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Besides the above-mentioned research, though limited in number, the findings obtained in a number of studies did not confirm the presence of triplets open cases in Turkey. Sürekçi (2011) analyzed the relationship among the public budget balance, investment-savings balance and the current account deficit using quarterly data for the period 1987-2007 in Turkey. Results of the Impulse-Response Function based on the Vector Autoregressive Model (VAR) model showed that the case of the triple deficit is not valid in Turkey. However, a causal relationship has been found from public deficits to the current deficit. Altun and İnce (2014) have analyzed the interactions among the saving-investment balance, government budget balance and the foreign trade deficit by employing the ARDL method on the data between 1975 and 2010. As a result of the analysis, no long-term relationship was found between the mentioned variables. In addition, in the results of the Toda Yamamoto causality test, causality relationship was determined from the foreign trade deficit to the savings deficit, from the foreign trade deficit to the budget deficit and from the savings-investment deficit to the budget deficit. Samırkaş and Samırkaş (2015) analyzed the interaction among the balances of budget, investment- savings and current account using the Impulse-Response Functions and Variance Decomposition techniques developed within the framework of the Vector Autoregressive Model (VAR). Empirical findings did not confirm the presence of the case of triple deficit in Turkey. Instead, while the current account deficit was an important determinant of the budget deficit and savings-investment deficit, a causality

relationship from the savings deficit to the budget deficit was also identified.

## 4. Data, Methodology And Empirical Results

In this section, the effects of the budget deficit and investment savings deficit on the current deficit are analyzed empirically. In our study, budget deficit (BD), investment savings gap (IS) and the current account deficit (CAD) data was obtained from the Electronic Data Dissemination System (EDDS) of the Central Bank of the Republic of Turkey. Econometric analysis covers the 3-month data from 2003 and 2018, which represents the period of implementation of inflation targeting monetary policy in Turkey.

Within the framework of econometric analysis, firstly unit root tests are employed to the series. Stability analysis of variables is performed using ADF (Augmented Dickey-Fuller) and PP (Phillips-Perron) unit root tests developed by Dickey and Fuller (1981) and Phillips and Perron (1988). Then, the relationships between variables were investigated within the framework of the Autoregressive Distributed Lag (ARDL) method developed by Peseran and Shin (1995) and Peseran, Shin and Smith (2001). Accordingly, in the first stage, Bound Test was applied to determine the cointegration relationship between the variables. In the second and third stages, based on the ARDL model established, the coefficients of long- and short-term relationships, respectively, were estimated.

### 4.1 Unit Root Test

The results of the ADF (Augmented Dickey-Fuller) and PP (Phillips-Perron) unit root tests are presented in Table 1. Accordingly, investment savings gap (IS) data is stationary in terms of both unit root tests. Budget deficit (BD) and current account deficit (CAD) data have become stable only when their first differences are taken. Therefore, IS data I (0) and BD and CAD data are stationary in I (1) degrees. Thus, since the variables are stationary at different degrees, the ARDL Boundary Test should be used in the implementation of the cointegration relationship between them.

Table 1. Results of Unit Root Test

Variables	ADF		PP	
	Level	1. difference	Level	1. difference
CAD (intercept)	-1.98	-11.53*	-2.47	-12.15*
CAD (intercept+ trend)	-1.51	-12.98*	-1.69	-11.98 *
IS (intercept)	-2.68***	-8.60*	-2.20 ***	-7.90*
IS (intercept+ trend)	-2.47***	-8.96*	-2.66***	-7.87 *
BD (intercept)	-2.09	-6.19**	-1.29	-8.77**
BD (intercept+ trend)	-1.59	-10.19*	-1.61	-11.45*

Note. \*, \*\*, \*\*\* show the critical values at the significance levels %1, %5 and %10, respectively. Optimal lag (2) for AIC.

### 4.2 Bound Test

In this section, the most suitable model by using Schwarz Information Criterion (SIC) was determined and Bound Test was estimated. As can be seen from the results of bound test presented in Table 2, the calculated F statistic value is higher than the lower and upper limit values at 1%, 5% and 10% significance levels. This result allows us to reject the null hypothesis,

which suggests that there is no long-term relationship between the variables included in the analysis. Thus, the existence of a cointegration relationship between the budget deficit, investment savings deficit and current account deficit is revealed. Accordingly, the stages of estimating the relationships between the variables with the ARDL model for long and short terms can be realized.

Table 2. Results of Bound Test

k	F-Stat.	1 %		5 %		10 %	
		critical value		critical value		critical value	
		I(0)	I(1)	I(0)	I(1)	I(0)	I(1)
2	8.91	6.84	7.84	4.94	5.73	4.04	4.78

Note: k, the number of independent variables. The critical values bounds are taken from Table CI (iii) in Pesaran et al 2001.

