

CURRENT ACCOUNT ADJUSTMENT IN TURKEY

1923-2002

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**by
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ABSTRACT

CURRENT ACCOUNT ADJUSTMENT IN TURKEY: 1923-2002

In this thesis the balance of payments of Turkey between 1923-2002 is examined with special emphasis on current account adjustment. One of the targets is to evaluate the balance of payments under different economic regimes since 1923 and to identify the changes in the structure of balance of payments. The review of the balance of payments and different development strategies highlights that there is a close relationship between economic growth and balance of payments in Turkey.

The second task of this thesis is to identify the determinants of current account balance empirically. A reduced form single equation model of current account with annual and quarterly data is estimated through ordinary least squares (OLS). Next, formal statistical methods are applied to detect possible breaks and shifts in the model. Whether there exists a threshold between the current account balance and economic growth is also questioned. Finally, stability of the model parameters is examined through rolling-regressions analysis.

Consequently, current account balance in Turkey has been found to be determined by GDP growth, demand from export markets, terms of trade and foreign exchange volatility, among which GDP growth is the major factor. Formal tests for structural break and test for threshold effects did not provide significant results but analysis of rolling regressions had important results for the current account dynamics in Turkey, which verified that there are shifts and breaks in the current account model. The impact of GDP growth on current account balance declined during 1995-2002 and specifically in 1999. Given the unsustainability of economic growth in this period, the economy could not generate proportionate expenditures during phases of economic growth.

ÖZET

TÜRKİYE'DE CARİ İŞLEMLER DENGESİ UYUMU: 1923-2002

Bu tezde, 1923-2002 döneminde Türkiye'de ödemeler dengesi ve cari işlemler dengesi gelişmeleri incelenmektedir. Çalışmanın amaçlarından biri, ödemeler dengesinin farklı dönemlerde nasıl şekillendiğini ve makroekonomik politikalarla ilişkisini göstermektir. Çalışmada büyüme ve ödemeler dengesi arasında gerek 1980 öncesinde gerekse 1980 sonrasında yakın bir ilişki olduğuna dikkat çekilmektedir.

Bu tezin amaçlarından bir diğeri cari işlemler dengesini belirleyen faktörleri ampirik olarak incelemektir. Cari işlemler dengesi için biri yıllık, diğeri çeyrekler bazında olmak üzere sıradan en küçük kareler yöntemiyle indirgenmiş iki denklem hesaplanmaktadır. Bir sonraki aşamada, bu denklemlerde yapısal bir kırılma olup olmadığı istatistiksel yöntemlerle araştırılmaktadır. Ayrıca, cari işlemler dengesi ile ekonomik büyüme arasında bir eşik ilişkisi olup olmadığı sorulmaktadır. Çalışmanın son bölümünde ise, model parametrelerinin zaman içinde istikrarlı ya da dalgalı bir seyir izleyip izlemediği hareketli regresyonlar yöntemiyle incelenmektedir.

Sonuç olarak, Türkiye'de cari işlemler dengesi GSYİH büyümesi, dış pazar talebindeki büyüme, dış ticaret haddi ve döviz kuru oynaklığı tarafından belirlenmektedir. Bu faktörler arasında en güçlü etkenin GSYİH büyümesi olduğu saptanmıştır. İstatistiksel yöntemler, yapısal bir kırılma ya da bir eşik ilişkisi göstermemekle birlikte, hareketli regresyonlar yöntemi, Türkiye'de cari işlemler dengesinin dinamiği üzerine önemli sonuçlara işaret etmektedir. Bu analiz, tahmin edilen cari işlemler modelinde kırılma olduğunu desteklemektedir. Buna göre, GSYİH'nın cari işlemler dengesi üzerindeki etkisi 1995-2002 döneminde zayıflamıştır. Bu sonuç, 1994 sonrasında ekonomik dengesizliklerin artması ile büyümenin sürdürülebilir olmaktan çıktığı bir dönemde, ekonomik büyüme olduğunda harcamalardaki artışın sınırlı kaldığı; başka bir deyişle, büyümenin çok dalgalı bir seyir izlediği 1990'ların ikinci yarısı ve 2000'lerin başında, ekonomik birimlerin büyüme olduğu zaman tasarruflarını azaltmada daha az istekli olduğu şeklinde yorumlanabilir.

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INTRODUCTION

The current account of the balance of payments is a reflection of the macroeconomic performance of a country. It reflects the transactions of a country's residents with non-residents in terms of goods and services and the extent the country has to borrow over its savings to finance its investments or the extent the country lends its savings in excess of investments. Current account deficits and imbalances between saving and investment received increasing attention especially in the 1990s and 2000s, following the frequent currency and balance of payments crises throughout the world.

Alternatively the current account has been defined as the outcome of *forward-looking* dynamic saving and investment decisions of private agents, who try to smooth their consumption across periods in response to transitory shocks in the economy. This allowed dynamic analysis of the current account as compared to static analyses that prevailed before 1980s and enhanced the understanding of why current account responses varied so much among countries as well as through time.

The implications of economic growth on current account balance have always been at the center of theoretical models and empirical research. Departing from the national income identity, the current account balance is defined as savings minus investment, which explain the current account balance through the changes in national income. The relationship between current account balance, domestic savings and investment has been examined in many studies so far. (Ventura, 2002; Knight and Scacciavillani, 1998; Edwards, 2000; Roubini and Wachtel, 1997) Considering that current account balance is the outcome of intertemporal decisions, the deviations of national income from its permanent value assumes a substantial place, among other variables, in the determination of current account deficits. (Obstfeld and Rogoff, 1994 and 1996; Knight and Scacciavillani, 1998; Kraay and Ventura, 1997)

In the relation between current account balance and economic growth, capital flows emerge as a critical factor, the availability of which had implications for economic

growth and the current account especially after 1990s. The sudden drying up of capital flows to developing countries, most visible after Asian and Russian crises, had serious repercussions on the domestic economies and, hence, the adjustment of the current account. The sudden stop of capital inflows is either met from international reserves or a surplus in the current account balance, the former increasing the country's vulnerability and the latter is obtained by serious contraction in the domestic GDP. (Calvo and Reinhart, 2000b; 8-12)

In the empirical literature, although balance of payments of Turkey was explored from different dimensions so far, the work on current account balance is rare. Most of the studies focused on different components of balance of payments, namely exports, imports, tourism demand and capital flows.¹ There is only a limited number of studies trying to model the determinants of current account balance in Turkey. (Eken, 1990; Civcir, 1997; Boratav et. al. 1996) The intertemporal model of current account has been applied to the current account behavior of Turkey by Selçuk (1997) for the period 1987-1995 and by Akçay and Özler (1998) for a similar period of 1987-1996, both showing that the actual current account differed from the optimal current account by a wide margin for Turkey.

Furthermore, capital flows in Turkey became one of the central issues that received a great deal of interest from the economists especially since the second half of 1990s due to the balance of payments imbalances in the 1990s and 2000s and high growth rates spurred by capital inflows. The topics ranged from the timing of the capital account liberalization (Ersel, 1996) to the definitions of "hot money" (Altinkemer, 1995) and to the channels through which the sudden capital outflows were transmitted as a crisis onto the real variables (Alper and Sağlam, 2001). Altinkemer (1995) measures the degree of openness of Turkish economy and concludes that capital inflows have a destabilizing impact and is a complicating issue for monetary

¹ International trade, is one of the most studied fields in the Turkish economic literature. The long-time series availability as well as the structural changes in the foreign trade regime especially after 1980s motivated research in the field. One of the most appealing topics on international trade was the export-led growth in the 1980s and subsidies to spur exports (Yeldan 1990; Özmen and Furtun, 1998; Doğanlar and Fisunoğlu, 1999).

management. Ersel (1996) discusses the impact of the capital account liberalization on real sector, balance of payments, financial system, public balance and domestic debt issues.²

As far as the empirical literature on Turkey is concerned, the dynamics of the current account have not been examined in greater detail so far. Nor the balance of payments has been examined in historical perspective from present until before 1960s. The purpose of this thesis is to examine the balance of payments of Turkey between 1923-2002, with special emphasis on current account adjustment. One of the aims of the thesis is to evaluate the balance of payments under different economic regimes since 1926 and to relate the changes in the balance of payments to the economic policies of the period in question. In this context, it will be shown that the balance of payments has been central in the Turkish economy not only in the post-1990 period, when trade and capital movements were fully liberalized, but also in the closed economy period before 1980. The key position of balance of payments will be traced back as early as 1930s, during when foreign trade and foreign exchange policies were used to generate current account surplus which was used as a means to cope with the Great Depression. The balance of payments has evolved through time as a response to different needs and took shape differently under various economic regimes since then. Therefore, it is one of the tasks of this thesis to identify these changes in the structure of balance of payments. The review of the relationship between the balance of payments and different development strategies highlights that there is close relationship between economic growth and balance of payments in Turkey.

The second task of this thesis is to identify the determinants of current account balance empirically. Special emphasis will be placed on the relationship between current account balance and economic growth, as this relationship has not been examined in detail in economic literature so far.

After having set the model for the current account balance, next step will be to apply formal statistical methods and analysis to detect the possible breaks and shifts in the

² Other relevant studies on capital flows are Agenor et. al. (1997), Kirmanaoğlu and Özçiçek (1999), Iwata and Tanner (2003) and Balkan et. al.(2002).

data. In the empirical literature related to the current account balance, the studies taking into account breaks or splits in the data are rare.³ In general, studies acknowledging that certain periods are structurally different from each other are based on a priori available evidence, such as wars, shifts from inward looking to outward-looking policies, shift from gold-standard exchange system to Bretton Woods adjustable pegs and to floating exchange rates.⁴ This kind of approach takes the parameters in the defined sub-periods as not changing; hence, the impact of the parameters is constant in the period in question.

However, I argue that, in addition to the probability of one-time shifts in the parameters, the impact of the parameters may gradually change over time. Moreover, there may be very short-lived changes in the model parameters for which there is no a priori information about a break and therefore, cannot be captured by formal tests of structural breaks. Consequently, I question the existence of certain structural breaks and sample splits in the data, as Turkey underwent substantial changes in economic structure in the period in question. Some of these changes were the shift from inward looking economic policies to different stages of outward oriented economic policies in the 1980s; completion of capital liberalization in 1990s and shifts in the foreign exchange regime in 2000 and 2001. It is highly likely that, apart from some specific breakeven dates that we already know, there are breaks or shifts in the model. I ask whether it is possible to capture the changes in economic policies and trends by utilizing the estimated reduced form model.

In this context, formal structural break tests will be applied to the model. In the next step, the question is further deepened by asking whether the economic growth is associated with current account balance in a non-linear fashion and whether there was a threshold in the relation of economic growth with current account balance. The reason why GDP growth has been taken as a reference variable for threshold is the

³ Testing of the intertemporal approach to the current account embodies information on shifts in the current account data, as the current account balance itself is defined as deviations of macro variables from their permanent values. Optimal level of current account balance is predicted and this is compared with the actual values. For the testing of those models, see Obstfeld and Rogoff (1994) and for testing for the case of Turkey see Selçuk (1997) and Akçay and Özler (1998).

⁴ As an example for such studies, see Iawata and Tanner (2003) and Taylor (2002).

statistical significance of this variable in the equations explaining the changes in the current account balance especially after 1980s as opposed to other variables.

Furthermore, the examination of breaks and sample splits will be extended by a rolling windows regression analysis, which evaluates the trends in the coefficients for moving sub-periods in the sample. In this way, I intend to see when the model coefficients are stable or volatile (even in very short periods of time) and which period accounted for the volatility or shifts in the model parameters.

Consequently, the thesis will proceed as follows: In *Chapter I*, a background of world economy related to the balance of payments developments in the twentieth century will be presented. This is required to evaluate Turkey's balance of payments developments in comparison with the world economic developments. In this chapter, general principles of the development strategies implemented in the developing countries will also be shortly discussed in terms of their implications for economic growth and balance of payments.

Chapter II discusses why current account balance constitutes a field of research and analysis in the economic literature. The importance of current account balance in evaluating a country's economic performance and balance of payments crises is evaluated in this section. Furthermore, the theoretical approaches that accompany these questions are briefly presented.

An overview of economic policies in relation to balance of payments developments in 1923-2002 follows in *Chapter III*. Different economic regimes are identified in this section and the current account adjustment along with information on capital inflows is presented. The relationship between development strategies, economic growth and the current account is described.

Chapter IV presents empirical research on current account balance dynamics in Turkey outlines of which have been already described above.

Finally, main findings of this thesis will be summarized in the *Conclusion* section.

CHAPTER I

BALANCE OF PAYMENTS ISSUES AND ECONOMIC POLICY IN HISTORICAL PERSPECTIVE

The balance of payments is a record of foreign exchange transactions between residents of a country and non-residents. However, foreign exchange flows are related to various domestic and external factors, which can not be evaluated without reference to particular historical developments that surround them. Hence, balance of payments records are the outcome of many different determinants from domestic policies to currency crises, from economic growth to terms of trade movements, from choice of exchange rate to sudden halt in capital inflows, etc.

In this sense, this chapter aims at providing a historical background for foreign exchange flows from the early 1900s to the 2000s. The first part concerns the world economic history surveying the main economic policies that affected the foreign exchange flows both in developed and developing countries. The second part is devoted to the major development strategies and controversies around development and growth issues.

The relationship of the second section with the balance of payments is not straightforward at first glance. However, each issue undertaken in the second part has an implication in the balance of payments accounts through its impact on foreign exchange flows. For example, import substitution industrialization rested on controls and restrictions on foreign exchange and capital flows. Volumes of capital flows were significantly low and balance of payments was not central on the agenda of the policy makers. Outward-oriented strategy, on the other hand, promoted trade and capital liberalization, which led to increases in trade volumes and capital flows. Hence, the balance of payments attracted much attention in the 1980s and 1990s in line with the rise in the volume of capital flows and its impact on domestic economies. The choice of exchange rate regime, globalization and currency crises were among the topics which were examined intensively and they have an impact on

the magnitude and character of foreign exchange flows, which can be traced through the changes in the components of the balance of payments. The relationship of different components of balance of payments such as trade or capital inflows on economic growth was among the frequently asked questions in the economic literature related to balance of payments. This issue is one of the central questions that will be examined in this thesis in the framework of Turkish balance of payments from 1950s to 2000s.

1.1. Main Macroeconomic Trends and Foreign Exchange Flows in the Twentieth Century

It is evident that the marked difference between the early and the late twentieth centuries was the greater stability of prices in the former compared to the latter period in Europe and the US. Stable prices were particularly the result of the gold-standard era, which formally lasted until the early 1930s. Leaving aside at present the explanations about the functioning of the gold standard exchange rate system (that will be presented in the second chapter), it will be argued that the main feature of the period before World War I was the fairly free mobility of both trade and capital flows. The strict stability in the domestic economies dictated by the gold-standard rules provided the decent conditions upon which the capital and trade transactions could take place without any disruption.

In principle, among many policies, the maintenance of the convertibility of the domestic currency to gold was the prior goal of the authorities under gold-standard exchange rate system. The adherence of the authorities to this strict rule left no room for either fiscal or monetary policy to be directed at other domestic means. Hence, consolidated budgets were required to be in balance and the supply of money and the level of interest rates were determined according to gold flows so as to hold the gold-exchange parity fixed.

Despite the relative stability in the international economy in the prewar period, the consequences of the strict adherence to gold-standard rules in the domestic economy could be detrimental in terms of higher unemployment and slowdown in growth. Obstfeld (1998: 15) stresses that this commitment of the authorities to “fixed

exchange rates and capital mobility were at the expense of domestic macroeconomic health”, citing that the US Treasury followed tight monetary policy that eventually resulted as a severe deflation in the 1892-1897 period. How could authorities neglect the domestic goals in favor of maintaining the gold-standard principles? Eichengreen (1996) explains this phenomenon by the lack of comprehensive right of the citizens to vote, the absence of a powerful unionization and strong labor parties in that period that would put pressure on the authorities. Consequently, the commitment to the convertibility to the gold was so credible a policy prior to World War I that capital flowed freely and in substantial amounts across national borders.

Indeed, international capital mobility was very high before World War I and the world economy can be said to have been as “global” as it is now. (Sachs and Warner, 1995: 6-8) Several researches confirm that the levels of capital flows as a ratio of the GNP reached at its peak prior to late 19th century and those levels have never been reached even in the post-1990s, during when the capital mobility and the magnitude of the flows rose unprecedentedly. (Obstfeld, 1998; Taylor, 2002) However, one should bear in mind that by the end of the 19th century a large part of the world from Africa to Near East and North America had already been colonized by Western powers. Hence, the globalization of the 19th century, which in fact was the result of the forceful colonial rule of the then-developed centres (Sachs and Warner, 1995: 6-7), is described by Obstfeld (1998: 11) as follows:

“Before World War I, a vibrant, free-wheeling capital market linked financial centres in Europe, the Western Hemisphere, Oceania, Africa and Far East. A 19th century reader of the Economist magazine could track investments in American railroads, South African gold mines, Egyptian government debt, Peruvian guano and much more. The laying of the trans-Atlantic cable in 1886 reduced the settlement time for intercontinental transactions from roughly ten days (the duration of a steamship voyage between Liverpool and New York) to only hours.”

Not only investment but also merchandise trade volume was high before 1913. Among the industrialized countries, the ratio of the trade volume to GDP levels in

1913 could not be attained for a long time until the 1960s and 1970s and in some countries like Australia, Denmark, Japan and the United Kingdom, the levels in 1913 could not be achieved even in 1990. (Feenstra, 1998: 33)

Table 1.1. Net Capital Flows to GDP* (%)

Country	1870 1889	1890 1913	1914 1918	1919 1926	1927 1931	1932 1939	1940 1946	1947 1959	1960 1973	1974 1989	1990 1996
Australia	8.2	4.1	3.4	4.2	5.9	1.7	3.5	3.4	2.3	3.6	4.0
Canada	7.0	7.0	3.6	2.5	2.7	2.6	3.3	2.3	1.2	1.7	4.1
Denmark	1.9	2.9	5.1	1.2	0.7	0.8	2.3	1.4	1.9	3.2	2.0
France	2.4	1.3	-	2.8	1.4	1.0	-	1.5	0.6	0.8	0.7
Germany	1.7	1.5	-	2.4	2.0	0.6	-	2.0	1.0	2.1	1.9
Italy	1.2	1.8	11.6	4.2	1.5	0.7	3.4	1.4	2.1	1.3	1.8
Japan	0.6	2.4	6.8	2.1	0.6	1.0	1.0	1.3	1.0	1.8	2.2
Norway	1.6	4.2	3.8	4.9	2.0	1.1	4.9	3.1	2.4	5.2	3.7
Sweden	3.2	2.3	6.5	2.0	1.8	1.5	2.0	1.1	0.7	1.5	2.1
United Kingdom	4.6	4.6	3.1	2.7	1.9	1.1	7.2	1.2	0.8	1.5	2.0
United States	0.7	1.0	4.1	1.7	0.7	0.4	1.1	0.6	0.5	1.4	1.0
Argentina	18.7	6.2	2.7	4.9	3.7	1.6	4.8	3.1	1.0	1.9	2.2
ALL	3.7	3.3	5.1	3.1	2.1	1.2	3.2	1.9	1.3	2.2	2.3

* Mean absolute value of current account as percentage of GDP.

Source: Obstfeld (1998, Table 1)

Table 1.2. Ratio of Merchandise Trade to GDP (%)

Country	1890	1913	1960	1970	1980	1990
Australia	15.7	21.0	13.0	11.5	13.6	13.4
Canada	12.8	17.0	14.5	18.0	24.1	22.0
Denmark	24.0	30.7	26.9	23.3	26.8	24.3
France	14.2	15.5	9.9	11.9	16.7	17.1
Germany	15.9	19.9	14.5	16.5	21.6	24.0
Italy	9.7	14.4	10.0	12.8	19.3	15.9
Japan	5.1	12.5	8.8	8.3	11.8	8.4
Norway	21.8	25.5	24.9	27.6	30.8	28.8
Sweden	23.6	21.2	18.8	19.7	25.0	23.5
United Kingdom	27.3	29.8	15.3	16.5	20.3	20.6
United States	5.6	6.1	3.4	4.1	8.8	8.0

Source: Feenstra (1998, Table 1)

However, the picture is slightly different in terms of the ratio of merchandise trade to merchandise value added. Feenstra (1998) finds that except for Japan, the United States and Australia, this ratio increased from 1913 to 1990 for the remaining

industrial countries, concluding that the relative weight and contribution of trade has been rising through time. Besides, it should be noted that the share of services sector has also been increasing.

Table 1.3. Ratio of Merchandise Trade to Merchandise Value Added (%)

Country	1890	1913	1960	1970	1980	1990
Australia	27.2	35.6	24.4	25.6	32.4	38.7
Canada	29.7	39.4	37.6	50.5	65.6	69.8
Denmark	47.4	66.2	60.2	65.9	90.0	85.9
France	18.5	23.3	16.8	25.7	44.0	53.5
Germany	22.7	29.2	24.6	31.3	48.5	57.8
Italy	14.4	21.9	19.2	26.0	43.1	43.9
Japan	10.2	23.9	15.3	15.7	25.8	18.9
Norway	46.2	55.2	60.0	73.2	70.9	74.8
Sweden	42.5	37.5	39.7	48.8	72.9	73.1
United Kingdom	61.5	76.3	33.8	40.7	52.6	62.8
United States	14.3	13.2	9.6	13.7	30.9	35.8

Source: Feenstra (1998, Table 2)

The key element in the proper functioning of the gold-standard era was the confidence in the Bank of England's position as the "lender of last resort" and the role that fell on the pound sterling as a substitute for gold. (Smithin, 1996: 12; Eichengreen, 1996: 35-38) Britain's position as the world economic leader of the day made Britain one of the major creditor nations and the country's strength was the factor behind the strong pound.

However, the World War I brought the stability to an end and changed the position of Britain from world leader and creditor to a debtor nation. The surging public expenditures after the outbreak of war, 70% of which could not be financed, placed enormous pressure on Britain to suspend the gold-standard system and resort to printing money to finance its means. Britain finally gave in to the pressures and this resulted in the doubling of the price level. The story was more or less the same in other industrial countries with collapsing economies due to huge budget deficits, mounting inflation rates and disrupted international capital and trade flows. (Eichengreen, 1999: 4)

As a result, the demise of Britain's position as the world leader brought the end of the gold-standard era. Efforts to return to gold standard system in the post-war period proved vain and Britain abandoned the system in 1931, allowing the pound sterling to float freely.

"This was perceived as a political disaster at the time and finished off whatever hopes Britain may have had of returning the City of London to the prestigious position it had occupied before 1914. Nonetheless, from the point of view of the British economy, the move was actually beneficial, as British goods would now be more competitive on world markets. In principle, there was nothing standing in the way of expansionary domestic macroeconomic policy. (...) In relative terms the British economy did not fare as badly as some others (such as the USA and the Wiemar Germany)" (Smithin, 1996: 14)

Smithin was right! In the deep recession period that followed in the late-1920s and 1930s, both developed and the developing countries realized that more active economic policies namely expansionary policies had to be followed in order to start the recovery again. In the severe deflation known as the Great Depression during 1930s, free mobility of capital and adherence to fixed exchange rate regimes became absolutely unpopular. Countries leaving gold standard one after another initiated trade and capital controls to implement their own strategies for exchange rate and domestic policies.

The collapse of the international coordination after the gold standard system paved the way for alternative strategies in different countries. However, in the industrialized center, contractionary fiscal policies and balanced budgets were almost unanimously the rule owing to the memories of chronic budget deficits fuelling inflation and social disturbance during World War I. Thus, the recovery followed the expansionary monetary policies in Britain and Sweden; debt default and monetary expansion in Latin America, foreign exchange controls in Germany and Austria. Only in Germany and Japan, fiscal expansion, which relied heavily on military expenditures in the 1930s, contributed to the recovery in those countries. (Eichengreen, 1999: 13-17)

Particularly, Britain lowered interest rates and allowed the foreign exchange rate to depreciate, restoring competitiveness. In Eichengreen's (1999: 15) view, it was the "interest rate sensitive sectors producing for the home market that led the recovery" in Sweden and Britain.

On the developing countries' side, most striking feature of the period is that almost all of the Latin American countries announced debt moratoria, which is seen as the key to economic recovery in the 1930s. (Aldcroft, 2001: 197-198) Having relaxed the international debt service constraint, many developing countries in Latin America and Asia resorted to domestic demand expansion via expansionary monetary policies, currency depreciation and increasing government expenditures especially to support the import substituting industrialization.

After the extensive disruption caused by the World War II, the immediate reconstruction of the devastated countries was the prior concern in the second half of the 1940s. The huge government expenditures during the World War II inspired the authorities that government spending was an indisputable device to restore full employment as well as rapid economic growth. However, the emergence of workers and organized labor as a political power in the post-war period also became an influential factor in shaping governments' economic policies and urged the authorities to focus on growth and employment issues. (Eichengreen, 1996; Obstfeld, 1998) Hence, establishing prosperity along with economic growth and employment became the motto of the post-war era. In 1944, 44 allied countries negotiated and set up the fixed but adjustable exchange rate system in Bretton Woods Conference¹. The belief that the instability generated by the floating exchange rate regimes would hamper domestic economic goals and international trade played a significant role in the establishment of the new economic order based on fixed but adjustable exchange rate system.

¹ In the Bretton Woods exchange rate system, the US dollar would be pegged to gold, while all other currencies would be determined by fixed parities with respect to US dollars. The system rested on three pillars: Pegged exchange rates were adjustable in the case of "fundamental disequilibrium". Second, controls on foreign exchange flows were permitted and encouraged. Third, International Monetary Fund was established in the guard of this new system and was expected to intervene by providing finances whenever a balance of payments crisis occurs. (Eichengreen, 1996: 93)

The Marshall aid program in the aftermath of the war led to the restructuring and recovery of Europe, while the Korean War in 1950 generated a rise in demand for the primary commodity products, which benefited developing countries through foreign exchange inflows in their balance of payments accounts. (Owen and Pamuk, 1998: 94)

The period of prosperity and remarkable economic growth and investment in the industrial countries lasted until the outbreak of the first oil shock in 1973. The Bretton Woods fixed exchange rate regime had started to lose strength starting from the late 1960s onwards due to high deficits in the US balance of payments, aggravated by the Vietnam War and consequently, the dollar was weakening. Smithin (1996) argues that the Bretton Woods exchange rate system crashed when the US domestic policies began to contradict its leading role in the maintenance of the strong dollar.

“In the Bretton Woods era, obviously the major player was the USA. As long as American policies were consistent with both economic expansion and with maintaining the dollar’s pivotal role in the international monetary system and (a delicate balancing act) the Bretton Woods system could hold and the world economy could be relatively prosperous. When American policies failed to fulfil both conditions, however, both the exchange rate system and world prosperity collapsed.” (Smithin, 1996: 20)

Smithin (1996: 21-22) argues further that the failure of the American authorities which lay behind the collapse of the Bretton Woods exchange rate system was their reluctance to implement Keynesian policies during the Vietnam War. The war had heated the economy and the authorities in the US were advised to introduce tax rises to cool down the economy. However, tax financing of the war was definitely objected, as the war itself was already too much unpopular. Instead, the authorities chose to finance the expenses by printing money, generating inflation, loss of competitiveness and the resulting balance of payments problems, all of which finally led to the abandonment of the Bretton Woods exchange rate system in 1971.

The 1970s were marked for the devastating impact of the oil price shocks in 1973 and 1979 respectively on the developing countries. It was precisely in the early 1970s that the external debt stock of the developing countries began to surge. According to World Bank data, external debt of developing countries, which was hardly USD 70 billion in 1970, rose to USD 751 billion in 1981. (Aldcroft, 2001: 174) Although the latter figure is significantly low compared to huge amounts of the 1990s (USD 1.6 trillion in 1992), it is more dramatic in the sense that the wave of borrowing in the 1970s came to a sudden halt by the bitter debt crisis in the early 1980s. The accumulation of foreign debt by the developing countries was at the first place to meet the costs of rising oil prices. There were other reasons, such as political corruption, mismanagement of the resources and the greediness of the creditors who ignored the proper evaluation of the borrowers and the supervision of the credits, etc., all of which may be regarded as secondary. Consequently, the development strategy based on inward-looking policies in the developing countries thanks to cheap petrodollar funds, collapsed in 1982 with the onset of a widespread debt crisis.

Compared with the fragility of the international economy in the post-1970s, it can be argued that one of the advantages of the Bretton Woods system was its ability to limit the generation and the transmission of the external shocks owing to strict controls on capital mobility and the exchange rates. Two oil shocks following the end of Bretton Woods system were accompanied by persistent stagflation (double-digit inflation rates in most countries with recession), which became the major characteristic of the 1970s especially in the industrialized countries.²

In 1979 a significant shift in the economic policies took place among the industrialized countries: First, in the US and UK, tight monetary policy to bring down the inflation rate became the dominant economic policy. Second, the European Monetary System (EMS) was established in that year. These changes reflected that the inflation and the exchange rate became the concern once again as compared to previous era's full employment objective, loose monetary policies, etc. There was

² It should be noted, however, that the oil-exporting countries benefited from these oil price hikes, accumulating substantial foreign exchange, which were later extended to developing countries with low interest rates.

considerable reaction to Keynesian economics and the related issues of expansionary policies. The fight with the inflation was given priority by repressing real wages and leaving aside economic growth. The monetary targeting implemented as a disinflation policy was a failure in this period; however, the interest rate instrument was quite effective in combating inflation in the industrialized countries. The rise in the real interest rates in the early 1980s was quite striking: It was twice the level in 1960s and sixfold of the 1974-79 levels. The interest paid by the developing countries also rose substantially, average real interest rate on floating debt increasing from a negative 9.7% in 1979 to positive 16.7% in 1982. (Aldcroft, 2001: 196)

The debt crisis in the early 1980s was resolved with less dramatic consequences for the international economy such as defaults as a result of the internationally coordinated efforts. In contrast to the sudden halt in the capital flows during 1930s, the international institutions provided emergency relief to the highly indebted countries; arrangements regulating the bank and official lending were designed; structural reform was requested from the debtor countries and debt reduction and rescheduling schemes were introduced. (Aldcroft, 2001: 196) It might be the case that behind this "generosity" of the international institutions (especially to Mexico) lay the stronger interests of the US in the region. (Jomo, 2002b: 9) Consequently, these efforts granted the continuation of the repayment of foreign debt and hence, the survival of the highly indebted countries in the world economy. In other words, the economic developments in the 1980s, by strengthening the financial links between the developing and the developed countries, prepared the milieu for a greater integration in the world economy, which has come to be known as economic globalization in the 1990s.

The 1990s witnessed a boom in international capital flows. In contrast to period in the aftermath of World War II until 1980 when there were controls on foreign exchange flows, the economic policies shifted to easing or abolishing the controls in the 1990s.

“World War II cemented the demise of the global capital market. As late as 1950, the world’s major economies remained linked only by the most rudimentary, and typically bilateral, trade and financial arrangements. However, private capital movements began to return in the 1960s, grew rapidly in the 1970s and then grew even faster in the 1980s (though global capital largely bypassed the developing countries mired in that decade’s debt crisis). The worldwide trend of financial opening in the 1990s has restored a degree of international capital mobility not seen since this century’s beginning.”
(Obstfeld, 1998: 11)

Besides rapid growing debt stock of the developing countries (from USD 1 trillion in 1988 to approximately USD 2 trillion in 1997), there were two basic structural changes in the debtor and creditor relations in the 1990s. The first is the strikingly small number of countries left as creditors since 1970s. Particularly, among industrial countries, only Germany, Japan, Netherlands and Switzerland remained as creditors during 1970-1998. Others were either permanent debtors or former creditors turned into debtors, most noticeable of them being the US. (Lane and Milesi-Ferretti, 2001: 6; Eatwell, 1996: 13) This evidence coupled with the fact that the US became one of the biggest debtors in the last two decades show that capital from rich countries did not flow to lucrative poor countries as the economic theory predicted.³

Second, short-term debt grew more rapidly with respect to medium and long-term debt in this period. The growth of the short-term debt was accompanied by regional divergences receiving this debt. East Asia became the locus of short-term debt in the 1990s, whereas rate of growth of short-term debt stopped in the Latin America after the Mexican debt crisis in 1994. (Rodrik and Velasco, 1999: 3) However, the recent Asian crisis in 1997, the immediate Russian crisis that followed in 1998, the collapse of the exchange rate stabilization program in Turkey in 2001 and the collapse of the Argentine economy in 2002 set the final blow to capital flows especially of short-term going into developing countries.

³ I will return to this issue in the *Globalization Issues* section below).

In this respect, the 1990s and early 2000s did not become a period of stability either. As mentioned above, foreign exchange crisis erupted in many places in the world such as in Europe, Latin America and East Asia. The balance of payments received an increasing concern; especially the recent currency and balance of payments crisis⁴ were argued to be closely linked to capital flows, which were now more volatile and bigger in size.

Related to this, the choice of exchange rate became one of the central issues among both the researchers and policy makers in the last decade. This topic will be dealt in further detail in the next sections below. However, to conclude I will suffice here to mention the evolution of the exchange rates. Once the capital controls became difficult to implement in the 1980s, adherence to fixed exchange rate regimes became even more difficult. Consequently, in the 1980s and 1990s a spectrum of different exchange rate regimes were implemented in different parts of the world from hard-peg currencies to freely floating systems.

1.2. Economic Development Strategies and Major Controversies around Development and Growth

1.2.1. Import Substitution Industrialization as a Development Strategy

After the Second World War, the approach that was known to be *Import Substitution Industrialization* (ISI) came to dominate the economic policy making in many developing countries, especially in Latin America. The basic premises and principles of the strategy was originated in the Economic Commission for Latin America (ECLA) and became widespread throughout the world until 1980s. ISI strategy was basically the policy of protection of the domestic industry against the competing imports so as to develop a native industry based on domestic demand.⁵

⁴ Debates and analysis about the balance of payments crisis in the 1990s will be presented in the second chapter.

⁵ In this framework, the industrialization process is expected to start as a simple import substitution in the labor-intensive manufacturing sector. This is expected to evolve in the meantime to produce the intermediate and capital goods that have previously been imported in the early stages of ISI. The next step, then, will entail increase in exports owing to the rise in the production of manufactured goods accompanied by the development of industrialization.

Krueger (1997: 7-9) defines six premises upon which the ISI approach has been based on. First, the production in the developing countries was oriented towards primary commodities, which were subjected to continuing deterioration in their relative prices and the country was dependent on international trade to obtain expensive manufactured goods. Second, the comparative advantage of those countries dependent on primary goods production was badly hurt during the Great Depression and it was believed that this would persist had they adopted free trade. Third, and in line with the first two premises, price elasticities of demand for primary commodities were so low that those primary good-producing countries would not generate sufficient export earnings with the declining prices. The fourth and fifth premises were related to the availability of factor inputs and their marginal productivity. Accordingly, in the countries occupied with mainly agricultural production, the production structure had been labor intensive and the marginal productivity of labor was low, while capital was a scarce input. Therefore, as capital input is vital for growth, import-competing capital goods had to be produced rapidly. The final premise addressed the specific conditions of the developing countries that distinguished them from the developed ones. The developing countries had "structural" problems that required different policy prescriptions.

As a result, many developing countries worldwide adopted import-substituting measures for manufactures to initiate the pace of domestic industrialization after the World War II. ISI, in fact, was based on protectionist trade policies because it was expected that the domestic industry, which could not compete with the developed countries' industry, would flourish behind the tariff barriers, producing initially for the home market. Surprisingly, this line of thought was also welcomed in the international community such as GATT (General Agreement on Trade and Tariffs) articles, where the developing countries were granted the right to adopt tariffs and quantitative restrictions.

Consequently, the ISI policies in the developing countries could be justified in terms of the ‘infant industry argument’⁶ and received considerable support from the other members of the international economy.

In many countries very similar policies were implemented during the import substituting industrialization. The basic tools were almost the same, namely, high tariffs and various provisions to the import-competing goods producers. In Brazil, for example, a “Law of Similars” was put into effect, according to which importers bringing into the country similar products that could be produced domestically would be punished by abandoning all sorts of privileges and exemptions provided previously. The privileges included tax privileges, access to cheap credit, admittance to the government auctions, etc. In India and Turkey, there were import licenses. In Turkey, the goods that could be produced domestically would be dropped from the import license lists so that the importers would no longer be granted the right to import that particular product. (Krueger, 1997: 13)

1.2.1.1. Criticisms against the ISI

The import substituting industrialization received notable criticisms especially from the neoclassical economists. The bulk of the critiques focused mainly on the second stage of the ISI. Accordingly, the first stage of the ISI is rather easy. The production in this phase is labor-intensive and it is relatively simple to replace consumption goods imports with the domestically produced consumption goods. The protection in this period is only selective and not extensive, as it does not cover intermediate goods and capital goods imports. In contrast, in the second stage in order to produce intermediate goods such as paper, steel, petrochemicals, etc., capital goods and consumer durables, the protection must be widespread and high. According to the opponents of the ISI, given the limited size of domestic markets, this high level of protection generates monopoly positions in most cases, accompanied by little motive

⁶ Some economists believed that industrialization would not be initiated by the private agents due to the existence of heavy investment costs and externalities at the beginning of the process. In that case, the government intervention was necessary to launch the dynamic pace of industrialization. This could be achieved either by an increase in the tariff rates and quantity restrictions on the imported consumption goods or by a production subsidy to the import competing sectors, which has the same effect as the tariffs. Later on, the infant industry was expected to grow into a self-sufficient industry, which could compete with its counterparts in the developed countries.

for improving technology. (Frenkel et. al., 1993: 5) Monopolies, facing no competition from both inside and outside, have no motivation to enhance technology. This is supposed to be one of the major factors that hampers exports of manufactured goods, which is the main source of foreign exchange revenue in this development strategy.

Kruger (1997: 14) claims that fixed exchange rate regimes have been another reason for discouraging exports during the import substitution industrialization. Under this development strategy the demand for foreign exchange increases, as industrialization through ISI relies on imports of intermediate and capital goods that require abundant foreign exchange. However, under fixed exchange rate regimes with high inflation rates due to overloaded development plans and expenditures, it becomes impossible to maintain the real exchange rate intact. Hence, the real exchange rate appreciates, which depresses exports and slows down the foreign exchange earnings.

Another aspect of this bias in favor of industry as opposed to agriculture is related to the financing constraints of the developing country. According to these criticisms, the ISI implementing country should depend on primary good exports to secure its payments and finances as the shift towards manufactured goods exports would take time. However, the protectionist policies (coupled with export taxes to raise government income) and subsidies (such that industrial sectors are granted cheap credits with low interest rates in contrast to the other sectors) distort the terms of trade against agricultural goods. As a result, via ISI policies, income is extracted from the primary goods producing sectors to be transferred to the industry.

Other critiques regarding the ISI deals with the increasing role and size of the government in the economy, which is supposed to lead to some distortionary effects in the financial sector. (Frenkel et. al., 1993: 6) The credit policy favoring the privileged sectors is based on low nominal interest rates compared with the level of inflation, which basically means negative real interest rates. This in turn discourages savings, which has a direct consequence of inability to collect domestic funds for investment purposes. Moreover, as the cost of funds is far below the market clearing levels, many unprofitable and inefficient projects could be undertaken, which would

result in significant losses, if the auditing and control mechanism has not been properly established (which has been the case in many developing countries). And thirdly, higher productivity projects are deprived of access to the credits due to the preferential treatment among the sectors.

Increasing role of the government in the economy is another issue that receives considerable attention from the opponents of the ISI. (Frenkel et. al., 1993: 6-8) It is claimed that the state leading industrialization processes and in some cases directly involving in production in industry crowds out private sector from the market, contradicting the market principles. According to this view, the state may act with other motives (such as nationalization, employment maintenance, saving bankrupt establishments due to political reasons, etc.) instead of economic ones.⁷

1.2.2. Outward-oriented Strategy

As opposed to the ISI as a development strategy, outward oriented development approach gained prominence in the late 1960s and 1970s. This approach was reformulated and refined in the 1990s through the policy proposal called the “Washington Consensus” on policy reform. From 1990s onwards, there has been considerable effort to spread the “Washington Consensus” policies around the world, as a result of which many developing countries adopted liberal policies as their development strategies in the last two decades. In a sense, the Washington Consensus formed the intellectual framework and laid the foundations of the global world integration, which dominated in the last decade.

The researchers started to question the premises of the ISI such as “market failure”, “tariffs or quotas as the best instruments for industrialization”, etc. and they tried to show that opening up of the economy is a prerequisite for a successful development.

⁷ Consequently, two different approaches within the neoclassical framework emerges in terms of the formulation of the state’s role in the economy: The first one suggests the strategy allowing the government to set and implement laws and regulations that would give way to industrialization via the private sector. The limits of the state are confined to providing basic infrastructure, alleviating poverty, improving social services, and so on. The other approach allows the state to be relatively more active within the development process, only to the extent that it would facilitate the right conditions for industrialization such as the case in East Asian industrialization during 1960s and 1970s. As a result, still there has not been a consensus about the role of the state among the economic scholars.

Among those researchers were Bhagwati and Ramaswamy (1963), Johnson (1965) who tried to demonstrate that tariffs were not “the first-best, neither the second-best policy instrument” for development (Krueger, 1997: 21). This line of study coincided with the remarkable success of the East Asian growth based on export promotion, which strengthened the liberal policies further. Taiwan, Korea, Hong Kong and Singapore registered high growth rates owing to the upsurge in exports of manufactures, which could be attained by providing incentives to exporters and by granting a competitive (depreciated) real exchange rate.

1.2.2.1. Washington Consensus and its Policy Proposals

In 1990, John Williamson formulated the principles of the policy package, which has been named the “Washington Consensus”. This is a series of policy prescriptions, which involve various topics from constraints on government expenditures to incentives on foreign investment. At the core of the package stand the tools for trade and capital account liberalization. Behind this approach, there is an assumption that adjustment and growth are complementary phenomena. Hence, growth and development can only be attained by the successful implementation of ten instruments (Frenkel et. al., 1993: 9-10), which can be summarized as follows:

First, fiscal policy should be directed at reducing fiscal deficits. This should be attained by cutting expenditures rather than increasing revenues. In reducing public expenditures, subsidies should be abandoned in the first place rather than education, health or public infrastructure expenditures. In addition, tax reform to broaden the tax base should accompany the efforts to close the fiscal deficits. On the other hand, interest rates should be determined in the market. This is expected to have several advantages: It would discourage capital outflows, increase private savings and would avoid discriminatory actions in credit provisioning.

Apart from the regulations regarding public accounts and market interest rates, Washington Consensus’ most renowned proposals are in the area of exchange rate, international trade and capital flows. Trade and exchange rate policies should be designed to enhance exports; it is suggested that the competitive level of exchange rate is a prerequisite for export growth; trade policy should involve measures to

remove the tariff and non-tariff barriers as well as export taxes. Protection of infant industry is only temporary and moderate level general tariffs are allowed.

The liberalization approach is complemented by a few more measures such as enhancing the privatization of the state owned enterprises, deregulation especially in the labor markets and securing property rights. As a result, the Washington Consensus approach provided the basis for IMF (International Monetary Fund) stabilization and IBRD (World Bank) adjustment programs.

The basic premise behind the outward-oriented strategy as a development perspective is as follows: Trade enhances growth, it increases specialization, brings about efficient resource allocation (which mainly stems from the comparative advantage) and it helps the information and technology to spread around the world rapidly and easily. In addition, liberalized trade is an instrument that establishes discipline both in government and private sector. By introducing international competition, the domestic competition increases, which will be reflected in higher quality of production as well as in lower prices. The government, on the other hand, will be obliged to behave in a manner that would not jeopardize the stability in the markets and, most likely, would implement measures that would be in line with the liberalization efforts.⁸

However, outward-oriented approach, formulized by the Washington Consensus proposals, and globalization in a broader sense have come under attack especially in the late 1990s and the early 2000s. The researchers have been investigating the impact of those policies on growth and development performance of countries implementing liberal economic policies. The debate has mainly centered on whether trade and capital flows lead to economic growth. The free mobility of capital, which was facilitated as the economies obeyed Washington consensus rules, and the government policies in the developing countries have been questioned extensively and it has been argued that all were addressed to the interests of foreign capital instead of basic domestic needs. (Rodriguez and Rodrik, 2000; Rodrik, 2000;

⁸ For empirical research on trade and growth relationship see Sachs and Warner (1995), Balassa (1985), Edwards (1998).

Eatwell, 1996; Jomo, 2002b) Therefore, it seems that liberalization and globalization, in Washington Consensus terms, have been more detrimental than beneficial for developing countries.⁹

1.2.2.2. Choice of Exchange Rate

The choice of appropriate exchange rate regime received considerable attention in the 1990s and early 2000s due to the subsequent currency crisis in various developing countries. It has been argued that especially after Asian, Russian and Turkish currency crises the exchange rates regimes were polarized in two opposite directions, either in hard pegs or pure floats. (Fischer, 2001) It is totally beyond the scope of this paper to decide or propose the most decent form of exchange rates for a developing country (a question that has not been resolved yet). Nevertheless, this issue deserves a special interest especially in the context of this thesis, as the foreign exchange (FX) rate regimes as well as the fluctuation in the FX rates are crucial in the determination of both trade and capital flows.

Before turning to the recent trends in the FX regimes and the motives behind the choice of the exchange rate, it is necessary to present a simple, textbook definition of fixed and floating exchange rates.

Fixed or pegged exchange rate corresponds to a system in which the monetary authority sets the buying and selling rates for domestic currency in terms of foreign currencies and commits to buy and sell FX at those announced rates in unlimited amounts. The extreme form of fixed exchange rate regime is hard peg arrangements such as currency boards and full dollarization. On the opposite side of the spectrum lies the floating exchange rate, whose definition is less clear-cut compared to the hard pegs. Calvo (2000: 4) defines it as “a system in which the monetary authority sets money supply and lets prices and exchange rate free to reach their market equilibrium levels.” Other categories such as “crawling peg”, horizontal bands, crawling bands, managed floats, etc. all fall in in-between the two polar cases.

⁹ The criticisms will be taken in detail in *Globalization Issues Section*.

Why did a shift to floating exchange rate regimes take place after the demise of the Bretton Woods system (in which exchange rates were fixed but adjustable)? What were the factors that made possible the operation of the fixed exchange rate system of gold standard for so long? The answers to these questions can be given in the context of “inconsistent trinity” hypothesis, which says that a country cannot implement monetary policy for domestic goals while adhering to a fixed exchange rate regime, if the capital is perfectly mobile. (Obstfeld, 1998: 14-15) Conversely, a country that wants to conduct an independent monetary policy, raising or lowering interest rates for the purpose of its domestic economy, must allow its exchange rate to fluctuate in the market if capital is mobile. However, if the exchange rate is to be maintained while allowing the capital to move freely, then the monetary policy should accommodate the two concerns. Hence, the latter was the case in the gold standard era.

As already mentioned in the first section, the gold standard era was a period when capital could move freely and maintaining the exchange rate was the primary goal of the authorities, whereas there was less concern in domestic economic objectives. Therefore, the inconsistent trinity dilemma was not violated. In the post-war period, however, both capital movements and foreign exchange rates were controlled through strict rules and restrictions, as a result of which inward-looking policies throughout the world could be implemented. However, after the collapse of the Bretton Woods system, the authorities could no longer forgive the domestic means as easily as it was in the gold-standard era.¹⁰ Moreover, the increase in the volume of capital had rendered it too difficult and costly to defend the exchange rates. Sharp increases in the interest rates would damage both the banking and the real sector so badly that few governments would be willing to assume such responsibility. (Obstfeld and Rogoff, 1995: 79-80) Hence, the shift to floating exchange rate regimes emerged as an option for the authorities who were faced with contradicting ends, easing the pressure on them and allowing them to implement relatively independent monetary policies.

¹⁰ See Section 1.1. *Main Macroeconomic Trends and Foreign Exchange Flows in the Twentieth Century.*

However, despite the growing number of proponents claiming that the more countries tend to choose floating exchange rates at present, there is growing number of opponents against this view saying that textbooks do not explain the real world phenomena. Indeed, according to the IMF classifications based on formal announcements of the countries, the tendency to float has been remarkably rising since 1970s. For example, the percentage of the pegged rates in total exchange rate arrangements has been continuously declining from 97.2% in 1970 to 11.1% in 1999. Likewise, the burst in the number of floaters is also significant, from almost a negligible level at 2.8% in 1970 to 44.5% in 1999. (Calvo and Reinhart, 2000a: 32)

Nevertheless, in contrast to this data, the evidence suggest that many countries today -even if they had already announced floating exchange rate regimes- intervene in the foreign exchange rates not directly but through various indirect ways in order to minimize the variations in the foreign exchange rates. In their influential paper, Calvo and Reinhart (2000a) find that, regardless of the announced FX regimes, the FX variations were significantly reduced in the 1979-1990 period and interest rates were most commonly used instrument to smooth out the fluctuations in the FX rates compared to direct purchases and sales. This tendency to avoid fluctuations in the foreign exchange rates was conceptualized by the authors as the “fear of floating”.

What, then, are the motives behind the fear of floating, despite the widely accepted benefits of floating, such as sheltering the country’s reserves against external shocks and providing monetary independence? What are the detrimental effects of floating exchange rates on the real economy, which were often neglected in the debates? Why is fear of floating more widespread among developing countries?

There are numerous reasons behind this tendency to avoid fluctuations in the exchange rates. In contrast to the textbook prescription that the devaluations are expansionary, the result is often the opposite in the case of developing countries.¹¹

¹¹ Although Rodrik (2000: 6-9) is in agreement with the view that either a hard peg or a pure float has its detrimental impact on the developing economies, he disagrees with the view that devaluation of the domestic currency was not expansionary for developing countries. He mentions some of the countries including Turkey in 1980s, which registered significant growth for a long time following large and persistent devaluations. He argues that depreciation of the currencies boosted economic recovery through its impact on tradables.

The impact of devaluation on increasing exports is often offset by other factors such as loss of credibility, rising inflation rate due to pass-through effect and cessation of production and investments because of high volatility in the exchange rates. (Calvo and Reinhart, 2000a, 2000b) Perhaps the crucial issue is the strong tendency of the authorities to preserve their credibility, which force them to smooth out the variations in the FX rates. Once the credibility is lost, the most likely outcome would be sudden cessation of the capital inflows, which is the worst punishment for a developing country with its desperate dependence on those flows. Correspondingly, the current account adjustment required to offset the outflows (probably by repressing imports and domestic demand) would be much severe than the industrialized countries who continue to have access to international finance.

Apart from this, the volatility in the foreign exchange rates has an adverse impact on trade, production and consumption as it shades the pricing and cost decisions. In particular, the domestic credit market is blocked, which limits the firms' financing abilities. Another critical issue is that, in countries where currency substitution is extensive and the foreign currency denominated stock is large, the stock of debt rises in domestic currency terms, if the exchange rate rises. This phenomenon is called the "liability dollarisation" by Calvo (2000; Calvo and Reinhart, 2000a, 2000b)

To conclude this section it can be said that despite the increasing popularity of floating rates among researchers and policy makers the tendency to pure fluctuations in the foreign exchange rates is also spreading especially among the developing countries. However, fear from floating has some drawbacks as well, which make economies vulnerable to various shocks and may end up with currency crises. The currency crises and the theoretical approaches to deal with them will be presented in the second chapter.

1.2.2.3. Globalization Issues and Debates

In the last decade, especially after successive financial crises around the world, a stream of critiques developed on the functioning of the world economic system as a whole. The final phase of the world economy since 1990s has been defined by the term "globalization" which reflects a structure of economic relations regarding a shift

in the mode of production towards disintegration, changed nature of finance with the domination of complete mobility of capital and rapid technological developments.

It would not be false to argue that the bulk of criticisms grew markedly in the last years, in response to disappointment about the commitments of the liberalization paradigm and the destructive impact of “globalization” on developing countries. The extent of criticisms about globalization ranges from specific features such as the disturbing effects of capital flows on the domestic economy and the sequence of liberalization, to more general critiques such as the instabilities inherent in the system itself. Trade and capital liberalization processes as well as policies of the international institutions such as the IMF, the World Bank and the World Trade Organisation were all subject to criticism in this period. (Jomo, 2002b: 7-9; Rodrik 2000: 4-12) Moreover, a good deal of work appeared on the development aspects of liberalization and globalization.

