MACROECONOMIC BALANCES AND GEOPOLITICAL RISKS: DETERMINANTS OF DOMESTIC SAVINGS IN TÜRKİYE

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ABSTRACT
Saving is a critical concept not only from an economic perspective but also from religious and intellectual standpoints, serving as a fundamental pillar for the sustainability of individual and social welfare. This study aims to empirically examine the effects of economic growth on the level of domestic savings in Turkey over the period 1985–2023. The analysis incorporates key macroeconomic variables such as the current account balance, inflation, exchange rate, and geopolitical risks as control factors. The empirical results reveal that economic growth and inflation positively affect savings, whereas current account deficits and geopolitical risks have adverse impacts. Although the exchange rate shows a negative effect, it is not statistically significant. The study's originality lies in addressing the largely underexplored influence of geopolitical risks on savings in the literature. The findings indicate that economic and political stability constitute essential prerequisites for increasing savings. The results emphasize the importance of policymakers developing macroeconomic policies that promote sustainable economic growth, control inflationary pressures, and effectively manage external and geopolitical risks. Furthermore, implementing reforms aimed at resolving structural current account deficits can be considered a strategic factor contributing to the sustainable increase of domestic savings rates.
Keywords: Savings, Economic Growth, Current Account Balance, Exchange Rate, Geopolitical Risks.
JEL Codes: E21, O11, F32, F31

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MAKROEKONOMİK DENGELER VE JEOPOLİTİK RİSKLER: TÜRKİYE'DE YURTİÇİ TASARRUFLARIN BELİRLEYİCİLERİ

ÖZ
Tasarruf, ekonomik açıdan olduğu kadar dini ve entelektüel perspektiften de kritik bir kavramdır ve bireysel ile toplumsal refahın sürdürülebilirliğinde temel bir yapı taşıdır. Bu çalışma, 1985-2023 döneminde Türkiye'de ekonomik büyümenin iç tasarruf düzeyi üzerindeki etkilerini ampirik olarak incelemeyi amaçlamaktadır. Araştırmada, cari işlemler dengesi, enflasyon, döviz kuru ve jeopolitik riskler gibi önemli makroekonomik değişkenler kontrol değişkeni olarak dahil edilmiştir. Ampirik analizler, ekonomik büyüme ve enflasyonun tasarrufları olumlu etkilediğini ortaya koyarken, cari açık ve jeopolitik risklerin tasarruflar üzerinde olumsuz etkileri olduğu tespit edilmiştir. Döviz kurunun etkisi negatif olmakla birlikte istatistiksel olarak anlamlı bulunmamıştır. Çalışmanın özgün yanı, jeopolitik risklerin tasarruflar üzerindeki etkisini literatürde nadir incelenen bir boyut olarak ele almasıdır. Bulgular, ekonomik ve siyasi istikrarın tasarrufların artırılmasında temel bir ön koşul olduğunu ortaya koymaktadır. Elde edilen sonuçlar, politika yapıcıların sürdürülebilir ekonomik büyümeyi teşvik eden, enflasyonist baskıları kontrol altına alan ve dışsal ile jeopolitik riskleri etkin bir şekilde yöneten makroekonomik politikalar geliştirmelerinin önemini vurgulamaktadır. Ayrıca, yapısal cari işlemler açığının giderilmesine yönelik reformların hayata geçirilmesi, iç tasarruf oranlarının sürdürülebilir şekilde yükseltilmesine katkı sağlayacak stratejik bir unsur olarak değerlendirilebilir
Anahtar Kelimeler: Tasarruf, Ekonomik Büyüme, Cari Hesap Bakiyesi, Döviz Kuru, Jeopolitik Riskler.
JEL Kodları: E21, O11, F32, F31