### 4.3 Long Run Analysis

The coefficient values of the ARDL (1,3,2) model used in the estimations about the long-term relationship between the variables are presented in Table 3. The results show that the estimated coefficients for the ARDL (1,3,2) model are mostly statistically significant. When the long-term coefficient values are examined in the model where the current deficit variable (CAD) is dependent variable, it is determined that the variables of investment savings deficit (IS) and budget deficit (BD) are statistically significant at the levels of 1% and 5%, respectively. In addition, both variables positively affect the current account deficit. In other words, savings and investment deficit may lead to imbalances in both the current account deficit

in Turkey together. In addition, when looking at the size of the variables, it is seen that the investment saving deficit (0.96) has a much more significant effect on the current deficit than the budget deficit (0.32). Diagnostic test results for econometric forecasts made to determine long-term relationships between variables are also given in the last section of Table 3. The high R and R<sup>2</sup> values here determine that the fit of the model is good. In addition, Jarque-Bera Test, Breusch-Godfrey Test and Breusch-Pagan-Godfrey Test conducted within the framework of diagnostic tests show that normal distribution, autocorrelation and variance problems are not experienced in the predicted model, respectively.

Table 3. Estimation Results of ARDL (1,3,2)

Variables	Coefficient	t-statistics	Probability
C	-0.6932	-2.5110	0.0110
CAD (-1)	0.9447	1.2711	0.0173
IS	0.1700	0.3867	0.0001
IS (-1)	0.2610	0.1750	0.0982
IS (-2)	-0.7236	-1.1730	0.0021
IS (-3)	0.5941	1.1750	0.0811
BD	0.4850	0.0861	0.0125
BD (-1)	-0.3018	0.7651	0.0192
BD (-2)	0.2835	0.1731	0.0271
The Estimation Results of Long-Run Coefficients			
Variables	Coefficient	t-statistics	Probability
Sabit	2.9861	4.9311	0.0011*
IS	0.9612	9.212	0.0000*
BD	0.3210	2.387	0.0100**
Diagnostic Tests			
R	0.76	JB Normality	1.6712 (0.3981)
R <sup>2</sup>	0.69	BG Autocorrelation	1.2149 (0.5957)
Schwarz Criteria	-1,6189	White Heteroscedas.	7.6543 (0.2155)
F Statistics	27.6410 (0.00) *	Ramsey RESET	0.8351 (0.3851)

Note. \* and \*\* show the critical values at the significance levels %1, and %5, respectively.

#### 4.4 Short Run Analysis

The short-term effects of the investment savings gap and the budget deficit on the current account deficit have been calculated within the framework of the Error Correction Model (ECM) and the results are presented in Table 4. Error correction model is a model that shows how the imbalance between the short- and long-term relationship of the variables is eliminated. In this way, it provides information about short-term dynamics between variables with cointegration relations, and is also used to test causality between these variables. Here, the error correction coefficient gives

information about how the imbalance between the short- and long-term relationship is resolved. In the estimates made in our study, error correction coefficient (ECM) was found to be negative and statistically significant as expected. Accordingly, the error correction mechanism works in the model and the imbalance in the face of a shock to the system is directed towards the long-term balance at a rate of 68.44% in each quarter. In addition, just like the long-term forecast, the impact of the investment savings deficit (IS) lagged values on the current account deficit (CAD) is greater than that of the budget deficit lagged values (BD).

Table 4. Estimation Results of Error Correction Model

Variables	Coefficient	t-statistics	Probability
C	6.6139	2.6712	0.0210**
$\Delta$ CAD (-1)	1.2319	2.8912	0.0398**
$\Delta$ IS	0.8716	-2.9820	0.0010*
$\Delta$ IS (-1)	1.9125	2.4512	0.0467**
$\Delta$ IS (-2)	0.8798	-1.9861	0.0321**
$\Delta$ IS (-3)	1.1281	-2.1692	0.1458
$\Delta$ BD	0.7712	1.8912	0.0376**
$\Delta$ BD (-1)	0.6425	2.7512	0.0398**
$\Delta$ BD (-2)	0.3791	1.9237	0.0465**
$\Delta$ BD (-3)	-0.4431	1.7912	0.1179
ECM (-1)	-0.6844	-2.0912	0.0015*

Note. \*, \*\*, show the critical values at the significance levels %1, and %5, respectively.



## 5. Conclusion

As a result of the increase in international economic integration, changes in the foreign trade balance and especially the developments in the current account have gained great importance. In this process, deficits in the current account created serious risks in the economy and caused serious crises. Thus, current account deficits have been used as an important variable in the explanation of many negative economic facts, especially crisis theories. Therefore, understanding the dynamics of current account deficits and designing policies that can control these dynamics has become a popular research topic among economists. Hence our study determines the current account deficit in Turkey factors were analyzed in the public and private sector investment savings gap and the budget deficit axis. For this, quarterly data for the period 2003-2018 were analyzed using the ARDL model.

Empirical findings showed a long-term interaction between variables. Short- and long-term coefficient estimates made upon this also gave meaningful results. The findings obtained in this way shows that the current open cases of triplets for Turkey's economy. In addition, data on the role played by the public and the private sector regarding the current account deficit in Turkey has allowed dynamic comparative evaluation. Accordingly, the negative impact of the investment savings imbalance on the current account deficit in both the short and long term is greater than the effect of the public budget deficit. Accordingly, policymakers should prioritize policies aimed at solving private sector savings shortages in order to close the current account deficit.

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