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The Impact of Exchange Rate Fluctuation on Coffee Exports in Kenya

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A B S T R A C T

This research examined the impact of exchange rate fluctuations on Kenyan coffee exports, which is a critical sector for foreign exchange earnings in Kenya, over the period 1990–2023. The objective is to assess both the long-run and short-run effects of exchange rate fluctuations on coffee export performance in Kenya, alongside other macroeconomic variables like inflation and GDP, to inform policy measures for enhancing the coffee sector in Kenya. This analysis focused on annual data of coffee exports, which is the dependent variable, with exchange rate, inflation, and GDP as the independent variables. These data were sourced from the World Bank, the IMF, the Central Bank of Kenya, and Kenya's National Treasury, totaling 34 observations. It is a quantitative study that employs a time-series econometric approach, utilizing the Johansen Cointegration Test and a Vector Error Correction Model (VECM). The empirical findings indicate that exchange rate depreciation positively affects Kenyan coffee exports in the long run. However, in the short run, the effects of exchange rates on coffee exports are insignificant

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INTRODUCTION

The most critical economic sector for many developing countries is the global coffee market, especially for countries that are reliant on agricultural exports as a primary source of foreign exchange earnings. Kenya, a country known for its quality Arabica coffee, has since depended on coffee exports as it is a major contributor to its economy. However, regardless of the importance of coffee in the trade portfolio of Kenya, the sector remains vulnerable to factors such as exchange rate fluctuations. The effect of exchange rate fluctuations on coffee exports is of prime importance, keeping in mind that currency fluctuations influence revenue stability, competitiveness, and pricing for coffee producers and exporters. The exchange rate in Kenya has been experiencing a considerable variation over time, transitioning from a fixed exchange rate system to a flexible exchange rate system. The shift towards a flexible exchange rate, while intended to improve economic efficiency, has exposed coffee exporters to increased risks. The appreciation or depreciation of the Kenyan shilling against other trading currencies, such as the Euro and the U.S. Dollar, affect the earnings of coffee farmers and exporters directly. When a local currency depreciates, it improves the competitiveness of Kenyan coffee in the global market by making exports cheaper, thereby increasing demand. Furthermore, uncertainty and fluctuations in exchange rates may disrupt trade contracts, hinder investment, and introduce financial instability, which extremely affects coffee trade performance.

Existing literature and empirical studies reveal a complex relationship between coffee exports and exchange rate movements. The Marshall-Lerner (M-L) condition, which is a fundamental economic theory, suggests that currency depreciation improves trade balance only if the sum of the price elasticities of exports and imports is greater than one. However, the scope to which this principle applies to Kenya's coffee sector is an area of investigation. Studies on similar countries, like Ethiopia, reveal that while exchange rate depreciation might theoretically boost exports, structural constraints, including supply chain inefficiencies, production costs, and global market dynamics, mostly limit the expected benefits. A recent study has also examined the effects of exchange rate volatility, observing that while devaluation may be good for coffee export revenues in the short run, its unpredictable fluctuation over long periods creates uncertainty that will undermine the stability of the sector in the long run. The findings indicate that coffee exporters hedge themselves against currency risks either through contractual agreements or financial instruments, but peasant farmers, who constitute Kenya's coffee sector, continue to remain vulnerable to the effects of exchange rate fluctuations.

Additionally, macroeconomic variables like interest rates, global commodity prices, and inflation complicate the exchange rates and coffee exports relation. Inflationary pressures, for instance, erode real incomes and increase input costs for coffee producers and thus reduce profitability even in cases where a weaker currency could enhance export revenues. Besides this, global economic shocks such as the COVID-19 pandemic have worsened the financial instability, disrupting global supply chains and altering trade patterns, further influencing