The liberalization of trade and capital is often equated to the term globalization as the former defines the central characteristic of the latter concept. In fact, what is meant by globalization is far beyond trade and capital liberalization. In this respect, globalization involves internationalization and disintegration of production along with greater vertical integration of control of production, the increased ability of capital to cross borders rapidly (for speculative purposes in many instances) with the resulting negative impact in the recipient country.¹² (Ghosh, 2002b)

In the early 1990s, globalization/capital and trade liberalization was believed to have many potential benefits. Those included increasing efficiency of the financial system, better opportunities for the investors and savers, rising productivity of investment, as capital would seek the most productive use, higher investment and growth, convergence among the industrialized and developing countries as well as discipline for the authorities. (Eatwell, 1996: 9-10; Sachs and Warner, 1995: 2-4)

¹² This economic order rests on innovation and marketing of new commodities, some of which were previously in the domain of the state such as telecommunication, health, power, etc. and access to new markets, some of whom were formerly Soviet and developing countries. (Ghosh, 2002b: 5)

The premises of the liberalization paradigm have been questioned to a great extent in the light of a decade of experience and data. Neither empirical research nor actual data could satisfactorily validate the above promising benefits, namely the relationship between liberalization and growth performance, especially for developing countries. (Edison et. al. 2002; Rodrik 2000) Particularly due to the capital flows, most of which were short-term, and the combination of various other factors (such as appreciation of the exchange rate, weak banking system, moral hazard, etc.) there were asset-price bubbles accompanied by consumption boom in many developing countries. (Jomo, 2002a: 4; Jomo, 2002b: 1) Furthermore, the rapid flow of capital but lagged and slow adjustment of the real sector in response to it created a differential in the speeds of adjustment of both sectors, which added to the volatility in the system.

Another concern raised by many researchers about the adverse consequences of globalization is the neglect of the authorities of the basic needs and socioeconomic rights of their citizens during the process of integration to global world. (Ghosh, 2002b: 3) This is one of the darker sides of the story: Governments, faced with disciplining the fiscal sector, start with the easiest way of cutting expenditures in the basic provisions of health, education, infrastructure, etc. The policies of the governments have become so focused on global integration issues that development aspects and basic requirements of the citizens have been overlooked and the government policies were shaped so as to secure the interests of the foreign investors. (Rodrik, 2000: 4-12) Restoring confidence in the eyes of foreign investors was bound to a set of policies applied almost unanimously by many developing countries. This included tight monetary policies, reducing the size of the government, lowering taxes, flexible labor legislation, deregulation, privatization and openness. However, these policies hindered the ability of the authorities to act in favor of domestic economic goals such as enhancing social insurance and other developmental concerns. (Rodrik, 2002: 14-15)

To have a better understanding of the questions raised about globalization, I will review in the remaining section below some of the critiques raised against the basic premises. The first one is the expectation that exports of developing countries would

increase. Indeed, since 1980s exports of goods from developing countries have been rising at 11.3% annually (above the world export growth by 8.4% annually). Moreover, there is a shift in the share of exports of developing countries from primary goods to manufactures, which require high skill and technology. (Ghosh, 2002a: 1) However, as opposed to these positive signs, income generated from these exports did not rise as much as the rise in volume. There were numerous reasons¹³ for this. Probably the most influential factor was the adverse price movements in some specific sectors, in which the developing countries have specialized such as the high technology products of East Asia. (Jomo, 2002a: 2)

The second premise that came under serious criticism is the myth of capital that would flow to poor countries from rich countries in its quest for profitable investment opportunities. In reality this prediction did not come true. As already mentioned in the previous sections, the US itself attracted most of the available capital in the 1990s and shifted to a debtor position from once a strong creditor. Eathwell, (1996: 13-14) presents evidence that net transfer of funds to the US in 1983-1992 was USD 100 billion annually while the net transfers to *all* developing countries in the same period was USD 1 billion per year. Although in the second half of the 1990s, the net capital inflows to developing countries tended to rise rapidly (USD 48 billion in 1994), this magnitude was still too low compared with the USD 112 billion absorbed by the US in the same year and USD 119 billion in 1995. (Eathwell, 1996: 13)

Moreover, one of the reasons for the faith in the advantages of capital flows was the belief that new financial instruments would be developed to minimize the numerous risks arising from exchange and interest rates as well as political disruptions. These involved derivatives, investment and hedge funds. Indeed, hedging has evolved to become one of the most indispensable components of the financial markets today. Nevertheless, whether they avert risk or exacerbate them is an open question. There

¹³ Ghosh (2002a) refers to vertical disintegration of production, which allows goods and services to travel many locations before being completed. This mode of production is done at very low costs and the most value added accrues to the controller of the production process (instead of the intermediate producers in developing countries) when the goods are finally completed. Second factor is the fallacy of composition, which involves many problems such as overproduction and dependence on a great extent on imports as input, increasing the cost of production.

are several plausible reasons to believe that these instruments are unable to minimise risks but contribute them.¹⁴

As a result, in addition to the increase in the volatility in already existing markets such as exchange, securities and money markets (Eatwell, 1996: 40-48), the world economy faced new forms of volatility and risks in the financial system. "Contagion" for example emerged as a major source of volatility. Furthermore, from a political economy perspective, there are various factors behind the current economic structure that make the world economy more prone to instability. Most crucial cause of a probable instability is the reluctance of the US to act as a world leader in economic terms, counteracting the crises whenever necessary. (Ghosh, 2002b: 7) For the US, counteracting a crisis is ever more difficult today than before, as the US is suffering from a recession itself in the first place and the mobility of capital and the fragility of the domestic markets weakens the effect of a counter-cyclical move. Consequently, the world economy as a whole has entered into a recession since the onset of 2000.

Finally, the last myth about globalization is that it would facilitate higher investment and growth. Despite many empirical studies in favor or against this view, there is not yet strong evidence in favor of either of them. (Rodrik 2000: 13) As far as the different categories are concerned (developing and industrial countries), it is more possible to find an evidence for liberalization promoting growth in the industrial countries at best. (Edison et. al., 2002) This reminds once again that the globalization was not for the countries' essential development needs but for the security of a large body of finance capital to invest without any problems arising from the recipient country's weaknesses. (Rodrik, 2000)

¹⁴ Firstly, these funds are motivated by granting continuous profit to their customers, which induces them to be aggressive and risk-taking in the financial markets. (Jomo, 2002a: 5) Moreover, not only their motive for sustained profit but also the complexities of the derivatives themselves are a major source of risk. This makes the derivatives more vulnerable to abuses, as well as the same complexities may avoid the evaluation of the risks properly. (Eatwell, 1996: 18-20)

CHAPTER II

WHY DOES CURRENT ACCOUNT MATTER?

2.1. Why Does Current Account Matter?

The arguments whether the current account of the balance of payments is a matter of concern are diverse. Some argued that current account is not a cause of concern as long as fiscal accounts are in balance or investment is increasing. However, sharp increases in the current account deficits due to private agent's actions prior to debt crisis in 1982 in Latin America and the more recent 1990-1994 Mexican crisis, despite increasing investment and no major fiscal imbalances, invalidated this view. (Edwards, 2001) After the frequent crises in 1990s in East Asia, Russia, Turkey and Argentina, current account deficits have been carried to the center of economic circles and its *sustainability* is questioned.

Current account balance is important as it measures the macroeconomic performance of a country. It shows the transactions of a country's residents with non-residents in terms of goods and services and the resources that the country receives over its savings to finance its investments. On the other hand, current account balance also reflects the evolution of the country's stock of net claims on (or liabilities to) the foreigners. In this respect, growing debt stock of the country matters because it requires trade surpluses in future to pay it back.

In the relation between current account balance and economic growth, capital flows emerge as a critical factor, the availability of which had implications for economic growth and the current account especially after the 1990s. Capital inflows to the developing countries became one of the major ingredients for economic growth while the sudden drying up of capital flows to developing countries, most visible after Asian and Russian crises, had serious repercussions on the domestic economies and, hence, the adjustment of the current account. Foreign credit constraint of the late 1990s forced serious adjustment in the current account through contraction in the domestic GDP. (Calvo and Reinhart, 2000b; 8-12) Impact of lending booms, capital

mobility as well as the credit constraint on economic growth and current account balance initiated a great deal of work in the empirical literature. (Gourinchas et.al., 2001; Taylor, 2002; Knight and Scacciavillani, 1998)

2.1.1. Current Account as a Measure of Competitiveness

Competitiveness is a very critical issue for a country, especially if it is open. It determines the sources of a country's foreign exchange income as well as the access of foreign capital into the country.

Earlier definition of the concept is roughly restricted to the "ability to sell" the products of the country. In this context, the competitiveness is directly linked to the current account balance. High (low) competitiveness is reflected as current account surplus (deficit), as the foreign exchange revenues (expenditures) exceed foreign exchange expenditures (revenues).

To put it in different words,

"A rise in the overall competitiveness leads ceteris paribus directly to a surplus on current account because of local goods attracting a larger share of world demand. This suggests a quite robust relationship between competitiveness and the current account." (Dluhosch et. al., 1996: 3)

There are basically two types of competitiveness. The first one is the price competitiveness that reflects the price advantages of a country in terms of prices of local goods with respect to foreign ones through the real exchange rate and unit labor costs. The second type is the non-price competitiveness, showing the quality of the products rather than the quantitative properties. The latter is hard to quantify and, hence, difficult to assess.

Besides, another indicator of competitiveness, which has been often utilized in empirical research, is the bilateral current account balance. This is a problematic indicator, however, as the markets are assumed to be segmented and independent of each other, which is not the case in reality. The countries are evaluated as a single firm, the presence and the impact of the rival domestic firms on the competitiveness

of the country is neglected.¹ In addition, this approach rests on the assumption of fixed exchange rates and restricted capital mobility. Whenever one of these two assumptions is violated, the results of bilateral comparisons become even more dubious. For example, it is possible that capital will leave a country whose competitiveness decline, if capital is free to move. This in turn would result in a current account surplus, not a deficit as the above approach suggests. (Dluhosch et. al., 1996: 66, 205-206)

Therefore, although the indicators such as regional and sectoral trade balances, trade in high tech products, revealed comparative advantage², market shares and real exchange rates, unit labor costs, etc. do show some facts about the trade positions of a country, they do not reflect the full extent of the competitiveness level due to the problems stated above.

Consequently, to overcome the shortcomings of the traditional concepts of the competitiveness, the intertemporal approach to the balance of payments is utilized, especially in the case of liberalized capital flows. This approach allows the current account to be taken together with the capital account movements and, hence, enhances the scope and meaning of competitiveness. As will be discussed in greater detail in *Section 2.1.2.1 and 2.2.6*, there is considerable support for the view that the current account might yield a deficit while still maintaining a satisfactory level of competitiveness. For example, if there is substantial foreign capital inflow, this implies a confidence in the economy of the borrowing country and hence, good investment conditions. Therefore, the economy could consume more foreign goods and services than it sells abroad, which means that the current account will be in deficit. The high marginal productivity of capital is an indicator of high competitiveness in this case.

¹ Presence of domestically mobile but internationally immobile factors leads to such a result. For example, some local firms may increase its competitiveness and increase wages in this sector, which in turn will force other local firms operating in other sectors to push their wages. Overall, the country may loose competitiveness in this way, without the foreign competitors increase their competitiveness actually. (Dluhosch et. al., 1996: 206)

² Revealed comparative advantage is expressed as the ratio of sectoral exports to imports divided by the ratio of national (total) exports to imports. That is, $RCA = \ln((X_i/M_i)/(\Sigma X_i/\Sigma M_i))$. (Dluhosch, Freytag and Krüger (1996: p.74)

Therefore, the meaning and scope of the competitiveness has evolved through time. Now the determinants of capital flows as well as the current account flows are taken into account in assessing the competitiveness of a country. The inclusion of capital movements into the analysis changes the way many indicators are interpreted. For example, according to the former approach high unit labor costs are an indicator of low competitiveness, which is expected to lead to a current account deficit. Although high unit costs are indeed a factor for low competitiveness, the result of this on the current account may be a surplus rather than a deficit, if a capital outflow takes place in response to high unit labor costs. (Dluhosch et.al., 1996: 208-209) Case studies for the United States (US) and Japan in 1980s illuminate these arguments better.

In the 1980s US current account balance registered persistently high deficits in line with the substantial appreciation of the US dollar (by 46%) between 1980-1985 and rising high unit labor costs (by 42%). (Dluhosch et.al., 1996: 141) Despite the depreciation of the USD vis-à-vis the other currencies in the second half of the decade, the current account deficits persisted. Therefore, the price and cost factors were not alone effective in current account deficits. High interest rates attracting foreign capital along with fiscal deficits were the major factors behind the current account deficits in the second half of 1980s.³

Another example is the case of Japan, which, in contrast to the US, has been accepted as one of the most competitive countries yielding high and persistent current account surpluses. Some attributed the current account surpluses of Japan to the protectionist trade policies, which provided the Japanese goods the shelter from the foreign goods. Although agricultural sector as well as some sectors in the industry are protected by high tariff rates, Dluhosch et.al. (1996: 162-166) claim that the levels and the structure of tariffs were not much different than the industrialized countries. Other views suggest that the state intervention and the special organization of the Japanese

³ This is the origin of the famous "twin deficit debate", which suppose that the deficits in the budget are the main cause behind the current account deficits.

firms through the system of “keiretsu”⁴ created a sort of protective environment for the Japanese firms, which avoided foreigners to enter. However, as far as the studies on the impact of keiretsu on trade balance are considered, it is seen that the exact relationship could not be identified so far and the views are diverse. Therefore, although protectionism cannot be totally neglected as a factor for surpluses in the current account, the traditional concepts of competitiveness, i.e. the “ability to sell” cannot be argued to account as the only factors in these surpluses.

This issue can be investigated within the framework of saving and investment decisions. The competitive position of Japan can be attributed to very high rates of saving. Despite high investment rates corresponding to around 10% of net national product, savings exceeded investments, which has been the major reason behind Japan being a net capital exporter and a high current account surpluses of the country. (Dluhosch et.al., 1996: 177-180)

Consequently, a short overview about the competitiveness issue and the related country examples presented in this section clearly show that any attempt at interpreting the current account developments in terms of gains or losses requires caution and the incorporation of capital account flows into the analysis. For the case of Turkish balance of payments developments, which will be investigated in the next chapters, the debates around the competitiveness issue are illuminating. Furthermore, the capital flows especially after the financial liberalization in Turkey is crucial.

2.1.2. Balance of Payments as a Source of Disruptive Imbalances

In the 1990s, balance of payments became a very popular subject for investigation for economists due to the frequent balance of payments crises that broke in various parts of the world. These took the form of currency crises accompanied by substantial capital outflows. In the late 1970s and early 1980s, there were a few cases of currency crises especially in Latin America. Later in 1992, the European exchange rate mechanism (ERM) collapsed. In 1994 Mexican peso crisis and subsequent

⁴ Keiretsu are conglomerates formed by companies around the banks, which are also allowed to hold shares in other companies. In this sense, this is a web of production units, which have easy access to financial resources. Basic feature of keiretsu is its interlocking nature between companies and firms which enhances the efficiency of production.

currency crises in the Latin America arouse, followed by a wave of currency crisis in Asia in 1997 and 1998. Finally it was in Turkey at the beginning and in Argentina at the end of 2001 that we witnessed the collapse of domestic currencies followed by free floating of the currencies. These series of crises in the last decade were so frequent that the existing models were inadequate in explaining them; hence, a significant collection of studies accumulated, giving way to different interpretations on the currency and balance of payments crises.

Very roughly, a balance of payments crisis is defined as an occasion in which the government cannot defend a fixed parity due to high cost of defending it and, hence, the domestic currency is devalued or left to float. Sudden depletion in the international reserves, whether it precedes the sharp change in exchange rate or not, is the characteristic feature of a crisis. In this sense, the interpretation of a balance of payments crisis includes countries' solvency position. That is, in a crisis situation it is usually the case that a country cannot meet its external obligations. The existence of a mismatch between the country's external liabilities and external assets may suffice to weaken the ability of the country to pay, even if the country had sufficient resources to meet its obligations. Furthermore, usually the crisis takes place in a very short period of time and, therefore, the nature and the form of a balance of payments crisis is bound to the liquidity position rather than to the country's actual level of external assets. (Calvo and Vegh, 1999: 46)

In this respect, in the recent studies current account balance is considered to be an indicator, showing that the country is "spending beyond its means". (Calvo and Vegh, 1999: 52) Various "sustainability" indicators have been proposed, by which an acceptable level of current account deficit that the country can bear without endangering its solvency position is explored. However, in many cases the balance of payments crises break out despite the fact that the current account is in balance or in a small deficit. In those cases, other factors such as the level of reserves or weaknesses in the current economic regime trigger a payments crisis instead of the current account itself. The following sections briefly explore those different perspectives that evolved on sustainability of the current account and balance of payments crises since 1980s.

2.1.2.1. Sustainability of Current Account

Three concepts have been proposed in the recent economic literature to evaluate whether persistent current account deficits pose serious problems. These concepts are *solvency of foreign debt*, *sustainability* and *excessiveness* of the current account deficit, which rest on the intertemporal allocation of resources and intertemporal feature of decisions of the economic agents.

The marked difference of foreign exchange flows in the 1990s from the former periods was the expansion in the size of the flows throughout the world. Parallel to this development, persistent current account deficits were observed in some developing countries receiving substantial foreign capital. Furthermore, in contrast to the 1980s, when current account deficits were regarded as being closely related to the fiscal deficits, the private saving and investment decisions assumed a major role in the determination of capital flows in the 1990s. Likewise, the former periods were characterized by external borrowing in the form of syndicated loans, whereas in the 1990s, portfolio and foreign direct investment occupied the bulk of the foreign exchange flows. (Milesi-Ferretti and Razin, 1996, a: 2)

In this context, *solvency* is defined as a state where a country's "discounted value of the expected stock of its foreign debt in the infinitely distant future is non-positive".⁵ (Corsetti, Presenti and Roubini, 1998: 8) This can be attained through the intertemporal allocation of resources, which is possible via current account adjustment and for a country to be solvent, the present discounted value of trade surpluses (deficits) must be equal to the present level of foreign debt (assets). In other words, as long as the country has the ability to generate trade surpluses some time in future which can pay back foreign debt, the current account deficit may not be considered to be posing a serious problem. In this sense, the solvency condition has been used by economists and policy makers as a justification for persistent current account deficits widely adopted measure and stable foreign debt to GDP ratio is found to be a sufficient condition for solvency. In this framework, it has been argued,

⁵ This implies that a country's foreign debt should not increase faster than real interest rate on its debt.

even a country growing less than world interest rate can generate current account deficit continuously, as long as sufficiently large trade surplus is attained, keeping the debt to GDP ratio stable. (Milesi-Ferretti and Razin, 1996, b: 6)

This brings us to the notion of “*resource gap*”, which is defined as the difference between the current trade balance and the trade surplus required in the future to stabilize the debt to GDP ratio in the long-run. (Corsetti, Presenti and Roubini, 1998: 9; Roubini and Wachtel, 1997: 5) Corsetti et. al. (1998, : 9-10) estimates the resource gap for a group of the Asian countries as the differential between real interest rate and output growth times the given level of external debt. By making some (conservatively low) assumption about the interest rate and growth differential, the authors calculate quite high resource gaps for Korea, Thailand, Indonesia, Philippines and Malaysia prior the 1997 financial crisis ranging from 2.3% to 6.9% as percentages of GDP in 1996.

Nevertheless, the solvency criterion has some flaws. First, the analysis is designed for the steady-state case, which might be valid for some industrialized countries while it cannot be used to evaluate the developing economies with output growth. Second, although the solvency criterion does require a change in the direction of flows in the trade balance from deficit to surplus to finance the debt payments, it does not point at the exact time when the shift from trade deficits to surplus should take place. Hence, it is the *sustainability* criterion that attempts to answer the latter question. What level of current account deficits should signal for trouble? Formerly, an arbitrary level of deficit about 5% of the GDP was accepted in the economic literature to be a threshold. However, with the help of the sustainability analysis, economists found out that current account balances might change from country to another depending on the differences in the variables affecting portfolio decisions and economic growth. (Edwards, 2001: 16-17)

In general terms, *sustainability* is defined as a case where current economic policies can be maintained at the same time fulfilling the solvency condition, that is, by maintaining the ratio of external debt to GDP at stable levels. (Milesi-Ferretti and Razin, 1996, a: 6) Accordingly, adjustment to a particular troublesome situation takes

place without leading to a shift in the current policy stand, which implies that consumption patterns and economic activities do not change remarkably. On the contrary, if current account reversal from a deficit to a surplus takes place as a result of a shift in the economic policies (as evidenced in some countries by a transition to contractionary policies or failure of the exchange rate), this is accepted as an unsustainable position.

Sustainability issue has several dimensions: Milesi-Ferretti and Razin (1996, b) suggest to take into account the “willingness to pay” and “willingness to lend” in evaluating the sustainability of external imbalances. Political concerns might hinder the country’s ability to pay its foreign debt, although the country in question can be potentially solvent. Furthermore, the willingness to lend might rapidly erode, leading to unsustainable positions, as it has already been verified by the loss of lender’s confidence during the latest crisis in South East Asia, Russia and Turkey.

Based on these theoretical considerations, some measures of the sustainability are proposed and evaluated by Milesi-Ferretti and Razin (1996, a, b) comparing Latin America and East Asia in the 1980s and 1990s. These measures have been widely used in empirical research in the evaluation of current account imbalances. Among the various factors related to the structure of the economy, macroeconomic policy, political factors and external shocks, eight indicators are chosen⁶. Accordingly, these are debt-service ratio, ratio of exports to GDP, real exchange rate, savings ratio, fiscal policy, degree of political instability, composition of capital inflows and fragility of the banking system.

⁶ The indicators of sustainability and solvency suggested by Milesi-Ferretti and Razin (1996, b) are as follows: Investment and saving ratios, economic growth, ratio of exports to GDP as a proxy for the openness, composition of external liabilities, financial structure, monetary and exchange rate policy, fiscal policy, capital account policy regime, political economy factors and market expectations. Saving and investment ratios can perform poorly if the investment is allocated by other mechanisms than market. The ratio of exports to GDP should be complemented by an investigation of the commodity composition of trade since larger the export base the better. Interpretation of the real exchange rate is complicated due to several factors. The real appreciation of the exchange rate might be a result of a fixed exchange rate system. Or, it might be induced by substantial capital inflows, by productivity growth in traded goods sector or positive terms of trade shock. As for the capital account, although an open capital account regime is regarded as the country’s commitment to sound economic policies, the open regimes make the countries more vulnerable to external shocks. Therefore, the impact of the capital account should also be handled by care.

Among these indicators, debt-service ratio, ratio of exports to GDP and real exchange rate are found to be indicative. The debt burden was quite high and the real exchange rate has been appreciated prior to the crisis periods, whereas the adjustment to the crisis was successful in countries by higher export to GDP ratios. In contrast, the investment/saving ratios and fiscal policy indicators did not show a significant pattern in the crisis and non-crisis situations.⁷ Finally, the sixth factor, political instability, played an important role in the crisis episodes, as evident in the crisis periods being electoral years on the whole, while the successful adjustment could be carried out by strong governments afterwards.

Closely related to the question of sustainability of the current account balance, the question of whether balance of payments crises and the sharp reversal in the current account balance can be predicted received considerable attention recently. In fact, the idea of *reversal* is derived from the notion of solvency. The reversal is defined as the difference between the trade balance before the reversal and the trade balance required to stabilize the ratio of external debt to GDP. (Milesi-Ferretti and Razin, 1997: 2)

$$REV = tb^* - tb = (r^* - \gamma^* - \varepsilon^*)d - tb = [(r^* - r) - \gamma^* - \varepsilon^*]d - (s - i)$$

where tb and tb^* are the trade balance before the reversal and trade balance that stabilizes the external debt ratio respectively; r and r^* are pre- and post- reversal real interest rate on external debt; γ^* is the rate of growth of economy after the reversal; ε^* is the post reversal rate of real appreciation; d is the ratio of external debt to GDP; s and i are savings and domestic investment to GDP respectively.

This formulation simply says the following. As it is implied by the solvency principle, trade surplus is required if the cost of external borrowing exceeds the growth rate of the economy. Furthermore, the required change in the trade balance from deficit to surplus (reversal) increases higher the initial trade deficit. With a

⁷ In a study by Bascand and Razin (1997: 74), current account developments are shown to be related to the developments in the fiscal balance. From 1970 to 1991, fiscal deficit (surplus) and current account deficit (surplus) go hand in hand in Indonesia. This is particularly due to the relative weight the oil price movements occupy in the two balances.

given initial trade deficit, the size of the required reversal rises with external debt and world interest rate, while economic growth reduces the magnitude of the shift. (Milesi-Ferretti and Razin, 1997: 3)

Using multivariate probit analysis for the data of low- and middle-income countries over the period 1971-1992, Milesi-Ferretti and Razin (1997) find the following: Current account deficit is, itself, significant in explaining the likelihood of the reversal. Openness is a factor limiting the probability of the reversal, while low reserves signal for a likely reversal. The impact of investment is ambiguous, however. Higher investment is a factor that empowers the country to continue to service its debts (decreasing the probability of a reversal), while the output growth generated by the investment demand might induce increase in the current account imbalances (which would increase the likelihood of a reversal.) Moreover, particular pattern in the GDP growth of the countries that experienced sharp reversals in their current account balance could not be captured in this study. (Milesi-Ferretti and Razin, 1997: 12) However, as expected, reversals required export performance to improve, while the growth performance of the country could be poor during the reversal process.

In contrast, Edwards (2001), with the use of a larger data set, shows that reversals do have an impact on investment, and hence, on the economic growth in an indirect way. The departure point of Edwards (2001) is that investment is financed by national and foreign savings and foreign savings determine the current account deficit. Edwards (2001) estimates several investment equations and obtains results that the relationship between the reversals and investment is statistically significant and negative. Therefore, this implies that economic performance of the country is negatively affected through investment channel during a crisis. Other questions asked by Edwards (2001) are related to the links between reversals and crisis. However, the author does not find straightforward answers to this question depending, as he argues, on the definition of the crisis, sample period and the lag structure used in the analysis.

2.1.2 First Generation Models of Balance of Payments Crisis

The origins of a balance of payments crisis has been explored by using different approaches in the economic literature, defined as *the first generation and second generation models*.

The first generation models flourished over Krugman's seminal paper written in 1979, which has been the most celebrated example of these models. According to his model, at the core of the crisis stands the monetary expansion by the government to finance its budget deficit while pursuing a fixed exchange rate regime. In Krugman's model, a country has a pegged currency and the government finances its budget deficit simply by printing money. While doing this, the country slowly loses reserves, which, however, can not continue until the total exhaustion of international reserves. At a point in time around some threshold, a speculative attack to the international reserves emerges as the investors, who foresee that a jump in the foreign exchange would take place whenever reserves are exhausted, attempt to maintain their existing capital.

"...There comes a point when the (balance of payments) problem becomes a 'crisis': speculators anticipating an abandonment of the fixed exchange rate, seek to acquire government's reserves of foreign money. This crisis always comes before the government would have run out of reserves in the absence of speculation". (Krugman, 1979: 319)

Theoretical contribution of the first generation models is many. First, they stress the importance of fundamentals as the causes of a crisis. Second, they very well define the case where crises break out without the government having completely exhausted its reserves. Third, the model proposes that for a central bank to be able to defend its parity, it should be well endowed with sufficient exchange reserves. And finally, it is implied that being able to defend a currency by the central bank is very hard in any case. (Eichengreen, Rose and Wyplosz, 1997: 7-9)

In sum, the first generation balance of payments crisis models explain the crisis as the outcome of the inconsistency between the domestic economic policies and maintaining the fixed exchange rate regime.

2.1.2.3. Second Generation Models of Balance of Payments Crisis

Second generation models flourished in response to the criticism directed to the first generation models. One of the major criticisms was that the first generation models were mechanical due to their assumption that a government only printed money to finance its deficits. In contrast, it is argued that the authorities were endowed with wide range of instruments other than selling foreign exchange to maintain the exchange rate, such as the short-term interest rates⁸ and tight monetary policy. (Krugman, 1997: 3) Hence, this approach offered a new explanation for the causes of balance of payments crises by modeling multiple equilibria and self-fulfilling attacks.

Obstfeld developed this type of models in his well-known paper written in 1994, where he constructed two models in which the government finally responds to market's expectations of devaluation. In the first of these models, the government is obliged to raise the nominal interest rates to very high levels in order to avoid a devaluation. However, as the costs of high interest rates on the government become difficult to bear, the government finally surrenders to allow a depreciation of the currency. (Obstfeld, 1994: 200-206) In his second model, the expectations of a devaluation induce a rise in the wages, which reduces the competitiveness of the country. This implies a rise in the unemployment rate and an accompanying economic recession. Consequently, as in the first model, the devaluation is triggered by the expectations of the market that the government will not be able to endure this aggregate demand shock any longer. (Obstfeld, 1994: 206-210)

⁸ There have been attempts to incorporate the interest rate as a mean for defense in the first generation models as well. One of these studies belongs to Lahiri and Vegh (2000) where interest rate is effective through two main channels. On the monetary side, higher interest rates on domestic liquid assets trigger demand for domestic assets. On the other hand, higher interest rates on government debt instruments exacerbate the public debt burden, which has its own adverse consequences. One of the results of the study is that up to a certain threshold level the rise in interest rates is effective in defending the parity, whereas after that point the adverse impact on public debt dominates and brings the currency crisis ahead. In a similar fashion, authors conclude that raising interest rates is optimal/welfare enhancing only "up to a point".

Second generation models bring into question the expectations and self-fulfilling elements in triggering the crisis. Even in a case of equilibrium in its balance of payments and its fiscal budget, a country may find itself obliged to leave the fixed exchange rate or devalue the domestic currency merely due to a speculative attack. This attack might arise just because of an expectation of depreciation in the future, as people believe that it is getting costlier to defend the exchange rate. Faced with the speculative attack, government raises short-term interest rates. However, this rise in the interest rates may itself distort the macroeconomic balances, by giving way to higher unemployment, lower credits and lower absorption. This in turn will lead to increases in the non-performing loans and serious problems in the banking sector. Consequently, the costs of maintaining the exchange rate may rise to a point where it is no more possible to carry it. In this case, pessimism itself is the main factor initiating a crisis.

Consequently, these models show that speculative attack is ultimately generated and the fixed exchange rate regime collapses if the investors realize a tension between the intention of the government to abandon the peg and the obligation of preserving it and they believe that the current situation is not sustainable.

According to Krugman (1997: 3-4), three basic elements that together generate a crisis are the following. The first one is a reason to depreciate, the second is a reason to keep the fixed exchange rate regime and the third one is a reason for the expectation of a devaluation to increase the cost of maintaining the level of exchange rate. As a result, this type of crisis, too, is ultimately the outcome of the inconsistencies in the economic fundamentals.

The second generation models were particularly useful for some events in the 1990s. Best example for this type of crisis is the ERM (exchange rate mechanism of the European Monetary System) crisis of 1992 in which a series of devaluations and exit from the ERM took place following the suspension of the British membership from the ERM. Until that date ERM was functioning properly without any intervention for five years, which led to a fairly optimistic vision about its strength and continuance

among member countries. Krugman (1997:9) describes this fairly stable period as follows:

"In all cases, the governments retained full access to capital markets, both domestic and foreign. This meant that they had no need to monetize their budget deficits and indeed they did not have exceptionally rapid growth of domestic credit. (...) they remained able to borrow on foreign markets and indeed clearly retained the ability to stabilize their currencies had they so chosen simply by raising domestic interest rates sufficiently. Finally, all of the target economies had low and stable inflation before and after the crisis."

The first weaknesses of the system came into being in 1992 after the referendum in Denmark about the Maasricht Treaty in which the majority voted against the Treaty. This led to distrust about a common monetary system, which fuelled the pessimism of the investors. (Eichengreen, 1996: 172) The collapse of the sterling came after the investors realized that the UK government was in between choosing domestic employment and, hence, an expansionary monetary policy or maintaining the level of exchange rate.⁹ (Krugman, 1999: 2) After Britain, Italy followed suit. Six months later Sweden abandoned its pegged currency, Spain and Portugal and finally Ireland were obliged to devalue. (Eichengreen, 1996: 174)

In their analysis of the Mexican crisis in 1994, Sachs, Tornel and Velasco (1996) suggest that, apart from the weak fundamentals like appreciated real exchange rate and weak banking system prior to the crisis, self-fulfilling speculative attack played the major role in activating the crisis. According to the authors, there were reasons for devaluation due to these weak fundamentals but it was the self-fulfilling panic that triggered the crisis. The current account balance had begun to widen rapidly in 1994 and the political tensions had climbed up. In addition, there were signs of relaxing the fiscal and monetary policies ahead of the elections. In line with these events, there was alarming capital outflows and a serious depletion in the

⁹ Germany's tight monetary policy conducted in response to heavy expenditures and expansionary policies created by the unification contributed to the recession in Europe at that time. Those countries whose currencies were pegged to DM had to follow Germany by implementing tight monetary policies. (Krugman, 1997: 9)

international reserves. Despite a small devaluation as the government could not roll over its dollar-denominated short-term debt, the investor confidence could not be restored and finally, following another fall in the peso, Mexico found itself in one of the worst economic contraction phases. (Krugman, 1997: 10) Hence, as the possibility of a crisis is realized, the panic spread to neighbouring countries such as Argentina, Brazil and Philippines, leading to self-fulfilling crisis known in the literature as the “Tequila effect”. (Sachs et. al., 1996: 149)

When the successive devaluations in East Asia took place in 1997, neither of the above models could explain the determinants of the crisis. The government’s budget deficits were not significantly large that would signal for a danger. The choice between maintaining the exchange rate and reducing unemployment by expansionary policies was not a concern either. Hence, the self-fulfilling motive did not seem to suffice in explaining the currency crisis. Therefore, the researchers turned on to banking sector to find the possible causes of balance of payments crisis.

2.1.2.4. Further Elaboration on Balance of Payments Crises

A formal model of a third generation model has not been developed yet but there are several attempts at developing new approaches towards understanding the recent currency crisis.

Some of these approaches place the problems related to the banking sector at the core of the arguments. Particularly, the role of various problems in triggering or aggravating currency crises, such as over-borrowing and moral hazard lending of banks driven by the government’s implicit guarantees or a self-fulfilling loss of confidence that leads to early liquidation of investments were explored by the several studies. (Krugman, 1999; Corsetti et. al., 1998 and Kaminsky and Reinhart, 1999) In those studies, weaknesses in the banking system that are associated with the currency crisis were stated as follows: Firstly, the excessive lending of the international institutions to banks without comprehensive risk evaluations deteriorated the quality of the bank loans, as the banks, endowed with large funds competed to extend credits, neglected an extensive evaluation of their customers. Secondly, the government’s hidden or open guarantees became another source of disturbance in the

banking system; by providing shelter for over risky projects undertaken by banks. Thirdly, the short-term nature of the banks' borrowing from abroad was one more factor, which added to the fragility of the banking sector.

Kaminsky and Reinhart (1999) in their analysis of the latest crises in Asia introduce a term "twin crises" addressing the simultaneity of crises in both banking sector and balance of payments, particularly in the 1980s and 1990s. The specificity of the time period suggests that the twin crises were a product of financial liberalization. In their study, they find that the two crises have common origins in weak economic fundamentals and external shocks and both are closely interrelated such that the crisis in one of the fields fosters the other. Despite this interrelationship, however, the authors further argue that the balance of payments crisis does not start immediately due the weaknesses in the banking sector, although banking crises usually precedes the currency crises. Rather than being the source of balance of payments crisis, authors claim that such problems in the banking sector aggravate the latter.

Krugman (1999: 8-10) takes the debates further from its focus on the banking sector problems and suggests that an analysis of the recent currency crisis in Asia should incorporate issues such as "*contagion, transfer and balance sheet problems*". The recent currency crises brought into question how the crisis in one country spread to another, even many kilometres away. Contagion is a case, which generates currency crises due to speculative attacks on other currencies elsewhere, apart from domestic imbalances in the economy.¹⁰

Besides contagion, the transfer problems and balance sheet problems reinforce each other, which together aggravates or sparks of a crisis. The *transfer problem* is defined as the process of generating a surplus in the current account in order to compensate for the capital outflows (either by severe recession or sharp depreciation of the currency, limiting imports and encouraging exports.) This has severe consequences on the real economy as the reversal in the current account balance is achieved

¹⁰ For a survey on contagion literature, see Eichengreen, Rose and Wyplosz (1997: 11-19).

through sharp depreciation, mostly accompanied by severe recession, which in turn reduces imports significantly.

The *balance sheet problem*, on the other hand, appears to be another fundamental way of transmission and strengthening of a currency crisis. The depreciation of the domestic currency increases the value of the foreign exchange denominated debt in terms of domestic currency, which leads to severe losses on firms' balance sheets. Apart from the impact of depreciation on the balance sheet of firms, the declining sales due to the recession in the country makes the matters worse for firms. The weakened financial conditions of firms through this way make it all impossible for them to obtain credit from the banks either. Hence, the reduction in the credits of the banking sector and the resulting surge in the non-performing loans would aggravate the crisis even further. Consequently, through the balance sheet effect, the crises have more sustained and deeper impact on the real economies. Krugman (1999: 11) builds a model of a currency crisis in which a country resorts to depreciation in order to create the required reversal in the current account (*transfer problem*). However, the resulting worsening in the balance sheets of firms due to the depreciation provokes a recession and a further loss of confidence of the investors (*balance sheet problem*).

These models of balance of payments crisis are very useful tools for analyzing the anatomy of crises and deriving policy implications for authorities. The studies on the balance of payments developments as a source of disruptive imbalances provide insight for Turkey, as Turkey faced two severe balance of payments crises in the last decade, and several crises prior to 1980s, which had different roots and causes. Hence, the balance of payments crisis models will be useful analytical tools in the next chapters, when it comes to explain the particular crisis events in the Turkish economic history in 1923-2002 period. In the next section theoretical approaches to the current account of the balance of payments and the empirical regularities as well as the ongoing debates about the determinants of the current account will be explored.

2.2. Theoretical Approaches and Models of Current Account

Until the 1980s, the dominant paradigm in explaining the balance of payments adjustment mechanism rested on the analysis of elasticities of demand and supply of foreign exchange and foreign trade. Classical economists utilized these elasticities and relative price changes under full employment to interpret the changes in exports and imports. The Keynesian economists, however, designed a model to fill the gap left by the classical approach by elaborating on real income, which is not at full employment. It was argued that home and foreign demand and supply elasticities are partial in nature and might be exposed to change during the adjustment process. Therefore, adjustment in the balance of payments is achieved, according to Keynesian view, mainly by changes in exports and imports in response to changes in income both at home and abroad. Consequently, the two approaches prevailed together until 1970s. The role of macroeconomic policies have been analyzed through the famous Mundell-Fleming model in the 1960s and early 1970s, which stated that both internal and external balance could be achieved via policy actions. Later on, new approaches have been developed such as intertemporal model of current account and sustainability approaches in response to changing conditions and complexity of the problems. These issues will be briefly reviewed below.

2.2.1. Elasticities Approach

These models focus on current account balance, but more narrowly on trade balance. They explain the determination of the foreign exchange rate and the external balance adjustment under different foreign exchange rate regimes, namely, freely fluctuating, gold standard and adjustable peg systems, by using demand and supply schedules of foreign exchange and home and foreign demand-supply elasticities of exports and imports. Exchange rate serve as the price that clears the foreign exchange market and by current account adjustment, the changes in exports and imports as a result of changes in relative prices (whether automatic or policy-induced) is meant.

Under freely fluctuating exchange rate system, the adjustment mechanism is automatic. Any deviation from the equilibrium exchange rate will end up with the establishment of the new equilibrium level by the demand and supply forces at work

and resulting depreciation or appreciation of the currency. The general condition¹¹ for the relationship between demand and supply elasticities of foreign exchange and elasticities of exports and imports of goods and services are basically as follows (Stern, 1973: 66):

$$[e_x(\eta_x - 1) / (e_x + \eta_x)] / [\eta_m(e_m + 1) / (\eta_m + e_m)] = (e_f + \eta_f) \quad (1)$$

where,

e_x : home export supply elasticity

η_x : foreign export demand elasticity

e_m : foreign import supply elasticity

η_m : home import demand elasticity

e_f : elasticity of supply of foreign exchange

η_f : elasticity of demand for foreign exchange

This expression implies that, for a given devaluation to improve trade balance of the devaluating country, the expression in (1) should be greater than zero.¹² A special case for this general condition is the “Marshall-Lerner” condition, where it is assumed that the elasticities of supply of exports and imports are infinite and, hence, equation (1) becomes,

$$\eta_x + \eta_m > 1 \quad (2)$$

where η_x and η_m stand for foreign export demand elasticity and home import demand elasticity respectively. This condition implies that in the case of devaluation, this inequality must hold in order for the stability in the foreign exchange market and

¹¹ The full derivation of the expression can be found in Stern (1973: 65-66). All of the elasticities enter positively to the formula.

¹² With a given devaluation, the amount of foreign exchange supplied and demanded will be determined by the elasticity of supply of and elasticity of demand for foreign exchange respectively. When both of these elasticities are high, the export revenues will be larger and the import expenditures smaller, leading to improvement in the foreign balance. In case that exports receipts decline due to inelastic export supply, the trade balance *may* still improve due to greater decline in import payments, if the elasticity of demand for foreign exchange is greater than the elasticity of supply of foreign exchange.

improvement in the balance of trade of the devaluating country to be attained.¹³
(Stern, 1973: 125-132)

Under the gold standard, the adjustment of the external balance took place by movements of gold in response to changes in demand and supply for foreign exchange. In this system, individual countries established a fixed parity for the exchange rate in terms of gold. Domestic money supply was determined by the inflows and outflows of gold, as a result of which adjustments in terms of wages, prices and interest take place and, consequently, equilibrium was restored. (Stern, 1973: 111-112)

If, for example, there was a trade deficit in a country, this implied that imported goods were much higher than exports and the payments were made by exporting gold to the recipient country. This is expected to induce a self-correcting mechanism. With the mint parity fixed the money supply in the country in question contracts as gold is exported, which in turn decreases prices and the money income. The declining prices in the trade-deficit country makes its exportables more attractive for foreigners, whereas, the prices rise in the gold-receiving country and, hence, the cost of imports from that country. Consequently, the trade balance is restored again by this mechanism, which is nothing but the classical “price specie flow model” of David Hume. (Eichengreen, 1996: 25-26)

For the pegged (but adjustable) exchange rate regimes, the determination of the exchange rate is similar to the gold-standard system, with the only difference that gold is not the crucial item that is being exported or imported as the balancing factor. Rather the exchange rate is defended by the Central Bank reserves. As in the gold-standard system, the adjustment is automatic in the sense that the role of the gold-exports/imports now being replaced by changes in international reserves. However, the adjustable peg system has also some features resembling that of freely fluctuating

¹³ However, in reality to estimate price and income elasticities is not easy. There have been significant diversities in the point estimate of elasticities owing to a various factors. Usually the estimations have limitations such as use of multilateral trade flows aggregated across countries and commodities, use of different techniques in the estimation and specification errors. (Marquez and McNeilly, 1988: 307; Arize et. al. 2000: 41-45)

rate system in that the exchange rate could be adjusted to maintain the competitiveness or to resolve some permanent disequilibrium situation.

To summarize shortly, the changes in relative prices, namely, the foreign exchange rate played the major role in eliminating imbalances in the external sector in the classical models. In the meantime, Keynesian model of balance of payments was developed, in which the emphasis shifted to changes in output as the key to attain external balance and foreign trade multipliers in determining the changes in exports and imports. However, the focus was again on trade balance, not on current account balance as a whole.

2.2.2. Keynesian (Income) Approach

Keynesian views gained prominence especially in the interwar period. At the beginning when the *General Theory* (1936) was written, there was no mention and need to incorporate international dimensions in the theory mainly due to the extraordinary insular economic conditions in this period. The economic theories of Keynes had to wait until the World War II to be taken up by Robinson (1947), Harberger (1950) and Meade (1951) to incorporate aspects of exchange rates, international aspects of income determination and international transactions. (Kenen, 1985: 631-633)

Keynesian view of external balance, as is also called the income (absorption) approach, associated the changes in national income with the fluctuations in external balance, namely, exports and imports. Quoted in Letiche (1975: 95), Metzler's views summarize the basic features of the income approach that differentiates it from the others:

"The essence of the new theory is that an external event which increases a country's exports will also increase imports even without price changes, since the change in exports affects the level of output and hence, the demand for all goods. In other words, movements of output and employment play the much the same role in the new doctrine that price movements played in the old"

The basic assumptions behind the Keynesian theory of balance of payments were as follows: Marginal propensities to save and to import are constant. Exchange rate is fixed. Domestic investment is unaffected by changes in foreign trade. As opposed to the assumption of unchanging output in elasticities approach, Keynesian approach started off at national income below full employment levels. This allowed the expenditure switching effects of devaluation to raise domestic output levels. Upon these assumptions, foreign trade multipliers, which show the extent the changes in exports and investment will induce a change in income, are estimated. The multiplier analysis is the innovation of the Keynesian approach.

Some propositions of this approach are as follows. (Kenen, 1985: 647) First, the devaluation of domestic currency is expansionary in the sense that it raises domestic output and reduces foreign output. Following the devaluation of the domestic currency, the demand for domestic good rises whereas the rise in the relative price of foreign good reduces the demand for foreign good. Second, due to the impact of devaluation on output of both the domestic and the foreign countries, the improvement in the trade balance of the devaluating country will be less than the Marshall-Lerner condition would predict. This is known to be the “*transmission problem*” in the literature, which evaluates the impact of changes in the national income of one country upon the balance of trade of another country. The second proposition simply says the following: An increase in country 1’s exports will lead to a rise in the country 1’s income, which will trigger a rise in imports in return. Hence, country 1’s rising imports will contain the initial improvement in her trade balance induced by the initial rise in exports to country 2. (Stern, 1973: 175-185)

Third, a change in exchange rate is an optimal policy response to a spontaneous switch in expenditure and a shift in foreign expenditure. For example, faced with an unexpected shift in domestic expenditures, which increases foreign country’s income and yields a current account surplus in that country, the home country should at best devalue its currency to restore both internal and international equilibrium again. (Kenen, 1985: 648)

Finally, devaluation will not improve a country's current account balance, which has started at full employment, if the demand for domestic goods cannot be reduced. This is the most renowned proposition of the absorption approach. If domestic output cannot be increased following the rise in demand for the domestic good after devaluation, the result will be a price increase in the home country offsetting the positive impact of the devaluation. This proposition, however, ignited another line of study in which the economists searched the way devaluation affects absorption, namely savings and investment. (Kenen, 1985: 648-649) These studies brought on the agenda the effect of demand for real cash balances. Accordingly, alternative explanations suggested that devaluation leads to a rise in prices in the home country by raising the price of imported goods and this raises the demand for real cash balances. The latter stimulates savings, and reduces absorption, resulting in a current account surplus.

Nevertheless, the Keynesian approach to the balance of payments also received considerable criticisms. First of all, it has been argued that it is a restricted approach as it applied only to the depression conditions in the interwar period. Its conclusions are claimed to be plausible only in the case that the income could expand without leading to rise in prices. In practice, it is argued, prices may rise before the full employment level of income is reached due to various factors such as the structure of the production with decreasing returns rather than constant returns to scale or the existence of powerful unions to drive the wages higher. In this respect, the critiques question whether the marginal propensities will remain constant in the case that both the output and prices rise together. (Stern, 1973: 192-195) Furthermore, this approach is often criticized on the grounds that it ignored the implications of the elasticities approach, relationship between foreign and domestic interest rates, influence of exchange rate expectations and the problem of controlling the money supply. (Kenen, 1985: 634) Furthermore, it is argued that the Keynesian approach was a response to the Great Depression and that his suggestion of trade controls to achieve internal stability caused the costs of Great Depression to fall on other open countries. Hence, Keynes is blamed by the proponents of open trade regimes of not laying enough stress on the merits of free trade policies. (Letiche 1975: 98-103)

2.2.3. Keynesian Model of Monetary Approach to Balance of Payments -An

Example: Polak's Model (1957)

In the 1950s and 1960s, there has been an attempt to involve credit and monetary factors in the analysis of balance of payments and income developments, which were neglected until then in the absorption approach. This model was developed by Polak in 1957 and reflected the view that not the monetary adjustment mechanism but the adjustment in real variables accounted for the changes in international reserves. The Polak's model in its basic form is as follows: (Polak, 2001: 6)

$$M_S = kY \quad (1)$$

$$M = mY \quad (2)$$

$$\Delta M_S = \Delta R + \Delta D \quad (3)$$

$$\Delta R = X - M + K \quad (4)$$

where

M_S : money supply

Y : GNP

M : imports

R : reserves

D : domestic credit of the banking system

X : Exports

K : net capital inflow of the nonbanking sector

k : the inverse of the velocity of circulation

m : the marginal propensity to import.

Combining the four equations above, one obtains

$$\Delta Y = 1/k (\Delta D + X + K - mY). \quad (5)$$

In this model, the exogenous variables of ΔD , X , K determine the Y , M and M_S . The domestic credit expansion is considered to be a part of autonomous demand and in case of a domestic credit expansion, income increases, triggering a rise in imports, which eventually leads to a decline in reserves. As this model illustrates, the

monetary implications of domestic credit expansion are neglected during the process of adjustment, as it is assumed that the monetary authorities can use open market operations to offset the monetary impact arising from reserve accumulation or depletion.

2.2.4. Monetary Approach to Balance of Payments -An Example: Johnson's Model (1958)

Around the same years when the Keynesian approach to balance of payments was popular, another approach was developed by Johnson in 1958. (Polak, 2001). In contrast to the negligence of monetary implications in the Keynesian approach, money has been added to the model as one of the determinants of balance of payments developments. The basic motto used by the proponents of this view was that "Balance of payments was essentially a monetary phenomenon." (Polak, 2001: 12).

According to this approach, monetary developments were the major factor that influenced the balance of payments. Hence, any imbalances in the balance of payments would be solved not through adjustment in real variables but through the money markets. For example, under fixed exchange rates, expansion in the money supply by the monetary authority would create excess supply of cash balances and the households would try to exhaust this excess by demanding foreign goods, services and financial assets. In this way, the money supply would flow out the country, output movements restoring the equilibrium in the supply and demand of real balances. Under flexible exchange rates, however, the adjustment is rendered through autonomous change in the level of exchange rates. The domestic money expansion will simultaneously lead to a depreciation of the domestic currency. (Johnson et. al., 2000: 116)

The central assumption behind Johnson's (1958) monetary model is that the foreign exchange inflows may not be sterilized, therefore, it has direct consequences on money supply. In the long-run equilibrium when full employment is achieved, prices settle at world levels and domestic interest rate levels is equalized at world levels, the

consequence of the domestic credit expansion will appear as a decline in reserves.

This long-run equilibrium model of monetary approach is as follows:

$$M_s = kY + qr \quad (1)$$

$$\Delta M_s = \Delta R + \Delta D \quad (2)$$

$$Y = y_f p \quad (3)$$

$$y = y_f \text{ (constant)} \quad (4)$$

$$p = p_w \text{ (constant)} \quad (5)$$

$$r = r_w \text{ (constant)} \quad (6)$$

where

y: output at full employment

p: price level

r: interest rate

Using the above equations, the followings are obtained:

$$\Delta M_s = 0 \text{ and } \Delta R = -\Delta D.$$

Although both Keynesian and Johnsonian approaches end up with the result that the domestic credit expansion eventually leads to decline in reserves, the two views differ in their analysis of where the loss in reserves stem from. The latter view suggests that the decline in reserves corresponds to the excess money in the economy, while Keynesians believe that the corresponding changes in the real variables such as imports lead to a decline in reserves as the money supply gradually builds up. According to the Keynesian view, downward change in interest rates following domestic credit expansion would provoke output, investment and employment and, hence, a demand for imports. However, increase in money supply would be more gradual compared to the increase in domestic demand, as the latter would be provoked rapidly with the perception of a rise in total incomes. Therefore, at any point in time in the economy aggregate demand, instead of increase in unwanted cash balances, would lead to decline in reserves. (Polak, 2001: 15-16)

2.2.5. Mundell-Fleming Model

The idea that governments were able to attain both external and internal balance through various policy means and that the primary objective of the government was to maintain full employment led to the canonical model of Mundell (1963) and Fleming (1962) in the early 1960s. This had very important policy implications under different exchange rate regimes and capital mobility assumptions and in this framework, the balance of payments emerge as a “problem” or a “constraint” in attaining the domestic policy goal. (Frenkel and Mussa, 1985; 680) With the shift to floating exchange rates around 1973s, the emphasis on balance of payments as subsidiary or complementary field in economic policy making shifted to the importance of balance of payments and exchange rates by its own.

