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Perspectives regarding Current Account Deficit, Interest Rates, Inflation and Exchange Rates; Turkey Example[1]

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ABSTRACT

The current account deficit problem has become one of the chronic problems of Turkey during recent years. To achieve macroeconomic balance, the share of the current account deficit in the gross domestic product should be kept under control. Due to this reason, it is of great significance for the economic policies to be formed to analyze the factors affecting the current account deficit and to reveal which one has a larger share of the current account deficit.

Turkey's current account deficit between the years 2002-2019 will be analyzed with the VAR model and the Granger causality test in this study. The purpose of the study is to reveal the whole of the factors affecting the current account deficit and to reveal the relationship between inflation, which is seen as financing the current account deficit, but which is one of the biggest problems of the Turkish economy, the exchange rate, which is the most significant factor in our foreign trade, and the interest rate trio, which affects the foreign capital inflow to the country, with the current account deficit.

Keywords: Current Account Deficit, Interest Rate, Inflation, Exchange Rate, VAR, Turkish Economy

Introduction

One of the most significant macroeconomic indicators of countries is the current account balance. This is because the current account balance is an indicator of whether the result of the policies put into effect in the country is successful or not. An imbalance in the current account balance may create negative effects on the country's economy and cause crisis signals. Therefore, the differences in the current account give information regarding the course of the economy, thus helping to form expectations and policies.

Moreover, the current account deficit weakening the country's economies against external shocks and the use of the share of current account deficit in the gross domestic product as a leading indicator in possible financial crises in the economy has caused the current account deficit problem to gain importance in Turkey as in many countries. The underlying causes of the macroeconomic problem that affects the economy so much and the difficulties in financing this problem have been one of the main topics discussed for many years. Although the current account deficit problem commenced giving its first signals as a result of the abandonment of the import substitution industrial policy after 1980 and the adoption of an export-based industrial policy, it has become one of the most significant problems of the Turkish economy following the 2000s.

Literature

To study the cause of the current account deficit, many studies have been carried out from the past to the present and different results have been reached. If we take a consider the studies on the causes of the current account deficit;

The current account deficit of the previous period increases the current account deficit of the next period. In the study of Erkılıç (2006), covering the period 1987-2005, many variables were reviewed to find the factors affecting the current account deficit by way of using the VAR model. In the findings obtained as a result of the study, it has been observed that the current account deficit has the power to affect itself and the same findings have been observed in terms of the current account deficit growth rate.

The current account balance also encompasses the foreign trade balance between total goods exports and total goods imports. In other words, the emergence of a current account deficit is closely related to imports and exports. If a country imports more than it exports, a foreign trade deficit arises and the foreign trade deficit increases the current account deficit. In the studies made by Erdoğan and Bozkurt (2009) encompassing the period between the years 1990-2008, they found that there is a high inverse correlation between the current account deficit and the ratio of exports to imports, and the level of impact of oil prices on the current account deficit is in the second place.

If the exports are more than imports, the current account deficit decreases. As proved in this study, it is the foreign trade balance with the highest correlation associated with the current account deficit.

[1]This article has been derived from the master's thesis executed by the second author under the counselling of the first author.

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This is because the share of the foreign trade balance in the current account deficit is quite high. Canıdemir (2011) found a positive correlation between import and real exchange rate increase and current account deficit, and a negative correlation between export and interest rate increase and current account deficit, in a study examining the general budget deficits in Turkey using the multiple regression model based on the 1989–2010 periods.

Turkey being a foreign-dependent country in energy has caused energy imports to have a large share in the current account deficit. Regarding this, the VAR model was used in the study of Göçer (2013), encompassing the period 1996-2012, and the current account deficit is; It has been determined that the part arising from energy imports is 37%, the part arising from imports excluding energy imports is 26%, the part arising from foreign debt interest payments is 24%, the part arising from foreign direct investments is 7% and the part arising from profit transfers of portfolio investments is 6%. As set forth at the end of this study, energy imports and other import items have a great impact on the current account deficit.

Bayrak et al. (2014), has used the Granger causality test for the 2000-2013 period and it was determined that the ratio of exports to imports and Borsa Istanbul (Istanbul Stock Exchange) 100 index had a significant share on the current account balance. Based on the analysis, it is presented that 25.3% of the change in the current account balance is by foreign direct investment inflows, 20% by portfolio investments, 18.3% by crude oil prices, 15% by public gross total debt stock, 8.6% by Borsa İstanbul 100 index and 6.2% by the real effective exchange rate.

