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## Financing the Current Account Deficit in the Turkish Economy: ARDL Bounds Test Approach

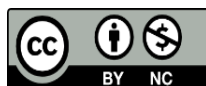
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### **Financing the Current Account Deficit in the Turkish Economy: ARDL Bounds Test Approach**

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#### **Abstract**

In recent decades, the current account deficit has become one of the most critical problems in the Turkish economy. The fact that the production structure of the Turkish economy is dependent on imports and that capital goods, semi-finished products and raw materials constitute the majority of total imports has led to the growth of this problem. The persistent deficit in the current account deficit makes its financing extremely important. To explain the funding of the current account deficit, the ARDL bounds test approach developed by Pesaran, Shin, and Smith (2001) is used in this study to analyze the short and long-run effects. Current Account Deficit, Official Reserves, Real Effective Exchange Rate, Private Sector Credit Growth, External Debt, and Foreign Direct Investment variables obtained from the Central Bank of the Republic of Turkey for 2005Q4 - 2024Q2 are used in the model estimation. As a result of the analysis, it is concluded that there is a cointegration relationship between the variables. These variables and their lagged values are essential in financing the current account deficit.

#### **Keywords**

Current Account, ARDL Bounds Test, FDI, Official Reserves, Real Effective Exchange Rate

#### **JEL Classification**

C32, F32, F41

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## **Türkiye Ekonomisinde Cari Açığın Finansmanı: ARDL Sınır Testi Yaklaşımı**

### **Öz**

Cari açık, son yıllarda Türkiye ekonomisinin en önemli sorunlarından biri haline gelmiştir. Türkiye ekonomisinin üretim yapısının ithalata bağımlı olması ve sermaye malları, yarı mamuller ve hammaddelelerin toplam ithalatın büyük bir çoğunluğunu oluşturması bu sorunun büyümesine yol açmıştır. Cari işlemler açığının sürekli açık vermesi, finansmanını son derece önemli hale getirmektedir. Bu çalışmada cari açığın finansmanını açıklamak için Pesaran, Shin ve Smith (2001) tarafından geliştirilen ARDL sınır testi yaklaşımı kullanılarak kısa ve uzun dönem etkileri analiz edilmiştir. Model tahmininde 2005Q4 - 2024Q2 dönemi için Türkiye Cumhuriyet Merkez Bankası'ndan elde edilen Cari Açık, Resmi Rezervler, Reel Efektif Döviz Kuru, Özel Sektör Kredi Büyümesi, Dış Borç ve Doğrudan Yabancı Yatırım değişkenleri kullanılmıştır. Analiz sonucunda değişkenler arasında eşbütünlük ilişkisi olduğu sonucuna varılmıştır. Bu değişkenler ve gecikmeli değerleri cari açığın finansmanında önemli arz etmektedir.

### **Anahtar Kelimeler**

Cari İşlemler Hesabı, ARDL Sınır Testi, FDI, Resmi Rezervler, Reel Efektif Döviz Kuru

### **JEL Kodu**

C32, F32, F41

## **1. Introduction**

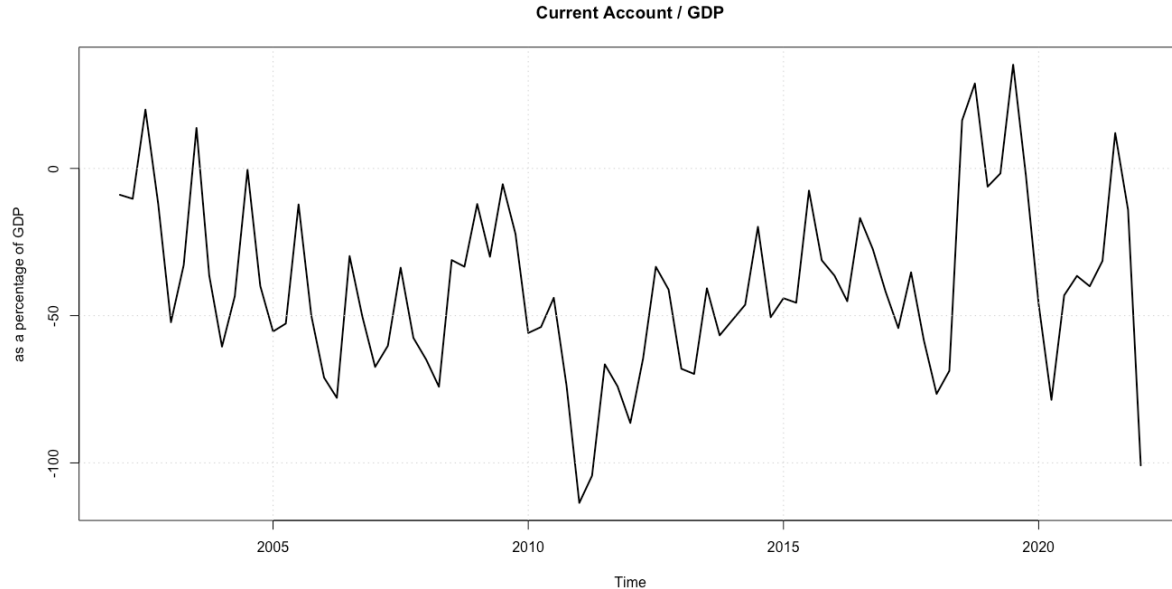
The current account balance is among the most critical issues for national economies to maintain macroeconomic stability. This indicator, which plays an essential role in long-term economic management and political decision-making processes, sheds light on developing national economies internationally. The current account balance is a significant indicator for policymakers when making economic growth and development decisions. In countries with a current account deficit, more foreign currency outflows occur than foreign currency entering the country. The current account deficit can be financed by utilizing existing reserves and/or finding foreign resources (Çelikkol, 2024).

