

Foreign Investment and Trade Balance Dynamics in Kenya: A Decadal Review

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DOI: <https://doi.org/10.47772/IJRISS.2026.1015EC0096>

Received: 14 August 2026; Accepted: 19 August 2026; Published: 31 August 2026

ABSTRACT

This study examines relationship between Financial Account Balance and Merchandise Trade Balance in Kenya, while controlling for gross domestic product (GDP), inflation, and exchange rate. Kenya has continued to experience a persistent merchandise trade deficit because imports of petroleum products, machinery, industrial supplies, and intermediate goods have generally exceeded export earnings. At the same time, Financial Account movements have remained important in financing external-sector activities and influencing the wider balance-of-payments position. Unlike foreign direct investment, Financial Account Balance is a broader measure that includes cross-border direct investment, foreign portfolio investment, other investment, financial derivatives, and reserve-related transactions. The study therefore focuses on Financial Account Balance rather than FDI.

The study uses quarterly secondary data covering the period from 2014Q1 to 2025Q2. An Autoregressive Distributed Lag (ARDL) approach was applied since the variables were found to have mixed orders of integration, $I(0)$ and $I(1)$, with none of the variables being integrated of order two. The selected model was $ARDL(4, 4, 4, 0, 0)$, based on the Akaike Information Criterion. The analysis involved descriptive statistics, the unit-root tests, the ARDL Bound Test for cointegration, long-run estimation, an error-correction model, and diagnostic tests.

The Bounds Test results gave a statistically significant long-run relationship for Merchandise Trade Balance, Financial Account Balance, GDP, inflation, and exchange rate. The calculated F-statistic of 14.4315 exceeded the upper-bound critical values at the 1% significance level, leading to rejection of the null hypothesis of no levels relationship. In the long run, Financial Account Balance had a positive and statistically significant relationship with Merchandise Trade Balance. GDP had a negative coefficient that was significant at the 5% level, suggesting that economic growth may be associated with increased import demand. Inflation and exchange rate did not have statistically significant long-run effect in the estimated model.

The error-correction term was negative and statistically significant. This confirmed adjustment toward long-run equilibrium. However, its magnitude of -1.6997 indicates an overshooting adjustment process, in which deviations are corrected through damped fluctuations. Short-run results show that changes in Financial Account Balance and GDP influence Merchandise Trade Balance across several lags. Diagnostic results found no evidence of heteroskedasticity, but evidence of serial correlation was observed; therefore, the results should be interpreted cautiously and the model should be further refined before final policy conclusions are made.

The study recommends policies that promote productive and export-supporting financial flows, reduce import dependence, strengthen domestic value addition, and improve monitoring of the different components of the Financial Account.

Keywords: Financial Account Balance; Merchandise Trade Balance; ARDL Bounds Test; GDP; Inflation; Exchange Rate; Kenya.

BACKGROUND OF THE STUDY

Globalization has made international trade and foreign financial flows important drivers of economic growth and development. International financial flows can support investment, technology transfer, employment creation, and the expansion of productive capacity. At the same time, many developing economies experience persistent trade deficits because demand for capital goods, petroleum products, machinery, and manufactured imports exceeds export earnings (United Nations Conference on Trade and Development [UNCTAD], 2024).

Across Africa, foreign investment and financial inflows have been influenced by economic reforms, trade liberalization, regional integration, infrastructure development, and expanding market opportunities. However, many African countries continue to face structural trade challenges because their exports are mainly primary commodities, while their imports include manufactured goods, machinery, energy products, and industrial inputs. Consequently, increased financial flows do not automatically improve trade balances; their effect depends on the sectors receiving the funds and their capacity to support domestic production and exports (UNCTAD, 2024).

In Kenya, the relationship between financial-account movements and trade balance is important for economic planning and macroeconomic stability. Kenya has historically recorded a merchandise trade deficit, meaning that the value of imports is more than the value of exports. In 2024, Kenya's total trade reached approximately KSh 3.8 trillion, while the merchandise trade deficit stood at about KSh 1.59 trillion. Major imports included petroleum products, machinery, fats and oils, plastic articles, and iron and steel, whereas leading exports included horticultural products, tea, apparel, coffee, and re-exports (Kenya National Bureau of Statistics [KNBS], 2025).

Financial Account movements may influence Kenya's trade balance through several channels. Financial inflows can support investment, infrastructure development, production capacity, and export-oriented activities. However, they may also increase imports of machinery, technology, intermediate inputs, and capital goods, particularly in the short run. Therefore, the overall relationship between Financial Account movements and the trade balance is theoretically ambiguous and requires empirical examination (Osoro, 2013; UNCTAD, 2024).

In addition to Financial Account movements, the trade balance may be influenced by important macroeconomic conditions. GDP is included as a control variable because economic growth may increase domestic production and exports, but it may also increase demand for imports. Inflation is included because higher domestic prices may reduce export competitiveness and increase production costs. Exchange rate is also important because changes in the value of the Kenya Shilling affect the domestic cost of imports and the foreign-currency price of exports (International Monetary Fund [IMF], 2024).

Kenya has experienced changing macroeconomic conditions, including exchange-rate movements, inflationary pressures, fluctuating financial flows, and continued reliance on imported energy and capital goods. These conditions make it important to examine the relationship between Merchandise Trade Balance and Financial Account, while controlling for GDP, inflation, and exchange rate. This study therefore investigates the short-run and long-run dynamics of these variables in Kenya over the study period (IMF, 2024; KNBS, 2025).

Statement Of The Problem

Kenya has continued to experience a persistent merchandise trade deficit, with the value of imports remaining higher than the value of exports. The country relies heavily on imported petroleum products, machinery, industrial supplies, transport equipment, and intermediate goods, while export earnings are mainly derived from tea, horticulture, apparel, coffee, manufactured goods, and re-exports. This trade imbalance places pressure on foreign-exchange reserves, the exchange rate, and the country's overall external position (Kenya National Bureau of Statistics [KNBS], 2025).

Financial Account Balance is important in financing external-sector transactions and may influence the trade balance through capital inflows, portfolio investment, loans, trade credit, reserve movements, and other cross-border financial transactions. However, the effect of Financial Account Balance on Merchandise Trade Balance is not clear. Financial flows may improve the trade balance if they support productive investment, domestic

production, infrastructure, and export-oriented activities. On the other hand, they may worsen the trade balance if they finance imports of machinery, fuel, intermediate goods, and consumer products. Since Financial Account Balance is broader than foreign direct investment, it should not be treated as an FDI measure (International Monetary Fund [IMF], 2009).

The trade balance is also affected by macroeconomic conditions. GDP growth may increase domestic production and export capacity, but it can also increase import demand. Inflation may affect production costs and export competitiveness, while exchange-rate movements may alter the prices of imports and exports. Kenya has experienced changes in these macroeconomic variables alongside changing financial-account flows and persistent trade deficits, making it necessary to examine their joint relationship (IMF, 2024).