Increasing the energy demand and current account deficit show a relationship in the same direction in Turkey. As the energy demand increases, energy imports increase and energy imports increase the current account deficit. Bayrak (2014) examined the period of 2000-2012 in his study to reveal Turkey's energy deficit problem in general terms and to offer solutions for eliminating the energy deficit. He reached the conclusion that the increasing energy imports and foreign dependency level in Turkey caused the current account to run short, the macroeconomic balances deteriorated and the economy became more vulnerable to external shocks. He argued that the potential of domestic and renewable energy resources will contribute to overcoming the energy bottleneck in the country, reducing the dependency on imported energy inputs and thus preventing foreign exchange loss.

Demiray and Güneş (2017) utilized the Johansen co-integration test in their study based on the years 1990-2015 to examine the relationship between energy imports, current account deficit, and GDP in Turkey. He concluded that there is a long-term positive relationship between energy imports, GDP, and current account deficit. The data showed that energy imports affect GDP and that there is a weak bidirectional relationship between current account deficit and GDP. Saritas et al. (2018) examined the relationship between current account deficit energy imports and economic growth, using the VAR model and the Granger causality test for the period 1971-2015. He concluded that energy imports cause a deficit in the current account balance.

Should we consider the studies carried out to examine the relationship between the current account deficit and the interest rate, inflation, and exchange rate;

Genç, Yardimci, and Göçeri (2017) studied the structural causes and sustainability of the current account deficit problem in the Turkish economy for the period 2002-2016. In the study, they concluded that the major reason for the current account deficit is; the use of imported intermediate goods increased as a result of the overvaluation of the real exchange rate, the inability to convert savings into real investments, foreign dependency in energy and high external debt stock. Kesikoğlu, Yıldırım, and Çeştepe (2013), concluded in their analysis using the panel VAR method for 28 OECD member countries for the period 1999-2009 and they found that interest rate, economic growth, and the budget deficit had a medium-term effect on the current account deficit, however, the exchange rate did not affect the current account deficit.

Eşiyok (2012), studied in his study, the problems that cause the current account deficit in the Turkish economy and concluded that the overvaluation of TL increased the current account deficit rapidly due to inflation targeting in Turkey after the 2000s. Moreover, he concluded that the foreign-dependent production structure that emerged due to energy imports and the delayed effects of the Customs Union that came into force in 1996 also affected the current account deficit. Uz (2010), concluded in his study using the ARDL model for the 1987-2008 period, that the exchange rate has the strongest effect on the current account.

Moreover, he determined that the depreciation of the national currency improves the current account in the long run, while the valuation of the national currency improves the current account deficit in the short run. Peker et al. (2009) concluded that the real interest rate, real exchange rate, and Borsa (Stock Exchange) Istanbul index are the most significant determinants of the current account deficit in Turkey, in their study encompassing the period 1992-2007 and using VAR model.

2.1. Theoretical Foundations of Current Deficit

We can deal with the current account deficit with three interrelated equations. The first of these equations is;

$$CDt=NXt+rtBt+TRt. \quad (1)$$

In this equation, the definition of current account deficit is performed with interest payments on foreign debt, transfer payments, and trade in goods.

NX: Denotes the exports of goods and services (Net)
Bt: Denotes the foreign debt stock.
rt: Denotes International interest rate
rtBt: Denotes Foreign debt interest payment

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TRt: Denotes public and private sector net transfer expenditures.

The foreign debt interest payment is the variable that negatively affects the current account deficit in the equation. The fact that the country is in debt will cause this variable to be negative and affect the current account deficit negatively. As another negative item, deficits in trade in goods and services can be considered. The deficits in the trade of goods and services affect the current account deficit negatively by causing the net exports of goods and services in the equation to have a negative value. If we consider transfer expenditures, transfer expenditures mathematically affect the current account deficit positively.

We can set forth the current account deficit with the equality of external assets secondly. According to this equation;

$$CDt=Bt+1-Bt \quad (2)$$

Bt+1-Bt variable denotes the change in net foreign assets.

If the net foreign asset change takes a negative value, it means that the country has a current account deficit.

Thirdly, we can explain the current account deficit with the help of investment and savings balance. According to this equation;

$$CDt=St-It. \quad (3)$$

If this equality receives a negative value, that is, if the savings are not enough to meet the investments, it can be understood that there is a domestic savings deficit in the country. If there is a lack of domestic savings, this means that the country runs a current account deficit.

Relationship of the Current Account Deficit and Exchange Rate

As a result of the expansionary monetary and fiscal policies carried out to eliminate the global crisis phenomenon, Turkey was affected by this situation and the capital inflow to the country accelerated. Due to these capital inflows, the fall in the exchange rate and the decrease in the prices of imported products caused a significant increase in the number of imports. Based on these concepts, the high current account deficit and high growth rates have been observed in the Turkish economy (Bayrak and Esen., 2012; Yeldan, 2010).

