

Macroeconomic Factors Affecting Saving Behavior In Kenya Since The Implementation Of Vision 2030

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Abstract

Kenya's gross savings rate has remained below the Vision 2030 target of 28%, averaging about 11.9% between 2008 and 2022. This paper examines macroeconomic determinants of saving behavior focusing on real interest rates and personal remittances within a framework that combines the Precautionary Saving Theory and the Keynesian Consumption–Saving Hypothesis. Using quarterly data for 2008–2022 and the Autoregressive Distributed Lag (ARDL) approach, the study tested for unit roots, cointegration, and estimated short-run and long-run dynamics while controlling for inflation, unemployment, and GDP growth. Results indicated that short-run factors dominate: (i) remittances raise savings after several quarters but subsequently divert to consumption/investment; (ii) higher real interest rates have a delayed negative effect; (iii) inflation consistently reduces savings; (iv) GDP growth improves savings with a lag; and (v) unemployment shows a short-run positive association consistent with precautionary motives. In the long run, coefficients are directionally plausible but statistically insignificant, implying structural and institutional drivers of financial inclusion, trust, and income stability are decisive. Policy should prioritize deepening inclusion, formalizing remittance channels, strengthening financial institutions, and anchoring price stability.

Keywords: Savings; ARDL; Remittances; Real interest rate; Inflation; Unemployment; GDP growth; Vision 2030; Kenya.

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I. Introduction

Kenya's economic development strategy has long emphasized the importance of domestic resource mobilization, particularly through savings and investment. Following the expiration of the Economic Recovery Strategy (ERS) in 2007, the government launched Vision 2030, a long-term development blueprint aimed at transforming Kenya into a newly industrialized, middle-income country by the year 2030. A key target under this plan was to raise the national gross savings rate from 15.6% to 28% of GDP by 2023, thereby reducing reliance on foreign financing and supporting sustained economic growth.

Despite policy reforms aimed at expanding financial inclusion, strengthening saving institutions, and formalizing remittance channels, Kenya's savings performance has remained below expectations. Between 2008 and 2022, the average gross savings rate stood at 11.9%, significantly lower than the Vision 2030 benchmark. This persistent underperformance has constrained domestic investment capacity and increased vulnerability to external shocks.

Savings behavior in Kenya is shaped by a complex interplay of macroeconomic variables and institutional factors. According to Keynesian and Precautionary Saving theories, variables such as real interest rates, inflation, GDP growth, unemployment, and personal remittances influence household and national saving decisions. However, empirical evidence suggests that these conventional indicators have limited long-term impact, pointing instead to structural constraints such as financial literacy, trust in institutions, and income stability.