Economies that consume more than they produce in a given period run a deficit in their current account balance. As a result, the emergence of the phenomenon of inflation gains momentum. Countries that are disadvantaged in technological development cannot meet their energy needs. Importing energy from abroad in this direction cannot close their current account deficits in their growth processes. There is extensive literature on the sustainability of the current account deficit. Although there is wide acceptance in the literature that the desired value of the current account deficit to national income ratio should be 5%, it is expected that the deficit ratio to be given will vary according to the characteristics of each country's performance and production

techniques. Since the current account deficit means more foreign exchange demand than supply, this deficit can be made up either by capital inflows or foreign exchange reserves.

This study is desired to explain the evolution and change of the reasons that caused the deterioration of the Turkish economy's current account over time. From 1998 to 2002, the current account balance in the Turkish economy progressed steadily in a particular band range. Although there were deteriorations in the current account balance from 2002 to 2010, when considering the ratio to national income between 2008 and 2010, it is felt that a proportional improvement has been achieved. Since 2010, deterioration has occurred in the current account and many other economic indicators. The first of these is the high volatility in the exchange rate, which is a measure of uncertainty; the increase in inflation rates and the dollarization problem caused by the rise in foreign currency deposits can be shown as the disorders that emerged in the same period. Before the global financial crisis 2008, most of Turkey's current account deficits were financed by long-term capital inflows and direct foreign investments. This financing method has been a fundamental determinant of the viability of Turkey's current deficits. A surplus of short-term liquidity on international markets after the global financial crisis prompted an increase in short-term capital inflows, a quick appreciation of the Turkish lira, a rapid expansion of credit, and an expansion of Turkey's current account deficit. Current deficits were financed with long-term capital inflows during the pre-crisis period. In contrast, portfolio investments and short-term capital inflows supported them post-crisis. As a result, in addition to its common objective of targeting inflation, the Central Bank implemented a more flexible policy regime aimed at financial stability.(Yurdakul & Cevher, 2015a). The exchange rate in Turkey, which remained under pressure under low exchange rates and relatively high accurate interest rates until the end of 2010, started to rise in 2010 due to the global crisis. Moreover, the exchange rate increased rapidly in this period due to the insecurity that the national currency would not be able to maintain its value in the economy, which switched from the de-dollarization process to the dollarization process. With the increasing exchange rate volatility since 2010, the government's primary goal was to close the deficit in the current account rather than engage the exchange rate volatility. With the increasing severity of the global crisis after 2010, it is observed that the Central Bank of the Republic of Turkey's (CBRT) functions to protect financial stability have increased rather than maintaining price stability. CBRT stated that maintaining loan growth is necessary to avoid capital mobility's adverse effects (Kara et al., 2014).

Therefore, higher prices of imported goods due to the high exchange rate were expected to improve the current account. However, when the production conditions of the Turkish economy are examined, mainly when the components of the imports in the country are concerned, it is observed that more than 87% of these imports are raw material, intermediate, and energy imports. In this case, although the increase in the exchange rate tends to decrease the current account deficit, it becomes one of the most critical factors that will prevent the growth of national income, and there is an increase in the general level of prices due to the pass-through effect from the exchange rate to inflation. Although the low interest and high exchange rate policy, especially in the last three-year period, which started in September 2019, did not help to decrease the current account, as a result of the increase in the exchange rate, the inflation rate increased significantly, and the increase in the current account continued to accelerate. Although it was desired to support the producers in the country with the low interest rate realized in this process, production costs increased due to this high exchange rate. As a result of this, as of October 2020, TL depreciated rapidly, and it was observed that double-digit inflation rates emerged with the deterioration of price stability.