the situation between exchange rate fluctuations and coffee exports. Kenyan coffee exports are highly dependent on global market prices and are largely affected by the current global coffee market. Nonetheless, the international coffee market has changed drastically in the past few decades. Changes in technology, the global policy environment, the asymmetrical character of power, and the new arrangements in supply chain and demand in the coffee value chains increasingly reduce the opportunities for vulnerable and growing economies like Kenya to secure the benefits experienced through feasible coffee trade (Petit, 2007). Reliable coffee markets in developing countries like Kenya support the eradication of poverty and boost economic growth. These factors, in addition to consumer behavior, productivity, inflation, currency exchange rates, and demand, greatly affect and impact the market and export of Kenyan coffee. Kenya, having liberalized its market and adopted a floating exchange rate regime to boost coffee exports, has not improved much in foreign reserve availability or export earnings. However, it is unclear how exchange rates usually affect coffee exports in Kenya, both in the short and long run. Various factors and determinants of coffee exports have been explored in the literature review. This study examines the impact of exchange rate fluctuations on Kenya's coffee export performance, drawing on empirical evidence and theoretical insights from economic literature. Through examining case studies and historical data, the research demands a comprehensive grasp of how exchange rate movements affect coffee export and potential policy measures to eradicate the adverse effects of exchange rate fluctuations. Understanding these relationships is crucial for traders and farmers who rely on coffee export earnings for economic survival. By exploring these dynamics, this research contributes to the broader discourse on exchange rate policies and their implications on the agricultural sector in developing economies

LITERATURE REVIEW

The exchange rate fluctuations and their impact on coffee exports in Kenya need a thorough examination of previous research. Existing literature provides valuable insights into the theoretical and empirical perspectives on how exchange rate movements influence agricultural exports. By synthesizing past findings, we can identify common patterns, contradictions, and areas where further research is necessary. This literature review aims to build a foundation for understanding the mechanisms through which exchange rate volatility affects coffee trade and to inform policy recommendations based on evidence. Reviewing existing studies is crucial for Kenya, given its reliance on coffee exports for foreign exchange earnings. Kenya's coffee sector has long been shaped by international trade dynamics, making it susceptible to macroeconomic forces beyond its borders. Past research has explored how exchange rate fluctuations interact with factors such as global demand, production costs, and governmental policies to influence export performance. By evaluating these studies, we can assess the extent to which Kenya's coffee exports respond to exchange rate fluctuations.

Moreover, an in-depth literature review helps to contextualize Kenya's experience within a broader regional and global framework. Studies from other

coffee-exporting nations, including Ethiopia, Colombia, and Brazil, provide comparative insights into how exchange rate policies and trade structures shape agricultural export performance. Understanding these dynamics enables a broader discussion on whether Kenya's exchange rate behavior aligns with or diverges from global trends in global agricultural trade. The literature reviews the gap between economic theory and real-world trade dynamics. It highlights key debates in the field, such as whether currency depreciation consistently boosts exports or its effects are contingent on other economic conditions. This review also provides a methodological foundation for empirical analysis, guiding the study's approach to assessing the relationship between exchange rates and coffee exports in Kenya.

Theoretical Framework

The Marshall-Lerner (M-L)

According to the Marshall-Lerner (M-L) condition, currency depreciation improves a country's trade balance if the sum of the absolute values of import and export price elasticities exceeds one (Bahmani et al., 2013). Researchers have studied it extensively using various methodologies to test its validity. Nielsen (1986) extended the M-L condition to include intermediate goods imports, while Cambazoğlu & Güneş (2016) examined its applicability in Turkey, considering both short-term and long-term effects of depreciation on trade balance. Mahmud et al. (2004) employed non-parametric kernel estimation techniques to test the M-L condition in six developed countries. He found that it was only partially satisfied in sub-sample periods and more likely to hold under fixed exchange rate regimes. These studies highlight the complexity and ongoing relevance of the M-L condition in understanding the relationship between currency valuation and the trade balance. This theory is relevant as it provides a framework for understanding the relationship between exchange rates and trade performance, particularly in the context of coffee exports in Kenya.