Although existing studies have examined foreign direct investment, economic growth, exchange rate, and the balance of payments in Kenya, limited evidence explains the long-run and short-run relationship between Financial Account Balance and Merchandise Trade Balance while controlling for GDP, inflation, and exchange rate. This study therefore addresses this gap by applying an ARDL approach to examine whether Financial Account Balance significantly influences Kenya's Merchandise Trade Balance over the study period.

Research Objective

This study analyzes the dynamics of foreign flows and trade balance in Kenya over the past decade (2014 to 2025) and examines how foreign investment flows has influenced export performance, import dependency, and overall trade sustainability.

Specific Objectives

1. To examine trends in Kenya's trade balance over the last ten years, including the composition of imports and exports, assess the patterns and levels of financial flows into Kenya during the same period, and identify the key sectors attracting Foreign investments.
2. To evaluate the relationship between foreign financial flows and trade balance, specifically how Foreign Investments impacts export growth, import dependency, and trade sustainability.
3. Examine the long-run and short-run dynamics between Foreign investments flows and the trade balance.
4. To identify the policy and structural factors that have influenced the effectiveness of Foreign investments in improving Kenya's trade balance.

Research Questions

1. What have been the trends in Kenya's trade balance from 2014 to 2025, and how have imports and exports evolved during this period?
2. What are the patterns and levels of foreign direct investment in Kenya during the past decade?
3. What policy and structural factors have affected Foreign investment flows' ability to improve Kenya's trade balance?
4. Does Foreign investment flows improve or worsen Kenya's trade balance?
5. Is the impact immediate or delayed?

Justification Of The Study

The study of foreign Financial flows and trade balance dynamics in Kenya is important for several economic, policy, and academic reasons. Kenya has consistently faced a trade deficit, with imports surpassing exports, creating pressure on foreign exchange reserves hence impacting its macroeconomic stability. Understanding the

role Foreign investment flows plays in influencing trade patterns is crucial, as FDI and FPIs can stimulate industrial capacity, technology transfer, and export growth, potentially reducing import dependency in the process. This study provides insights into how FDI, FPI and Remittances contributes to sustainable economic growth and trade stability, which is essential for policymakers, investors, and economic planners.

Despite various policy measures, such as investment incentives, trade facilitation agreements (AGOA, EU EPA), and export promotion initiatives, Kenya continues to struggle with persistent trade imbalances and fluctuating FDI inflow. By analyzing decadal trends and sectoral impacts, this study offers evidence-based recommendations for improving policy effectiveness. It can guide the design of targeted investment incentives to attract sustainable FDI, Strategies for export diversification and trade competitiveness, and measures to strengthen sector-specific trade and investment planning.

While there are studies on Kenya's trade and investment separately, there is limited research integrating both dimensions over a significant time frame. This study fills this gap by providing a decadal review (2014–2025) of how FDI interacts with trade balance dynamics. This study enhances the existing body of knowledge on development economics in Kenya and Africa, provides empirical evidence for further research on trade-FDI linkages, and offers analytical frameworks that can be used to study similar economies in Africa and other emerging markets.

A clear understanding of this relationship between investment flows and trade balance can help improve employment opportunities through investment-led industrialization, encourage productive use of foreign capital to benefit local communities, promote economic resilience, and reduce vulnerability to external shocks, including commodity price fluctuations and global financial crises.

Overall, this study is justified because it provides critical insights into the effectiveness of investment flows in addressing trade imbalances, informs policy formulation, and contributes academically by bridging the gap between trade and investment studies in Kenya over the past ten years. The findings are valuable to government agencies, investors, scholars, and development partners interested in Kenya's economic growth trajectory.

EMPIRICAL LITERATURE

The Financial Account is an important component of the balance of payments because it records cross-border financial transactions. Under the IMF balance-of-payments framework, it includes foreign direct investment, foreign portfolio investment, financial derivatives, other investment remittance, and reserve assets. Therefore, Financial Account Balance is broader than foreign direct investment and should not be interpreted as an FDI variable. Its relationship with trade balance may reflect capital inflows, portfolio movements, external borrowing, trade credit, reserve changes, and other cross-border financial transactions (International Monetary Fund [IMF], 2009).

Empirical studies show that the relationship between financial flows and trade performance is not always straightforward. Financial inflows may improve trade balance when they finance export-oriented production, industrial development, infrastructure, and productive capacity. However, they may worsen the trade balance when they finance imports of machinery, intermediate inputs, petroleum products, consumer goods, or debt-financed expenditure. The effect of Financial Account Balance on trade balance therefore depends on the composition, direction, and use of the underlying financial flows rather than on the size of the aggregate balance alone (IMF, 2009; Osoro, 2013).

A larger body of empirical literature has examined the role of exchange rate movements in explaining trade balance dynamics. Exchange-rate depreciation may increase the trade balance since it makes exports relatively cheaper and imports more expensive. However, the adjustment may not occur immediately because import contracts, production constraints, and demand rigidities can delay the response of trade flows. This delayed response is commonly described as the J-curve effect. Empirical evidence remains mixed, indicating that the impact of exchange-rate movements differs across countries, time periods, and model specifications (Bahmani-Oskooee & Ratha, 2004).

GDP is also an important control variable in trade-balance models. Economic growth may improve the trade balance by increasing domestic production and export capacity. Conversely, growth may worsen the trade balance when it raises demand for imported machinery, energy, intermediate goods, and consumer products. Empirical ARDL studies commonly include domestic income or GDP because its final effect on trade balance depends on whether expansion is driven mainly by export production or import-intensive demand (Irhan, Alacahan, & Korap, 2011).

Inflation may influence trade performance through changes in domestic production costs and export competitiveness. Persistent inflation can increase the prices of locally produced goods, reduce competitiveness in international markets, and increase pressure on the exchange rate. However, the empirical effect of inflation on trade balance may differ depending on monetary policy, exchange-rate arrangements, import dependence, and the structure of domestic production. Studies of trade-balance determinants therefore commonly include inflation alongside GDP and exchange rate as key macroeconomic control variables (Purnamasari, Zuhroh, & Kurniawati, 2023).

In Kenya, the external sector has continued to be characterized by a large merchandise trade deficit, driven by imports of petroleum products, machinery, industrial supplies, and other goods needed for production and consumption. Export earnings have mainly been supported by horticulture, tea, apparel, coffee, and re-exports. Kenya's external performance is also influenced by changes in exchange rate, inflation, economic growth, foreign borrowing, portfolio flows, and other financial-account transactions (Kenya National Bureau of Statistics [KNBS], 2025; IMF, 2024).

Recent IMF assessments show that Kenya's external position has been affected by changing market sentiment, exchange-rate movements, import developments, and financial flows. Portfolio inflows and other financial-account movements may help finance external deficits in the short run, but their effect on the merchandise trade balance is not necessarily direct. This supports the need to examine Financial Account Balance separately from FDI and to assess its short-run and long-run relationship with Kenya's trade balance while controlling for GDP, inflation, and exchange rate (IMF, 2024).

Research Gap

Existing Kenyan studies have mainly examined foreign direct investment, exchange rate, economic growth, or the broader balance of payments. Although these studies provide useful background, they do not adequately explain how aggregate Financial Account Balance relates to Merchandise Trade Balance when GDP, inflation, and exchange rate are controlled for in a single dynamic model. This study addresses that gap by examining the long-run and short-run relationship between Financial Account Balance and Merchandise Trade Balance in Kenya using an ARDL approach.