1. INTRODUCTION

According to Adam Smith, the founder of the classical school of economics, savings are important in terms of financing the inputs required at the initial stage of economic activities. However, according to Keynesian economics, savings are not considered as an input to production, but as the unspent portion of disposable income. According to Keynes, savings may lead to a decrease in expenditures and thus a fall in aggregate demand. In the theoretical background of the relationship between savings and inflation, two approaches come to the fore. The first of these approaches is that due to the uncertainty created by the inflationary process in the economy, economic decision-makers will tend to increase precautionary savings in order to meet their future expenditures (Mundel (1963) and Tobin (1965); Deaton (1977); Howard (1977); Wachtel (1977)). The other approach is that the decline in the purchasing power of money in inflationary processes leads economic agents to consume rather than save (Sidrauski (1967); Burch and Werneke (1975); Stockman (1981); Haan (1990).Therefore, if savings are not converted into investment expenditures, there may be a risk of economic stagnation. Ragnar Nurkse (1964) argued that in developing economies with low income levels, low domestic savings lead to underinvestment, which in turn leads to a "vicious circle of poverty" with weak capital accumulation. The fact that domestic savings are an important factor in establishing sustainable economic growth paves the way for determining the factors affecting the level of savings. In this context, attributing the level of saving solely to the level of income provides a rather narrow analytical perspective. To overcome this limitation and to provide a more comprehensive framework for identifying the determinants of domestic savings, this study aims to address two main research questions. These are as follows:

- Are economic growth, inflation, exchange rate and current account deficit the main determinants of the domestic saving rate in Turkey in the long run?
- Do geopolitical risks affect domestic saving dynamics in Turkey? If so, is this impact positive or negative?

The aim of this study is to empirically analyze the effects of economic growth on the level of savings in Turkey. Savings are considered one of the fundamental pillars of economic development and sustainable growth. Therefore, a detailed examination of the macroeconomic factors affecting saving dynamics is of great importance for both policymakers and academics. In this context, in addition to traditional macroeconomic variables such as current account balance, inflation, and exchange rate, geopolitical risks—which have been gaining increasing significance in recent times—are also included as control variables in the study. Although there are many studies in the literature regarding the determinants of domestic savings, research directly analyzing the impact of geopolitical risks on savings is quite limited. Geopolitical risks can increase economic uncertainty and thus influence the saving behavior of individuals and institutions, significantly affecting macroeconomic balances. This study aims to contribute to a better

understanding of saving behavior in countries like Turkey that are exposed to geopolitical risks, enabling policymakers to develop more effective strategies. In this way, the study intends to provide an original contribution to the academic literature as well as practical guidance.

2. EMPIRICAL LITERATURE REVIEW

There are many studies in the literature on the relationship between domestic savings and various macroeconomic indicators such as economic growth, inflation, interest rates and financial development. These studies have generally analyzed the effect of savings on economic growth or vice versa. However, there is no study that directly addresses the geopolitical risk factor on the level of savings. This suggests that there is an important gap in understanding the impact of geopolitical uncertainties on the saving propensity of individuals and businesses. In this context, the contribution of the current study to the literature is to analyze the impact of geopolitical risks on the level of saving and to provide a broader perspective on the factors affecting saving dynamics. To this end, the literature review is mainly based on studies on the relationship between saving and economic growth.

In the literature analyzing the relationship between savings and economic growth, Çetinkaya and Türk (2014), Alptekin et al. (2018), Bekar and Terzi (2018), Gül and Acar (2018), Altıner and Korkmaz (2023), Siaw et al. (2017), Ribaj and Mexhuani (2021) and Wanzala and Obokoh (2024), there is a general consensus that there is a positive relationship between these two variables. On the other hand, findings on the relationship between savings and inflation and real interest rates are more heterogeneous. For example, Önder and Taş (2024) find that inflation and real interest rates have a positive effect on savings, while Altıner and Korkmaz (2023) find that the effect of inflation on savings is negative and Şahin (2024) finds that there is no statistically significant relationship between inflation and savings. Moreover, Bozkurt (2024) and Altıner and Korkmaz (2023) find that foreign direct investments have a positive effect on domestic savings.

Table 1. Summary of Empirical Literature

Studies	Period	Contry/ Countries	Method	Findigs
Çetinkaya & Türk	1975-2012	Turkey	Times Series	Savings have a positive impact on economic growth
Alptekin et.al (2018)	1989-2015	Turkey	ARDL	Savings have a positive impact on economic growth
Bekar & Terzi (2018)	1981-2015	Turkey	ARDL	Positive bidirectional interaction between savings and economic growth
Gül & Acar (2018)	1977-2014	40 Developed and Devolopin g Countries	Panel Data	There is a positive bidirectional interaction between savings and economic growth, by the effect is stronger in developed countries