J-Curve Effect

The J-curve effect is an essential economic phenomenon that illustrates the temporal relationship between currency devaluation and the trade balance. The initial impact of currency depreciation results in a decline in the trade balance, with significant increases in import prices but relatively little change in export volumes. This initial decline is illustrated by the downward-sloping 'J' curve. However, as the economy adjusts to the new exchange rate gradually, exports become more competitive in global markets, leading to higher export volumes. Simultaneously, domestic consumers often switch away from more expensive imports, which further improves the trade balance. The J-curve effect provides valuable information regarding the impact of currency volatility on a country's trade performance, particularly in key export crops like coffee. This analysis could inform policy decisions regarding exchange rate management and export promotion policy in Kenya's coffee sector.

Elasticity Approach to Exchange Rates and Trade

The elasticity approach focuses on how responsive export and import demand is to changes in exchange rates. If Kenyan coffee has high price elasticity, depreciation of the Kenyan shilling should lead to a substantial increase in exports. However, if demand is inelastic due to brand loyalty or trade agreements, the impact of exchange rate changes may be limited. This framework helps to assess whether exchange rate fluctuations significantly affect Kenya's coffee trade performance. By applying these theories, this study will provide an analysis of how exchange rate fluctuations influence Kenya's coffee exports. These theories offer different lenses to examine the impact of currency movements, highlighting the complexity of exchange rate dynamics in international trade.

Empirical Literature

Several empirical studies have analyzed the impact of exchange rate changes on farm production, prices, revenues, and exports in the short and long run. Among this plethora of research, some found a significant positive relationship, while others found negative results. Exchange rate volatility, defined as unpredictable fluctuations in the value of a currency relative to other currencies, has been widely studied for its effects on international trade, particularly in export-dependent economies. The literature reveals the relationship between exchange rate movements and trade outcomes influenced by sector-specific dynamics, policy reforms, and firm-level responses. This review examines recent research to find how exchange rate fluctuations affect agricultural exports and trade performance, drawing on studies from Asia, Africa, and beyond.

Mukhebi et al. (2024) explored the impact of currency exchange rates on Kenya's agricultural exports, which is a key focus of Vision 2030. Focusing on the purchasing power parity theory and using OLS regression, they found a significant positive effect of exchange rates on export performance (5% significance). This study recommends maintaining competitive exchange rates to counter declining profitability and uncertainty. Mao (2019) investigates the effects of exchange rate fluctuations on China's food industry exports at the firm level. The study finds that exchange rate volatility introduces uncertainty that disproportionately affects small-scale firms, who lack sufficient resources to hedge against currency risks. However, larger firms can mitigate these effects through financial instruments or diversified markets, suggesting that firm size and capacity play a critical role in moderating the impact of volatility. This firm-level perspective is important to understanding how macroeconomic shocks translate into heterogeneous export outcomes within a sector.

Similarly, Kargbo (2006) explored exchange rate volatility in the context of South Africa's agricultural trade under policy reforms. Employing a time-series analysis, the study demonstrates that volatility negatively impacts agricultural exports by increasing transaction costs and reducing competitiveness in international markets. The post-apartheid liberalization of South Africa's economy amplified these effects, as farmers faced greater exposure to global currency fluctuations without sufficient domestic support. These findings

underscore the interaction between exchange rate movements and domestic policy environments.

Elias et al. (2023) examine the effects of currency devaluation which is a related phenomenon to fluctuation on Ethiopia's coffee and khat exports. Using a vector error correction model (VECM) and Johansen co-integration test, they found that devaluation initially boosts export volumes by making Ethiopian goods cheaper abroad. However, persistent volatility erodes these gains over time, as importers adjust their purchasing behaviors and local producers struggle with input cost inflation. This dual effect highlights the short-term benefits versus the long-term challenges of exchange rate instability in export-dependent economies. Mbunduki (2024) analyzed the impact of exchange rate variability on coffee export growth in Tanzania. The study found that volatility disrupts export planning and reduces profitability, particularly for smallholder farmers who rely on stable revenue. Coffee, a globally traded commodity, is very sensitive to exchange rate shifts, and Tanzania's export growth stagnates during periods of high volatility. Wanzala et al. (2024) identified a negative correlation between exchange rate volatility and export volumes of Kenya's coffee exports. Their analysis suggests that volatility increases exporters' risk perceptions, leading to reduced investment in production and marketing.