*Figure 1.* Current Account / GDP Ratio (\*Since the rates will change when seasonal adjustment is made, the series are taken with the original observation values)

The interest rate is the essential element of the monetary transmission mechanism. According to Taylor's theory, the central bank should increase the interest rate if the target inflation

rate is higher than expected. The conventional approach to determining interest rates is predicated on the notion that there is no ideal substitute for money in financial markets. If there were a perfect substitution of money, if monetary policy altered the money supply, the perfect substitution of money would act in the opposite direction, balancing the money supply and demand and reducing the effect of money supply change on interest rates.

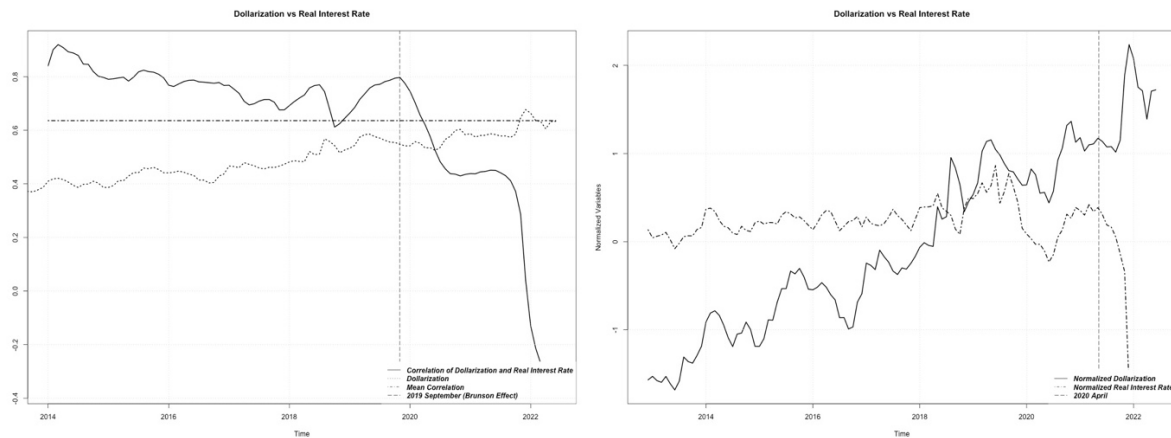


Figure 2. Dollarization vs Real Interest Rate

As relations with Turkey, the United States, and the European Union continued to deteriorate, unlike the rest of the world, the Central Bank began to reduce policy rates in response to political pressures. Instead of using the interest rate instrument to prevent the exchange rate increase, the government conducted opaque reserve sales through public banks. The Central Bank started implementing a new economic model with a high exchange rate and low-interest rate policy to compete in international trade. Rather than reducing inflation, domestic and foreign investors viewed economic growth as the country's top priority. Instead of maintaining price stability, its responsibility, the Central Bank adopted a growth-oriented monetary policy in response to political pressures. These occurrences have strengthened the notion that the central bank lacks independence. After the Priest Brunson crisis 2018, the USA applied additional customs duties on steel imports. After this date, the Turkish lira started to lose value rapidly. With the price increases and the reduction in the policy rate, the real interest rate decreased, and the national currency continued to depreciate. As a result, the current account has become one of the most fundamental problems in the country because the share of raw materials and intermediates in total imports is close to 70%.

Although many macroeconomic variables are included in the academic literature on the current account balance models, we have observed that the final variables are not included and neglected in these studies. Examining the financial variables in the literature reveals measures to evaluate financial excess and depth. While financial excess variables attempt to capture boom-and-bust cycles in the financial markets through flow measurements, financial depth variables are concerned with the scale of the financial markets via stock measures (Ekinici et al., 2015). Lending is even more critical in Turkey due to the country's large structural current account deficit. The risk of a "sudden stop" is increased by any additional deficit caused by cyclical circumstances. " Therefore, it is imperative to control the cyclical component of the current account deficit. Debt may be used to smooth out cyclical fluctuations in the current account because of the strong correlation between net credit utilization and current account deficits. Credit growth must be sustainable to stabilize debt ratios and avoid macroeconomic risk (Kara et al., 2014).

As discussed in this study, we used the ratio of credit growth to current account deficit ( $\Delta$  Credit / GDP) to represent financial openness and depth. We also used the real exchange rate to show the change in purchasing power related to the current account balance and oil prices to capture production costs.

