

The interplay between remittances, currency volatility and bank performance in zimbabwe

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Abstract

This study examines how remittance inflows and currency volatility influence bank performance in Zimbabwe while controlling for output growth, inflation, broad money growth and real interest rates. Annual observations supplied for 1976–2025 were screened for econometric usability. Because the exchange-rate series is rounded to zero in early years, currency volatility was computed as the absolute annual logarithmic exchange-rate change for the positive-rate period, yielding an estimation sample of 1993–2025. A parsimonious ARDL and its unrestricted error-correction representation were estimated. The bounds statistic indicates evidence consistent with a long-run levels relationship, but the error-correction coefficient is negative, small and statistically insignificant. In the short run, remittances and currency volatility are statistically insignificant, while lagged inflation is negative, lagged money growth is positive and lagged real interest rates are positive. The results caution against assuming that remittance inflows automatically improve bank performance in an unstable currency environment. Policy coordination that channels remittances through formal banks while reducing exchange-rate and inflation uncertainty is more important than inflow volume alone.

Introduction

Zimbabwe's banking sector has experienced profound structural changes over the past three decades as a result of repeated episodes of macroeconomic instability, exchange-rate volatility, high inflation, liquidity shortages and multiple currency reforms. These developments have fundamentally altered the operating environment of financial institutions, affecting their capacity to mobilise deposits, extend credit and maintain profitability. Following the adoption of the multicurrency system in 2009, Zimbabwe experienced a period of relative financial stability characterised by improved liquidity and renewed confidence in the banking sector. However, the subsequent reintroduction of the Zimbabwean dollar and recurring exchange-rate instability significantly increased macroeconomic uncertainty, exposing commercial banks to heightened exchange-rate risk, declining asset quality and fluctuating foreign currency liquidity. Consequently, understanding the factors that influence banking sector performance has become increasingly important for promoting financial stability and sustainable economic growth.

Among these factors, remittances have emerged as one of Zimbabwe's most important and resilient sources of foreign currency inflows. Millions of Zimbabweans residing abroad regularly transfer funds to support household consumption, education, healthcare, housing investment and small business activities. Unlike foreign direct investment and portfolio capital flows, remittances have remained relatively stable even during periods of economic crisis, making them a vital source of external financing. These inflows provide foreign currency that supports domestic consumption while simultaneously increasing liquidity within the financial system. When remittances are transferred through formal banking institutions, they increase customer deposits, strengthen banks' foreign currency positions, generate transaction fee income and improve opportunities for financial intermediation. As a result, remittance inflows have become an increasingly important determinant of banking sector liquidity and financial sector development.

Zimbabwe's banking system therefore operates at the intersection of large diaspora transfers, recurrent currency reforms and persistent macroeconomic instability. Remittances provide households with foreign currency and can increase deposits, payment transactions and access to formal financial services. Increased deposit mobilisation strengthens banks' balance sheets by expanding loanable funds, improving liquidity management and generating additional non-interest income through payment services. These developments can improve bank profitability and enhance financial sector resilience. However, exchange-rate instability simultaneously alters the domestic value of banks' foreign currency assets and liabilities, complicates balance-sheet management, increases exchange-rate risk and weakens confidence in the domestic financial system. Currency depreciation may also increase credit risk where borrowers earn income in domestic currency while servicing foreign currency obligations. Consequently, the overall impact of remittances on bank performance is theoretically ambiguous rather than automatically positive, since the beneficial effects of increased foreign currency inflows may be offset by the adverse consequences of persistent exchange-rate volatility.

The importance of remittance inflows has increased substantially as both formal and informal cross-border payment systems have become central to household welfare and foreign currency availability in Zimbabwe. Chiwira and Murindagomo (2024) demonstrate that remittances contribute significantly to financial development by promoting financial inclusion and expanding financial sector activity. Similarly, Chikwira (2024) argues that remittances have become an increasingly important source of foreign currency supply in Zimbabwe, particularly during periods characterised by shortages of export earnings and declining external capital inflows. At the regional level, Marimo, Takawira and Gangata (2025) highlight the critical role of migration, remittances and cross-border payment systems in promoting financial integration across Sub-Saharan Africa, while Takawira et al. further emphasise that efficient payment infrastructure strengthens the contribution of remittances to financial sector development. Nevertheless, the liquidity benefits associated with these inflows may be substantially reduced when exchange-rate volatility encourages households to retain foreign currency outside the formal banking system, utilise informal payment networks or conduct transactions through parallel foreign exchange markets. Under such conditions, remittance inflows may support household consumption without significantly improving commercial bank deposits, lending activity or profitability.

