International Academic Journal of Economic and Financial Research

INTERNATIONAL REMITTANCES, MONETARY POLICY AND UNEMPLOYMENT IN KENYA: EVIDENCE FROM AN AUTOREGRESSIVE DISTRIBUTED LAG BOUNDS TESTING APPROACH, 1990–2024

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International Academic Journal of Economic and Financial Research
ISSN: 0522-4543
Vol.3, Issue.No.2, 2026

International Remittances, Monetary Policy and Unemployment in Kenya: Evidence from an Autoregressive Distributed Lag Bounds Testing Approach, 1990–2024

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Article History:
***Published on**:* 31/10/2026

***DOI:* https://doi.org/10.68715/92c90470**

***How to Cite**:* Mwangi, G. G., & Muthoga, S. (2026). International Remittances, Monetary Policy and Unemployment in Kenya: Evidence from an Autoregressive Distributed Lag Bounds Testing Approach, 1990–2024. *International Academic Journal of Economic and Financial Research, 3*(2), 1-21. **https://doi.org/10.68715/92c90470**

Abstract:

Purpose of Study: This study examines the effects of international remittances and monetary policy on unemployment in Kenya between 1990 and 2024. Specifically, it evaluates whether remittance inflows and changes in the Central Bank Rate significantly influence unemployment dynamics, while accounting for interest rates, exchange rates, inflation, and labour market persistence.

Methodology: The study employed a quantitative time series research design using annual secondary data from the World Bank and Central Bank of Kenya. An Autoregressive Distributed Lag (ARDL) bounds testing approach examined long run relationships and short run dynamics. Augmented Dickey Fuller tests established stationarity, while diagnostic tests assessed model reliability.

Findings: The findings revealed no significant long-run relationship between unemployment, remittances, monetary policy, and the selected macroeconomic variables, as the bounds test statistic (1.351) fell below critical thresholds. Although the short-run model was statistically significant ($p = 0.029$), remittances ($\beta = 0.006$, $p = 0.720$) and monetary policy exhibited insignificant effects on unemployment. Interest rates, exchange rates, and inflation were similarly insignificant. However, lagged unemployment growth demonstrated a significant positive effect ($\beta = 0.777$, $p = 0.001$), indicating substantial labour market persistence. These results suggest that unemployment dynamics are driven primarily by historical labour market conditions rather than immediate macroeconomic adjustments.

Conclusion: The study concludes that international remittances and monetary policy do not significantly influence unemployment in Kenya. Consequently, policymakers should promote productive investment of remittances, strengthen monetary policy transmission, and implement targeted employment creation initiatives. Addressing structural labour market challenges remains essential for achieving sustainable employment growth and economic development.

***Keywords**: remittances; monetary policy; unemployment; ARDL; bounds test; Kenya.*

JEL classification*: F24; E52; J64; C22*

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1. INTRODUCTION

International remittances have become one of the most visible links between Kenya and the global economy. Central Bank of Kenya (CBK, 2026b) data show that inflows through formal channels rose from about US$3.1 billion in 2020 to a record US$4.94 billion in 2024 and US$5.04 billion in 2025, although growth in 2025 was the slowest in more than a decade. Remittances are often described as a stabiliser of household consumption, the exchange rate and the external account. Whether they also create jobs is a separate and less settled question.

The labour market picture is not encouraging. According to modelled International Labour Organization estimates published in the World Bank's World Development Indicators (World Bank, 2026), Kenya's unemployment rate rose from below 3% in the mid-2010s to about 5.6% in 2020 and has remained between 5.4% and 5.7% since. The headline figure understates the problem because most work is informal and low paid. The Kenya National Bureau of Statistics (KNBS, 2025) reported that the economy generated about 782,300 jobs in 2024, but only 78,600 of them were in the formal sector. Youth unemployment for ages 15 to 24 has been close to 15% in recent years (World Bank, 2026). Remittances have therefore grown strongly over a period in which unemployment did not fall.

Monetary policy adds a second layer to this puzzle. After raising the Central Bank Rate (CBR) to 13.00% in 2023, the CBK cut it ten times in a row between August 2024 and February 2026, bringing it to 8.75% (FocusEconomics, 2026). The Monetary Policy Committee held the rate at 8.75% on 7 October 2026 (CBK, 2026a). Yet the CBK's own key-rate statistics show an average commercial lending rate of 14.34% in August 2026, more than five percentage points above the CBR (CBK, 2026c). If policy easing is not reaching borrowers in full, its employment effects may be muted.