## **2. Literature Review**

The non-stationary nature of global economic dynamics has consistently kept the issue of the sustainability of the current account deficit on researchers' agendas. In numerous studies, researchers have sought to uncover the effects of changing local and global conditions on the balance of the current account deficit. These studies aim to guide policymakers in understanding and managing the long-term implications of the current account deficit.

Studies for various countries with different economic structures have tried to reveal the determinants of the current account deficit: Pakistan (Ahmed et al., 2023), USA (Barnett & Straub, 2008; Batdelger & Kandil, 2012), Kenya (Destainings, 2017), Turkey (Kalyoncu, 2005; Peker, 2009; Göçer, 2013; Yurdakul & Cevher, 2015; Karahan, 2020); India (Sohrabji, 2010), Nigeria (Onatunji, 2023), Greece (Apergis et al., 1998; Apergis et al., 2000; Zombanakis et al., 2009), Germany (Ruppert & Stähler, 2022)

To summarise, when analyzing the existing studies, the issue has been addressed in developed and developing countries. In addition to this distinction, studies are analyzed based on

individual countries and multiple countries (OECD, EU, etc.). Country groupings vary in studies where more than one country is evaluated: OECD (Wu, 2000; Mercan, 2014; Kalyoncu, 2006; Holmes, 2006), EU (Afonso et al., 2020), G-7 (Liu & Tanner, 1996), ASEAN-8 (Baharumshah et al., 2005)), Asian-12 (Lau & Zubaidi Baharumshah, 2005), 129 countries (Dash, 2020), developed countries (Narayan & Srikanthakumar, 2020).

A literature review shows that many different time series methods are used in the studies. These methods differ according to the model considered in the research and the structure of the data set. In these studies, methods such as the Engle-Granger cointegration test (Husted, 1992; Yucel & Yanar, 2005; ), Johansen cointegration test (Göçer & Mercan, 2011; Göçer, 2013; Babatunde, 2014; Ahmed et al., 2023), ARDL cointegration test (Narayan & Narayan, 2004; Narayan & Narayan, 2005)), unit root and cointegration test (Konya & Singh, 2008, Ismail & Baharumshah, 2008; Ogus & Sohrabji, 2008 ), panel unit root test (Lau et al., 2006; Kalyoncu, 2006) and panel cointegration (Mercan, 2014; Gnimassoun & Coulibaly, 2014; Khadan & Deonarine, 2020; Afonso et al., 2020) are frequently observed to be employed.

(Yücel & Yanar, 2005) Examined the sustainability of Turkey's current account deficit for 1964-2003. Import and export data, including unrequited foreign transfers and foreign interest payments, were used in the study. The analyses reveal that Turkey's current account deficit is unsustainable.

(Kalyoncu, 2006) investigated the sustainability of the current account of 22 OECD countries. Using the ADF unit root test, it is found that the current account of many OECD countries has a unit root. Applying the test proposed in Im, Pesaran and Shin (1997) concluded that current account deficits in OECD countries are sustainable.

(Peker, 2009) investigated the sustainability of the current account deficit in Turkey. As a result of the co-integration analysis using monthly data for the period 1992:01-2007-12, it was concluded that the current account deficit in Turkey is sustainable only at a low level.

(Göçer & Mercan, 2011) Examined the sustainability of the current account deficit in Turkey for 1992:M01-2010:M11 with the intertemporal external balance constraint model. Export and import data were used in the study. According to the bounds test approach results, the current account deficit in Turkey is found to be sustainable in weak form.



Göçer (2013) examined the sustainability of the causes of Turkey's current account deficit. Using the Johansen and VEC methods for the period 1996: M01-2012: M01, it was found that the current account deficit in Turkey is sustainable in the weak form.

Mercan (2014) investigated the sustainability of budget deficits in OECD countries from 1980 to 2012. His study examined horizontal cross-sectional dependence (CD) with the CDLM test (Cross Sectionally Dependency Lagrange Multiplier). A panel cointegration test with multiple structural breaks evaluated the cointegration relationship between the indicators considered in the study. As a result, a cointegration relationship was found between the indicators, and it was concluded that the budget deficits of these countries are sustainable in a weak form in the long run.

Karahan (2020) analyzed the sustainability of the current account deficit in Turkey from 2003 to 2008. Based on the Johansen cointegration test, the study concluded that the current account deficit is weak. Moreover, the VEC results are consistent with the long-run results. It is concluded that deviations from the long-run equilibrium are corrected by 78%.