Limited empirical evidence integrates foreign investment and trade balance dynamics over a sufficiently long period while accounting for macroeconomic variables e.g. exchange rate, GDP, and inflation. Furthermore, few studies employ recent quarterly data covering the period 2014–2025. This study seeks to bridge this gap and examine both the short-run and long-run relationship between foreign investment and trade balance in Kenya using modern time-series econometric techniques.

METHODOLOGY

This study adopted a quantitative time-series research design to analyze the relationship between Foreign Investment flows and Kenya's trade balance. A time-series approach was appropriate because this study examined how economic variables changed and interacted over time. The analysis used secondary macroeconomic data covering the period 2014 to 2025, or the most recent data available. This period was selected to capture recent economic trends and fluctuations in Kenya's economy, allowing the study to examine the dynamic relationship between Foreign financial flows, trade balance, and other control variables, e.g. exchange rate, GDP, and inflation, over time. The quantitative design enabled the application of econometric techniques to test relationships and draw objective conclusions based on the numerical data.

Control variables were included in the study to ensure that the relationship between Foreign Investment flows and Kenya's trade balance was accurately estimated. Kenya's trade balance was not influenced by Foreign Investment flows alone but also by other macroeconomic factors. Variables like exchange rate fluctuations, GDP growth, inflation, oil prices, government policies, and global demand can independently influence the level of exports and imports in the economy. If these factors were ignored, the analysis could have produced biased results by incorrectly attributing changes in the trade balance to Foreign Investment flows when, in reality, they were caused by other economic conditions. Therefore, control variables such as the exchange rate, GDP, and inflation were included in the model to isolate the specific impact of Foreign financial flows on the trade balance and improve the reliability and accuracy of the study's findings.

The exchange Rate was measured by Kenya Shilling per USD with the expectation that depreciation affects exports and imports directly. GDP Growth was measured in terms of normal GDP. It was expected that a Higher GDP would increase imports (machinery, fuel) and worsen the trade balance. The inflation Rate is included with the expectation that high inflation reduces export competitiveness. Oil Prices (Global), Interest Rate (CBK Rate) and Trade Openness were also considered were not included because of the risk of multicollinearity and also wrong model specification

b) Model Specification

Trade balance model confedered were as follows

$$TB_t = \beta_0 + \beta_0 FA_t + \beta_2 EXR_t + \beta_3 GDP_t + \beta_4 GDP_t + \varepsilon_t$$

Where:

TB = Trade balance

FA = Financial Account in BOP. (Foreign Investment flows)

EXR = Exchange rate

GDP = Economic growth

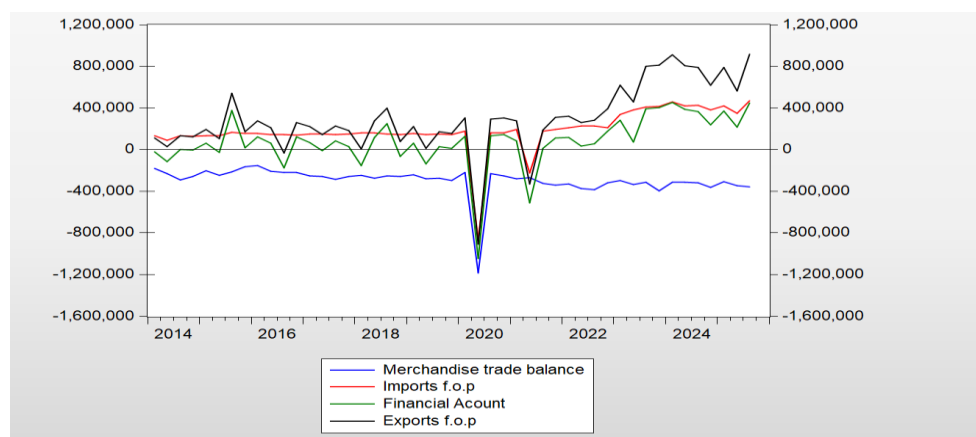
INF = Inflation

c) Econometric Techniques

Descriptive trend analysis, unit root tests (ADF), the Johansen cointegration test and VECM were used to investigate the long-run relationship as well as the short-run dynamics of the model. The Granger causality test was also performed to check whether there was pairwise causality between the proposed variables. The preferred Software was EViews

FINDINGS

Overview



Kenya's exports and imports have both grown over the decade; however, imports have consistently exceeded exports, resulting in a persistent trade deficit. For example, in 2024, total trade reached roughly KSh 3.8 trillion, with exports at KSh 1.1 trillion and imports at KSh 2.7 trillion, yielding a significant merchandise deficit. Import reliance on petroleum products, machinery, and industrial supplies has been a major structural factor in deepening the deficit.

Periodic monthly data (e.g., in 2025) show continued negative trade balances, with deficits driven by rising imports outpacing export growth. Balance of trade numbers have averaged negative for decades (including record lows in 2023), underscoring a structural challenge. Exports have grown, particularly in agriculture (tea, horticulture, and coffee) and re-exports, helping reduce but not close the trade gap. Export earnings increased faster than imports in 2024, slightly narrowing Kenya's merchandise deficit. The key takeaway here is that Kenya continues to run structural trade deficits, albeit with some recent improvements in export performance.

Kenya has attracted modest FDI inflows relative to its GDP and peers in Sub-Saharan Africa. Total FDI inflows were approximately USD ~1.5 billion in 2024, broadly flat compared to 2023. FDI to GDP ratios remain low, significantly below regional averages, suggesting relatively limited penetration of foreign capital relative to overall economic size. Over the past decade, FDI inflows have exhibited no strong upward trend; in fact, the data suggest slightly declining cumulative growth or stagnation in recent years. FDI flows experienced volatility, influenced by global uncertainties (e.g., slow global investment and geopolitical tensions) and relative competitiveness challenges.

Europe has been a significant source of inward investment. Investments are concentrated in selected sectors, and diversification across manufacturing, services, and technology remains limited.

Key deterrents include high taxation and compliance costs, competition from other African economies, and policy uncertainty. FDI has played a mixed role in altering trade dynamics. some FDI has enhanced export capacity (e.g., agro-processing, renewable energy projects). But Mostly FDI has not yet significantly shifted the import-export balance.

Kenya's participation in trade agreements (e.g., with the EU) and regional blocks influences FDI prospects and market access, but legal challenges (such as the suspension of the EU Economic Partnership Agreement) have created uncertainties affecting both trade and investment decisions. Global investment flows tightened around 2023-2024; the UNCTAD has noted slowing FDI worldwide, which would affect emerging markets like Kenya.

Trade-related policies, such as US tariff changes and evolving duty-free access (e.g., AGOA), add another layer of complexity to export-oriented sectors.