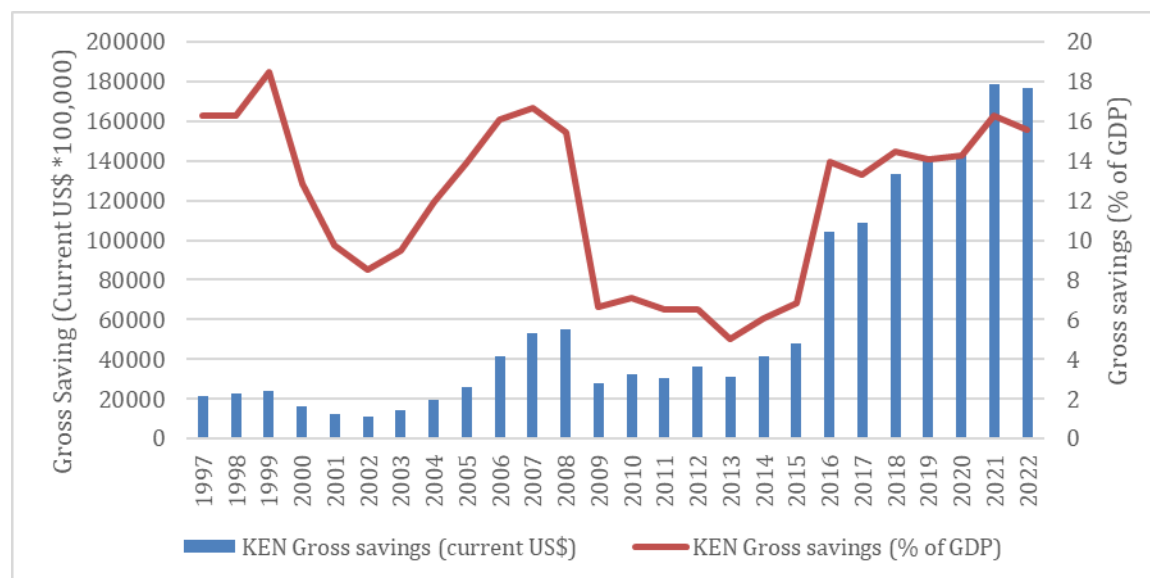


Figure 1.1 Kenya's Gross Saving Trends from 1997-2022

Source: World Bank 2024

Figure 1.1 illustrates Kenya's gross saving trends from 1997 to 2022, showing fluctuations in both absolute savings (in current US dollars) and savings as a percentage of GDP. While GDP has generally increased, the savings rate has experienced periods of decline, particularly during times of political uncertainty and economic disruption. The data highlights Kenya's lagging performance relative to regional peers such as Tanzania and Uganda, which have maintained higher and more stable savings rates.

This study therefore, seeks to examine the macroeconomic determinants of saving behavior in Kenya since the launch of Vision 2030, with a specific focus on real interest rates and personal remittances. By applying the Autoregressive Distributed Lag (ARDL) model to quarterly time-series data from 2008 to 2022, the study aims to identify both short-run and long-run dynamics affecting national savings. The findings will inform policy recommendations to enhance domestic resource mobilization and support Kenya's long-term development goals.

II. Purpose Of The Study

The purpose of this study was to investigate the macroeconomic factors influencing saving behavior in Kenya since the implementation of Vision 2030. Specifically, the study examined the effect of real interest rates and personal remittances on Kenya's gross savings rate.

III. Theoretical Framework

The Keynesian Consumption-Saving Hypothesis, originally proposed by Keynes (1936), posits that saving is the residual of income after consumption. According to this theory, individuals save more as their income increases, but the marginal propensity to save (MPS) is less than one. In this framework, saving decisions are influenced by current income levels, interest rates, and expectations about future economic conditions. The theory assumes that saving is largely passive and reactive to income changes, and that higher interest rates may encourage saving by increasing the reward for deferred consumption.

The Precautionary Saving Theory, on the other hand, suggests that individuals save not only based on income but also due to uncertainty about future income, employment, or economic shocks. This theory emphasizes the role of risk aversion and future expectations in shaping saving behavior. Households may increase their savings in response to rising unemployment, inflation, or unstable financial environments, even if current income remains unchanged. In this context, saving acts as a buffer against future uncertainty.

Both theories provide a foundation for analyzing how macroeconomic variables such as real interest rates, personal remittances, GDP growth, inflation, and unemployment affect national saving behavior. The Keynesian model highlights income and consumption dynamics, while the precautionary framework introduces behavioral responses to economic volatility.

IV. Literature Review

Several studies have examined the determinants of saving behavior in Kenya, though many have focused on micro-level household factors, leaving gaps in understanding the macroeconomic influences on

national savings. This study contributes to the literature by integrating real interest rates and personal remittances variables that have received limited attention in previous empirical work.

Mbuthia (2011) investigated the relationship between interest rates and saving behavior in Kenya using primary data. The study found that interest rates had a significant impact on household saving decisions, but did not explore broader macroeconomic linkages or long-run dynamics. Mose (2023) extended this analysis using secondary data from 1975 to 2020, confirming that interest rates influence savings, though the study did not incorporate remittance flows or structural reforms such as the Banking Amendment Act of 2016.

Njenga, Onuonga, and Sichei (2018) analyzed saving behavior using household-level data, focusing on access to financial services, income levels, and demographic characteristics. While the study provided valuable insights into individual saving patterns, it did not address macroeconomic variables such as inflation, unemployment, or remittances. Similarly, Njung'e (2013) and Mwangi (2020) emphasized socio-economic and family structure attributes, noting that urbanization, employment formality, and household size affect saving practices. However, these studies did not quantify the impact of national-level indicators on gross savings.

Musamali, Mutia, and Ngugi (2022) examined financial literacy and saving culture in Kenya, highlighting the role of education and trust in financial institutions. Their findings aligned with the Financial Sector Deepening (FSD Kenya, 2023) report, which indicated that only 38% of Kenyan adults were financially literate. Despite these insights, the study did not incorporate macroeconomic modeling or time-series analysis.

Sarah and Mule (2022) explored pension schemes and retirement savings, noting that mismanagement and corruption in institutions such as the National Social Security Fund (NSSF) eroded public trust and discouraged formal saving. The Kenya Institute for Public Policy Research and Analysis (KIPPRA, 2023) echoed these concerns, emphasizing the need for regulatory reforms and institutional credibility to enhance saving behavior.