Economic theory gives conflicting predictions about the effect of remittances on unemployment. Remittances raise household income and demand, which should encourage firms to hire. They may also finance micro-enterprises that employ family members and neighbours. On the other hand, non-labour income can reduce the incentive to seek work, and large inflows can appreciate the real exchange rate and weaken tradable sectors, a mechanism known as Dutch disease. The empirical evidence is equally divided. Pal et al. (2022) found that remittance inflows reduce unemployment in low- and middle-income countries but increase it in high-income countries. Micro-level studies from Africa report that receiving foreign remittances lowers labour participation and hours worked (Ayalew & Mohanty, 2022). For South Africa, Musakwa (2024) found bidirectional causality between remittances and unemployment.

Evidence on monetary policy and unemployment is also mixed, and most of it comes from advanced economies. Bennani (2023), for example, showed that expansionary monetary shocks in the United States reduce unemployment among White and Black workers, with larger effects for Black workers, but not among Hispanic workers. Whether a central bank in a small, remittance-dependent, largely informal economy can influence unemployment through its policy rate has received little attention. Studies on Kenya have mostly examined the effect of remittances on house prices or education, or the pass-through of the policy rate to lending rates (Chege et al., 2024; Musimbi, 2024; Musyimi, 2023). We are not aware of a time-series study that considers remittances and monetary policy together as explanations of Kenya's unemployment rate.

This article fills that gap. It estimates an ARDL model of Kenyan unemployment using 35 years of annual data, with remittances as a share of gross domestic product (GDP) and the CBR as the main explanatory variables, and the interest rate, exchange rate and inflation as controls. The study is guided by two research questions. First, what is the effect of international remittances on unemployment in Kenya? Second, what is the effect of monetary policy, measured by the CBR, on unemployment in Kenya? The corresponding objectives are to evaluate the effect of remittances on unemployment and to examine the effect of monetary policy on unemployment.

The article contributes in three ways. It provides an empirical test of the remittance–unemployment link for Kenya that accounts for the macroeconomic environment in which remittances arrive. It tests the employment effect of the CBR directly rather than inferring it from output or inflation outcomes. It also reports confidence intervals alongside p-values, which allows the reader to distinguish between a precisely estimated absence of an effect and an imprecise estimate. The remainder of the article is organised as follows. Section 2 sets out the conceptual background and reviews the recent literature. Section 3 describes the data and methods. Section 4 presents the results. Section 5 discusses them, and Section 6 concludes with policy implications, limitations and directions for further research.

2. CONCEPTUAL BACKGROUND AND LITERATURE REVIEW

2.1 Channels linking remittances to unemployment

Four channels recur in the literature. The first is the demand channel. Remittances are non-labour income that raises household disposable income. If recipients spend on domestically produced goods and services, aggregate demand rises, firms expand output, and employment increases through a multiplier process. Pal et al. (2022), using panel data for high-, middle- and low-income countries from 1991 to 2020, found that remittances raised economic growth in all three groups and lowered unemployment in low- and middle-income countries. This supports the demand

channel in developing economies, although the authors' results do not identify which mechanism was at work.

The second channel concerns the motive for remitting. When migrants send money to cushion relatives against shocks, remittances behave counter-cyclically: they rise when the home economy is weak. An observed association between high remittances and high unemployment then reflects causation running from the labour market to remittances, not the reverse. Musakwa (2024) found bidirectional causality between remittances and unemployment in South Africa using ARDL and error-correction methods on data for 1990–2020, which is consistent with feedback in both directions.

The third channel operates through labour supply. Household members who receive remittances may reduce job search, participation or hours of work. Ayalew and Mohanty (2022) found that receiving foreign remittances reduced adult labour participation and hours worked in Ethiopia, with effects that varied by occupation, gender and place of residence. Alhassan et al. (2024) examined how educational attainment and household income shape the work decisions of remittance recipients in Nigeria, which underlines that responses differ across households. A decline in labour supply could lower measured unemployment if people leave the labour force, or raise it if recipients keep searching for better jobs while relying on transfers. The net effect on the headline rate is therefore ambiguous.

The fourth channel is macroeconomic and works through the exchange rate. Large and persistent inflows can appreciate the real exchange rate, making exports less competitive and shifting resources from tradable to non-tradable sectors. Ben Atta et al. (2025) found a U-shaped relationship between migrant remittances and the real exchange rate in developing countries, which implies that the effect of remittances on the exchange rate is not constant but varies with the level of inflows. Carare et al. (2025) found that real effective exchange rate overvaluation is positively correlated with remittances under flexible exchange rate regimes, that appreciation also occurs, albeit more slowly, under fixed regimes, and that countries receiving high remittances and importing relatively little experience appreciation after a remittance shock. Ma and Wang (2023) examined remittances and natural resources jointly through the lens of Dutch disease in the global economy. For Kenya, these findings suggest that currency appreciation could offset part of any positive demand effect of remittances on employment, although the size of the offset is an empirical matter.