Mundell-Fleming model is an extension of the IS-LM model under open economy framework. It is a three dimensional space where the market for goods, foreign exchange and money are cleared to produce pairs of income and interest rates. The model implies that, if the CB does not sterilize the depletion of reserves, capital mobility increases the effectiveness of expansionary fiscal policy under fixed exchange rate, while expansionary monetary policy is ineffective either with capital controls or perfect capital mobility. (Kenen, 1985; 662-669) For example, a policy of tax rate cut, which shifts the IS curve to right will lead to increase in domestic interest rates along with the rise in income. High interest rates will induce capital inflows, financing the current account deficit, which was generated by the expansionary fiscal policy. Hence, reserves and money supply will increase again, interest rates will return to initial levels with income settling at a higher level. However, under fixed exchange rate and perfect capital mobility, increase in money supply will shift the LM curve to right, driving the interest rates down and immediately triggering capital inflows, which in turn will deplete reserves and lead to contraction in money supply. LM curve will return to its position with the interest rates restoring its initial position, hence, with no impact on the income level. (Knight and Scacciavillani, 1998; 6)

On the other hand, under flexible exchange rates with perfect capital mobility, the effectiveness of fiscal policy declines, while the effectiveness of the monetary policy

increases. The expansionary fiscal policy would induce a rise in income along with a rise in interest rates, which will attract capital inflows. This in turn will lead to a significant appreciation of the exchange rate, and, hence, an increase in the current account deficit, fully offsetting the income generating impact of the fiscal policy. In contrast, monetary expansion induces a fall in interest rates, increase in income and a depreciation of the currency. The depreciation of the currency, which is aggravated by capital outflows, provokes exports, increases income further while restoring the initial interest rates at equilibrium.

Mundell-Fleming model has been criticized primarily for being a static analysis. (Knight and Scacciavillani, 1998: 7) The dynamics of foreign borrowing on the current account adjustment is often neglected by assumption. For example, an expansionary fiscal policy (under fixed exchange rates) will initially end up with current account deficit and capital inflows. However, the situation cannot be sustained like that, because the accumulation of debt and consequent increases in interest payments will urge the trade balance to improve in order to pay the foreign debt, which in turn will necessitate depreciation of the domestic currency. In this case, the initial impact of the fiscal policy will be offset. Therefore, Mundel-Fleming model, despite forming a basis of many theoretical contributions, is accused of not reflecting the real world dynamic practices.

2.2.6. Intertemporal Model of Current Account

In the early 1980s, a need to develop another approach to the current account developments has emerged. The former models of the current account, namely the elasticities and income approaches, had fallen short of capturing new issues and problems related to the foreign exchange flows. The most remarkable event in the first part of 1970s was the oil crisis of 1973-1974. With the surging oil prices the current account deficits of non-oil exporting countries had risen substantially and the increased lending to the developing countries had introduced the question of intertemporality of the balance of payments decisions and the sustainability of the current account imbalances. (Obstfeld and Rogoff, 1994: 2)

Consequently, these developments sparked off new line of research in the current account analysis. So, instead of static analysis attempting to investigate the event in the short-term, a dynamic analysis of balance of payments has been developed, which focused on forward-looking dynamic saving and investment behavior as the determinants of current account balance. This tradition of current account models, which were inspired by Sachs (1982) and labelled as the intertemporal model of current account, can be defined as follows:

“The intertemporal approach to the current account analysis extends the absorption approach through its recognition that private saving and investment decisions, and sometimes even government decisions, result from forward looking calculations based on expectations of future productivity growth, government spending demands, real interest rates and so on. The intertemporal approach achieves a synthesis of the absorption (income) and elasticities view, however, by accounting for the macroeconomic determinants of relative prices and by analysing the impact of current and future prices on saving and investment.” (Obstfeld and Rogoff, 1994: 4)

In addition to the divergent behaviour of the current account in industrialized and developing countries in response to the oil crisis as well as large current account deficits accompanied by substantial inflows were the main motives behind this view. It is further argued that Lucas’ most renowned critique of the econometric analysis¹⁴ in 1976, which triggered an interest in advancing the econometric methods, was another factor that contributed to the development of intertemporal models. (Obstfeld and Rogoff, 1994: 6-7)

According to Obstfeld and Rogoff’s (1994) characterization of intertemporal models, consumption smoothing is the mechanism behind the current account fluctuations.

¹⁴ Principally, Lucas demonstrated in his paper “Econometric Policy Evaluations: A Critique” (1976) that econometric models would be useless if the expectations were formed rationally. In many econometric studies at that time the private saving behaviour was taken as structural, meaning that it is invariant to different policy rules. However, Lucas pointed at the adjustment of the private behaviour whenever the policy rules change since the agents do have the probable actions of the government in their information set and hence, behave accordingly. Therefore, the coefficients of the models estimated by the econometric studies become invalid, as the coefficients themselves will be changing in response to the change in the policy rules. (McCallum, 1989: 228-230)

The representative consumer, having a perfect foresight, maximizes a time separable utility function with respect to her intertemporal budget constraint. The budget constraint of the individual implies that the discounted value of her consumption must equal to the present values of income flows including stock of interest earning assets, real wage net of taxes and the real value of securities of the firms. This dynamic process can be translated into equilibrium in a small open economy by assuming that all individuals are identical. Likewise, the economy has a budget constraint and, therefore, the present value of the economy's expenditures must equal its net foreign wealth and present value of domestic production.

2.2.6.1. Intertemporal Model of Current Account in a Small Economy with Finite and Infinite Horizon

In this model, a representative agent has a time separable utility function of the form,

$$U_t = \sum_{s=t}^{t+T} \beta^{s-t} u(C_s) \quad (1)$$

where β is the subjective discount (or time preference factor) and $u(C_s)$ is the utility in each period.

For simplicity, the world interest rate r is assumed to be constant over time. To derive the budget constraint, let us start with the current account identity

$$CA_t = B_{t+1} - B_t = Y_t + rB_t - C_t - G_t - I_t \quad (2)$$

where B_{t+1} is the value of economy's net foreign assets at the end of period t ; Y , C , G and I are gross domestic product, aggregate consumption, government expenditure and investment respectively.

Rearranging (2), one obtains

$$(1+r)B_t = C_t + G_t + I_t - Y_t + B_{t+1} \quad (3)$$

Forward this identity by one period and divide both sides by $(1+r)$ will yield

$$B_{t+1} = \frac{C_{t+1} + G_{t+1} + I_{t+1} - Y_{t+1}}{1+r} + \frac{B_{t+2}}{1+r} \quad (4)$$

Use (4) to eliminate B_{t+1} from (3). Reiterate (4) this time to eliminate B_{t+2} from (3). After repeating the procedure until period $t+T$, the budget constraint is attained as

$$\sum_{s=t}^{t+T} \left(\frac{1}{1+r} \right)^{s-t} (C_s + I_s) + \left(\frac{1}{1+r} \right)^T B_{t+T+1} = (1+r)B_t + \sum_{s=t}^{t+T} \left(\frac{1}{1+r} \right)^{s-t} (Y_s - G_s) \quad (5)$$

However, in this case where the time horizon is finite, the condition that $B_{t+T+1} = 0$ must hold. This is due to that the lenders will require the debts to be paid at the end of the period or likewise, it is not plausible to leave unused resources at the end of life. Therefore, the budget constraint becomes

$$\sum_{s=t}^{t+T} \left(\frac{1}{1+r} \right)^{s-t} (C_s + I_s) = (1+r)B_t + \sum_{s=t}^{t+T} \left(\frac{1}{1+r} \right)^{s-t} (Y_s - G_s) \quad (5')$$

The model assumes that $\beta = \left(\frac{1}{1+r} \right)$. This is a special case, which implies subjective discount factor is equal to the market discount factor and that the marginal utility of the individual in each period is the same. Hence, optimal consumption must be same in all periods. Using (5') maximum constant consumption level is attained as

$$C_t = \left[\frac{1}{1 - (1+r)^{-(T+1)}} \right] \left(\frac{r}{1+r} \right) \left[(1+r)B_t + \sum_{s=t}^{t+T} \left(\frac{1}{1+r} \right)^{s-t} (Y_s - G_s - I_s) \right] \quad (6)$$

Consequently, when $T \rightarrow \infty$ in equation (6), the consumption function becomes

$$C_t = \left(\frac{r}{1+r} \right) \left[(1+r)B_t + \sum_{s=t}^{t+T} \left(\frac{1}{1+r} \right)^{s-t} (Y_s - G_s - I_s) \right] \quad (6')$$

This implies that the aggregate consumption level of the economy equals the total discounted income streams net of government spending and investment. Inserting equation (6') into basic current account identity (2) and defining net output as $Z_t = Y_t - G_t - I_t$, the following equation is attained.

$$CA_t = Z_t - \left(\frac{r}{1+r} \right) \left[\sum_{s=t}^{t+T} \left(\frac{1}{1+r} \right)^{s-t} Z_s \right] \quad (2')$$

The equation (2') implies that the current account position is linked to the discounted value of net output in future periods. This implies that if the economy is expected to be bright in future, the current account will be in deficit.

Next define the a permanent level of a variable X on date t by

$$\sum_{s=t}^{\infty} \left(\frac{1}{1+r} \right)^{s-t} \bar{X}_t = \sum_{s=t}^{\infty} \left(\frac{1}{1+r} \right)^{s-t} X_s, \text{ which reduces to}$$

$$\bar{X}_t = \frac{r}{1+r} \sum_{s=t}^{\infty} \left(\frac{1}{1+r} \right)^{s-t} X \quad (7)$$

Inserting consumption function (6') into current account identity (2) and using (7), one arrives at the basic current account identity of the form

$$CA = B_{t+1} - B_t = (Y_t - \bar{Y}_t) - (I_t - \bar{I}_t) - (G_t - \bar{G}_t) \quad (8)$$

If the model is extended to infinite horizon, current account can be represented as follows:

$$CA = B_{t+1} - B_t = (r_t - \bar{r}_t) B_t + (Y_t - \bar{Y}_t) - (I_t - \bar{I}_t) - (G_t - \bar{G}_t) \quad (9)$$

where r_t and $\bar{r}_t$ are the world interest rate and the permanent value for the world interest rate respectively.

Hence, the adjustment of the economy through the current account and consumption smoothing takes place as follows. If the world interest rates are higher than its permanent value and the foreign assets of the economy surpass its liabilities (that is, the economy is net foreign assets claimant), the current account registers a surplus, as people prefer to postpone their consumption into future to take advantage of the higher world interest rates by lending to foreigners. (Obstfeld and Rogoff, 1994: 12) Furthermore, if, for example, the permanent output is greater than the actual output, the people will decrease their saving in order to keep their level existing consumption; hence, a current account deficit will take place. Likewise, temporary shifts in the government expenditure and investment in excess of their permanent values will cause current account deficit. This is due to the increase in foreign

borrowing to finance these expenditures and investment, which leads to current account deficit. Note that only temporary changes in the related variables lead to changes in the current account balance. Permanent changes lead to an equal amount of change in the level of both permanent and actual variables, which does not affect the level of current account. (Obstfeld and Rogoff, 1996: 10-11) In one of the early studies of Sachs (1982) this feature of the intertemporal optimisation framework has been made clear.

The intertemporal approach has been extended and applied to many interesting topics, investigating the probable reasons for current account fluctuations under different assumptions and settings. As a result, a vast literature has accumulated based on the intertemporal approach both theoretically and empirically.¹⁵ One of the often-cited articles in this area belongs to Edwards (1987) where the author attempts to investigate real exchange rate determination in response to tariffs and terms of trade shocks. Likewise, in an attempt to investigate the impact of tariffs on employment and current account balance under flexible exchange rates, Sen and Turnovsky (1989) also apply intertemporal optimization and consumption smoothing approach to illuminate the dynamics of employment, capital accumulation, terms of trade and output. Tornell and Lane (1998), on the other hand, uses consumption smoothing model to evaluate the impact of the fiscal policy on the current account balance.

2.2.6.2. Some Limitations of the Intertemporal Approach

The theory of the intertemporal approach of the current account formed the basis of the widely accepted view that continuous current account deficits might not be a problem as long as the deficit country could go on borrowing from abroad. This assessment is based on the presumption that new investment opportunities required

¹⁵ For the survey of testing of the models, see Obstfeld and Rogoff (1994: 53-59) In some studies, whether the countries obey the consumption smoothing process, in line with what the theory predicts is tested. In this respect, long-term/permanent current account path is predicted through various econometric methods in order to compare it with the actual values. The deviations of the constructed values from the actual can be used to test either whether the consumption smoothing holds or to evaluate the excessiveness of the current account deficit. See, Kim, Hall and Buckle (2002) for New Zealand's case, where the authors argue that the country smoothed consumption optimally, satisfying the solvency criterion and the fluctuations in the current account was not excessive for 1982-1999. For Turkey, the same questions have been examined by Selçuk (1997), where he concludes that there is no consumption smoothing in the Turkish economy in 1987-1995 period.

foreign borrowing and, hence, a deterioration in the current account balance, which could be offset in the future by trade surpluses and the accrual of the yields from these investments. However, in practice, even at comparably lower debt to GDP ratios than implied by the theory, the countries faced problems, as it was most notably reflected in the debt crisis in 1982 in Latin America. According to Obstfeld and Rogoff (1994: 14), the allowance of very high levels of debt to income ratios of the intertemporal approach was due to three basic flaws of the theory. Firstly, agents with finite lifetimes weaken the model's predictions based on the ability to borrow according to the whole present value of the economy's future output. Secondly, the model does not incorporate sovereign risk. And thirdly, fixed interest rate assumption can be misleading in many occasions.

In line with the above theoretical shortcomings, there have been some flaws in the empirical testing of the model as well. The problem arises especially in the estimation, or construction of the permanent values of output, government spending and investment. The results might differ enormously in the choice of the real interest rate to discount the expected values of these variables to reach their permanent levels. Furthermore, in addition to the complexities based on real interest rate, time series process of generating the empirical values for the permanent level of variables using the actual data might add to the sensitivity of the relationship between actual and permanent levels. (Obstfeld and Rogoff, 1994: 51-53)

As a result, despite some flaws, intertemporal approach has been useful in analyzing the current account dynamics and paved the way to the development of "sustainability" questions, which focused on the sustainable level of current account deficits consistent with the solvency position of the country.¹⁶

2.3. Empirical Research on Current Account Balance and Its Relationship with Economic Growth

The interest among the economists in the current account imbalances especially in the last few years led to a wide range of studies on different aspects of the current

¹⁶ This issue has already been examined in the *Section 2.1.2.1*.

account behaviour. Especially, as already mentioned in the previous sections, the efforts concentrated mostly in understanding the relationship of the current account balance with a probable macroeconomic crisis. In this context, some studies attempted to unravel which of the macroeconomic variables determined the changes in the current account balance and another line of research tried to foresee the probable imbalances in the current account to predict the likelihood of the collapses in the economy.

In the light of the theoretical approaches already introduced in Section 2.1 and 2.2, I will try to present in this section an overview about the factors underlying the current account balance of a country and the unresolved debates revolving around these factors in the recent economic literature. The list of variables in different studies and the estimated signs of their relation with respect to the current account deficit are displayed in tables attached to the end of this chapter. As can be observed immediately, the effect of macroeconomic variables on the current account is not a settled issue. Different studies reveal different and sometimes conflicting outcomes. Hence, this section presents the miscellaneous explanations for current account adjustment, which contain at the same time the clues to highlight the current account behavior and adjustment in Turkey.

2.3.1. Determinants of the Current Account: Domestic Factors

Domestic Output Growth: There are competing views on whether domestic output growth will improve or deteriorate the current account balance. Some economists argue that the economic growth leads to higher deficits whereas others claim that it may lead to current account surplus as well. This disagreement has several reasons: First, the sources of growth might lead to different outcomes. For example, if economic growth is more associated with an increase in investment rather than an increase in the saving rate, this might lead to deterioration in the current account balance. (Calderon, Chong and Loayza, 2000: 14) From an intertemporal point of view, growth resulting from increase in the productive capacity and investment implies sustainable external debt solvency in future and, hence, this may allow for persistent deficit in the current account balance. This line of thought can be found in Milesi-Ferretti and Razin's papers (1996, a, b).

However, whether the rise in the productivity is permanent or temporary has different consequences on the current account balance. If the productivity increase is permanent, the resulting increase in investment and consumption will lead to a worsening in the current account, whereas the temporary productivity shock will lead to a rise in current national income, but will not induce investment. In this case, people will smooth their consumption between present and future by saving more today and, hence, this will result in a current account surplus. (Glick and Rogoff, 1995: 164-165)

Similar arguments can be found in Chinn and Prasad (2000: 10). The authors argue that the effect of GDP growth rate on current account deficit is ambiguous due to the perception of the households of the GDP growth rates. If the GDP growth rates are associated with an increase in the permanent income, then the savings could diminish, as suggested by the life-cycle permanent income hypothesis. On the other hand, if the growth rates are interpreted by the households as transitory, then the savings may actually rise, improving the current account balance. In addition to these effects, to what extent the economic growth will lead to investment complicates the picture further and the net of those forces cannot be determined beforehand.

Following the above reasoning, Chinn and Prasad's (2000) regression results¹⁷ indicate that the GDP growth will account for smaller current account deficit for industrialized countries, which is empirically different from the evidence put forward by others suggesting income growth leads to current account deterioration.¹⁸

¹⁷ Chin and Prasad (2000) regress current account to GDP on a set of exogenous variables through cross-section OLS and panel approach, using 18 industrial and 71 developing countries for 1971-1995.

¹⁸ Furthermore, in this study the ratio of developing countries' GDP per capita to that of advanced countries' (namely, the US) per capita income is used as one of the determinants of the current account balance. This is to capture the "stages of development" effect. Stages of development hypothesis claims that countries which lag behind the advanced/industrialized countries have to register current account deficit during their process of industrialization and development as the developing country has to import capital as well as to borrow extensively and attract capital inflows. The developed countries, on the other hand, produce current account surpluses as they import capital to developing countries. However, empirical findings of Chinn and Prasad (2000: 7-8) do not validate this argument.

Corsetti et.al. (1998) and Freund (2000) find similar evidences in favor of positive relationship between output growth and current account deficits. Corsetti et. al. (1998) shows that, despite the widely held belief that output growth is an indicator of sustainability, his sample of Asian countries which collapsed in late 1990s registered very high growth rates and current account deficits prior to the financial crisis.¹⁹ Likewise, for a group of industrial countries, Freund (2000) shows that the rate of growth of income and current account deficit increases together and that simultaneously the rate of growth of income slows down while the current account deficit starts to improve during the adjustment phase.²⁰

Savings and Investment: Starting from the national income identity, current account can be defined as savings minus investment. In the empirical studies, which focus on the relationship between current account balance and saving-investment, it is shown that the current account deficit rises as savings, whether public or private, decrease and investment increases. On the other hand, although the negative impact of investment on the current account balances is a widely agreed view, Milesi-Ferretti and Razin (1997) claims that the net effect may not be straightforward. They argue that high investment may, apart from increasing imports of intermediate and capital goods, act as a factor increasing the credibility of the country, which will help extend its foreign borrowing. Capital flows in turn may worsen the current account balance further by relaxing the financing constraint. On the other hand, the deficit in the current account may be offset by a rise in exports, which is likely to increase due to productive capacity that is generated by investments. Therefore, it is argued that which of the effect will dominate is not clear-cut.

However, Corsetti et.al. (1998), in the light of the recent Asian financial crisis, approach with caution to the widely-agreed view that current account imbalances

¹⁹ The sample consisted of Korea, Indonesia, Malaysia, Philippines, Singapore, Thailand, China and Taiwan. In the 1990s, GDP growth rates around 7% and at times surpassing 10% were common, whereas current account deficits were on the average persistent and high during the same period. In Thailand the current account deficit to GDP was 8%, whereas for Malaysia, Philippines and Korea, this ratio was around 5% in 1996. (Corsetti et. al., 1998)

²⁰ Clarida and Prendergast's paper (1999) also reveals worsening in the current account balance for G3 countries (United States, Germany and Japan) in response to domestic income growth for at least several quarters.

resulting from the rise in investment is more preferable to current account deficits resulting from the fall in savings (namely, higher consumption). In fact, the evidence about the Asian countries in the 1990s show that these countries registered incredible rates of investment prior to the crisis, surpassing 40% of their GDP. Why, then, these countries collapsed, if high investment rates were one of the conditions of the sustainability? Two reasons are suggested: First, the sectors which these investments are directed to matters. That is, investment in the traded sector will induce higher FX revenues as compared to investment in non-traded sectors. Second, the return from the investment should be at least as much as the cost of borrowing. In contrast, the investment projects in Asia were mainly concentrated in very costly and unproductive projects in the non-traded sectors (such as huge construction boom, speculative investment in land and real estate), which in turn was one of major reasons impeding the country's external debt repayments. (Corsetti et.al. 1998: 13) Therefore, the evidence suggests that the investment position of a country should be considered with caution especially, as an indicator of sustainability.

Freund (2000) presents another interesting finding in the relationship of saving and investment with the current account balance for a sample of 25 industrialized countries during 1980-1997. Defining reversal and adjustment rules for the current account balance, she examines the pattern of various macroeconomic variables. Related with savings and investments, the study reveals that the deterioration in the current account balance in the industrialized countries is due to fall in savings (meaning that the current account imbalances result from rising consumption activity) instead of rising investment. In contrast, fall in investments acted as an adjusting factor during the adjustment period following the highest current account deficit. (Freund, 2000: 13)

Using a panel data set of 44 developing countries during 1966-1995, Calderon et.al. (2000) estimate the determinants of the current account balance. Differentiating between public and private savings, the authors conclude that the association of the current account balance with public savings is negative and is strongly significant while only marginally significant with the latter. Also based on the finding that the coefficient of the public savings is three times the coefficient of private savings, the

authors propose that the public savings are a useful policy option if immediate improvement in the current account is required.

One of the conventional views regarding the public/private savings is that the fall in public savings is considered more detrimental to the economy compared to the fall in private savings. (Corsetti et.al., 1998: 16) The rationale behind this view is that the decline in the public savings is interpreted as reflecting some structural shift, which in most cases result in mounting external debt. On the other hand, the fall in the private savings are believed to be only temporary, since, as already explained above, this fall in savings of the households might result from the expectations of higher output growth and, hence, permanent rise in the national income.

However, this idea cannot be validated by empirical data. Corsetti et.al. (1998: 17) brings forth some conflicting examples, where current account deteriorated despite budget surplus (as in Chile in 1977-81) and fall in the private savings was as much harmful as the fall in public savings (as in Mexico before 1994 crash). The latter case in which the consumption boom was a consequence of liberalization of domestic markets and optimistic expectations has some similarities with the case of Turkey during 2000. The record high current account deficit for Turkey reaching 4.9% of GDP was triggered predominantly by consumption drive (i.e., fall in private savings) which was mainly the consequence of the exchange-rate based stabilization program and over optimistic expectations regarding the economy. As a result, the private agents' behaviour had a drastic consequence and eventually the current account deficit of Turkey became unsustainable in February 2001, leading to a economic regime shift from predetermined exchange rate to a floating rate exchange rate system.²¹

Budget Deficit (Twin Deficit Debate):

One of the most controversial issues in the current account adjustment is the "twin deficit" debate, which claims that there is a positive correlation between the fiscal deficit and the current account deficit. Milessi-Ferrett and Razin (1996a, b, 1997),

²¹ This issue will be dealt in more detail in Chapter 3.

Chinn and Prasad (2000) and Enders and Lee (1990) find evidence in favour of the idea whereas Freund (2000) and Corsetti, et.al. (1998) detect a weaker support for the direct correspondence between the two factors, although they believe that budget deficits are one of the major determinants of the current account imbalances. Therefore, one of the ways that the current account deficit to be eliminated is to impose new taxes (or increase in the tax rates). This will reduce budget deficit and private spending (namely, imports of goods and services) and divert the domestic production for exports. Consequently, the current account imbalances will be corrected through this mechanism. (Enders and Lee, 1990: 373)

However, Ricardian Equivalence Hypothesis (REH) formulated by Barro (1974) says that government deficit does not affect current account balance. The basic REH objection to the idea that current account and budget deficit move in the same direction is due to the assertion that private agents might not respond as predicted. In the case of increasing fiscal deficits, if the private agents believe that the deficits today will be compensated with higher taxes in future, then the private savings today will not fall but rise, fully neutralizing the impact of the public deficits. Thus, there will be no effect on the current account. This is called the “debt neutrality” of Barro (1974).

On the other hand, there are numerous studies that found evidence contrasting the REH framework. In work of Corsetti et. al. (1998), the aforementioned Asian countries showed high saving rates in the 1990s, despite low fiscal deficits or persistent fiscal surplus. At first sight, fiscal data seemed not to provide evidence in favor of the twin deficit. However, authors argue that the *likelihood* of the fiscal deficit itself played an important role in the current account imbalances. In the particular case for Asia prior to crisis, the banking sector's non-performing loan stock had started to increase in the 1990s, leading to the expectations that the likelihood of eventual take-off of the financial sector losses by the government have been increasing. The expectations that a policy shift (either in the form of financial sector restructuring or a change in the foreign exchange regime) to take place was one of the major causes of the current account imbalances and currency collapses in

Asia.²² As a result, as these studies indicate, the twin deficit argument has not been resolved so far and finds more support among the researchers than its opponents.

Financial Deepening:

In some studies, monetary and credit expansion are used as indicators of financial deepening in a country. There are alternative views about the impact of financial deepening on the current account balance. Primarily the arguments focus on the channel through which the effects of the financial deepening or the sophistication of the financial system pass on to current account balance. These channels are the investment and the saving. More formally, monetary expansion is expected to bring down interest rates, which will induce more investment and, consequently, lead to a worsening in the current account balance. Behind this argument lies the assumption that the monetary expansion has no effect on savings. However, financial deepening can incite more savings as well. Then the net effect of these two factors would be ambiguous. Chinn and Prasad (2000: 9) find significantly positive relationship between the improvement current account balance and financial deepening for a sample of developing countries, concluding that private savings channel is a more dominant factor in determining the current account balance compared to investment. In contrast, Calderon et. al (2000: 14) suggest that financial deepening leads to a worsening in the current account balance in the developing countries.

Inflation:

In the analysis of current account balance, inflation is referred to as an indicator for volatility and uncertainties in the economy. (Calderon et. al, 2000; Corsetti et. al. 1998) It is presumed that existence of uncertainties and instabilities created by inflation will provoke precautionary and saving motives while lowering investment, thereby, improving the current account balance. Furthermore, Corsetti et. al. (1998: 18) stress that high inflation rate can be one of the causes of the collapse of the fixed exchange rate regimes by leading to appreciation of the exchange rate and hence, is one of the good indicators for the sustainability of the current account.

²² Similarly, Freund (2000: 11) cannot obtain a general rule linking current account deficit to fiscal deficits for industrialised countries. However, in the adjustment phase when current account deficit improves, the author observes that in many countries fiscal consolidation took place. Furthermore, in Indonesia the fiscal balance and the current account moved together until 1990 since 1970s, however, deviated after that date.

Capital and Foreign Exchange Controls:

Capital and foreign exchange controls involve different practices such as payments for capital transactions, multiple exchange rate practices and restrictions on current account transactions. The degree of capital and foreign exchange controls determine the foreign financing availability, among other factors. Therefore, capital controls increase the cost of borrowing from abroad and limit the magnitude of capital inflows into the country and the foreign credit constraint forces smaller current account deficits or current account surpluses.

However, empirical studies show that the impact of these measures on the current account balance is not easy to detect and these indicators do not significantly explain current account behavior. (Chinn and Prasad, 2000; Calderon et.al. 2000) Only Calderon et.al. (2000) finds black market premium to be statistically significant, albeit its impact is economically small.

Political Instability:

Political factors are very crucial in the developments related to the current account balance. Political factors affect current account through various ways. First, it shapes expectations of the investors. For example, in a politically unstable environment the investors would expect sudden policy reversals, which would hamper the availability of foreign credits or substantial capital outflows. This may have a limiting effect on the current account deficit, as the financing of the current account balance would be restricted. However, another impact of the instability and loss of confidence of the investors can be reflected as a decline in the revenues obtained from exports and services as well as unrequited transfers. This was felt very clearly in Turkey in 2001 following the financial crisis. Uncertainties in the economy due to political reasons kept the exporters from bringing their export revenues to the country and the workers abroad from sending their remittances to their relatives at home. This contributed to the deficit in the current account balance.

Second, government actions, policies are reflected on the current account balance through their effect on the budget deficit. The government might be too powerless to

take necessary measures in response to a sudden shock or to cope with macroeconomic imbalances. It may also be unwilling to implement those measures due to populist concerns. In such cases, increasing budget deficits might have adverse effect on the current account balance as described in the previous sections.

The country cases, which had high current account deficits and faced currency crisis especially in Asia and Turkey, show that the financial collapse was preceded by political disturbances. The political disturbances involved variety of cases from cabinet changes, government falls, elections, resistance to structural reforms and labor strikes to tensions with the relations of the country with the IMF.²³ In the empirical research, these disturbances are reflected by some of the indicators such as “historical frequency of changes in government, (attempted or realized) coups, measures of industrial conflict, degree of support of the government in Parliament, the party composition of government and the timing of elections.” (Milesi-Ferretti, Razin, 1996, b: 16) Consequently, evidence suggests that the relationship between the political instability and a probability of an external crisis is quite strong.

Demographic Profile of the Population:

In addition to the set of the indicators explained above, demographic profile of the population is tested by Chinn and Prasad (2000), measured as the ratio of the dependent population to working-age population. This indicator is proposed as a proxy for savings as demographic properties are one of the major determinants of the saving structure of a country. Accordingly, the bigger the ratio of the dependent population, the lower the savings, affecting the current account balance negatively. Hence, the authors find the indicator as statistically significant especially for industrial country groups and find a relatively weaker relationship for the developing countries.

²³ For a more detailed information on country cases and the impact of political instability on current account balances, see Corsetti, Pesenti and Roubini (1998).

2.3.2. Determinants of the Current Account: External Factors

Degree of Openness:

Measures used as indicators of openness or outward orientation is a highly disputable subject.²⁴ Despite the problems inherent in the specification of these variables, studies examining the current account behavior often look at the ratio of the sum of exports and imports to GDP or solely the ratio of exports to GDP as an openness indicator.²⁵ Accordingly, higher current account deficit is expected in relatively more open economies as more open economies can attract more foreign capital, which increases consumption, investment and interest payments increasing the outflows through current account balance.²⁶

Terms of Trade:

Terms of trade shocks (as defined by sharp decline in the price of exports to price of imports of a country) affect the current account balance negatively. From a Keynesian open economy framework with a single good and absence of international capital mobility, the fall in income due to the temporary terms of trade shock will lead to fall in savings, weakening the current account balance. This effect is known in the economic literature as the Harberger-Laursen-Metzler (HLM) effect. Empirically,

²⁴ For problems related to measurement of openness and alternative measures, see Dollar (1992), Frankel and Romer (1999), Sachs and Warner (1995), Balassa (1985), Edwards (1998) and Rodriguez and Rodrik (2000). Dollar (1992) constructs a cross-country index of real exchange rate distortion that measures the extent of which the real exchange rate is distorted away from its free trade level by the trade regime. Frankel and Romer (1999) point at the fact that trade policies are likely to be correlated with other factors in the economy and that trade share in national income, which is usually used as an exogenous variable, may itself be endogenous. Therefore, the authors obtain an instrumental variable to substitute for trade, which are the geographic characteristics of the country. These include country's size, distance from each other, whether they share a border, etc. Sachs and Warner (1995) point at the difficulties of distinguishing growth effects of trade, as trade reforms are almost exclusively accompanied by much broader range of reforms from fiscal to privatization policies. Finally, Rodriguez and Rodrik (2000) suggest that trade effects should be investigated on a more disaggregated and micro level instead of via generalized cross-section studies. These studies may include comparisons between small versus large countries, with comparative advantage in manufactured goods versus primary goods, in periods of recession versus booms and trade and firm performance.

²⁵ See Corsetti et. al. (1998), Calderon et. al (2000), Chinn and Prasad (2000) and Milesi-Ferretti and Razin (1996, a, b) for a discussion on the impact of openness on current account.

²⁶ Calderon et. al. (2000) finds that a temporary increase in exports to GDP ratio decreases current account deficit in developing countries as the impact coming from reducing the trade deficit offset the deficit increasing effect coming from other components of the current account.

the negative relationship between the terms of trade and the current account deficit has been verified by various researches.²⁷

However, the impact of terms of trade variation on current account balance becomes ambiguous, once the model is extended from a single-good model to a three-good model, involving importable, exportable and non-tradable goods. (Cashin and McDermott, 1998) In this setting, not only income effect but also substitution effect plays a significant role, offsetting the increase in the current account deficit due to adverse terms of trade movements.

The authors differentiate between three effects of transitory adverse terms of trade shock on the current account balance. The first one is the consumption smoothing or the HLM effect, leading to a decline in current income with respect to future income. Second is the consumption-tilting effect due to a rise in the current price of importables compared to future price of imports. The third effect is the real exchange rate effect, operating through the rise in the price of tradables (namely, importables) with respect to non-tradables. The mechanism, which the latter two substitution effects induce a rise in savings, and hence, a reduction in the current account deficit, is as follows: In the consumption-tilting effect, current consumption becomes more expensive relative to future consumption through the temporary rise in the price of importables, implying a rise in current aggregate saving and, hence an improvement in the current account balance. In the real exchange rate effect, however, the people shift to non-tradables as tradables are now relatively more expensive and this temporary real appreciation translates into a rise in the general price level, again making current consumption more expensive. Hence, the impact on the current account depends on which of three effects will dominate. Accordingly, the authors in their study using data for five OECD countries for 1970-1990 period, cointegration and generalized method of moments estimation find that terms of trade shocks

²⁷ Calderon et. al. (2000), Corsetti et. al. (1998), Milesi-Ferretti and Razin (1996, a; 1997). For a relationship between current account balance and the volatility in the terms of trade, see Chinn and Prasad (2000: 10). In this study, developing countries current account surplus is larger the higher is the terms of trade volatility. This is due to economic agents' lower consumption and investment, triggered by precautionary motives.

generate significant intertemporal substitution effects, offsetting to some extent the impact of income effect. (Cashin and McDermott, 1998:8-9)

Real Exchange Rate Appreciation:

The real exchange rate appreciation is associated with an increase in the current account deficit. However, whether the current account deficit triggered by the real exchange rate appreciation will be unsustainable is a disputable issue among the economists. The difficulty in analyzing the impact of the real exchange rate appreciation arises from the different origins of the appreciation, which requires different interpretation. For example, most common question asked in this regard is whether the appreciation of the exchange rate is driven by economic fundamentals such as the productivity growth in the tradables sector with respect to non-tradables or by misalignment in the exchange rate. (Milesi-Ferretti, Razin, 1996, a: 23-24; Corsetti et.al. 1998: 19-22) In terms of the latter, the real exchange rate appreciation might correspond to “inconsistency between monetary and exchange rate policies, effects of inflation inertia or the imperfect credibility in the context of an exchange rate based stabilization program”, which endangers the sustainability of the persistent current account deficit. (Milesi-Ferretti, Razin, 1996, a: 23)

It is usually the case that the authorities defend the domestic currency (typically in the exchange rate based stabilization programs) through high domestic interest rates (or capital controls). Real Appreciation of the domestic currency provokes consumption and, partly, investment (due to fall in the cost of imported inputs), which is reflected in the rise in imports. On the other hand, appreciation of the currency might be realized as declining exports as well, which altogether weakens the current account balance.

It is generally accepted that current account deficit triggered by real exchange rate appreciation due to capital inflows, which turn into investment and productivity gains, is sustainable. However, if the capital flows are motivated by short-term profits and are quite volatile, then the appreciation of the currency is considered to be hazardous for the current account balance. Nonetheless, it is almost impossible to

distinguish clearly the origins of the real exchange rate appreciation and, hence, its impact on the sustainability of the current account deficit.

Despite the difficulties in the evaluation of the appreciation of exchange rate as an indicator of sustainability, the empirical studies verify a positive relation between the two variables. Clarida and Prendergast (1999: 6), in their study on G3 countries, namely, United States, Germany and Japan, find that real appreciation of the exchange rate leads to deterioration in the current account balance and the deterioration continues for at least several quarters. In the paper of Calderon et. al. (2000), the estimated direction of the relationship between the two variables for developing countries is significantly positive. On the other hand, in her analysis of the current account adjustment in industrialized countries, Freund (2000) detects that the real depreciation of the domestic currency is not reflected as improvement in the current account balance immediately but comes with a lag. She suggests this finding as evidence in favour of J-curve effect.²⁸

Industrial Countries' Growth Rate:

The industrial countries' growth rate has a positive impact on the current account balance of a country mainly through increasing demand for its exports. Calderon et. al. (2000) find robust results supporting this relationship for developing countries, whereas Milesi-Ferretti and Razin (1997) shows that the reversal in the current account (implying a narrowing of the deficit) corresponds to the time when the OECD (namely, major export markets of developing countries) growth rates are high. Furthermore, Clarida and Prendergast (1999), detect the persistence of the positive impact of world growth on their sample of G3 current account balance. They conclude that improvement in the current account balance continues for at least several quarters.

²⁸ The current account may initially worsen before improving, in response to real depreciation in exchange rates, which is known as the "J-curve effect". The reason for the trade balance to deteriorate in the short run stems from slow adjustment of the volume of imports and exports in response to the depreciation.

World Interest Rate:

World interest rate is used as a measure of cost of external financing and an indicator showing the likelihood of capital arrivals into the country. The research posits a negative relationship between the current account deficit and world interest rates. On the demand side, higher international interest rates increase the cost of international funds, limiting the capital inflows to the borrowing country. As already mentioned above in the *capital controls* section, limited capital flows would necessitate lower current account deficits. On the supply side, lower international interest rates may induce the creditors to lend to developing countries to take advantage of profitable investments.

Among the studies that examined the relationship between current account balance and international interest rates, Milesi-Ferretti and Razin (1997: 9) find that reversals (that is, improvement in the current account deficit) in the developing countries take place after a period of high real interest rates in the industrialized countries. Negative relationship between international interest rates and current account balance is also verified by Calderon et. al. (2000). Looking at the issue from a different side, Freund (2000: 10-11) examines the correlation between domestic short-term interest rates and the current account deficit. According to her study, highest current account deficits take place when the domestic short-term interests were increased (implying that the gap between domestic and international interest rates increases) and after the reversal in the current account, domestic interest rates are down again.

Other Capital Flows Related Items: Net Foreign Assets and Net International Investment Position

In addition to above-mentioned external variables as determinants of the current account balance, two of the studies use two specific variables, namely the (initial) net foreign assets (Chinn and Prasad, 2000) and the net international investment position²⁹ (Freund, 2000). These are proxies for the capital flows to the country and hence, the foreign liabilities. According to the intertemporal theory of current

²⁹ According to the Balance of Payments Manual of the IMF (1993), the international investment position is the balance sheet of the stock of external financial assets and liabilities in a country. Standard components of the international investment position are the assets and liabilities of a country in terms of direct investment, portfolio investment, other investment including trade credits, loans, currency and deposits.

account, net foreign assets, are negatively related to the current account deficit. The reason for it is simple: The stock of foreign liabilities today would enforce current account surpluses tomorrow for payments purposes or to stabilize its debt to income ratio. (Chinn and Prasad, 2000: 6) Hence, the authors find evidence supporting this claim for industrial countries. On the other hand, a similar argument is put forward by Freund, suggesting that the decline in the net international investment position and the deterioration in the current account balance in the industrial countries took place simultaneously. Likewise, during some episodes of reversal in the current account balance, a rise in the net international investment position was observed.

2.3.3. Determinants of the Capital Account

In the above section, it has been mentioned that some studies used proxies for capital account to explain current account behavior. Capital flows are the financing means of the current account. However, as the magnitude of and the associated problems with capital flows increased in the last two decades especially in developing countries, the economists focused specifically on the question of the determinants of capital flows.

Basically the determinants of the capital flows were examined in broad categories, namely “push and pull factors”. (Taylor and Sarno, 1997; Carlson and Hernandez, 2002) In this respect, most often asked question is whether the capital flows to a country is triggered by external forces (push factors) such as low world interest rates with respect to recipient country’s rates or domestic/country-specific forces (pull factors) such as government policies, recipient country’s economic growth, etc.

External factors involve elements such as business cycles and interest rates in the developed world. These factors determine the availability of foreign funds that would seek profitable investment especially in the developing countries with higher returns. Domestic factors, on the other hand, are multiple which show the recipient country’s opportunities and risks. Many studies focussed on country’s creditworthiness whether it triggered large capital inflows and reversals or not. Capital controls, regional location, opportunities to use local raw materials, availability of cheap local labour force, openness were some other factors that received concern as the country-specific determinants of capital flows.

Studies further deepened to investigate the possible determinants of different types of capital flows. Credit ratings and secondary market prices were found to be effective in portfolio flows, while stock market returns and domestic GDP growth were crucial in triggering inflows to equity markets. Foreign direct investment, on the other hand, rested mainly on solid institutional framework, availability of local raw materials and cheap and skilled labor force.

In one of the earlier studies on capital flows belonging to Lucas (1990) which triggered a great deal of interest in the economic circles, the question of why capital do not flow from rich to poor countries has been asked. In contrast to what the economic theory predicts, the evidence suggest that the magnitude of capital flowing into poor countries is considerably low compared to capital flows attracted by rich countries.³⁰ Lucas argues that the differentials in labour quality (human capital) and the capital controls were the major impediments to capital flows to poor countries.

In another study, Taylor and Sarno (1997) uses monthly data from 1988 to 1992 for nine Latin American and nine Asian developing countries. Using cointegration techniques and seemingly unrelated error correction models, they conclude that both domestic factors (credit rating and black-market exchange rate premium) and external factors (short- and long-term US nominal interest rates, level of real industrial production in the US) account for bond and equity flows. Bond flows are explained much powerfully by push factors while equity flows are bound to both domestic and external factors equally.

In a similar study, Carlson and Hernandez (2002) use a panel data set composed of annual data for Argentina, Brazil, India, Indonesia, Korea, Mexico, Poland and Thailand in the period 1991-1998. As domestic policy variables, exchange rate regime, capital controls and sterilization measure (as defined by difference in dollar value of domestic credit between two years divided by dollar value of reserves in the same period) are used. Furthermore, changes in the GDP growth rate, interest rate

³⁰ This issue has already been discussed in Chapter I, in *Globalization Issues Section*.)

differentials with respect to international rates and dummy variables to account for regional effects were other variables examined as the possible determinants in this study. The authors differentiated between types of capital flows and examined the impact of those factors on each of foreign direct investment (FDI), short-term debt and portfolio investment. Some of their results are not surprising, though. Both policy and other measures affect FDI. The floating exchange regime appears to be a discouraging factor for FDI, while capital controls induce the countries to make their utmost to attract foreign direct investment. On the short-term capital flow side, the authors find that high levels of sterilization as well as free-floating exchange rate increase the short-term debt. The latter is due to the fact that the long-term investment is not attractive given the increased exchange rate variability. However, some of their results are controversial. For example, they detect no effect of external factors, inflation in the domestic economy and changes in the real exchange rate, which require further investigation.

To the list of the above country-specific factors, Rodrik and Velasco (1999) add financial depth and "corruption and cronyism" as the possible motives for short-term debt. The latter factor has received considerable attention in the recent years, especially after the currency crisis in East Asia, as it was seen as one of the reasons of inadequate internalization of risks. However, the authors find a positive but statistically insignificant relation between corruption and short-term debt.

TABLE 2.1. DETERMINANTS OF CURRENT ACCOUNT DEFICITS: Domestic Factors

Variable	Direction of Relationship								
	Calderon, Chong, Loayza (2000)	Chinn, Prasad (2000)	Freund (2000)	Corsetti, Pesenti, Roubini (1998)	Glick, Rogoff (1995)	Milesi-Ferretti, Razin (1996,a,b, 1997)	Clarida and Prendergast (1999)	Cashin and McDermott (1998)	Calderon, Chong, Zanzi (2001)
Domestic Output Growth	+	- (for industrial countries)	+	+		+	+		+ for whole developing countries sample, - for African sample
Relative Per Capita Income (GDP per Capita/ US per Capita Income)		-							
Country-Specific Productivity Shock (Temporary/Permanent)					+ / -				
Private Saving	- (weakly significant)			-		-		ambiguous / depends on income and substitution effects	-
Public Saving	- (strongly significant)			ambiguous (but affects expectations)		-			-
Investment				+	+	ambiguous			
Budget Deficit		+	ambiguous	ambiguous		+			
Government Spending (Temporary/Permanent)					no				
Liquid Liabilities to GDP (monetary and credit expansion)	+								
Inflation / Volatility in Inflation	-			high expected inflation is an indicator of unsustainability.					- for whole developing countries sample
BOP / Capital Controls	insignificant	insignificant				ambiguous			insignificant
Black Market Premium on Foreign Exchange Rate and Other exchange Controls	-								-
Financial Deepening (M2/GDP)		-							
Demographic Profile (Dependent Population/Working Population)		+							
Political instability				+		+			

CHAPTER III

OVERVIEW OF ECONOMIC POLICIES IN THE 1923-2002 PERIOD AND THEIR RELATIONSHIP WITH BALANCE OF PAYMENTS DEVELOPMENTS

The aim of this chapter is to present an overview of the economy in the 1923-2002 period and to examine the relationship between economic policies and balance of payments in Turkey. The balance of payments has always been at the center of economic policy making with different priorities and importance attached to its different components along with different economic regimes. The balance of payments have evolved through time as a response to different needs and changing conditions and took shape differently under various economic regimes between 1923-2002. Economic decisions regarding the foreign exchange rate, foreign trade and capital movements under different development strategies determined the character and the magnitude of the foreign exchange flows and are associated with the economic growth. Back in the 1930s, current account surplus was a policy goal for development. Between 1950-1955, restrictions on balance of payments were relatively eased (especially on foreign trade) which fuelled economic growth; during 1960s and 1970s, balance of payments was complementary to the development plans. After the 1980s, economic growth became the major determinant of the current account with the liberalization of trade, foreign exchange and capital movements.

This chapter consists of three major sections, each of which corresponds to a sub-period within the 1923-2002 period. Basically, the periodization has been made according to specific development strategy applied in each period. Nevertheless, due to availability of data, the analysis starts from 1926. Therefore, the first period concentrates more on post-1929 period. 1929-1945 was characterized by inward-looking economic policies and two external shocks, namely the Great Depression (1929) and the Second World War (1940-1945). The second period under investigation is 1946-1979, whose characteristic development strategy was import substitution industrialization as it was in the first period. However, this period

differed from the former by increasing integration with the world economy and with more emphasis on import substitution industrialization through the five-year plans that were effective from 1963 onwards. In this period, trade volumes were higher and capital movements assumed an increasing role in the financing of the development plans. The third period, 1980-2002, is the open economy phase, when first trade and finance were liberalized followed by capital movements at a later stage.

However, through each of these three broad periods, the balance of payments adjustment was not homogeneous and this fact requires more partitions in these sub-periods. Consequently, the changes in the structure of balance of payments determined the rationale for more divisions during each sub-period investigated in this study.

3.1. 1923-1945: From an Open Economy to Inward-Oriented Economic Policies

3.1.1. The Great Depression: Adversely Affected Turkish Economy

The two most influential factors that shaped the macroeconomic policies of Turkey during 1929-1945 period were the Great Depression in 1929 and the Second World War. It was these two external shocks that inspired and forced the variety of inward looking expansionary macroeconomic policies that prevailed in many developed and developing countries during this period.¹

The depression was transmitted to the less developed countries rapidly by sharp changes in relative prices: The prices of primary products collapsed more steeply than manufactures. There were other adverse impacts of the Great Depression such as the collapse in the import volume of the developed countries, which restricted the foreign exchange earnings of the developing countries, whereas a parallel collapse in the international capital markets restricted major possible credit opportunities for the developing countries. Moreover, a steep decline in the world price level, which was realized at different levels in developing and developed countries, altered distribution of the debt burden between creditors and debtors, favouring the former because the debt was already fixed in nominal value. (Maddison, 1985: 13-16)

¹ See *Chapter I* for a review on the measures implemented by both developed and developing countries to cope with the deflationary impact of the Great Depression.

Turkey was not immune from the adverse impact of the Great Depression that dominated the world economy in the first half of 1930s. In line with the sharp decline in the prices of leading export crops such as tobacco, raisins, hazelnuts and cotton, the terms of trade of Turkey started to deteriorate after 1928 and fell to its lowest levels during 1932-34. The fall in the terms of trade was 41% in 1933 compared to 1928, when the terms of trade was relatively favorable. (Tezel, 1994: 426) The decline in the export revenues of the market-oriented agricultural producers resulted in a significant slowdown in the economy with gross national income growing by only 2.2% in 1930 compared to double-digit growth rates registered in the previous two years.

Furthermore, Turkey was faced with a foreign exchange shortage just on the eve of the Great Depression in 1929, which further aggravated the economic problems. This foreign exchange crisis, however, had its roots more in domestic factors than in external factors. Among these, demand for foreign exchange for Ottoman debt installments and nationalization of railways as well as demand from importers who increased imports with an anticipation of a tariff hike in 1929 and speculative demand in anticipation of a devaluation triggered the foreign exchange crisis. (Tezel, 1994: 170-171) As a result, the TL/USD rate, which was then determined in the market, depreciated by 4.8% in 1929 and continued to depreciate by 2.6% in 1930.

3.1.2 Rapid Recovery from the Great Depression

Turkey reacted rapidly to the deflationary forces generated by the balance of payments problems and collapse in the export revenues by resorting to protectionist policies in foreign trade.² By increasing the control over foreign trade and capital movements, the authorities generated current account surpluses and accumulated international reserves. This allowed small-scale industries such as textile, flour, glass, cement and tanneries to flourish rapidly under the protectionist shelters in the first few years of the 1930s. (Yücel, 1996: 124) Starting from 1932, however, the authorities announced a strategy of state-led industrialization called "etatism" and in

² The foreign trade and balance of payments policies will be presented in detail in the following sections.

the rest of the decade, public investments in sectors such as iron and steel, textiles, sugar, glass, cement, utilities and mining contributed to the overall growth. According to Chenery's report on Turkish investment and development (Chenery et. al., 1953: 3), those sectors were chosen for investment not for their emergency in the process of development but for practical needs such as saving on imports and self-sufficiency. Given that the worldwide depression had reduced export revenues and foreign financing facilities, the industrialization program of the 1930s should necessarily target to save foreign exchange, to create employment and help Turkey towards self-sufficiency.

Table-3.1. Average Annual Economic Growth During 1926-1945 (%)

	Gross National Product	Agriculture	Industry	Services
1926-1929	9.5	15.7	9.3	5.5
1930-1939	6.0	6.0	11.7	5.7
1940-1945	-6.6	-7.5	-6.5	-5.3
1926-1945	2.9	3.9	5.7	2.4

Source: State Institute of Statistics (SIS), Statistical Indicators 1923-1995.

As can be followed from the Table-3.1, growth in the industrial sector in 1930-1939 became the engine of recovery from the depression. The figures related to the industrial sector and, hence, the GNP are overestimated as the estimations done by Tezel, Bulutay and Yıldırım (1974) were based on the assumption that, in the absence of available data, the whole industry grew at the same rate as the large scale enterprises. Some correction was done by Zandiyasek (1997) who included in the estimations the rate of growth of small-scale enterprises that on the whole grew relatively slower than the large scale ones. According to her findings, the growth rate of the manufacturing sector that was around 11% in the 1930s falls down to a rate slightly higher than 5%. (Owen and Pamuk, 1998: 21). However, given the severity and continuity of the depression that prevailed elsewhere, such growth rates in manufacturing sector in Turkey should be regarded as significant. Furthermore, these estimates did not change the GNP figures significantly. Around 1%-2% downward revision in the growth rate of 1930s does not change the fact that the economic growth was strong at that period.

The Second World War, however, led to the collapse of the already recovering economy and the output contracted tremendously in all sectors, especially in the labor intensive agriculture. The annual rate of contraction of GNP reached 15% in 1945, with a collapse in the agricultural and industrial sector by 23% and 17%, respectively. These figures were the highest rate of contraction ever registered in Turkish economic history. The prices during the war mounted to threefold of the prices in 1930s and almost twofold of those in 1929. Shortages, blackmarket and stockpiling emerged, imports were blockaded contributing to the production bottlenecks and scarcities. Under these economic conditions, the state-led industrialization was put aside to be revived soon in the early 1950s again.