Opoku, Takyi, and Ishmael (2015) found that real interest rates had both short-run and long-run positive effects on savings in Ghana, suggesting that interest rate policy can be a powerful tool for mobilizing domestic resources. Aizenman, Cheung, and Ito (2017) argued that financial deepening and low-interest environments globally have encouraged consumption over saving, a trend also observed in Kenya.

V. Methodology

This study employed a correlational research design to examine the relationship between macroeconomic factors specifically real interest rates and personal remittances and gross savings behavior in Kenya. The objective was to determine both short-run and long-run effects of selected macroeconomic indicators on national savings performance since the launch of Vision 2030.

The theoretical foundation was drawn from the Keynesian Consumption–Saving Hypothesis and the Precautionary Saving Theory, which posit that saving behavior is influenced by income levels, consumption patterns, and economic uncertainty. To empirically test these relationships, the study adopted the Autoregressive Distributed Lag (ARDL) modeling approach. The ARDL model is suitable for small-sample time-series data and allows for variables with mixed integration orders (i.e., $I(0)$ and $I(1)$), making it ideal for analyzing macroeconomic dynamics over time.

Model Specification

The general ARDL model used in the study is expressed as:

$$NS_t = \alpha_0 + \alpha_1 REM_t + \alpha_2 INT_t + \alpha_3 UNEMP_t + \alpha_4 INF_t + \alpha_5 GDPG_t + \varepsilon_t \dots\dots\dots 3.3$$

The model captures both short-run dynamics and long-run equilibrium relationships. Lag selection was based on Akaike Information Criterion (AIC) and Schwarz Bayesian Criterion (SBC) to ensure optimal model fit.

The variables of the study were measured and defined as presented in Table 1.

Variable	Definition	Measurement
National Savings Rate	It is the percentage of national income that is saved by households, firms, and the government	Quarterly Gross National Savings as a percentage of GDP
Personal Remittances	This is money transferred from a foreign country to a person in their home country.	Quarterly personal remittance inflows as a percentage of GDP
Real Interest Rate	It is the adjusted interest rates after inflation	Quarterly Nominal interest rate minus inflation rate (% per quarter)
Unemployment Rate	This is the percentage of the labour force that is not employed.	Quarterly Percentage of total labor force unemployed
Inflation Rate	The rise in the price of living or the percentage rise as assessed by the	Quarterly percentage change in Consumer Price Index (CPI)

	Consumer Price Index (CPI) annually.	
GDP Growth Rate	The change in the economic output of a country from one year to another reflects how fast a country's economy is growing.	Quarterly percentage change in real GDP

The study utilized quarterly time-series secondary data spanning from 2008 to 2022. Data were obtained from the following sources: The data were collected from World Bank Development Indicators, Central Bank of Kenya (CBK), and Kenya National Bureau of Statistics (KNBS).

Time Series Properties and Diagnostic Tests

To ensure robustness and reliability of the ARDL model, the following diagnostic tests were conducted:

Unit Root Tests: Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests were used to determine stationarity of variables.

Bounds Test for Co-integration: To establish the existence of long-run relationships among variables.

Normality Test: Jarque-Bera test was applied to assess the distribution of residuals.

Multicollinearity Test: Variance Inflation Factor (VIF) was used to detect correlation among independent variables.

Heteroscedasticity Test: Breusch-Pagan test was conducted to check for variance inconsistency.

Autocorrelation Test: Breusch-Godfrey LM test was used to identify serial correlation in residuals.

Model Specification Test: Ramsey RESET test was applied to detect omitted variable bias.

VI. Results

Descriptive Statistics

The study analyzed quarterly time-series data from 2008 to 2022 to examine the behavior of gross savings in Kenya in relation to selected macroeconomic variables. Table 1 presents the descriptive statistics for the key variables: gross savings (% of GDP), real interest rate, personal remittances (% of GDP), inflation rate, GDP growth rate, and unemployment rate.