George (2022) and Samoei and Kipchoge (2021) emphasize the role of exchange rate stability in horticultural export success in East Africa. George (2022) points out that exchange rate volatility undermines the competitiveness of Tanzania's horticultural sub-sector due to increased logistical costs, which is especially detrimental to perishable goods. Similarly, Samoei and Kipchoge (2021) identified exchange rate stability as a key driver of horticultural exports in Kenya, allowing firms to better predict revenues and plan investments, leading to increased export volumes. Wainana (2025), in his study, analyzed Kenya's exchange rate trends from 1990 to 2022 and found that while there is a long-term relationship between exchange rates, GDP, inflation, and trade volumes, exchange rate shocks delay the effects on trade, citing the importance of stable exchange rate policies to support economic resilience and trade balance. On the other hand, Gebreyesus (2015) found that in Ethiopia, the exchange rate does not affect the coffee exports in either the short run or the long run, meaning that exchange rate fluctuations have no impact on coffee exports in Kenya.

Isnowati et al. (2023) noted that in Indonesia, during the period spanning 2000 to 2020, a positive correlation exists between the exchange rate and inflation in both the short term (coefficient = 0.0738) and long term (0.3753), with the long-term effect demonstrating a greater magnitude. This finding suggests a more substantial long-term exchange rate pass-through, highlighting the significance of the exchange rate as a driver of inflation.

METHODOLOGY

This research employs a quantitative time-series econometric approach to analyze the impact of exchange rate fluctuations on Kenya's coffee exports, utilizing a Vector Error Correction Model (VECM) to analyze both short-run and long-run relationships. To eliminate trends and non-stationarity, the exchange rate variable is transformed by taking the first difference of the variables. Augmented Dicky-Fuller (ADF), which ensures that all the variables involved in the study are stationary. The study is set within Kenya's coffee export sector, focusing on national-level trade and economic data from 1990 to 2023, a period capturing Kenya's shift to a floating exchange rate and various global economic shocks like the 2008 global financial crisis and the COVID-19 pandemic. The dependent variable is the annual value of coffee exports (in USD), with independent variables including exchange rate fluctuations (KES/USD volatility), inflation rate, and real GDP growth. It encompasses all relevant economic and trade data over the study period, with a sample of 34 annual observations drawn from secondary sources like the World Bank, the IMF, the Central Bank of Kenya, and Kenya's National Treasury.

Secondary instruments, specifically electronic datasets from the World Bank, the IMF, the Central Bank of Kenya, and Kenya's National Treasury, were accessed in formats like Excel. The analysis will be conducted using the statistical software EViews 12 to perform stationarity tests, cointegration analysis, and VECM estimation, ensuring robust results. Ethical clearance is not required as the study uses publicly available data without human subjects or sensitive information. Ethical standards are maintained through accurate data handling, transparent reporting, citing of previous studies, and adherence to the terms of data access provided by the source institutions. This methodology ensures a thorough and ethical investigation into the complex dynamics of exchange rate impacts on Kenya's coffee exports. To eliminate trends and non-stationarity, the exchange rate variable is transformed by taking the first difference of the variables. Augmented Dicky-Fuller (ADF), which ensures that all the variables involved in the study are stationary.

The VECM takes the following form:

$$\Delta X_t = \alpha\beta X_{t-1} + \Gamma_1 \Delta X_{t-1} + \Gamma_2 \Delta X_{t-2} + \Gamma_3 \Delta X_{t-3} + \Gamma_x \Delta X_{t-x} + \in_{t\ldots\ldots}$$

Where;

α= Coefficients of adjustments

β= Cointegrating coefficients

Γ= Short run coefficients

To eliminate trends and non-stationarity, the exchange rate variable is transformed by taking the first difference of the variables. Augmented Dicky-Fuller (ADF), which ensures that all the variables involved in the study are stationary.