Descriptive Statistics

	MERCHANDISE_T RADE_BALANCE	FINANCIAL_A COUNT	EXCHANGE_ RATE	GDP	INFLATION
Mean	-294972.6	-108951.5	110.2266	2213479.	6.299348
Median	-274670.9	-100990.7	103.4167	2165454.	6.396667
Maximum	-155159.7	213279.9	151.8400	2865035.	8.693333
Minimum	-1184225.	-318418.7	86.32667	1713837.	3.726667
Std. Dev.	145088.6	102904.6	15.93681	338028.7	1.182485
Skewness	-5.112136	0.174659	0.944040	0.333284	0.128063
Kurtosis	32.12719	4.219273	3.282219	1.994239	2.515102

Jarque-Bera	1826.447	3.083248	6.985276	2.790415	0.576393
Probability	0.000000	0.214033	0.030421	0.247782	0.749614
Sum	-13568740	-5011769.	5070.423	1.02E+08	289.7700
Sum Sq. Dev.	9.47E+11	4.77E+11	11429.18	5.14E+12	62.92224
Observations	46	46	46	46	46

The Mean of $-294,972.6$ means that, on average, Kenya runs a trade deficit (imports > exports). A skewness of -5.11 shows that there are highly negative or extreme left-tail data and very large trade deficits. A kurtosis of 32.13 indicates Very Highly peaked data with extreme outliers. The Jarque-Bera Prob of 0.0000 means that the data is not normally distributed. The takeaway from this is that Kenya's trade balance is highly volatile and dominated by large deficits. Financial flow data had a mean of $-108,951.5$, indicating that, on average, financial outflows exceed inflows (or vice versa, depending on the sign convention). In addition, a JB Probability of 0.214 indicates that the data were normally distributed.

The exchange rate had a mean of 110.23 and a skewness figure of 0.94 , indicating that it is right-skewed. The JB Prob of 0.030 means that the exchange rate data was not normally distributed, indicating depreciation shocks. The Mean of The GDP data was $2,213,479$ and the skewness was 0.33 . The JB Prob of 0.248 shows that GDP is approximately normally distributed. The Mean for data in inflation was 6.30% , and the JB Prob was 0.75 , meaning inflation data was normally distributed.

What This Means for the Study

All these imply that the first Trade Balance is highly volatile and non-normal. Second Exports are non-normal, and third, the exchange rate shows asymmetry from the 46 observations (11.5 years of quarterly data). This led the study to estimating the VAR as the most preferred method.

Stationarity

	T- statistic	Prop	Stationarity	order
Trade balance	-6.738037	0.0000	Yes	I(0)
Financial Account Balance	-7.629018	0.0000	Yes	I(0)
Exchange Rate	-1.514444	0.5175	No	I(0)
Exchange Rate (differenced)	2.842966	0.0068	Yes	I(1)
GDP	0.893792	0.9944	No	I(0)
GDP(differenced)	-2.713189	0.0103	Yes	I(1)
Inflation	-3.402000	0.0159	Yes	I(0)

Unit Root Summary

The ADF tests were applied to examine the stationarity of key macroeconomic and financial time series. The decision rule is that if the $p \geq 0.05$, the null hypothesis of presence of a unit root is rejected, hence indicating the series is stationary. If $p > 0.05$, we fail to reject the null, meaning the series is non-stationary.

For Merchandise Trade Balance, the ADF statistic is -6.738 with a p-value of 0.00 . Since -6.738 is less than the 1% critical value of -3.58 and $p < 0.05$, the null hypothesis is rejected, indicating that trade balance is stationary at level, or $I(0)$. Similarly, Financial Account is stationary at level with an ADF statistic of -7.629 and $p = 0.0000$, confirming that financial flows do not require differencing in order to achieve stationarity.

In contrast, the Exchange Rate shows an ADF statistic of -1.514 and $p = 0.5175$. Since $-1.514 > -2.92$ and $p > 0.05$, the null won't be rejected, indicating that the exchange rate is non-stationary at level and must be differenced before analysis. GDP is also non-stationary at levels, with an ADF of 0.894 and $p = 0.9944$. After first differencing, the ADF statistic becomes -2.713 with a p-value of 0.0103 , showing that GDP is finally stationary at first difference, or $I(1)$.

Finally, Inflation is stationary at levels giving an ADF statistic of -3.402 and $p = 0.0159$, indicating no differencing is required. Overall, these results show a mix of $I(0)$ and $I(1)$ variables, which justifies the use of a VECM framework for analysing long-run relationships among these series, since some variables are integrated of order one while others are stationary at level.

Causality Tests

Pairwise Granger Causality Tests			
Sample: 2014Q1 2025Q4			
Lags: 2			
Null Hypothesis:	Obs	F-Statistic	Prob.
FINANCIAL_ACCOUNT does not Granger Cause MERCHANDISE_TRADE_BALANCE	45	0.23279	0.7934
MERCHANDISE_TRADE_BALANCE does not Granger Cause FINANCIAL_ACCOUNT		0.79990	0.4564
EXCHANGE_RATE does not Granger Cause MERCHANDISE_TRADE_BALANCE	45	0.60210	0.5525
MERCHANDISE_TRADE_BALANCE does not Granger Cause EXCHANGE_RATE		0.02674	0.9736
GDP does not Granger Cause MERCHANDISE_TRADE_BALANCE	44	2.19880	0.1245
MERCHANDISE_TRADE_BALANCE does not Granger Cause GDP		2.99666	0.0616
INFLATION does not Granger Cause MERCHANDISE_TRADE_BALANCE	45	0.54623	0.5834
MERCHANDISE_TRADE_BALANCE does not Granger Cause INFLATION		1.09038	0.3459
EXCHANGE_RATE does not Granger Cause FINANCIAL_ACCOUNT	45	1.10076	0.3425
FINANCIAL_ACCOUNT does not Granger Cause EXCHANGE_RATE		1.10713	0.3404
GDP does not Granger Cause FINANCIAL_ACCOUNT	44	0.02931	0.9711
FINANCIAL_ACCOUNT does not Granger Cause GDP		1.51613	0.2322
INFLATION does not Granger Cause FINANCIAL_ACCOUNT	45	1.33163	0.2755
FINANCIAL_ACCOUNT does not Granger Cause INFLATION		1.27648	0.2901

GDP does not Granger Cause EXCHANGE_RATE	44	2.89382	0.0673
EXCHANGE_RATE does not Granger Cause GDP		1.17338	0.3200
INFLATION does not Granger Cause EXCHANGE_RATE	46	1.16969	0.3206
EXCHANGE_RATE does not Granger Cause INFLATION		1.22859	0.3033
INFLATION does not Granger Cause GDP	44	0.33619	0.7165
GDP does not Granger Cause INFLATION		0.20668	0.8142

FINANCIAL_ACCOUNT → TRADE_BALANCE

The granger causality test on financial flow on trade balance gave an F-statistic of 0.23279 with the p-value of 0.7934. Since $p > 0.05$ we Fail to reject null and therefore we find no statistical evidence to confidently say that Financial Account does Granger-cause Trade Balance.