Among the most significant items affecting the current account balance is the foreign trade balance. The foreign trade balance comprises goods exports and goods imports. The most significant factor shaping the current account deficit is the foreign trade balance. The main indicator of this is that the import and export of goods has an important share of 1/2 to 1/3 of the share of most countries in international economic transactions. Another indicator of the importance of the foreign trade share in the current account deficit is that the trade in goods is the most concrete indicator of the developments in the real economy.

The factors affecting the foreign trade balance also indirectly affect the current account deficit. As the real exchange rate is the most significant factor that directly affects foreign trade, it affects the current account balance to a significant extent, although indirectly. As the real exchange rate appreciates; TL depreciates, the price of imported goods increases relatively, and as a result, imports decrease.

As the price of domestic goods becomes cheaper compared to other countries, the exports increase, increasing exports reduce the foreign trade deficit, thus the current account deficit decreases. When the real exchange rate depreciates, TL appreciates, the price of goods imported from abroad decreases and imports increase, and as a result of increasing imports, the foreign trade deficit increases.

If we consider Turkey's CPI-based real effective exchange rate between the years 2002-2019 in Figure 1; TL having gained 2% in value in 2004, continued to appreciate until 2007, and gained 28% in 2007. Although there were fluctuations in the value of TL between the years 2007 and 2014, it experienced the greatest decrease in value in 2018. TL depreciated by 24% in 2018 compared to 2003, which was the base year, and this depreciation continued until 2019.

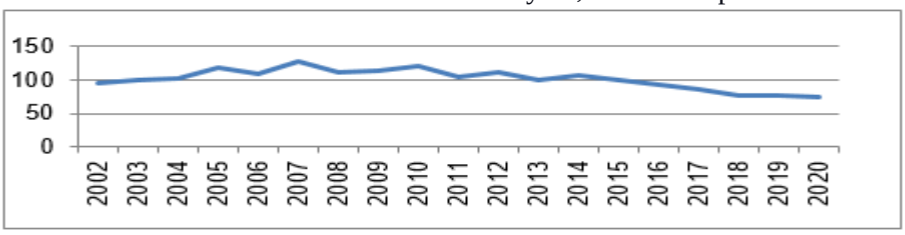

Figure 1. Real Effective Foreign Exchange Rate (2013=100)
Source: Central Bank Data Distribution System (EVDS)

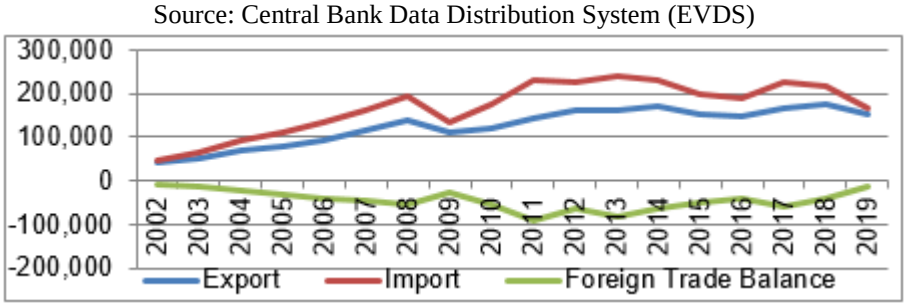

Figure 2. Import, Export and Foreign Trade Balance (US$ Million)
Source: Central Bank Data Distribution System (EVDS)

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As you can see in Figure 2, Turkey's imports have always been more than its exports in the period from 2002 to 2019, and as a result, it has had a constant foreign trade deficit.

The import of intermediate goods is the item that has the largest share in total imports in Turkey. Approximately 70-75% of its total imports originate from the import of intermediate goods. As you can understand here, Turkey's production is largely dependent on imports. Due to this dependency, while its imports are increasing, it also generates a great burden on the current account deficit.

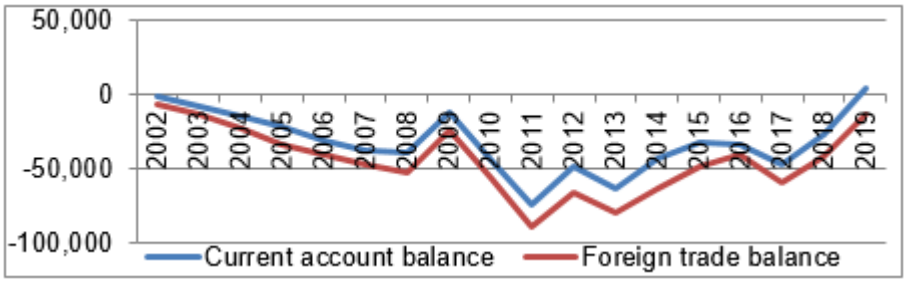

Figure 3. Current Account Balance and Foreign Trade Balance Between the years 2002-2019 ($ million)
Source: Central Bank Data Distribution System (EVDS)

Figure 3 presents that the current account balance and foreign trade balance move in the same direction from 2002 to 2018, and there is a causality between them. In 2019, for the first time, the foreign trade balance had a deficit, while the current account gave a surplus. Another remarkable point is that the foreign trade balance always has more deficit than the current account balance. It can be understood from this that the Foreign Trade balance is an important reason for the current account balance to give a deficit.