Altıner & Korkmaz (2024)	1992-2021	41Developing Countires	Panel Data	economic growth and foreign direct investments have a positive effect on savings, while inflation has a negative effect
Önder& Taş (2024)	1980-2019	Turkey	VAR	While GDP and financial development affect savings positively, inflation and real interest rates affect savings negatively
Bozkurt (2024)	1995-2023	Turkey	ARDL	Institutional quality and FDI positively affect domestic savings
Şahin (2024)	1975-2023	Turkey	ARDL	There is no statistically significant relationship between inflation and savings
Siaw et.al2017)	1970-2013	Ghana	Times Series	Savings have a positive impact on economic growth
Ribaj & Mexhuani (2021)	2010-2017	Kosovo	Times Series	Savings have a positive impact on economic growth
Wanzala & Obokoh (2024)	1980-2023	South Africa	ARDL	Positive bidirectional interaction between savings and economic growth

While these studies generally emphasize the positive impact of domestic savings on economic growth, the findings regarding the effects of macroeconomic variables such as inflation and interest rates on savings vary. This difference is mainly due to the structural differences across countries and the diversity of economic and political conditions in the periods covered in the studies.

3. MATERIALS and METHODOLOGY

3.1. Purpose of the Study

The objective of this study is to empirically analyze the effects of economic growth on the level of savings in Turkey. To this end, current account balance, inflation, exchange rate and geopolitical risks are included as control variables in the analysis of macroeconomic factors affecting saving dynamics. These variables are important in terms of reflecting economic conditions and external uncertainties and will allow for a more accurate decomposition of the factors affecting the level of savings. Thus, the effects of geopolitical risks and other macroeconomic indicators on saving can be evaluated more accurately in a framework free from exogenous factors.

3.2. Population and Sample of the Study

The sample country of the study is Turkey and annual time series data for the period 1985-2023 are used.

3.3. Data Collection and Analysis

The data used in the study were obtained from the World Bank and matteoiacoviello online database. Gauss 6.0 package programs and Eviews 9.0 were used to analyze the empirical model.

3.4. Limitations of the Study

The study covers the period 1985-2023 due to data limitations and this constitutes the limitation of the study.

3.5. Empirical Analysis and Findings

In this section of the study, an empirical analysis will be conducted to determine the impact of selected macroeconomic indicators and the level of geopolitical risk on gross domestic savings in Turkey. To this end, firstly, the variables used in the analysis will be introduced and then the descriptive statistics of these variables will be presented. Finally, the methodology and the econometric findings will be discussed in detail.

3.5.1. Model Data and Variables

In the model constructed to analyze the determinants of the level of saving in Turkey, gross domestic saving is used as the dependent variable and the data are obtained from the World Bank database. Among the independent variables, geopolitical risk level is obtained from Matteo Iacoviello's online dataset, while data on current account balance, inflation, exchange rate and gross domestic product are obtained from the World Bank database. For the purpose of the study, the functional expression of the relevant variables is presented below:

$$GDS = (CAB, INF, OER, GDP, JEO) \tag{2}$$

$$lnGDS = \alpha_{it} + \beta_1 CAB + \beta_2 INF + \beta_3 OER + \beta_4 lnGDP + \beta_5 JEO \tag{3}$$

Information on the variables in the study is summarized in Table 1.

Table 1. Data and Variables Used in the Study

Variables	Description	Period	Source
CAB	Current Account Balance (% GDP)	1985–2023-(Annual)	World Bank
INF	Inflation Consumer Price Index	1985–2023-(Annual)	World Bank
GDS	Gross Domestic Savings (current USD)	1985–2023-(Annual)	World Bank
OER	Official Exchange	1985–2023-(Annual)	World Bank
GDP	Gross Domestic Product	1985–2023-(Annual)	World Bank
GEO	Geopolitical Risks	1985–2023-(Annual)	matteoiacoviello

Descriptive statistics to assess the consistency and accuracy of the model reveal the basic distributional characteristics of the variables. Skewness values reveal that the current account balance (CAB), official exchange rate (OER) and credit risk premium (GDS) variables exhibit negative skewness, thus their distributions are left-skewed. In particular, the skewness value of the official exchange rate variable shows the most pronounced left skewness with -0.79. On the other hand, inflation (INF), gross domestic product (GDP) and geopolitical risk (GEO) variables exhibit positive skewness, indicating that their distributions are right-skewed. In terms of kurtosis values, all variables have kurtosis coefficients less than 3, indicating a more kurtotic structure compared to the normal distribution. In particular, the credit risk premium variable (GDS) has the lowest kurtosis value of 1.37 and shows a flatter distribution. Jarque-Bera test results evaluate the conformity of the variables to the normal distribution. Considering the p-values obtained, the assumption of normal distribution for all variables is not rejected at 5% significance level. This indicates that the variables are close to a normal distribution.

