



## **Sustainability of Current Account Deficit in Turkey (1989-2014)**

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### **ABSTRACT**

The current account deficit, as a frequently disputable phenomenon of Turkish economy, is considered as one of the main causes of the crises in the economy. The current account deficit is one of the important problems in some developed countries as well as in developing countries. Indeed, the long-term sustainability of such an incident which results from expenditures in excess of the income or investments in excess of the savings in a country is subject to discussion. Despite its experience of a rapid process of change following the decisions of 24<sup>th</sup> January 1980, the Turkish banking sector has been severely damaged during the crisis of November 2000 and February 2001 in particular. The global financial crisis of the year 2008, like the rest of the world, has also increased uncertainties in Turkey along with a reduction in demand, a decline in production which, in turn, led to the emergence of negative impacts on the real and financial sectors. The aim of this study is to examine the sustainability of current account deficit in Turkey between the years 1989 and 2014. The technical analysis conducted with the econometric model is also supported by a variety of data analysis.

**Keywords:** Current Account Deficit, Export, Import, Sustainability, Economic Crisis

**JEL Classifications:** E30, F30, G32

### **1. INTRODUCTION**

Since the current account balance equals to the difference between national savings and domestic investment, current account deficits may occur due to either a decrease in savings or an increase in investment. Sustainability of a certain current deficit can also be affected by additional characteristics of the change in investment or savings (Roubini and Watchel, 1998. p. 6).

The most important indicator of the sustainability of current account deficit in Turkey is the low level share of final consumption goods in total imports. Imported goods are mostly intended for production and investment processes through which intermediate goods are transformed into exports and the share of intermediate goods (70%) in exports verifies this fact. This situation would be considered as the main reason behind the fact that the economic balance is not deteriorated in spite of the high level of the current account deficit. This increases the long-term sustainability of the current account deficit (Göçer and Mercan, 2011. p. 41).

In fact, the ratio of the current account deficit to gross national product (GNP) has increased rapidly throughout the recent period. On the

other hand, this ratio in excess of 5% is considered as one of the signals for financial crisis. However, the increase in this ratio must be analyzed in more detail. Indeed, the inevitable rise in oil prices is the most important reason for such a high level of deficit. It has been noticed that the share of the current account deficit in GNP remained at 3% level without showing an upward trend, forasmuch as keeping the energy prices at their constant level in 2002. This information by no manner of means eliminates the fact that Turkey experiences serious issues of current account deficit, however, it highlights once again that the country's dependence on external sources of energy and oil is basically the underlying cause (Özkale and Kayalıca, 2008. p. 377).

Current account deficits are among the important factors that affect economic crisis. Many economists believe that an economic crisis is inevitable in case of current account deficits over 5% of gross domestic product (GDP). Economic growth rate affects the current account deficit through imports increases. Turkey's chronic current account deficits largely emerges as a result of a trade imbalance (Boratav, 2010. p. 27).

The oil prices are also expected to affect the current account balances significantly. When considering the current account

deficit to be one of the most crucial factors which would increase macroeconomic fragility in emerging economies, the rise in energy prices may create obstacles for sustainable economic growth by negatively affecting the current account deficits in energy-importing countries (Kaminsky et al., 1998; Kaminsky and Reinhart, 1999).

## 2. MEASURING THE SUSTAINABILITY OF CURRENT ACCOUNT DEFICITS

According to Milesi-Ferretti and Razin, the sustainability of current account is closely related with the country's solvency (ability to repay its current foreign debts). An economy is solvent if the present discounted value of future foreign trade surpluses of an economy is equal to (or higher than) current external indebtedness (Çakmak and Varlık, 2007. p. 116).

The "sustainability" of current account deficit focuses on for how long the deficit would be sustained without experiencing a crisis or how early the crisis would be anticipated.

The main purpose here is not preventing the emergence of the conditions of crises, but instead, estimating duration of the sustainability of current account deficits without creating any crisis. In other words, the sustainability of current account deficits is defined depending on whether the borrowed resources can be repaid without experiencing bigger problems (Şubasat, 2010. p. 8).

Milesi-Ferretti and Razin determined a set of four macroeconomic and structural indicators for assessing the sustainability of a country's current account deficit (Atik, 2006. p. 337):

- a. Structural features of the country,
- b. Macroeconomic policy stance of the country,
- c. Political stability and credibility of the country,
- d. Market expectations.