Whereas the exports are not very sensitive to the real effective exchange rate, imports are more sensitive. Excluding some exceptional cases, the real effective exchange rate and imports moved in opposite directions, as seen in Figure 4. While the real effective exchange rate increased, imports decreased, and while the real effective exchange rate decreased, the imports increased. Since the imports are among the important items in the current account balance, the current account balance changes as a result of these increases and decreases.

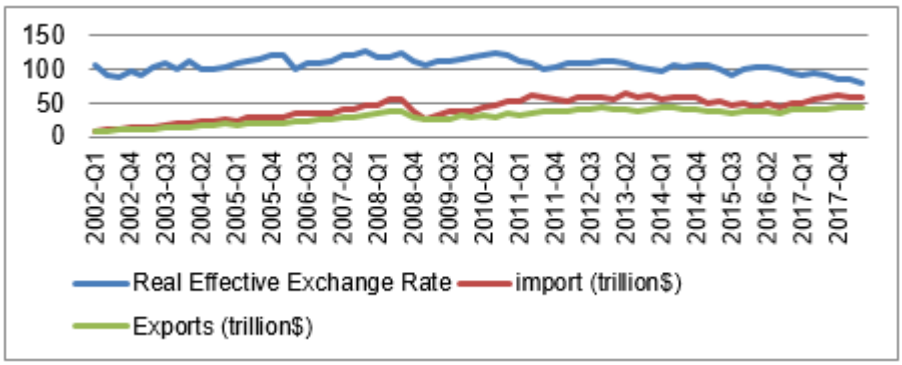

Figure 4. Import, Export and Exchange Rate Relationship
Source: Central Bank Data Distribution System (EVDS)

Relationship of Current Account Deficit and Inflation

The relationship between the inflation rate and the current account deficit is as important as the relationship between the current account deficit and the real exchange rate. The financing issue in the Turkish economy is the biggest obstacle to the high growth desire. Inflation and current account deficit, which are utilized to meet this financing problem, can be presented as substitutes for each other. In an economy that wants to grow but has insufficient resources, inflation or current account deficit is used to finance growth to achieve this goal.

The inflation and current account deficit are utilized as a way of closing the resource deficits that arise in an economy that wants to spend more than the resources it has and to grow. In cases where the economic structure of the country and the external conjuncture are not suitable for providing growth with foreign resources, the financing method used to close these resource deficits has been inflation. The use of inflation in financing growth in the past years has enabled the country's current account deficit to decrease.

Following the "inflation targeting", which is one of the measures taken after the economic crisis in 2001, inflation was tried to be reduced to single digits and inflation was no longer used primarily in financing growth. However, as a result of this policy, the resource deficit problem encountered by Turkey has directly increased the current account deficit, since there has been no decrease in the resource needs of the economy while the inflation has decreased, and there has been no improvement in the production and expenditure structure.

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As a consequence of inflation targeting, the main macroeconomic problem experienced in Turkey was the high current account deficit problem. This situation reveals the relationship between the current account deficit, which increases with the growth of the economy and is presented as the end of import-based economic growth, with inflation.

If the current world conjuncture goes on like this, the flow of foreign resources will continue and the current account deficit potential of the Turkish economy will continue. This will also contribute to single-digit inflation targeting. However, if the world conjuncture reverses, the current account deficit potential of the Turkish economy will diminish. In the case where this potential decreases, the desire for high growth will either have to be abandoned or high inflation rates, which is another source of financing for growth, will be settled for.

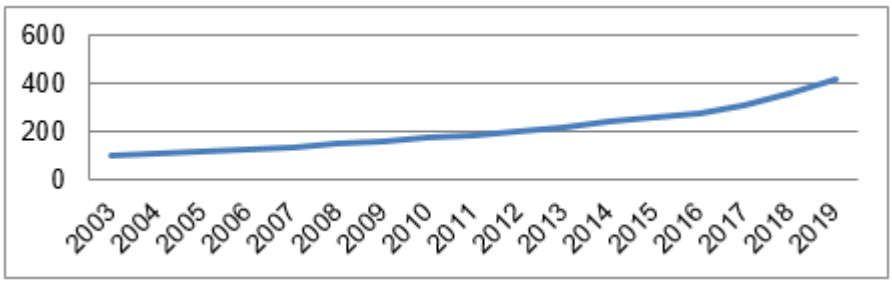

Figure 5. Consumer Price Index Between 2003-2019 (base=2013)
Source: Central Bank Data Distribution System (EVDS)

Figure 6 presents the change in the annual average value of the consumer price index (CPI) and the current account balance between the years 2003 and 2019. Turkey managed to reduce inflation to single digits with the application of 'Inflation Targeting', which is one of the macroeconomic measures taken after the 2001 crisis.