TRADE_BALANCE → FINANCIAL_ACCOUNT

The results also gave an F-statistic of 0.79990 with p-value of 0.4564. Since the p-value is higher than the 5% significance level- the null hypothesis that Trade Balance does not Granger-cause the Financial Account can't be rejected. This implies that past values of the Trade Balance do not provide significant information in predicting changes in the Financial Account over the study period. No causality in either direction meaning no short-run dynamic relationship

Between: Merchandise Trade Balance and Financial Account in Kenya (2014–2025 quarterly). The findings also indicate that GDP does not Granger-cause the Trade Balance, since the p-value of 0.1245 is greater than the 5% significance level, implying that past values of GDP do not significantly predict movements in the Trade Balance. However, the reverse relationship shows a p-value of 0.0616, which is significant at the 10% level but not at the 5% level, suggesting weak evidence that the Trade Balance may influence GDP. Similarly, the results show that GDP may weakly Granger-cause the Exchange Rate, with a p-value of 0.0673, which is also only significant at the 10% level. Overall, apart from these weak relationships observed at the 10% significance level, all other causal relationships among the variables are statistically insignificant at the conventional 5% level, indicating limited evidence of strong causal linkages in the model.

No predictive causality between financial inflows and trade balance. This may suggest that Capital inflows in Kenya are not directly financing trade deficits. Financial flows may be directed to: Government securities, Real estate, Portfolio investment and Trade imbalance may be structural (import dependence).

ARDL Bound Test

Since Inflation and Exchange Rate have 0 lags in the ARDL (4,4,4,0,0) model, they only appear in the equation as lagged levels (t-1) and do not have short-run difference terms. the test equation is:

$$\Delta TB_t = c + \rho TB_{t-1} + \beta_2 FA_{t-1} + \beta_2 GDP_{t-1} + \beta_3 INF_{t-1} + \beta_4 EXR_{t-1} + \sum_{i=1}^3 \gamma_i \Delta TB_{t-i} + \sum_{j=0}^3 \beta_j \Delta FA_{t-j} + \sum_{m=0}^3 \lambda_m \Delta GDP_{t-m} + \varepsilon_t$$

Dependent Variable: MERCHANDISE_TRADE_BALANCE		
Method: ARDL		

Date: 08/22/26 Time: 16:24				
Sample (adjusted): 2015Q1 2025Q2				
Included observations: 42 after adjustments				
Maximum dependent lags: 4 (Automatic selection)				
Model selection method: Akaike info criterion (AIC)				
Dynamic regressors (4 lags, automatic): FINANCIAL_ACCOUNT GDP				
INFLATION EXCHANGE_RATE				
Fixed regressors: C				
Number of models evaluated: 2500				
Selected Model: ARDL(4, 4, 4, 0, 0)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.*
MERCHANDISE_TRADE_BALANCE(-1)	-0.658166	0.135092	-4.871963	0.0001
MERCHANDISE_TRADE_BALANCE(-2)	-0.262118	0.120726	-2.171172	0.0396
MERCHANDISE_TRADE_BALANCE(-3)	-0.087002	0.112220	-0.775284	0.4454
MERCHANDISE_TRADE_BALANCE(-4)	0.307626	0.122129	2.518855	0.0185
FINANCIAL_ACCOUNT	0.398269	0.169713	2.346723	0.0272
FINANCIAL_ACCOUNT(-1)	0.366272	0.165069	2.218901	0.0358
FINANCIAL_ACCOUNT(-2)	0.616040	0.153892	4.003067	0.0005
FINANCIAL_ACCOUNT(-3)	0.286508	0.150991	1.897511	0.0694
FINANCIAL_ACCOUNT(-4)	0.312836	0.159781	1.957910	0.0615
GDP	2.986929	0.396345	7.536193	0.0000
GDP(-1)	-0.191246	0.287455	-0.665309	0.5119
GDP(-2)	-0.027766	0.294357	-0.094328	0.9256
GDP(-3)	-0.311881	0.309166	-1.008784	0.3227
GDP(-4)	-2.762992	0.428845	-6.442866	0.0000
INFLATION	21328.81	21045.50	1.013462	0.3205
EXCHANGE_RATE	-3249.394	3577.592	-0.908263	0.3724
C	315567.1	144088.9	2.190086	0.0381

R-squared	0.783328	Mean dependent var		-300161.5
Adjusted R-squared	0.644658	S.D. dependent var		150461.8
S.E. of regression	89691.13	Akaike info criterion		25.93686
Sum squared resid	2.01E+11	Schwarz criterion		26.64020
Log likelihood	-527.6741	Hannan-Quinn criter.		26.19466
F-statistic	5.648859	Durbin-Watson stat		1.466701
Prob(F-statistic)	0.000066			
*Note: p-values and any subsequent tests do not account for model selection.				
ARDL Long Run Form and Bounds Test				
Dependent Variable: D(MERCHANDISE_TRADE_BALANCE)				
Selected Model: ARDL(4, 4, 4, 0, 0)				
Case 2: Restricted Constant and No Trend				
Date: 08/22/26 Time: 16:57				
Sample: 2014Q1 2025Q4				
Included observations: 42				
Conditional Error Correction Regression				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	315567.1	144088.9	2.190086	0.0381
MERCHANDISE_TRADE_BALANCE(-1)*	-1.699659	0.237826	-7.146653	0.0000
FINANCIAL_ACOUNT(-1)	1.979924	0.482765	4.101213	0.0004
GDP(-1)	-0.306956	0.168651	-1.820068	0.0807
INFLATION**	21328.81	21045.50	1.013462	0.3205
EXCHANGE_RATE**	-3249.394	3577.592	-0.908263	0.3724
D(MERCHANDISE_TRADE_BALANCE(-1))	0.041493	0.202189	0.205221	0.8391
D(MERCHANDISE_TRADE_BALANCE(-2))	-0.220624	0.170602	-1.293210	0.2078
D(MERCHANDISE_TRADE_BALANCE(-3))	-0.307626	0.122129	-2.518855	0.0185

D(FINANCIAL_ACCOUNT)	0.398269	0.169713	2.346723	0.0272
D(FINANCIAL_ACCOUNT(-1))	-1.215383	0.310762	-3.910982	0.0006
D(FINANCIAL_ACCOUNT(-2))	-0.599344	0.233545	-2.566293	0.0167
D(FINANCIAL_ACCOUNT(-3))	-0.312836	0.159781	-1.957910	0.0615
D(GDP)	2.986929	0.396345	7.536193	0.0000
D(GDP(-1))	3.102639	0.493394	6.288365	0.0000
D(GDP(-2))	3.074873	0.470768	6.531609	0.0000
D(GDP(-3))	2.762992	0.428845	6.442866	0.0000
* p-value incompatible with t-Bounds distribution.				
** Variable interpreted as $Z = Z(-1) + D(Z)$.				
Levels Equation				
Case 2: Restricted Constant and No Trend				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
FINANCIAL_ACCOUNT	1.164895	0.318349	3.659180	0.0012
GDP	-0.180599	0.095884	-1.883504	0.0713
INFLATION	12548.87	12402.77	1.011780	0.3213
EXCHANGE_RATE	-1911.792	2125.471	-0.899467	0.3770
C	185664.9	88207.65	2.104862	0.0455
EC = MERCHANDISE_TRADE_BALANCE - (1.1649*FINANCIAL_ACCOUNT				
-0.1806*GDP + 12548.8743*INFLATION -1911.7921				
*EXCHANGE_RATE + 185664.9412)				
F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
			Asymptotic: n=1000	
F-statistic	14.43152	10%	2.2	3.09
K	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37

Actual Sample Size	42		Finite Sample: n=45	
		10%	2.402	3.345
		5%	2.85	3.905
		1%	3.892	5.173
			Finite Sample: n=40	
		10%	2.427	3.395
		5%	2.893	4
		1%	3.967	5.455

The ARDL model was estimated with Merchandise Trade Balance as the dependent variable. Using the Akaike Information Criterion, the selected specification was ARDL(4, 4, 4, 0, 0), comprising four lags of Merchandise Trade Balance, Financial Account, and GDP, while Inflation and Exchange Rate entered with zero lags.