RESULT

The Johansen cointegration test revealed the presence of two significant long-run relationships among coffee exports, GDP, exchange rate, and inflation. This shows that these macroeconomic variables are cointegrated and thus move together over time despite short-term fluctuations, indicating a stable long-run equilibrium relationship. The estimated coefficients suggest that changes in the exchange rate and inflation have notable long-run impacts on coffee export in Kenya.

Descriptive

Table 1. Kenya Macroeconomic Variability Statistics from 1990 to 2023

Date: 04/12/25 Time: 13:19
Sample: 1990 2023

	EXPORT	GDP	ER	INFL
Mean	60227556	5.57E+12	79.29647	173.3156
Median	49844252	5.01E+12	77.20500	131.3550
Maximum	1.52E+08	1.04E+13	156.4600	632.9100
Minimum	37456346	3.16E+12	22.90000	66.09000
Std. Dev.	23102661	2.21E+12	27.47061	127.2277
Skewness	2.202234	0.674361	0.253449	2.219478
Kurtosis	8.682457	2.185600	3.699915	7.767365
Jarque-Bera	73.22701	3.516589	1.058004	60.11213
Probability	0.000000	0.172339	0.589193	0.000000
Sum	2.05E+09	1.89E+14	2696.080	5892.730

The descriptive statistics used were measures of central tendencies, such as mean and median. They reveal a visible variability in Kenya's macroeconomic indicators from 1990 to 2023. Coffee export values show significant fluctuations, indicating instability in trade performance. GDP appears to be relatively stable with a distribution close to normal, also suggesting steady economic growth trends. The exchange rate shows a consistent depreciation of the Kenyan Shilling, reflecting the long-term effect of external economic pressures. Inflation exhibited the highest level of volatility, pointing to periods of economic instability and price shocks. The skewness and kurtosis values suggest that outliers heavily influence export and inflation data and are not normally distributed. This was further supported by the Jarque-Bera test, which confirmed non-normality in export and inflation data. Overall, these findings underscore the coffee export sensitivity of Kenya to the global market, reinforcing the importance of strong macroeconomic policies and exchange rate management.

Autocorrelation

Table 2. Portmanteau Test

Joint test:

Chi-sq	df	Prob.
195.7600	180	0.1998

Individual components:

Dependent	R-squared	F(18,12)	Prob.	Chi-sq(18)	Prob.
res1*res1	0.927812	8.568535	0.0003	28.76219	0.0514
res2*res2	0.407126	0.457800	0.9349	12.62091	0.8136
res3*res3	0.794251	2.573522	0.0497	24.62177	0.1357
res4*res4	0.312235	0.302656	0.9890	9.679272	0.9419
res2*res1	0.544986	0.798489	0.6765	16.89456	0.5304
res3*res1	0.346692	0.353781	0.9772	10.74746	0.9048
res3*res2	0.415738	0.474374	0.9259	12.88787	0.7982
res4*res1	0.433903	0.510989	0.9040	13.45100	0.7641
res4*res2	0.234202	0.203885	0.9987	7.260274	0.9877
res4*res3	0.498519	0.662730	0.7913	15.45410	0.6306

The diagnostic tests carried out on the VECM model reveal that the residuals are well-behaved, indicating that the model is appropriately specified. The Portmanteau test for autocorrelation produced a joint p-value of 0.1998, which is greater than the 5% significance level, leading to the conclusion that there is no significant autocorrelation in the residuals. This suggests that the model captures the dynamic structure of the data well.

Normality Test

Table 3. Tilt Test

VEC Residual Normality Tests
Orthogonalization: Cholesky (Lutkepohl)
Null Hypothesis: Residuals are multivariate normal
Date: 04/14/25 Time: 17:37
Sample: 1990 2023
Included observations: 31

Component	Skewness	Chi-sq	df	Prob.*
1	0.044201	0.010094	1	0.9200
2	0.149766	0.115887	1	0.7335
3	0.308376	0.491330	1	0.4833
4	0.369975	0.707222	1	0.4004
Joint		1.324533	4	0.8572