2.2 How remittances are used in Kenya

The use of remittances determines whether they stimulate job creation. Chege et al. (2024) applied an ARDL model to quarterly data for 2004 to 2020 and found a positive and significant long-run

relationship between real remittances and real house prices in Kenya. Housing investment creates some construction jobs, but spending that mainly raises property prices need not generate much additional employment. Musyimi (2023), working with Kenyan data for 1990 to 2021, found that remittances had a negative and significant short-run effect on the education index and concluded that a large share of remittances is not directed to education. Taken together, these studies suggest that remittances in Kenya are largely absorbed by consumption, property and other uses with limited direct employment effects. That pattern is consistent with a weak aggregate link between remittances and unemployment.

2.3 Monetary policy and employment

Monetary policy affects employment mainly through the cost and availability of credit. A lower policy rate should reduce lending rates, encourage firms to borrow and invest, and support hiring. Bennani (2023), using data from 1969 to 2015 and a narrative identification of monetary shocks with local projections, found that expansionary shocks lower unemployment among White and Black workers but have no statistically distinguishable effect on Hispanic workers. The results show that the aggregate effect of monetary policy can hide large differences between groups. Evidence from African economies is more limited. Gómez and Irewole (2024) used a panel ARDL model for 29 African countries from 1991 to 2019 and found that economic growth, debt, the labour force and population are positively related to unemployment in the long run, while inflation, foreign direct investment and gross capital formation are negatively related to it. Their results show that the macroeconomic correlates of unemployment in Africa do not always follow textbook expectations.

For Kenya, the strength of the interest-rate channel is questionable. Musimbi (2024), using quarterly data for 2010 to 2021, concluded that changes in the CBR were not fully passed through to lending rates, real GDP and stock market capitalisation, and called for a review of the monetary policy framework. This matters because the link from the policy rate to employment runs through bank lending. If the pass-through is incomplete or slow, the employment effect of a rate change may be small and delayed.

2.4 Research gap and hypotheses

The literature reviewed above is dominated by cross-country panels, household surveys from other African countries, and advanced-economy studies of monetary shocks. For Kenya, existing time-series work examines remittances in relation to house prices, education and other outcomes, and monetary policy in relation to lending rates and growth. No study we know of tests remittances and the policy rate together as determinants of unemployment. Higher interest rates and inflation are expected to raise unemployment by increasing financing costs and eroding demand, while the

expected sign of the exchange rate is ambiguous, because depreciation can improve export competitiveness but also raises the cost of imported inputs. Based on the demand channel and the expected stimulative effect of looser policy, the study tests two null hypotheses against the alternatives that they have negative effects:

- H_1: International remittances (% of GDP) have no significant effect on unemployment in Kenya.
- H_2: The Central Bank Rate has no significant effect on unemployment in Kenya.

3. DATA AND METHODOLOGY

3.1 Research design and data

The study used a time-series econometric design with annual data for 1990–2024, giving 35 observations. This period covers the liberalisation of the 1990s, the introduction of the CBR as the main policy signal, the 2007–2008 post-election crisis, the COVID-19 pandemic, and the recent tightening and easing cycle. Data are secondary and publicly available. Unemployment, remittances, the interest rate, the exchange rate and inflation were obtained from the World Bank's World Development Indicators (World Bank, 2026). The policy rate series was obtained from the CBK (2026c). Unemployment is the modelled International Labour Organization estimate, expressed as a percentage of the total labour force.

Table 1 summarises the variables. Remittances are measured as personal remittances received as a percentage of GDP, which controls for the growth of the economy. Monetary policy is represented by the CBR, the rate at which the CBK signals its stance. The interest rate, the exchange rate (Kenya shillings per US dollar) and inflation (consumer prices) are included as controls because they affect firms' hiring decisions and the purchasing power of remittances.

Table 1

Variables, measurement and data sources

Variable	Role	Measurement	Source
Unemployment (U)	Dependent	Share of labour force without work but seeking work (%)	World Bank (2026)
Remittances (IR)	Explanatory	Personal remittances received (% of GDP)	World Bank (2026)
Monetary policy (MP)	Explanatory	Central Bank Rate (%)	CBK (2026c)
Interest rate (INT)	Control	Interest rate, annual percentage	World Bank (2026)
Exchange rate (EXC)	Control	Kenya shillings per US dollar	World Bank (2026)
Inflation (INF)	Control	Consumer price inflation (%)	World Bank (2026)

Unemployment, remittances, the CBR, the exchange rate and inflation were transformed into natural logarithms to reduce volatility and scale differences between series, so that their coefficients can be read as elasticities or, in differenced form, as relationships between growth rates. The interest rate was kept in levels because it takes negative values in some years.