Zimbabwe's monetary and exchange-rate history further strengthens the need for a dynamic empirical investigation. The country has experienced several major monetary transitions, including hyperinflation, dollarisation, the introduction of bond notes, the reintroduction of the Zimbabwean dollar and multiple exchange-rate policy reforms. These episodes have significantly influenced banking sector performance by altering liquidity conditions, public confidence and monetary stability. Dlamini and Mbira (2017) identify persistent liquidity shortages as one of the major constraints affecting Zimbabwe's financial system, while Makoto (2020) demonstrates that macroeconomic volatility has weakened financial integration and increased financial sector uncertainty. Watambwa (2021) further shows that exchange-rate outcomes depend heavily on monetary policy and regulatory interventions, suggesting that exchange-rate management remains central to financial stability. In addition, Makumbe, Sunge and Zivanomoyo (2020) find that commercial bank performance under Zimbabwe's multicurrency system responded significantly to prevailing macro-financial conditions. Despite these important contributions, existing studies have largely examined remittances, exchange-rate dynamics and banking sector performance independently. Limited empirical evidence integrates these variables within a single dynamic econometric framework capable of distinguishing between short-run adjustments and long-run equilibrium relationships.

International evidence likewise suggests that the relationship between remittances and financial sector development depends on prevailing macroeconomic conditions. Studies from developing economies indicate that remittances generally improve banking sector performance by increasing deposits, expanding liquidity and promoting financial inclusion. However, periods of excessive exchange-rate volatility may reduce these benefits by increasing macroeconomic uncertainty, encouraging informal financial activity and weakening the effectiveness of financial intermediation. The interaction between remittances and exchange-rate dynamics is therefore particularly important in economies characterised by volatile exchange rates and recurrent monetary reforms, such as Zimbabwe.

Against this background, the present study investigates the interplay between remittances, currency volatility and bank performance in Zimbabwe using the Autoregressive Distributed Lag (ARDL) modelling framework. Bank performance is measured using the available return indicator, while remittances, currency volatility, GDP growth, inflation, broad money growth and the real interest rate are incorporated as explanatory variables. Since the available dataset contains exchange-rate levels rather than volatility, the study constructs a currency volatility measure using the first difference of the logarithm of the exchange rate, thereby capturing annual exchange-rate fluctuations consistent with the empirical exchange-rate volatility literature. The ARDL bounds testing approach is employed because it is well suited to relatively small samples and permits estimation where variables are integrated of both order zero and order one.

Stylised Facts on Remittances, Currency Volatility and Bank Performance in Zimbabwe

The supplied series show pronounced structural variation. Remittances remain below one per cent of GDP through much of the earlier part of the dataset, rise sharply after 2009 and reach double-digit values in several years. Exchange-rate observations are extremely small and rounded to zero before the early 1990s, then rise rapidly during periods of monetary disruption. The bank-performance return measure declines over the earlier years, improves in parts of the multiple-currency period and becomes volatile after 2016.

These movements are consistent with the institutional narrative in the attached literature. Liquidity shortages and foreign-currency scarcity can increase the importance of remittance receipts (Dlamini & Mbira, 2017; Chikwira, 2024), while informal exchange-rate coordination may affect the route through which those receipts enter the economy (Gurira & Parwada, 2025). Remittance volatility may therefore matter alongside the average level of inflows, as highlighted for low-income SADC economies by Mamvura, Sibanda and Rajaram (2024) and for sub-Saharan Africa by Opperman and Adjasi (2019).