The single-digit inflation figures have left their place in the financing of growth to the current account deficit. Afterward, the increasing current account deficit started to become a huge burden on the Turkish economy, and economic growth rates gradually decreased with the implementation of policies aimed at reducing the current account deficit.

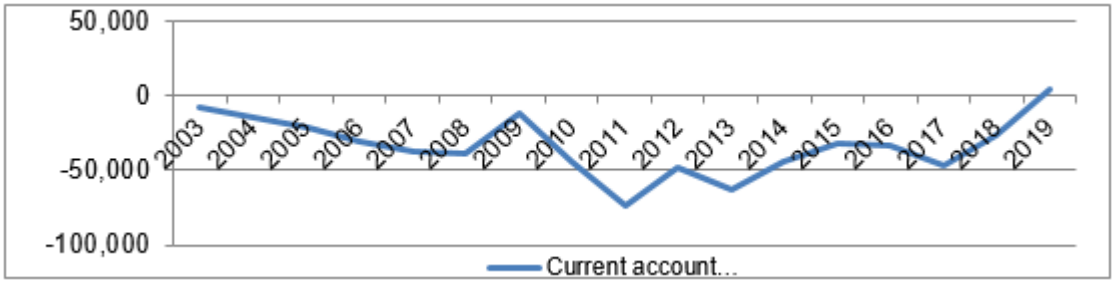

Figure 6. Current Account Balance Between 2003-2019 (million $)
Source: Central Bank Data Distribution System (EVDS)

Current Deficit and Interest Relation

The interest rate may affect the current account deficit in both directions. The increase in interest rates increases the short-term foreign capital inflow to the country in an open economy where capital movements are free and accordingly, the foreign exchange supply in the country's economy increases and this causes the exchange rate to decrease. Depending on the decrease in the exchange rate, an increase in imports is expected.

As a consequence of this increase, the current account deficit will increase even more. On the contrary scenario; the decrease in interest rates reduces the capital inflow to the country and accordingly, the foreign exchange supply in the country decreases. The decreased foreign exchange supply causes increases in foreign exchange prices, and accordingly, the exports are expected to increase. The increasing exports, on the other hand, reduce the current account deficit. Considering this aspect, it is possible to talk about a same-sided relationship between interest and current account deficit.

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If we consider the relationship between interest rate and current account deficit on the demand aspect, there is a negative relationship between interest rates and current account deficit. The increase in interest rates will narrow the domestic loan demand and domestic demand. Since domestic demand in the Turkish economy is mainly based on imports, a decrease in domestic demand will reduce imports. The current account deficit will also diminish after the decrease in imports.

Methodology

Current account balance, foreign direct investment inflows, real effective exchange rate, energy imports, Gross Domestic Product, interest, and foreign trade balance data were acquired from the Data Distribution System (EVDS) of the Central Bank of the Republic of Turkey. The Consumer Price Index was obtained from the Turkish Statistical Institute (TUIK).

While our dependent variable is the current account balance, our other variables are covered in the model as independent variables.

Table 1. Variables to be used in the study

CID/GSYIH	Current account balance /GDP
DYY	Foreign direct investment inflows ($ million)
REDK	Real effective exchange rate (CPI based 2003=100)
TUFE	Consumer Price Index (2003=100)
ENERJİ	Energy imports ($ million)
DTD	Foreign trade balance (Million $)
FAİZ	Interest

*Chain GDP by TUIK expenditures method

Before initiating the analysis, the variables were seasonally adjusted.

Stationarity (Unit-Root) Test

The concept of stationarity clarifies the situation where the mean, variance, and auto-covariance of a series do not change in different periods. The series should be stationary to reveal the true relationships between the series and for the effect of a shock to be temporary. Therefore, Augmented-Dickey Fuller (ADF) Test will be utilized in the study for stability research.

To implement the VAR model, the series must be stationary in the first place. The stationarity of the time series used in the study was examined with ADF (Augmented-Dickey-Fuller), and the test results regarding the stationarity are shown below. As a result of the stability test, it was determined that the CID/GDP, REDK, INTEREST, FDI, ENERGY, CPI, and DTD variables were levels I (1) variables. To examine the relationship between variables, the first difference of all variables should be adopted.