3.1.3. Monetary and Fiscal Policies during Depression and the Second World War

In terms of the monetary policy, a distinction should be made between 1930s and early 1940s. The monetary policy of 1930s as opposed to the monetary policy during 1940-1945 cannot be labeled as expansionary. The nominal money supply was almost kept constant throughout the decade. There was a rise in the real money supply in the first few years of 1930s, not as a result of a deliberate government policy but of declining prices during the depression.

The fiscal policy, on the other hand, was not expansionary either, during 1930s. In the midst of the depression, the authorities did not choose to implement expansionary fiscal and monetary policies to stimulate domestic demand but chose to repress the imports along with strengthening the controls on foreign exchange transactions. The experience of Ottoman state with high budget deficits, foreign debt and inflationary environment during the First World War discouraged the government from implementing expansionary monetary and fiscal policies during 1930s. During Second World War, however, expenditures rose considerably due to the war expenses leading to budget deficits especially in the first years of the war. Imposition of wealth levy (*Varlık*) and extraordinary agriculture taxes after 1942 relieved the budget to some extent and the expenditures were financed mainly by the Central Bank credits which fuelled inflation during war years. (Tezel, 1994; 431-449)

Despite its power of issuing money, the Central Bank did not choose to increase the money supply until 1938. From 1938 onwards, the control on money supply was relaxed and advances to the government by the Central Bank inflated the money in circulation. (Köklü, 1947: 50; Keyder, 1978: 210-215) Later during the Second World War when wartime production bottlenecks arouse, the nominal money supply was expanded tremendously accompanied by a surge in the inflation rate to levels much higher than 1929 levels. (See Table-3.2)

Table-3.2. Money Supply* and Central Budget During 1929-1945 (Average Annual)

	Wholesale Price Index (1929=100)	Currency in Circulation Index (1929=100)	Total Deposits Index (1929=100)	Real Money Supply* (1929=100)	Central B. Revenues/ GNP (%)	Central B. Expenditures /GNP (%)	Central B. Balance/ GNP (%)
1926-1929	100.0	100.0	100.0	100.0	8.5	8.0	0.5
1930-1939	60.3	113.5	106.3	182.8	11.0	11.2	-0.2
1940-1945	178.5	447.1	203.5	192.1	11.3	10.7	0.6
1926-1945	104.4	230.5	140.2	181.2	10.6	10.4	0.2

*Money supply is defined as banknotes, coins in circulation and deposits in banks.

Source: Köklü (1947) and Kepenek and Yentürk (1996), *SIS, Statistical Indicators 1923-1995 and Tezel (1994)*.

On the other hand, total deposits in the banking system remained stagnant in nominal terms but increased in real terms due to the fall in price level during the depression. During war years, in contrast, deposits contracted in real terms by around 27% compared to 1930-1939. The flight from deposits is plausible in the sense that under very high inflation rates, cost of holding money at banks was high. Consequently, real contraction in total deposits partly offset the tremendous increase in the currency in circulation during 1940-1945, limiting the real increase in the total money supply.

Summing up, the effect of the rise in the real money supply on aggregate demand during 1930s and 1940s requires further investigation. However, keeping in mind that the nominal money supply did not change between 1933-1937, the prices remained depressed and the economy grew by around 6% annually, the rise in the money real supply can be said to have matched the economy's growing needs during 1930s.

On the fiscal policy side, leaving aside the war period, Turkey followed a balanced budget policy through 1926-1939. The budget revenues were increased during the depression of 1930s owing to the new taxes on imports and wages as well as low elasticity of tax revenues with respect to income changes. During the war period 1940-1945, however, the share of budget revenues was maintained mainly by the extraordinary war time taxes of wealth and agricultural products. (Tezel, 1994: 434)

3.1.4. Foreign Trade During 1929-1945

Considering that the depressed economy was put to a recovery path very soon after the outbreak of Great Depression and buoyant growth rates of output were achieved throughout the decade, the Turkish government can be said to have successfully managed the economic crisis during the Great Depression. As mentioned above, the driving force of the recovery cannot be attributed to the cautious fiscal and monetary policy of the government. Instead, the foreign trade and foreign exchange rate policies became the key that promoted rapid recovery during the Great Depression. The strengthening of controls on foreign trade and exchange rates, selective imports policy repressing consumption good imports while favoring intermediate goods and raw materials provided the conditions for the increase in output in those consumption good industries rapidly.

As soon as the depression broke out, the authorities responded by taking measures to block the channels through which the effects of the world depression would be felt. Contrary to many developing countries where exchange rate was allowed to float, heavy controls were put on the foreign exchange transactions and stability of the nominal exchange rate was maintained by fixing the exchange rate. Furthermore, the tariff rates were raised significantly, deliberately discriminating against final products in favor of industrial raw materials, machines and equipment. Yarn, cloth, sugar, flour and some processed foodstuffs, leather products, forestry and cement were the sectors, which received the highest tariff rates. Quota lists were introduced for the first time in 1931 (Decree No: 2/11940). Such quantity restrictions would be the most popular instrument in the international trade of Turkey from then on until late 1970s. Moreover, control over trade was strengthened by the law providing the government

the authority to determine every step in the production and exporting of leading exportable goods (Law No: 1705). (Yücel, 1996: 95-111)

Apart from the above measures, Turkey began to rely increasingly on bilateral trade agreements in the 1930s to enhance her international trade relations. Barter and clearing agreements began to be used heavily during this period. Turkish exports, which had been adversely affected from the collapsed international prices for agricultural goods as well as the overall protectionist waves, could be increased with the help of these measures, especially in the second half of 1930s. Clearing agreements also contributed to the expansion of imports. Most of the trade took place in these forms between 1934-39. Hence, clearing agreements and reciprocal quotas amounted to 84% of Turkey's imports and 81% of her exports in 1934-1939 period.³ (Tezel, 1994: 173-179)

The quotas and rise in the tariff rates were effective in generating a drastic fall in the volume of imports in the aftermath of the depression and pre-1929 levels could not be reached again during 1930s. This reduction in imports was so significant that a trade surplus was achieved during the decade despite stagnating exports in the first half of 1930s and only slightly recovering in the second half.⁴

Moreover, taking advantage of the turmoil in the international environment, Turkey defaulted and rescheduled the Ottoman debt, which was an important move relieving the excess foreign exchange demand. In addition, the lower relative domestic prices of agricultural goods were accentuated with the tariff policy, which increased the domestic prices of manufactured goods further. As a result of all the above measures, decent conditions for industrialization were generated and Turkey initiated large

³ Increasing share of Nazi Germany in Turkish foreign trade was worth to mention during the 1930s. (Tezel, 1994; 177) Among the bilateral trade partners, Germany assumed a very significant role in a period, when international trade was adversely affected from war conditions. The share of this country's exports in total exports of Turkey rose from 15% in 1932 to 44% in 1935-1938, while imports share rose from 25% to 46% in the same period. The dependence of Turkish foreign trade on Germany continued during the Second World War. The author suggests that this trade relationship which had its origins in the political ends of Germany helped the Turkish exports to increase in the second half of 1930s despite the real appreciation of TL during 1930s.

scale industrialization process during 1930s. It registered significantly high rates of economic growth, while other developing countries contracted at the peak of the depression at rates ranging from 5% to 14% annually. In this sense, the dominant strategy of the period could be called as “*the balance of payments surpluses as a policy goal*”⁵ which ultimately served to initiate a pace of industrialization in Turkey.

Foreign trade continued to yield surplus during the Second World War although the volume of trade declined tremendously. Imports, which had started to increase slightly towards the end of 1930s, stopped with the onset of the war, whereas exports, though adversely affected from the blockage of transport channels due to war, continued to rise after 1942 thanks to the demand from Germany and the Allies for foodstuffs and raw materials. (Tezel, 1994: 180) This brought about current account surplus and reserve accumulation during the war period. However, strict controls on foreign trade, which aggravated the scarcities, production bottlenecks and high inflation, led to extraordinary profits for those associated with imports and distribution and sale of those imports.

3.1.5. Balance of Payments During 1929-1945

The balance of payments statistics has been published by the Ministry of Finance for 1950-1974 and by the Central Bank since 1975. Therefore, although it is possible, despite the major modifications in the categories, to find information about the balance of payment series of Turkey since 1950, the period before 1950 is completely absent, creating uncertainties in the interpretation of economic developments at that time. To have a complete view of balance of payments during 1926-1949, the capital and reserve movements are required in addition to international trade transactions. In this section, using the available information on services and capital flows, the balance of payments of Turkey has been constructed at least in its major categories. The information about the data and the details of the construction of the series will be presented in more detail in *Appendix*.

⁴ The stagnation of exports was due to adverse terms of trade movements against exports instead of a decline in physical volumes. It should be noted that the volume of exports continued to increase in the early 1930s. (Yücel, 1996: 136)

⁵ Since the capital inflows were almost negligible during the period, the balance of payments surplus in fact corresponded to the surplus in trade balance.

Table-3.3. Balance of Payments 1926-1949 (Summary Table)

(USD million, cumulative)	1926-1929	1930-1939	1940-1945	1946-1949
Current Account Balance	-111	70	239	27
Foreign Trade Balance	-106	73	246	-26
Exports	414	840	846	903
Imports	-519	-767	-600	-929
Invisibles	-5	-3	-6	53
Capital Account Balance	17	3	-3	46
Reserves*	94	-73	-236	-73
(average annual, as % GNP)	1926-1929	1930-1939	1940-1945	1946-1949
Current Account Balance	-2.2	0.5	0.8	0.0
Foreign Trade Balance	-2.1	0.5	0.8	-0.2
Exports	8.4	5.8	2.5	4.8
Imports	-10.4	-5.3	-1.7	-5.0
Invisibles	-0.1	0.0	0.0	0.3
Capital Account Balance	0.3	-0.1	0.2	0.2
Reserves*	1.8	-0.4	-1.0	-0.3
Memo Item: TL/USD Rate (average)	2.0	1.6	1.3	2.6

* Negative sign indicates a reserve accumulation.

Source: Author

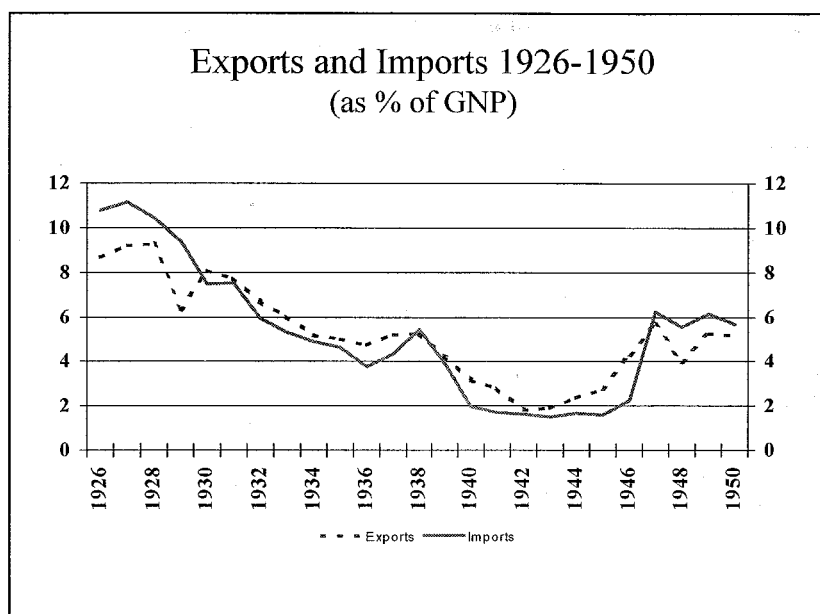
The data confirms the basic features of 1926-1945, as explained in the previous sections. Prior to 1930s, the foreign trade of Turkey was quite liberal mainly due to restrictions imposed on Turkey in Lausanne Treaty. During the reconstruction of Europe after the World War 1, Turkey enjoyed satisfactory demand for her exports, whereas, partly due to the low tariff rates and almost no control on foreign trade, imports exceeded her exports, resulting in trade and current account deficits. The ratio of exports and imports to GNP were quite impressive in the late 1920s, around 9% and 11% respectively. It should be noted that these ratios would not be reached until early 1980s, when the country underwent a regime change from an inward-looking strategy to outward-oriented development. These deficits in the late 1920s were not financed primarily by the capital flows, however, which remained around USD 5 million per annum in 1926-1929 period, but by the international reserves of the country.

The shift in the foreign trade and balance of payments during 1930s and early 1940s can be observed from Table-3.3 as the current account deficits of the previous period turned into a surplus mainly owing to the import repression policies. It is noteworthy that, after this particular period, the current account registered deficit for a long time until 1988 (except for 1974). During 1926-1946, services and unrequited transfers were almost negligible and so were the capital flows. Capital inflows during the early 1930s were rare and mainly took the form of long-term credits for industrialization purposes.⁶ However, long-term borrowing took the form of credits taken for the financing of military equipment and expenditures starting from late 1930s and rose during the war. It should be noted that throughout the period, there were considerable debt payments, the major part of which were composed of the payments for the nationalization of railways, which reduced the net inflow of capital during 1930s and early 1940s. So basically, the trade policies were effective in the determination of foreign exchange flows in this period.

The strict control on imports resulted in a decreasing share of this item within national income from 11% in 1926 to around 3.8% in 1936 and this ratio further descended to 1.5% in 1943 during the Second World War. Exports, on the other hand, were also negatively affected from adverse price movements in the beginning of early 1930s, exports to GNP ratio decreasing from 8.7% in 1926 to 4.8% in 1936 before falling further down to 1.9% in 1943.

From the Table-3.3, it can be observed that the trade surpluses registered during the war period were higher than in the previous decade. As mentioned already, demand for Turkish wheat and chrome during the war was the main factor for the increasing exports. Despite production bottlenecks due to repressed imports and economic difficulties during the war, the current account surplus led to a substantial accumulation of reserves during 1940-1945.

⁶ Examples for such credits were USD 10 million credit given by the USA in return for the monopoly of match production in 1930, USD 8 million granted by the USSR in 1932 for industrialisation program and TL 18 million granted by England in 1936 for the construction of Karabük Iron and Steel factory. (Tezel, 1994: 212-213)

Figure-3.1.

3.2. 1946-1979: Different Phases of Import Substitution Industrialization

Turkey continued to grow by significantly high rates during 1946-1979. However, this growth path was interrupted two times by balance of payments crises after which the existing development strategy was replaced with a new one. In this sense, the economic growth in Turkey was not a steady but a fluctuating process during 1946-1979.

During 1947-1953, the strategy adopted for development was agriculture based and this strategy, together with infrastructure investments, was financed through foreign capital and aid. The end of this strategy came with a balance of payments crisis in 1958, after which the development strategy was shifted from agriculture to industry. Balance of payments policies of the 1960s, by repressing mostly consumption good imports and relying on foreign credits to finance the process of industrialization, were central to development concerns. The policy termed as the import substitution industrialization was successfully implemented during the 1960s and its drawbacks became more apparent in the second half of 1970s, ending up with another serious balance of payments crisis. The latter was followed by an overall change in the

economic regime from inward looking strategy to outward oriented development in 1980.

Therefore, given its close connection with growth strategies, the balance of payments records of Turkey will be briefly examined in this section with reference to the macroeconomic strategy applied during 1947-1979.

3.2.1. The Agriculture Based Development Strategy: 1947-1953

The strong commitment of the authorities to etatist principles and the inward-looking economic policies, which gave priority to industrialization over other sectors of the economy, started to weaken following the war. The war had disrupted the income distribution through blackmarkets and profiteering as well as wartime taxation, especially the infamous wealth levy in 1942, *Varlık Vergisi*, that discriminated against the non-Muslim groups. The dissatisfaction of those who were badly hurt from the wartime policies, namely poor peasants, salaried workers and officials created a pressure upon the single-party government of the period. More effective than this however, was the pressure emanating from the commercial and agricultural classes. Relatively wealthier agricultural producers were not pleased with the preferential treatment of industrialists and transfer of resources from agriculture to industry and, hence, they, together with the newly born Muslim commercial class, strived to grab more power within the government. (Owen and Pamuk, 1998: 104-106; Tezel, 1994: 257-264)

In addition to the domestic factors, the ideological sphere of the period was shaped by an increasing dominance of the United States (US) over Turkey, both politically and economically. While Turkey's relationships with the USSR were deteriorating, the country was admitted as part of the reconstruction process of Europe and supported by substantial aid and grants from the US. These aids and grants were directed to specific means, namely the agriculture-led growth and the promotion of the private sector. (Kepenek and Yentürk, 1996: 84; Tezel, 1994: 264-268)

Consequently, under these circumstances, long before the defeat of Republicans People's Party in 1950, the governmental authorities had started to signal for a shift

in economic policies, by the statements encouraging private sector and by attempting to improve the income distribution through Land Distribution Law of 1946. (Tezel, 1994: 268-269; Owen and Pamuk, 1998: 106).

Therefore, these developments suggest that, as a demarcation point from the earlier period policies, 1947 would be suitable date, as the post-war third five year development plan was stopped at that date. In contrast to the view accepting 1950 as the starting point of a new era (Krueger, 1974; Ceyhun, 1992; Sönmez, 1996, Chenery et. al., 1953), the view that the starting point should be an earlier date than 1950 has been widely supported by economists. (Kepenek and Yentürk, 1996; Owen and Pamuk, 1998; Tezel, 1994) Therefore, in line with the latter view, the starting point of the new development perspective has been set as 1947 in this study.

Table-3.4. Economic Growth During 1947-1979 (Average Annual, %)

	Gross National Product	Agriculture	Industry	Services
1947-1953	8.6	8.5	7.4	10.1
1954-1960	4.0	2.7	7.2	4.3
1961-1972	6.1	2.1	9.5	7.5
1973-1979	3.8	1.2	6.0	4.5

Source: State Institute of Statistics (SIS), Statistical Indicators 1923-1995.

During the 1947-1953 period, unprecedented rates of economic growth were registered. As can be followed from the sectoral composition of the GNP in Table-3.4, the engine of growth was agriculture and services, whose shares in GNP were 43% each. There were several factors for the boost in agricultural production and services (the latter driven by construction, transportation and government services) during this period. On the supply side, in addition to the increase in the arable lands by 39% between 1947 and 1953 owing to the distribution of Treasury lands after 1946, good weather especially in 1952 and 1953 led to increases in production by 15% above normal yields. (Chenery et. al., 1953: 6) The rapid rise in the number of tractors from around 1,500 in 1947 to more than 35,000 in 1953 was another factor that speeded up the output growth in agriculture in this period. (Kepenek and Yentürk, 1996: 97)

On the demand side, too, things worked well. The output growth in agriculture was further promoted by buoyant world demand especially for wheat and chrome that became scarce commodities during the Korean War. As a result, Turkey enjoyed a rise in her external terms of trade about 44% between 1948-1950 and 1951-1953 periods. (Owen and Pamuk, 1998: 107) The following Table-3.5 shows the prices of various commodities since 1950. The data, which is available for cotton and wool during early 1950s, suggests that the prices of raw materials and intermediate goods were higher compared to the two decades that followed, which should have benefited developing countries exporting those commodities during 1950-1953.

Table-3.5 Selected Commodity Prices During 1950-1979 (Average Annual)

	US Wheat (1957=100)	UK Wool (1957=100)	UK Sugar (1957=100)	UK Zinc (1957=100)	Egypt Cotton (1957=100)
1950-1953	-	107	-	-	98
1954-1960	92	87	103	98	81
1961-1972	95	77	105	124	74
1973-1979	216	151	255	347	181

Source: International Monetary Fund (IMF), International Financial Statistics.

The take-off in the economy in the early 1950s was coupled with the expansion of the service sector and infrastructure investments of highways, dams, airports and factories (Kumcu and Pamuk, 2001: 10-29; CBRT Annual Report, 1959: 30), which was financed primarily by American aid. From 1948-53, total American aid amounted to USD 420 million, which was used to finance half of imports as well as one third of investments during this period. (Chenery et. al., 1953: 6) The remaining part of the expenditures, however, could be met by the strong reserves of the Central Bank, which had accumulated during the Second World War.

Consequently, the 1947-1953 became the golden years of prosperity where higher income generated higher savings and, hence, higher rates of investment. However, we do not have reliable data for investment and consumption in this period. Nevertheless, some estimates done by Chenery (1953: 12-14) reflects that investment share in gross national income had risen from 11% in 1950 to 15% in 1953, where construction investments share rose from 7.1% to 9.5% in the same period.

3.2.2. Towards a Balance of Payments Crisis: 1954-1958

Turkey encountered serious difficulties in sustaining agricultural based development when the agricultural prices fell sharply from 1953 onwards following the end of the Korean war and the decline in world demand. Rapid fall in prices of cotton and wool can be followed from the Table-3.5 above, confirming the price declines in raw materials.⁷ During 1954-1958 things worsened as successive bad weather conditions negatively affected agricultural yields. Agricultural production declined by around 27% in 1954 and could not recover its 1953 levels until the end of the 1950s. (CBRT Annual Report, 1959: 36)

The Democratic Party government that had received the support of the agricultural producers in their election victory in 1950, tried to protect them from the negative external and internal shocks by resorting to price support operations. Soil Products Office (TMO), established to buy wheat (consequently at higher prices than the world) and accumulate inventories, was primarily financed by advances from the Central Bank. In a short period of time, the price support operations became a central policy option for the government to compensate crop failures. However, the accompanying surge in the inflation rate and the money supply during 1954-1969 period was associated by the operations of the TMO and the credit expansion of the domestic banks. (Krueger, 1974; 40-50; Owen and Pamuk, 1998: 108).

Table-3.6. Money Supply, Central Budget and Inflation During 1947-1979 (Average Annual)

	M1/GNP (%)	M2/GNP (%)	Central B. Revenues/GNP (%)	Central B. Expenditures/GNP (%)	Central B. Balance/GNP (%)	CPI (%)	WPI (%)
1947-1953	11.9	12.9	11.3	11.1	0.2	2.5	3.2
1954-1960	14.9	15.9	10.1	10.7	-0.5	12.8	13.4
1961-1972	15.0	18.1	13.5	14.0	-0.5	7.9	7.1
1973-1979	17.1	20.9	17.0	18.4	-1.4	32.6	30.9

Source: SPO web site and SIS, Statistical Indicators 1923-1995.

Despite the money supply expansion by almost 32% in real terms in 1954-1960, the central budget registered a very slight deficit of around 0.5% of the gross national

⁷ Furthermore, the Central Bank Annual Report (1955:14-16) states that the index of raw materials prices, which averaged 100 in 1950, fell from 105.7 in 1954 to 102.2 in 1955.

product (GNP). The budget figures understate the real magnitude of domestic credit expansion, as the state economic enterprises (SEEs) were not included in the central budget. In fact, when the inflation accelerated from 1956 onwards, the government tried to combat the inflationary pressures by direct intervention, mainly through administering the prices of non-agricultural SEE's. A law was passed from the Parliament in 1956, determining the legal profit margins for the private sector (which did not work out, as a blackmarket soon developed) and imposing lower limits for the inputs produced by the SEEs. (Krueger, 1974: 44) This led to increasing credit expansion by the Central Bank (CB), as the deficits of the SEEs were financed through the CB credits. The credits to SEEs (excluding TMO credits) rose by 18.4% in real terms in the 1954-1958 period. (Krueger, 1974: 46).

On the other hand, the external accounts deteriorated rapidly. Exports remained stagnant both due to weaker world demand and to the real appreciation of the TL (See Figure-3.2), while imports continued to increase, accompanying the rise in investment. To control for the widening trade deficit, the government strengthened the import controls and restrictions in the second half of the 1950s. (Krueger, 1987: 19-20) The restrictions on trade were further increased when the country faced a payments crisis following the drop in the capital inflows in 1957 and the depletion of reserves. These measures resulted in import scarcities and production bottlenecks⁸ in the late 1950s, which eventually led to the 1958 Stabilization Program.

The foreign payments crunch was resolved through the stabilization program, which the government accepted in return for debt-restructuring and additional foreign credits. The program aimed at liberalizing the foreign trade regime and establishing a budgetary discipline.⁹ (Krueger, 1974: 71-72) The macroeconomic indicators following the implementation of the stabilization program were quite promising. The

⁸ There is plenty of evidence in the daily newspapers about how the controls over the economy and the consequent supply bottlenecks affected daily life. Consumer goods such as sugar, coffee, cheese almost disappeared due to stockpiling. Prices were perceived by the public to be higher than official figures, due to blackmarkets. The factories could not work and agricultural production could not be delivered to markets, due to the oil shortage. (Kumcu and Pamuk, 2001: 9-10, 30-39)

⁹ More details about the program will be discussed in *Section 3.2.4.2*.

inflation rate fell, the capital flows resumed and the current account deficits were only moderate (around USD 150 million, approximately 1.5% of GNP).

However, despite these improvements, the economy entered into a phase of recession in the aftermath of the program. Agricultural growth was sluggish and the uncertainties in the economy following the May 1960 coup d'état should have affected the consumption and investment decisions negatively. (Krueger, 1974: 104-110) Consequently, the average rate of growth of GNP fell to 4% in the 1954-1960 period, much lower than the previous 1947-1953 period's 8.6%. (See Table-3.4)

3.2.3. The Industrialization Based Development Strategy and Shortcomings of the ISI: 1962-1979

With the recession in the early years of the 1960s the agriculture based development strategy was abandoned. In the two decades that followed import substitution industrialization became the basic policy goal. In fact, during the 1950s the industry had grown by over 7% per annum. However, the growth of industrial output during that decade was rather accidental than intended. The import repression acted as a motive for the domestic production of some light industries. The industrialization during 1960s and 1970s, on the other hand, was a result of a planned strategy, where the state assumed a greater coordination of economic policies. New division of responsibilities emerged between the state and the private sector. The state would initiate heavy investments, which required large-scale capital and provide inputs for the flourishing of private sector's industrialization, which would focus on producing light industrial goods such as textiles, processed food and durables. (Kumcu and Pamuk, 2001: 45-46)

For this purpose, the State Planning Organisation (SPO) was established in 1961 and economic policies were implemented through Five Year Development Plans. In this framework, the foreign trade policy became more central to the domestic goals, which was another major difference between the two episodes of 1950s and 1960s. Incentives for the industry would be provided either through subsidised credit or the foreign trade regime by repressing and prohibiting imports of those commodities that could domestically be produced. The list of quotas for imports was determined by the

foreign exchange availability as well as the preference for the goods to be protected. For example, even if the production of the manufactured good was below its imported level, the good was transferred to quota list until its production level was found satisfactory. In this case, that good would be dropped from any list, meaning that its imports were totally prohibited from that time onwards. (Krueger, 1987: 23, 27; Krueger, 1980: 6-7)

Indeed, big industrial state enterprises such as Ereğli Demir Çelik and Petkim started operation during the 1960s. With the private sector's contribution, the growth in industrial production surpassed the targeted level of 7% per annum and averaged 9.5% during 1961-1972 period. The boost in the industrial production was accompanied by growth in the services by 7.5% and, as a result, the GNP grew significantly by 6.1% annually, although agricultural output growth was sluggish. (See Table-3.4) The real wages, which remained stable in 1960-1963, rose significantly by 41% from 1963 to 1970 with the institutional changes protecting union rights and minimum wage legislation, fuelling the demand for consumer goods, especially durables. (Owen and Pamuk, 1998: 112-113) Despite buoyant demand, both the CPI and WPI inflation remained quite moderate (around 7.1% per annum during 1961-1972).¹⁰ The role of the SEEs in promoting growth was well understood in this period and, more importantly, their financing by the CB credits, which has been a regular policy tool, increased the money supply. This can also be followed from the sectoral distribution of the CB's credits. (Kepenek and Yentürk, 1996: 143) Accordingly, the CB credits to the public sector rose faster than the credits to the private sector, the former increasing at an average rate of 23% in real terms per annum and the latter by 16% in real terms per annum during 1962-1972 period.

The shortcomings of the growth based on import substitution industrialization (ISI) began to be realized in the second half of 1960s, when the excess demand for foreign exchange was felt. During 1961-1972, exports did not rise with respect to the second half of 1950s and remained stagnant around 4% of GNP annually, while import

¹⁰ According to Krueger (1974: 17-19), the inflation in the official statistics was understated and the perceived inflation by the public was higher.

demand continued to increase depending on the import content of the investment and industrialization plans. The authorities responded to this by strengthening the controls on foreign trade and foreign exchange transactions in the late 1960s.

The ISI strategy is inherently import demanding due to the intermediate and capital goods to be utilized during production. (Ceyhun, 1992: 17) The required foreign exchange for imports was to be acquired by the rise in the exports of the country after the manufactured products become competitive in the international markets. However, this rather difficult stage of the ISI did not take place in the Turkish case, as the exports could never be competitive due to both to overvalued exchange rates and high labour costs.¹¹

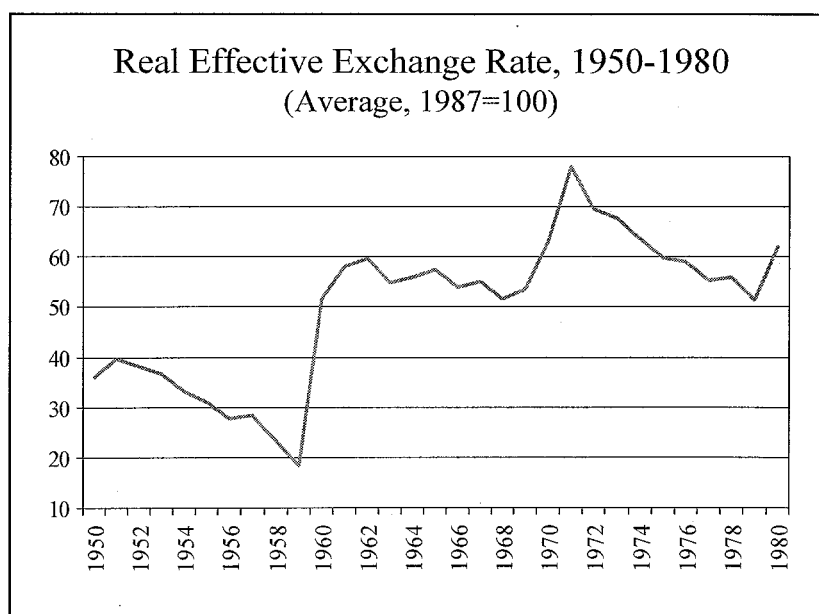
The weaknesses of the ISI policies strengthened with the adverse developments in the international economy. Early 1970s witnessed several important events, including the end of Bretton Woods exchange rate system and the oil price shock of 1973. Under these conditions the industrial countries found themselves in a very high inflationary environment. To counteract the impact of oil price shocks, recessionary policies started to be implemented in industrialized countries, which reduced the demand for exports from the developing countries. This was a problem for Turkey, as well, dampening the export revenues further.

The Turkish government made an adjustment in the foreign exchange rate by a devaluation to provide more incentive for Turkish exports in 1970, much earlier than the pressures due to foreign exchange demand mounted in the second half of the decade. Consequently, the ratio of exports to GNP rose from 4% in 1961-1972 period to 6.2% during 1973-1979. While this partly relieved the foreign exchange need, the major unexpected development that allowed the authorities to postpone the problems associated with the ISI until late 1970s was the substantial workers' remittances that rose rapidly during 1970s.

¹¹ For urban real wages between 1950 and 1990, see Owen and Pamuk (1998), Table 5.5.

The worker's remittances had an impact on the economy through various mechanisms: First, domestic demand was fuelled by those FX inflows, which was favored by the industrialists who produced for domestic markets. However, the upsurge in the domestic demand also added to the inflationary pressures, which escalated from 1971 onwards. (Krueger, 1987; 28) (See Table-3.6) With the foreign exchange rate fixed, this amounted to a significant real appreciation of the TL by 34% from 1971 to 1979. (See Figure-3.2 below) The appreciation of the currency aggravated the imports in the 1970s, which is a factor intensifying foreign exchange demands and inflation. Since, ultimately the self-fulfilling process hurt the ISI strategy, the workers remittances had an effect, resembling the Dutch disease where oil exporting countries export revenues had triggered substantial imports. (Owen and Pamuk, 1998: 113).

Figure 3.2.



The impact of oil crises in 1973 and 1979 was to aggravate the already rising inflation in the early 1970s. Inflation had started to increase due to loose fiscal policy, rising incomes as a result of workers remittances and increasing real wages. The real wages in 1977 was 28.5% higher than its 1970 level (Owen and Pamuk, 1998: 251), while the money supply rose considerably along with the increase in total CB credits. The M2 rose by 23% in real terms and the CB credits by more than 200%

in real terms from 1972 to 1978. Hence, at the end of 1979 the inflation rates in CPI and WPI hit 64%, the highest level since the Second World War.

Despite deteriorating macro balances, Turkey attained high growth rates between 1973 and 1979. Average annual GNP growth in this period was 3.8% and the industry's average growth rate per annum was spectacular, by 6%. This performance was due to the short-term solutions that relieved the day. In addition to the worker's remittances that provided relief in the financing of imports, the government introduced convertible TL deposits¹² in 1975 to meet foreign financing needs of the growth strategy. The latter measure and the appreciated domestic currency prompted open positions in the banking sector and resulted in a change in the character of capital inflows in the second half of 1970s from long-term capital to short-term. Short-term capital inflows mounted in this period from USD 40 million in 1975 to USD 1 billion in 1977. However, this short-term relief of convertible deposits would lead to the balance of payments crisis again in 1979, when the country entered rescheduling agreements with the IMF and the creditor banks for the short-term foreign debt payments. In 1979, the short-term capital outflows reached USD 1 billion.

The result of these developments was another wave of scarcities, blackmarkets and production bottlenecks at the end of the 1970s, which forced the authorities to seek IMF support to resolve the balance of payments crisis. The fragmented and weak coalition government in power was unable to bear the costs of a stabilization program with the IMF and the country found itself with the worst economic and political turmoil at the end of 1979.

3.2.4. Balance of Payments during 1946-1979

The balance of payments statistics have been published by the Ministry of Finance for 1950-1974 and by the Central Bank since 1975. Through time, there have been modifications in the classifications of the balance of payments, which creates difficulty in obtaining a complete series of each item. Despite these difficulties, the

¹² The private sector was provided an exchange rate guarantee by the government in obtaining short-term borrowing

data has been consolidated for 1950-1979 in as much detail as possible and in terms of major categories, which can be followed from the two tables below. In this way, the balance of payments adjustment under different economic strategies can be overlapped and the relationship between balance of payments and other macroeconomic policies can be established. Although the balance of payments statistics for 1946-1949 have been estimated with very limited data (See Appendix 1), the starting point of the analysis in this section has been taken as 1950, as this is the starting point of the officially announced data. The reason why the four years series after the Second World War have been neglected is that there is not a sufficient number of constructed categories in detail such as the invisibles and different forms of capital flows that are comparable with the later period.

In the framework of the macroeconomic setting described in the previous sections, the balance of payments took different forms from 1950 to 1979. In the following sections the basic features of the balance of payments in different periods under different macroeconomic policies will be reviewed.

Table-3.7. Balance of Payments under Different Development Strategies (1950-1979) (Average Annual)

USD million	1950-1953	1954-1960	1961-1972	1973-1979
<i>CURRENT ACCOUNT BALANCE</i>	-127	-120	-159	-1,390
Exports	334	317	514	1,787
Imports	-444	-433	-798	-4,275
Foreign Trade Balance	-110	-116	-284	-2,488
Net Other Goods and Services Income	-16	-45	-69	-220
Net Unrequited Transfers	0	41	194	1,318
<i>CAPITAL ACCOUNT BALANCE</i>	135	155	247	571
Direct Investment	7	11	31	61
Long-term Capital Movements	128	145	189	482
Short-term Capital Movements	0	0	27	28
<i>NET ERRORS AND OMMISONS</i>	24	-11	2	-266
<i>RESERVE S</i>	-32	-24	-90	1,086
IMF	8	6	9	103
Official Reserves	-40	-30	-98	41
Balance of Payments Financing and Corresponding Accounts	0	0	0	942

Source: CBRT web site; CBRT Balance of Payments Statistics Bulletins, various issues, Ministry of Finance and the Author.

Table-3.8. Balance of Payments under Different Development Strategies (1950-1979) (Average Annual, As Percentage of GNP)

% of GNP	1950-1953	1954-1960	1961-1972	1973-1979
CURRENT ACCOUNT BALANCE	-1.9	-1.1	-1.2	-2.3
Exports	5.1	2.8	3.5	3.4
Imports	-6.7	-3.8	-5.4	-8.0
Foreign Trade Balance	-1.6	-1.1	-1.9	-4.6
Net Other Goods and Services Income	-0.3	-0.4	-0.5	-0.3
Net Unrequited Transfers	0.0	0.3	1.1	2.6
CAPITAL ACCOUNT BALANCE	2.0	1.3	1.6	1.1
Direct Investment	0.1	0.1	0.2	0.1
Long-term Capital Movements	1.9	1.3	1.3	0.9
Short-term Capital Movements	0.0	0.0	0.1	0.0
NET ERRORS AND OMMISONS	0.2	0.0	0.0	-0.5
RESERVE S	-0.4	-0.3	-0.4	1.7
IMF	0.1	0.0	0.1	0.2
Official Reserves	-0.5	-0.3	-0.5	-0.1
Balance of Payments Financing and Corresponding Accounts	0.0	0.0	0.0	1.5

Source: CBRT web site; CBRT Balance of Payments Statistics Bulletins, various issues, Ministry of Finance and the Author.

3.2.4.1. Relatively Liberal Trade after the Second World War: 1946-1953

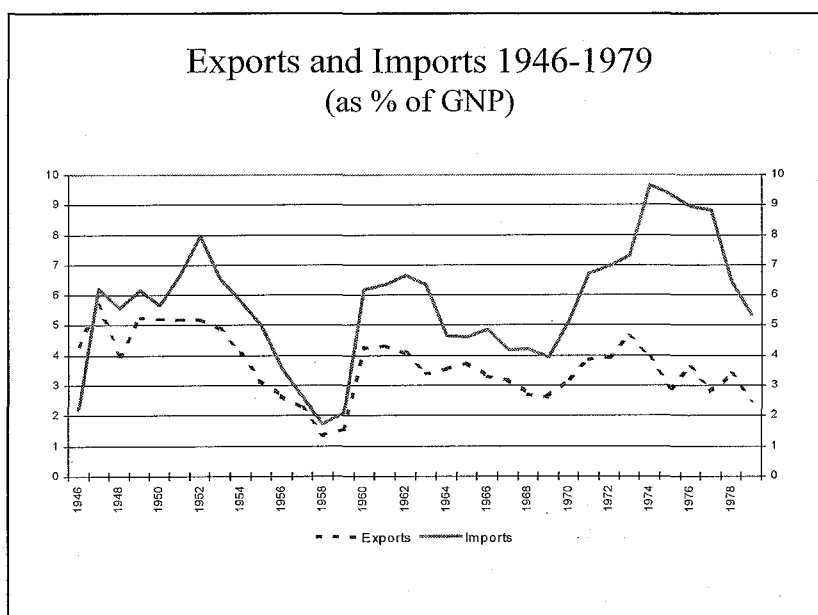
During 1946-1953 period, the foreign trade regime was fairly liberal, promoting both exports and imports. The first devaluation of the Republic took place in 1946, increasing the value of the USD from TL 1.3 to TL 2.8. This was a post-war adjustment to improve competitiveness of the Turkish products, which had been adversely affected from the overvaluation of the TL especially during the high inflationary episode of the war years. (Kepenek and Yentürk, 1996: 108-110) The price and quantity restrictions were greatly relieved in the early 1950s in line with the requirements of the particular development strategy implemented during that period. Increasing domestic consumption due to the rapid urbanization and marketization of agricultural products and the rising investment and infrastructure expenditures mainly channeled to promote agriculture necessitated an increase in imports.

In this respect, balance of payments policies of the early 1950s were compatible with the agriculture-based development, which rested on increasing agricultural

production and hence, exports of primary goods. The orientation towards a relatively more liberal economy together with favorable international conditions due to the Korean War increased exports considerably. The ratio of exports to GNP, which had fallen to record low levels around 2% during the war years, quickly recovered to reach 5%. On the other hand, imports, fuelled by consumption and investment demand, rose faster in the post-war period, from 2% of the GNP during 1940-1945 to 6.7% of the GNP during 1950-1953. (See Figure-3.3)

The Turkish exports were composed mainly of agricultural goods such as dried fruit, hazelnut, cotton, tobacco and cereals and mineral goods, especially chrome. In 1952, when weather conditions were pretty good, cereals amounted to 26% of Turkey's total exports (and declined to 9% of the total exports later in 1956), while dried fruit, hazelnut, cotton, tobacco and minerals constituted 4%, 5%, 17%, 19% and 13% respectively. Among these, Turkey had a share not more than 15% in world exports for raisins, figs and hazelnuts, which implies that Turkey had hardly a significant monopoly power for her exports. (Krueger, 1974: 182) In addition to low market shares, increase in domestic absorption in the early 1950s limited the rapid increase in exports. (Chenery, 1953: 25-26)

Figure-3.3.



On the other hand, increased imports of intermediate goods and machinery required for the infrastructure investments of highways and agriculture increased the trade deficit, amounting to an average of USD 110 million (1.6% of GNP) per annum.¹³ This implied a significant rise in the deficit in contrast with the trade surpluses of the previous two decades. This was financed mainly by the Marshall aid granted after the Second World War. In 1948-53, Turkey received USD 354 million of grants and loans within the context of Marshall aid. In 1953, an additional economic aid of USD 71 million was granted. (Chenery, 1953: 47-48) Consequently, the long-term borrowing of Turkey including the program credits amounted to USD 512 million during 1950-1953, which was approximately 2% of the GNP annually. This was quite large, considering that the net capital inflows remained below this level in the 1954-1979 period.

Table-3.9. Capital Movements During 1950-1974

(cumulative, USD million)	1950-1953	1954-1960	1961-1974
<i>CAPITAL ACCOUNT BALANCE</i>	539	1086	3398
Foreign Debt Payments	-75	-545	-1722
Imports of Foodstuffs (PL480 Credits)	0	137	498
Private Foreign Investment	27	74	535
Project Credits	23	49	1836
Import with Waiver	0	0	288
Program Credits	353	759	1646
Other Capital Movements	211	612	280
Short-term Capital	0	0	37
(average annual, USD million)	1950-1953	1954-1960	1961-1974
<i>CAPITAL ACCOUNT BALANCE</i>	135	155	243
Foreign Debt Payments	-19	-78	-123
Imports of Foodstuffs (PL480 Credits)	0	20	36
Private Foreign Investment	7	11	38
Project Credits	6	7	131
Import with Waiver	0	0	21
Program Credits	88	108	118
Other Capital Movements	53	87	20
Short-term Capital	0	0	3

Source: Ministry of Finance.

¹³ There is evidence about the import boom of consumer goods in the daily newspapers. In one of the news, it is reported that enough storage place for the imports of durables could not be found. (Hürriyet, September 11, 1951) However, Chenery (1953) believed that part of the rise in imports did not stem from structural change in the economy but due to stockpiling motives in anticipation of future controls on trade. This view is supported by the news in the dailies, giving an idea that stockpiling was also quite widespread. (Hürriyet, October 31, 1952 and April 10, 1954)

The foreign borrowing enabled the government to import a sizeable number of tractors, convert the pasture lands into cultivated lands for wheat agriculture and support agriculture through price and credit incentive systems. Turkey became a major wheat producer and exporter in the early 1950s, producing 8 million tons of wheat in 1953 and exporting net 600 thousand tons and 950 thousand tons in 1953 and 1954 respectively. (Krueger, 1974: 43) However, when export demand weakened and export prices fell, the government started inventory accumulation, which in turn intensified the inflationary pressures in the second half of the decade. (Krueger, 1987: 7)

It is worthwhile to note that after the war the authorities did not attempt to improve the investment incentives for foreign investors. The only law on this issue was enacted on 1947 during the Republican People's Party government. However, this law contained significant uncertainties about the transfer of the profit and, hence, was quite ineffective in attracting foreign investment in the early 1950s. (Kepenek and Yentürk, 1996: 91)

Consequently, the current account deficit of USD 506 million during 1950-1953 was financed by an almost equal amount of capital inflows, amounting to USD 539 million. With the impact of the inflows in the net errors and omissions whose source cannot be known, the reserves increased by USD 129 million in this period. (Table 3.7 and 3.8)

3.2.4.2. Balance of Payments Crisis and the Stabilization Program: 1954-1960

The balance of payments during 1954-1960 period reflects the problems related to the agricultural based development strategy. As already covered in the previous sections, the expansion of the cultivated areas slowed down in 1954 and stopped in the second half of 1950s (CBRT Annual Report, 1959; 35), while the international prices for primary goods, along with the decline in demand after the end of Korean War, started to fall from 1953 onwards.¹⁴ These reduced the exports significantly.

¹⁴ In the CBRT Annual Report (1960: 112), it is stated that the terms of trade index (1953=100), which rose to 107 in 1955, started to fall from that time onwards and became 98 in 1957 and 95 in 1958. The fall in the terms of trade was more dramatic in 1959 and 1960, with the index declining to 84 and 74 respectively.

The response of the government to the failure of the agriculture-based strategy in the mid-1950s was to assume a greater role in absorbing the production and administering the prices of agricultural output. However, the domestic policies directed to sustain economic growth fuelled by increasing requirements of imports of intermediate and capital goods, despite declining export revenues, soon generated payments pressure on the government.

Accordingly, by the end of 1953, government was obliged to increase restrictions on foreign trade and foreign exchange transactions when the current account deficit climbed up to 2.8% of the GNP in 1952 and remained at 2.1% in 1954. The basic instruments to control foreign trade were the quantitative restrictions: Import licensing, holidays on issuance of licenses and price checks were some of the widely used instruments during the period. (Krueger, 1974: 20-21, 36-38).

Furthermore, the *de facto* multiple exchange rate system that prevailed during 1953-1960 also served to control imports and the demand for foreign exchange. Import surcharges were put on goods regarded as luxurious. This brought the buying rate of foreign exchange for those imports with license to TL 3.99 (as compared to the official TL 2.82). On the other side, there were export premium and FX retention privileges to encourage some categories of exports. Capital account transactions were subject to official exchange rate, whereas FX purchases for tourism purposes and services payments were subject to surcharge over official exchange rate. In contrast, the repatriation of profits of the residents and foreigners present in Turkey for tourism purposes were granted premium to attract foreign exchange inflows. (Krueger, 1974: 32-35).

In addition to these measures, the government put to use an increasing number of bilateral trade agreements in the mid-1950s. (Krueger; 1987: 15) These were of two types: for debt payment and for obtaining imports. Accordingly, in the bilateral agreement for foreign debt payments, exporters were not allowed to bring all of their foreign exchange earnings to the country. Some part of the FX earnings were retained by the creditor for debt payments and the exporter was paid in terms of TL by the debtor. However, the concrete account of these transactions is not available. These

types of agreements are believed to have benefited Turkey in such a way that they forced the importers of Turkish goods to buy the Turkish goods because otherwise, the Turkish debt would perhaps not be paid. Therefore, this should have prompted Turkish exports even when they were not price competitive. (Krueger, 1974: 31-32)

On the other hand, evidence shows that bilateral agreements to obtain more imports in exchange for Turkish exports assumed a significant role in Turkish foreign trade until the end of 1958. There were 15 agreements of this sort by 1957, mostly with the socialist countries and as of 1955, 29% of total imports belonged to those countries. Similarly 32% of total exports were directed to the countries in bilateral trade relationship in the same period. (Krueger, 1974: 39; Kepenek and Yentürk, 111; CBRT Annual Report, 1960: 117)

What effect these measures had on the balance of payments can be followed from the sharp decline in imports from over USD 500 million in 1953 to USD 315 million in 1958. This corresponded to approximately 5 percentage points decline in the ratio of imports to GNP from 6.6% in 1953 to 1.7% in 1958. However, the stringent measures discouraged exports in this period, resulting in a decline in the exports from around USD 400 million (4.9% of GNP) in 1953 to around USD 250 million (1.4% of GNP) in 1958. (See Figure-3.3 and Tables 3.7-3.8) Furthermore, the measures were also effective in containing tourism expenditures, which was almost negligible (around USD 7-10 million) until 1958. As a result, despite the reduction in exports, an even larger decline in imports reduced the current account deficit to around 0.4% of GNP in 1957-1958 as compared to 2% in 1953.

It is worthwhile to note that one of the consequence of the restrictions on trade and foreign exchange was to provoke unregistered transactions. The blackmarket for foreign exchange developed and outflows through net errors and omissions in the balance of payments, partly reflecting the unrecorded flows, amounted to 1.2% of the GNP and 33% of the imports in 1956. In the following two years when the foreign exchange scarcity continued, the net errors and omissions continued to register outflows, amounting to around 20% of the imports in those years. Hence, it is plausible to expect that smuggling and under-invoicing were very common in the

mid-1950s. This fact also supports the relatively high growth rates in industry and services that were registered until 1958, despite repression of imports.¹⁵

On the capital account side, the net capital inflows, which were around USD 160-180 million per year between 1952-1956, declined in 1957 to USD 128 million. The reduction stemmed mainly from the decline in the credits given in the context of reconstruction credits from the USA and OEEC. However, the US agricultural surplus credits (PL 480)¹⁶ after 1956 partly offset the decline in the long-term credits and aid. Although accurate data for the debt stock is not available for 1950s, the State Planning Organization (SPO) data for 1950 is 353 million and for 1960 is USD 992 million. Simulating for the deficient years, we obtain a total debt stock of around USD 800-900 million in 1958, corresponding to 4.5-4.9% of GNP. This figure seems quite low compared with the data found in Krueger (1974). She suggests that total debt stock including arrears reached approximately USD 1,500 million (Krueger, 1974: 31), almost 8.2% of GNP. On the other hand, the Central Bank's foreign assets (including gold and foreign exchange) was USD 287 million in 1958 (CBRT Annual Report, 1959: 53-54). Whether with SPO's or with Krueger's debt stock, the external debt exceeded FX revenues and the Central Bank's reserves.

The accumulation of foreign debt rendered the economy more fragile in the case of a possible payments crisis. Furthermore, despite the fact that foreign trade balance improved as a result of controls, declining imports especially in terms of raw materials and intermediate goods had an adverse impact on capacity utilization, investment and production in sectors dependent on imported inputs such as mining and transportation. (Krueger, 1987: 22)

¹⁵ Krueger (1974: 56) estimates, by comparing Turkish imports with that of Turkey's trading partner's exports to Turkey, that the smuggling and under invoicing in imports reaches a proportion of around 15% of the total imports.

¹⁶ Under the Agricultural Trade and Development and Assistance Act of 1954, the US exported agricultural goods to Turkey and provided cheap credits for the financing of these exports. These loans were kept by the Central Bank, part of which was used for the budget and SEEs financing and the remaining part for bilateral transactions with the US.

Consequently, the balance of payments crisis forced an adjustment in Turkey in 1958 that would last two years. (Krueger, 1987: 22, 26-27) There were seven objectives of the program, most of which centred on how to resolve the crunch in the balance of payments, allowing continuation of imports. The components of the program were as follows:

- The TL was devalued against foreign currencies and multiple exchange rates were abandoned gradually within two years. As a result, the TL/USD rate was increased from TL 2.8 in 1958 to TL 9 in 1960.
- Turkey agreed to constrain the use of short-term supplier's credit.
- Ceilings were imposed upon the Central Bank and commercial bank credits and budget deficits.¹⁷
- SEE prices were raised in 1959.
- Import and export regimes were considerably liberalized.
- In return for the above measures, external debt were consolidated and rescheduled.
- In addition, a long-term credit was granted by international lenders. (Krueger, 1974: 71-72)

The debt schedule in 1959 relieved the pressure on Turkey's foreign debt payments. Although the exact amount of the foreign debt was unknown in 1958, a debt schedule agreed upon with the OEEC countries in 1959 covered USD 422 million of debt, repayments of which would be finished by 1970 and the interest rate was set at 3%. Comparing this amount with the external debt of the public sector in 1961 amounting to USD 690 million (excluding the debt under consolidation agreement) shows the extent of the relief that the consolidation agreement provided. In addition to the debt schedule, a total of USD 359 million of foreign credit was granted to Turkey during the adjustment program to institute the flow of imports again. Of this amount USD

¹⁷ The restrictions on monetary and fiscal policy were as follows: Commercial bank credits would be maintained at the June 1958 level. Consolidated budget would be balanced with a limit on government expenditures, which was not publicly disclosed. Agricultural subsidies were required to be included in the government budget. SEE prices would be adjusted so as to cover costs and the SEEs were required to obtain financing through non-inflationary sources and deposit interest rates were raised. (Krueger, 1974: 79) These measures, although effective in 1958, started to be loosened from 1959 onwards.