In summary, when the studies on the current account deficit in Turkey are analyzed, it is found that the current account deficit is unsustainable (Yücel & Yanar, 2005) or in a weak form (Peker, 2009; Göçer & Mercan, 2011; Göçer, 2013; Mercan, 2014; Karahan, 2020).

(Yurdakul & Cevher, 2015) Tried to reveal the causality relations between the indicators affecting the current account deficit using conditional and partial Granger causality tests. The study used the indicators of current account deficit/GDP, growth rate, real effective exchange rate, foreign direct investment, openness, and energy imports for 2003.1-2014.2. As a result, it is found that the real effective exchange rate is the variable with the most significant effect on the current account deficit/GDP. The growth rate, energy imports, and openness to externalization variables follow the exchange rate. Foreign direct investment is found to be the variable with the least effect.

### **3. Data and Methodology**

The study utilizes quarterly data from the Central Bank of the Republic of Turkey's Electronic Data Distribution System (EVDS) from 2006:Q1 to 2024:Q2. Table 1 provides the variables used in the econometric methodology and their corresponding abbreviations. Taking the variables' natural logarithms reduces their variances and stabilizes them.

Table 1

*Variables Used in Models*

Variable	Abbreviation
Current Account Balance	CAB
Official Reserves	RES
Real Effective Exchange Rate	RER
Credit Growth	CRD
External Debt	DEB
Foreign Direct Investment	FDI

With the logarithm, the variance is stabilised and the effects of outlier observations are reduced (Türe ve Akdi, 2005:6). Figure 3 shows the variable time series graphs.

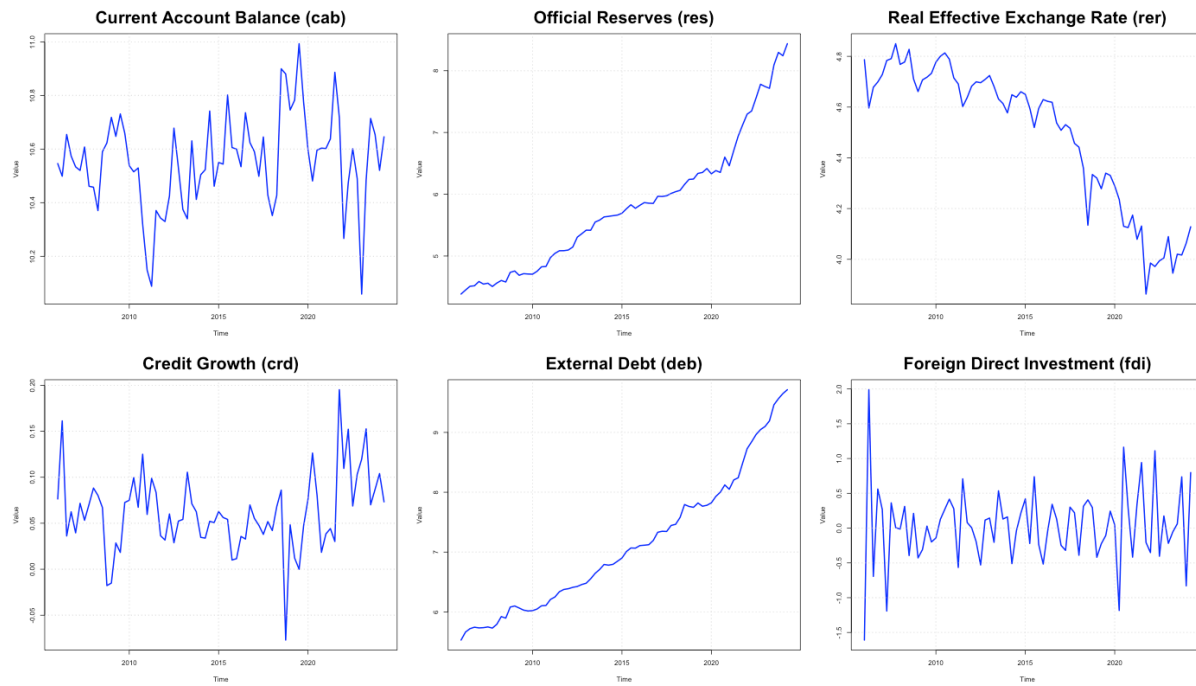


Figure 3. Time Series Graphs of Variables

Seasonal movement refers to fluctuations in a time series that occur regularly (usually annually). These movements are caused by regular events or conditions over specific periods. If a time series variable experiences seasonal movement, a spurious relationship between the variables emerges.

Before eliminating these spurious relationships, testing whether seasonal movement exists in the series is necessary. The Welch test, which examines the difference between means developed by Welch (1951), is used in this study. Hypotheses are

$H_0$ : Seasonality is not present in data.