Because Inflation and Exchange Rate have zero lags, they enter the conditional error-correction model only through their lagged-level terms. They therefore have no separate short-run differenced terms. The estimation used 42 quarterly observations, covering 2015Q1 to 2025Q2 after lag adjustments. This sample period should be reported consistently throughout the manuscript.

The ARDL Bounds Test was used to examine whether there was a stable long-run relationship existing among Merchandise Trade Balance, Financial Account, GDP, Inflation, and Exchange Rate. The null hypothesis is that no long-run levels relationship exists among the variables.

The calculated F-statistic was 14.4315. This value exceeds the 1% finite-sample upper-bound critical values for samples of both 40 and 45 observations. Therefore, the null hypothesis of no levels relationship is rejected. The results provide strong evidence of existence of a long-run relationship among the variables.

Long-Run Dynamics

The long-run estimates show that Financial Account is positively and statistically significantly associated with Merchandise Trade Balance. Its coefficient is 1.1649 and is significant at the 5% level ($p = 0.0012$). Holding other factors constant, a one unit increase in the Financial Account balance is associated with an approximately 1.16-unit improvement in Merchandise Trade Balance in the long run.

GDP had a negative long-run coefficient of -0.1806 and was statistically significant at the 10% level ($p = 0.0713$). This suggests weak evidence that economic expansion may be associated with a deterioration in the trade balance, possibly because economic growth increases demand for imported capital goods, petroleum products, intermediate inputs, and consumer goods.

Inflation and Exchange Rate have positive and negative coefficients, respectively, but neither was statistically significant at levels. The results therefore do not provide sufficient evidence that these variables have an independent long-run effect on Merchandise Trade Balance within the estimated model.

The long-run equilibrium relationship may be expressed as:

$$TB_t = 1.1806FA_t - 0.1806GDP_t + 12548.87INF_t - 1911.79EXR_t + 185664.94$$

Because Financial Account is broader than foreign direct investment, the results are interpreted as the effect of broader financial-account movements, rather than direct FDI effects alone.

Adjustment Speed (Error Correction)

ARDL Error Correction Regression				
Dependent Variable: D(MERCHANDISE_TRADE_BALANCE)				
Selected Model: ARDL(4, 4, 4, 0, 0)				
Case 2: Restricted Constant and No Trend				
Date: 08/22/26 Time: 17:14				
Sample: 2014Q1 2025Q4				
Included observations: 42				
ECM Regression				
Case 2: Restricted Constant and No Trend				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(MERCHANDISE_TRADE_BALANCE(-1))	0.041493	0.123513	0.335944	0.7397
D(MERCHANDISE_TRADE_BALANCE(-2))	-0.220624	0.111355	-1.981269	0.0587
D(MERCHANDISE_TRADE_BALANCE(-3))	-0.307626	0.088047	-3.493905	0.0018
D(FINANCIAL_ACCOUNT)	0.398269	0.117226	3.397445	0.0023
D(FINANCIAL_ACCOUNT(-1))	-1.215383	0.179299	-6.778524	0.0000
D(FINANCIAL_ACCOUNT(-2))	-0.599344	0.154341	-3.883247	0.0007
D(FINANCIAL_ACCOUNT(-3))	-0.312836	0.114174	-2.739996	0.0112
D(GDP)	2.986929	0.281462	10.61218	0.0000
D(GDP(-1))	3.102639	0.377316	8.222924	0.0000
D(GDP(-2))	3.074873	0.369504	8.321630	0.0000
D(GDP(-3))	2.762992	0.334600	8.257596	0.0000
CointEq(-1)*	-1.699659	0.166740	-10.19348	0.0000
R-squared	0.894107	Mean dependent var		-2100.276
Adjusted R-squared	0.855280	S.D. dependent var		215225.6
S.E. of regression	81876.43	Akaike info criterion		25.69877
Sum squared resid	2.01E+11	Schwarz criterion		26.19524

Log likelihood	-527.6741	Hannan-Quinn criter.		25.88074
Durbin-Watson stat	1.466701			
* p-value incompatible with t-Bounds distribution.				
F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	14.43152	10%	2.2	3.09
K	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37

The error-correction model indicated that deviations from the long-run equilibrium are corrected rapidly. The error-correction coefficient, $CointEq(-1)$, is -1.6997 and statistically significant at the 5% level ($t = -10.19$, $p < 0.001$).

The negative and statistically significant coefficient confirms the existence of an adjustment mechanism toward the long-run equilibrium. the magnitude indicates that approximately 170% of the previous quarter's disequilibrium is corrected within the current quarter. Since the coefficient lies between -1 and -2 , adjustment occurs through overshooting: the trade balance initially adjusts beyond its equilibrium level and then converges back through damped oscillations. This interpretation is appropriate only if the ARDL model satisfies the required stability conditions.

In the short run, changes in Financial Account significantly affect Merchandise Trade Balance. The contemporaneous change in Financial Account has a positive effect, while the first, second, and third lagged changes have negative effects. This pattern suggests that financial-account movements may initially improve the trade balance but may later be associated with increased imports, repayments, capital outflows, or other adjustment effects.

Changes in GDP are also statistically significant in the short run while the positive coefficients on current and lagged GDP changes suggest that short-run growth movements are associated with changes in the trade balance. However, this result should be interpreted carefully because the long-run GDP coefficient is negative and only weakly significant.

The third lag of the change in Merchandise Trade Balance is negative and statistically significant, indicating that earlier changes in trade balance continue to influence current short-run adjustments.

Diagnostics

Serial Correlation

The Purpose of this was to check whether the residuals are autocorrelated.

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	2.997760	Prob. F(2,23)	0.0497
Obs*R-squared	8.684510	Prob. Chi-Square(2)	0.0130

The Breusch-Godfrey LM test provides evidence of residual serial correlation. Although the F-statistic had p-value of 0.0497, the Obs*R-squared statistic had a p-value of 0.0130, which is above the 5% significance level. Based on the LM statistic, the null hypothesis that there no serial correlation is not rejected. This result means that the current model does not contain residual autocorrelation, which can affect the reliability of conventional standard errors and statistical inference.

Heteroskedasticity Test

The Purpose of this is to Check if residual variance is constant.