H0: $\rho=0$ (has a unit root, and is not stationary)

H1: $\rho \neq 0$ (it is stationary)

Table 2. CİD/GSYİH Unit Root test

AugmentedDickey-Fuller test statistic		t-Statistic	Prob.*
		-4.811813	0,0194*
Test criticalvalues:	%1 level %5 level %10 level	-4.100935 -3.478305 -3.166788	

Table 3. DTD Unit Root test

AugmentedDickey-Fuller test statistic		t-Statistic	Prob.*
		-5.636929	0.0001*
Test criticalvalues:	%1 level %5 level %10 level	-4.098741 -3.477275 -3.166190	

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Table 4. DYY Unit Root test

AugmentedDickey-Fuller test statistic		t-Statistic	Prob.*
		-14.39266	0,0001*
Test criticalvalues:	%1 level %5 level %10 level	-4.090602 -3.473447 -3.163397	

Table 5. ENERGY Unit Root test

AugmentedDickey-Fuller test statistic		t-Statistic	Prob.*
		-5.270496	0.0002*
Test criticalvalues:	%1 level %5 level %10 level	-4.090602 -3.473447 -3.163967	

Table 6. INTEREST Unit Root test

AugmentedDickey-Fuller test statistic		t-Statistic	Prob.*
		-5.577397	0.0001*
Test criticalvalues:	%1 level %5 level %10 level	4.090602 -3.473447 -3.163967	

Table 7. REDK Unit Root test

AugmentedDickey-Fuller test statistic		t-Statistic	Prob.*
		-6.880630	0.0000*
Test criticalvalues:	%1 level %5 level %10 level	-4.100935 -3.478305 -3.166788	

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Table 8. CPI Unit Root test

AugmentedDickey-Fuller test statistic		t-Statistic	Prob.*
		-5.713377	0.0001*
Test criticalvalues:	%1 level %5 level %10 level	-4.090602 -3.473447 -3.163967	

Since the probability value at the level of all the variables whose test results were examined above is greater than 5%, the Ho hypothesis was adopted and it was concluded that it is not stationary. Since the probability values of all variables are less than 5% in the 1st order difference, the Ho hypothesis is rejected and all the variables become stationary at the 1st order difference.

VAR Model

To establish VAR model, the appropriate delay length must first be determined.

As seen in Table 9, the last error term for the appropriate lag length was determined as 2 according to the Akaike information criterion.

Table 9. Determining the Appropriate Delay Length

Lag	LogL	LR	FPE	AİC	SC	HQ
0	-2661	NA	1.04e+24	75.16320	75.38628	75.25191
1	-2150.477	906.5194	2.34e+18	62.15428	63.93893*	62.86398*
2	-2091.618	92.84752*	1.84e+18*	61.87657*	65.22279	63.20725
3	-2043651	66.20764	2.10e+18	61.90568	66.81346	63.85735

* mark denotes the appropriate lag length.

FPE: denotes the last error term, AIC: denotes Akaike information criterion, SC: denotes Schwarz information criterion, HQ: denotes Hannan-Quin information criterion.

Variance decomposition analysis

While the degree of self-explanation of the change in the current account balance/GDP variable in the 10-year forecast period is 100 percent in the first period, this rate is 56.5 percent in the 10th year. At the end of the period, the change due to the current account deficit variable diminished to 56.5 percent.

The variables which have the largest share in the forecast error variance of the current account deficit variable for the future periods are foreign trade balance with 13.5 percent, followed by energy imports with 12.6%. While the share of real effective exchange rate was 1.5% in the second period, it increased to 6.73 percent during the 10th period. While the share of interest was 2.6% during the 2nd period, it reached 6.7% in the 10th period. The variable with the lowest share in the forecast error variance for the future periods of the current account deficit variable is the consumer price index with 1%.

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Table 10. Variance Decomposition Analysis of CID/GDP Variable (%)

Periyot	S.E	CİD/GSYİH	DTD	DYY	ENERJİ	REDK	TUFE	FAİZ
1	0.011274	100.0000	0.000000	0.000000	0.000000	0.0000000	0.0000000	0.000000
2	0.013542	82.30308	0.395508	0.000544	12.17730	1.545401	0.966128	2.612046
3	0.015062	66.59025	11.06045	0.610622	12.68271	5.485729	0.923292	2.648953
4	0.015729	62.40085	13.97243	1.200847	11.65785	6.912933	0.939106	2.915980
5	0.016162	61.03295	13.58975	1.645930	11.46728	7.081868	1.037849	4.144378
6	0.016540	58.35575	13.61215	2.012088	12.53217	7.181242	1.053947	5.252646
7	0.016852	57.97486	13.11819	2.308275	12.69066	7.245841	1.019996	5.642181
8	0.016982	57.86698	12.92524	2.488856	12.54670	7.201200	1.006763	5.964265
9	0.017107	57.17914	13.28890	2.555460	12.48282	7.096501	1.004588	6.392599
10	0.017257	56.54155	13.52130	2.573177	12.65617	6.732773	1.001602	6.732773

Granger causality analysis

Table 11. Causality Relationship from CID/GDP to Other Variables

	Probability value
DTD	0.0002
DYY	0.6785
ENERJİ	0.0088
FAİZ	0.7973
REDK	0.2022
TUFE	0.4954

When Table 11 is studied, it is seen that the probability values of foreign trade balance and energy imports are less than 5% in which case, the Ho hypothesis is rejected and there is a causal relationship. Based on this result, there is a causal relationship from current account balance/GDP to foreign trade balance and energy imports.