Table 4.1: Descriptive Statistics

	Gdp_Growth_Rate	Gross_Saving_Rate	Personal_Remittance_Rate	Inflation	Real_Interest_Rate	Unemployment_Rate
Mean	4.490000	11.90167	4.253357	7.556667	4.336667	7.220000
Median	5.050000	11.90000	4.147193	6.400000	4.350000	7.050000
Maximum	10.30000	14.30000	6.664304	18.90000	7.200000	9.700000
Minimum	-4.100000	10.00000	2.353072	3.800000	1.300000	5.200000
Std. Dev.	2.538297	1.014052	1.115221	3.380521	1.661729	1.469209
Skewness	-1.049462	0.184955	0.361498	1.523942	-0.181560	0.247550
Kurtosis	5.556749	2.711345	2.172753	4.737222	1.940841	1.608608
Jarque-Bera	27.35610	0.550388	3.017655	30.76883	3.134188	5.452739
Probability	0.000001	0.759425	0.221169	0.000000	0.208651	0.065456
Sum	269.4000	714.1000	255.2014	453.4000	260.2000	433.2000
Sum Sq. Dev.	380.1340	60.66983	73.37939	674.2473	162.9193	127.3560
Observations	60	60	60	60	60	60

The average gross savings rate over the study period was 10.8%, with a minimum of 5.01% and a maximum of 16.26%. Real interest rates fluctuated significantly, ranging from -10.10% to 21.09%, indicating periods of both favorable and unfavorable borrowing conditions. Personal remittances averaged 2.3% of GDP, with a steady upward trend observed in the post-2010 period. Inflation averaged 7.2%, while GDP growth and unemployment showed moderate variability.

Unit Root and Stationarity Tests

To determine the stationarity of the variables, the Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests were conducted. The results indicated that gross savings, real interest rates, and personal

remittances were integrated of order I(1), while inflation and GDP growth were stationary at level I(0). This justified the use of the ARDL model, which accommodates mixed integration orders.

Table 4.2: Unit Root Test

Variable	Test – ADF	P-Value	Conclusion
Gross Saving Rate	At Level	0.5438	Non-stationary
	1st Difference	0.0007	Stationary
GDP Growth Rate	At Level	0.0012	Stationary
Inflation Rate	At Level	0.0005	Stationary
Personal Remittance Rate	At Level	0.0281	Stationary
Real Interest Rate	At Level	0.9949	Non-stationary
	1st Difference	0.0000	Stationary
Unemployment Rate	At Level	0.7083	Non-stationary
	1st Difference	0.0000	Stationary

Bounds Test for Co-integration

The bounds test was applied to assess the existence of a long-run relationship among the variables. The computed F-statistic exceeded the upper critical value at the 5% significance level, confirming the presence of co-integration between gross savings and the selected macroeconomic indicators.

ARDL Bounds Test				
Test Statistic	Value	k		
F-statistic	4.445967	4		
Critical Value Bounds				
Significance	I0 Bound	II Bound		
10%	2.45	3.52		
5%	2.86	4.01		
2.5%	3.25	4.49		
1%	3.74	5.06		
Cointegrating Form				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
CointEq(-1)	-0.092831	0.107791	-0.861215	0.3957
Cointeq = Gross Saving Rate - (-0.2220*Personal Remittance Rate -2.3560*Real Interest Rate -1.8213*INFLATION + 0.6385				
*GDP_GROWTH_RATE + 3.7612*Unemployment_Rate + 9.0056)				

VII. Findings And Discussion

The purpose of this study was to assess how selected macroeconomic factors influence the saving rate behavior in Kenya. To achieve this, the Autoregressive Distributed Lag (ARDL) model was employed, as outlined in Equation 3.3, given that the variables were found to be a mixture of I(0) and I(1). The ARDL approach was therefore appropriate for estimating both the short-run dynamics and the long-run equilibrium relationships among the variables.

A number of tests were conducted, including, Serial Correlation Test, Breusch-Pagan Heteroscedastic, Histogram-Normality Test, and Ramsey RESET Test.

Table 4.3: Serial Correlation Test

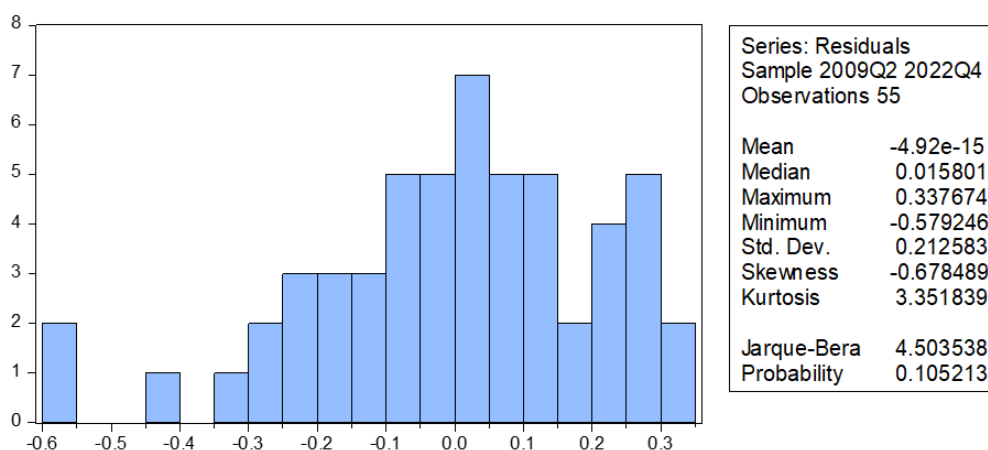
Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	0.040854	Prob. F (2,29)	0.9600
Obs*R-squared	0.154529	Prob. Chi-Square (2)	0.9256