Table 2. Descriptive Statistics

Variables	Average	S.Deviation	Max	Min	Skewness	kurtosis	J-Bera
CAB	-2.30	2.50	2.10	-8.87	-0.16	2.73	0.28(0.86)
INF	38.6	30.4	105.2	6.25	0.42	1.77	3.58(0.16)
GDS	25.1	0.93	26.4	23.7	-0.13	1.37	4.43(0.11)
OER	-1.19	3.11	3.16	-7.55	-0.79	2.29	4.89(0.08)
GDP	26.95	0.50	27.8	26.1	0.16	1.81	2.45(0.29)
GEO	0.20	0.12	0.49	0.04	0.65	2.27	3.63(0.16)

3.5.2. Empirical Findings

In the empirical findings section, first the methodological framework of the analysis will be presented and then the findings will be detailed. In the first stage, the ADF (Augmented Dickey-Fuller) unit root test developed by Dickey and Fuller (1981) was applied to determine the stationarity of the variables, and an additional verification was performed with the Phillip-Perron (1989) test to ensure the consistency of the results. Cointegration analysis was performed on the stationary series within the scope of ARDL bounds test and finally, short and long run coefficient estimates were obtained with the ARDL model

3.5.2.1. Unit Root Test Results

In econometric analyses, stationarity tests are applied to understand the behavior of variables over time and these tests ensure that the results of the analysis are reliable and avoid misleading inferences. Unit root tests examine whether the series are stationary at three different levels: level, first difference and second difference. A series is classified as I(0) if it is stationary at level, I(1) if it becomes stationary at first difference and I(2) if it becomes stationary at second difference. This indicates that the series does not follow a random trend and remains stable over time.

The ADF (Augmented Dickey-Fuller) test, which is frequently used in the literature, is a common method to determine the stationarity of series (Çelik et al., 2020). In the ADF unit root test, the equation to be estimated is as follows:

$$\Delta Y_t = \delta Y_{t-1} + \sum_{i=1}^{m} \alpha Y_{t-i} + \varepsilon_t \quad (4)$$

$$\Delta Y_t = \beta_1 + \delta Y_{t-1} + \sum_{i=1}^{m} \alpha \Delta Y_{t-i} + \varepsilon_t \quad (5)$$

$$\Delta Y_t = \beta_1 + \beta_{2t} + \delta Y_{t-1} + \sum_{i=1}^{m} \alpha \Delta Y_{t-i} + \varepsilon_t \quad (6)$$

In the first equation above, the variable ΔY is constructed using lagged values and differences to eliminate the autocorrelation problem. This model does not contain a deterministic component and is shaped by a random process. Unlike the first model, the second equation includes a constant term, while the third equation includes both a constant term and a trend component. In this framework, the hypotheses for the series analyzed by the ADF (Augmented Dickey-Fuller) test are stated as follows:

H_0: α ≥ 0, the series contains a unit root and is non-stationary.

H_1: α < 0, the series has no unit root and is stationary.

Table 3 analyzes the stationarity of the variables using ADF and PP tests. The results show that geopolitical risk and current account balance variables are stationary at level and under a constant model. Other variables required first differences to become stationary. Especially in the models with constant and trend, stationarity is achieved when the first differences of the variables are taken. The PP unit root test, which was applied to confirm the results of the ADF unit root test, yielded consistent results with the ADF test. These findings provide an important basis for making the series suitable for long-term analysis.