In many studies, sustainable current account deficit is determined in accordance with the ratio of current account deficits to GDP. Let us assume that  $C$  is the current account deficit and  $g$  is the average (optimal) growth rate of GDP. The expression of  $\lambda = (C/GDP)$  denotes the rate of current account deficit. Based on a simple macroeconomic model, the following relation can be defined between the country's current account deficit ratio and the ratios of  $\kappa$  and  $g$  (Uygur, 2001. p. 26):

$$\lambda = g \kappa \quad (1)$$

Since the ratio of  $\kappa$  is the domestic-based assets which the foreigners would like to keep, roughly the borrowings to Turkey; the ratio of  $\lambda$  represents the sustainable current account deficit. When the ratios of  $\kappa$  and  $g$  are given, a higher level of current account deficit cannot be financed. In case of financing a higher level of current account deficit, the ratios of  $\kappa$  and/or  $g$  should increase. It would be deceptive to comment on current account deficit level and its sustainability by simply considering the current account deficit rates. There have been a variety of opinions on the discussion of "current account deficit/GDP" ratios in the

sustainability analysis. For instance, while Freund estimated a boundary rate in his study on current account balance experiences of industrialized countries, such as 5% of GDP, Dornbusch maintained that any deficit in excess of a certain threshold - 4% of GDP - would have caused issues on which to be concerned (Babaoğlu, 2005. p. 10, 11).

## 3. EMPIRICAL LITERATURE REVIEW

Numerous research studies have been conducted on the sustainability of current account deficits. Using different methods, researchers in this study examined whether the current account deficit sustainable. Current operations are studies in the international arena regarding the sustainability of the deficit.

Wu et al. (2001) examined the sustainability of current account balances in the economies of such countries as USA, United Kingdom, Germany, Italy, Canada and Japan with the help of panel data method by using quarterly data between the years 1973:02 and 1998:04. The authors tested the sustainability of current account deficits with the instruments of conventional cointegration and panel cointegration methods by including net transfer payments and net interest payments to exports/imports of goods and services. The test results from the conventional cointegration methods indicated no cointegration between exports and imports in the long-run and they concluded that the current account deficits were not sustainable in the long-run. However, according to the results of the panel cointegration methods detected a long-term relationship between exports and imports of those countries and they concluded that the current account deficits were sustainable.

Baharumshah et al. (2003) examined the sustainability of current account imbalances in four Asian countries, namely, Indonesia, Malaysia, Philippines and Thailand for the period between the years 1961 and 1999. The analyses are conducted with the help of unit root and cointegration tests. The test results indicated that, with the exception of Malaysia, the current account deficits are unsustainable between the years 1961 and 1997.

Yanar and Yücel (2005) tested the sustainability of Turkey's current account deficits between the years 1964 and 2003. The key variables taken into account were export and imports data including uncovered foreign transfers and foreign interest payments. Augmented Dickey-Fuller unit root and Engle-Granger two-step cointegration tests are used in order to detect a possible long-term relationship between exports and imports. According to the results in the study; the hypothesis asserting no relationship between exports and imports could not be rejected. The findings concluded that Turkey's current account deficits were not sustainable.

Babaoğlu (2005) examined the sustainability of current account deficits in Turkey between the years 1987 and 2004. According to the test results of vector autoregression method, the study concluded that the current account deficits could not be sustainable in Turkey.

Yamak and Korkmaz (2007) examined the sustainability of current account deficits in Turkey between the years 2001:04 and 2005:09 by using monthly data. Bound test approach is applied to test the relationship between the data series of exports of goods and services and imports of goods and services including net current transfers and net interest payments. The results of the study concluded that the current account deficits in Turkey were weakly sustainable.

Akdiş et al. (2007) tested the sustainability of current account deficits in Turkey by utilizing cointegration and error correction models for the data sets obtained between the years 1992:02 and 2005:12. The variables included imports of goods and services, exports of goods and services plus current transfers. Their analysis revealed the existence of a long-term relationship between export and import data series and concluded that the current account deficits were sustainable in Turkey. According to the results of error correction model, short-term changes in exports are reported to have a negative and significant impact on imports.

Ağaslan and Akçorakoğlu (2007) compared the intertemporal current account model which result in the optimal current account balance with the actual current account. Within the framework of sustainability analysis, cointegration tests are utilized for estimation of the model. Comparison between the actual and the optimal series of current account balances are made with necessary statistical tests. In that regard, they tested the sustainability of the process accompanied with the current policies in Turkey.

Peker (2009) performed a cointegration analysis in order to determine the sustainability of current account deficits in Turkey by utilizing monthly data of the periods between 1992:01 and 2007:12. Despite a long-run relationship between exports and imports, the cointegration coefficient was  $<1$ , the study detected only a low level of sustainability of current account deficit in Turkey.

Djeutem and Nguimkeu (2013) used two different approaches for the sustainability of the current account deficits in Cameroon to figure out whether current economic policies are profound enough to make sure of the country's financial solvency. The former approach contains a structural procedure to make comparison between current account deficits and an optimal benchmark utilizing the Campbell-Shiller's method. The latter approach uses a reduced form in order to test for intertemporal budget constraint through cointegration tests between exports and imports plus net transfer payments on foreign debts. The results of their study claims that the current account imbalances for Cameroon in accordance with the data obtained from the period between 1970 and 2002 are excessive while the deficits are unsustainable.

