İletişim Yayınları, İstanbul

Yeyati, E. and Sturzenegger, F., (2001). Exchange Rate Regimes and Economic Performance, *IMF Staff Papers*, pp.47.

Yılmaz, E., (2000). The Impact of Persistent Devaluation on Growth: The Case of Turkey During the Post-1980 Period, *Yapı Kredi Economic Review*, 11(1), pp.29-39.

Zengin, H. and Terzi, H., (1995),” Türkiye’de Kur Politikası, İthalat, İhracat ve Dış Ticaret Dengesi İlişkisinin Ekonometrik Analizi”, *Gazi Üniversitesi İ.İ.B.F.*, 11,1-2,247-266.