Table 3. Unit Root Test Results

		Variables	ADF	PP		Variables	ADF	PP
Level	Fixed	CAB	-3.89(0.00)*	-4.07(0.00)*	First Difference	CAB	-9.89(0.00)*	-13.0(0.00)*
		INF	-1.39(0.57)	-1.33(0.60)		INF	-6.37(0.00)*	-6.38(0.00)*
		GDS	-0.67(0.83)	-0.59(0.86)		GDS	-8.11(0.00)*	-8.11(0.00)*
		OER	-1.88(0.33)	-1.98(0.29)		OER	-2.73(0.00)*	-3.16(0.02)**
		GDP	0.17(0.96)	0.61(0.98)		GDP	-6.45(0.00)*	-6.96(0.00)*
		GEO	-2.93(0.05)**	-2.78(0.06)**		GEO	-7.58(0.00)*	-18.0(0.00)*
	Constant + Trend	CAB	-4.62(0.00)*	-4.71(0.00)*		CAB	-9.75(0.00)*	-12.3(0.00)*
		INF	-1.43(0.83)	-1.39(0.84)		INF	-6.27(0.00)*	-6.27(0.00)*
		GDS	-2.38(0.38)	-2.35(0.39)		GDS	-8.00(0.00)*	-8.00(0.00)*
		OER	-3.050.13)	-1.14(0.82)		OER	-2.99(0.01)**	-3.06(0.05)**
		GDP	-2.42(0.35)	-2.49(0.33)		GDP	-6.42(0.00)*	-8.35(0.00)*
		GEO	-4.12(0.01) **	-4.06(0.01)**		GEO	-7.48(0.00)*	-20.0(0.00)*

Note: Values in parentheses indicate probability values. ***, ** and * values indicate stationarity of the series at 1%, 5% and 10% levels of significance, respectively.

3.5.2.2. ARDL Border Test

The ARDL bounds test method developed by Pesaran et al. (2001) does not require the explanatory variables to be integrated only at first order. In this approach, it is not necessary to determine whether the series contain unit roots or not. However, the dependent variable in the model should be first order integrated and there should be no second order integrated series among the variables used. Because the critical values calculated within the scope of the bounds test require the variables to be stationary or integrated of the first order (Çıraklı, 2019; Çiftçi, 2009; Narayan and Smyth, 2006). The F-test obtained in this method evaluates the existence of a long-term cointegration relationship between variables by calculating at 1%, 5% and 10% significance levels. If the F-statistic takes a value above the critical lower and upper bounds at the relevant significance levels, it is accepted that there is a long-run relationship between the series**.** The equation for the ARDL method established to test the cointegration relationship between the variables in the study is as follows.

$$\Delta LNGDS_t h = \beta_0 + \beta_1 GDS_t - 1 + \beta_2 CAB_t - 1 + \beta_3 INF_t - 1 + \beta_4 OER_t - 1 + \beta_5 GDP_t - 1 + \beta_6 GEO_t - 1 + \sum_{i=1}^{p} \alpha_{1i} \Delta LNGDS_{t-i} + \sum_{i=j}^{q} \alpha_{2i} \Delta CAB_{t-i} + \sum_{i=j}^{q} \alpha_{3i} \Delta INF_{t-i} + \sum_{i=j}^{q} \alpha_{4i} OER_{t-i} + \sum_{i=j}^{q} \alpha_{5i} \Delta lnGDP_{t-i} + \sum_{i=j}^{q} \alpha_{6i} GEO_{t-i} + \varepsilon_t \quad (7)$$

Within the scope of the equation above, the long-term relationship between GDS, CAB, INF, OER, GDP, GEO variables is tested using the f-statistic value with the following hypotheses;

H_o: $\beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = \beta_6$ *(No Co-integration)*

H_1: $\beta_1 \neq \beta_2 \neq \beta_3 \neq \beta_4 \neq \beta_5 \neq \beta_6$ *(Co-integration Exists)*

In line with the hypotheses stated above, if the null hypothesis (H_0) is rejected, it is concluded that there exists a long-term cointegration relationship among the variables in the model. In this context, the cointegration test conducted for the variables is presented in Table 4. When the table is analyzed, it is observed that the F-statistic value is 4.99, which exceeds the critical threshold at the 1% significance level. This finding indicates the presence of a long-term cointegration relationship in the model.