3.2 Model specification

The empirical model is motivated by the demand-side view that employment depends on output, and that output responds to remittances and to the macroeconomic environment. Unemployment is therefore treated as a function of remittances, monetary policy and the three control variables. Because unemployment turned out to be integrated of order one while the other series are stationary in levels (Section 4.2), the model was estimated with the dependent variable in first differences. With two lags of the dependent variable and one lag of the policy variable selected, the short-run specification is:

$$\Delta \ln U_t = \alpha + \lambda_1 \Delta \ln U_{(t-1)} + \lambda_2 \Delta \ln U_{(t-2)} + \beta_1 \Delta \ln IR_t + \beta_2 \Delta \ln MP_t + \beta_3 \Delta \ln MP_{(t-1)} + \beta_4 \Delta INT_t + \beta_5 \Delta \ln EXC_t + \beta_6 \Delta \ln INF_t + \varepsilon_t \quad (1)$$

where Δ is the first-difference operator, α is a constant, the λ terms capture the persistence of unemployment growth, the β terms are short-run coefficients and ε is the error term. The model has eight regressors and, after differencing and lags, 32 usable observations, which leaves 23 residual degrees of freedom. Coefficients in equation (1) show the relationship between growth in each regressor and growth in unemployment. If a long-run relationship exists, an error-correction term would be added to this specification.

3.3 Estimation strategy

The estimation followed four steps. First, the order of integration of each series was assessed with the Augmented Dickey–Fuller (ADF) test, which includes lagged differences of the tested variable to absorb serial correlation in the errors. The null hypothesis is that the series has a unit root. Establishing the order of integration is necessary because the ARDL bounds procedure is valid for a mixture of I(0) and I(1) series but breaks down if any series is integrated of order two.

Second, the ARDL bounds test was applied to detect a long-run level relationship among the variables. The test compares an F-statistic on the lagged level terms, and a t-statistic on the lagged dependent variable, with lower bounds that assume all regressors are I(0) and upper bounds that assume they are all I(1). An F-statistic above the upper bound indicates cointegration, one below the lower bound indicates no cointegration, and one between the bounds is inconclusive. The estimation and the bounds test followed the procedure implemented by Kripfganz and Schneider

(2023), whose critical values and approximate p-values are obtained from response-surface regressions.

Third, as the bounds test did not support cointegration, the short-run dynamics were estimated using the ARDL model in differences, which is the appropriate specification when there is no long-run level relationship. Fourth, diagnostic tests were applied to the residuals. The Breusch–Pagan–Godfrey test examined heteroskedasticity, with a null of constant variance. The Jarque–Bera test examined normality, using skewness and kurtosis. The Breusch–Godfrey Lagrange multiplier test examined serial correlation, with a null of no autocorrelation. All inference used a 5% significance level, although exact p-values are reported.

4. RESULTS

4.1 Descriptive statistics

Table 2 summarises the variables. The back-transformed means in the last column are geometric means and are included to make the logged series easier to read. Over 1990–2024 Kenya's modelled unemployment rate ranged from 2.6% to 5.7%, with a geometric mean of 3.2%. Remittances averaged about 2.0% of GDP but ranged from 0.4% to 4.5%, which reflects the steady expansion of inflows over the period. The CBR varied between 6.4% and 16.5%, the exchange rate depreciated from about KSh 23 to about KSh 140 per US dollar, and inflation ranged from 1.6% to 46.0%. The interest rate varied widely and took negative values in some years. These ranges show that the sample contains a great deal of macroeconomic variation, which is useful for identifying relationships.

Table 2

Descriptive statistics, 1990–2024

Variable	Obs.	Mean	Std. dev.	Min.	Max.	Mean in original units
ln Unemployment	35	1.164	0.261	0.972	1.739	3.20%
ln Remittances	35	0.683	0.630	−0.936	1.512	1.98% of GDP
ln Monetary policy (CBR)	35	2.247	0.159	1.850	2.803	9.46%
Interest rate	35	8.030	7.145	−10.096	21.096	8.03 (level)
ln Exchange rate	35	4.311	0.398	3.132	4.941	KSh 74.5 per US$
ln Inflation	35	2.152	0.702	0.441	3.828	8.60%

Note. Means in original units for logged variables are geometric means (exponentials of the log means).