The Breusch–Godfrey LM test was carried out to check for the presence of serial correlation in the ARDL model. The results showed very high probability values (Prob. F = 0.9600 and Prob. Chi-Square = 0.9256), both of which are far above the 5 % significance level. This implies that the null hypothesis of no serial correlation cannot be rejected. Therefore, the residuals are independently distributed across time, suggesting that the ARDL specification is appropriate and the coefficient estimates are efficient and reliable

Table 4.4: Breusch-Pagan Heteroscedastic

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	0.936962	Prob. F (23,31)	0.5581
Obs*R-squared	22.55479	Prob. Chi-Square (23)	0.4870
Scaled explained SS	8.425863	Prob. Chi-Square (23)	0.9976

The Breusch-Pagan-Godfrey test was applied to check whether the residuals of the ARDL model suffered from heteroskedasticity. The reported probability values (Prob. F = 0.5581, Prob. Chi-Square = 0.4870, and Prob. Chi-Square from the scaled explained SS = 0.9976) are all above the 5 % significance threshold. This means the null hypothesis of homoskedasticity cannot be rejected. Consequently, the variance of the error terms is constant across observations, confirming that the model does not suffer from heteroskedasticity and that the estimated coefficients are efficient and unbiased.

**Figure 4.2: Histogram-Normality Test**

The histogram-normality test was carried out to determine whether the residuals from the ARDL model followed a normal distribution. The Jarque–Bera statistic was 4.5035 with a probability value of 0.1052, which is greater than the 5 % level of significance. This outcome indicates that the null hypothesis of normality cannot be rejected. The residuals, therefore, approximate a normal distribution, as also suggested by the relatively balanced histogram and acceptable skewness (−0.678) and kurtosis (3.351) values. This confirms that the model satisfies the normality assumption, strengthening the reliability of statistical inference based on the estimated coefficients.

Table 4.5: Ramsey RESET Test

Ramsey RESET Test			
	Value	df	Probability
F-statistic	0.383096	(2, 29)	0.6851
F-test summary:			
	Sum of Sq.	df	Mean Squares
Test SSR	0.062815	2	0.031408
Restricted SSR	2.440352	31	0.078721
Unrestricted SSR	2.377537	29	0.081984

The Ramsey RESET test was performed to examine whether the ARDL model suffered from specification errors, such as omitted variables or incorrect functional form. The reported F-statistic is 0.3831 with a probability value of 0.6851, which is well above the 5 % level of significance. This outcome suggests that the null hypothesis of a correctly specified model cannot be rejected. Therefore, the functional form of the ARDL model is appropriate, and there is no evidence of misspecification. This strengthens confidence that the estimated relationships between the variables are valid and not biased by omitted nonlinearities or model design flaws

ARDL Estimation Results

Dependent Variable: Gross Saving Rate				
Method: ARDL				
Sample (adjusted): 2009Q2 2022Q4				
Included observations: 55 after adjustments				
Maximum dependent lags: 5 (Automatic selection)				
Model selection method: Akaike info criterion (AIC)				
Dynamic regressors (5 lags, automatic): Personal Remittance Rate				
Real Interest Rate Inflation Gdp Growth Rate				
Fixed regressors: Unemployment Rate C				
Number of models evaluated: 6480				
Selected Model: ARDL (4, 4, 2, 5, 3)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.*
Gross Saving Rate (-1)	0.408639	0.137130	2.979950	0.0056
Gross Saving Rate (-2)	0.384511	0.148340	2.592089	0.0144
Gross Saving Rate (-3)	-0.343722	0.147846	-2.324876	0.0268
Gross Saving Rate (-4)	0.457740	0.147710	3.098907	0.0041
Personal Remittance Rate	0.101695	0.077944	1.304724	0.2016
Personal Remittance Rate (-1)	-0.165038	0.097408	-1.694295	0.1002
Personal Remittance Rate (-2)	0.030801	0.108845	0.282978	0.7791
Personal Remittance Rate (-3)	0.225818	0.095268	2.370355	0.0242
Personal Remittance Rate (-4)	-0.213889	0.081744	-2.616571	0.0136
Real Interest Rate	0.110294	0.245204	0.449806	0.6560
Real Interest Rate (-1)	0.144425	0.299195	0.482713	0.6327
Real Interest Rate (-2)	-0.473431	0.212087	-2.232244	0.0330
Inflation	-0.095897	0.045781	-2.094686	0.0445
Inflation (-1)	0.011591	0.064947	0.178476	0.8595