Table 4. ARDL Bounds Test Estimation Results

Model		**f-stat**
$F(CAB, INF, OER, GDP, GEO)$		4.99
		Critical Values
Significance Level	Lower Limit	Upper Limit
%1	3.41	4.68
%5	2.62	3.79
%10	2.26	3.35
R^2:0.90		F-statistic 5.71
C R^2:0.74		Prob:0.00

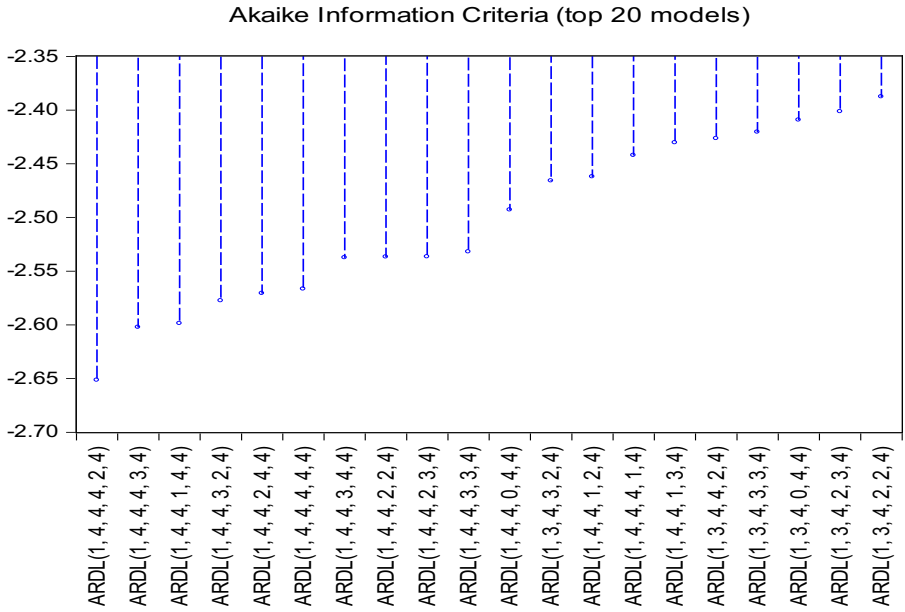
After determining the cointegration relationship between the variables, it is necessary to determine the appropriate model for the parameters in order to analyze the relationship between the variables in the long and short run. In the process of constructing these appropriate models, the functional expression for the long run is as follows;

$$LNGDS_t = \beta_0 + \sum_{i=j}^{P} \alpha_{1\dot{1}}\, \Delta LNGDS_{t-1} + \sum_{i=j}^{q} \alpha_{2i} CAB_{t-1} + \sum_{i=j}^{q} \alpha_{3i} INF_{t-1} + \sum_{i=j}^{q} \alpha_{4i} OER_{t-1} + \sum_{i=j}^{q} \alpha_{5i} \Delta LNGDP_{t-1} + \sum_{i=j}^{q} \alpha_{6i} \Delta GEO_{t-1} + \varepsilon_t \quad (8)$$

Once the long-run equation is estimated, an error correction model is applied to examine short-term fluctuations and assess the process by which the system returns to equilibrium. This approach allows to analyze short-term movements between variables and how they approach the long-term equilibrium. In the process of analyzing short-term effects, the lagged value of the error term derived from the long-term relationship of the previous period is integrated into the model. In this framework, the error correction model reflecting short-term dynamics is expressed as follows:

$$LNGDS_t = \beta 0 + \sum_{i=j}^{P} \alpha_{1i}\, \Delta LNGDS_{t-1} + \sum_{i=j}^{q} \alpha_{2i} CAB_{t-1} + \sum_{i=j}^{q} \alpha_{3i} INF_{t-1} + \sum_{i=j}^{q} \alpha_{4i} OER_{t-1} + \sum_{i=j}^{q} \alpha_{5i} \Delta LNGDP_{t-1} + \sum_{i=j}^{q} \alpha_{6i} GEO_{t-1} + \psi ECT_t - 1 + \boldsymbol{\varepsilon_t} \quad (9)$$

Chart 1 shows the Akaike Information Criterion tested for the appropriateness of the model established for the ARDL bounds test analysis. Accordingly, it is determined that the most appropriate model is (1,4,4,4,2,4) within the framework of this criterion.



