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THE EFFECT OF CURRENT ACCOUNT DEFICIT ON ECONOMIC GROWTH: THE CASE OF TURKEY

Abstract:

Current account deficit ise a measurement of a country's trade in which the value of goods and services it imports exceeds the value of goods and services it exports. Current account deficit has an important role on economic growth for developing countries. The objective of this study is to analyse the relationship between economic growth and current account deficit for Turkey using time series analysis. For this purpose, Gross Domestic Product and Current Account Deficit data of Turkey between the quarterly data including 2002-2013 were used. Empirical findings show that current account deficit affect economic growth negatively for Turkish economy.

Keywords:

Current Account Deficit; Economic Growth; Time Series Analysis; Turkish Economy

JEL Classification: A19, F40, F43

1. Introduction

The current account can be expressed as *the difference between the value of exports of goods and services and the value of imports of goods and services*. A deficit then means that the country is importing more goods and services than it is exporting. A current account deficit is when a country's government, businesses and individuals imports more goods, services and capital than it exports. A current account deficit may therefore reflect a low level of national savings relative to investment or a high rate of investment—or both. For capital-poor developing countries, which have more investment opportunities than they can afford to undertake because of low levels of domestic savings, a current account deficit may be natural. A deficit potentially spurs faster output growth and economic development. Despite this recent research does not indicate that developing countries that run current account deficits grow faster. Moreover, in practice, private capital often flows from developing to advanced economies.

The inverse relationship between current account deficit and economic growth in Turkey, as in many other developing countries, results mainly from the importing of intermediate goods and investment goods. In Turkey, intermediate and consumption goods import is high, which leads to deficits and dangerous consequences for the country's economy. Current account deficit has a direct multi-faceted relationship with growth rate and increase in investment. The current deficits started to increase after 2000. Turkish economy experienced high current account deficits in the period after 2002 due to overvalued national currency, high dependency on intermediate goods imports, rapid increase in imports in periods of growth, short-term high interest rates, and increases in world's oil, energy, commodity and basic goods prices. The ever-increasing current account deficits were covered with foreign direct investments, hot money inflows, privatization and external borrowing.

2. Review of the Literature

There are so many studies available investigating the reasons for current account deficit. In these studies, analyses were carried out by using different econometrical methods and data concerning different years. The obtained results have mostly showed that there are causality relations between current account deficit and and economic growth.

Findings obtained in some studies examining the relation between current account deficit and economic growth show that there is a strong relationship between two variables [Khan and Knight (1983) and Howard (1989)].

Herwartz and Siedenburg (2007) carried out a panel data study in which the data of 16 OECD countries including the years between 1980-2004 were used. In this study, there were 4 factors stated as reasons for current account deficit. These were, past current account deficit, budget deficits, differences in production output and changes in trade situations. Erbaykal (2007) carried out a Toda and Yamamoto casuality analysis for Turkey including the years between 1987:01-2006:03. Results showed that economic growth had effects on current account deficit.

Telatar and Terzi (2009) were tested the relationship between economic growth and the current account balance for the period 1991: 04 -2005: 04 with quarterly data for Turkey. They use Granger casuality and VAR analysis in their study. Regarding the results of their study findings was, an increase in the rate of growth occurring lead to a deterioration in the current account balance.

Yılmaz and Akıncı (2011) were tested the relationship between economic growth and the current account balance for the period 1980 -2010 data for Turkey. They use ADF unit root test, Johansen's cointegration test and Granger casuality in their study. According to the results of the study of gross domestic product in the current account balance has been a unidirectional causal relationship.

Kostakoğlu and Dibo (2011) were tested the relationship between economic growth and the current account balance for the period 1991 -2010 data for Turkey. They use VAR analsis in their study. According to the the study the positive changes in GDP shows that the current account deficit triggered.

Kandil and Greene (2002) performed cointegration test using both quarterly and monthly data including the years between 1960-2000, in order to find the raeason for current account deficit of United States. Consequently, they found that the changes in real GDP was effective on current account balance.

Hooper and Tyron (1984), Karunaratne (1988), Bagnai and Manzocchi (1999), Chinn ve Prasad (2000) showed in their studies that there were strong relations between economic growth and current account deficit.

3. Data And Methodology

In this research quarterly data including the time between 2002:1- 20141: were used. The data and resources were shown at **Table 1**

Table 1. The Data Set

Variables	Explanations	Resources
GDP	Gross Domestic Product (Fixed Prices), $	CBRT
CAD	Current Account Deficit, $	CBRT

In this study the relationship between GDP and CAD were tested with VAR analysis.

In general, since many economic time series have non-stationary characteristics, the variables must be tested for stationary process. The problem with non-stationary data is that the Ordinary Least Squares (OLS) regression procedures can easily result in incorrect conclusions. Therefore, in order to avoid the spurious regression, the Augmented Dickey-Fuller (ADF) test proposed by Dickey and Fuller (1981), whose null hypothesis is that there is a unit root, is adopted (Gujarati, 2003: 817).