75 million credit was from OEEC, USD 25 million from the IMF and the remaining from the US. (Krueger, 1974: 76-77)

In the following two years, both the exports and imports recovered significantly. The impact of the stabilization program on balance of payments was felt more clearly in 1960 as the measures such as the exchange rate adjustment were not effective completely until 1960 and the multiple exchange rate system based on premium continued. However, both the exports and imports started to recover in 1959. Imports rose faster owing to increase in the foreign credit financing, leading to an expansion in the trade deficit. As a result, in 1960 the ratio of exports and imports to GNP rose to 4.2% and 6.2% respectively, almost catching their 1954 levels.

In the beginning of the 1960s, a new economic strategy based on planned industrialization was launched. The balance of payments in the succeeding two periods, 1961-1972 and 1973-1979, took shape according to the needs of the import substitution industrialization. The former period reflected the rather easy stage of ISI, where restrictions on foreign trade continued, albeit promoting the imports of intermediate goods and machinery along with the requirements of the privileged sectors for industrialization. Despite stagnation of exports as they received less concern during the ISI, the government did not face difficulties in obtaining foreign financing for the industrialization process. Consequently, the balance of payments was completely oriented towards domestic policy goals in the 1961-1972 period.

During the 1973-1979 period, on the other hand, the shortcomings of the ISI were reflected on the balance of payments as a crisis, with mounting current account deficits, declining capital inflows and depletion of international reserves. This was the most severe balance of payments crisis of the post-war period, which was eventually followed by the adoption of open economy measures in the early 1980s.

3.2.4.3. Balance of Payments at the Center of Development Plans and Continuing Crisis in the Balance of Payments: 1961-1979

With end of the agriculture-based development in the late 1950s and a shift in economic policies to planned industrialization, the balance of payments took its place

at the center of development plans. Between 1961 and 1972, the current account deficit was moderate and the long-term capital was just enough to finance the current account deficit. Therefore, the balance of payments was almost in balance and there was only moderate reserve accumulation throughout the period until early 1970s. (Tables 3.7-3.8)

As a result of the Stabilization Program in 1958, the foreign trade regime was partly liberalized. List of liberalized imports was prepared identifying the raw materials and intermediate goods, which were not domestically produced and, thus, could be imported without any quantity restriction. However, authorities had the right to change the contents of the quota or liberalised lists, which they often did, as a mean to effectively implement the import substitution industrialization. The import programs were the basic tools of protection for the domestic industry throughout the two decades after the 1960s. (Krueger, 1987: 23)

On the other hand, following the initial adjustment made in 1958-1960 in the exchange rate, the appreciation of the TL served to contain domestic prices through lower prices of intermediate and raw material imports, while increasing imports limited the inflationary pressures arising from domestic demand. Therefore, the inflation rate remained very moderate in the 1960s.

During the successful decade of import substitution industrialization in the 1960s, the realizations in the balance of payments were also satisfactory. During the First Five Year Development Plan (1963-1967), exports were better than expected and workers' remittances emerged as an unanticipated source of foreign exchange.¹⁸ Imports were in line with the program. However, foreign credit fell short of anticipations. In contrast to the expected USD 290 million of PL480 credit in five years, this type of credit remained at USD 165 million. Similarly, the program credits¹⁹ amounted to USD 723 million in contrast to the expected USD 1,573 million. (Krueger, 1974: 124) It should be noted that, despite capital inflows lower than expected, the ratio of

¹⁸ Turkish workers started to go in increasing numbers abroad in 1962. Workers' remittances rose from 1965 onwards and mounted in 1974.

¹⁹ Consortium under the charge of the OECD was established in 1963 to coordinate the credits to be given for the Turkish development. In 1963, substantial credit was taken for Ereğli Steel Mill.

net capital inflows to GNP was around 1.2% per annum between 1963 and 1967, which was sufficient to cover the current account deficit of around 1.2% of GNP annually.

The promotion of exports was not on the agenda of the development plans in the 1960s, which was reflected as lower than expected exports during the first two years of the Second Five Year Development Plan (1968-1972). Better performance of exports during early 1960s may be attributed to the competitive real exchange rate that was adjusted in the 1958-1960 period. As of 1968, the real exchange rate had already appreciated by 13% compared to 1962 when the real depreciation of the TL had reached its peak after the adjustment in the exchange rates. (See Figure-3.2) This adversely affected the price competitiveness of Turkish exports and exports stagnated after 1967 until 1970.

Table-3.10. Composition of Imports by Commodity Group and Import Dependency of Investments (1950-1979)

(period averages)	1950	1955	1957-1960	1961-1972	1973-1979
Investment Goods (USD million)	131	270	188	369	1,705
% Share in Total Imports	46	51	46	46	39
Intermediate Goods (USD million)	96	155	172	385	2,607
% Share in Total Imports	33	29	43	48	58
Consumption Goods (USD million)	59	109	45	44	145
% Share in Total Imports	21	20	11	6	3
Total Imports (USD million)	286	533	406	798	4,457
Gross Fixed Investment (USD million)	554	1,580	1,216*	3,049	12,477
Intermediate and Investment Good Imports / Gross Fixed Investment (%)	41	27	35*	27	36

* Investment level and ratio of imports to investment belongs to 1960.

Source: For 1972-1983, 5. Beş Yıllık Kalkınma Planı Öncesinde Gelişmeler; for 1972-1983, Sosyal ve Ekonomik Gelişmeler DPT; TCMB Yıllık Rapor, various issues and SPO web site, www.dpt.gov.tr.

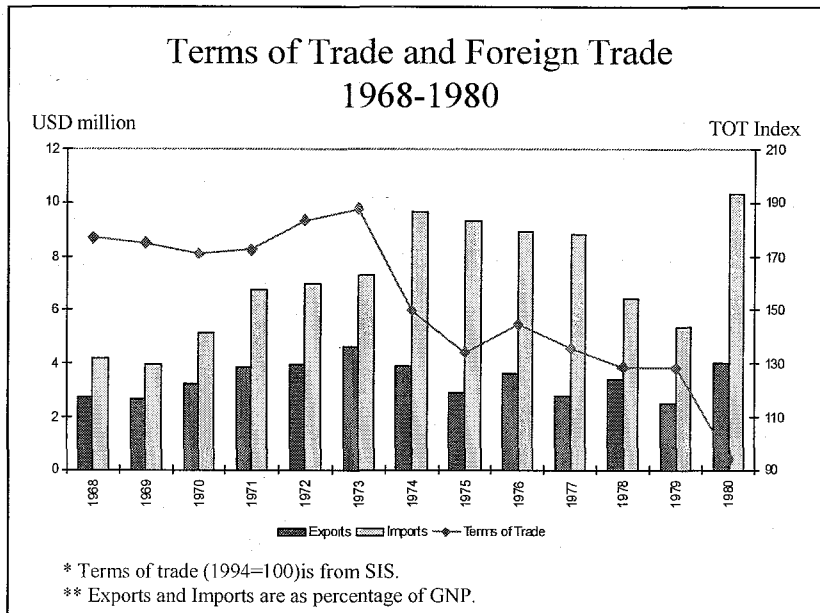
In contrast, during the Second Five Year Plan, the import demand for the planned industrialization was generally higher than planned levels and continued to rise during the third plan, intensifying the foreign exchange demand further. Although consumption good imports were effectively reduced during the 1960s and 1970s, this did not suffice to offset the increasing foreign exchange demand, which emanated from the intermediate good imports. (See Table-3.10) Consequently, strong FX

demand provoked increasing restrictions again from 1967 onwards, aggravating the foreign exchange difficulties at the end of 1960s. (Krueger, 1987: 27)

Under these pressures, the third devaluation of the Republic was introduced in 1970 when the TL/USD rate was raised from TL 9 to TL 15 and many of the restrictions in the mid- and late-1960s were relaxed significantly. Following the devaluation, the export rise was rapid. From around USD 500 million of the late 1960s, exports rose to over USD 1,000 million by 1973. As percentage of GNP, exports increased from 2.6% in 1969 to 4.6% in 1973. The devaluation also prompted workers remittances, which caught up and even surpassed the export revenues until 1975. Despite fuelling domestic demand and hence the inflation, the workers remittances became a perfect buffer for the oil price shock in 1974 and thanks to abundant foreign exchange due to workers remittances, the authorities could distribute a fairly liberal FX licensing in the early 1970s. (Krueger, 1980: 9) Furthermore, also after the devaluation, the project credits rose, the latter replacing the former as the major long-term credit category in the 1970s. (Krueger, 1974: 133-134) Consequently, during 1970-1973, Turkey's reserves were built up and USD 1.9 billion accumulated.

As a result, Turkey was caught up in the oil price shock with high reserves. The high oil prices were transmitted to Turkey with adverse terms of trade movement with the terms of trade deteriorating 20% in 1974 compared to previous year and by 10% further in 1975. Relying on strong reserves, Turkey did not take measures in response to the oil price shock but continued to implement ISI, depleting her international reserves soon. (Krueger, 1987: 31-32) (See Figure-3.4)

Figure-3.4.



Sharp increase in the trade deficit accounted for the depletion of the reserves in the second half of 1970s. With inflation mounting to an average 30%-33% during 1973-1979 period from a low level of 7%-8% on average in 1961-1972, the TL appreciated sharply in real terms in the second half of 1970s. As a result, exports failed to rise enough to cover imports, which reached 8% of the GNP during 1973-1979. As can be followed from the Table-3.10, the import content of investment rose sharply from 27% in 1961-1972 to 36% in 1973-1979, along with promotion of domestic growth through ISI. Moreover, net capital inflows fell short of meeting the trade deficit, despite the increase in the short-term credit through convertible deposit system²⁰ during this period. In contrast, short-term debt accumulated rapidly due to the convertible deposit system, leading to a payments crisis by the late 1970s. Consequently, at the end of 1970s, Turkey found herself in the midst of one of the worst economic crisis of her history.

²⁰ A newspaper told that the short-term foreign debt stock emanating from convertible deposits (DÇM) reached TL 40 billion in 1978, corresponding to 21.1% of total foreign debt stock. (Hurriyet, 25 January 1978)

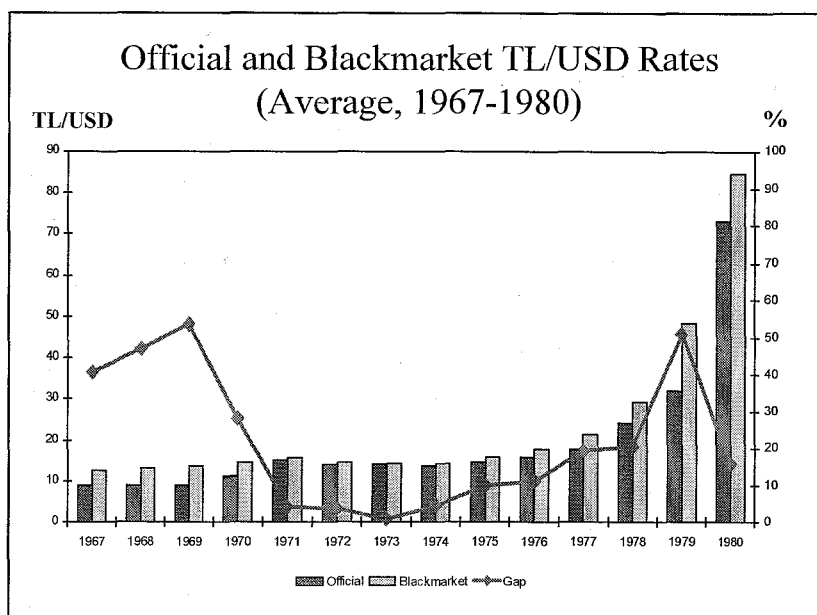
3.2.4.4. Balance of Payments Adjustment (1946-1979): Further Evidence and Questions

It is obvious from the balance of payments developments presented in the previous sections that balance of payments crises that took place almost once in every decade (1958, 1970, 1979) with varying degrees of strength was always followed by shifts in the economic regime. The shift from agriculture based development to planned industrialization through import substitution took place after 1958 crisis and adjustment, whereas the devaluation of 1970 was introduced when faced with stagnant exports and foreign exchange shortage in the second half of 1960s. The most severe balance of payments crisis during 1946-1979 period took place in 1979, followed by the end of ISI era.

Below I present evidence for the pressures coming from the balance of payments for adjustment in the economy. Figure-3.5 presents the average monthly official and blackmarket US dollar exchange rates for 1967-1980. The blackmarket rates have been taken from *Pick's Currency Yearbooks*.²¹

Although this data starts from 1967, it is compatible with the other scattered evidence found in the CBRT Yearbooks about early 1960s. The existence of blackmarket for foreign exchange was already acknowledged by the Central Bank but no series of these rates were available. For example, according to Central Bank's Annual Report (1960), the blackmarket rate of TL/USD was TL 22 in July 1958. This was in the midst of the crisis when foreign exchange difficulties had mounted before the stabilization and the official rate was kept at TL 2.82. After the devaluation, it is stated in the CB's Annual Report (1963) that the blackmarket TL/USD rate fell to 13.96 TL in 1961 and further declined to TL 12.43 in 1963, closing the gap between the unofficial and official rate, which was TL 9.

²¹ The blackmarket rates are quoted in Zurich exchange market (CRT Annual Bulletin, 1964: 42) and are based on foreign exchange transactions for Turkish exports and imports. Therefore, the existence of this market reveals that part of the foreign exchange transactions was made out of the borders of Turkey through bilateral relationships. This brings into reliability of export, import and balance of payments data before 1980s.

Figure-3.5.

Source: *Pick's Currency Yearbooks*, various issues.

The blackmarket exchange rate series have not been studied in the Turkish economic literature so far. Although I could reach only a limited monthly data in the period in question, the data reveals several interesting facts. In Figure-3.5, the solid line measures the discrepancy between the official and blackmarket rates. It can be followed that the discrepancy between the official and unofficial rates reached at its peak in 1969 before the authorities introduced a devaluation in 1970. After the adjustment, the rates in both markets converged between 1971 and 1974, reflecting a fairly competitive exchange rate, which boosted the exports. However, starting from 1975 onwards, the gap widened once again, blackmarket rates reaching over 50% of the official rate in 1979, which was another crisis year. The discrepancy was fairly closed again in 1980 with the devaluation and initiation of the liberalization reforms.

Based on the close relationship between the pressures emanating from the foreign exchange market and the adjustment in the balance of payments, it is possible to derive some consequences of the blackmarket for foreign exchange.

The discrepancy between official and market prices should have encouraged underinvoicing and smuggling in foreign trade and had serious consequence of

underestimation in the balance of payments magnitudes. With industry growing at an average of 6% and GNP at around 4% in the second half of 1970s, imports could have actually been higher. So could be the exports. Furthermore, the significant decline in the worker's remittances from 1975 onwards is worth mentioning. Unrequited transfers, which were USD 1.4 billion in 1974, declined to USD1.1 billion in 1978. Why would have workers reduced the remittances that they sent to their families in Turkey so significantly? In this respect, it is highly probable that the workers remittances were also brought to Turkey through unofficial means.²² As a result, the foreign exchange revenues were no doubt higher. At a time when the country was faced with severe foreign exchange and import shortages, those unofficial transactions of exports, worker's remittances and imports might have allowed high growth rates in the economy despite worsening economic conditions towards the end of 1970s. However, these issues are hard to quantify due to lack of data. I will conclude here by saying that one should be very cautious in interpreting the balance of payments data before 1980s.

3.3. Concluding Summary for 1929-1979:

Between 1929-1979, the balance of payments was strictly controlled. However, the constraints on the balance of payments had implications for economic growth and development through various economic regimes and policies. The most characteristic feature of the period was that the foreign financing availability through capital movements was negligible during 1929-1979 and therefore, the relationship between capital inflows and growth such that the former fosters the latter was absent in the pre-1980 period. This brought foreign trade and current account to the center of economic policy making, as the sole means to obtain and control foreign financing and inputs for production. Therefore, economic growth was closely associated with foreign trade and foreign exchange rate policies and dependent on whether the restrictions were relieved or strengthened.

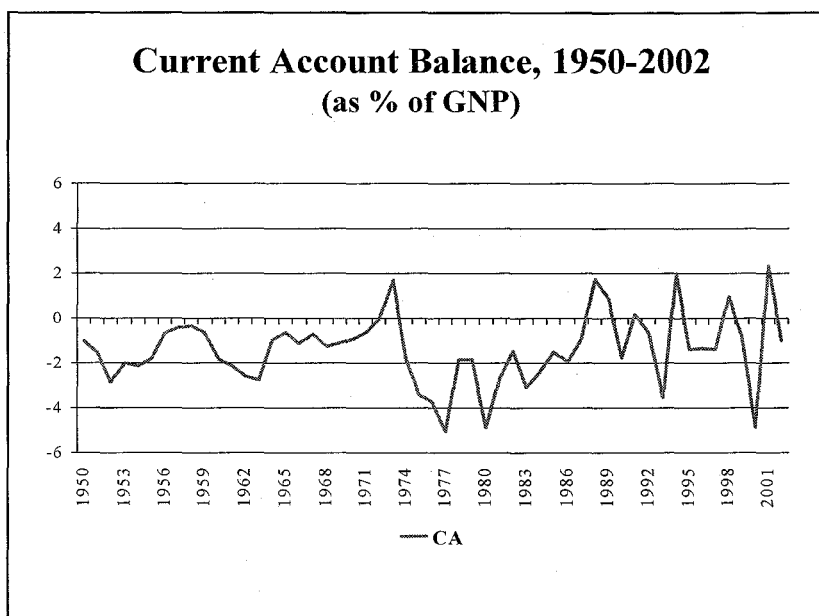
Summing the whole period in this perspective, it can be argued that the causation between economic growth and current account was from the latter to the former.

²² The news in the daily *Hurriyet* (10 February 1979), telling that the workers increasingly evaded sending their money through official means and that the transactions done through unofficial ways exceeded the official transfers, supports this claim.

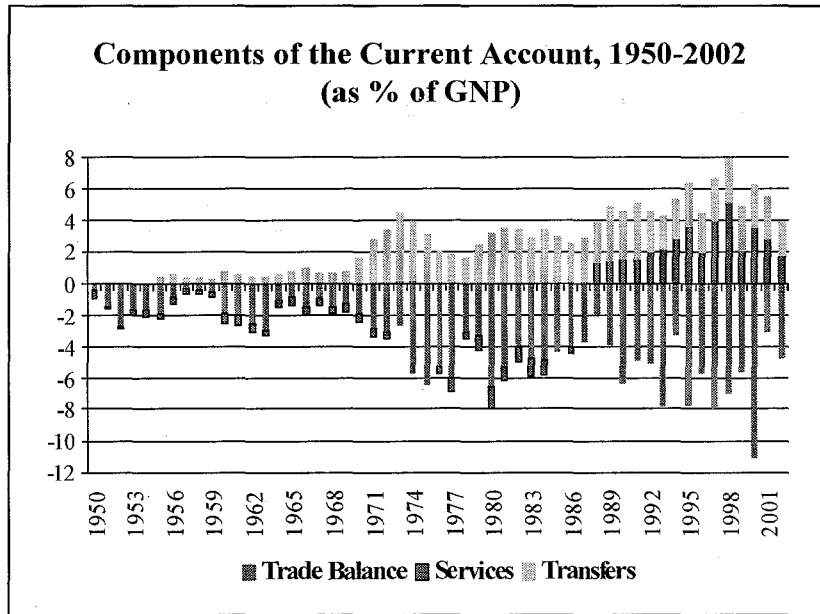
During import substitution industrialization in the 1929-1930 and the 1955-1979, strict controls on foreign trade, preventing consumption good imports and supporting import-competing industries led to high rates of growth in industry and services sectors. However, it was the increase in controls and regulations, which at the same time resulted in severe production bottlenecks and scarcities in 1958, 1979 and eventually the implementation of a stabilization program in 1958-60 and post-1980 periods.

3.4. 1980-2002: Open Economy Accompanied by Domestic and External Crises

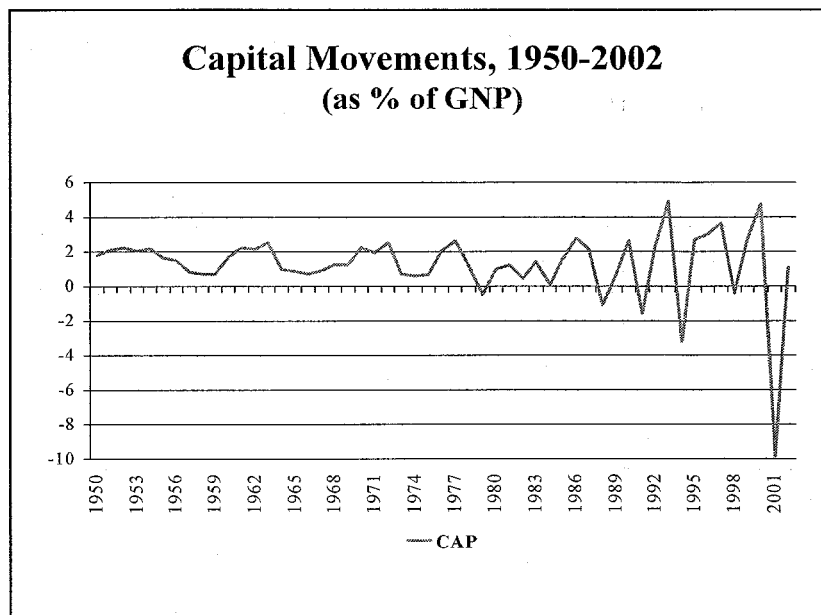
The balance of payments of Turkey underwent significant changes in the 1980s along with the stabilization and liberalization program introduced in 1980. With the opening of trade and capital movements, the key position of balance of payments as a development means of the earlier period shifted with the lifting of controls and restrictions on the foreign exchange flows between residents and non-residents. Instead, the balance of payments became the by-product of the decisions of economic agents from public and private sector in response to domestic and external signals and stimuli. In addition to inclusion of new components in the balance of payments accounts, the magnitudes and the weight of the other components of the balance of payments changed significantly in the post-1980s. The data became more refined and reliable and, hence this allowed more in-depth analysis in the understanding of Turkey's external accounts, although the data had serious drawbacks until the most recent adjustment applied in 2002.

Figure 3.6.

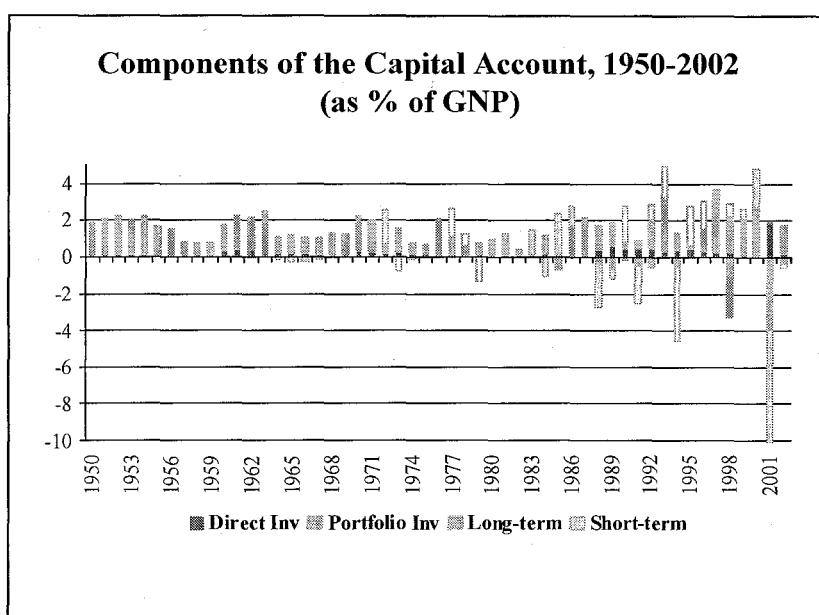
At first glance, it is observed that the rapid impact of the trade liberalization was reflected in the rapid improvement of the current account balance until 1988. (Figure 3.6 and 3.7) The source of this improvement came from the reduction of trade deficit as well as positive contribution from the unrequited transfers, mainly composed of workers' remittances. The balance of services was in deficit until 1987 and recovered only after 1988, later encouraged further by the completion of the capital account liberalization and the implementation of the full convertibility of the TL to foreign currencies. From 1990s onwards, however, it is observed that the current account to GNP ratio exhibited significant fluctuations, with a deficit reaching 5% of the GNP in 2000. The fluctuations in the trade balance in this period became the major source of the volatility in the current account balance. Services balance registered surplus during this period, contributing positively to the current account balance. However, since 1998, there has been a dramatic decline in net revenues obtained through this category mainly owing to the change in the methodology in this item from 1999 onwards as well as the instability and uncertainties in the domestic economy inducing the economic agents to postpone the transfer of the FX revenues to the country. Net FX inflows to GNP through workers remittances remained almost intact throughout the period except for 2002.

Figure 3.7.

It was not until 1990 that the capital flows assumed a significant place in the Turkish economy. In the 1980s, despite liberalization of domestic markets and foreign trade, net capital flows to GNP remained around 1% of GNP on the average. As can be followed from Figures 3.8 and 3.9, the magnitude of the capital flows increased considerably after the renowned Decree 32 in 1989 (and amendments done to this decree in February-March 1990) and full liberalization of the capital movements in 1990, however, accompanied by sharp volatility, outflows reaching 10% of the GNP in 2001. Figures 3.8 and 3.9 also reflect the changing structure of capital flows through time, especially after 1988. Portfolio investments and short-term capital movements became critical components of the capital account, which became the fuelling force behind boom and recession cycles that were very common in the 1990s and early 2000s. (Ersel, 1996; Kirmaoğlu and Özçiçek, 1999; Boratav and Yeldan, 2001; Çimenoglu and Yentürk, 2002)

Figure 3.8.

In this context, while this overall change in the structure of balance of payments was taking place, the relationship between balance of payments and economic growth also changed. In the pre-1980 period when the capital flows were negligible, the changes in the components of the current account balance (namely, export, imports and workers remittances) was bound to strict controls and regulations on foreign trade and exchange rate. The main objective of the government was to attain economic growth and all the domestic policies as well as foreign trade and foreign exchange rate policies were diverted at this objective. In this sense, inflows in the balance of payments (namely, in the current account balance) contributed to economic growth before the 1980s. In contrast, in the post-1980 period, with the financial, trade and capital account liberalization, the capital inflows started to assume an increasing role in the domestic economy and became one of the major factors behind economic growth. Therefore, economic growth fuelled by capital inflows became the major determinant of the current account balance in the aftermath of the liberalization of the economy. Besides, current account deficits became a source of concern in the 1990s reflecting over-heating in the economy that may lead to a balance of payments crisis.

Figure 3.9.

After this brief introduction, the balance of payments developments will be evaluated in detail with reference to macroeconomic policies of the period in the next sections. The period from 1980 to 2002 will be divided into two, 1990 being as the benchmark year for the start of the full liberalization of the external accounts. The components of the balance of payments will be examined in detail in order to identify the structure and determinants of balance of payments in the post-1980 period in Turkey. In addition, the limitations of the data will also be discussed.

3.4.1. Balance of Payments as Part of a Liberalization Package: 1981-1989

Turkey's liberalization experience obeys the "classical sequencing" hypothesis which states that liberalization first starts from trade, continues with the liberalization of domestic markets and is finalized by the removal of barriers to capital flows. (Ersel, 1996: 45-46)

Liberalization process has already started in 1980 with the economic measures introduced on January 24 with no success, which was followed by the coup d'état on September 12, 1980. The liberalization program was resumed again in early 1980s under military rule, when a series of policy changes and deregulation in the external sector and domestic markets took place. The program targeted at achieving three

major goals simultaneously: Eliminating the imbalances in the balance of payments, decreasing inflation and adjusting the economy towards outward orientation together with establishing a market-based economy. (Owen and Pamuk, 1998; 118)

One of the objectives of the program was to promote exports, which rested on real depreciation of the domestic currency as well as on various export promotion measures. The Turkish Lira depreciated in real terms from 1980 until 1987, increasing price competitiveness for exports. After the sharp devaluation of the TL in January 1980, the Central Bank adopted crawling peg exchange rate, adjusting the exchange rate through a series of devaluations in that year. After May 1981, the Central Bank started daily adjustments in the nominal exchange rate, which lasted until August 1988.

Apart from the real depreciation of the domestic currency, a series of export promotion measures, such as export tax rebates, cash premiums, export credits and foreign exchange allocations were put to use until the late 1980s. In terms of policy management, there was an attempt towards a better monitoring of the export promotion schemes in the second half of 1980s compared to the first half. For example, the intense use of export tax rebate rates was reduced after 1984 and ceased completely in 1988 due to the misuse of this measure by the famous “imaginary” exports (*hayalî ihracat*). To compensate for the smaller impact of the tax rebate system, cash premiums were first introduced in 1984. Furthermore, in the implementation of the export credit system, the first and second halves of the 1980s also differ according to relatively better management of the allocation of these credits. (Ersel, 1991: 2-6)

Despite these efforts at better monitoring the export promotion scheme in the second half of 1980s, the rate of growth of exports decelerated in this period. This has been attributed to the increasing domestic demand as well as decline in the subsidies to exports in the second half of 1980s. (Ersel, 1991; 4) Under the military rule when, among other things, the domestic policies were also unchallenged, the export push in the early 1980s benefited to a large extent from sharp declines in real wages, reducing the production costs as well as repressing domestic demand. (Akyüz and

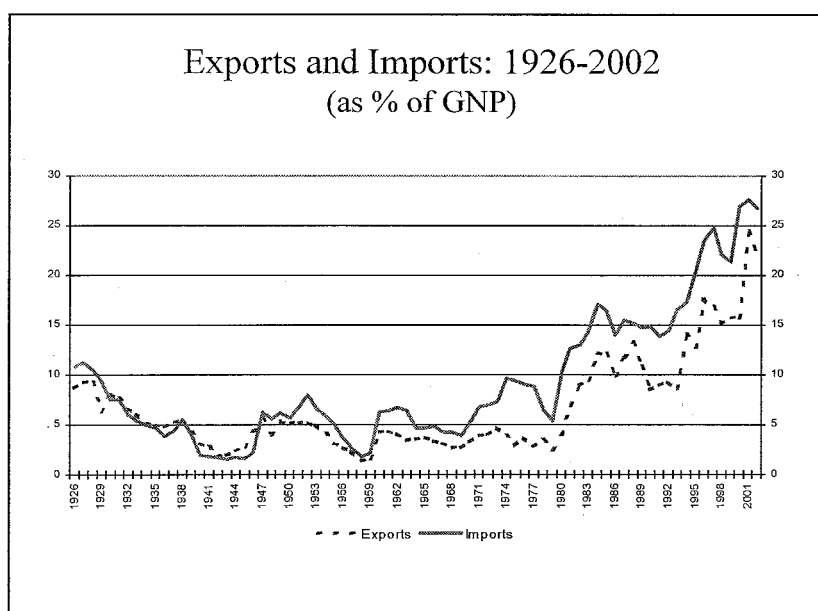
Boratav, 2002; 4; Yeldan and Boratav, 2001; 5; Owen and Pamuk, 1998; 117-118) Besides, external demand coming from Middle East due to Iran and Iraq war between 1982-1985 provided additional stimulus for the exports. (Owen and Pamuk, 1998; 120). As a result, from 1980 to 1985, exports grew by 23.2% on average annually, while the rate of growth of exports remained limited at 9.3% per year between 1985-1989. To put it differently, the exports to GNP ratio, which was 4% in 1980, rose to 12.1% in 1985 and remained at 10.9% in 1989. Consequently, considering the decade as a whole, it can be argued that the export promoting strategy of the period was successful.

The import liberalization measures, on the other hand, were put into effect more gradually. The quantitative restrictions were removed step by step until 1985, whereas tariffs on imports remained throughout the decade and even were increased in 1986 and 1987, before being lowered significantly in 1989 and 1990. (Ersel 1991: 5-6) Consequently, quota restrictions were removed consistently in the first half but tariff restrictions existed throughout the decade. The latter continued to be utilized for providing protection for manufacturing industries, especially the export industries. Despite continuing tariffs on imports, the lifting of quantity restrictions were influential in increasing imports, as can be followed from the increase in the imports to GNP ratio from 10.4% in 1980 to 14.7% in 1989. The average annual growth rate of imports between 1980-1989 was around 8.8%.

The financial sector reforms in the 1980s constituted the second major area of structural reforms, which had direct consequences on the structure of balance of payments accounts. The reform process accelerated in the mid-1980s when a series of effective measures were introduced. Major regulation in the early 1980s, the rapid removal of legal restrictions on loan and deposit rates, led to the financial crisis in 1982 when various brokers and a few small banks who were left unsupervised offered very high rates of return to deposits and, thus, collapsed. From 1983-1987, a list of very important measures in the restructuring of the financial sector was introduced. Among them, the permission of banks to pursue limited foreign exchange transactions and accept foreign exchange deposits (from residents as well) in 1984, Banking Act of 1985 defining codes and regulations aimed at strengthening the

banking sector were particularly important steps, which were directly related to banks. (Ersel, 1991: 7-8) In addition to these, a series of measures and regulatory institutions were also introduced mainly in 1983-1987 period, which served for financial deepening and enhancing financial markets' efficiency. The establishment of Capital Market Board took place in 1983, Treasury auctions were initiated in 1985 and private agents were allowed to participate in the auctions the next year. It was in 1986 that the İstanbul Stock Exchange was established. In 1987 the interbank market was opened, the Central Bank started to implement open market operations and investment funds were introduced.

Figure 3.10.



The financial reform process continued further in the 1988-1989 period, although at a decelerating pace. Foreign exchange market was set up in 1988, followed by the gold market in 1989. Furthermore, the Treasury started to issue eurobonds in the international markets in this period. Finally, the sequence of liberalization process was completed by the capital account liberalization and the declaration full convertibility of the Turkish Lira in 1989.

The capital account liberalization in Turkey has been criticized as an “early” or “premature” attempt put forward as a pragmatic solution to pressures arising from

populist demands. (Ersel, 1996; 53; Alper and Öniş, 2001; 6; Cizre and Yeldan, 2002; 4) 1987 elections were critical in this respect reflecting the decline in the popularity of Özal government as the economic reforms of the early 1980s had depressed wages and incomes of agricultural producers. Urban real wages had declined by 20% from 1979 to 1987 (Owen and Pamuk, 1998; 120-121), which now required upward revision to compensate for the discontent of those adversely affected by the reforms, at the expense of increasing public deficits. The government had to find a means of financing apart from the tax reform, which, if implemented, would aggravate the discontent further, and the financial markets were not developed enough to sustain financing continuously without crowding out the private sector. Therefore, capital account liberalization was proposed as a key for obtaining foreign financing for public expenditures while increasing consumption and investment through these flows and controlling for inflation through increasing imports and real appreciation of the TL. (Ersel, 1996; 53-55; Alper and Öniş, 2001; 6; Akyüz and Boratav, 2002; 5; Boratav et. al., 1999; 7) However, in the aftermath of the capital account liberalization, public sector's borrowing requirement rose speedily, interest rates and inflation remained high with GDP growth exhibiting sharp fluctuations in the 1990s.

These reforms were expected to affect the balance of payments through several mechanisms. First, trading activities would be eased by allowing residents to engage in foreign exchange transactions and, hence, the volume of trade would increase. Second, tourism transactions would be simplified and encouraged, which was expected to increase FX revenues. Third, one of the expected outcome of the financial liberalization was the reduction of the unrecorded transactions, which took place especially through the major unofficial market (*Tahtakale*). The FX revenues that were kept abroad or unrecorded, would be drawn in the country through official accounts. As already mentioned in the previous sections (*Section 3.2*), exporters and importers as well as workers abroad were highly engaged in unofficial transactions due to the heavy bureaucratic requirements and controls before 1980. Finally, foreign capital would be attracted to the country by offering various investment alternatives and granting an efficient and secure operation through enhanced financial markets. Thus, current account balance was expected to be improved and capital inflows to

increase. Whether these expected results were realized will be examined by evaluating the developments in the major components of the balance of payments in 1980-1989 period.

The initial effect of the liberalization was felt on the rapid improvement on the current account balance in the first half of 1980s. The current account deficit to GNP ratio, which was around 4.7% in 1980, fell to around 1.5%-2.5% between 1981-1985, mainly due to the contraction in the trade deficit. In the second half of 1980s, current account deficit to GDP declined further bolstered by the improvement in the net other goods, services and income account from 1985 onwards. The latter included tourism, interest and other services transactions, which were affected from the changes brought about in the trade and financial sector liberalization. In this context, the tourism revenues are worth to mentioning: Net tourism revenues, which were almost negligible around USD 250 million between 1980-1984 jumped to USD 770 million in 1985 just after Decree 30 was put into effect in 1984 allowing partial external financial liberalization. As of 1989, the tourism revenues had reached USD 2 billion. Similarly, the “other” category of goods, services and income account, which is composed of numerous items²³ registered a significant rise in 1986 to USD 850 million from around USD 600 billion in the previous few years and continued to increase in the rest of the decade. The rise in those items should be interpreted as coming from the increase in the volume of FX transactions facilitated by the new liberalization regulations as well as channeling of existing FX transactions through official means.

On the capital account side, the trade and FX liberalization measures did neither increase the inflows nor changed the structure of capital inflows in the 1980-1989

²³ “Other” category of goods, services and income accounts has been the most problematic account under balance of payments until the most recent change in the balance of payments methodology adjusted with the IMF’s definitions in 2002. It involved any services of the type other than tourism and interest receipts and expenditures such as communication, construction, insurance, financial services, patent and licensing payments, leasing, payments of the consulates, etc. The problem with the methodology of this category stemmed from the fact that a significant portion of the other items depended upon the personal declaration of the economic agents while they were making FX transactions in a bank. The problem arises in cases when the source of the FX revenue or expenditure is not declared. Thus, for any FX sales or FX purchases in a bank, the Central Bank (CB) applies some (unannounced) weights, assuming not all of the FX transactions are done for external financing purposes. The CB declared that they revised their methodology of “other” category from 1999 onwards and this item fell sharply since then. (CBRT Announcement, June 1999, www.tcmb.gov.tr)

period compared to the pre-1980 period. Comparing the first half of 1980s with the second half, as the measures were virtually effective in the latter, it is observed that net capital inflows remained limited in both periods, averaging USD 645 million per year in the first half and USD 959 million in the second half. Long-term capital inflows were the dominant form in both periods, although declined considerably after 1982, owing mainly to the loss of credibility in the international markets as a result of brokers (banker) default in the country.

However, there were two noticeable differences in the first and second part of 1980s: First, Turkey enjoyed a substantial amount of long-term credits in the early 1980s obtained from international institutions for the balance of payments financing, which was registered separately until 1985 in balance of payments accounts. The support of the international institutions stemmed from the importance attached to Turkey as the success story of orthodox stabilization measures and due to geopolitical reasons in the Middle East (Owen and Pamuk, 1998; 121). The funds were used to back up Central Bank reserves. The second difference between the first and second halves of 1980s was the innovation of portfolio investments from 1986 onwards. Until full capital account liberalization, private capital inflows to Turkey's securities and government debt instrument (GDI) markets was non-existent and significant inflows through this item in late 1980s emanated from the Treasury's eurobond issues in the international markets.

Consequently, partial external liberalization measures had an obvious impact on current account balance of Turkey, while capital inflows remained moderate for the whole period. In addition to the continuing restrictions on capital movements, the loss of credibility after the financial crisis in 1982 and the reluctance of banks to extend credit under the fragile financial system played a role in the limited supply and demand for foreign capital in the 1980s. (Atinkemer and Ekinici, 1992; 93).

Table-3.11. Balance of Payments in Post-Liberalization Period (Cumulative)

USD million	1980-1985	1986-1989	1990-1995	1996-2002
CURRENT ACCOUNT BALANCE	-10,671	286	-9,490	-12,669
Exports	35,052	41,614	97,560	232,508
Imports	-55,054	-53,920	-154,233	-318,572
Foreign Trade Balance	-20,002	-12,306	-56,673	-86,064
Net Other Goods and Services Income	-3,501	2,561	22,176	40,665
Tourism (net)	2,056	5,654	18,156	37,694
Interest (net)	-8,361	-8,446	-15,566	-22,508
Other Goods, Services and Income (net)	2,804	5,353	19,586	25,479
Net Unrequited Transfers	12,832	10,031	25,007	32,730
CAPITAL ACCOUNT BALANCE	3,872	3,837	14,700	14,192
Direct Investment	426	1,248	4,215	5,168
Portfolio Investment	0	2,992	8,893	-5,265
Long-term Capital Movements	1,604	1,600	-1,424	16,544
Short-term Capital Movements	1,842	-2,003	3,016	-2,255
NET ERRORS AND OMMISONS	2,049	862	1,191	-4,114
RESERVE S*	4,750	-4,985	-6,401	2,591
IMF	659	-1,286	634	20,095
Official Reserves*	-1,122	-4,125	-7,569	-17,504
Balance of Financing and Corresponding Accounts	5,213	426	534	0

*Plus sign indicates a fall and a negative sign indicates a rise in Central Bank's reserves.

Table-3.12. Balance of Payments in Post-Liberalization Period (Average Annual)

USD million	1980-1985	1986-1989	1990-1995	1996-2002
CURRENT ACCOUNT BALANCE	-1,779	72	-1,582	-1,810
Exports	5,842	10,404	16,260	33,215
Imports	-9,176	-13,480	-25,706	-45,510
Foreign Trade Balance	-3,334	-3,077	-9,446	-12,295
Net Other Goods and Services Income	-584	640	3,696	5,809
Tourism (net)	343	1,414	3,026	5,385
Interest (net)	-1,394	-2,112	-2,594	-3,215
Other Goods, Services and Income (net)	467	1,338	3,264	3,640
Net Unrequited Transfers	2,139	2,508	4,168	4,676
CAPITAL ACCOUNT BALANCE	645	959	2,450	2,027
Direct Investment	71	312	703	738
Portfolio Investment	0	748	1,482	-752
Long-term Capital Movements	267	400	-237	2,363
Short-term Capital Movements	307	-501	503	-322
NET ERRORS AND OMMISONS	342	216	199	-588
RESERVE S	792	-1,246	-1,067	370
IMF	110	-322	106	2,871
Official Reserves	-187	-1,031	-1,262	-2,501
Balance of Financing and Corresponding Accounts	869	107	89	0

To sum up shortly, in addition to favorable balance of payments developments, Turkey's adjustment program produced satisfactory results in other fields of the economy. High growth rates were achieved averaging 5.7% between 1981-1987; however, GNP growth rate decelerated in 1988-1989. The engine of growth became the industrial sector in this period fuelled by export-oriented development pattern. (Table 3.13) Public sector borrowing requirement and consolidated budget deficit were kept more or less under control as can be followed from Table 3.15. On the financial sector side, the financial deepening could be enhanced as can be observed in M2/GNP rising over 22% compared to 21% in the 1973-1979 period and M2Y/GNP increasing over to 28%, due to the introduction of FX deposits. However, high inflation rates around 50% persisted throughout the period and the interest rates remained high. Uncertainties due to high inflation and costly production financing led to a weak rise in investments. It can be observed in Table 3.16 that the economic measures only slightly increased the savings/GNP ratio in the second half of the decade compared to the first part, which transformed into a moderate rise in investment to GNP.

Table-3.13. Economic Growth During 1980-2002 (Average Annual, %)

	Gross National Product	Agriculture	Industry	Services
1980-1985	3.5	0.4	5.9	3.8
1986-1989	4.9	1.1	7.2	4.9
1990-1995	4.4	1.7	5.3	4.6
1996-2002	2.5	1.4	3.2	3.2

Source: State Institute of Statistics (SIS).

3.4.2. Balance of Payments Subject to External and Domestic Crises: 1990-2002

3.4.2.1. Macroeconomic Environment

In contrast to the previous decade, 1990s until 2002 will be remembered more for the external shocks and financial crises than for anything else in Turkey. In addition to the invasion of Kuwait by Iraq at the start of the decade and the ensuing Gulf crises in 1991, Turkey faced major shocks at the end of the decade arising from Asian crisis in 1997 and Russian crisis in 1998. Besides, in terms of sound domestic policy making and economic stability, the period as a whole was not fortunate either since

in almost a half of the decade, two major crises in 1994 and 2001 respectively led to the most severe downturn in the economy.

It can be argued that the roots of the most recent crisis in 2001 can be traced back to the policy mismanagement and reluctance of the authorities to effectively deal with public sector deficiencies in early 1990s, which later led to the chronic debt sustainability problem of the late 1990s. The capital account liberalization and following substantial inflows of foreign capital eased the pressures on the authorities at the beginning and provided them with room to pursue expansionist macroeconomic policies and, hence, economic growth without leading to a surge in the inflation rate. However, the open economy framework rendered the country more fragile to any domestic policy mistakes as well as to external shocks. Hence, growth pattern dependent upon the availability of foreign capital without having developed the capabilities of paying it back (namely, through trade surpluses), resulted in balance of payments crises two times in half a decade.

As mentioned in the previous section, at the core of the problems were rapid increases in the public deficits, owing to the populist stance of the government, who attempted to regain popularity and support at the first place. Apart from meeting the demands for wage correction from workers and public officials, the escalating war in the South East of Turkey against the Kurdish guerrillas in the early 1990s should have contributed to the growing deterioration in the public balances of the period.²⁴ (Owen and Pamuk, 1998; 121) Consequently, the public sector borrowing requirement which averaged 5% in 1980-1985 period surged to 8.9% in 1990-1995 period and to 11.8% in 1996-2002 period. Domestic borrowing became the major source of financing throughout the period, which has been fuelled by the inflows of capital. High interest rates due to substantial borrowing requirement of the public sector along with the real appreciation of the TL rendered the lending to the public sector more profitable and encouraged banks to divert their sources to the public sector

²⁴ For difficulties in analyzing defense expenditures and estimation of military expenditures can be found in Günlük-Şenesen (2002). The author shows that these expenditures accelerated after 1988, decelerated following 1994 economic crisis and gained momentum again after 1996 until 1999. (Günlük-Şenesen, 2002: 75-80).

instead of extending credits to the real sector. This can be followed from Figure 3.11 below reflecting the relationship between high interest rates, appreciation of the currency and capital inflows and from Table 3.14 showing the limited increase in the domestic credits in contrast. The return differential in Figure 3.11 has been estimated as the difference of the average Treasury auction interest rate (weighted with sales and annually compounded) in period $t-4$ and the annual basket devaluation rate in period t . The logic behind this is that the Treasury auction interest rate reflects the expected return in the year starting from that quarter, therefore, it should be compared with the realized annual return of an alternative investment instrument at the end of period t . The graph shows clearly that the prospect of net positive real returns on government debt instruments (GDIs) triggered capital inflows in Turkey and negative net return led to severe capital outflows.

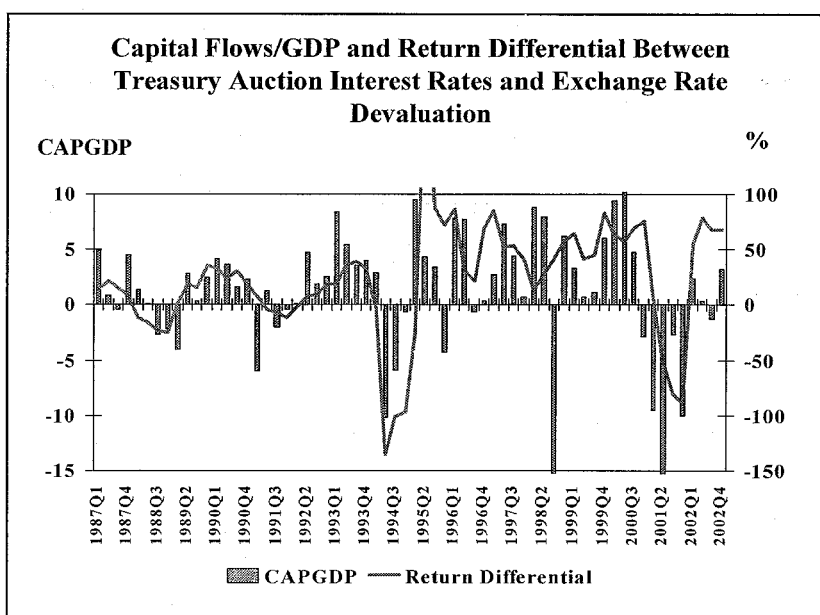
Table-3.14. Money and Credit Developments During 1980-2002 (Average Annual, %)

	M1/GNP	M2/GNP	M2Y/GNP	Domestic Credit/GNP
1980-1985	11.9	21.9	22.4	23.7
1986-1989	9.8	22.2	28.6	23.3
1990-1995	6.6	16.7	27.0	20.8
1996-2002	5.7	23.3	45.1	21.7

Source: CBRT and SPO web sites.

The rapid accumulation of domestic debt in the early 1990s accelerated the deterioration of expectations and led to the 1994 crash. By the end of 1993, there were strong signals from the various data that the public sector deficit and the public debt were seriously on the rise. (Özatay, 1996: 23) However, the “naïve” persistence of then ruling DYP government of attempting to control interest rates by canceling Treasury auctions sparked of a “second generation model of a balance of payments crisis” and ended in one of the worst economic crises of Turkey in 1994.

Figure 3.11.

**Table-3.15. Public Sector Developments During 1980-2002 (Average Annual, %)**

	Consolidated Budget Balance/GNP	Consolidated Budget Primary Balance/GNP	Consolidated Budget Interest Payments /GNP	PSBR	Domestic Debt Stock to GNP
1980-1985	-2.5	-1.2	1.3	5.0	17.0
1986-1989	-3.1	0.2	3.3	5.0	20.9
1990-1995	-4.5	0.8	5.3	8.9	17.2
1996-2002	-10.8	3.7	14.5	11.8	35.2

Source: Ministry of Finance and Treasury.

Owing to favorable external demand and the relative price advantage after the devaluation in 1994, the exports were quick to recover and from the second quarter of 1995, economic growth path was resumed again, registering over 7% GDP growth in consequent three years. The economy slowed down considerably in 1998, before entering into deep recession in 1999, the GDP contracting by a rate of 4.7%. The withdrawal of foreign funds from emerging markets throughout the world after Asian crisis and the ensuing Russian crisis in 1997 and 1998 respectively led to a sharp cut in the capital flows to Turkey in 1998. The economy slowed down and the current account balance registered a surplus in that year. The adverse external conditions continued in 1999 along with high rates of interest at home, driving the country into recession in 1999 and the problems were intensified further by the earthquake

disaster in August 1999. (Akyüz and Boratav, 2002; 9) The public sector borrowing requirement hit 16% and the budget deficit reached 12% of GNP. Average Treasury auction rates remained over 100% throughout the year while average annual CPI was 62%-65%. Given these imbalances, the sustainability of the domestic debt and stability in the economy were seriously at stake.

It was under these conditions that the new coalition government took power in 1999. The three-party coalition government was in a sense obliged to make the first serious attempt in the post-1990 period about solving the acute problems of persistent inflation and domestic debt rollover and agreed on launching a stabilization program in 2000 backed by a stand-by arrangement with the IMF. The program had three pillars: The economy would be put on a sustainable growth path; the inflation would be reduced to 25% in CPI and 20% in WPI and a series of structural reforms would be undertaken in the banking and public sector. The latter involved measures to establish the conditions on which financial markets would effectively function as well as controlling the expenditures in the public sector to secure debt sustainability.²⁵ The program rested on a pre-announced crawling peg in terms of basket (1USD+0.77 Euro) exchange rate with a certain exit in July 2001. This would be a nominal anchor in reducing the inflation rate by lowering the costs as well as containing the inflationary expectations. The structural reforms were expected to help build up credibility of the government, promoting foreign capital inflows into the country which would lower the interest rates through a Central Bank's policy of non-sterilization.

Despite neatly designed with its exit strategy, the stabilization program could not reach even the second stage of gradual exit from pre-announced exchange rate path in July 2001 and collapsed through a severe balance of payments crisis as early as February 2001. Weaknesses inherent in the exchange rate based stabilization programs such that capital inflows provokes consumption-led growth and considerable appreciation of the currency (given the resistance in the inflation), which end up in high current account deficit and increased risk perceptions for the

²⁵ See Letter of Intent dated December 9, 1999 and CBRT Monetary Program dated December 9, 1999 for details.

sustainability of the exchange rate regime were also valid for Turkey. Turkey registered a GDP growth rate of 7.4% in 2000 accompanied by USD 9.8 billion of current account deficit and USD 9.6 billion of net capital inflow. Naturally, there was not one single reason for the collapse of the economic program. The deterioration in the expectations related to the sustainability of the program had been bolstered in the meantime starting from mid-2000 due to the reluctance of the coalition government in implementing the major reforms including the privatization of the public banks and state monopolies and enterprises. Added to this, banks which, as the major financiers of the Treasury, carried heavy exposures of GDIs and were subject to serious interest rate risk. The rise in the interest rates in the second half of 2000 deteriorated the balance sheets of banks, making them even more fragile. Besides, the regulations on open positions on banks could not be effectively supervised which rendered them exposed to exchange rate risk as well. Finally, banks had a serious maturity mismatch due to their short-term liabilities of deposits and short-term foreign credits in contrast to long-term assets especially of consumer credits and GDI portfolio, which by their nature are not easily reversible.²⁶ Consequently, all of these factors combined to lead to a financial turmoil first in November 2000 and to the dismantling of the program officially in February 2001 and shifting to a free floating exchange rate regime. From then on Turkey entered into its worst recession ever (after the Second World War) with GNP and GDP contracting by 9.5% and 7.5% respectively in 2001.