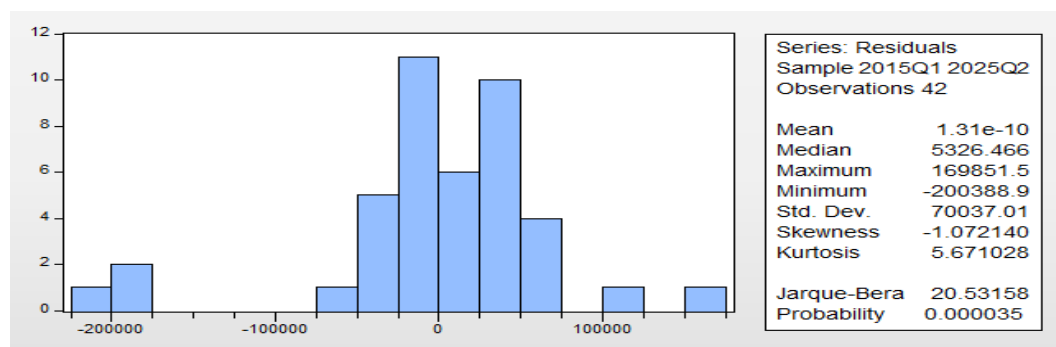
Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	1.014769	Prob. F(16,25)	0.4739
Obs*R-squared	16.53700	Prob. Chi-Square(16)	0.4162
Scaled explained SS	13.68424	Prob. Chi-Square(16)	0.6222

The Breusch-Pagan-Godfrey test indicates no evidence of heteroskedasticity. The Obs*R-squared probability is 0.4162, which was greater than 0.05 SL. Therefore, the null hypothesis of constant residual variance cannot be rejected.

This result suggests that the residual variance is reasonably stable over the sample period. However, the conclusion should be reported cautiously and considered together with the serial-correlation results.

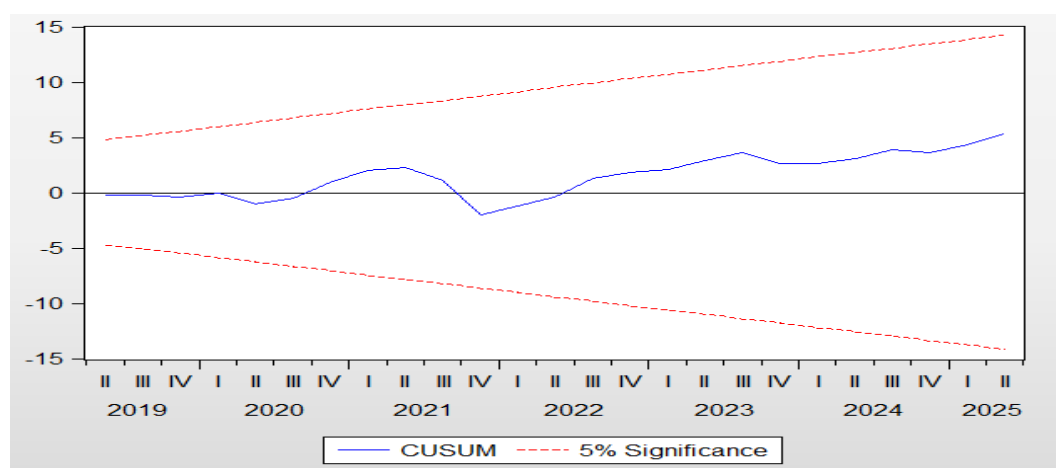
Residual Normality

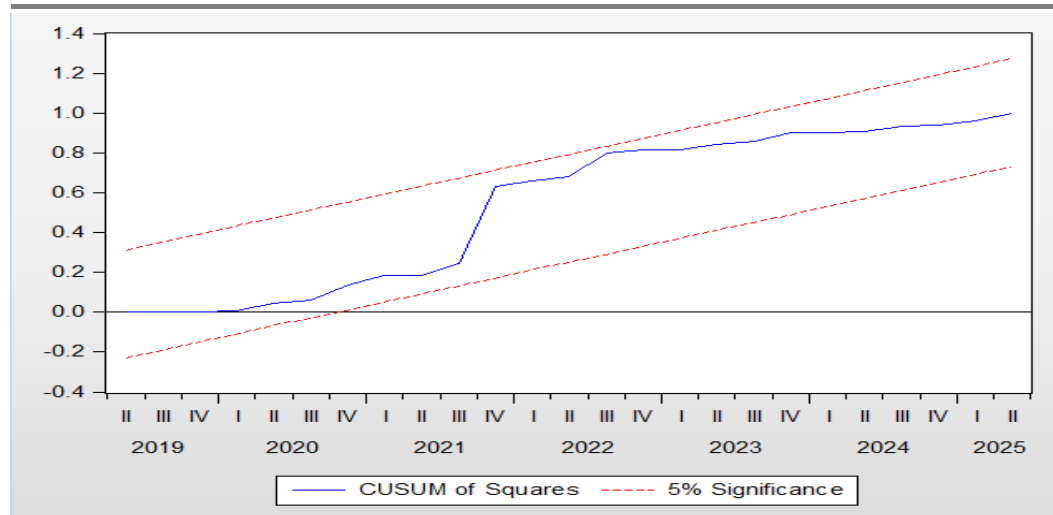
The Purpose of this was to check whether residuals follow normal distribution.



The normality test results should be inserted and interpreted using the reported Jarque-Bera probability value. Do not state that the residuals are normally distributed unless the test results supports that conclusion.

Stability





The stability section should also be revised. Since this is an ARDL model, the appropriate stability assessment should refer to ARDL stability tests, like, CUSUM and CUSUM of Squares, or the relevant inverse-root stability condition. The manuscript should include the stability graph or test output and state clearly whether the model remains stable throughout the sample period.

Summary of Findings

The ARDL Bounds Test provides strong evidence of long-run relationship among Merchandise Trade Balance, Financial Account, GDP, Inflation, and Exchange Rate in Kenya. Financial Account had a positive and statistically significant long-run association with Merchandise Trade Balance, while GDP had a negative association that is statistically significant only at the 10% level. Inflation and Exchange Rate do not show statistically significant long-run effects in the estimated model.

The error-correction term was negative and significant, confirming that deviations from long-run equilibrium are corrected rapidly. However, the coefficient of -1.6997 indicates an overshooting adjustment process rather than a smooth return to equilibrium. Short-run results indicate that both Financial Account and GDP changes significantly influence the trade balance, although their effects vary across lags.

These findings should be interpreted with caution because the serial-correlation test indicates residual autocorrelation. The ARDL model should therefore be refined and re-tested before drawing final policy conclusions. In addition, because Financial Account Balance is broader than foreign direct investment, the findings should not be presented as direct evidence of FDI effects without a more specific FDI measure.

Policy Implications

Focus on long-term trade improvement rather than short-term adjustments: The ARDL results confirm a long-run relationship between Merchandise Trade Balance, Financial Account, GDP, inflation, and exchange rate. Policymakers should therefore focus on structural measures that improve export capacity, diversify exports, strengthen domestic production, and reduce dependence on imported petroleum, machinery, and intermediate goods. Short-term interventions alone may not produce a sustained improvement in Kenya's trade balance (KNBS, 2025).