Table 2 shows the results of the ADF unit root test.

Table 2. Results of ADF Unit Root Test

Variables	ADF Test Statistic		MacKinnon Critical Values			
	Level	First Difference	Level		First Difference	
GDP	-3.061557 (0.0370)	-8.255239 (0.0000)	1% level	-3.588509	1% level	-3.596616
			5% level	-2.929734	5% level	-2.933158
CAD	-1.754911 (0.3971)	-4.360580 (0.0012)	10% level	-2.603064	10% level	-2.604867

The results of unit root tests indicate that the null hypothesis of a unit root cannot be rejected and the two variables are not stationary at the level, while the first differences of the variables are stationary. The variables are integrated of the same order.

The statistical output of lag length criteria test is presented in the **Table 3**.

Table 3. Summary of Lag Length Selection

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-1179.172	NA	2.16e+20	52.49654	52.57684	52.52648
1	-1142.603	68.26347	5.08e+19	51.04900	51.28989*	51.13880
2	-1139.342	5.796397	5.25e+19	51.08187	51.48335	51.23154
3	-1132.150	12.14726	4.57e+19	50.93998	51.50205	51.14952
4	-1120.220	19.08796*	3.23e+19*	50.58754*	51.31020	50.85694*

* indicates lag order selected by the criterion
LR: sequential modified LR test statistic (each test at 5% level)
FPE: Final prediction error
AIC: Akaike information criterion
SC: Schwarz information criterion
HQ: Hannan-Quinn information criterion

According to lag length criteria test, the Schwarz information criteria (SC) show the lowest value when the model includes one lag.

The stability of the VAR was tested using AR root graph which shows the inverse roots of the AR polynomial (Lütkepohl, 1991).

Inverse Roots of AR Characteristic Polynomial
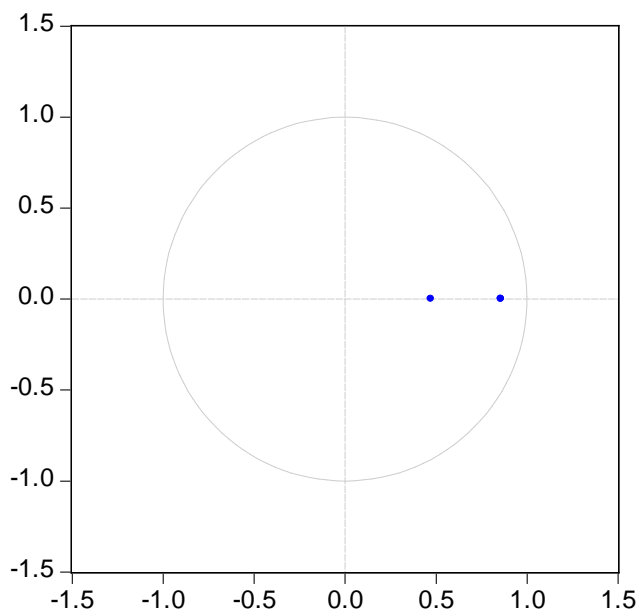
The estimated VAR is stable and stationary if all roots have modulus less than one and lie inside the unit circle. If the VAR is not stable, certain results, such as standard errors of impulse response, would not be valid. The Figure 1 shows that all AR roots are inside the unit circle and indicate the estimated VAR is stable.

To determine if there is a long-term relationship between current account deficit and gross domestic product, co-integration test should be made. To test it, maximum eigen and trace statistics are used. Johansen cointegration test results are in Table 4

Table 4. Results of Cointegration Test

	Trace Statistic	0.1 Critical Value	Prob.	Max-Eigen Statistic	0.1 Critical Value	Prob.
None	20.29933	17.98038	0.0494	14.53537	13.90590	0.0807
At most 1	5.763965	7.556722	0.2098	5.763965	7.556722	0.2098

Trace and Max-Eigenvalue tests indicates 1 cointegrating equation(s) at 10 percent significance level. According to this result the Johansen's cointegration tests result reject the null hypothesis of no cointegration at the ten percent significance level. Thus, it can be concluded that GDP and current account deficit are cointegrated or they co-move in the long run.

Figure 2 presents the impulse response function. The impulse response function graphically illustrates the expected response of GDP to the innovation in current account deficit and by GDP itself and also show the response of current account deficit to the innovation in GDP and by current account deficit itself. This function enables characterization of the dynamic interactions among variables and allows us to observe the speed of adjustment of variables in the system. **Figure 2** plots the response of public expenditure to shocks in GDP and vice versa.