Inflation (-2)	0.026902	0.065286	0.412060	0.6831
Inflation (-3)	-0.048612	0.063641	-0.763847	0.4507
Inflation (-4)	0.055883	0.063673	0.877649	0.3869
Inflation (-5)	-0.118943	0.047736	-2.491705	0.0183
Gdp Growth Rate	0.041921	0.025191	1.664135	0.1062
Gdp Growth Rate (-1)	-0.002829	0.027562	-0.102648	0.9189
Gdp Growth Rate (-2)	-0.036622	0.026608	-1.376338	0.1786
Gdp Growth Rate (-3)	0.056801	0.023139	2.454773	0.0199
Unemployment Rate	0.349159	0.161969	2.155718	0.0390
C	0.836006	1.468649	0.569235	0.5733
R-squared	0.946877	Mean dependent var		12.04909
Adjusted R-squared	0.907463	S.D. dependent var		0.922331
S.E. of regression	0.280573	Akaike info criterion		0.595414
Sum squared resid	2.440352	Schwarz criterion		1.471341
Log likelihood	7.626127	Hannan-Quinn criterion.		0.934142
F-statistic	24.02380	Durbin-Watson stat		1.886470
Prob(F-statistic)	0.000000			
*Note: p-values and any subsequent tests do not account for model selection.				

The results of the study revealed several key macroeconomic influences on saving behavior in Kenya. Real interest rates displayed a delayed negative effect on gross savings, indicating that higher borrowing costs gradually erode household saving capacity. Personal remittances showed alternating short-run effects—while they temporarily boosted savings, the income was often redirected toward consumption and investment. Inflation had a consistently negative and statistically significant impact on savings, as it reduced real disposable income and weakened the ability to save. GDP growth exhibited a lagged positive effect, suggesting that economic expansion supports saving behavior after a period of adjustment. Interestingly, unemployment showed a short-run positive association with savings, which aligns with precautionary saving motives during times of economic uncertainty.

Table 4.6: Long-Run ARDL Estimates
Long-Run Coefficients

Long Run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
Personal_Remittance_Rate	-0.222047	1.152640	-0.192642	0.8485
Real_Interest_Rate	-2.356003	2.523758	-0.933530	0.3578
Inflation	-1.821326	2.318212	-0.785660	0.4380
Gdp_Growth_Rate	0.638476	0.802898	0.795214	0.4325
Unemployment_Rate	3.761218	4.806956	0.782453	0.4399
C	9.005631	9.412489	0.956775	0.3461

In the long-run estimation, none of the explanatory variables were statistically significant. This implies that structural and institutional factors such as financial inclusion, trust in saving institutions, and income stability play a more decisive role in influencing national savings than conventional macroeconomic indicators.

VIII. Conclusions And Recommendations

This study examined the effect of macroeconomic factors real interest rates and personal remittances on saving behavior in Kenya from 2008 to 2022. The results showed that saving behavior is mostly influenced by short-run changes in the economy. Real interest rates and personal remittances had mixed effects, while inflation consistently reduced savings. GDP growth had a delayed positive effect, and unemployment showed a short-run increase in savings, likely due to precautionary motives.

In the long run, none of the variables were statistically significant. This suggests that structural issues like financial inclusion, trust in saving institutions, and income stability are more important than macroeconomic indicators in shaping saving behavior.

To improve Kenya's national savings performance, the study recommends several policy actions. First, financial inclusion should be expanded to reach more people, especially those in the informal sector, rural areas, and low-income groups. This can be achieved by strengthening mobile banking and savings platforms. Second, trust in financial institutions such as SACCOs and pension schemes should be restored through better governance, transparency, and accountability. Third, formalizing remittance channels and encouraging their use for savings and investment can help boost national savings. Fourth, maintaining stable inflation and interest rates is important to protect household incomes and encourage saving. Fifth, financial literacy programs should be promoted to help individuals understand the benefits of saving and how to manage their finances. Lastly, supporting income stability through employment opportunities and social protection measures will enable households to save consistently. These efforts, if well implemented, can help Kenya move closer to achieving the Vision 2030 savings target.