Not long after the 2001 crisis, the stabilization program was enacted again with another deal with the IMF under a new name (*Güçlü Ekonomiye Geçiş Programı, May 2001*) supported by an additional credit package. Had the IMF not granted this credit, the balance of payments would be in serious trouble in 2001 with only USD 3.4 billion current account surplus as opposed to USD 14.2 billion of capital outflow, almost 10% of GNP. Since then, the program has been on track despite delays and fluctuations. After a prolonged recession, Turkey resumed its growth path in the first

²⁶ For a detailed evaluation of 2001 crisis, see Akyüz and Boratav (2002), Alper and Öniş (2001), Cizre and Yeldan (2002), Ertuğrul and Yeldan (2002), Eichengreen (2001) and Yapı Kredi Research Occasional Bulletins, various issues.

quarter of 2002 and registered an overall unexpectedly high growth in 2002 amounting to 7.8% both in terms of GDP and GNP.

Examining the overall performance of the economy briefly, it is observed that the relative high rates of economic growth could be maintained in the first half of 1990, whereas various external as well as domestic shocks slowed down the average growth rate considerably during 1996-2002. The GNP grew by an average rate of 4.4% in 1990-1995 as compared to 2.5% in 1996-2002. This shows that the availability of foreign capital determined the growth path of Turkey, leading to high growth rates in the former period in contrast to poor economic performance in the latter period.

Table-3.16. Saving and Investment During 1980-2002 (Average Annual, %)

	Total Domestic Savings /GNP	Gross Fixed Investments /GNP	Public Gross Fixed Investments /GNP	Private Gross Fixed Investments /GNP
1980-1985	17.2	18.9	8.6	11.4
1986-1989	23.8	24.1	9.1	14.9
1990-1995	22.2	24.1	6.4	17.7
1996-2002	19.7	22.4	6.0	16.3

Source: SPO Annual Plans, various issues.

Looking at investment and saving figures, it is seen that trade and financial liberalization have increased total investment to GDP ratio increased from 19% to 24% during 1986-1989 but the capital account liberalization did not make a great difference in this ratio. However, the public investment ratio declined by 3 percentage points, whereas private investment ratio compensated this decline. Examining the data further, it is observed that saving to GNP ratio has declined since the capital account liberalization, which ultimately implies that domestic savings were not the source of finance in the rise in the private sector investments but capital inflows. On the monetary side, the impact of the capital liberalization unfortunately has been limited on further deepening of the financial system as can be followed from almost stable (and even declining) M1 and M2 figures as percentages of GNP. M2Y to GNP, on the other hand, rose significantly from 29% in 1986-1989 to 44.4% in 1996-2002, reflecting the substantial FX substitution in the system. Inflation rates remained high for most of 1990s and could be reduced during exchange rate based stabilization program in 2000 39% and 33% in CPI and WPI and during economic

program in 2002 to 30% and 31% in CPI and WPI respectively. Public imbalances persisted, throughout the decade, however, leaving the debt sustainability question intact until present times. The last economic program has improved the domestic debt to GNP ratio in 2002, yet, there are still concerns about it due to the high real interest rates presently in 2003.

3.4.2.2. Balance of Payments Developments

In the economic literature evaluating Turkish economy in historical perspective, 1990 is taken unanimously as a demarcation point as it marks the start of a new era in Turkey, which completed its process of outward orientation. Contrary to expectations, however, the instability in the economy in terms of boom and recession cycles owing to factors of both external and domestic origin became the characteristic of the period. Balance of payments took its toll from the volatility and instability in the economy in the 1990s and early 2000s as well. Structure of balance of payments changed significantly both in terms of current and capital accounts along with large swings in the balance of payments resulting in serious crises two times in 1994 and 2001.

Basic features of the balance of payments in 1990-2002 that differentiated it from the 1980s were as follows: Exports grew only moderately at an average annual growth rate of 9.8%, while imports closely followed boom and recession cycles in the economy, fluctuating with large swings especially between 1999-2002. With subsidies abolished in the 1990s, exports became more sensitive to external demand and relative price movements. Although external conditions were not much favorable especially after the 1997 Asian and 1998 Russian crises and the prolonged recession in the industrialized countries in the early 2000s, exports continued to expand faster especially in 1996-2002. Weak domestic demand during times of economic contraction as in 2001 and ability of the exporters to have access to different markets (such as the shuttle trade with Russia emerging as an important revenue item after 1996 and the access to North African markets) played a role in the rise of exports in recent years. Furthermore, exports benefited from the lower cost of production due to repressed real wages as in 2001 and in 2002 as well. Imports, on the other hand, rose rapidly in the 1990s, increasing its average share in GNP to 16.2% in the 1990-1995

and to 24.7% in the 1996-2002 from 14.8% in the 1986-1989 period. The import demand was driven by domestic demand at home exhibiting significant fluctuations in late 1990s along with boom and trough cycles in the economy. As a result, trade deficit expanded significantly in the 1990s despite high volatility, which led to sharp fluctuations in the current account balance.

One of the distinguishing features of current account balance in the 1990s was the considerable rise in the balance of other goods, services and income account. As mentioned previously, the average share of net balance of this account turned to a slight surplus only in the second half of 1980s with the partial liberalization measures and it rose rapidly after the full convertibility of TL after 1989. The average ratio of surplus in the net balance on other goods, services and income to GNP rose from 0.6% in 1986-1989 to 2.3% in 1990-1995 and to 3.1% in 1996-2002. The surge in net tourism revenues were quite significant in the 1990s with an average annual net revenue of USD 3 billion in 1990-1995 and USD 5.4 billion in 1996-2002, as compared to USD 1.4 billion in 1986-1989 (Table 3.11 and 3.12). A similar significant rise was observed in the “other” category of services account in the first half of 1990s. Net revenues from this latter account declined since 1999, however. This change in the trend stemmed first from the change in the methodology that became effective since 1999. Later, the decline continued due to the uncertainties following the economic crisis in 2001, reflecting the reluctance of FX earners such as exporters or those in tourism to bring the revenues at home. Also due to this latter reason, the transfers from workers abroad declined almost to half in 2000 and 2001. When the average ratio of unrequited transfers to GNP is considered, it is observed that the share of this item has been declining since 1980s, albeit slightly, and amounted to 2.5% in the 1996-2002 period.

On the other hand, as in current account balance, net capital flows reflected sharp fluctuations ranging from -9.9% and 5% as percentage of GNP in the 1990s as opposed to the low but stable inflows of the previous decade ranging from -1% and 2.9% as percentage of GNP. The period following the liberalization of capital movements reflects significant differences in the first and second halves of the decade in terms of availability of foreign capital and structure of flows. Below, 1990-

2002 period will be examined in 1990-1995 and 1996-2002 sub-periods in terms of major components of the capital account balance as well as some selected sub-components, showing the considerable changes through these periods.

Foreign direct investment has always been very poor in Turkey. It remained around USD 700 million per year throughout the whole period in the 1990s (Table 3.11 and 3.12). In addition to the time-consuming and costly requirements for the start of direct investment in Turkey, the bureaucratic legal framework and the sustained instability of the economy are the factors, discouraging direct investments, which are long-term. In contrast, the volume of portfolio investments and short-term capital inflows rose significantly in the first half of 1990s, whereas net flows through these categories turned negative in the second half, reflecting serious outflows, which had severe repercussions in the domestic economy. In 1990-1995, the cumulative flows through portfolio investment amounted to USD 8.9 billion and flows through short-term capital account amounted to USD 3 billion, while in 1996-2002, the former recorded an outflows of USD 5.3 billion and the latter an outflow of USD 2.3 billion respectively. The long-term capital compensated in part the lack of financing through short-term capital and portfolio investments in the second half, corporate sectors assuming an important role in obtaining long-term financing. While the net balance of long-term capital movements was negative in 1990-1995 period, it recorded an inflow of USD 16.5 billion in 1996-2002. Consequently, total net capital inflows in the first and second half of the 1990s amounted to USD 14.7 billion and USD 14.2 billion respectively, which implies a relatively lower average capital inflow per year in the 1996-2002 period.

Furthermore, one of the most critical elements in the second half of 1990s is the increasing weight of the IMF in the balance of payments, with USD 20 billion of credits for 1996-2002²⁷, compared to USD 0.6 million obtained in 1990-1995 (Table 3.11 and 3.12). As in early 1980s, when international institutions' support was critical in the stabilization program of Turkey, the post-1999 period's structural reform agenda took considerable support from the IMF. The support of IMF is

²⁷ In fact, the IMF credit of USD 20 billion was granted in 2000-2002; hence, IMF support should not be interpreted as a feature of the whole 1996-2002 period.

further evidence for the fragility in the balance of payments in the late 1990s since it compensated for the substantial capital outflows in 2001. Had the credits from the IMF amounting to USD 13 billion not been obtained in 2001, the balance of payments would be in serious trouble, with USD 14.2 billion capital outflows as opposed to USD 3.4 billion of current account surplus.

As a result, the second part of 1990s can be said to be characterized by a lack of foreign financing, in other words, by credit constraint, which in turn was critical in intertemporal consumption decisions, and hence, current account balance in the late 1990s and early 2000s. This brings us to the question of which sectors were credit constrained and which were able to attract foreign capital in this period.

The examination of the selected components of capital account in more detail gives an interesting picture (Table 3.17 and 3.18). Of the USD 8.9 billion portfolio investment between 1990-1995, inflows to newly established securities market amounted to USD 2.3 billion, while Treasury's eurobond issues in the international markets amounted to USD 9.1 billion. This shows that although inflows to the securities market rose considerably in this period, it remained limited considering the credit the Treasury obtained through eurobond sales. It is apparent that instead of lending to private sector and investing in shallow financial markets, foreign creditors preferred to lend to the Treasury's safe haven assets with secure and high returns. This could be regarded as a sort of crowding-out effect for private sector in terms of obtaining foreign funds, where the public sector in desperate search for financing, draws the financing means to itself. Moreover, in the second part of 1990s, the amount of inflows to the securities markets fell almost to a negligible amount of USD 0.5 billion, where outflows from domestic GDI markets were dramatic, amounting to USD 10.4 billion. This shows that, at the end of 1990s and early 2000s the foreign financial investors, who entered in substantial amounts in the secondary GDI markets with high real returns, left rapidly when faced with Russian crisis in 1998, liquidity crisis in 2000 and economic contraction in 2001. This is a striking evidence reflecting the fragility in the economy stemming from free mobility of capital.

Table-3.17 Selected Components of Capital Account Balance (1986-2002)
(Cumulative)

USD billion	1986-1989	1990-1995	1996-2002
CAPITAL ACCOUNT BALANCE	3,837	14,700	14,192
Portfolio Investment	2,992	8,893	-5,122
Securities (domestic markets)	17	2,340	503
GDIIs (domestic markets)	0	351	-10,403
Eurobond Sales of Treasury (international markets)	1,661	9,084	12,958
Central Government	-2,501	-9,509	-9,680
Long-term credits	-1,472	-9,509	-9,680
Short-term credits	-1,029	0	0
Corporate Sector	2,271	10,345	20,880
Trade Credits (long-term)	0	-132	1,807
Trade Credits (short-term)	-812	5,337	1,018
Financing Credits (long-term)	2,722	4,620	17,519
Financing Credits (short-term)	361	520	536
Banks	830	3,021	2,553
Long-term credits	76	958	1,968
Short-term credits	754	2,063	585
FX Deposits	3,214	4,993	6,056
Central Bank	2,187	3,824	5,402
Banks	1,027	1,169	654

Source: CBRT web site.

Considering the banking sector, the foreign financing constraint can be felt clearly in terms of short-term credits, which first rose to USD 2.1 billion in 1990-1995 and then fell to USD 0.6 billion. Despite being able to compensate for the loss in the second part of 1990s by substituting long-term credits, total credits to this sector in this period fell short of the amount in 1990-1995.

On the corporate sector side, it is observed that the inflows to this sector rose tremendously, especially in the 1996-2002 period, although short-term credit constraint was also effective in this sector. Corporate sector obtained long-term financing credit reaching USD 17.5 billion in the 1996-2002 period compared to USD 4.6 billion in 1990-1995 and only USD 2.7 billion in 1986-1989. This implies that given high interest rates, real appreciation of the domestic currency and the existence of the public sector as the major competitor for funds at home, the corporate sector found it more convenient to borrow from abroad especially in the second half of 1990s.

Table-3.18. Selected Components of Capital Account Balance (1986-2002)
(Average Annual)

USD billion	1986-1989	1990-1995	1996-2002
CAPITAL ACCOUNT BALANCE	959	2,450	2,027
Portfolio Investment	748	1,482	-732
Securities (domestic markets)	4	390	72
GDIIs (domestic markets)	0	59	-1,486
Eurobond Sales of Treasury (international markets)	415	1,514	1,851
Central Government	-625	-1,585	-1,383
Long-term credits	-368	-1,585	-1,383
Short-term credits	-257	0	0
Corporate Sector	568	1,724	2,983
Trade Credits (long-term)	0	-22	258
Trade Credits (short-term)	-203	890	145
Financing Credits (long-term)	681	770	2,503
Financing Credits (short-term)	90	87	77
Banks	208	504	365
Long-term credits	19	160	281
Short-term credits	189	344	84
FX Deposits	804	832	865
Central Bank	547	637	772
Banks	257	195	93

Source: CBRT web site.

In terms of FX deposits by non-residents, there has not been a significant change in the usual trends in Central Bank's Dresdner accounts. However, there is considerable decline in the FX deposits held in banks. This has two sides: The uncertainties in the domestic economy might have provoked outflows through this item, while the constraints over the banking sector strengthened during the economic program in 2000s especially about open positions might have induced banks to be reluctant to collect FX deposits.

3.5 Concluding Summary for 1980-2002:

Consequently, analysis of balance of payments in the 1990s shows the fragilities inherent in the system under full capital account liberalization. The key role of capital inflows is quite definite as a source of economic growth and instability in the 1990s and the foreign financing constraint in late 1990s and early 2000s resulted in changes in the behavior of economic units' decisions and hence, of the current account in Turkey.

In this respect there is a breakeven point in the mid-1990s marking the first and second phases of capital account liberalization. The break point is more evident in terms of availability of foreign financing in both periods. Relaxing the foreign capital constraints, Turkey attracted substantial amount of portfolio and short-term capital in 1990-1995 period. This fuelled economic growth and current account deficit at the expense of accumulation of domestic and foreign debt. This strategy failed in 1994, however, when the economic growth based on capital inflows was no longer sustainable under fiscal imbalances and large foreign debt bringing into question the sustainability of the debt stock. Instead of implementing a restructuring in the economy, Turkey continued to rely on capital inflows and fiscal imbalances accumulated in the meantime. From 1998 on, Turkey's access to international capital was quite restricted following the adverse conditions in international markets, which together with imbalances in the economy, resulted in volatility in the domestic growth rate and required frequent adjustments in the current account.

Consequently, when the foreign financing was available in the early 1990s, economic growth was perceived to be permanent by the economic agents, which induced them to reduce their savings, increasing the current account deficit. However, under credit constraint after 1994, economic agents perceived that the economic growth now is unstable and, hence, not sustained; therefore, they adjusted their consumption by increasing their savings in order to be able to increase their consumption in the future periods and pay back the accumulated foreign debt. Consequently, the impact of economic growth on current account deficit remained relatively limited, as compared to the previous period. These arguments will be verified in *Chapter 4* in the next section.

CHAPTER IV

DETERMINANTS OF THE CURRENT ACCOUNT BALANCE IN TURKEY AND STRUCTURAL BREAK AND THRESHOLD EFFECTS

4.1 Purpose of Empirical Research on Current Account Balance

The current account of the balance of payments is an important measure reflecting the macroeconomic performance of a country. It shows the transactions of a country's residents with non-residents in terms of goods and services and the resources that the country receives over its savings to finance its investments. On the other hand, current account balance also reflects the evolution of the country's stock of net claims on (or liabilities to) the foreigners. The latter has implications for imbalances between saving and investment, especially in terms of accumulation of foreign debt, which may not be sustainable. This issue received increasing attention, especially in the 1990s and 2000s following the frequent currency and balance of payments crises throughout the world.

The increasing magnitude and mobility of capital flows after 1990 introduced new problems and paved the way to alternative approaches in the analysis of the current account. The current account of the balance of payments has been defined as the outcome of *forward-looking* dynamic saving and investment decisions of every market participant, both resident and non-resident. Accordingly, the current account has been interpreted as the outcome of actions and expectations of private agents, who try to smooth their consumption across periods in response to transitory shocks in the economy. This allowed dynamic analysis of the current account as compared to static analyses that prevailed before 1980s and enhanced the understanding of why current account responses varied so much among countries as well as through time. Current account balance is associated with many components of the domestic economy; hence, it has implications for economic growth, exchange rates, and

competitiveness as well as the capital flows.¹ Therefore, one cannot overlook current account balance when dealing with such issues.

The implications of economic growth on current account balance have always been at the center of theoretical models and empirical research. Starting with the national income identity, the current account balance is defined as savings minus investment, which explain the current account balance through the changes in national income. The relationship between current account balance, domestic savings and investment has been examined in many studies so far. (Ventura, 2002; Knight and Scacciavillani, 1998; Edwards, 2001; Roubini and Wachtel, 1997) Ventura (2002) asked why saving and investment are so much correlated and tested the famous Feldstein-Horoika puzzle. Roubini and Wachtel (1997), in their analysis of ten transition economies in Europe, associated the high current account deficits with saving-investment imbalances and misalignment in the real exchange rate. Edwards (2001) examines the impact of current account reversals on investment, concluding that the former will negatively affect the latter, which eventually will affect GDP growth. Knight and Scacciavillani (1998) applied savings and investments framework for Italy during 1992-1995 to evaluate its external balance and exchange rate path consistent with the sustainable current account balance.

Considering that current account balance is the outcome of intertemporal decisions, the deviations of national income from its permanent value assumes a substantial place, among other variables, in the determination of current account deficits. (Obstfeld and Rogoff, 1994 and 1996; Knight and Scacciavillani, 1998; Kraay and Ventura, 2000) In the same paper, Knight and Scacciavillani (1998) examines the experience of Israel during 1990-1996 in terms of consumption smoothing model of current account as the country was faced with demographic shock in late 1989, leading to a one-time increase in certain macroeconomic variables, namely income and investment. Kraay and Ventura (2000) allow for productivity variation across countries and international lending/borrowing to take place and develop a model

¹ In Chapter II, a brief overview about why current account matters has been made along with the theoretical approaches that deal with those questions.

where output and productivity shocks lead to current account deficit in the debtor country and a surplus in the creditor country.²

There is plenty of empirical research on the determinants of the current account balance.³ These studies investigated the determinants of the current account balance under different conditions such as in medium vs. short terms, in developing vs. industrial countries or examined the impact of structural vs. cyclical factors and global vs. country-specific productivity shocks on the current account. In those studies the economic growth is one of the major determinants of the current account balance, its sign depending on different motives based on intertemporal allocation of resources. In most of these studies cross section and panel data estimations have been used, deriving generalizations over a large number of countries with time series data. Clarida and Prendergast (1999), who try to differentiate the changes in the current account balance in terms of structural or cyclical components, apply a different methodology than panel regressions. They estimate a four-equation quarterly model of current account with structural VAR (for the US, Japan and Germany), examining the dynamic impulse response of the current account shocks in various macroeconomic variables.

In the relation between current account balance and economic growth, capital flows emerge as a critical factor, the availability of which had implications for economic growth and the current account especially after 1990s. The sudden drying up of capital flows to developing countries, most visible after Asian and Russian crises, had serious repercussions on the domestic economy and, hence, the adjustment of the current account. By national income identity and leaving aside the errors and omissions, net capital inflows equal current account deficit plus changes in international reserves. Sudden stop of capital inflows is either met from international reserves or a surplus in the current account balance, the former increasing the country's vulnerability and the latter is obtained by serious contraction in the domestic GDP. (Calvo and Reinhart, 2000b; 8-12) Mendoza (2001; 14) argues that

² The different responses of debtor and creditor countries due to productivity differentials have been the subject of another recent study by Ventura (2002).

³ For determinants of current account balance, see Calderon et. al. (2001), Chinn and Prasad (2000), Calderon et. al. (2000), Freund (2000), Clarida and Prendergast (1999), Glick and Rogoff (1995), Enders and Lee (1990).

the (probability of) credit constraint will provoke economic agents for additional precautionary savings, leading to improvement in the current account balance.

Impact of lending booms, capital mobility as well as the credit constraint on economic growth and current account balance initiated a great deal of work in the empirical literature. (Gourinchas et.al., 2001; Taylor, 2002; Knight and Scacciavillani, 1998) Gourinchas et.al. (2001) identify sharp increase in the current account deficit during a lending boom as a stylized fact and that banking or currency crisis followed lending booms in Latin America. Taylor (2002), considering the long-run budget constraint for 15 countries from 1870 to present, concludes that when the capital mobility was low, the adjustment speed of current account was high. Knight and Scacciavillani (1998) explain changes in the Pakistani current account balance during 1993-1996 with reference to external financing constraint.

The relationship between balance of payments and economic growth led to the development of “balance of payments-constrained growth models” by the Keynesian economists, Thirwal (1979) and McCombie and Thirwal (1994). A long-run income growth model, based on the zero trade balance condition, was developed, implying that long-run equilibrium growth rate depends on growth rates of exports and income elasticity of demand for real imports. Later these models incorporated unbalanced (but stable) trade, debt accumulation and foreign credit constraint. (Filho, 2001a; Filho, 2001b)

In the empirical literature, balance of payments of Turkey was explored from different dimensions so far. Most of the studies focused on different components of balance of payments, namely exports, imports, tourism demand and capital flows. There is only a limited number of studies trying to model the determinants of current account balance in Turkey. (Eken, 1990; Cıvırcı, 1997; Boratav et. al. 1996; Selçuk, 1997; Akçay and Özler, 1998) Eken (1990) estimates five structural equations for the components of the current account balance for 1980-1988, which are industrial good exports, intermediate good imports, investment good imports, petroleum imports and workers' remittances. Foreign trade components are determined by relative domestic prices with respect to foreign prices as well as domestic production and income,

while workers' remittances are explained by relative rate of return of 1-year time deposits in Turkey with respect to Germany. Civcir (1997) designs a macroeconometric model of Turkish economy for 1960-1988, in which balance of payments assumes an important role. His approach rests on the monetary approach to balance of payments, which states that the changes in the international reserves are determined by excess supply of (or demand for) money. He further incorporates into his model the deviation between the desired and actual reserves, domestic and foreign price differential and black-market premium over the official exchange rate but finds only the money supply, the differential between the desired and actual reserves and black market premium significant. In the current account model developed by Boratav, Türel and Yeldan (1996), the change in the foreign deficit (current account deficit) is decomposed into external shock and domestic policy components⁴ for the period 1981-1992. The decomposition exercise has been done for different sub-periods between 1981-1992 and it is found out that the current account deficit contracted until the late 1980s thanks mostly to the favorable external conditions. In the late 1980s and early 1990s, the impact of policy component dominated by import liberalization increased the deficit, despite increasing exports and favorable external conditions. However, these studies only cover the period until early 1990s and the impact of capital liberalization is missing in those current account models.

Capital movements are embodied in the intertemporal models, which have been applied to the current account behavior of Turkey by Selçuk (1997) for the period 1987-1995 and by Akçay and Özler (1998) for a similar period of 1987-1996. The two papers have a result in common that the actual current account differed from the optimal current account by a wide margin for Turkey. The former questions the validity of perfect capital mobility assumption and concludes that intertemporal model of consumption is incapable of explaining the dynamics of current account in Turkey. In the latter paper, however, it is argued that the divergence between the actual and optimal current accounts during crisis period can be interpreted as an

⁴ External shock components involve impact of terms of trade changes, world trade expansion, world interest rate shock and change in transfer items. Policy component, on the other hand, is defined as changes in capacity utilization, import compression and export penetration.

indicator for “excessiveness” in the current account deficit and, hence, the sustainability indicators for the current account balance are examined. Consequently, the authors conclude that the measures do not suggest an urgent unsustainability threat.

Furthermore, capital flows in Turkey became one of the central issues that received a great deal of interest from the economists especially since the second half of 1990s due to the frequent balance of payments imbalances in the 1990s and 2000s and high growth rates spurred by capital inflows. The topics ranged from the channels through which the impact of sudden capital outflows were transmitted onto the real variables (Alper and Sağlam, 2001) to the questions related to the timing of the capital account liberalization (Ersel, 1996) and to the definitions of “hot money” (Altinkemer, 1995). Altinkemer (1995) measures the degree of openness of Turkish economy and concludes that capital inflows have a destabilizing impact and is a complicating issue for monetary management. Ersel (1996) discusses the impact of the capital account liberalization on real sector, balance of payments, financial system, public sector balance and domestic debt issues. He provides a comprehensive comparison between the 1984-1989 and 1990-1995, partially liberalized and full-liberalized periods respectively. He concludes that capital inflows provided room for the government to continue delaying a necessary structural reform process.⁵

International trade, on the other hand, is the one of the most studied fields in the Turkish economic literature. The long-time series availability as well as the structural changes in the foreign trade regime especially after 1980s motivated research in the field. One of the most appealing topics on international trade was the export-led growth in the 1980s and subsidies to spur exports (Yeldan 1990; Özmen and Furtun,

⁵ For a vector autoregression model that establishes the links between fiscal policy, uncovered interest rate differentials, the real exchange rate and the capital inflows in Turkey for 1987-1995, see Agenor et. al. (1997). Kirmanaoğlu and Özçiçek (1999) examine the relationship between capital inflows and other macroeconomic variables such as investment, economic growth, real exchange rate, real interest rate, inflation and real wages. Through unrestricted VAR models they conclude that short-term capital inflows are one of the major factors behind economic growth and real wage increase between 1987 and 1998. For the impact of capital flows on private consumption and private investment, see Çimenoğlu and Yentürk (2002); for the transmission of capital account shocks on the domestic economy, see Iwata and Tanner (2003) and for determinants of short-term capital flows for the period 1992-2002 see Balkan et. al.(2002).

1998; Doğanlar and Fisunoğlu, 1999). Yeldan (1990) associates the rise in exports with a rise in capacity utilization in 1980-1990, however, at the expense of deterioration in the income distribution and draws attention to the tendency in the increase in investment in non-traded sectors as a result of export led-growth. On the same topic, Özmen and Furtun (1998), using cointegration techniques find no evidence supporting export-led growth hypothesis for Turkey from 1970 to 1995, while Doğanlar and Fisunoğlu (1999), in their study for seven Asian countries plus Turkey, find a causal relation between exports and economic growth using error-correction mechanism. In the context of the question of the relationship between exports and economic growth, Erhat and Şahin (1998) estimate various export diversification measures for Turkey during 1969-1993, concluding that there was a definite diversification in 1970-1975 and 1980-1986 and that the episodes of diversification took place usually after economic crises.⁶

As far as the empirical literature on Turkey is concerned, the determinants of the current account have not been examined in greater detail so far. Nor the balance of payments has been examined in historical perspective from present until before 1960s. In the previous chapter, I explored the balance of payments adjustment since the early years of the Turkish Republic and the relationship of balance of payments developments and macroeconomic policy under different economic regimes. I examined the evolution and consistency of foreign trade and foreign exchange policies with respect to other macro policies during 1926-2002 and pointed at the relationship between economic growth and the balance of payments. I tried to decipher shifts in the macro economic policies and economic regime shifts, which had close connection to the balance of payments developments. In this context, I concluded that balance of payments and economic growth have always been closely connected, most evident in the case that balance of payments crises, which were often accompanied by severe contraction in the economy, were followed almost

⁶ For other relevant topics on international trade, see Akbostancı and Tunç (2001) who test the twin deficit and Ricardian Equivalence hypotheses for Turkey between 1987-2001 by using co-integration technique and estimating an error correction model. Pamukçu and Boer (2000), examines the determinants of import growth in Turkey between 1968-1990, where they show that the relative weight of determinants changed in two different economic regimes, namely the import substitution industrialization during 1968-1989 and outward-oriented strategy during 1980-1990.

unanimously by shifts in the macroeconomic policy or stabilization efforts. Between 1950-1979, whenever the foreign exchange needs increased along with the growing economy, the authorities resorted to increasing controls and restriction, which eventually led to production bottlenecks or slowdown in economic growth and balance of payments crises paving the way to a change in the economic policies.⁷ Further evidence about the balance of payments and economic growth can be found back in the 1930s, when current account surplus was a policy goal for development. Between 1950-1955, restrictions on balance of payments were relatively eased (especially on foreign trade) which fuelled economic growth; during 1960s and 1970s, balance of payments was again at the center of development plans. Therefore, these evidences suggest that prior to 1980s, foreign exchange availability was determined by flows through the current account balance and policies related to foreign trade and foreign exchange, which became one of the driving forces behind economic growth. After the 1980s and 1990s, the foreign credit constraint diminished following the liberalization of trade, foreign exchange and capital movements. Now the capital inflows became one of the major determinants of economic growth; economic growth, in turn, became the major determinant of the current account.

In this chapter, I will examine the relationship between macroeconomic variables and the current account empirically with annual data for 1976-2002 and with quarterly data for 1987-2002. Special emphasis will be placed on the relationship between current account balance and economic growth, as this relationship has not been examined in detail in economic literature so far.

The determinants of current account in Turkey will be analyzed through a reduced form model. As a first step, each component of the current account and their association with the macroeconomic variables will be defined. The preference of these variables has been determined by the theoretical considerations reviewed in the previous sections as well as availability of data. Due to this availability problem of

⁷ Examples for such occasions were 1958 crisis followed by a two-year stabilization period, restrictions on balance of payments in the late 1960s followed by a series of devaluation in early 1970s and payments crunch in the late 1970s that paved the way to 1980 stabilization measures. In the post-1990 period, the 2001 crisis balance of payments crisis was followed by the shift in the foreign exchange regime from fixed to floating exchange rate.

some variables, the time span under consideration is limited to 1976-2001 for the annual estimations. Next, the model will be estimated using quarterly data for 1987-2002 to evaluate short-term dynamics and the recent period's developments to derive implications for present. Whether the structure differed from the model estimated for longer term and whether the determinants persisted or their relative weight changed between medium- and short-term models will be examined. The results of the estimations will be presented in Section 4.3.

After having set the model for the current account balance, next step will be to apply formal statistical methods and analysis to detect the possible breaks and shifts in the data. In the empirical literature related to the current account balance, the studies taking into account breaks or splits in the data are rare.⁸ In general, studies acknowledging that certain periods are structurally different from each other are based on a priori available evidence, such as wars, shifts from inward looking to outward-looking policies, shift from gold-standard exchange system to Bretton Woods adjustable pegs and to floating exchange rates.⁹ This kind of approach takes the parameters in the defined sub-periods as not changing; hence, the impact of the parameters is constant.

However, I argue that, in addition to the probability of one-time shifts in the parameters, the impact of the parameters may gradually change over time with the shift taking place smoothly. Moreover, there may be very short-lived changes in the model parameters (for which there is no a priori information about a break) and therefore, cannot be captured by formal tests of structural breaks. Consequently, I question the existence of certain structural breaks and sample splits in the data, as Turkey underwent substantial changes in economic structure in the period in question. Some of these changes were shift from inward looking economic policies to different stages of outward oriented economic policies in the 1980s; completion of

⁸ Testing of the intertemporal approach to the current account implicitly embodies information on shifts in the current account data, as the current account balance itself is defined as deviations of macro variables from their permanent values. Optimal level of current account balance is predicted and this is compared with the actual values. For the testing of those models, see Obstfeld and Rogoff (1994) and for testing for the case of Turkey see Selçuk (1997) and Akçay and Özler (1998).

⁹ As an example for such studies, see Iawata and Tanner (2003) and Taylor (2002).

capital liberalization in 1990s and shifts in the foreign exchange regime in 2000 and 2001. It is highly likely that, apart from some specific breakeven dates that we already know, there are breaks or shifts in the model. I ask whether it is possible to capture the changes in economic policies and trends by utilizing the estimated reduced form model.

In this context, formal structural break tests will be applied to the model. In the next step, the question is further deepened by asking whether the economic growth is associated with current account balance in a non-linear fashion and whether there was a threshold in the relation of economic growth with current account balance. The reason why GDP growth has been taken as a reference variable for threshold is the statistical significance of this variable in the equations explaining the changes in the current account balance especially after 1980s as opposed to other variables.

Finally, the examination of breaks and sample splits will be extended by a rolling windows regression analysis, which evaluates the trends in the coefficients for moving sub-periods in the sample. The analysis rests on rolling windows regressions with fixed length, with fixed starting point and with fixed ending period. In this way, I intend to see when the model coefficients are stable or volatile (even in very short periods of time) and which period accounted for the volatility or shifts in the model parameters.

4.2 The Model

I start with the basic current account identity:

$$ca = tb + ni + nu \quad (1)$$

where *ca* stands for current account balance, *tb* for trade balance, *ni* for net other goods, services and income and *nu* for net unrequited transfers, all expressed as percentages of GDP. The trade balance is defined as exports net of imports as percentages of GDP.

$$tb = x - m \quad (2)$$

The exports are determined by three factors: The real exchange rate, the demand from the major export markets and the export prices. The real depreciation of the domestic currency is expected to increase exports by generating a price advantage

with respect to competitors. This is possible, however, if the Marshall-Lerner condition holds, or more simply, that the export demand elasticity is high. The rise in world export prices, on the other hand, increases export receipts. In addition to these variables, which have been widely utilized in the economic theory, the uncertainty has been incorporated in the export function as a factor that limits export demand and hampers deliveries and procedures. Hence, the exports can be defined as a function of the above four variables:

$$x = f(RX, W, P_x, U) \quad (3)$$

where RX stands for the real exchange rate (and the rise in this variable implies a depreciation of the domestic currency), W for the export markets' demand, P_x for the price of exports and U for the uncertainty and $f_{RX} > 0, f_W > 0, f_{P_x} > 0, f_U < 0$.

The imports, on the other hand, are defined as a function of growth of national income, real exchange rate, import prices and uncertainty. The real depreciation of the domestic currency is expected to affect the import demand negatively under the Marshall-Lerner condition. The impact of economic growth on current account, however, is not straightforward according to different approaches in the economic literature. One mechanism is through the rise in imports: A rise in income triggers consumption and investment demand, hence, imports and this leads to deterioration in the current account. This view is supported by the permanent life-cycle hypothesis, which suggests that the current account balance deteriorates if people do not perceive the changes in GDP as transitory and dissave accordingly. On the other hand, if growth of GDP is perceived to be transitory and unsustainable, this will induce a rise in savings, as the people would smooth their intertemporal consumption in both periods. (Obstfeld and Rogoff, 1994 and 1996; Sachs, 1982) In this model here, it is expected that the income growth fuelling consumption and investment demand will increase imports.

Furthermore, the rise in import prices will increase import bill and the uncertainty variable (as in the export function) has been taken as a factor hampering imports by delaying the expenditure decisions and deliveries. Consequently, the import function can be defined in terms of the four variables:

$$m = f(Y, RX, P_y, U) \quad (4)$$

where Y stands for the growth of gross domestic product, RX stands for the real exchange rate (and the rise in this variable implies a depreciation of the domestic currency), P_y for the price of imports and U for the uncertainty and $f_Y > 0, f_{RX} < 0, f_{P_y} > 0, f_U < 0$.

Second major component of the current account, the balance on services, other goods and income is composed basically of tourism revenues, tourism expenditures, interest revenues, interest expenditures and other composite categories. Other category ($\bar{O}$) is neglected in the model due to difficulty in decomposing and projecting the variable.

$$ni = t_r + i_r - t_e - i_e \quad (5)$$

where t_r and t_e stand for tourism revenues and tourism expenditures as percentages of GDP respectively, while i_r and i_e are interest receipts and interest payments as percentages of GDP respectively. Each of these components is assumed to be determined by different factors. Tourism revenues are assumed to be a function of the real exchange rate, where real exchange rate stands as a relative price for the cost of living in the domestic country. The tourism expenditures are defined as a function of national income and real exchange rate. The depreciation of the currency, by increasing the non-residents' purchasing power and lowering the resident's purchasing power, is expected to lead to an increase in tourism revenues and decrease in expenditures based on the assumption of high demand elasticities. It is also expected that the rise in income of the residents will increase tourism expenditures. It should be noted that apart from these variables, the tourism revenues and expenditures are affected by many other factors such as relative tourism prices between domestic and foreign countries, prices of transport, geographical properties, tourism capacities, advertisement and many unqualified properties such as epidemic, terrorism, etc. which, due to unavailability of data, cannot be used in the estimations and modeling. Hence, the tourism revenues and expenditures are defined as follows:

$$t_r = f(RX) \text{ and } f_{RX} > 0, \quad (6)$$

$$t_e = f(Y, RX) \text{ and } f_Y > 0, f_{RX} < 0, \quad (7)$$

Interest revenues are mainly determined by the level of Central Bank reserves and world interest rates, while the expenditures are associated with the level of foreign debt stock and world interest rates. Assuming that the world interest rates are constant, the interest revenues and expenditures can be defined in terms of Central Bank Reserves (R) and foreign debt stock ($FDEBT$) respectively.

$$i_r = f(R) \text{ and } f_R > 0, \quad (8)$$

$$i_e = f(FDEBT) \text{ and } f_{FDEBT} > 0, \quad (9)$$

By incorporating foreign debt stock or Central Bank reserves as explanatory variables, the link between the current account balance and the capital account balance is also involved in the model. If the country is a net debtor and pays interest of this debt, this will negatively affect the current account balance. However, the intertemporal approach to the current account argues that higher the level of foreign debt, higher the trade surpluses that are expected in future to pay back this debt, and hence, higher foreign debt should trigger current account balance to tend to a surplus rather than deficit. Hence, under this setting, the lagged values of foreign debt stock on the current account balance are expected to be positive.

Finally, the net unrequited transfers mainly composed of worker's remittances are determined by the real exchange rate and uncertainty variable. The real exchange rate determines purchasing power of the remittances, hence, the depreciation by increasing the purchasing power of the foreign currency is expected to decrease the amount transferred to the country. Likewise, the uncertainty variable is a factor limiting the magnitude of the inflows through this item. Accordingly, the net unrequited transfers to GDP is defined as follows:

$$nu = f(RX, U) \quad (10)$$

where RX stands for the real exchange rate and U for the uncertainty and $f_{RX} < 0, f_U < 0$.

Consequently, plugging (2)-(10) into (1), the current account reduces to a function of economic growth, real exchange rate, demand from export markets, price of exports and price of imports, uncertainty, Central Bank reserves and foreign debt stock. In

this reduced form equation, imports and export prices are replaced by terms of trade (TOT) for simplicity purposes. As a result, the current account to GDP can be defined in terms of the following variables:

$$ca = f(Y, RX, W, TOT, U, R, FDEBT) \quad (11)$$

Under this setting, except for real exchange rate and uncertainty variable, the expected signs of the explanatory variables is straightforward: The GDP growth deteriorates the current account balance through increasing imports and tourism expenditures. Export markets' demand, a rise in the terms of trade and Central Bank reserves affects the balance positively, while current foreign debt stock effects are negative and lagged effects positive. The sign of the real exchange rate is ambiguous due to several forces at work: Real exchange rate affects the current account through trade balance, net tourism balance and workers remittances. Depreciation of the domestic currency is expected to affect the trade balance and net tourism revenues positively whereas it negatively affects the workers remittances. However, the size of the workers' remittances is comparably low, so the expected sign of the real exchange rate is positive, given the dominance of the other components in the current account balance. The uncertainty decreases exports, workers remittances (deteriorating current account balance) as well as imports (affecting the current account balance positively). The sign depends on which of the effect dominates.

4.3. Estimation and Empirical Results

4.3.1. Estimation with Annual Data

The exogenous variables in the model are GDP growth, demand from the export markets, terms of trade, uncertainty and foreign debt stock. For the international demand for Turkish goods, various measures have been used as proxy. These were the GDP growth in the first 20 export markets of Turkey, trade weighted GDP of the major 14 export markets of Turkey and growth of imports of the major 14 export markets of Turkey. Only the import growth of the major export markets was significant in the determination of the current account, which is by no means more proper economically with respect to the others. These data have been compiled from the *World Bank*, *OECD* and *IMF-IFS* sources. Terms of trade and real GDP have been taken from *State Institute of Statistics* (SIS) while current account is from the

Central Bank (CB). For the uncertainty variable, coefficient of variation of the devaluation in the monthly average basket foreign exchange rate (composed of 1USD plus 1.5 DEM) is used. Foreign debt statistics are from the *Treasury and State Planning Organization* (SPO) web sites. Two different real effective exchange rates have been calculated using Germany and US consumer and wholesale price inflation and trade weights.

As a first step, the variables have been checked for stationarity using Augmented Dickey-Fuller unit root test. Accordingly, all variables but current account to GDP ratio and GDP growth contain unit root in level, while tests do not point at the existence of a unit root at the first difference levels except for foreign debt stock which is trend stationary.

Table 4.1. Results of Unit Root Tests for Annual Variables

Variables	Level		First Difference	
		Lags		Lags
Current Account (CA)	-2.40	2	-8.89*	2
Current Account/GDP (CAGDP)	-5.97*	0	-	-
Real GDP (RGDP)	1.96	1	-9.60*	0
Annual GDP Growth	-7.49*	0	-	-
Export Markets' Demand (IMPEXP _{MAR})	0.67	0	-4.84*	0
Foreign Debt (FORDEBT)	6.10	1	-2.23	1
Foreign Debt/GDP (FDEBTGDP)	0.45	0	-6.00*	0
Terms of Trade (TOT)	-1.70	0	-5.08*	0
Real Exchange Rate (REXCHAVG)	-1.68	0	-7.13*	0
Real Exchange Rate (REXCHWPI)	-3.38**	0	-7.36*	0
Volatility in the Exchange Rate	-0.87	0	-2.89**	0

*The hypothesis of a unit root in series is rejected at 1% level.

** The hypothesis of a unit root in series is rejected at 10% level.

In this framework, the following equation is estimated for 1976-2001:

$$\begin{aligned}
 CAGDP = & \alpha_0 + \alpha_1 d \log(RGDP) + \alpha_2 d \log(IMPEXP_{MAR}) + \alpha_3 d(TOT) + \alpha_4 d(FXVOLATIL) \\
 & + \alpha_5 d(FDEBTGDP) + \alpha_6 D81ST + \alpha_7 D00
 \end{aligned} \tag{12}$$

where ,

CAGDP: Current account balance as percentage of GDP,

dlog(RGDP): Real GDP as logarithmic difference over previous year,

dlog(IMPEXPMAR): Imports of 14 major export markets of Turkey as logarithmic difference over previous year,

d(TOT): Terms of trade in first difference terms,

d(FXVOLATIL): Volatility in the basket exchange rate in first difference terms,

d(FDEBTGDP): Foreign debt stock as percentage of GDP in first difference terms,

D81ST: dummy reflecting a structural change in 1981,

D00: dummy reflecting the exchange rate based stabilization program in 2000.

The results of the ordinary least squares (OLS) regression are presented in Table 4.2.

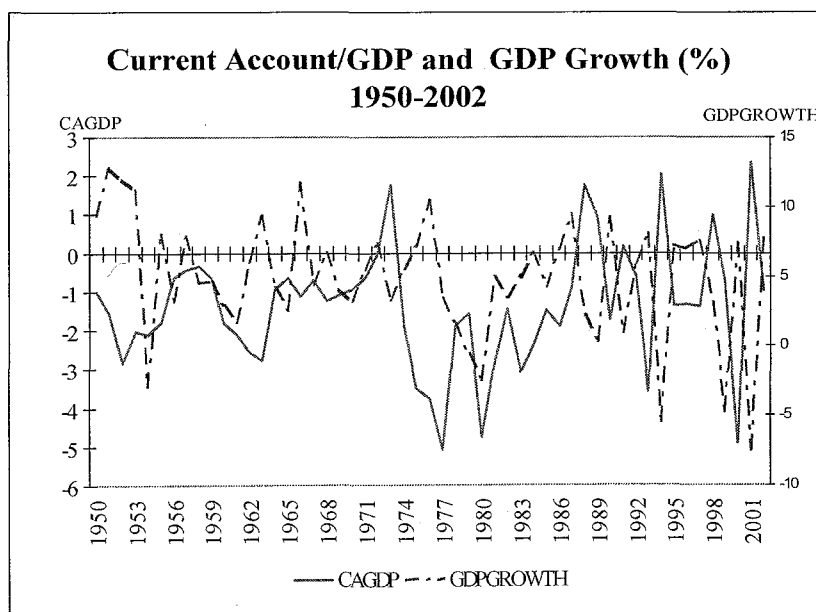
Table 4.2. Determinants of Current Account Balance/GDP During 1976-2001

Dependent Variable is CAGDP		
Variable	Coefficient	Probability
C	-0.030	0.003
DLOG(RGDP)	-0.297	0.000
DLOG(IMPEXPMAR)	0.063	0.077
D(TOT)	0.060	0.079
D(FXVOLATIL)	0.017	0.023
D(FDEBTGDP)	-0.107	0.062
D81ST	0.032	0.000
D00	-0.030	0.020
R-squared		0.824
Adjusted R-squared		0.756
Log likelihood		87.361
Durbin-Watson stat		2.352
F-statistic		12.065
Prob(F-statistic)		0.000

* Diagnostic tests of Box-Pierce *Q* and Breusch-Godfrey test for serial correlation; Jaque-Bera test for normality; ARCH test and White heteroskedasticity test were checked. (See Appendix)

The estimated coefficients are significant and their sign is as expected. It can be observed in the above equation that annual GDP growth explains most of the changes in the current account as reflected in its statistical significance.¹⁰ One percentage increase in the GDP growth increases the current account deficit by 0.3 percentage points. The relationship between current account and GDP growth can be also traced from the following graph showing the negative correlation especially after 1982. The correlation is less evident in the period before 1980, which is not surprising when the closed nature of the economy is considered. Furthermore, as argued above in the introduction section of this chapter, the balance of payments were strictly controlled prior to 1980s and the policies related to the foreign trade and capital movements were directed at development means, that is, as an instrument in fostering economic growth. Thus, the relationship between the economic growth and balance of payments in the pre-1980 period was not as straightforward as in the post-1980 period.

Figure 4.1.

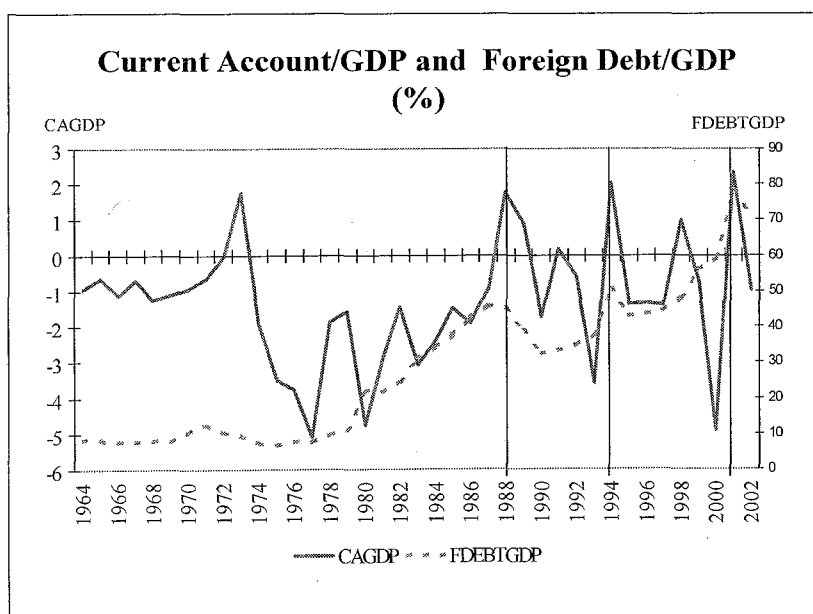


¹⁰ In order to deal with the exogeneity problem, I applied Granger-causality tests to current account and GDP growth. For the model with annual data, GDP growth Granger-cause current account to GDP but the opposite is not true. I applied the same test to the major components of the current account balance, namely, exports and imports. I arrived that GDP growth Granger-cause import growth but there was no relation between export growth and GDP growth. For the model with quarterly data, however, Granger causality tests did not produce satisfactory results as with the annual data. The results showed that there is no definite relationship between the current account to GDP and GDP growth. Neither could I find any relationship between export growth and GDP pair and import growth and GDP pair. Therefore, both based on findings with the annual data and the assumption that imports are a function of income, I took the GDP growth as exogenous in the models.

The shift in the macroeconomic environment between post- and pre-1980s is also captured in the equation by a structural change dummy (D81ST). The positive sign of the dummy can be interpreted that the post-1980 economic reforms affected the current account balance positively through increasing share of exports, tourism revenues and other services income. The sign of coefficients of the export markets' demand, terms of trade and FX volatility are as expected, despite FX volatility is statistically more significant in explaining the current account balance among the latter three variables.

One percentage change in the foreign debt stock to GDP affects the current account ratio by a coefficient of negative 0.1 points. Since interest payments are one of the crucial items in the current account with a share in the total FX revenues around 11%, the availability of foreign capital can be expected to increase the interest payments, increasing the current account deficit.

Figure 4.2.



This model does not capture the impact of lagged values of foreign debt stock on the current account balance. However, examining the bivariate relationship between foreign debt stock and the current account to GDP highlights an interesting result in terms of current account reversals. (Figure 4.2) Foreign debt to GDP started to rise from 1980 onwards. It rose until 1987 during when the current account balance

registered deficit, which was moderate around 1.5% to 3% of the GDP. Foreign debt to GDP reached its first peak in 1987 at 46% since 1964. Following this peak in 1988, current account balance yielded a surplus. At the second peak of foreign debt to GDP in 1994, the current account balance yielded another surplus. Finally, at the third peak in 2001, the current account balance registered the highest surplus. (Note that in all of those dates there was an economic crisis and an outflow of capital.) Consequently, it may be argued that the economy is forced to generate current account surpluses whenever foreign debt to GDP is perceived to have risen threateningly.

Furthermore, the coefficient of the terms of trade is positive, which implies that the terms of trade obeys Harberger-Laursen-Metzler rule. that current account balance improves as favorable terms of trade increases current income with respect to permanent income and, therefore, savings. The terms of trade changes have direct impact on the gains from trade. In the Turkish case, the consumption tilting and real exchange rate effects of terms of trade are not dominant. The consumption tilting effect is due to the increase in consumption today as relative price of consuming today falls with declining relative price of importables, leading to a deterioration in the current account positions. The real exchange rate effect, on the other hand, stems from a shift in the demand for tradables away from non-tradables, which leads to decline in the price of non-tradables (a temporary depreciation in the real exchange rate), making the present consumption less expensive and inducing a deterioration in the current account positions. However, these latter two predictions of the economic theory are not validated by the model above for the Turkish case.

In the model we use crawling-peg dummy to capture the impact of the exchange rate-based stabilization program in 2000, which had boosted imports. The sign is negative, reflecting the deterioration in the current account balance due to sharp increase in the trade deficit.

The real exchange rate (either WPI or CPI based) as an explanatory variable was not significant in this equation. This may be interpreted that as in many developing countries (Calderon et. al., 2001; 11) the real exchange rate is not as effective as

other factors in the trade balance of Turkey. This may also be interpreted that there is an asymmetric relationship between Turkey's exports and exchange rate, which has been the case in 2002 when exports rose by 13% despite significant appreciation of the TL.¹¹ Demand in the major export markets, growth of national income and international prices turn out to be major factors explaining the foreign trade.

Secondly, the quality bias of the estimated real exchange rate might be another factor for the lack of statistical relationship between real exchange rate and the current account. The debate related to the problems associated with the real exchange rate has not been resolved yet. (Kıpıcı and Kesriyeli, 1997; Erlat and Arslaner, 1997) The problems inherent in the measurement of this variable such as the trade weights, the choice of the base year and the inflation rates including biases in reflecting the traded vs. non-traded goods prices may have contributed to the outcome.