$H_1$ : Seasonality is present in data.

Table 2

*Seasonality Test Results*

Variable	Test statistic	p-value
CAB	46,4686	0,0000*
RES	1,1692	0,3343
RER	0,7004	0,5577
CRD	6,1101	0,0017*
DEB	0,2304	0,8747
FDI	2,5989	0,0673

*Note.* Contains a seasonal component at 0.05 significance level

Table 2 shows that the current account balance and credit growth variables contain a seasonal component. The analysis will include these variables after being seasonally adjusted using the Tramo-Seats method. Stationarity is the condition where a time series's mean, variance, and covariance remain constant over time. In addition, to eliminate the spurious regression relationship and to determine the appropriate estimation method, the stationarity levels of the variables should be determined. For this purpose, Augmented Dickey-Fuller Unit Root tests were utilized. However, since the breaks in the series also cause misapprehensions in determining the stationarity levels, ADF-based unit root tests proposed by Zivot and Andrews are also included.

Table 3

*Stationarity Tests at Levels*

Variable	ADF statistic	Critical value at 0.05	ADF model	ZA test statistics	Critical value at 0.05
CAB	-3,1596*	-2,89	intercept	-5,3799*	-4,8
RES	2,9184	-2,89	intercept	-3,1378	-4,8
RER	-2,3978	-3,45	tnd <sup>a</sup> & int <sup>b</sup>	-4,4971	-4,8
CRD	2,9107	-2,89	intercept	-2,9708	-4,8
DEB	2,6583	-2,89	intercept	-3,4470	-4,8
FDI	-8,6761*	-2,89	intercept	-6,8533*	-4,8

*Note.* Variables stationary at 0.05 significance level

a: trend, b: intercept

Table 4

*Stationarity Tests at First Difference*

Variable	ADF statistic	Critical value at 0.05	ADF model	ZA test statistics	critical value at 0.05
RES	-6,8115	-3,45	tnd & int	-11,3003	-4,8
RER	-6,8440	-2,89	intercept	-12,4512	-4,8
CRD	-5,5879	-3,45	tnd & int	-14,7439	-4,8
DEB	-5,6522	-3,45	tnd & int	-9,0197	-4,8

*Note.* All variables are stationary at a 0.05 significance level

In this study, after determining the integration levels of the variables, autoregressive distributed lag (ARDL) cointegration analysis is used to examine the long-run relationships to determine the financing of the current account deficit. Due to its dynamic structure, the ARDL model brings many advantages over the ordinary least squares method, error correction model, and vector autoregressive models. The ARDL model, which can include lags of the dependent variable as well as the lagged values of the explanatory variables, brings many advantages over the ordinary least squares method, error correction model, and vector autoregressive models due to its dynamic structure (Pesaran, Shin, and Smith, 2001). Although the ARDL model is incompatible with I(2), high-order integrated variables, it is compatible with level, first-order difference, or fractionally integrated variables. While traditional cointegration methods require a much longer observation length, the ARDL method allows for obtaining appropriate estimation results in small samples. The general form of the ARDL method used in the study is given in Equation 1.

$$\begin{aligned}
 CAB_t = \alpha_0 + \sum_{i=1}^m \omega_i CAB_{t-i} + \sum_{i=0}^p \beta_i RES_{t-i} + \sum_{i=0}^r \gamma_i RER_{t-i} \\
 + \sum_{i=0}^s \delta_i CRD_{t-i} + \sum_{i=0}^u \phi_i DEB_{t-i} + \sum_{i=0}^v \lambda_i FDI_{t-i} + \varepsilon_t
 \end{aligned} \quad 1$$

If we pay attention to the expressions in equation one, the lag of the dependent variable starts from the first period, while the lags of all other variables start from period t. Before estimating the model, the appropriate lag length should be determined. For this purpose, models are estimated for each lag length, and Akaike information criterion values are obtained. Table 5 presents the information criterion values for the appropriate lag lengths.

Table 5

*Information Criterion of Lag Lengths*

	CAB	RES	RER	CRD	DEB	FDI	AIC
order	2	2	2	0	2	0	-70,3639*
	2	2	1	0	2	0	-69,3816
	2	2	2	0	2	1	-69,2199
	2	2	2	1	2	1	-67,2493
	2	3	2	0	2	0	-67,2066
	2	2	2	0	3	0	-66,9624
	2	2	1	1	2	1	-66,7886
	2	2	2	0	3	1	-66,1201
	2	2	1	1	2	2	-64,8808
	2	2	1	2	2	2	-63,6464

When Table 5 is analyzed, the smallest Akaike information criterion value is obtained for (2,2,2,2,0,2,0). ARDL bounds test approach is used to examine the cointegration relationship between variables.