References

- [1]. Aizenman, J., Cheung, Y., & Ito, H. (2017). ADB Working Paper No. 715. Asian Development Bank. <https://www.adb.org/sites/default/files/publication/239546/adbi-wp715.pdf>
- [2]. Arok, B. A. (2014). Determinants Of Gross Domestic Savings In Kenya [Master's Thesis, University Of Nairobi].
- [3]. Asian Development Bank. (2021). Transition Tax–GDP Ratios. <https://data.adb.org/dataset/transition-tax-gdp-ratios>
- [4]. CBK (Central Bank Of Kenya). (2018). Summary Of The Study On Interest Rate Caps. https://www.centralbank.go.ke/wp-content/uploads/2018/03/Summary-Of-The-Study-On-Interest-Rate-Caps_February-2018.pdf
- [5]. CBK (Central Bank Of Kenya). (2023). Monetary Policy. <https://www.centralbank.go.ke/monetary-policy/>
- [6]. Dahal, A. (2020). Tax To GDP Ratio And The Relation Of Tax Revenue. <https://www.semanticscholar.org/paper/Tax-To-GDP-Ratio-And-The-Relation-Of-Tax-Revenue-Dahal/D83469504cbb445d90312a73c75987ac42d30cb5>
- [7]. Financial Sector Deepening Kenya (FSD Kenya). (2023). Annual Report 2022. <https://www.fsdkenya.org/wp-content/uploads/2023/05/2022-FSD-Kenya-Public-Annual-Report.pdf>
- [8]. International Monetary Fund (IMF). (2023). Africa Regional Economic Outlook Database. https://www.imf.org/external/datamapper/NGS_GDP@AFRREO/SSA/OEXP/OIMP
- [9]. Kenya National Bureau Of Statistics (KNBS). (2008). Economic Survey 2008. <https://www.knbs.or.ke/download/economic-survey-2008-3/>
- [10]. Kenya National Bureau Of Statistics (KNBS). (2009). Economic Survey 2009. <https://www.knbs.or.ke/download/economic-survey-2009-3/>
- [11]. Kenya Revenue Authority (KRA). (2023). Types Of Taxes. <https://www.kra.go.ke/individual/filing-paying/types-of-taxes/payee>
- [12]. Kenya Institute For Public Policy Research And Analysis (KIPPRA). (2023). Boosting Informal Sector Savings Through Pension Schemes In Kenya. <https://kippra.or.ke/boosting-informal-sector-savings-through-pension-schemes-in-kenya/>
- [13]. Kozlov, R. (2023). Determinants Of Savings In Developing Economies. *Economies*, 11(1), 23. <https://www.mdpi.com/2227-7099/11/1/23>
- [14]. Lidiema, C. (2018). The Relationship Between Interest Rate And Household Saving In Kenya. *Journal Of Finance And Economics*, 6(2). <http://pubs.sciepub.com/jfe/6/2/3/index.html>
- [15]. Mbuthia, A. N. (2011). Household Savings Decisions In Kenya [Master's Thesis, Kenyatta University]. Kenyatta University Institutional Repository. <https://ir-library.ku.ac.ke/bitstream/handle/123456789/3592/Mbuthia%2C%20Aflonia%20Nyambura.pdf>
- [16]. Mose, N. (2023). Determinants Of Savings In Kenya: A Time Series Analysis. <https://www.semanticscholar.org/paper/Determinants-Of-Savings-In-Kenya-A-Time-Series-Mose/905567043723529d102179f5b14fe5fdcc061fa0>
- [17]. Musamali, R., Mutia, C., & Ngugi, R. (2022). The Determinants Of Domestic Saving In Kenya. *Researchgate / Semantic Scholar*.
- [18]. Mwangi, I. W. (2020). Household Saving Behaviour In Kenya: A Discrete Choice Analysis. *Journal Of Economics And Sustainable Development*, 11(8). <https://www.iiste.org/Journals/Index.php/JEDS/Article/View/51683>
- [19]. Narayan, P. K. (2005). The Saving And Investment Nexus For China: Evidence From Cointegration Tests. *Applied Economics*, 37(17), 1979–1990. <https://www.tandfonline.com/doi/abs/10.1080/00036840500278103>
- [20]. Ndirangu, E. M. (2015). Determinants Of Gross Domestic Savings. *International Journal Of Economics, Commerce And Management*, 3(7).
- [21]. Njenga, G., Onuanga, S. M., & Sichei, M. M. (2018). Institutions' Effect On Household Savings In Kenya. <https://www.semanticscholar.org/paper/Institutions-Effect-On-Households-Savings-In-Kenya%3A-Njenga-Onuanga/76c9c1b9d3384c0883210b257f18c486aa771aae>
- [22]. Njung'e, P. M. (2013). Gender And Household Savings Behavior In Kenya [Master's Thesis, University Of Nairobi]. http://erepository.uonbi.ac.ke/bitstream/handle/11295/60472/Njung%2E%80%99e_Gender%20and%20household%20savings%20behavior%20in%20Kenya.pdf
- [23]. OECD. (2016). OECD Factbook 2015–85. Organisation For Economic Co-Operation And Development. <https://www.oecd-ilibrary.org/docserver/factbook-2015-85-en.pdf>