Graph 1. Akaike Information Criteria

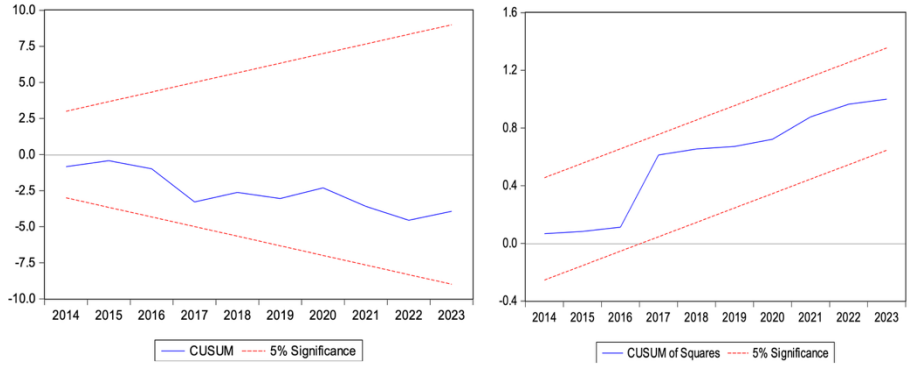
Table 5 presents the coefficient estimation findings including long and short run coefficients for the purpose of the study. In this context, when the long-run findings in the table are analyzed; GDP and INF variables have a positive effect on GDS, CAB and GEO variables have a negative effect on GDS, while OER variable is negative but not statistically significant . To summarize economic growth and inflation increase domestic savings, while current account deficit and geopolitical risks have a downward effect on savings. Moreover, the GDP variable has a more dominant positive effect on GDS than INF, while the GEO variable has a more dominant negative effect on GDS than CAB .

Short-run findings reveal that the effects of independent variables on the dependent variable generally follow a fluctuating course. However, an overall assessment suggests that geopolitical risks and exchange rate have negative effects on savings, while inflation and current account deficit have positive lagged effects. The calculated error correction coefficient is - 0.96. This result indicates that short-term imbalances return to equilibrium in approximately |1/-0.96| = 1.04 periods. In addition, the diagnostic test results presented in the Table show that the error terms are normally distributed, there is no autocorrelation problem, the functional form of the model is correct and variance invariance is ensured.

Table 5. ARDL Long and Short Run Analysis

Variables	Coefficient	t-stat	Probability
GDP.	2.31	7.70	0.00
INF	0.01	2.47	0.03
CAB	-0.11	-4.96	0.00
OER	-0.06	-1.67	0.12
GEO	-1.38	-3.52	0.00
C	-37.2	-4.54	0.00
Variables	**Coefficient**	**t-stat**	**Probability**
D GEO)	-0.343	-1.36	0.20
D(GEO (-1))	0.382	1.78	0.10
D(GEO(-2))	0.190	0.98	0.35
D(GEO(-3))	0.364	1.80	0.10
D(INF)	0.007	2.71	0.02
D(INF)	0.003	1.80	0.10
D(INF)	0.001	1.05	0.31
D(INF)	-0.010	-4.66	0.00
D(GDP)	0.941	1.47	017
D(GDP(-1))	0.165	0.14	0.88
D(GDP(-2))	-1.434	-1.58	0.14
D(GDP(-3))	0.747	1.18	0.26
D(OER)	-1.260	-4.29	0.00
D(OER(-1))	-0.504	-1.74	0.11
D(CAB)	-0.012	-1.12	0.28
D(CAB(-1))	0.028	2.85	0.01
D(CAB(-2))	0.005	0.51	0.61
D(CAB(-3))	0.034	3.55	0.00
ECM	-0**.96**	-5.21	0.00
	Diagnostics Tests	**t-stat**	**Probability**
	Jarque-Bera	1.13	0.56
	Breusch-Godfrey Serial Correlation LM Test	0.61	0.56
	Heteroskedasticity Test: ARCH	1.15	0.28
	Ramsey RESET Test	2.53	0.61

CUSUM and CUSUM SQ tests developed by Brown et al. (1975) are applied to detect structural breaks in the ARDL model. While the CUSUM test reveals possible structural changes by analyzing the cumulative movements of the error terms, the CUSUM SQ test evaluates whether the model is balanced within the specified confidence interval by examining the sum of squares of the error terms. Chart 2 shows that the variables remain within the critical limits at the 5% significance level. This supports that the coefficients of the variables used in the model are consistent over time and the model is generally reliable.



Graph 2. Cusum and Cusum SQ

4. CONCLUSION

Saving is an important religious, intellectual and economic concept and plays an important role in the sustainability of individual and social welfare. In order to utilize scarce resources in the most efficient way, maintain economic stability and ensure long-term development, it is of great importance to promote savings awareness. In this context, savings is not only a factor that increases individual financial security, but also a fundamental element in financing investments, supporting economic growth and increasing resilience against crises. Even though economic doctrines address the role of savings in the economy from different perspectives, their common point is that savings have an important place in the economic system.