4.2 Unit root tests

Table 3 reports the ADF results. The unemployment series has a test statistic of −0.974 (p = .763), so the null hypothesis of a unit root cannot be rejected in levels. After first differencing, the series is stationary (test statistic = −4.768, p < .001), which establishes that unemployment is integrated of order one. The log of remittances (p = .013), the log of the CBR (p < .001) and the log of inflation (p = .032) are stationary in levels at the 5% level on both the test statistic and the p-value. The interest rate (test statistic = −2.951, p = .040) and the log of the exchange rate (test statistic = −2.921, p = .043) are marginal cases: their statistics lie slightly above the 5% critical value of −2.978, and the conclusion of stationarity rests on the approximate p-values. We treat them as I (0), but the mixed integration orders would arise even if these two series were I (1). What matters for the bounds procedure is that none of the series is I (2), and the results satisfy that condition.

Table 3

Augmented Dickey–Fuller unit root tests

Variable	Test statistic	1% critical value	5% critical value	10% critical value	p-value	Order of integration
ln Unemployment	−0.974	−3.696	−2.978	−2.620	.7627	I(1)
Δ ln Unemployment	−4.768	−3.702	−2.980	−2.622	.0001	Stationary
ln Remittances	−3.349	−3.696	−2.978	−2.620	.0128	I(0)
ln Monetary policy	−5.027	−3.696	−2.978	−2.620	.0000	I(0)
Interest rate	−2.951	−3.696	−2.978	−2.620	.0397	I(0)
ln Exchange rate	−2.921	−3.696	−2.978	−2.620	.0429	I(0)
ln Inflation	−3.028	−3.696	−2.978	−2.620	.0324	I(0)

4.3 Diagnostic tests

The residual diagnostics in Table 4 give no indication of misspecification. The Breusch–Pagan–Godfrey test does not reject constant variance ($\chi^2(1) = 2.69$, p = .101). The Jarque–Bera test does not reject normality (JB = 1.223, p = .543; skewness = −0.479, kurtosis = 3.172). The Breusch–Godfrey test finds no first-order serial correlation ($\chi^2(1) = 0.679$, p = .410). With only 32 usable observations these tests have limited power, so they should be read as the absence of detectable problems and not as proof that the assumptions hold.

Table 4

Residual diagnostic tests

Test	Null hypothesis	Statistic	p-value	Decision
Breusch–Pagan–Godfrey	Constant variance	$\chi^2(1) = 2.69$	.1007	Do not reject
Jarque–Bera	Normally distributed residuals	JB = 1.223	.5426	Do not reject
Breusch–Godfrey LM	No serial correlation	$\chi^2(1) = 0.679$	.4100	Do not reject

4.4 Correlation analysis

Table 5 reports the pairwise correlations between logged unemployment and the explanatory variables. Two are statistically significant at the 5% level. Remittances are positively correlated with unemployment (r = .424, p = .011), and so is the exchange rate (r = .571, p < .001). The CBR (r = −.252, p = .145), the interest rate (r = .031, p = .859) and inflation (r = −.274, p = .111) are not significantly correlated with unemployment. Among the explanatory variables, inflation is negatively correlated with both the interest rate (r = −.415, p = .013) and the exchange rate (r = −.461, p = .005), and the correlation between remittances and the exchange rate is positive but marginal (r = .317, p = .064). These are bivariate associations in levels. Remittances, the exchange rate and unemployment all rose over the sample period, so their positive correlations may reflect common trends and are not evidence of a causal link. The multivariate dynamic model below gives a more reliable test.

Table 5

Correlations with ln Unemployment

Variable	r	p-value
ln Remittances	.424	.011
ln Monetary policy (CBR)	−.252	.145
Interest rate	.031	.859
ln Exchange rate	.571	< .001
ln Inflation	−.274	.111

4.5 ARDL bounds test for cointegration

The bounds test (Table 6) gives an F-statistic of 1.351. This is below the lower bound I(0) critical value at all four significance levels, including the 10% level (2.26), and a fortiori below the upper bound. The t-statistic on the lagged dependent variable (−0.984) is also above, that is, less negative than, the lower-bound critical values (−2.57 at 10%). Both statistics therefore fail to reject the null hypothesis of no level relationship. We conclude that unemployment, remittances, the CBR, the interest rate, the exchange rate and inflation are not cointegrated in this sample. Any relationship between remittances or monetary policy and unemployment is therefore confined to short-run dynamics, and we do not estimate an error-correction term.

Table 6

ARDL bounds test results

Statistic	Value	Significance level	Lower bound I(0)	Upper bound I(1)
F	1.351	10%	2.26	3.35
		5%	2.62	3.79
		2.5%	2.96	4.18
		1%	3.41	4.68
t	−0.984	10%	−2.57	−3.86
		5%	−2.86	−4.19
		2.5%	−3.13	−4.46
		1%	−3.43	−4.79

Note. Decision: do not reject the null hypothesis of no level relationship.