Despite the absence of real exchange rate effect on current account balance, the presence of terms of trade, FX volatility and the crawling peg dummy in the equation explain implicitly the movements in exchange rate as all of these variables are associated with foreign exchange rate. Terms of trade is linked to the real exchange rate through the formula of $RX = \frac{P_{nt}}{P_t}$ where RX is real exchange rate, P_t and P_{nt} is the price of tradables (namely, price of exports plus price of imports) and price of non-tradables respectively.

Moreover, Central Bank's foreign assets as a proxy for reserves are not significant either. This is expected, however, given the small share of annual interest revenues of around 4%-5% of the total FX revenues in the current account balance. Therefore, the change in the CB's reserves would be expected to have marginal impact on the current account balance.

¹¹ The decline in the real wages after 2001 crisis and lower cost of imported inputs reduced the cost of production and, hence, offset the negative impact of appreciation of the domestic currency.

4.3.2. Estimation with Quarterly Data

The same model has been estimated with quarterly data for 1987-2002. The model resembles the one estimated with annual data with some slight modifications in the coefficients. The exogenous variables in the model are quarterly GDP growth, demand from the export markets, terms of trade and uncertainty. As in the previous model, various measures have been used as proxy for the export markets' demand. GDP growth in the European Union and OECD countries, trade weighted GDP growth in the major 11 export markets of Turkey and growth of imports of the major 11 export markets of Turkey. Similar to the model with the annual data, the growth of total imports of the major export markets was the best proxy for international demand for Turkish goods. These data have been taken from the IMF's IFS database. Terms of trade and real GDP have been taken from SIS and current account is from the Central Bank. The uncertainty variable has been calculated as the coefficient of variation of daily average basket foreign exchange rate (composed of 1USD plus 1.5 DEM) devaluation in a quarter. Foreign debt statistics are from the Treasury and SPO web sites. Two different trade weighted real exchange rates have been calculated using consumer and wholesale prices.

The variables have been checked for stationarity using Augmented Dickey-Fuller unit root test. Except for current account, current account to GDP, quarterly GDP growth, WPI based real exchange rate and FX volatility, the remaining variables contain unit root in level, while tests do not point at the existence of a unit root at the first difference levels.

Table 4.3. Results of Unit Root Tests for Quarterly Variables

Variables	Level		First Difference	
		Lags		Lags
Current Account (CA)	-5.71*	4	-	-
Current Account/GDP (CAGDP)	-5.06*	4	-	-
Real GDP (RGDP)	-1.16	8	-5.47*	6
Quarterly GDP Growth (dlog(RGDP,0,4))	-6.30*	3	-	-
Export Markets' Demand (IMPEXP2)	0.26	5	-5.20*	4
Foreign Debt (FDEBT2)	1.61	2	-9.75*	0
Foreign Debt/GDP (FDEBT2GDP)	-0.48	1	-4.84*	0
Terms of Trade (TOT)	-1.95	3	-6.69*	2
Real Exchange Rate (REXTRAD)	-2.43	2	-7.16*	1
Real Exchange Rate (REXCHWPI3)	-3.51**	1	-	-
Volatility in the Exchange Rate	-7.29*	1	-	-

* The hypothesis of a unit root in series is rejected at 1% level.

** The hypothesis of a unit root in series is rejected at 5% level.

In this framework, the equation estimated for 1988:1-2002:4 looks like as follows:

$$CAGDP = \beta_0 + \beta_1 d \log(RGDP, 0, 4) + \beta_2 d \log(IMPEXP2(-1)) + \beta_3 d \log(IMPEXP2(-4)) + \beta_4 d(TOT(-1)) + \beta_5 FXVOLATIL + \beta_6 DQ3 + \beta_7 D2000 + \beta_8 DASIA \quad (13)$$

where ,

CAGDP: Current account balance as percentage of GDP,

dlog(RGDP,0,4): Real GDP as logarithmic difference over the same period of previous year,

dlog(IMPEXP2): Imports of 11 major export markets of Turkey as logarithmic difference over previous period,

d(TOT): Terms of trade in first difference terms,

FXVOLATIL: Volatility in basket exchange rate,

DQ3: Seasonal dummy for the third quarter

D81ST: dummy reflecting the exchange rate based stabilization program in 2000,

DASIA: dummy reflecting adverse external shock following Asian and Russian crisis in 1998.

The results of the OLS regression are presented in Table 4.4.

The model estimated with quarterly data for 1988-2002 resembles very much to the annual model estimated above for 1976-2001 with some slight modifications mainly due to the change in the period of estimation. The signs of the coefficients are as expected.

The most significant variable in determining the current account balance is GDP growth as it was the case in the annual model. Interestingly, the impact of GDP growth on the current account balance is almost the same with the coefficient of negative 0.3. This factor implies that one percentage increase in the rate of growth of the national income in that particular quarter will generate a deficit of 0.3 percentage points in the current account to GDP ratio. The mechanism is the same: GDP growth will trigger increase in consumption, investment and intermediate good imports as

well as tourism expenditures, leading to a fall in savings and a rise in investment, and hence, a deterioration in the current account balance. In line with the permanent life-cycle income hypothesis, the negative coefficient of the GDP growth can be interpreted as the economic agents' perception of the growth of their income to be permanent (probably because they are short sighted!) and dissave accordingly. If they had perceived the growth in the economy as transitory, they would be expected to save for consuming in future, generating surplus in the current account. Alternatively, the negative sign might be interpreted as a situation in which the economy is not faced with serious credit constraint on the average, which would force the economy to generate current account surpluses.

Table 4.4. Determinants of Current Account Balance/GDP (CAGDP) During 1988:1 - 2002:4

Dependent Variable is CAGDP		
Variable	Coefficient	Probability
C	-0.007	0.038
DLOG(RGDP,0,4)	-0.308	0.000
DLOG(IMPEXP,0,4)	0.117	0.020
DLOG(IMPEXP,0,4)	0.099	0.034
D(TOT(-1))	0.125	0.061
FXVOLATIL	0.001	0.032
DQ3	0.024	0.000
D2000	-0.032	0.000
DASIA	0.017	0.072
R-squared		0.743
Adjusted R-squared		0.703
Log likelihood		168.441
Durbin-Watson stat		1.666
F-statistic		18.464
Prob(F-statistic)		0.000

** Diagnostic tests of Box-Pierce Q and Breusch-Godfrey test for serial correlation; Jaque-Bera test for normality; ARCH test and White heteroskedasticity test were checked. (See Appendix)*

Comparing the estimates of growth in the export markets demand in the quarterly model with that of the annual model, it can be observed that the significance of the variable increases in the quarterly model. This can be interpreted as the increase in the relative importance of the export markets for Turkish foreign trade after 1988, considering that the liberalization of external accounts was completed as of 1990. The latter paved the way for greater integration of Turkey with the world economy in many aspects, one of them being the increasing importance of international demand in Turkish foreign trade. Growth in the export markets' demand in the previous quarter improving the current account balance next period is plausible in the sense that the export contracts and deliveries follow with a few months lag the increase in income in foreign markets. The fourth lag of the growth of export markets' demand has been incorporated into the model for removing seasonality in the data.¹²

Comparing the quarterly and annual models, one can infer that the significance of the terms of trade has slightly increased in the post-1990 period, accompanied by a rise in the magnitude of the coefficient from 0.06 to 0.13. This may have two reasons: Either the data¹³ became more precise after 1982 or the current account balance began to be increasingly affected by terms of trade changes in the 1990s along with the greater integration to the world economy. Consequently, the significance of the variable in two settings shows that the international prices have been important factor in the determination of trade in Turkey both in the closed economy phase and the open economy framework.

Interestingly, another variable whose impact on the current account balance was almost the same in the two models considered was the dummy set for the impact of exchange-rate based stabilization program in 2000 where the basket exchange rate were set in advance in the form of crawling exchange rate. Its coefficient is almost

¹² The model has been estimated with the seasonally adjusted data as well to see whether the structure of the model changed considerably when the seasonal factors were removed from the data. It has been found that the seasonally adjusted model did not change much from the original model with the same variables and their coefficients very close to the original model's coefficients. This will be presented in the Appendix.

¹³ In the annual setting, in order to obtain a time series data, I integrated three different series of foreign trade indices from SIS; namely, 1968=100, 1973=100 and 1994=100 indices. The latter starts from 1982 and has been used ever since.

the same in the two models, reflecting the extent of the current account deterioration due to the surge in imports and slackened exports. Apart from a seasonal dummy for the third quarter, when the current account balance tends to improve due to abundant foreign exchange revenues coming from exports and tourism, a dummy was set for the external shock in 1998 due to Asian and Russian crises. The coefficient of the latter is positive, implying that the sudden stop of the financial flows to Turkey and the decline in the demand for Turkey's exports forced the current account to generate surplus.

The FX volatility has smaller coefficient in the short term, however, its significance do not change with respect to the annual setting. The difference in the magnitude of the coefficients is due to two factors: One is the scale effect, which occurs due to the level and difference variables entering into the quarterly and annual models, respectively. Second, the definition of the two variables is different: In the annual setting owing to the lack of data, coefficient of variation of the monthly devaluation rate is used, whereas in the quarterly setting, coefficient of variation of the daily devaluation rate is used. The latter is larger as daily exchange rates exhibit higher volatility.

Both the CPI and WPI based real exchange rates are not significant in the quarterly model similar to the annual model. Nevertheless, it has the expected sign, despite at 9% significance level when FX volatility is omitted. This shows that the impact of the real exchange rate in the equation is captured partly the uncertainties generated by the volatility in the exchange rate. The same arguments for the ineffectiveness of the real exchange mentioned in the previous section hold for the quarterly model as well.

Foreign debt to GDP was also insignificant in the quarterly setting despite having the expected sign. It may be due to the fact that in the short-term foreign debt stock changes do not play a significant role in increasing interest payments or affecting intertemporal decisions of economic agents.

4.4. Structural Break and Threshold Effects

After having defined the model, the next step in the analysis is to test for any structural change in the model. In the recent years, there is plenty of studies examining the breaks or threshold effects in the data using new set of advanced tests compared to the well-known Chow (1960) tests. Since the Chow test is designed for the cases when the nuisance parameter, that is, the breakeven point is known, it does not suffice to detect the change when it is unknown at the beginning. In other words, the Chow's critical points are quite low (naturally for it tests the particular known dates) that applying it to unknown dates one can easily accept the hypothesis of a change when it is in fact not.

Therefore, the recent efforts concentrated on developing tests for the constancy of parameters when the structural change points are not known. One of the most cited methods in the economic literature was derived by Andrews (1993). The null hypothesis for the parameter stability is $H_0 : \beta_t = \beta_0$ for all t in the period in question, where the alternative hypothesis with a change point at unknown time is $H_1 : \beta_s \neq \beta_t$ for some s, t in the same period. To decide on a potential break point before proceeding for the test, Andrews proposed to calculate the F statistics for each potential breakeven point and take the maximum among the potential change points, which is called the *SupF statistics*. Andrews tabulated in his paper the asymptotic critical values for the SupF statistics. Later Hansen (2000) criticized Andrews' (1993) for his method tested the stability in the coefficients of the regressors and assumed stationarity of conditioning variables. Consequently, Hansen (2000) showed that a *bootstrap distribution* produces asymptotically valid inference while allowing for structural change in the regressors at the same time.

Related to the question of stability in model parameters, one of the most interesting questions in the recent studies is the non-linear effect of the regressors in the models. The threshold models have many applications in the economic studies. Many studies were inspired by Sarel's (1996) paper, which examined the non-linear relationship between inflation and growth. The potential threshold point for inflation rate was determined by a preliminary test of choosing the minimum residual sum of squares

(or maximum R^2) obtained from the various potential threshold regressions. However, these models, in which the threshold is not identified under the null hypothesis, cannot be tested with the standard tests such as the t-test, as the distribution of such classical tests become non-standard in these cases. To deal with the testing problem, Hansen (1996, 1999) proposed a bootstrap technique to simulate the asymptotic distribution for the likelihood ratio test. The threshold model and the testing procedure will be presented in detail below.

4.4.1. Structural Breaks in the Model

The structural equation for a break in the model is as follows:

$$y_t = \beta_t' x_t + e_t \quad (14)$$

where $\beta_t = (\beta, \text{ if } t < t_0 \text{ and } \beta + \theta, \text{ if } t \geq t_0)$ and t_0 is the time when the shift took place. The test is whether $H_0: \theta = 0$ against the alternative $H_1: \theta \neq 0$. I will apply Andrews' (1993) *SupF* test and check the result with Hansen's (2000) bootstrapping procedure. The results for the test statistics and estimated critical values are presented below.

Table 4.5. Test Results of Structural Break for 1976-2001

Potential Structural Break	F_0	5% Critical Value (Andrews, 1993)	5% Critical Value (Hansen, 2000)
$t = 1996$	1.76	31.10	14.91

Table 4.6. Test Results of Structural Break for 1988:1-2002:1

Potential Structural Break	F_0	5% Critical Value (Andrews, 1993)	5% Critical Value (Hansen, 2000)
$t = 1991$	2.77	32.65	13.19

Consequently, the test strongly rejects the existence of a structural break in the period in question. There is considerable difference between the critical ratios and the estimated test statistic. This may be due to the fact that these tests consider one single point, which is itself is not known to be a break beforehand. Therefore, the critical ratios are very high. On the other hand, the data may not exhibit a break at a single point but the impact of the parameters may be evolving through time gradually. This will be evaluated in *Section 4.5* through rolling regressions.

4.4.2. Threshold Effect between Current Account and Economic Growth

The question of the existence for a threshold found many applications in economic research. These involved questions such as the relationship between inflation and growth (Sarel, 1996; Khan and Senhadji, 2001), non-linear effects of fiscal policy on national savings (Giavazzi et. al., 2000) and existence of non-linearities in the determinants of growth (Ghosh and Wolf, 1998). These studies questioned and verified that an asymmetric relationship existed between those macro variables above and below some threshold level, which has direct implications for economic policy making.

Returning to this study, growth rate of the economy has been found to be the most powerful regressor in the model that determines the current account balance for both the annual and quarterly samples for 1976-2001 and 1988:1-2002:1 respectively (*See Section 4.3*). Inspired by the threshold debates above, I ask in this section whether the relationship is indeed linear between economic growth and current account balance or whether there is a threshold, which implies different responses of the current account balance to economic growth. The threshold effect in the relationship between growth and current account balance would have interesting implications, if it exists. For example, at higher growth rates over the threshold level, it would be plausible to expect the current account positions to deteriorate faster if economic agents perceive the high growth rates as permanent. On the contrary, during lower rates of growth below the threshold or during economic contraction, current account adjustment (in terms of generating a surplus or a decline in the current account deficit) may not be in the same proportions as above the threshold and the response may be slower. This may be due either to the perception of the situation as transitory or the minimum (or survival) level of imports economic agents are obliged to undertake. If there is no threshold in the relationship between current account balance and GDP growth, however, this may be interpreted as arising from the indifference of economic agents to different levels of growth. After all, Turkey's GDP exhibit significant fluctuations in the post-1990 period and, on the average, Turkey is a modestly growing country. Therefore, it may be the case that people do not believe the high rates of growth to be sustainable and do not change their consumption patterns.

Hence, in this section, these questions will be tested using the bootstrapping procedure proposed by Hansen (1996, 1999).

The structural equation is as follows:

$$y_t = \beta_0 + \beta_1 x_t I(q \leq \gamma) + \beta_2 x_t I(q > \gamma) + e_t \quad (15)$$

where $I(\cdot)$ is an indicator function, q is the threshold variable and γ is the threshold. To put it another way, the model behaves differently above and below the threshold with the slopes β_1 and β_2 .

In this context, the relationship between the current account and growth rate has been estimated through the following model:

$$CAGDP_t = \alpha_0 + \alpha_1 d_t (g_t - g_{threshold}) + \alpha_2 (1 - d_t) (g_t - g_{threshold}) + \theta' X_t \quad (16)$$

where,

g_t : GDP growth rate,

$g_{threshold}$: threshold growth rate,

d_t : dummy variable where $d_t = (1 \text{ if } g_t \geq g_{threshold}; 0 \text{ otherwise})$ and

X_t is the vector of variables specified in equations (12) and (13).

As a first step to compute the threshold level of growth, $g_{threshold}$, equation (16) above was estimated by ordinary least squares (OLS). Defining $S_1(g_{threshold})$ as the residual sum of squares with the threshold at $g_{threshold}$, the optimal threshold level was chosen as the growth rate which minimizes $S_1(g_{threshold})$, namely;

$$g_{threshold}^* = \arg \min (S_1(g_{threshold}), g_{threshold} = g_{threshold}^1, \dots, g_{threshold}^n).$$

Table 4.7. Threshold Effect for 2.1% Growth in the Relationship between Current Account Balance (CAGDP) and GDP Growth (1976-2001)

Dependent Variable is CAGDP Variable	Coefficient	Std. Error	t-Statistic	Probability
C	-0.036	0.008	-4.275	0.001
DG*(GDPGROWTH-2.1)	-0.358	0.115	-3.119	0.006
(1-DG)*(GDPGROWTH-2.1)	-0.224	0.131	-1.712	0.105
DLOG(IMPEXPMAR)	0.071	0.036	1.969	0.066
D(TOT)	0.065	0.033	1.936	0.070
D(FXVOLATIL)	0.017	0.007	2.319	0.033
D(FDEBTGDP)	-0.083	0.066	-1.242	0.231
D81ST	0.033	0.007	4.660	0.000
D00	-0.029	0.012	-2.467	0.025

* $R\text{-squared}=0.829$, Durbin-Watson stat=2.242, $F\text{-statistic}=10.274$, $\text{Prob}(F\text{-statistic})=0$.

In this framework, the estimations were carried out for possible threshold levels above 0%, each level increased by 0.01 percentage points until 7% for both annual and quarterly models. The minimum sum of squared residuals was attained at 2.1% and 7% growth rate in the annual setting (Table 4.7 and 4.8). (See Appendix)

Table 4.8. Threshold Effect for 7% Growth in the Relationship between Current Account Balance (CAGDP) and GDP Growth (1976-2001)

Dependent Variable is CAGDP Variable	Coefficient	Std. Error	t-Statistic	Probability
C	-0.053	0.009	-6.223	0.000
DG*(GDPGROWTH-7)	-0.035	0.338	-0.103	0.919
(1-DG)*(GDPGROWTH-7)	-0.324	0.076	-4.252	0.001
DLOG(IMPEXPMAR)	0.056	0.035	1.626	0.122
D(TOT)	0.052	0.034	1.524	0.146
D(FXVOLATIL)	0.017	0.007	2.458	0.025
D(FDEBTGDP)	-0.119	0.057	-2.105	0.050
D81ST	0.033	0.007	4.722	0.000
D00	-0.029	0.012	-2.419	0.027

* $R\text{-squared}=0.830$, Durbin-Watson stat=2.324, $F\text{-statistic}=10.409$, $\text{Prob}(F\text{-statistic})=0$.

Next, the existence of a threshold effect at 2.1% and 7% growth rates are tested by bootstrap simulations. Since the threshold is not identified beforehand, the classical tests will have non-standard distributions. In this case, in order to test the null hypothesis ($H_0: \alpha_1 = \alpha_2$), Hansen (1996 and 2000) proposed a method to simulate the asymptotic distribution of the likelihood ratio:

$$LR(\pi) = \frac{S_0 - S_1(g)}{\sigma^2(g)}$$

where S_0 and $S_1(g)$ are residual sum of squares under $H_0: \alpha_1 = \alpha_2$ and $H_1: \alpha_1 \neq \alpha_2$ respectively and $\sigma^2(g)$ is the residual variance with the threshold effect under H_1 . Hansen (1996 and 2000) showed that the bootstrap procedure attains the first order asymptotic distribution and the bootstrap generated p-values are asymptotically valid.

Bootstrapping is a re-sampling procedure. Repeated samples of the original data set are taken to calculate values of some statistic and this information is used to infer information about the true but unknown parameter. The steps of bootstrapping procedure is as follows:

1. OLS estimates of the coefficients of the model from the original data are obtained.
2. Residuals are calculated between the fitted model ($\hat{y}_i$) and the observed data (y_i) as $e_i = \hat{y}_i - y_i$.
3. A large number (say, B) of random samples of size n are drawn with replacement from this set of residuals.
4. These residuals are then added to $\hat{y}_i$ to create bootstrap replications.
5. From each of these B sets of data, the equation is re-estimated and B times new estimates of the coefficients are attained.
6. Finally, these estimated B coefficients are arranged in a frequency distribution and $(1-\gamma)\%$ confidence intervals are obtained by counting in $\gamma B/2$ observations from each end.

Using the above technique, critical values and significance levels obtained for the threshold effect are presented in Table 4.9. The findings suggest that hypothesis of no threshold effects ($H_0: \alpha_1 = \alpha_2$) is rejected at 5% significance level.

Table 4.9. Test Results of Threshold Effects for 1976-2001

Threshold Estimate	LR ₀	Critical Value	Confidence Level
$\gamma = 2.1$	0.65	34.8	%95
$\gamma = 7$	0.93	33.1	%95

*LR₀ is the observed value of the likelihood ratio. Critical value is computed using the using the bootstrap distributions of LR₀.

Applying the same procedure for the quarterly data, the potential threshold level has been found to be at 0% and 6.4% growth rate.

Table 4.10. Threshold Effect for 0% Growth Rate in the Relationship between Current Account Balance (CAGDP) and GDP Growth (1988:1-2002:1)

Dependent Variable is CAGDP				
Variable	Coefficient	Std. Error	t-Statistic	Probability
C	-0.012	0.005	-2.354	0.023
DG*(GDPGROWTH-0)	-0.228	0.071	-3.231	0.002
(1-DG)*(GDPGROWTH-0)	-0.412	0.087	-4.721	0.000
DLOG(IMPEXP2(-1))	0.118	0.049	2.436	0.018
DLOG(IMPEXP2(-4))	0.099	0.045	2.193	0.033
D(TOT(-1))	0.001	0.001	1.865	0.068
FXVOLATIL	0.001	0.001	1.819	0.075
DQ3	0.024	0.005	4.605	0.000
D2000	-0.033	0.008	-3.911	0.000
DASIA	0.021	0.010	2.115	0.039

* R-squared=0.752, Durbin-Watson stat=1.509, F-statistic=16.827, Prob(F-statistic)=0.

Table 4.11. Threshold Effect for 6.4% Growth Rate in the Relationship between Current Account Balance (CAGDP) and GDP Growth (1988:1-2002:4)

Dependent Variable is CAGDP				
Variable	Coefficient	Std. Error	t-Statistic	Probability
C	-0.029	0.004	-7.003	0.000
DG*(GDPGROWTH-6.4)	-0.123	0.173	-0.714	0.478
(1-DG)*(GDPGROWTH-6.4)	-0.340	0.046	-7.400	0.000
DLOG(IMPEXP2(-1))	0.108	0.050	2.191	0.033
DLOG(IMPEXP2(-4))	0.091	0.046	1.983	0.053
D(TOT(-1))	0.001	0.001	1.757	0.085
FXVOLATIL	0.001	0.001	1.763	0.084
DQ3	0.025	0.005	4.635	0.000
D2000	-0.031	0.009	-3.668	0.001
DASIA	0.019	0.010	1.952	0.057

* R-squared=0.749, Durbin-Watson stat=1.537, F-statistic=16.606, Prob(F-statistic)=0.

Table 4.12. Test Results of Threshold Effects for 1988:1-2002:1

Threshold Estimate	LR ₀	Critical Value	Confidence Level
$\gamma = 0$	2.00	44.5	95%
$\gamma = 6.4$	1.40	44.7	95%

**LR₀ is the observed value of the likelihood ratio. Critical value is computed using the using the bootstrap distributions of LR₀.*

Similarly, hypothesis of no threshold effects ($H_0: \alpha_1 = \alpha_2$) is rejected at 5% significance level.

4.5. Rolling Windows Regressions

As explored in great detail in *Section 4.3*, the formal tests do not show structural break and threshold in the model. These tests measure whether the period before and after the potential break point is structurally different from each other. In this respect, such tests presume that parameters are not changing through time in the particular sub-periods. However, the parameters themselves may be changing and the structure of the model may be evolving through time in response to different external and domestic shocks.

To deal with this problem, splits in the data and the change in the structure of the model will be examined using moving-windows regressions in this section. This is novel in the empirical literature in the sense that rolling regressions has not yet been applied to a current account model. This is expected to give more insight for a more in-depth evaluation of the current account dynamics in Turkey. Accordingly, the model developed in *Section 4.2* will be estimated repeatedly using sliding sub-samples in the whole set of data and the coefficients of the regressors obtained from these estimations will be examined for whether they remain stable through time or they deviate from their long-run trend. The sub-samples will be formed by adding or dropping one observation or both in each estimation.

The procedure will be as follows: First, a sample of 24 observations¹⁴ from the quarterly data will be chosen starting from the beginning of the period. Second, keeping the number of observations fixed, the sample will be moved by dropping one observation from the beginning and adding one from the end of the sub-sample and the equation will be re-estimated with each sub-sample. Third, the coefficients of each regressors obtained from the sliding sub-sample estimations will be plotted in the first of the three graphs below.

In the next step, in order to see whether the change in the trend in the coefficients emanated from including one observation, moving windows estimations will be made by keeping the starting point fixed and adding one observation each time the equation is re-estimated. The path of these coefficients will be presented in the second graph for each exogenous variable. Finally, to see whether the change in the trend in the coefficients was due to dropping one observation, the model will be estimated this time for the whole period and then one observation starting from the beginning of the period will be dropped for each re-estimation, keeping the end point fixed. These will be shown in the third of the three graphs for each explanatory variable.¹⁵ Applying the rolling regressions, the following points can be deduced:

¹⁴ The sample size is arbitrarily chosen. The analysis has been applied to sample sizes of 20, 30 and 32 to see whether results are robust to changes in the sample size. Rolling regressions with sample size of 20 has been omitted as it reflected more volatility due to lack of enough number of observations. Regressions with sample sizes of 30 and 32, on the other hand, exhibited milder fluctuations, as can be expected, but the results are not significant from the ones obtained from the 24-observation sample. In this sense, results are robust to changes in the sample size over 24.

¹⁵ The moving windows have been applied to post-1990 period with 20 observation samples to see in detail the period after the completion of the liberalization of the external accounts. It has also been applied to the model excluding the FX volatility due to its coefficient's abrupt fluctuations in 1994:4-2000:2 period in the original model. Fluctuations in FX volatility coefficient may be due to insufficient number of observations in each sub-sample that can best explain the financial turmoil that broke in the first quarter of 2001. Many changes related to the foreign exchange regime took place after 2000 –the foreign exchange regime shifted from crawling peg to floating exchange rate in the first quarter of 2001- and the model with 24 observations fails to capture these effects. Dropping this variable from the model, it has been tested whether the fluctuations in the other regressor coefficients in the recent periods were due to the changes in the FX volatility itself or not. It has been found that the major trends in the original model did not change and the fluctuations after 2001 declined. Therefore, from now on the analysis will be based on the model without FX volatility.

In Figure 4.a.1, the GDP growth coefficient remains quite stable around negative 0.35-0.37 until 1993.2-1999.1. From then on, the coefficient starts to fall (in absolute value terms) until 1995.2-2001.1 to around 0.2 before increasing again to 0.25-0.3 levels. What could have accounted for the declining path of the coefficient of growth variable after 1993?

In Figure 4.a.2, where the estimation period is increased by adding one observation in each estimation, it is observed that the coefficient is stable around negative 0.37 until 1999.1. It declines sharply (in absolute value terms) after including 1999.2, 1999.3 and 1999.4 elements and continues to decline afterwards, falling to around negative 0.30 by the end of the period.

Looking at Figure 4.a.3, where the sample is reduced dropping one observation in each estimation, the coefficient is quite stable around 0.3 until 1994.2. Dropping 1994.2 makes the coefficient to jump from 0.3 to 0.27. The coefficient continues to decline afterwards until 1997:1-2002.4.

Several conclusions could be inferred from those findings: The relationship between current account and GDP growth is stable only for late 1980s and early 1990s. However, there have been fluctuations in the relationship between current account and growth starting from the second half of 1990s and a declining trend in the magnitude of the regressor coefficient. More specifically, the results of the sensitivity analysis suggest that the external and domestic shocks in 1999, the unstable economic conjuncture and external financing constraint in the post-1995 period led to a decline in the impact of GDP growth on the current account. Let us verify each of these claims by examining the graphs more closely below.

The first jump in Figure 4.a.1 starting from 1993.3-1999.2 is related with the inclusion of second to fourth quarters of 1999 as can be understood from Figure 4.a.2. This period corresponds to adverse external conditions and the serious contraction in the economy. The external shocks due to consecutive crises in Asia and Russia in 1997 and 1998 had very negative repercussions in the domestic economy resulting in a severe capital outflow and increasing interest rates in 1998.

The negative external conditions continued into 1999 and the sustained high real interest rates due to high public sector borrowing requirement, adversely affected the domestic demand aggravating the downturn in the domestic economy, which had entered into a period of recession already at the second half of 1998. Turkish economy later suffered from another domestic shock in the second half of 1999, namely, the earthquake disaster. Consequently, the economy seriously contracted in 1999. Despite the contraction in the economy, current account registered deficit in that year, reflecting the slower adjustment in the current account with respect to slowdown in the economy.

The decline in the coefficient of growth (in absolute value) continues in Figure 4.a.1 in the post-1994 period. This has not stemmed specifically from the crisis in 2001 or including any other observation after 1999 but from dropping pre-1995 period from the sub-sample as can be followed from Figure 4.a.3. The inclusion of 2001 crisis disturbed the growth trajectory further. This can be interpreted as that the pattern of relationship between economic growth and current account balance has changed considerably in the post-1994 period. This period should be carefully evaluated both in terms of domestic and external events and the weakening of the impact of GDP growth had its roots in the domestic imbalances as well as foreign credit constraint that aggravated after 1999.

In 1994, Turkish economy collapsed, as imbalances in the economy became no more sustainable. As of 1993, fiscal accounts had deteriorated sharply, domestic debt stock to GNP and PSBR reaching highest level, primary balance registering deficit for the third year. After 1994, the economy required significant restructuring especially in the public and banking sectors in order to put the economy on a sustainable growth path. Unfortunately, owing to the reluctance of the authorities to undertake a restructuring, the public accounts continued to deteriorate and the imbalances grew, rendering the economy more fragile against domestic and external shock. Given these conditions, Turkey faced serious foreign credit constraint after 1997. Private creditors were not as willing to lend in the second half of 1990s as compared to the first half. In the early 1990s, the availability of foreign financing had alleviated budget constraint concerns, leading to persistent deficits in current account balance. In the

post-1994 environment, however, the lack of availability of financing required frequent adjustments in the current account balance and consumption remained relatively limited in response to economic growth. In other words, given the unsustainability of economic growth along with mounting fiscal imbalances, the economy could not generate proportionate expenditures during economic growth. To put it in another way, the economic agents were less willing to decrease their savings during high volatility in economic growth and instability in the economy in the second half of 1990s and early 2000s.

Table 4.13. Foreign Credit Constraint in Balance of Payments, Selected Components (1990-2002, cumulative)

USD billion	1990-1997	1998-2002
CAPITAL ACCOUNT BALANCE	27,308	1,584
Portfolio Investment	11,097	-7,326
Securities (domestic markets)	2,539	304
GDI (domestic markets)	1,341	-11,393
Eurobond Sales of Treasury (international markets)	11,928	10,114
Central Government	-13,073	- 6,116
Long-term credits	- 13,073	- 6,116
Short-term credits	0	0
Corporate Sector	16,507	14,718
Trade Credits (long-term)	313	1,362
Trade Credits (short-term)	5,792	563
Financing Credits (long-term)	9,289	12,850
Financing Credits (short-term)	1,113	- 57
Banks	7,220	- 1,646
Long-term credits	3,664	- 738
Short-term credits	3,556	- 908
FX Deposits	8,436	2,613
Central Bank	6,188	3,038
Banks	2,248	- 425

Source: CBRT web site.

The lack of foreign credit can be followed from Table 4.13 and 4.14. Net capital inflows to Turkey between 1990-1997 when the external conditions were relatively good amounted to USD 27.3 billion, while the net capital inflows declined dramatically to USD 1.6 billion in 1998-2002. In terms of components of the capital flows, portfolio investment registered an outflow of USD 7.3 billion in the latter period against an inflow of USD 11 billion in 1990-1997. Outflows due to GDI sales of the non-residents were significant, amounting to USD 11.4 billion and shows that

central government faces a financing constraint in terms of domestic borrowing. Banks are heavily credit constrained, too, as can be followed from USD 1.6 billion outflows in 1998-2002 as compared to USD 7.2 billion inflows in 1990-1997. FX deposits held by non-residents in banks also were drawn in 1998-2002. Only corporate sector could continue to obtain credits and the Treasury could borrow in the international markets through eurobond sales in the latter period.

Table 4.14. Foreign Credit Constraint in Balance of Payments, Selected Components (1990-2002, average annual)

USD billion	1990-1997	1998-2002
CAPITAL ACCOUNT BALANCE	3,414	317
Portfolio Investment	1,387	-1,465
Securities (domestic markets)	317	61
GDI (domestic markets)	168	-2,279
Eurobond Sales of Treasury (international markets)	1,491	2,023
Central Government	-1,634	-1,223
Long-term credits	-1,634	-1,223
Short-term credits	0	0
Corporate Sector	2,063	2,944
Trade Credits (long-term)	39	272
Trade Credits (short-term)	724	113
Financing Credits (long-term)	1,161	2,570
Financing Credits (short-term)	139	-11
Banks	903	-329
Long-term credits	458	-148
Short-term credits	445	-182
FX Deposits	1,055	523
Central Bank	774	608
Banks	281	-85

Source: CBRT web site.

As for the other determinants of current account balance, the coefficient of demand in the major export markets becomes only significant after 1990.1-1995.4 in the windows with fixed length in Figure 4.b.1, plausible considering that the liberalization of trade took several steps and capital flows liberalization was complete as of 1990. It can be argued that the liberalization of trade and capital movements increased the weight of export market's demand in the determination of Turkey's exports. High fluctuations in the post-1993 period in Figure 4.b.1 can be attributed to the distortions in 1994 and 1995 (Figure 4.b.3). However, when the two

years are dropped from the sample, the coefficient falls to around 0.12, lower than pre-1994 average around 0.18.

In Figure 4.b.2, where the impact of the newly included observation is examined, it is observed that the impact of export market demand was quite stable until 1999.1 with the coefficient around 0.11. It increased after including 1999.2 and 1999.3 to 0.13 and remained stable before returning to 0.12 in 2002.2.

It is apparent that 1994 crisis led to significant fluctuations in Figure 4.b.3 and hence, Figure 4.b.1. After the 1994 crisis was over, despite fluctuations, the relative weight of the exports markets has fallen and started to recover only after 1996.2. (Figure 4.b.3)

The coefficient of terms of trade in Figure 4.c.1 behaves quite similar to the previous regressors in terms of stability until 1993.3-1999.2 and fluctuations afterwards. The overall picture suggests that the relative weight of this variable gradually increased in the post-1993 period.

In Figure 4.c.1, there is a jump in the level of the coefficient of terms of trade starting from 1993.3-1999.2. Figure 4.c.2 reflects that the source of the jump stems from including 1999.3 and 1999.4. Examining the terms of trade of Turkey at those dates, it is found that the price of imports rose faster than exports, deteriorating the terms of trade. The deterioration continued in the 2000s as well. Returning back to Figure 4.c.1, the rise in the coefficient of terms of trade continued after 1994.3-2000.2. Following the drop of the impact of 1994 crisis from the model totally, the coefficient rose (Figure 4.c.3). Combining this information with the declining impact of the growth coefficient on current account balance, one can argue that current account developments become more dependent on terms of trade changes after 1993. This may be interpreted as that Turkey's higher degree of integration with the world economy made her foreign trade and, hence, and the current account to be more exposed to terms of trade changes in the post-1994 period.

Figures 4.a.1-4.c.3 at the end of the chapter show the moving windows for the equation of CAGDP as a function of GDP growth, export markets' demand and terms of trade, omitting the FX volatility. Figures 4.d.1-4.g.3 show the moving windows regressions for the equation (13) of current account as a function of GDP growth, export markets' demand, terms of trade and FX volatility.

4.6. Concluding Summary

In this chapter, it has been shown that the current account of the balance of payments in Turkey has been determined by GDP growth, demand from export markets, terms of trade and foreign exchange volatility. Among these determinants, GDP growth has been found to be the major factor behind current account deficit. The determinants were almost the same in the model estimated with annual data for 1976-2002 and the model estimated with quarterly data for 1987-2002. The former showed the medium-term elasticities of each determinant, while the latter reflected the short-term dynamics. Despite some changes in the magnitude of the elasticities of export demand, terms of trade and foreign exchange volatility, the elasticity of GDP growth did not change in the short- and medium-term settings.

Having identified the determinants of the current account, structural break tests have been applied to the models, considering that Turkey underwent substantial changes in economic structure especially after 1980s. These tests, however, did not show statistically significant structural breaks in the model. Following the structural break tests, it has been investigated whether there existed non-linearity in the relationship between current account and GDP growth as GDP growth was the major determinant of current account balance. Tests for the existence of threshold in the relationship between current account balance and GDP growth also failed to verify an existence of a threshold. As a final step, the changes in the structure of the model and the possible break-even points have been tested using rolling regression analysis.

Two critical dates have been captured in rolling regressions analyses for 1988:1-2002:4: In all the coefficients, there was a gradual change during the 1995-2002 period and specifically in 1999. The latter reflected the impact of a combination of domestic and external shocks to the economy. The former, on the other hand,

reflected a more volatile period compared to the relative stability in the model's structure between 1989 and 1995. Post-1994 period in Turkey is characterized by deterioration in public balances along with weaknesses in the financial system. Owing to the growing imbalances in the domestic economy and frequent crises in developing countries (namely, crises in Asia and Russia in 1997 and 1998 respectively), Turkey faced a serious foreign credit constraint after 1998. This changed the pattern in the relationship between current account balance and economic growth with lesser impact of the latter on the former. This may be interpreted as emanating from the increase in precautionary savings in response to instability in the economy, yielding lower current account deficits during economic growth.

Therefore, this study contributed to the existing literature by identifying the determinants of Turkish current account balance in the medium- and short-run, focusing especially on the post-1990, a period for which such a study do not exist. As opposed to cross section and panel studies, which derive generalizations from a large sample set of many countries, this study focused on the specificity of Turkey's conditions with reference to international and domestic events. In this context, this study has revealed that a developing country may be faced with various structural breaks, which might be lost through cross-section and panel data analysis. Therefore, it is of utmost importance to suspect breaks in the data when dealing with developing countries, who has to undertake frequent stabilization programs or changes in their foreign exchange regimes.

In addition, it has been shown that Turkey is a foreign credit-constrained economy with limited access to international financing and, hence, studies on the dynamics of the current account in Turkey should at best take into account theoretical models involving international liquidity constraint. Furthermore, the findings of this study suggest that studies on Turkey's current account balance should not overlook dynamic analyses. In fact, there is no explicit evidence in this study about whether the people in Turkey smoothed their consumption in line with what the intertemporal theory predicts. However, the fact that the decline in the impact of GDP growth on

current account suggests that consumption smoothing became harder given the credit constrained economy.¹⁵

Summing up, this chapter highlighted the following findings about current account dynamics in Turkey:

GDP growth is the major factor behind current account deficit both in the medium and short term. The significance of the coefficient in the two models reflects its persistence.

The quarterly model differs from the annual model in that the significance of the growth in international demand increases in the former, together with an increase in the magnitude of the coefficients. This is related to greater integration of Turkey with the world economy and the increase in the relative importance of the export markets for Turkish foreign trade after 1988, considering that the liberalization of external accounts was completed as of 1990.

Similarly, significance of the terms of trade has increased in the quarterly model, accompanied by a rise in the magnitude. This may be due to increasing impact of terms of trade changes on the current account balance in the 1990s along with the greater integration to the world economy. This implies that relative prices became more important signals as controls, barriers to trade and government intervention in the economy relatively declined.

Furthermore, there are shifts and breaks in the current account model. Parameters of the model are not constant for all rolling window regressions but subject to change either through a one-time shift or gradually in response to external and/or domestic shocks.

¹⁵ To develop this study further, next step may be to identify the determinants of the current account balance for a number of developing countries separately, who were similarly faced with credit constraint in the 1990s. Deriving generalizations through such comparisons may be useful in understanding of developing countries current account adjustment with similar features. As an extension, it would be better to repeat the windows analysis in a group of emerging market economies.

Finally the, results also show that external financing constraint is binding, preventing the current account deficit to expand sharply. Reversal in the current account deficit followed when the country was faced with serious foreign credit constraints in 1988, 1994, 1998 and 2001.

Elasticities of the Current Account With Respect to Its Determinants (Based on Equation (13); FX Volatility omitted)

Figure 4.a.1

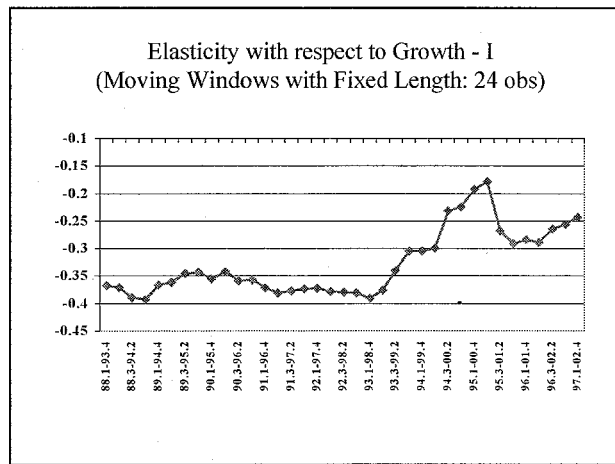


Figure 4.a.2

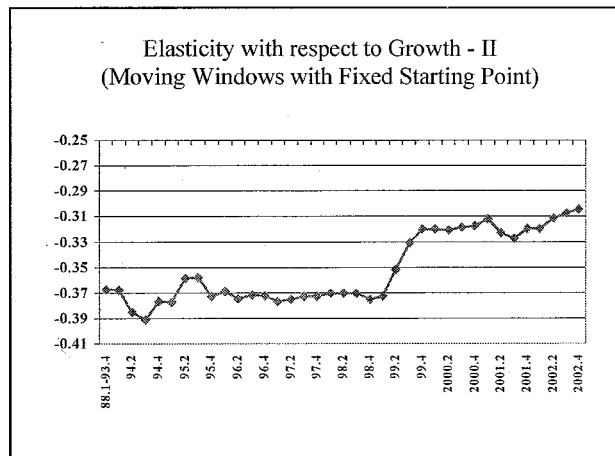


Figure 4.a.3

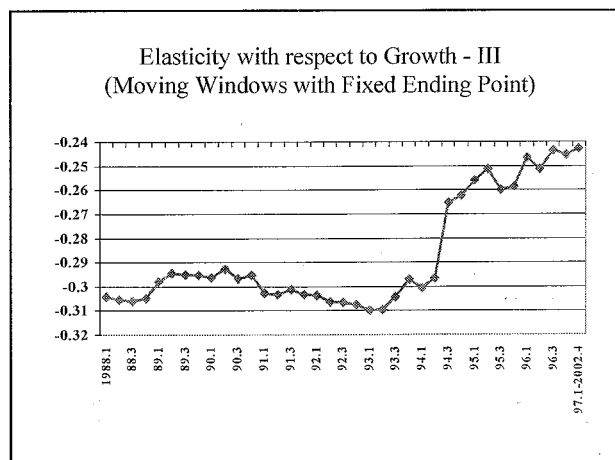


Figure 4.b.1

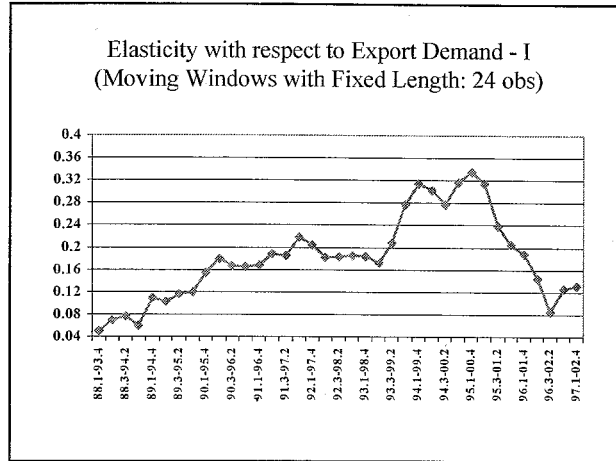


Figure 4.b.2

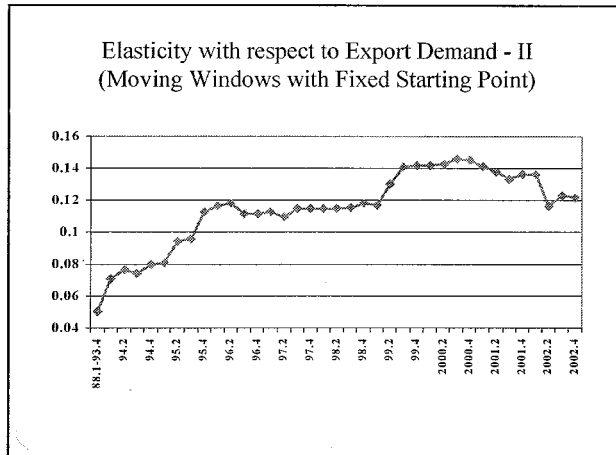


Figure 4.b.3

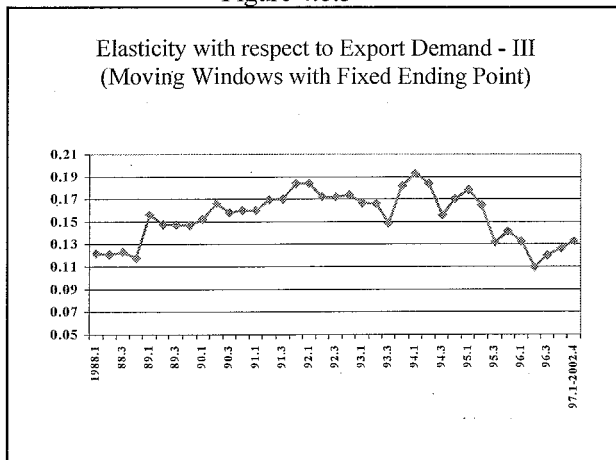


Figure 4.c.1

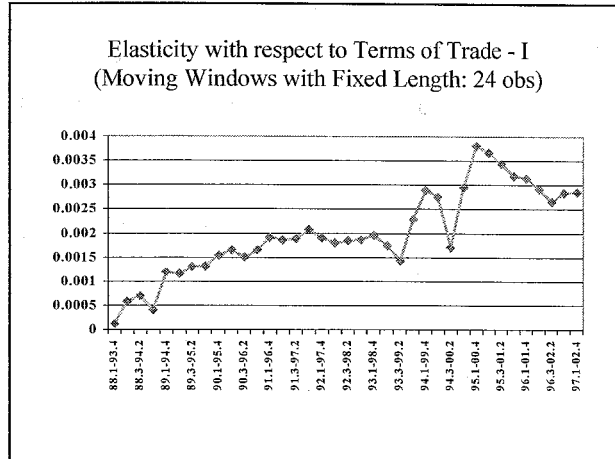


Figure 4.c.2

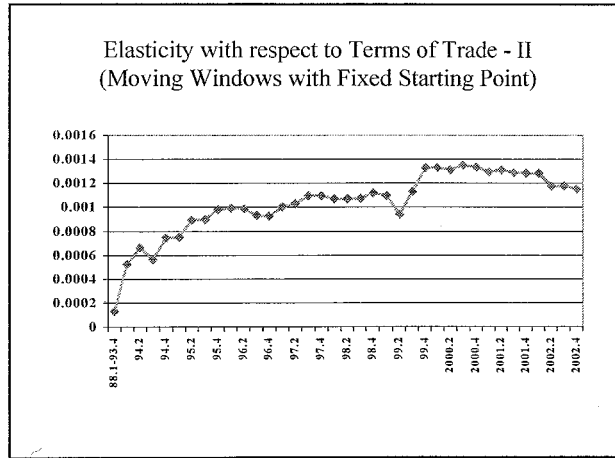
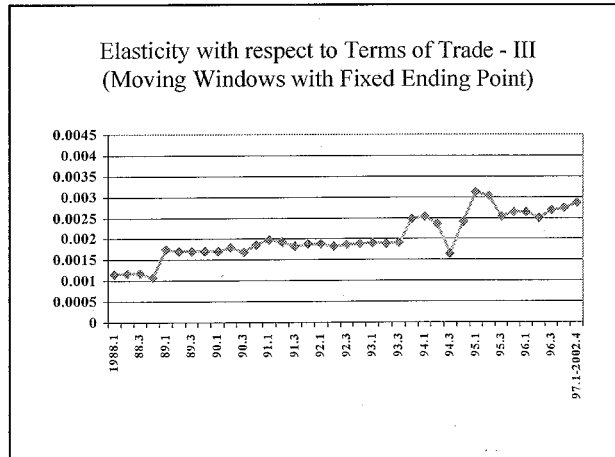


Figure 4.c.3



Elasticities of the Current Account With Respect to Its Determinants (Based on Equation (13))