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Table 12. Causality Relationship from Foreign Trade Balance to Other Variables

	Probability value
CİD/GSYİH	0.0005
DYY	0.3681
ENERJİ	0.6899
FAİZ	0.3613
REDK	0.4899
TUFE	0.4398

Table 13. Causality Relationship from Energy Imports to Other Variables

	Probability value
CİD/GSYİH	0.0184
DTD	0.5329
DYY	0.7767
FAİZ	0.5709
REDK	0.9987
TUFE	0.9452

When Table 12 is studied, it is seen that there is causality from foreign trade balance to CID/GDP.
When Table 13 is studied, it is seen that there is causality from energy imports to CID/GDP.

Table 14. Causality Relationship from Interest to Other Variables

	Probability value
CİD/GSYİH	0.9176
DTD	0.3604
DYY	0.0228
ENERJİ	0.2083
REDK	0.0006
TUFE	0.1953

Table 15. Causality Relationship from Real Effective Exchange Rate to Other Variables

	Probability value
CİD/GSYİH	0.6011
DTD	0.0451
DYY	0.2108
ENERJİ	0.0129
FAİZ	0.0036
TUFE	0.0002

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Based on Table 14, there is a causal relationship between interest in foreign direct investment and real effective exchange rate.

Based on Table 15, there is a causal relationship from real effective exchange rate to foreign trade balance, energy imports, interest, and consumer price index.

Table 16. Causality Relationship from Consumer Price Index to Other Variables

	Probability value
CİD/GSYİH	0.1778
DTD	0.0048
DYY	0.7442
ENERJİ	0.0139
FAİZ	0.1151
REDK	0.0746

When Table 16 is analyzed, it is seen that there is causality from the consumer price index to foreign trade balance and energy imports.

Least Squares (EKK) Method

The current account balance, inflation, exchange rate, and real effective exchange rate were analyzed with the least-squares method. Initially, the logarithm of the variables was taken and analyzed so that the relationship between the variables could be expressed in %.

A 1% increase in interest reduces the current account balance by 1.33%, and a 1% increase in inflation reduces the current account balance by 0.66%. On the other hand, a 1% increase in the real effective exchange rate increases the current account balance by 0.66%.

Table 17. Current Account Balance Analysis with Least Squares Method

Variable	Coefficient	Std. Error	Prob.
LogFaiz	-1.338025	0.199165	0.0000
LogRedk	0.663206	0.269738	0.0164
LogTufe	-0.664783	0.185696	0.0006
R-squared	0.332403		

Conclusion

Turkey is one of the countries that face the current account deficit problem like most developing countries. The basis of this current account deficit lies in the fact that Turkey has a foreign-dependent structure. To achieve macroeconomic balance, the share of the current account deficit in the gross domestic product should be kept under control. Thus, it is of great importance for the economic policies to be generated to analyze the factors affecting the current account deficit and to reveal which one has a larger share of the current account deficit. Turkey's current account deficit between the years 2002-2019 was analyzed with the VAR model and the Granger causality test. Moreover, the relationship between inflation, interest, and exchange rate with the current account deficit was analyzed using the Least Squares (Least Squares) method.

As a result of the econometric analysis of the study, it can be observed that the main determinants of the current account deficit in Turkey are the real effective exchange rate, foreign trade balance, foreign direct investment inflows, consumer price index, interest, and energy imports. As a result of causality analysis, it has been determined that energy imports and foreign trade balance are Granger causes of the current account balance. Although inflation and real effective exchange rate are not the direct Granger causes of the current account deficit, they indirectly affect the current account deficit since they are the Granger causes of foreign trade deficit and energy imports.

The existence of a causal relationship from the interest rate to the real effective exchange rate is an indicator that the interest rate affects the current account deficit. Variance decomposition analysis results show that 56% of the change in the current account balance is due to the current account balance, 13.5% due to the foreign trade balance, 12.6% due to energy imports, 2.5% due to foreign direct investment inflows, 6,7% due to interest rate1% due to the Consumer price index and 6.7% by the real effective exchange rate.