4.6 Short-run ARDL estimates

Table 7 reports the short-run ARDL model estimated in first differences. The model as a whole is statistically significant ($F(8, 23) = 2.71$, $p = .029$), with $R^2 = .485$ and an adjusted R^2 of .306, so the regressors jointly account for about 49% of the variation in unemployment growth. The joint significance is, however, driven by the persistence of unemployment growth. The first lag of the dependent variable has a positive and significant coefficient ($\beta = 0.777$, $p = .001$), while the second lag is negative and insignificant ($\beta = -0.152$, $p = .459$). An acceleration of unemployment in one year therefore tends to be followed by a further, though smaller, acceleration in the next.

None of the macroeconomic variables is statistically significant. The coefficient on remittances is 0.006 ($p = .720$), with a 95% confidence interval of −0.029 to 0.042. Because the variables are growth rates, the interval means that a ten-percentage-point faster growth in the remittance-to-GDP ratio is associated with a change in unemployment growth of between about −0.3 and +0.4 percentage points. The current CBR has a coefficient of −0.035 ($p = .527$) and its first lag has a coefficient of 0.069 ($p = .233$); the signs differ and neither is distinguishable from zero. The interest rate ($\beta = -0.0005$, $p = .721$), the exchange rate ($\beta = -0.022$, $p = .810$) and inflation ($\beta = 0.007$, $p = .640$) are also insignificant. We therefore cannot reject H_1 or H_2. Table 8 summarises the decisions.

Table 8.

Summary of hypothesis tests

Hypothesis	Relevant estimate	p-value	Decision
H_1: Remittances have no effect on unemployment	$\beta = 0.006$	.720	Fail to reject
H_2: The CBR has no effect on unemployment	$\beta = -0.035$ (current); $\beta = 0.069$ (lag)	.527; .233	Fail to reject

Table 7

Short-run ARDL estimates (dependent variable: Δ ln Unemployment; N = 32)

Regressor	Coefficient	Std. error	t	p-value	95% CI
Δ ln Unemployment (t−1)	0.777	0.211	3.68	.001	[0.340, 1.213]
Δ ln Unemployment (t−2)	−0.152	0.201	−0.75	.459	[−0.568, 0.265]
Δ ln Remittances	0.006	0.017	0.36	.720	[−0.029, 0.042]
Δ ln Monetary policy (CBR)	−0.035	0.055	−0.64	.527	[−0.149, 0.078]
Δ ln Monetary policy (CBR), t−1	0.069	0.056	1.22	.233	[−0.048, 0.186]
Δ Interest rate	−0.0005	0.001	−0.36	.721	[−0.003, 0.002]
Δ ln Exchange rate	−0.022	0.089	−0.24	.810	[−0.205, 0.162]
Δ ln Inflation	0.007	0.014	0.47	.640	[−0.023, 0.036]
Constant	0.009	0.011	0.78	.446	[−0.015, 0.032]

Note. $F(8, 23) = 2.71$, $p = .0291$; $R^2 = .4854$; adjusted $R^2 = .3064$.

5. DISCUSSION

5.1 Remittances and unemployment

The central result is that remittances are not a statistically or economically meaningful short-run determinant of unemployment in Kenya. This differs from the panel evidence in Pal et al. (2022), who found that remittances reduce unemployment in low- and middle-income countries. It also differs from the finding of bidirectional causality between remittances and unemployment in South Africa (Musakwa, 2024). Several features of the Kenyan case help to reconcile these results.

The first is the pattern of use. Studies of Kenya suggest that remittances are directed toward consumption, housing and other purposes with limited employment effects. Chege et al. (2024) found that remittances move together with house prices in the long run, and Musyimi (2023) concluded that a large share of remittances is not spent on education. If households use transfers to pay for food, rent, debts, property or other consumption, the multiplier effect on domestic hiring is weak, particularly when part of the spending leaks into imports. The demand channel exists in theory but may be too small to move the national unemployment rate.

The second is labour supply. Where remittances reduce job search or hours worked, as Ayalew and Mohanty (2022) found for Ethiopia, any demand effect on hiring can be offset by a reduction in labour supply, and the net effect on measured unemployment is close to zero. Alhassan et al. (2024) show that responses depend on recipients' education and household income, which suggests that offsetting effects across household types could cancel out in aggregate data. Our macro-level estimate cannot separate these effects, but the null result is what we would expect if they are of similar magnitude.

The third is the compensatory nature of many transfers. If migrants remit more when the home economy is under strain, then remittances and unemployment can rise together even when remittances help recipients, which would bias a simple regression toward finding a positive relationship. Musakwa's (2024) evidence of two-way causality in South Africa points to this kind of feedback. In our case the positive and significant bivariate correlation ($r = .424$) disappeared once dynamics and controls were introduced, which is consistent with common trends or feedback and not a causal effect of remittances on joblessness.