Component	Kurtosis	Chi-sq	df	Prob.
1	4.938571	4.854160	1	0.0276
2	4.008365	1.313365	1	0.2518
3	2.509708	0.310499	1	0.5774
4	3.238972	0.073764	1	0.7859
Joint		6.551788	4	0.1616

Component	Jarque-Bera	df	Prob.
1	4.864254	2	0.0878
2	1.429253	2	0.4894
3	0.801828	2	0.6697
4	0.780986	2	0.6767
Joint	7.876321	8	0.4456

*Approximate p-values do not account for coefficient estimation

The results of the residual normality test indicate that the residuals from the VECM model are approximately normally distributed. The skewness test showed no significant deviation from symmetry, while only one component displayed mild excess kurtosis. Importantly, the joint Jarque-Bera test returned a p-value of 0.4456, suggesting that the residuals do not significantly deviate from a normal distribution. These findings confirm that the model satisfies the assumption of residual normality, supporting the validity of further statistical interpretation

Granger Causality

Table 4. Granger Causality Test

Pairwise Granger Causality Tests
Date: 04/14/25 Time: 17:40
Sample: 1990 2023
Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
GDP does not Granger Cause EXPORT	32	1.43025	0.2568
EXPORT does not Granger Cause GDP		0.70686	0.5021
ER does not Granger Cause EXPORT	32	0.46655	0.6321
EXPORT does not Granger Cause ER		0.09117	0.9131
INFL does not Granger Cause EXPORT	32	0.81958	0.4513
EXPORT does not Granger Cause INFL		1.16111	0.3283
ER does not Granger Cause GDP	32	0.96604	0.3934
GDP does not Granger Cause ER		4.81608	0.0163
INFL does not Granger Cause GDP	32	1.02739	0.3715
GDP does not Granger Cause INFL		4.57629	0.0194
INFL does not Granger Cause ER	32	0.35896	0.7017
ER does not Granger Cause INFL		1.59892	0.2207

Pairwise Granger causality tests indicate that there is no statistically significant short-run causality from exchange rate to coffee exports ($p = 0.6321$), nor from coffee exports to exchange rate ($p = 0.9131$). This shows that while these variables may be linked in the long run (as tested by cointegration), short-run relationships are weak. This evidence strongly supports the existence of long-term cointegrating relationships among coffee exports, exchange rate, GDP, and inflation, justifying the use of a Vector Error Correction Model (VECM) for estimation

VECM Results

Table 5. Vector Error Correction Model (Vecm) Results

EXPORT(-1)	1.000000
GDP(-1)	1.71E-05 (5.4E-06) [3.15544]
ER(-1)	-1923963. (588680.) [-3.26827]
INFL(-1)	182135.9 (84419.9) [2.15750]
C	-31335343

Error Correction:	D(EXPORT)	D(GDP)	D(ER)	D(INFL)
CointEq1	-0.235432 (0.13360) [-1.76221]	-2286.977 (948.558) [-2.41100]	1.38E-07 (6.8E-08) [2.03279]	-5.51E-07 (1.3E-07) [-4.37105]
D(EXPORT(-1))	-0.426290 (0.16604) [-2.56732]	702.3063 (1178.91) [0.59573]	-7.41E-08 (8.4E-08) [-0.88047]	3.63E-07 (1.6E-07) [2.32063]
D(GDP(-1))	2.48E-07 (2.8E-05) [0.00891]	0.133643 (0.19752) [0.67659]	2.31E-11 (1.4E-11) [1.64077]	-4.07E-11 (2.6E-11) [-1.55092]
D(ER(-1))	-143846.7 (434601.) [-0.33099]	-1.99E+08 (3.1E+09) [-0.06434]	-0.130282 (0.22028) [-0.59144]	-0.679807 (0.40992) [-1.65839]
D(INFL(-1))	-147078.6 (147012.) [-1.00045]	-2.86E+08 (1.0E+09) [-0.27364]	0.072897 (0.07451) [0.97831]	0.211746 (0.13866) [1.52705]
C	-4303174. (7487476) [-0.57472]	1.94E+11 (5.3E+10) [3.64481]	0.742147 (3.79505) [0.19556]	0.602610 (7.06228) [0.08533]
R-squared	0.380061	0.391324	0.221219	0.709709
Adj. R-squared	0.260842	0.274271	0.071454	0.653884
Sum sq. resids	1.17E+16	5.91E+23	3010.927	10426.90
S.E. equation	21231549	1.51E+11	10.76127	20.02585
F-statistic	3.187926	3.343128	1.477103	12.71307
Log likelihood	-581.9558	-865.7267	-118.1143	-137.9886
Akaike AIC	36.74724	54.48292	7.757144	8.999286
Schwarz SC	37.02206	54.75775	8.031970	9.274111
Mean dependent	-1290942.	2.25E+11	4.030000	-14.46906
S.D. dependent	24695233	1.77E+11	11.16765	34.03926