The aim of this study is to empirically analyze the effects of economic growth on the level of savings in Turkey. To this end, macroeconomic factors determining saving dynamics are analyzed and current account balance, inflation, exchange rate and geopolitical risks are considered as control variables. In the econometric analysis conducted for this purpose, ADF (Augmented Dickey-Fuller) and PP (Phillips-Perron) unit root tests were applied to determine the stationarity of the variables. According to the findings of the analysis, geopolitical risk and current account balance variables are found to be stationary at the level and under the constant model, while other variables become stationary when first differences are taken. The PP test, which confirms the results of the ADF test, provides consistent findings. The co- integration relationship between the variables was analyzed with the ARDL bounds test and the F-statistic value was calculated as 4.99. This value is above the critical threshold at 1% significance level and indicates the existence of a long-term cointegration relationship in the model.

The research questions are answered in line with the findings obtained from the ARDL method. In this framework, the first research question, “Are economic growth, inflation, exchange rate and current account deficit the main determinants of domestic saving rate in Turkey in the long run?” can be answered as follows: The findings suggest that economic growth, inflation and current account deficit play a determinant role on the domestic saving rate in

Turkey in the long run. Economic growth (GDP) and inflation (INF) variables have a positive and significant effect on domestic saving rate (DSR). This indicates that rising income levels and inflation expectations may increase the propensity to save. This finding is also supported theoretically, as the uncertainty created by inflationary processes leads economic decision makers to increase their precautionary savings in order to secure their future expenditures (Mundell, 1963; Tobin, 1965; Deaton, 1977; Howard, 1977; Wachtel, 1977). On the other hand, the current account deficit (CAB) variable has a negative effect on domestic savings, while the exchange rate (OER) also has a negative effect, but this effect is not statistically significant.

The second research question, namely *"Do geopolitical risks affect domestic saving dynamics in Turkey? If so, what is the direction of this effect?"*, can be answered as follows based on the empirical findings: The results of the study reveal that geopolitical risks have a statistically significant and negative impact on domestic saving dynamics in Turkey. In particular, the increasing political and economic uncertainties stemming from Turkey's geopolitical environment exert downward pressure on the domestic saving rate. It has been identified that the geopolitical risk variable (GEO) exerts a stronger negative effect on the domestic saving rate than the current account balance (CAB). This indicates that during periods of heightened uncertainty, individuals tend to move away from precautionary saving behaviors and lean more towards short-term consumption. For instance, developments such as conflicts in neighboring countries, concerns regarding border security, or regional economic crises undermine economic agents' confidence in the Turkish economy, thereby negatively affecting both consumption and saving decisions. The growing perception of risk leads economic agents to postpone savings, act more cautiously in their investment decisions, and ultimately weakens the overall tendency to save. This finding constitutes the original contribution of the study and its added value to the literature. While most existing studies have primarily focused on macroeconomic determinants of saving, this research empirically demonstrates the impact of geopolitical risks on saving dynamics, thereby providing important evidence on a relatively underexplored relationship in the literature. In this regard, the study underscores the significance of geopolitical risks not only in the context of financial markets but also in terms of household behavior and saving tendencies, offering a meaningful contribution to the academic discourse

The findings of the study regarding the positive impact of economic growth on savings are consistent with and support the existing literature, including studies by Çetinkaya and Türk (2014), Alptekin et al. (2018), Bekar and Terzi (2018), Gül and Acar (2018), Altıner and Korkmaz (2023), Siaw et al. (2017), Ribaj and Mexhuani (2021), and Wanzala and Obokoh (2024). This result confirms the widely accepted view that rising income levels and investment capacity enhance individuals' propensity to save. In contrast, the findings related to the inflation variable align with those of Önder and Taş (2024) but differ from Altıner and Korkmaz (2023). This divergence suggests that the impact of inflation on savings may vary depending on country-specific

macroeconomic conditions, temporal uncertainties, and policy implementations.

In the light of the findings obtained from this study, researchers who want to conduct research on the factors affecting savings can make important contributions to the literature by examining the effects of geopolitical risks on the level of savings in different country groups.

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