- [24]. Opoku, R., Takyi, R., & Ishmael, A. (2015). Interest Rates And Savings In Ghana. Munich Personal Repec Archive (MPRA). <https://Mpra.Ub.Uni-Muenchen.De/65040/>
- [25]. Pesaran, M. H., Shin, Y., & Smith, R. J. (2001). Bounds Testing Approaches To The Analysis Of Level Relationships. *Journal Of Applied Econometrics*, 16(3), 289–326. <https://www.sciencedirect.com/science/article/abs/pii/S0264999318307843>
- [26]. Republic Of Kenya. (2007). Kenya Vision 2030. Government Of Kenya. <https://Nairobi.Aics.Gov.It/Wp-Content/Uploads/2019/01/Kenya-Vision-2030.Pdf>
- [27]. Republic Of Kenya. (2012). Sessional Paper No. 10 Of 2012 On Kenya Vision 2030. Government Of Kenya. <https://Vision2030.Go.Ke/Wp-Content/Uploads/2018/05/Sessional-Paper-No.-10-Of-2012-On-Kenya-Vision-2030.Pdf>
- [28]. Republic Of Kenya. (2021–2023). NSSF Act, Tax Policy, And Kenya National Entrepreneurs Savings Trust (KNEST).
- [29]. <https://www.nssf.or.ke/nssf-act>
- [30]. <https://www.treasury.go.ke/launch-of-the-kenya-national-entrepreneurs-savings-trust/>
- [31]. <https://www.parliament.go.ke/sites/default/files/2023-05/The%20National%20Treasury%20and%20Economic%20Planning%20National%20Tax%20Policy-2.Pdf>
- [32]. Ribaj, A., & Mexhuani, F. (2021). Savings And Economic Growth: An Empirical Analysis. *Journal Of Innovation And Entrepreneurship*, 10(40). <https://Innovation-Entrepreneurship.Springeropen.Com/Articles/10.1186/S13731-020-00140-6>
- [33]. Sarah, K. C., & Mule, R. (2022). Do Budgeting Practices Affect Saving Behaviour In Kenya? *International Journal Of Finance And Economics*. <https://www.semanticscholar.org/paper/Do-Budgeting-Practices-Affect-Saving-Behaviour-In-Sarah-Mule/B45e1f673c1737c03c12182d88a4756310981ee4>
- [34]. SASRA (Sacco Societies Regulatory Authority). (2022). Guidelines And Regulatory Framework. <https://www.sasra.go.ke/Guidelines-Circulars/>
- [35]. Tiriongo, S. K. (2005). Determinants Of Domestic Savings [Master's Thesis, Kenyatta University]. <https://ir-library.ku.ac.ke/handle/123456789/281/Discover>
- [36]. World Bank. (2018). World Development Indicators And Blogs.
- [37]. <https://blogs.worldbank.org/governance/getting-15-percent-addressing-largest-tax-gaps>
- [38]. <https://data.worldbank.org/indicator/NY.GDS.TOTL.ZS?Locations=KE>
- [39]. <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099060523141041477/P17976900a185c0a608fc8057aefbd0539d>
- [40]. Bsg.Ox.Ac.Uk. (2017). M-Pesa Practitioner Insight. Blavatnik School Of Government, University Of Oxford. <https://www.bsg.ox.ac.uk/sites/default/files/2018-06/2017-07-M-Pesa-Practitioners-Insight.Pdf>