Promote productive Financial Account flows: Financial Account Balance had a positive and statistically significant long-run relationship with Merchandise Trade Balance. Policies should therefore encourage financial flows that support productive investment, export-oriented industries, infrastructure, manufacturing, agriculture, and value addition. However, because Financial Account Balance includes portfolio investment, loans, trade credit, and other financial flows—not only FDI—policymakers should monitor the composition and sustainability of these flows rather than focusing only on the total balance (IMF, 2009; IMF, 2024).

Maintain macroeconomic stability: Inflation was not statistically significant in the long-run model, but stable prices remain important for business planning, household welfare, export competitiveness, and investor confidence. Monetary and fiscal policy should continue to contain inflationary pressure, especially inflation arising from food, fuel, exchange-rate, and supply-chain shocks. Stable macroeconomic conditions can support more predictable trade and financial-account outcomes (IMF, 2024).

Manage exchange-rate volatility: Although exchange rate did not give a statistically significant long-run effect in the estimated model, exchange-rate stability remains important for importers, exporters, and firms with foreign-currency obligations. Policymakers should reduce excessive exchange-rate volatility through credible monetary policy, adequate foreign-exchange reserves, improved export earnings, and transparent foreign-exchange market operations. A stable exchange rate can improve planning, pricing, and competitiveness in the external sector (IMF, 2024).

Promote growth with lower import dependence: GDP has a negative long-run coefficient, although it is significant only at the 10% level. This suggests that economic growth may be associated with increased import demand for capital goods, fuel, machinery, and intermediate inputs. Kenya should therefore support growth in sectors that increase domestic value addition and export capacity, including agro-processing, manufacturing, renewable energy, transport, and digital services. Growth policies should be designed to reduce import dependence while expanding the country's export base (KNBS, 2025).

Strengthen financial-account and trade data monitoring: Since Financial Account Balance is broader than FDI, policy analysis should distinguish among direct investment, portfolio investment, loans, trade credit, reserve movements, and other financial flows. Improved disaggregation of financial-account data would help policymakers identify which types of flows support productive investment and trade improvement, and which may create short-term external vulnerabilities. This would also strengthen future research and policy evaluation (IMF, 2009).

REFERENCES

1. Bahmani-Oskooee, M., & Ratha, A. (2004). The J-curve: A literature review. *Applied Economics*, 36(13), 1377–1398. <https://doi.org/10.1080/0003684042000201794>
2. Central Bank of Kenya. (2024). Annual Report and Financial Statements.
3. Chirwa, T. G., & Nicholas M. Odhiambo (2016). Macroeconomic determinants of economic growth: A review of international literature. *South East European Journal of Economics and Business*, 11(2), 33–47.
4. Dunning, J. H. (1988). The eclectic paradigm of international production: A restatement and some possible extensions. *Journal of International Business Studies*, 19(1), 1–31.
5. Egger, P., Pirotte, A., & Titi, C. (2023). International investment agreements and foreign direct investment: A survey. *The World Economy*, 46(5), 1524–1565.
6. International Monetary Fund. (2009). Balance of payments and international investment position manual (6th ed.). <https://www.imf.org/en/publications/manuals-guides/issues/2016/12/31/balance-of-payments-manual-sixth-edition-22588>
7. International Monetary Fund. (2024). Kenya: Seventh and eighth reviews under the Extended Fund Facility and Extended Credit Facility arrangements. <https://www.elibrary.imf.org/view/journals/002/2024/316/article-A001-en.xml>
8. International Monetary Fund. (2024). World Economic Outlook Database.
9. Irhan, H. B., Alacahan, N. D., & Korap, L. (2011). An empirical model for the Turkish trade balance: New evidence from ARDL bounds testing analyses. *Istanbul University Econometrics and Statistics e-Journal*, 14. <https://dergipark.org.tr/en/pub/iuekois/article/112030>
10. Islam, M. S., & Beloucif, A. (2024). Determinants of foreign direct investment: A systematic review of the empirical studies. *International Journal of Comparative Sociology*, 59(2).
11. John H. Dunning. (1988). The eclectic paradigm of international production: A restatement and some possible extensions. *Journal of International Business Studies*, 19(1), 1–31.
12. Kenya National Bureau of Statistics. (2025). Economic Survey 2025.

13. Kenya National Bureau of Statistics. (2025). Economic survey 2025. <https://www.knbs.or.ke/reports/2025-economic-survey/>
14. Kojima, K. (1973). A macroeconomic approach to foreign direct investment. *Hitotsubashi Journal of Economics*.
15. Kojima, K. (1973). A macroeconomic approach to foreign direct investment.
16. Makatiani, C., Ngala, C., & Mungai, A. (2024). Impact of tax incentives on foreign direct investment inflows in Kenya. *African Journal of Empirical Research*.
17. Marszk, A. (2014). Economic integration and foreign direct investment: Review of main theoretical concepts.
18. Mundell, R. A. (1957). International trade and factor mobility. *American Economic Review*, 47(3), 321–335.
19. Nicholas M. Odhiambo. (2022). Foreign direct investment and economic growth in Kenya: An empirical investigation. *International Journal of Public Administration*, 45(8), 620–631.
20. Njoroge, S., Namusonge, G., & Sakwa, M. (2015). Determinants of foreign direct investment in Kenya: A theoretical review.
21. Odhiambo, N. M. (2022). Foreign direct investment and economic growth in Kenya: An empirical investigation. *International Journal of Public Administration*, 45(8), 620–631.
22. Osano, H. M., & Koine, P. W. (2016). Role of foreign direct investment on technology transfer and economic growth in Kenya: A case of the energy sector. *Journal of Innovation and Entrepreneurship*, 5(31).
23. Osoro, K. (2013). Determinants of balance of payments in Kenya. *European Scientific Journal*, 9(16).
24. Paul M. Romer. (1986). Increasing returns and long-run growth. *Journal of Political Economy*, 94(5), 1002–1037.
25. Paul M. Romer. (1990). Endogenous technological change. *Journal of Political Economy*, 98(5, Part 2), S71–S102.
26. Purnamasari, E. N., Zuhroh, I., & Kurniawati, E. T. (2023). Determinant of trade balance: Empirical study in ASEAN 5 countries. *Jurnal Ekonomi Pembangunan*. <https://doi.org/10.22219/jep.v21i02.22713>
27. Robert A. Mundell. (1957). International trade and factor mobility. *American Economic Review*, 47(3), 321–335.
28. Robert M. Solow. (1956). A contribution to the theory of economic growth. *The Quarterly Journal of Economics*, 70(1), 65–94.
29. Romer, P. M. (1990). Endogenous technological change. *Journal of Political Economy*, 98(5), S71–S102.
30. Sgrignoli, P., Metulini, R., Zhu, Z., & Riccaboni, M. (2017). The indirect effects of foreign direct investment on trade: A network perspective.
31. Siddique, H. H., & Bardai, B. (2023). Seventy years of FDI literature: Review, comparison and critique. *Economics*.
32. United Nations Conference on Trade and Development. (2024). World investment report 2024: Investment facilitation and digital government. <https://unctad.org/publication/world-investment-report-2024>
33. World Bank. (2024). World Development Indicators.