Determinant resid covariance (dof adj.)	3.56E+41
Determinant resid covariance	1.55E+41
Log likelihood	-1699.135
Akaike information criterion	107.9459
Schwarz criterion	109.2285
Number of coefficients	28

The Vector Error Correction Model (VECM) results shows a statistically significant long-run relationship among coffee exports, GDP, exchange rate, and inflation, with a 1-unit increase in GDP leads to a 0.0000171-unit rise in exports, a 1-unit increase in exchange rate reduces coffee exports by 19,239,863 units, and a 1-unit rise in inflation increases coffee exports by 182,135.9 units. The error correction term shows that 23.5% of the disequilibrium is adjusted each period, though this correction is not statistically significant (t-statistic = -1.76221). In the short run, lagged changes in exports, GDP, ER, and INFL have no significant effect on export changes, as their coefficients lack statistical significance.

DISCUSSIONS

The results provide significant insights into the relationship between exchange rate fluctuations and Kenyan coffee exports. The positive long-run effect of exchange rate depreciation supports the elasticity approach, where a weaker currency enhances export competitiveness, validating the findings from Mukhebi et al. (2024) and Kiptarus et al. (2022). However, the insignificant short-run effects in the VECM suggest that the J-curve effect, which predicts an initial decline followed by an increase in exports after depreciation, may not be the case in Kenya's coffee sector. This could be due to rigidities such as fixed prices or delays in adjusting export volumes, as noted by Mao (2019), who emphasized on how smaller firms struggle to respond to volatility. The unexpected positive effect of inflation aligns with Isnowati et al. (2023), who found a positive correlation between exchange rates and inflation, but contradicts Kargbo (2006), who noted that volatility often reduces competitiveness by increasing costs. In Kenya, inflation may drive producers to export more to escape domestic price pressures. The declining export trend corresponds well with Wanzala et al. (2024), who identified a negative correlation between exchange rate volatility and Kenyan coffee exports, reflecting great challenges like supply chain inefficiencies and global market dynamics (Petit, 2007). The insignificant short-run dynamics and moderate multicollinearity (VIF for ER = 7.19) suggest that other factors, such as global coffee prices or weather conditions, may dominate immediate export performance, as highlighted by George (2022) in the context of East African horticulture.

CONCLUSION AND RECOMMENDATIONS

This research shows that exchange rate depreciation significantly boosts Kenya's coffee exports in the long run, with a weaker Kenyan Shilling enhancing competitiveness. GDP and inflation also positively influence coffee exports in Kenya. In contrast, the short-run effects of exchange rate fluctuations, GDP, and inflation on coffee exports are insignificant. This research contributes to the elasticity approach by validating the long-run benefits of depreciation for agricultural exports while challenging the applicability of the J-curve effect in Kenya's coffee sector due to the absence of short-run dynamics. For future research, exploring the impact of global coffee price volatility, climate change, and technological advancements in production could provide deeper insights on what really affects the coffee export market in Kenya. To strengthen Kenya's coffee sector, policymakers should adopt a managed float exchange rate regime to reduce volatility and support long-run export growth, while ensuring smallholder farmers have access to affordable hedging tools like forward contracts to manage currency risks. The government should also increase its role in organizing and structuring coffee production, encouraging processing and value-adding, and distributing to global markets

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