Response to Cholesky One S.D. Innovations ± 2 S.E.
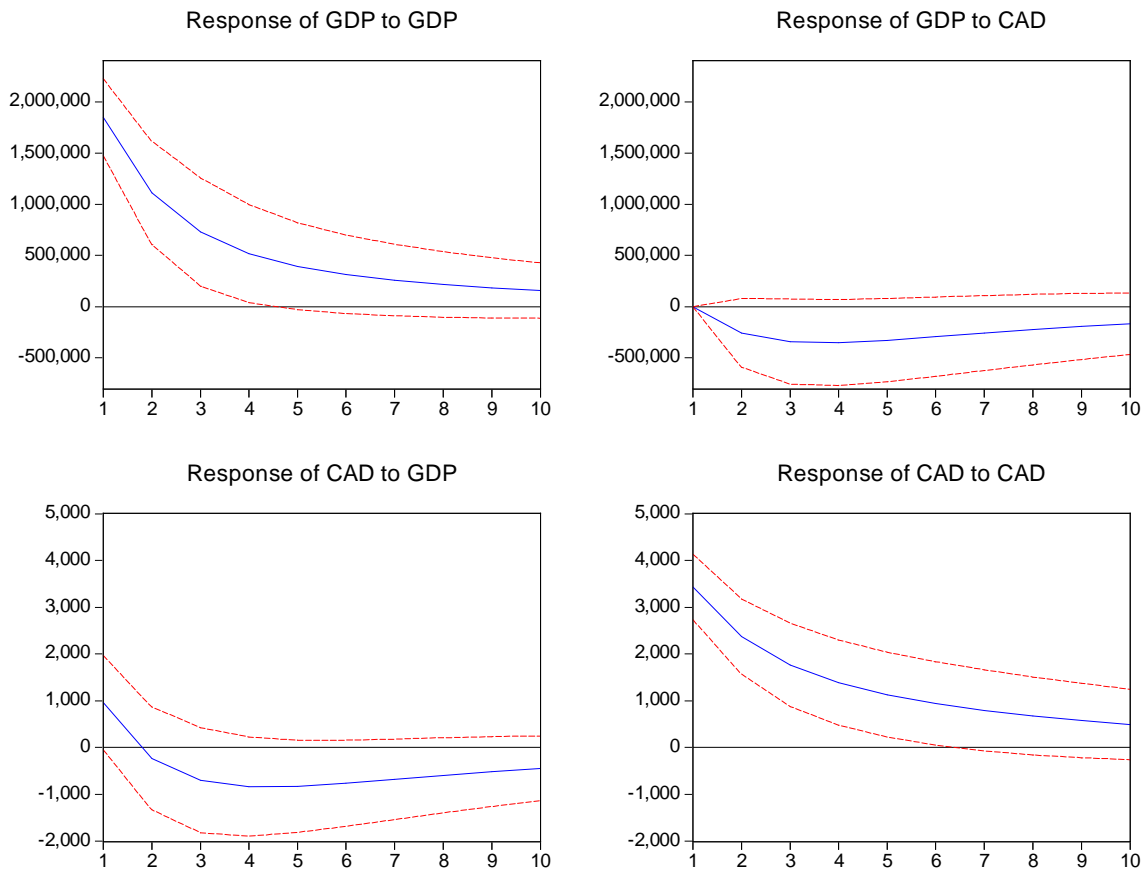
According to impulse response functions a shock in GDP has negative impact on current account deficit at beginning. Besides, shocks to the current account deficit has a negative impact on economic growth. This indicates that there is significant negative impact of GDP on current account deficit and vice versa.

Variance decomposition has been made to show how much a change that occurs in the economic growth could be explained by other variables. The results are presented in **Table 5 and Table 6.**

 Table 5 shows the forecast error variance decompositions of GDP VAR model.

Table 5. **Variance Decomposition of GDP**

Period	GDP	CAD
1	100.0000	0.000000
2	98.59676	1.403245
3	96.58040	3.419600
4	94.66930	5.330700
5	93.10905	6.890955
6	91.91542	8.084576
7	91.02865	8.971346
8	90.37816	9.621845

9	89.90324	10.09676
10	89.55686	10.44314

Current account deficit explains around 10 percentage of variation in GDP.

Table 6. Variance Decomposition of CAD

Period	GDP	CAD
1	7.241046	92.75895
2	5.298659	94.70134
3	6.656940	93.34306
4	8.790649	91.20935
5	10.72902	89.27098
6	12.24975	87.75025
7	13.37998	86.62002
8	14.20297	85.79703
9	14.79837	85.20163
10	15.22890	84.77110

Gross domestic product explains around 15 percentage of variation in current account deficit.

4. Conclusion

The current account deficit is a major macroeconomic problem in Turkey as in many developed and developing countries. The Turkish economy has experienced both very high current deficits and high capital inflow since 2000's. In this study, the effects of current account deficit on Turkey's economic growth were analyzed by using Structral VAR method by evaluating the quarterly data including the period between 2002:I and 2014:I. within the frame of related literature. The obtained theoretical and empirical results can be summarized as follows.

According to empirical findings of this study, the current account deficit has been observed causal relationship between economic growth. It has been obtained that, the changes appeared in current account deficit has effected to the economic growth in the economies of Turkey. Along with economic growth, the current account deficit is increasing due to increasing imports. Current account deficit to finance the interest rate hike by adversely affecting investment and consumption spending growth is negatively affected

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