Table 6

*ARDL Bounds Test Results*

Test Statistics		Value	k
F		12.779	5
Critical Bounds			
Significance Level			
	0.10	0.05	0.01
I(0)	2.26	2.62	3.41
I(1)	3.35	3.79	4.68

Table 6 shows that the null hypothesis of no cointegration relationship between the variables is rejected at 0.01 significance level. The F-test statistic calculated for model estimation exceeds the critical values at all three significance levels. Thus, there is a cointegration relationship between the variables in the model.

Table 7

*Short Run Results*

Variables	Coefficient	Std error	t statistics	p value
Intercept	0,0477	0,0384	1,2438	0,2185

L(ECT, -1)	-1,0120	0,2439	-4,1490	0,0001
d(RES)	-0,2615	0,4280	-0,6109	0,5436
d(RER)	-1,6541	0,5459	-3,0298	0,0036
d(CRD)	0,9927	0,2238	4,4357	0,0000
d(DEB)	-0,9294	0,6338	-1,4663	0,1479
d(FDI)	0,1073	0,0410	2,6182	0,0112

According to the ECM results presented in Table 7, L(ECT, -1), d(RER), d(CRD), and d(FDI) are statistically significant at a 5% significance level. First of all, the lagged error correction term (L(ECT, -1)) is statistically significant and has a negative sign ( $p < 0.05$ ), indicating that a correction mechanism is operating in the long-run equilibrium. The real effective exchange rate (d(RER)) variable is also significant. It has a negative sign ( $p < 0.05$ ), suggesting that exchange rate fluctuations have a negative impact on the variable explained in the model. Credit volume (d(CRD)) is positive and significant ( $p < 0.05$ ), indicating that credit growth contributes positively to the dependent variable in the model. Foreign direct investment (d(FDI)) is positive and significant ( $p < 0.05$ ), indicating that foreign investment inflows have a positive impact on the dependent variable. On the other hand, d(RES), d(DEB) and the constant term are not statistically significant at the 5% significance level, indicating that these variables do not significantly contribute to the model.

According to the results of Table 8, the variables that are significant at a 0.05 significance level are as follows: L(CAB, 2), RES, L(RES, 1), L(RES, 2), RER, L(RER, 1), CRD, DEB, L(DEB, 1), L(DEB, 2) and FDI. The second lagged current account deficit variable (L(CAB, 2)) has a negative sign, indicating that the value of the current account deficit two periods ago has a significant negative impact on the dependent variable. The reserve variable (RES) is positive and significant, indicating that the reserve increase contributes positively to the dependent variable. The lagged first-period reserve coefficient (L(RES, 1)) is positive and significant.

Table 8

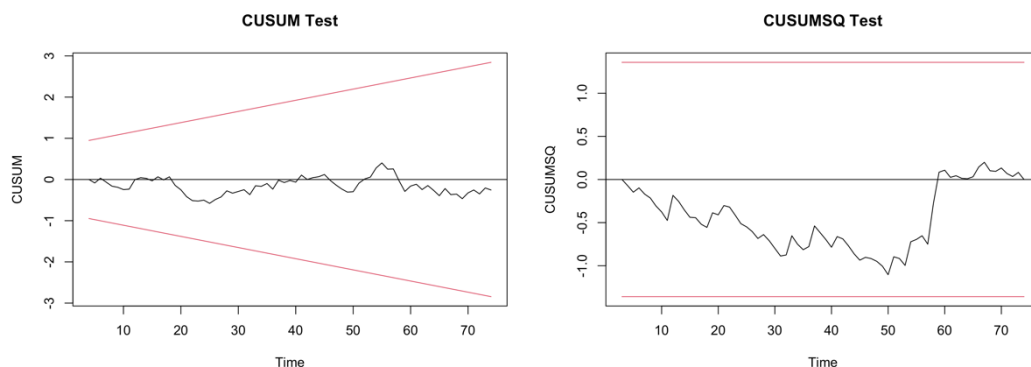
*Long Run Estimation Results*

Variables	Coefficient	Std error	t statistics	p value
Intercept	1,9069	1,7860	1,0677	0,2902
L(CAB, 1)	-0,2246	0,1203	-1,8674	0,0670
L(CAB, 2)	-0,3712	0,1102	-3,3698	0,0014
RES	0,5825	0,2821	2,0649	0,0435
L(RES, 1)	1,0294	0,4114	2,5024	0,0152