Kalyoncu and Kaplan (2014) investigated the sustainability of current account imbalances by utilizing the data of totally five ASEAN countries between the years 1981 and 2008. The analysis is performed under intertemporal borrowing constraint approach by performing a panel cointegration between exports

and imports plus net transfer payments plus net interest payments. The panel cointegration test results indicated evidence in favour of the sustainability of the current account for those five ASEAN countries as a group.

Murat et al. (2014) analyzed the strategies for the sustainability of current account deficit in Turkey with the help of an empirical model for the period between 2003:01 and 2013:02 by utilizing Hakkio and Rush (1991) and Husted (1992) model for current account sustainability. Their test results indicated that current account has a weak form sustainability in Turkish economy.

Ekinci and Kahyaoglu (2015) analyzed the sustainability of current account deficit in Turkey between the period of 1992:01 and 2011:12. As the leading liquidity indicator, the international interest rate determined the level of sustainability. For this purpose, they adopted a non-linear time series approach in order to test the sustainability of current account deficit in Turkey. Their test results indicated that as international interest rates increase at a slow pace, the current account deficit in Turkey is shifted from an unsustainable to a sustainable regime. They also indentified a threshold value which is about one billion USD per month for the sustainability of current account deficit in Turkey.

Topallı and Doğan (2016) focused on the current account deficit dynamics and sustainability by utilizing data of the period between 1990:Q1 and 2014:Q2 in Turkey. Their findings highlighted the most crucial determinant of the current account deficit such as energy consumption, openness rate, GDP, exchange rate and investments in accordance with the Markov-switching method. They claimed that Turkey's problem of current account deficit can be solved by diminished the level of foreign dependence in energy, encouraged GDP and investments.

#### 4. THEORETICAL FRAMEWORK, DATA AND METHODOLOGY

In this study, the sustainability of current account deficit is tested within Husted (1992) model. Husted's model is utilized in order to determine whether a long-term relationship between exports and imports exists. If such a long-term relationship occurs, it would be possible to assert that the current account deficits are sustainable. In accordance with Husted (1992) approach, the long-run relationship between exports and imports is examined in terms of the intertemporal budget constraint below:

$$C_0 = Y_0 + B_0 - I_0 - (1 + r_0)B_{-1} \quad (2)$$

Here,  $C_0$ ,  $Y_0$ ,  $B_0$ ,  $I_0$  and  $r_0$  are current consumption, output (production), positive or negative international indebtedness, investment, and a one-period world interest rate, respectively. The initial size of debt is denoted by  $(1 + r_0)B_{-1}$ .

Husted (1992) formulated a testable model of the long-run relationship between exports and imports such as below after setting several simplifying assumptions:

$$X_t = a + bM_t + e_t \quad (3)$$

In the revised version of the model shown above;  $X$  denotes the exports as the dependent variable,  $M$  denotes the imports as the independent (explanatory) variable.

The annual data set of Turkey's exports and imports in USD between the years 1989 and 2014 are obtained from electronic data delivery system within the Central Bank of Turkish Republic.

In compliance with Husted (1992) method, the following model is used:

$$X_t = \beta_0 + \beta_1 M_t + D_{2008} + e_t \quad (4)$$

$t$  = years ( $t = 1989, \dots, 2014$ )

$X_t$  = Exports (dependent variable)

$M_t$  = Imports (explanatory (independent) variable)

$D_{2008}$  = Dummy variable of the year 2008 (due to global economic crisis)

Since temporal annual data are used, stationarity problem is encountered. Prior to testing the time series for stationarity, they need to be detrended by taking the first differences. However, due to global economic crisis in the year 2008, the time series data contain a structural break. Therefore, a dummy variable is included to estimate the effect of the crisis. The stationarity tests for the first difference series are performed.

## 5. EMPIRICAL RESULTS

As shown in Table 1, the first differences of  $X_t$  and  $M_t$  data series are found to be stationary. The existence of long-term relationship between those data series with stationary first differences are examined with the instrument of cointegration model developed by Engle-Granger (1987). Accordingly; if the error term in the estimate model is found to be stationary, there should be a long-term relationship between the variables. Stationarity test results for detection of such relationship are shown in Table 1.

According to Engle-Granger two step method, error term is estimated by the help of the ordinary least squares (OLS) method in the first step. In the second step, on the other hand, the obtained error term is subjected to unit root test. Cointegration occurs if it is found to be stationary. Besides, both data series are found to be cointegrated if they are stationary (Yanar and Yücel, 2005, p.490).