The fourth is the exchange rate. Recent work finds that remittance inflows tend to appreciate the real exchange rate, with the size of the effect depending on the exchange rate regime and the structure of the economy (Ben Atta et al., 2025; Carare et al., 2025; Ma & Wang, 2023). An appreciation can weaken exporters and import-competing firms and so offset the demand gains from remittances. We did not find a significant short-run association between exchange rate changes and unemployment, so our results neither confirm nor rule out this mechanism. It would be more accurately examined with real exchange rate data and sectoral employment series.

Finally, the unemployment rate itself may be a poor indicator of the labour market effects of remittances in an economy where most people work informally. If remittances finance small informal businesses, the beneficiaries would be counted as employed before and after, and the effect would show up in earnings and job quality and not in the unemployment rate. The KNBS (2025) figures on the dominance of informal job creation illustrate why headline unemployment can be insensitive to many labour market developments.

The confidence interval for remittances deserves emphasis. The estimates are precise enough to rule out large effects in either direction, so the result should not be dismissed as the product of low power alone. At the same time, an annual sample of 32 usable observations limits what can be excluded, particularly for effects that vary across households or over time.

5.2 Monetary policy and unemployment

The CBR has no statistically significant relationship with unemployment, either contemporaneously or with a one-year lag, and the signs of the two coefficients are opposite. This

is consistent with the view that the interest-rate channel is weak in Kenya. Musimbi (2024) found that changes in the CBR were not fully transmitted to lending rates, GDP and stock market capitalisation over 2010–2021. Recent data point to a similar gap. The CBK's key-rate statistics show an average lending rate of 14.34% in August 2026 against a CBR of 8.75% (CBK, 2026a, 2026c), after ten consecutive cuts that lowered the CBR from 13.00% (FocusEconomics, 2026). If lending rates adjust slowly and incompletely, firms' borrowing costs, and therefore their hiring decisions, respond little to policy changes.

Timing offers a second explanation. Firms typically adjust employment with a delay after financing conditions change, and our specification includes only one lag of the policy variable. Longer lags or a higher-frequency data set might reveal effects that annual data conceal. A third explanation concerns the objectives of policy. The CBK's mandate and its stated focus in recent communications are inflation and exchange rate stability (CBK, 2026a). Policy decisions are made with those goals in mind and not with a view to employment, so one would not expect the CBR to track the unemployment rate closely.

The contrast with Bennani (2023) is instructive. That study identified exogenous policy shocks and found significant employment effects for some racial groups in the United States, with no effect for others. Aggregate Kenyan data and a policy rate that responds endogenously to inflation and growth cannot reproduce that identification. The Kenyan labour market is also very different: with most workers outside the formal sector, a policy-induced fall in bank lending rates reaches only a small fraction of employers. The recent easing cycle is a useful illustration. Since August 2024 the CBR has fallen by 425 basis points, yet the modelled unemployment rate has stayed between 5.4% and 5.5% (World Bank, 2026).

5.3 Control variables and persistence

Interest rate, exchange rate and inflation changes were all insignificant, which differs from the long-run findings of Gómez and Irewole (2024), who reported that inflation was negatively related to unemployment in a panel of African countries. The difference is not surprising because their analysis concerned long-run relationships in a panel, while we found no cointegration for Kenya and therefore estimated short-run dynamics only. The negative sign on the exchange rate coefficient should not be read as support for Dutch disease, because the coefficient is statistically indistinguishable from zero.

The strongest result in the model is the persistence of unemployment growth. A coefficient of 0.777 on the first lag means that movements in unemployment tend to carry over from one year to the next. This is typical of labour markets in which hiring and firing are costly and in which shocks, such as droughts, the pandemic or fiscal tightening, take time to work through. For policy,

persistence implies that deteriorations in the labour market are costly to reverse and that early action matters more than corrective action after the fact.

5.4 Implications for the literature

Three lessons for the wider literature emerge. First, evidence that remittances raise growth does not by itself show that they reduce unemployment. Pal et al. (2022) found growth effects in all income groups but employment effects that differed by income level, and the Kenyan case shows that a growth-enhancing inflow can leave the unemployment rate largely unchanged. Second, single-country time-series studies are a necessary complement to cross-country panels, because the channels discussed above depend on institutions, the exchange rate regime and the structure of the labour market, which panels average over. Third, reporting confidence intervals is useful in this literature. Many studies conclude that remittances have an insignificant effect without showing how large an effect their data could exclude. In the present case the interval is narrow enough to tell policymakers that the aggregate employment payoff from remittances, at least within a year, is small.