L(RES, 2)	0,7519	0,3319	2,2654	0,0273
RER	-1,5364	0,3802	-4,0411	0,0002
L(RER, 1)	-1,8077	0,4158	-4,3475	0,0001
L(RER, 2)	-0,5452	0,3487	-1,5637	0,1234
CRD	-1,7396	0,6574	-2,6461	0,0105
DEB	1,2292	0,5212	2,3584	0,0218
L(DEB, 1)	2,3748	0,6721	3,5337	0,0008
L(DEB, 2)	1,4763	0,4330	3,4092	0,0012
FDI	0,0226	0,0089	2,5393	0,0139

In contrast, the second-period reserve coefficient (L(RES, 2)) is also positive and significant, suggesting that reserve dynamics have positive effects in different periods. The real effective exchange rate (RER) is negative and significant, indicating that exchange rate fluctuations have a negative impact on the dependent variable. The coefficient of lagged first-period real effective exchange rate (L(RER, 1)) is negative and significant ( $p = 0.0001$ ), supporting the negative impact of lagged effects of the real effective exchange rate on the dependent variable. Credit growth (CRD) is negative and significant ( $p = 0.0105$ ), indicating that credit growth has a negative impact on the dependent variable. The borrowing variables (DEB), (L(DEB, 1)), (L(deb, 2)) are positive and significant, indicating that borrowings contribute positively to the dependent variable. Foreign direct investment (FDI) is positive and significant, suggesting that FDI positively affects the dependent variable.

On the other hand, (Intercept), L(CAB, 1), and L(RER, 2) variables are not statistically significant at 0.05 significance level, and it can be stated that these variables do not make a significant contribution to the model.



In the final stage of the estimation process, it is essential to perform a stability test on the model parameters. For this purpose, CUSUM and CUSUMSQ plots have been generated in Figure

4. Figure 4 shows that the statistics remain within the critical bounds, indicating that the coefficients are stable. Furthermore, the Jarque-Bera test assesses whether the residuals follow a normal distribution, with the null hypothesis ( $H_0$ ) assuming normality. With a test statistic of 1.019 and a p-value of 0.601, the null hypothesis cannot be rejected, indicating no significant deviation from normality. The Breusch-Godfrey test used for serial correlation, where  $H_0$  assumes no autocorrelation. The test yielded an LM statistic of 1.935 and a p-value of 0.164, indicating no significant serial correlation. Finally, the studentized Breusch-Pagan test is performed for heteroskedasticity, with  $H_0$  indicating homoskedasticity. The BP statistic of 21.822 and the p-value of 0.149 do not reject  $H_0$ , so there is no evidence of heteroskedasticity.

#### 4. Conclusion

This study analyses the dynamics of the current account deficit in the Turkish economy and the factors affecting its financing using the ARDL bounds test method. Using quarterly data from 2006:Q1 to 2024:Q2, it evaluates the short and long-run effects of the current account deficit, official reserves, real effective exchange rate, credit growth, external debt, and foreign direct investment.

Gümüšoğlu and Alçın (2019) found that the effect of foreign direct investment (FDI) on the current account deficit is significant. Similarly, Knight, Nedeljkovic, and Portugal-Perez (2019) found that private sector loans, real exchange rates, and FDI are among the crucial determinants of the current account deficit in Turkey. Petek and Öznur (2021) also found a statistically significant relationship between current account deficit and FDI. The findings that reserves, real effective exchange rate, credit growth, external debt, and FDI significantly affect the financing of the current account deficit are consistent with the studies in the literature.

The ARDL model's findings emphasize the positive effects of reserves and FDI. In contrast, real effective exchange rate fluctuations adversely affect the current account deficit. Furthermore, the model's statistically significant and negative error-correction mechanism suggests a return to long-run equilibrium, indicating that short-term deviations can be adjusted in the long run.

The effects of credit growth and external debt on the current account deficit have been found to be positive at various times. However, in a sustainable economic growth model, these factors should be approached with caution. Given the potential risks of external debt to long-term financial stability, such borrowing should be directed towards productivity-enhancing investments.



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Structural problems such as the import dependence of the production structure of the Turkish economy and the high share of energy imports limit the sustainability of the current account deficit. In this context, strategies such as encouraging policies to increase foreign direct investments, reducing exchange rate volatility, and supporting reserve accumulation are emphasized again.

### **Declaration of Research and Publication Ethics**

This study which does not require ethics committee approval and/or legal/specific permission complies with the research and publication ethics.

### **Researcher's Contribution Rate Statement**

Since the author is the sole author of the article, his contribution rate is 100%.

### **Declaration of Researcher's Conflict of Interest**

There are no potential conflicts of interest in this study.

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