As shown in Table 2, the model is significant as a whole. 83% of the changes in exports are explained by the changes in imports. In fact, this indicates the degree of the dependence of Turkey's exports to its imports. The coefficient  $b$  is found to be 0.45. Thus, every \$1.00 worth of imports account for \$0.45 worth of exports in Turkey. Therefore, the current account deficits cannot be sustainable in case of such long-term foreign trade deficits which are the main causes of the current account deficits in Turkey.

**Table 1: Stationarity (ADF) test**

Variable	Intercept	Trend and intercept	Critical value	
$X_t$ (first difference)	-4.46	-4.61	-4.50	1%
			-3.65	5%
			-3.26	10%
$M_t$ (first difference)	-5.56	-5.79	-4.50	1%
			-3.65	5%
			-3.26	10%

The first differences of exports and imports data do not contain unit root.

ADF: Augmented Dickey-Fuller

**Table 2: Engle-Granger cointegration test results**

$$X_t = 1027 + 0.47M_t + 9779 D_{2008} + e_t$$

(1.47) (8.33)\* (1.86)\*\*

$R^2 = 0.83$   $F = 47$   $e_t = \text{Stationary}$

\*Significant at 1% level, \*\*Significant at 5% level. Figures in parenthesis indicate t-statistics

## 6. CONCLUSIONS

The increase in prevalence of the post-1980 liberal policies is the main reasons for large external deficits especially in developing countries. As in many developing countries, production in Turkey's economy is mainly based on the imports of intermediate goods. Thus, in many developing countries, serious deteriorations occur in the current account balances due to the high proportion of imported inputs in their domestic production process. This is also the case for Turkey's economy. High interest rates which lead to revaluation of the domestic currency and, in turn, increase the volume of imports is one of the major causes of the current account deficit in Turkey. The crises in the world economy have come to the fore in 1990s during which high levels of current account deficits are experienced in a global scale. Therefore, the current account deficits are considered as one of the signals for economic crises. Economies with higher current account deficits are more vulnerable to the crises, so that the studies have focused mostly on whether a current account deficit is sustainable or not rather than on whether the current account deficits actually exist.

The growth period of post-2001 crisis had more potential in creation of current account deficits in comparison with 1980s and 1990s due to a variety of reasons such as Exchange rate and debt management policies. After the year 2001, increasing current account deficits as a result of the appreciation of the domestic currency have been financed directly with foreign capital inflows attracted by external debt and high interest rate policies. Although, a recession in foreign markets and a decline in demand of domestic markets along with an increase in exchange rates during the crisis of 2008 have lowered the growth rate of the current account deficits; an increase in foreign direct investment outflow and external debt burden had a negative impact on the sustainability of current account deficits. The current account balance is determined by the difference between national savings and domestic investment. In the pursuit of permanent policies on the implementation of sustainability, the policies pertaining the promotion of national savings can create a positive impact in terms of sustainability.

The spiral of low exchange rate/high interest rate applicable in Turkey resulted in the long-term high levels of current account deficits. A decline in the current account deficits would occur in case of higher exchange rates/lower interest rates; because the lower Exchange rates would lead to an increase in the prices of domestic goods and a decrease in the prices of foreign goods. Thereby reducing export revenues by increasing imports with the help of lower exchange rates has caused the current account deficit. Technology, intermediate and investment goods in Turkey have an important place in terms of imports. Turkey, unlike oil exporting countries, is more prone to deficits as its exports fail to offset its imports. Thus, it is vital to produce the energy level for self-sufficiency. If necessary, the establishment of nuclear power plants would be considered as a feasible alternative in order to get rid of its energy dependency.

The main problem in Turkey is not the level of current account deficit, but the basic vulnerability of its economy for which those deficits are responsible. The size of the current account deficit financed with capital inflows is not an indication of which to be concerned. The degree of performance of foreign capital inflows may not be a huge risk in terms of current account deficits. However, a current account deficit financed with a short-term foreign capital inflow is unsustainable, regardless if its size, due to sudden capital outflow risks. Considering the developments in Turkey, especially after the year 1990, increasing current account deficits have led to significant rise in external debt of the country. High levels of the current account deficits have fed the import-based growth, but the resources provided from the outside world could not be transferred to productive areas which are subject to trade.

In this study, the current account deficits as one of the most important economic problems in Turkey between the years 1989 and 2014 are discussed. It mostly focuses on the changes in imports, exports and foreign trade deficits that occurred after the year 1980. Moreover, the crisis of 2008 is tried to be explained in terms of its impacts on the World economy and the Turkish economy. The final section of the study reflects the test results of the sustainability of current account deficit in Turkey with the instrument of Husted (1992) model. The test results indicate that the current account deficits in Turkey are not sustainable in the long-run during which the country's exports fail to offset its imports.

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