When the relationship between inflation, interest, and exchange rate with the current account deficit is analyzed by the least-squares method; it was concluded that interest, inflation, and exchange rate can explain the current account

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balance by 33%. Moreover, according to the EKK analysis, the current account balance; while interest and inflation affect negatively, real effective exchange rate affects positively. A 1% increase in interest reduces the current account balance by 1.33%, and a 1% increase in inflation reduces the current account balance by 0.66%. On the other hand, a 1% increase in the real effective exchange rate increases the current account balance by 0.66%.

As the conclusion of the analysis, it was concluded that the variable that most affected the current account deficit was the foreign trade balance. This result reveals to us that studies should be performed to prevent the foreign trade balance deficit to prevent the current account balance from causing a deficit in Turkey. To prevent foreign trade deficit, production should be freed from dependence on imported inputs and exports should be increased. The most significant factor for ensuring this cycle is certainly real investments. Real investments are of ultimate importance in terms of closing the current account deficit. Real investments to be made to carry out the domestic production of imported goods used as inputs in production will contribute to closing the current account deficit.

Because energy imports are one of the most significant factors in our foreign trade deficit, renewable energy investments to be made to get rid of energy dependence have great importance in closing the current account deficit. Moreover, the implementation of a balanced and realistic exchange rate policy that will reduce imports and encourage exports is of ultimate importance in closing the current account deficit. However, it is possible to close the deficit in the current account by applying a reasonable and balanced interest and inflation policy.

References

Bayrak, E. ve Ö. Esen . 2012. " Bütçe Açıklarının Cari Işlemler Dengesi Üzerine Etkileri: İkiz Açıklar Hipotezinin Türkiye Açısından Değerlendirilmesi ." *Ekonomik Yaklaşım* 23 (82): 23 – 49.

Bayrak, M. ve Esen, Ö. (2014), "Türkiye'nin Enerji Açığı Sorunu ve Çözümüne Yönelik Arayışlar", *Atatürk Üniversitesi İktisadi ve İdari Bilimler Dergisi*, 139-158.

Canıdemir, S., Uslu, R., Ekici, D. ve Yarat, M. (2011). Türkiye'de Cari Açığın Yapısal ve Dönemsel Belirleyicileri. Ekonomik Yaklaşım Kongreler Dizisi-VII; 1–27.

Demiray, E. ve Güneş, İ. (2017).Türkiye'de Enerji İthalatı, Ekonomik Büyüme ve Cari Açık İlişkisi. Akademik Sosyal Araştırmalar Dergisi. Yıl: 5, Sayı: 45, Mayıs 2017, ss. 340-352.

Erdoğan,S., Bozkurt, H.(2009). Türkiye'de Cari Açığın Belirleyicileri, Mgarch Modelleriyle İnceleme. Maliye Finans Yazıları.

Esiyok, A. (2012). Türkiye ekonomisinde cari acık sorunu ve nedenleri (Current account deficit problem in Turkish economy and its reasons) Finans Politik & Ekonomik Yorumlar, 49 (569), 63-86.

Genç, S., Yardımcı, M. ve Göçeri, K. (2017) 'Türkiye Ekonomisinde Cari Açık Sorununun Yapısal Nedenleri ve Sürdürülebilirliği (2002-2016)', Dünden Bugüne Ekonomi Yazıları.

Göçer, İ. (2013). Türkiye'de Cari Açığın Nedenleri, Finansman Kalitesi ve Sürdürülebilirliği: Ekonometrik Bir Analiz . *Eskişehir Osmangazi Üniversitesi İİBF Dergisi,* 8(1),213-242.

Kesikoğlu, F., Yıldırım, E. ve Çeştepe, H. (2013), "Cari Açığın Belirleyicileri: 28 OECD Ülkesi için Panel VAR Analizi", *Ekonomik ve Sosyal Araştırmalar Dergisi,* Cilt:9, Yıl:9, Sayı:2; 15-34.

Peker, O. ve Hotunoğlu, H. (2009). Türkiye'de Cari Açığın Nedenlerinin Ekonometrik Analiz. *Atatürk Üniversitesi İİBF Dergisi, Cilt: 23, Sayı: 3; 221–237.*

Sarıtaş, H, Genç, A. ve Avcı, T. "Türkiye'de Enerji İthalatı, Cari Açık ve Büyüme İlişkisi: VAR ve Granger Nedensellik Analizi" . Ekonomik ve Sosyal Araştırmalar Dergisi 14 (2018): 181-200

Uz, İ. (2010). Determinants of CurrentAccount: *The RelationbetweenInternal and ExternalBalances in Turkey. AppliedEconometrics and International Development, Vol. 10–2; 115–126.*

Yeldan, E. (2010). Türkiye ekonomisinde Dış Açık Sorunu ve Yapısal Nedenleri ''(Editörle:TuranSubaşat,Hakan Yetkiner), Küresel Kriz Çerçevesinde Türkiye'nin Cari açık Sorunsalı,Elif Kitabevi.