6. CONCLUSIONS, POLICY IMPLICATIONS AND LIMITATIONS

6.1 Conclusions

This article examined whether international remittances and monetary policy explain short-run movements in Kenya's unemployment rate between 1990 and 2024. Unemployment is integrated of order one, the other series are stationary in levels, and the ARDL bounds test detects no long-run relationship among the variables. The short-run ARDL model is jointly significant but only the persistence of unemployment growth is individually significant. Remittances, the current and lagged CBR, the interest rate, the exchange rate and inflation are all statistically insignificant, and the confidence interval for remittances excludes large effects. The study therefore finds no evidence that remittances or the policy rate have a reliable effect on unemployment in Kenya at the annual frequency.

These results should not be read as saying that remittances and monetary policy are unimportant. Remittances support household consumption and the external account, and monetary policy influences inflation and financial conditions. The conclusion is narrower: neither is, on present evidence, an effective lever for reducing the aggregate unemployment rate. The explanation lies in how remittances are used, in the labour supply response of recipients, in the incomplete pass-through of the policy rate to lending rates, and in the dominance of informal employment.

The study adds to the literature in three ways. It tests remittances and the policy rate jointly, so that the estimated effect of each is conditioned on the other and on the macroeconomic setting. It

uses data through 2024 and places the results in the context of the 2024–2026 easing cycle and record remittance inflows. It also reports the full set of estimates, diagnostics and confidence intervals so that readers can judge the evidence for themselves.

6.2 Policy implications

Three policy implications follow. First, remittances should not be treated as a substitute for employment policy. If the objective is to convert remittances into jobs, policy needs to widen the options for productive use. Financial literacy and entrepreneurship training for recipient households, together with investment vehicles that allow diaspora and recipient funds to be channelled into enterprises, would raise the share of remittances that supports job creation. The fall in the education index associated with remittances (Musyimi, 2023) and the link to house prices (Chege et al., 2024) show that, left alone, flows do not automatically go to employment-generating uses.

Second, the CBK should not expect changes in the CBR alone to move unemployment. Improving the pass-through of the policy rate to lending rates, particularly for micro, small and medium enterprises that account for much of the country's job creation, would strengthen the employment channel. The CBK should also consider the timing and magnitude of monetary tightening and the implications of Central Bank Rate increases for job creation when it makes adjustments. Coordination with fiscal and structural policies on credit access, skills and the business environment is needed if monetary easing is to translate into hiring.

Third, the government should continue to monitor the interest rate, the exchange rate and inflation, because sustained adverse movements can affect firms' operations and, over time, employment, even though the short-run effects found here are small. Better measurement of informal employment, underemployment and job quality would also help policymakers to see labour market effects that headline unemployment misses.

6.3 Limitations

Several limitations should be borne in mind. First, the sample is short, with 35 annual observations and 32 usable observations in the dynamic model, which limits the power of the tests and the number of lags that can be explored. Second, the unemployment series is a modelled estimate and may smooth real fluctuations, and the unemployment rate captures only one dimension of labour market performance. Third, remittances are measured as a share of GDP and reflect formal channels, so flows through informal channels are not captured. Fourth, the CBR is a single indicator of monetary policy, and its early history requires careful documentation. Fifth, the analysis uses aggregate data and cannot identify the heterogeneous household-level responses discussed above or fully resolve reverse causality between remittances and unemployment. Sixth,

structural breaks, such as the 2007–2008 crisis and the COVID-19 pandemic, were not modelled. Finally, because there is no cointegration, the study speaks only to short-run relationships. These limitations suggest that the results are best read as evidence about the aggregate, annual relationship and not as a verdict on every channel through which remittances or monetary policy may affect individual workers and firms.

6.4 Directions for further research

Future studies could substitute the CBR with other policy indicators, such as the money supply, the cash reserve ratio or Treasury bill rates, and could add variables such as foreign direct investment, public debt, government spending and private investment. Quarterly data and methods that allow for structural breaks or asymmetric responses, such as nonlinear ARDL, would test whether effects differ between tightening and easing phases. Household-level analysis would show how remittance receipt affects labour participation, self-employment and informal enterprise in Kenya. Panel studies of East African Community countries would test the external validity of the findings.

7. DECLARATIONS

Funding. The first author's postgraduate studies were supported by a scholarship from CISP Italy and the Cooperation and Development Network (CDN).

Conflict of interest. The authors declare no conflict of interest.

Data availability. The data analysed are publicly available from the World Bank's World Development Indicators and the Central Bank of Kenya.

Ethics. The study used publicly available secondary data and involved no human participants.

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