Figure 4.d.1

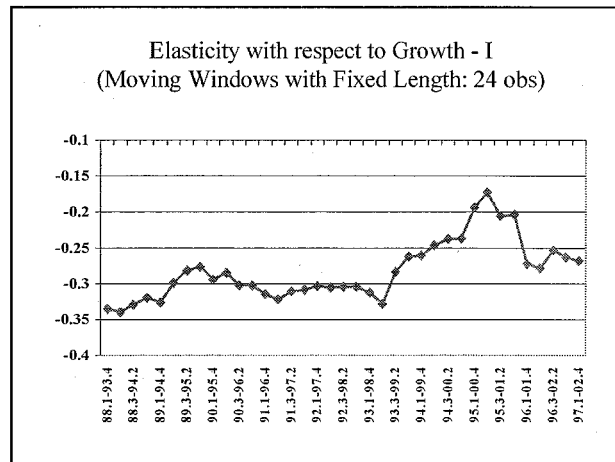


Figure 4.d.2

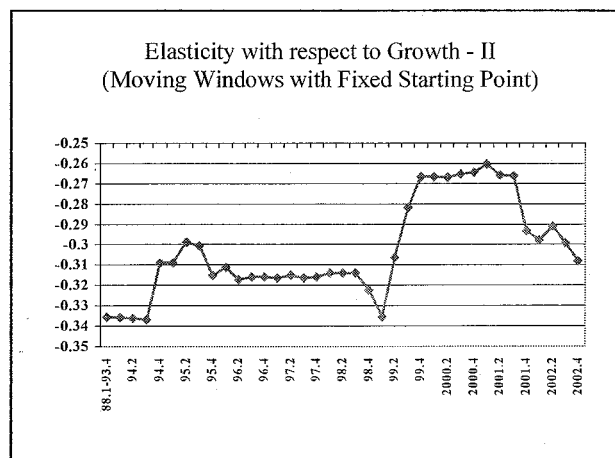


Figure 4.d.3

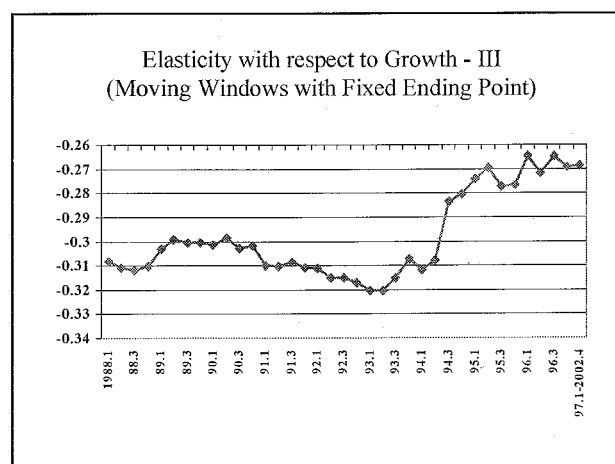


Figure 4.e.1

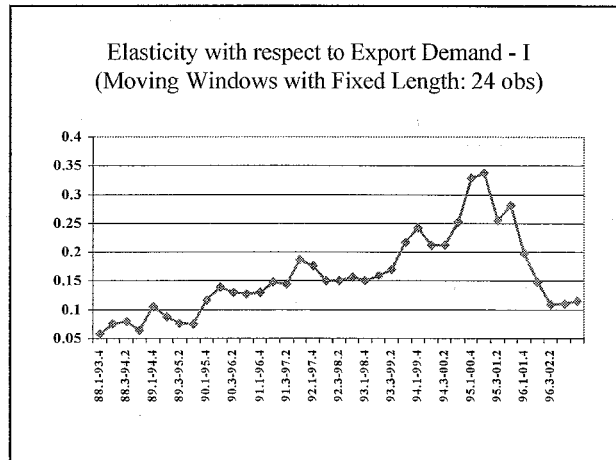


Figure 4.e.2

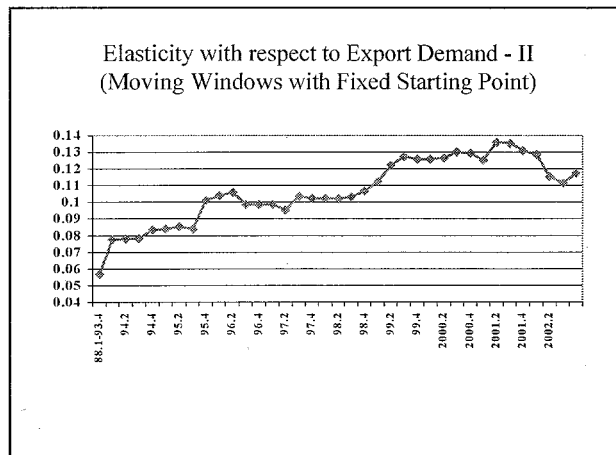


Figure 4.e.3

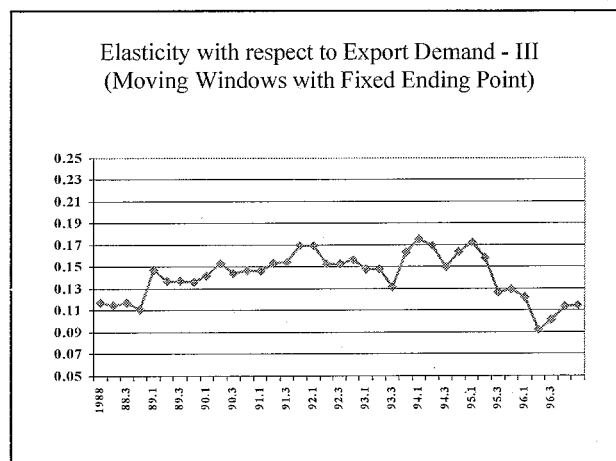


Figure 4.f.1

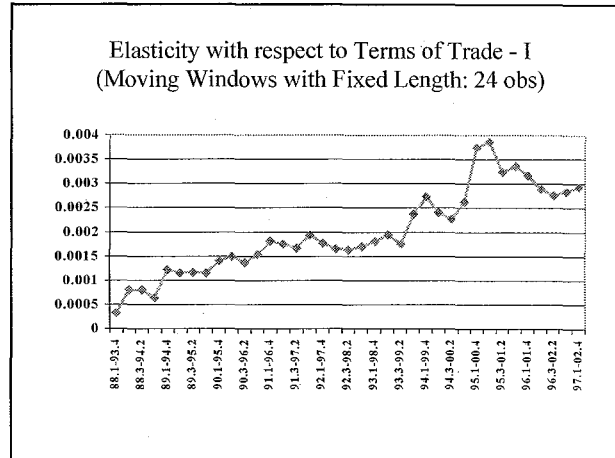


Figure 4.f.2

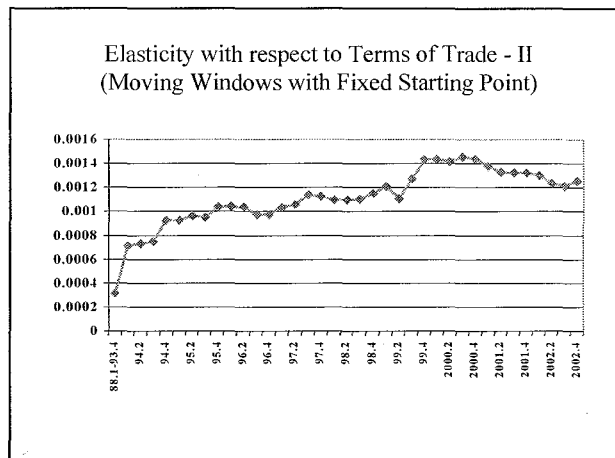


Figure 4.f.3

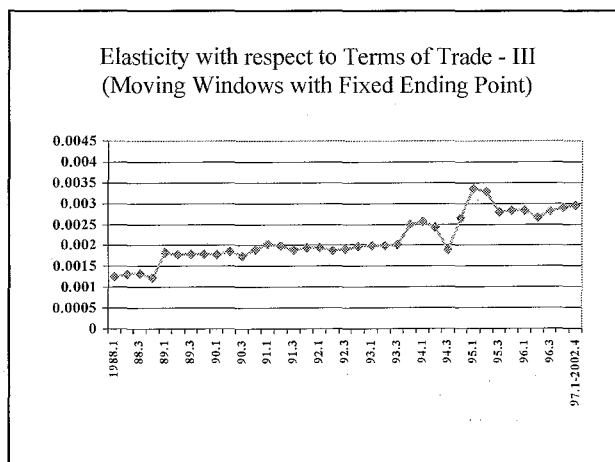


Figure 4.g.1

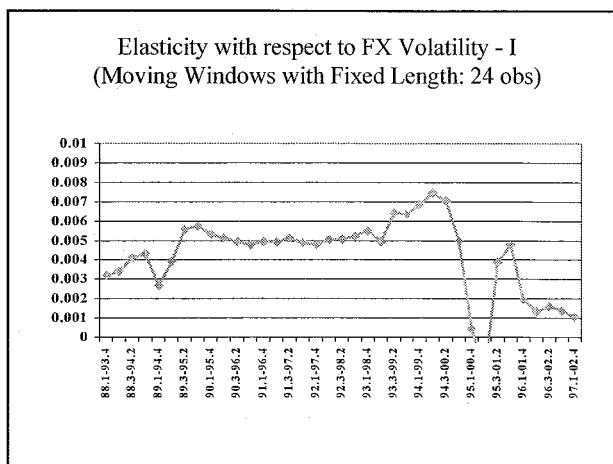


Figure 4.g.2

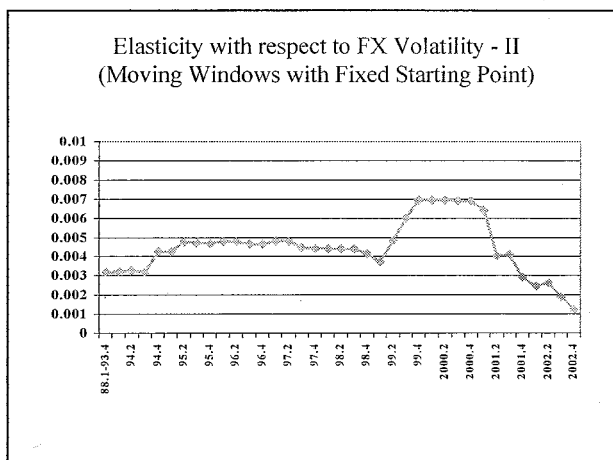
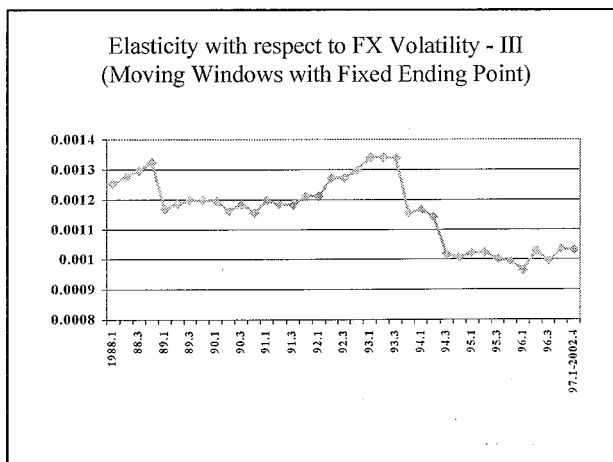


Figure 4.g.3



CHAPTER V

CONCLUSION

The balance of payments received much attention in the economic literature especially in the 1990s with the growing magnitude of capital flows and frequent currency and balance of payments crises in the developing countries. Conventional approaches viewed current account as a measure of competitiveness; that, is, the ability of a country to sell, but this approach was impotent, especially when the current account surplus was a result of a sudden halt in capital flows and accompanying contraction in the GDP. Therefore, new approaches to the current account have been developed, taking into account the impact of the capital flows on the domestic economy and, hence, the current account.

In the 1980s, an approach known as the intertemporal approach to the current account became popular as opposed to the static analyses that prevailed until then. This approach viewed the current account balance as the outcome of forward looking dynamic saving and investment behavior of private agents. Therefore, the current account balance is determined by intertemporal optimization of consumers and firms. This view was used to overlook the current account imbalances if they are due to private agent's decisions but the Mexican crisis in 1994 invalidated this view, as the current account deficits were largely financed by private agents' portfolio investment.

Following frequent crises in the developing countries, the current account deficits have been questioned as an indicator, showing the extent of country's spending beyond its means. The "sustainability" approach became a popular method, by which an acceptable level of current account that a country can carry without endangering its solvency position is proposed. However, in many cases, despite the current account is in balance or in small deficit, crises could take place, which required alternative explanations to the balance of payments (or currency) crises, leaving aside the current account deficit as a source of disruptive imbalance itself. First and second generation models, in this sense, try to explain the balance of payments crises

(defined as an occasion in which the government cannot defend a parity and domestic currency is left to float). First generation models views the crisis as the outcome of the inconsistency between the domestic economic policies and maintaining fixed exchange rate regime, while the second generation models goes further beyond the first generation by defining multiple equilibria and self-fulfilling attacks.

In the light of those theoretical arguments, current account adjustment in Turkey has been examined in this thesis. Basically, the study has two major parts: On the one side, the balance of payments developments between 1923-2002 are investigated in historical perspective in relation with the macro economic policies of different periods. On the other side, the determinants of the current account balance are identified and the dynamics of the current account in the post-1990 period is investigated. The second part embodies empirical work and, due to lack of sufficient data, is confined to 1976-2002 period. The study focused on the dynamics of the current account for 1987-2002, mainly due to the fact that the capital account liberalization was completed in 1990. The latter is intended to provide insight for recent developments and to be useful in deriving policy implications.

To evaluate the balance of payments in Turkey in 1923-2002, it is necessary to identify sub-periods characterized by different economic regimes. Nevertheless, due to availability of data, the analysis starts from 1926. Therefore, the first period concentrates more on post-1929 period. 1929-1945 was characterized by inward-looking economic policies and two external shocks, namely the Great Depression (1929) and the Second World War (1940-1945). The second period under investigation is 1946-1979, whose characteristic development strategy was import substitution industrialization as it was in the first period. However, this period differed from the former by increasing integration with the world economy and with more emphasis on import substitution industrialization through the five-year plans that were effective from 1963 onwards. In this period, trade volumes were higher and capital movements assumed an increasing role in the financing of the development plans. The third period, 1980-2002, is the open economy phase, when first trade and finance were liberalized followed by capital movements at a later stage.

Analyzing the balance of payments developments before 1950 is not an easy task, as official statistics do not exist for this period. Therefore, the non-existing data has to be constructed to complete the overall view on current account adjustment and capital flows. However, it should be acknowledged that the constructed data can not cover all developments but can only show the major trends in the current account and the capital movements. Keeping in mind the possible flaws in the data, it is observed that the data confirms the quite liberal foreign trade before 1930 and that the country underwent a regime change from outward-looking strategy to inward-looking strategy after 1930. Considering that the country registered significant growth rates during 1930s, the surpluses registered in current account balance were complementary to the development strategy of the period, that is, achieving economic growth along with import-repression.

From 1947 to 1979, foreign trade and foreign exchange continued to be controlled strictly, although some relaxation was required whenever the situation became unsustainable. The most characteristic feature of the whole period of 1929-1979 was that the foreign financing availability through capital movements was negligible during 1929-1979. This brought foreign exchange and foreign trade to the center of economic policy making, as the sole means to obtain and control foreign financing and inputs for production. Therefore, economic growth was closely associated with foreign trade and foreign exchange rate policies and dependent on whether the restrictions were relieved or strengthened.

In this respect, it can be argued that the causation between economic growth and current account was from the latter to the former. During import substitution industrialization (ISI) in 1930-1939 and 1955-1979, strict controls on foreign trade, preventing consumption good imports and supporting import-competing industries led to high rates of growth in industry and services sectors. However, the system based on continuous controls was not sustainable due to weaknesses in the ISI and was subject to interruption and adjustment several times following severe production bottlenecks and scarcities in 1958 and 1979.

With the opening of trade and capital movements in 1980s and 1990s, the key position of balance of payments as a development means of the earlier period shifted with the lifting of controls and restrictions on the foreign exchange flows between residents and non-residents. Instead, the balance of payments became the by-product of the decisions of economic agents from public and private sector in response to domestic and external signals and stimuli. In addition to inclusion of new components in the balance of payments accounts, the magnitudes and the weight of the other components of the balance of payments changed significantly in the post-1980s.

Analysis of balance of payments in the 1990s shows the fragilities inherent in the system under full capital account liberalization. There is a breakeven point in the mid-1990s marking the first and second phases of capital liberalization. The break point is more evident in terms of availability of foreign financing in both periods. Relaxing the foreign capital constraints, Turkey attracted substantial amount of portfolio and short-term capital in 1990-1995 period. This fuelled economic growth and current account deficit at the expense of accumulation of domestic and foreign debt. This strategy failed in 1994, however, when the economic growth based on capital inflows was no longer sustainable under fiscal imbalances and large foreign debt bringing into question the sustainability of the debt stock. Instead of implementing a restructuring in the economy, Turkey continued to rely on capital inflows and fiscal imbalances accumulated in the aftermath of 1994. From 1998 on, Turkey's access to international capital was quite restricted following the Asian and Russian crises, which together with imbalances in the economy, resulted in volatility in the domestic growth rate and required frequent adjustments in the current account.

Empirical analysis verified that there was a breakeven point in 1994 and the analysis captures the impact of foreign credit constraint on the current account behavior. The current account of the balance of payments in Turkey has been found to be determined by GDP growth, demand from export markets, terms of trade and foreign exchange volatility, among which GDP growth is the major factor. Formal tests for structural break and test for threshold effects between current account and GDP growth did not provide significant results but analysis of rolling regressions had

important results for the dynamics of the current account balance. The analysis verified that there are shifts and breaks in the current account model. Parameters of the model are not constant but subject to change either through a one-time shift or a gradual shift in response to external and/or domestic shocks. In this respect, external financing constraint appears to be a binding factor, preventing the current account deficit to reach unprecedented levels.

One of the major findings of the rolling regressions is that the impact of GDP growth on current account balance declined during 1995-2002 and specifically in 1999. This implies that, given the unsustainability of economic growth along with mounting fiscal imbalances, the economy could not generate proportionate expenditures during phases of economic growth. To put it in another way, the economic agents were less willing to decrease their savings during high volatility in economic growth and instability in the economy in the second half of 1990s and early 2000s.

Therefore, this study contributed to the existing literature by identifying the determinants of Turkish current account balance in the medium- and short-run, focusing especially on the post-1990, a period for which such a study do not exist. As opposed to cross section and panel studies, which derive generalizations from a large sample set of many countries, this study focused on the specificity of Turkey's conditions with reference to international and domestic events. In this context, this study has revealed that a developing country may be faced with various structural breaks, which might be lost through cross-section and panel data analysis. Therefore, it is of utmost importance to suspect breaks in the data when dealing with developing countries, who has to undertake frequent stabilization programs or changes in their foreign exchange regimes.

In addition, it has been shown that Turkey is a foreign credit-constrained economy with limited access to international financing and, hence, studies on the dynamics of the current account in Turkey should at best take into account theoretical models involving international liquidity constraint. Furthermore, the findings of this study suggest that studies on Turkey's current account balance should not overlook dynamic analyses. In fact, there is no explicit evidence in this study about whether

the people in Turkey smoothed their consumption in line with what the intertemporal theory predicts. However, the fact that the decline in the impact of GDP growth on current account suggests that consumption smoothing became harder given the credit constrained economy.

APPENDICES

A.1. Constructing Balance of Payments Statistics for 1926-1949

To construct the balance of payments statistics for 1926-1949, information from different sources has been used.

For 1926-1933, detailed balance of payments statistics is available, which was published by *Al-i İktisat Meclisi*. These reports classified the balance of payments categories as assets and liabilities; therefore, these accounts are not in balance as in standard balance of payments records but rather presented in the form of balance sheet of a country in terms of foreign exchange.

The categories in *Al-i İktisat* reports are very close to the standard balance of payments items that we know today. It includes information on foreign trade (including exports on FOB, imports on CIF basis, gold and even an estimate of smuggling), services income such as interest, tourism, consulate, commercial activities, etc. Gold imports, however, are available for only two years. Under commercial activities, freight, insurance and transit trade fees, commission and consulting income, services income of banks have been classified in detail. Moreover, interest and profit transfers have been recorded as separate accounts. Finally, in terms of standard current account components, unilateral transfers including immigrant and emigrant possessions and foreign aid are present in those accounts.

As for capital movements, information on foreign direct investment, long-term borrowing and payments of central government, municipalities and bond issues and repayments are all displayed in those accounts. The short-term capital movements are composed of non-residents' FX deposits held in domestic banks and short-term trade credits.

I reorganized these detailed accounts which were presented in debit-credit form into the standard current account and capital account categories. (Table A.1.1 and A.1.2) I

collected the current account related items under foreign trade and balance of invisibles and the capital account items under direct investment and (net) long-term capital movements. Since the Central Bank was not established until 1932, there was no specific information about reserves of the country during that period. According to Al-i İktisat Meclisi reports, however, the net of current and capital accounts were reported as a residual under short-term capital movements, where foreign deposits in domestic banks, bonds held by foreigners and commercial debt to foreigners were registered. Therefore, considering that reserve accumulation took place in domestic banks, I assumed that what was registered as the short-term capital movements were in fact reserve movements during 1926-1933. In that way, a balance of payments summary table consisting of exports, imports, trade balance, net other goods and services income (including unrequited transfers), capital movements and reserves could be formed.

The most problematic part in the construction of the balance of payments was for 1934-1949 due to the lack of available statistics. I collected various scattered data from different sources. As for the current account, foreign trade data is available either in SIS (State Institute of Statistics) bulletins, annual foreign trade reports or in Central Bank's Bulletins. However, data on the remaining part of the current account, namely, the services income and unrequited transfers, is not available in any sources. Therefore, for the period in question I constructed the current account balance as the balance of trade flows and interest payments. The latter I estimated using the information in Al-i İktisat Reports and Tezel (1994).

Tezel (1994: 210) provides the foreign debt payments for 1924-1950 but interest and principal payments are not disintegrated in these series. Therefore, I had to disintegrate the interest payments from the total. For this purpose, I calculated for 1930-1933 the share of interest payments published in the Al-i İktisat reports in the total debt payments provided in Tezel (1994). Next, I took the average of these four years and applied this average to the whole series of debt payments presented by Tezel. Therefore, for 1934-1949, I attained a series of interest payments which was, unfortunately, the only entry in the net other goods and services and unrequited transfers categories. The remaining part, namely the principal payments (this includes

payments made for nationalization of infrastructure), I registered under long-term capital movements as payments in the capital account.

The most difficult part of the capital movements between 1934-1950 was to compile long-term and short-term borrowing. Tezel (1994: 188-225) narrates comprehensive information on debt settlements and the amounts received, which I registered under long-term borrowing in the particular period in question. These included credits for match monopoly (1930), USSR industrial credits (1932), British credits for Karabük iron and steel factory (1936), British trade credits (1938), British military credits (1938-1939), British gold credits (1940) and similar credits from the US, Germany and France between 1939-1950. France and Germany provided military credits in 1939 and 1942 respectively and a series of US credits between 1946-1950 including credits for the post-war reconstruction. I recorded these particular debt settlements as long-term borrowing.

Next I resorted to foreign debt stock of Turkish Republic (published in *CBRT Quarterly Bulletin*, various issues), which was in detail in terms of every debt settlement of the central government and municipalities. In those accounts, the state of each foreign debt settlement (labeled according to the purpose of the credit) is displayed annually. These accounts show the stock due to the credits I mentioned above as well as the stock due to the nationalization of railways, utilities and ports. The difference in the debt stock data can be expected to point at net inflows of capital (if it increases, indicating that country has borrowed) or net outflows of capital (if it decreases, indicating that country has repaid).

However, interpreting the foreign debt stock data was not that straightforward. Interpretation of the debt stock figures was difficult due to several reasons: At the first place, for many occasions, there was a mismatch between the date of the debt settlement and the first entry in the official debt stock figures. In addition to that, there were more entries in the foreign debt stock data than what Tezel (1994) mentioned in his book. Secondly, it was not possible to understand exactly why the rise in the stock figures stemmed from, due to debt rescheduling or the renewal of the credit. Moreover, there were increases in some years and decreases in some other

years in the series. Since I did not have precise information on whether the country has been repaying or renewing the credits, I could not use and make assumptions about the changes in the foreign debt stock for capital movements. Therefore, I only used the foreign debt stock data to check the information in Tezel. In some rare occasions, when there was no information in Tezel (1994) on the exact date of the debt settlement, I took the first entry in the official debt stock figures as the date of the arrival of the foreign credit. I did not include in my estimations the official debt stock figures about which I had no *a priori* information.

As for the short-term capital flows, I had to make a series of assumptions. First of all, I assumed that the changes in the floating debt stock, which is short-term in nature, constituted the net short-term capital inflows. Floating debt stock was significantly lower than the fixed rate debt stock, around one third of the latter. Given that the net capital inflows were very small in that period, I assumed that the errors related to the short-term movements were also negligible. Accordingly, I took the change in the floating debt records that were presented item by item as in the consolidated debt stock figures and registered the total net change in the stock figures as net short-term debt flows. Consequently, all of these estimations during 1934-1949 were based on official figures, which means that the estimated capital flows were of the government and the public sector, assuming away private sector's borrowing.

It should be admitted that gathering the scattered information in this way can not adequately reflect the capital movements during 1943-1949. Besides, most of the foreign credits provided to Turkey during war years were for the financing of the military expenditures, which did not directly contribute to the economic activities. Including them overestimate the exact foreign financing available to the domestic economy. However, despite this, the volume of capital movements was almost negligible compared to the trade flows and, therefore, measurement errors can be easily neglected.

Another flaw in the constructed series is the lack of data on services and unilateral transfers between 1934-1949. However, considering the very small magnitudes of net services and bilateral transfers in Al-i İktisat reports between 1926-1933, there is no

reason to believe that the structure was very different during the depression and the war periods.

Finally, I checked the change in the estimated change in reserves in the balance of payments with the change in Central Bank's foreign assets (composed of gold and foreign exchange) that I calculated from its balance sheet for 1934-1949. In a few years, the direction of the change was not the same in the two series but when 1934-1949 is taken as a whole, total increase in reserves in the balance of payments and the Central Bank foreign assets were USD 360 million and USD 428 million, respectively. This supports that even if the magnitudes were not precise, the estimations show the direction of foreign exchange flows right.

Table A.1.1. Balance of Payments (1926-1949)

USD million	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937
CURRENT ACCOUNT BALANCE	-28	-22	-11	-50	6	-2	3	14	4	5	20	19
Exports	108	101	112	92	88	74	54	59	73	76	94	109
Imports	-135	-122	-126	-137	-81	-72	-48	-52	-69	-71	-74	-90
Foreign Trade Balance	-26	-21	-14	-45	7	2	6	7	4	6	20	19
Balance on Services, Other Income and Transfers	-2	-1	2	-5	-1	-4	-3	7	0	0	0	0
CAPITAL ACCOUNT	5	3	3	6	1	3	0	-3	-13	-24	5	-9
RESERVE S*	23	19	8	44	-7	-1	-3	-11	9	19	-25	-10

USD million	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949
CURRENT ACCOUNT BALANCE	-4	7	31	36	12	39	51	70	133	-10	-66	-30
Exports	115	99	84	94	126	197	178	167	238	222	196	246
Imports	-119	-92	-52	-57	-113	-155	-126	-96	-124	-243	-274	-288
Foreign Trade Balance	-4	7	32	37	13	41	52	71	115	-21	-78	-42
Balance on Services, Other Income and Transfers	0	0	-1	-1	-1	-2	-1	-1	18	12	12	12
CAPITAL ACCOUNT BALANCE	24	17	39	26	7	-37	-22	-17	10	-15	45	6
RESERVE S*	-20	-24	-70	-62	-19	-3	-30	-53	-143	24	22	24

* Plus sign indicates a decline and a minus sign indicates a rise in reserves.

**Net errors and omissions are assumed to be zero.

Source: Author, *Al-i İktisat Reports*, Tezel (1994), *CBRT Quarterly and Annual Bulletins*, various issues.

Table A.1.2. Balance of Payments, Detailed Accounts (1926-1933)

TL million	1926	1927	1928	1929	1930	1931	1932	1933
CURRENT ACCOUNT BALANCE	-54.3	-42.5	-22.4	-103.5	11.8	-5.3	7.0	23.9
A. TRADE BALANCE	-50.7	-40.6	-27.3	-93.3	14.5	4.0	12.6	11.8
Exports (fob)	209.0	198.6	221.2	190.5	186.6	156.7	113.8	100.5
Exports	186.4	158.4	173.5	155.2	151.5	127.3	101.3	96.2
Imports								
Imports (cif)	-259.7	-239.2	-248.5	-283.8	-172.1	-152.7	-101.2	-88.7
B. INVISIBLE ACCOUNTS	-3.5	-1.9	4.9	-10.2	-2.7	-9.3	-5.6	12.2
Interest	0.0	0.0	0.0	0.0	-0.4	-0.4	-0.3	-0.3
Income								
Payments					0.4	-0.4	-0.3	-0.3
Profit Transfers	-7.6	-7.5	-6.1	-5.0	-6.3	-1.0	-0.1	-0.5
Inflows	0.7	0.8	0.9	1.0	1.0	0.5	0.4	0.4
Outflows	-8.3	-8.3	-7.0	-6.0	-7.3	-1.5	-0.5	-1.0
Tourism	1.3	1.3	1.5	-0.2	-2.0	-3.2	-3.8	3.2
Income	4.5	4.5	4.5	4.5	4.5	2.1	3.0	5.2
Expenditures	-3.2	-3.2	-3.0	-4.8	-6.5	-5.2	-6.8	-2.0
Other	2.8	4.3	9.6	-5.0	6.0	-4.8	-1.4	9.8
Income from commercial activities	9.8	17.3	18.1	18.7	15.6	13.2	10.9	11.3
Expenditures for commercial activities	-5.3	-5.0	-5.2	-6.8	-2.8	-4.3	-1.1	-0.6
Immigrant income		2.0	6.5	3.0	1.8	1.4	1.5	3.6
Emigrant expenditures	-4.0	-4.0	-7.2	-6.4	-5.0	-2.5	-4.0	-2.5
Foreign aid		1.0	1.0	0.4	0.7	0.5	0.5	0.6
Consulate income	5.0	5.0	5.4	5.0	5.0	3.5	2.0	2.0
Consulate expenditures	-1.6	-1.5	-2.7	-2.7	-2.7	-2.8	-1.6	-1.5
Other income	0.3	1.8	1.6	1.6	1.2	1.0	1.0	1.5
Other expenditures	-1.4	-12.2	-8.0	-17.7	-7.7	-6.5	-8.7	-4.6
Gold imports						-8.4	-2.1	

Source: *Al-i İktisat Reports.*

Table A.1.2. Balance of Payments, Detailed Accounts (1926-1933)

TL million	1926	1927	1928	1929	1930	1931	1932	1933
CAPITAL MOVEMENTS	54.3	42.5	22.4	103.5	-11.8	5.3	-7.0	-23.9
Direct Investment	2.0	1.0	-1.6	0.5	0.5	0.0	0.0	0.1
Real estate sold to foreigners	2.0	1.0		0.5	0.5			0.1
Real estate bought from foreigners			-1.6					
Borrowing of central government and municipalities, bond issues and other capital inflows	7.4	4.3	10.5	21.5	1.2	1.2	4.5	1.4
Payments of central government, bond repayment and other capital outflows			-2.3	-15.5	-9.3	-4.1	-5.6	-6.2
Borrowing of the central government				6.2	9.7	9.7	1.2	
Short-term movements	44.9	37.3	15.8	90.7	-14.0	-1.5	-7.0	-19.2
Inflows	44.9	37.3	15.8	90.7				
Outflows					-14.0	-1.5	-7.0	-19.2

Source: Al-i İktisat Reports.

Table A.1.3. Balance of Payments, Detailed Accounts (1934-1949)

TL million	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949
CURRENT ACCOUNT																
BALANCE	4.55	6.48	24.48	23.55	-5.39	8.61	41.03	46.96	15.57	51.47	66.90	91.90	240.87	-27.40	-186.40	-85.14
Exports	92.00	96.00	118.00	138.00	145.00	127.00	111.00	123.00	165.00	257.00	233.00	219.00	432.00	625.00	551.00	694.00
Imports	-87.00	-89.00	-93.00	-114.00	-150.00	-118.00	-69.00	-75.00	-148.00	-203.00	-165.00	-126.00	-224.00	-685.00	-770.00	-812.00
Foreign Trade Balance	5.00	7.00	25.00	24.00	-5.00	9.00	42.00	48.00	17.00	54.00	68.00	93.00	208.00	-60.00	-219.00	-118.00
Balance on Services, Other Income and Transfers	-0.46	-0.52	-0.52	-0.46	-0.39	-0.39	-0.98	-1.04	-1.43	-2.54	-1.11	-1.11	32.87	32.61	32.61	32.87
Foreign debt payments	-0.46	-0.52	-0.52	-0.46	-0.39	-0.39	-0.98	-1.04	-1.43	-2.54	-1.11	-1.11	-2.54	-2.80	-2.80	-2.54
US aid													35.40	35.40	35.40	35.40
CAPITAL ACCOUNT	-15.81	-29.79	6.77	-10.84	30.14	21.66	52.19	34.44	8.81	-47.76	-28.12	-22.69	18.17	-41.36	125.45	17.48
Long-term borrowing	0.00	0.00	18.00	0.00	37.80	19.32	78.60	59.54	45.20	3.14	0.64	0.00	63.45	9.13	142.21	
Long-term payments	-12.16	-13.09	-12.16	-12.16	-10.29	-11.22	-18.70	-19.64	-25.25	-40.21	-19.64	-18.70	-43.01	-50.49	-52.36	-47.69
Short-term movements (net)	-3.65	-16.70	0.92	1.32	2.62	13.56	-7.71	-5.46	-11.15	-10.69	-9.12	-3.99	-2.27	0.00	35.60	65.16
RESERVE S*	11.26	23.31	-31.25	-12.71	-24.75	-30.27	-93.22	-81.40	-24.38	-3.71	-38.78	-69.21	-259.03	68.75	60.94	67.66

* Plus sign indicates a decline and a minus sign indicates a rise in reserves.

**Net errors and omissions are assumed to be zero.

Source: Author, CBRT Quarterly and Annual Bulletins, various issues.

Table A.1.4. Balance of Payments, Detailed Accounts (1950-1974)

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962
A. CURRENT ACCOUNT BALANCE	-50	-94	-198	-164	-177	-177	-75	-64	-64	-145	-139	-170	-242
EXPORTS	263	314	363	396	335	313	305	345	247	354	321	347	381
IMPORTS	-286	-402	-556	-533	-478	-498	-407	-397	-315	-470	-468	-510	-622
TRADE BALANCE	-23	-88	-193	-137	-143	-185	-102	-52	-68	-116	-147	-163	-241
INTEREST PAYMENTS	-15	-10	-12	-18	-18	-21	-16	-14	-8	-22	-29	-30	-30
NET TOURISM REVENUES	-6	-1	-7	-9	-10	-7	-9	-9	-8	-6	-2	-5	-10
WORKERS' REMITTANCES	0	0	0	0	0	0	0	0	0	0	0	0	0
PROFIT TRANSFERS	0	0	0	0	0	0	0	0	0	0	0	0	0
PROJECT CREDIT SERVICE PAYMENTS	0	0	0	0	0	0	0	0	0	0	0	0	0
OTHER INVISIBLES (NET)	-6	5	14	0	-6	-7	-15	-29	-32	-36	-13	-20	-1
INVISIBLE ITEM BALANCE	-27	-6	-5	-27	-34	-35	-40	-52	-48	-64	-44	-55	-41
NATO INFRASTRUCTURE AND OFF-SHORE	0	0	0	0	0	43	67	40	52	35	52	48	40
B. CAPITAL MOVEMENTS	92	126	156	165	183	166	173	128	136	171	129	181	199
FOREIGN DEBT PAYMENTS	-15	-18	-22	-20	-73	-106	-89	-83	-69	-60	-65	-84	-97
IMPORTS OF FOODSTUFFS	0	0	0	0	0	0	14	32	42	27	22	65	71
PRIVATE FOREIGN INVESTMENT	2	7	10	8	8	3	2	17	13	7	24	34	36
PROJECT CREDITS	5	1	6	11	14	15	8	5	4	1	2	7	26
IMPORT WITH WAIVER	0	0	0	0	0	0	0	0	0	0	0	0	0
PROGRAM CREDITS	100	115	77	61	108	127	95	70	97	147	115	118	94
OTHER CAPITAL MOVEMENTS	0	21	85	105	126	127	143	87	49	49	31	41	69
BALANCE	42	32	-42	1	6	-11	98	64	72	26	-10	11	-43
C. REZERVES	30	-21	-99	-69	-66	-71	38	7	-34	-33	-51	-60	-11
D. SPECIAL DRAWING RIGHT (SDR)	0	0	10	20	0	0	0	14	25	0	0	16	15
E. SHORT AND MEDIUM TERM CAPITAL MOVEMENTS	0	0	0	0	0	0	0	0	0	0	0	0	0
F. NET ERROS AND OMISSIONS	-72	-11	131	48	60	82	-136	-85	-63	7	61	33	39

Table A.1.4. Balance of Payments, Detailed Accounts (1950-1974) (continued)

	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
A. CURRENT ACCOUNT BALANCE	-300	-109	-78	-164	-115	-224	-220	-171	-109	-8	484	-719
EXPORTS	368	411	464	490	523	496	537	588	677	885	1317	1532
IMPORTS	-688	-537	-572	-718	-685	-764	-801	-948	-1171	-1563	-2086	-3778
TRADE BALANCE	-320	-126	-108	-228	-162	-268	-264	-360	-494	-678	-769	-2246
INTEREST PAYMENTS	-31	-34	-32	-32	-34	-34	-44	-47	-47	-62	-59	-102
NET TOURISM REVENUES	-13	-14	-10	-14	-14	-9	-5	4	21	44	78	42
WORKERS' REMITTANCES	0	9	70	115	93	107	141	273	471	740	1183	1426
PROFIT TRANSFERS	-1	-5	-15	-16	-25	-32	-32	-33	-36	-35	-35	-71
PROJECT CREDIT SERVICE PAYMENTS	0	-4	-7	-7	-9	-15	-18	-30	-32	-35	-24	-17
OTHER INVISIBLES (NET)	16	6	4	-1	22	17	-6	14	2	-12	92	222
INVISIBLE ITEM BALANCE	-29	-42	10	45	33	34	36	181	379	640	1235	1500
NATO INFRASTRUCTURE AND OFF-SHORE	49	59	20	19	14	10	8	8	6	30	18	27
B. CAPITAL MOVEMENTS	251	127	146	150	175	235	257	413	344	160	433	290
FOREIGN DEBT PAYMENTS	-119	-131	-184	-146	-99	-72	-108	-158	-91	-235	-72	-126
IMPORTS OF FOODSTUFFS	88	31	29	17	0	0	41	83	55	18	0	0
PRIVATE FOREIGN INVESTMENT	21	25	22	30	17	13	24	58	45	43	79	88
PROJECT CREDITS	81	40	57	56	83	127	174	179	219	222	328	237
IMPORT WITH WAIVER	5	5	5	11	12	22	20	34	27	39	50	58
PROGRAM CREDITS	115	117	167	162	162	145	106	217	89	73	48	33
OTHER CAPITAL MOVEMENTS	60	40	50	20	0	0	0	0	0	0	0	0
BALANCE	-49	18	68	-14	60	11	37	242	235	152	917	-429
C. RESERVES	48	-12	-13	39	-25	6	0	-233	-345	-574	-728	354
D. SPECIAL DRAWING RIGHT (SDR)	22	19	0	22	0	0	0	18	11	-18	0	0
E. SHORT AND MEDIUM TERM CAPITAL MOVEMENTS	21	-15	-35	-39	-21	0	0	0	0	413	-224	-63
F. NET ERRORS AND OMISSIONS	-42	-10	-20	-8	-14	-17	-37	-27	99	27	35	138

Source: SIS, Statistical Indicators, 1923-1995

A.2. Current Account Equation with Seasonally Adjusted Data (1988:1-2002:1)

Table A.2.

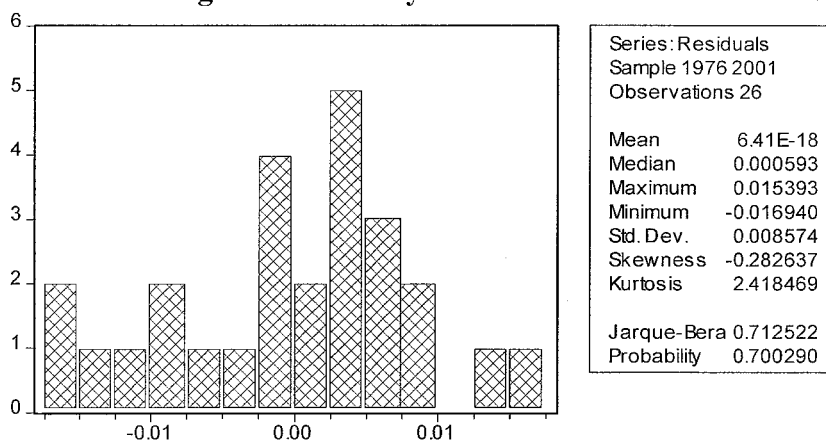
Dependent Variable is CAGDP				
Variable	Coefficient	Std. Error	t-Statistic	Probability
C	-0.003	0.003	-0.889	0.378
DLOG(RGDPSA,0,4)	-0.293	0.037	-7.839	0.000
DLOG(IMPEXPMSA(-1))	0.115	0.062	1.858	0.069
DLOG(IMPEXPMSA(-4))	0.098	0.060	1.624	0.111
D(TOTSA(-1))	0.160	0.075	2.141	0.037
FXVOLATSA	0.003	0.001	2.387	0.021
D2000	-0.031	0.008	-3.657	0.001
DASIA	0.018	0.009	1.897	0.064
R-squared	0.721	Mean dependent var		-0.007
Adjusted R-squared	0.681	S.D. dependent var		0.028
S.E. of regression	0.016	Akaike info criterion		-5.344
Sum squared resid	0.012	Schwarz criterion		-5.057
Log likelihood	160.294	F-statistic		18.100
Durbin-Watson stat	1.637	Prob(F-statistic)		0.000

A.3. Diagnostic Tests for Equation (12) in Chapter IV

A.3.1. Correlogram of Residuals

Autocorrelation	Partial Correlation	AC	PAC	Q-Stat	Prob
.** .	.** .	1 -0.204	-0.204	1.2123	0.271
.** .	.** .	2 -0.219	-0.272	2.6659	0.264
. * .	. .	3 0.067	-0.051	2.8088	0.422
.* .	.* .	4 -0.086	-0.158	3.0515	0.549
.** .	.** .	5 -0.215	-0.312	4.6502	0.460
. * .	. .	6 0.188	-0.023	5.9357	0.430
. .	.* .	7 0.011	-0.101	5.9405	0.547
.* .	.* .	8 -0.111	-0.147	6.4346	0.599
. ***	. **	9 0.331	0.255	11.115	0.268
. .	. * .	10 0.006	0.123	11.117	0.349
.* .	. * .	11 -0.157	0.109	12.307	0.341
.** .	.** .	12 -0.221	-0.261	14.837	0.250

A.3.2. Histogram-Normality Test



A.3.3. Breusch-Godfrey Serial Correlation LM Test

F-statistic	1.364676	Probability	0.283647
Obs*R-squared	3.788874	Probability	0.150403

A.3.4. ARCH-LM Test

F-statistic	0.008516	Probability	0.927272
Obs*R-squared	0.009253	Probability	0.923366

A.3.5. White Heteroskedasticity Test

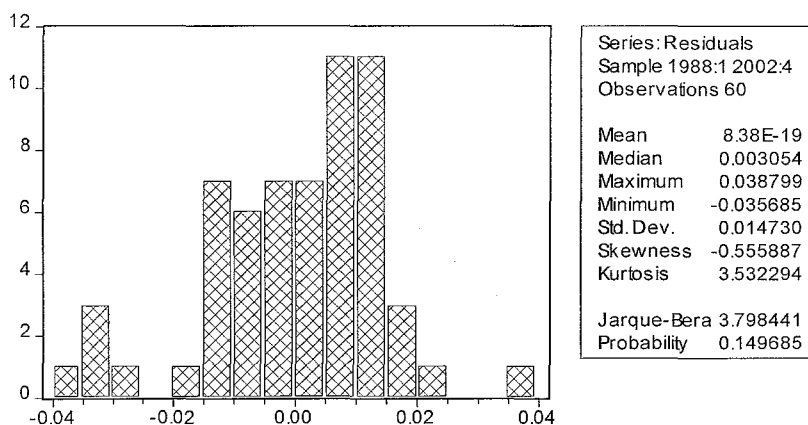
F-statistic	0.835363	Probability	0.622022
Obs*R-squared	11.45949	Probability	0.572383

A.4. Diagnostic Tests for Equation (13) in Chapter IV

A.4.1. Correlogram of Residuals

Autocorrelation	Partial Correlation	AC	PAC	Q-Stat	Prob	
. *	. *	1	0.158	0.158	1.5659	0.211
. *	. *	2	0.109	0.086	2.3305	0.312
. .	. .	3	-0.003	-0.033	2.3310	0.507
. *	. *	4	-0.065	-0.071	2.6088	0.625
. .	. .	5	-0.052	-0.030	2.7942	0.732
. .	. .	6	-0.013	0.013	2.8063	0.833
. .	. .	7	-0.001	0.006	2.8064	0.902
** .	** .	8	-0.192	-0.206	5.4414	0.710
. .	. *	9	0.030	0.087	5.5089	0.788
. *	. *	10	0.068	0.101	5.8578	0.827
. .	. *	11	-0.023	-0.070	5.8972	0.880
. .	. .	12	0.026	-0.008	5.9481	0.919

A.4.2. Histogram-Normality Test



A.4.3. Breusch-Godfrey Serial Correlation LM Test

F-statistic	0.519019	Probability	0.722123
Obs*R-squared	2.538195	Probability	0.637810

A.4.4. ARCH-LM Test

F-statistic	0.895282	Probability	0.473661
Obs*R-squared	3.674222	Probability	0.451886

A.4.5. White Heteroskedasticity Test

F-statistic	0.980745	Probability	0.510383
Obs*R-squared	12.35388	Probability	0.417694

A.5. Threshold Estimations: Minimum Residual Sum of Squares for Alternative Threshold Potentials. Model with Annual data (1976-2001)

threshold	0.001	r-squared	0.8278	threshold	0.026
rss	0.00181			rss	0.0018
r-squared	0.8267	threshold	0.014	r-squared	0.82757
		rss	0.0018		
threshold	0.002	r-squared	0.82791	threshold	0.027
rss	0.00181			rss	0.0018
r-squared	0.82673	threshold	0.015	r-squared	0.82737
		rss	0.0018		
threshold	0.003	r-squared	0.82802	threshold	0.028
rss	0.00181			rss	0.00181
r-squared	0.8268	threshold	0.016	r-squared	0.82718
		rss	0.0018		
threshold	0.004	r-squared	0.82813	threshold	0.029
rss	0.00181			rss	0.00181
r-squared	0.82689	threshold	0.017	r-squared	0.82699
		rss	0.0018		
threshold	0.005	r-squared	0.82823	threshold	0.03
rss	0.00181			rss	0.00181
r-squared	0.82698	threshold	0.018	r-squared	0.8268
		rss	0.00179		
threshold	0.006	r-squared	0.82833	threshold	0.031
rss	0.00181			rss	0.00181
r-squared	0.82707	threshold	0.019	r-squared	0.82649
		rss	0.00179		
threshold	0.007	r-squared	0.82843	threshold	0.032
rss	0.00181			rss	0.00182
r-squared	0.82716	threshold	0.02000	r-squared	0.82609
		rss	0.00179		
threshold	0.008	r-squared	0.82852	threshold	0.033
rss	0.00181			rss	0.00182
r-squared	0.82724	threshold	0.021	r-squared	0.82573
		rss	0.00179		
threshold	0.009	r-squared	0.82861	threshold	0.034
rss	0.00181			rss	0.00182
r-squared	0.82732	threshold	0.022	r-squared	0.82549
		rss	0.00179		
threshold	0.01	r-squared	0.82839	threshold	0.035
rss	0.0018			rss	0.00183
r-squared	0.82744	threshold	0.023	r-squared	0.82536
		rss	0.0018		
threshold	0.011	r-squared	0.82818	threshold	0.036
rss	0.0018			rss	0.00183
r-squared	0.82756	threshold	0.024	r-squared	0.82521
		rss	0.0018		
threshold	0.012	r-squared	0.82797	threshold	0.037
rss	0.0018			rss	0.00183
r-squared	0.82768	threshold	0.025	r-squared	0.82506
		rss	0.0018		
threshold	0.013	r-squared	0.82777	threshold	0.038
rss	0.0018			rss	0.00183

r-squared	0.82493	r-squared	0.82425	r-squared	0.82588
threshold	0.039	threshold	0.05	threshold	0.061
rss	0.00183	rss	0.00184	rss	0.00182
r-squared	0.8248	r-squared	0.82429	r-squared	0.82629
threshold	0.04	threshold	0.051	threshold	0.062
rss	0.00183	rss	0.00184	rss	0.00181
r-squared	0.82468	r-squared	0.82435	r-squared	0.82675
threshold	0.041	threshold	0.052	threshold	0.063
rss	0.00183	rss	0.00184	rss	0.00181
r-squared	0.82457	r-squared	0.82442	r-squared	0.82727
threshold	0.042	threshold	0.053	Threshold	0.064
rss	0.00183	rss	0.00183	rss	0.0018
r-squared	0.82447	r-squared	0.82451	r-squared	0.82785
threshold	0.043	threshold	0.054	threshold	0.065
rss	0.00184	rss	0.00183	rss	0.00179
r-squared	0.82437	r-squared	0.82461	r-squared	0.82849
threshold	0.044	threshold	0.055	threshold	0.066
rss	0.00184	rss	0.00183	rss	0.00179
r-squared	0.82429	r-squared	0.82474	r-squared	0.82892
threshold	0.045	threshold	0.056	threshold	0.067
rss	0.00184	rss	0.00183	rss	0.00178
r-squared	0.82424	r-squared	0.82488	r-squared	0.82938
threshold	0.046	threshold	0.057	threshold	0.068
rss	0.00184	rss	0.00183	rss	0.00178
r-squared	0.8242	r-squared	0.82505	r-squared	0.82985
threshold	0.047	threshold	0.058	threshold	0.069
rss	0.00184	rss	0.00183	rss	0.00178
r-squared	0.82419	r-squared	0.82524	r-squared	0.83017
threshold	0.048	threshold	0.059	threshold	0.07
rss	0.00184	rss	0.00182	rss	0.00177
r-squared	0.8242	r-squared	0.82553	r-squared	0.83046
threshold	0.049	threshold	0.06		
rss	0.00184	rss	0.00182		

A.6. Threshold Estimations: Minimum Residual Sum of Squares for Alternative Threshold Potentials. Model with Quarterly Model (1988:1-2002:4)

threshold	0.001	threshold	0.014	Threshold	0.027
rss	0.0124	rss	0.01254	Rss	0.01265
r-squared	0.7516	r-squared	0.74863	r-squared	0.74631
threshold	0.002	threshold	0.015	threshold	0.028
rss	0.0124	rss	0.01255	rss	0.01266
r-squared	0.75131	r-squared	0.74842	r-squared	0.74622
threshold	0.003	threshold	0.016	threshold	0.029
rss	0.01242	rss	0.01256	rss	0.01266
r-squared	0.75107	r-squared	0.7482	r-squared	0.74612
threshold	0.004	threshold	0.017	threshold	0.03
rss	0.01243	rss	0.01257	rss	0.01267
r-squared	0.75083	r-squared	0.74799	r-squared	0.74603
threshold	0.005	threshold	0.018	threshold	0.031
rss	0.01244	rss	0.01258	rss	0.01267
r-squared	0.75058	r-squared	0.74779	r-squared	0.74593
threshold	0.006	threshold	0.019	threshold	0.032
rss	0.01245	rss	0.01259	rss	0.01268
r-squared	0.75034	r-squared	0.74758	r-squared	0.74583
threshold	0.007	threshold	0.02	threshold	0.033
rss	0.01246	rss	0.0126	rss	0.01268
r-squared	0.75012	r-squared	0.74737	r-squared	0.74571
threshold	0.008	threshold	0.021	threshold	0.034
rss	0.01247	rss	0.01261	rss	0.01269
r-squared	0.74991	r-squared	0.74719	r-squared	0.74559
threshold	0.009	threshold	0.022	threshold	0.035
rss	0.01248	rss	0.01262	rss	0.01269
r-squared	0.7497	r-squared	0.74704	r-squared	0.7455
threshold	0.01	threshold	0.023	threshold	0.036
rss	0.01249	rss	0.01262	rss	0.0127
r-squared	0.74948	r-squared	0.74689	r-squared	0.74545
threshold	0.011	threshold	0.024	threshold	0.037
rss	0.01251	rss	0.01263	rss	0.0127
r-squared	0.74927	r-squared	0.74674	r-squared	0.74539
threshold	0.012	threshold	0.025	threshold	0.038
rss	0.01252	rss	0.01264	rss	0.0127
r-squared	0.74906	r-squared	0.7466	r-squared	0.74541
threshold	0.013	Threshold	0.026	threshold	0.039
rss	0.01253	Rss	0.01265	rss	0.0127
r-squared	0.74884	r-squared	0.74645	r-squared	0.74545

threshold 0.04
 rss 0.01269
 r-squared 0.74553

 threshold 0.041
 rss 0.01269
 r-squared 0.74562

 threshold 0.042
 rss 0.01268
 r-squared 0.7457

 threshold 0.043
 rss 0.01268
 r-squared 0.74578

 threshold 0.044
 rss 0.01268
 r-squared 0.74587

 threshold 0.045
 rss 0.01267
 r-squared 0.74595

 threshold 0.046
 rss 0.01267
 r-squared 0.74604

 threshold 0.047
 rss 0.01266
 r-squared 0.74613

 threshold 0.048
 rss 0.01266
 r-squared 0.74621

 threshold 0.049
 rss 0.01265
 r-squared 0.74629

 threshold 0.05
 Rss 0.01265

r-squared 0.74638

 threshold 0.051
 rss 0.01265
 r-squared 0.74644

 threshold 0.052
 rss 0.01264
 r-squared 0.74652

 threshold 0.053
 rss 0.01264
 r-squared 0.74666

 threshold 0.054
 rss 0.01263
 r-squared 0.74686

 threshold 0.055
 rss 0.01262
 r-squared 0.74706

 threshold 0.056
 rss 0.0126
 r-squared 0.74731

 threshold 0.057
 rss 0.01259
 r-squared 0.74756

 threshold 0.058
 rss 0.01258
 r-squared 0.74783

 threshold 0.059
 rss 0.01256
 r-squared 0.7481

 threshold 0.06
 rss 0.01255
 r-squared 0.74838

threshold 0.061
 rss 0.01254
 r-squared 0.74865

 threshold 0.062
 rss 0.01253
 r-squared 0.74887

 threshold 0.063
 rss 0.01251
 r-squared 0.74909

threshold 0.064
rss 0.0125
r-squared 0.7493

 threshold 0.065
 rss 0.0125
 r-squared 0.7493

 threshold 0.066
 rss 0.01251
 r-squared 0.74925

 threshold 0.067
 rss 0.01251
 r-squared 0.74917

 threshold 0.068
 rss 0.01252
 r-squared 0.74891

 threshold 0.069
 rss 0.01253
 r-squared 0.74879

 threshold 0.07
 rss 0.01254
 r-squared 0.74866

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