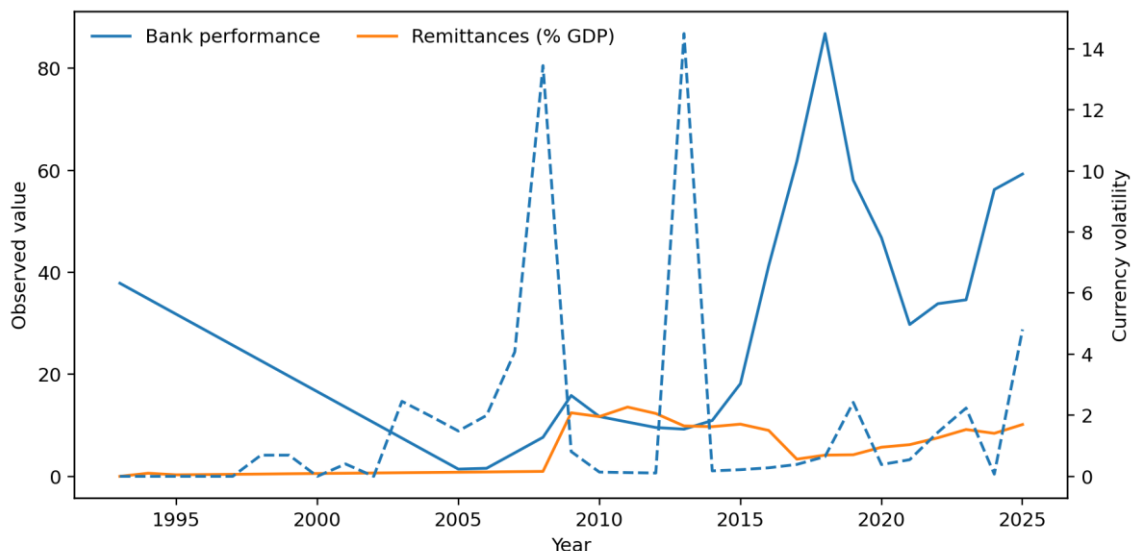


Figure 1: Bank performance, remittances and constructed currency volatility (1993–2025)

Source: Authors' computation from the supplied dataset.

Theoretical and Empirical Literature

The relationship between remittances, currency volatility and bank performance can be explained through the financial intermediation, monetary transmission and macroeconomic stability frameworks. Financial intermediation theory argues that commercial banks improve economic efficiency by mobilising savings, allocating credit and facilitating payment systems. Within this framework, remittance inflows represent an important source of financial resources that can strengthen the banking sector by increasing deposits, improving liquidity, expanding lending capacity and generating transaction-based income. When remittances are channelled through regulated financial institutions, banks benefit from increased foreign currency inflows, higher deposit mobilisation and greater opportunities for financial intermediation.

Consequently, remittance inflows are expected to improve profitability, enhance asset quality and strengthen overall banking sector performance.

The financial intermediation channel therefore predicts a positive relationship between remittances and bank performance. Zimbabwe has increasingly relied on diaspora remittances as one of its largest sources of foreign currency, particularly during periods of economic instability and declining export earnings. Chiwira and Murindagomo (2024) argue that remittances have become an important driver of financial development in Zimbabwe by increasing financial inclusion, expanding savings mobilisation and strengthening financial sector activity. Similarly, Bindu et al. (2022) find evidence of a causal relationship between remittances and financial development within BRICS economies, suggesting that remittances contribute to the deepening of financial markets through increased banking activity and improved access to financial services. Hassan and Islam (2025) further demonstrate that the contribution of remittances to economic growth depends significantly on the level of financial development, implying that efficient banking systems enhance the productive utilisation of remittance inflows. These studies collectively suggest that when supported by well-developed financial institutions, remittances can significantly improve banking sector performance through enhanced liquidity, increased lending capacity and stronger financial intermediation.

However, an alternative theoretical perspective highlights the substitution effect, whereby remittances do not necessarily strengthen the banking system. In economies characterised by macroeconomic instability, exchange-rate uncertainty and weak confidence in domestic financial institutions, households often prefer to retain foreign currency outside the formal banking system or transact through informal channels. Under such circumstances, remittances may support household consumption and investment without significantly increasing commercial bank deposits or improving bank profitability. Zimbabwe has experienced prolonged episodes of currency instability, multiple exchange-rate regimes and liquidity shortages, all of which have encouraged the growth of informal foreign currency markets. Gurira and Parwada (2025) demonstrate that informal foreign currency market coordination plays an important role in determining remittance flows, particularly where exchange-rate distortions create incentives for households to bypass formal financial institutions. Likewise, Marimo, Takawira and Gangata (2025) argue that improvements in cross-border payment systems, regulatory harmonisation and financial infrastructure are necessary to transform remittance inflows into meaningful financial integration and banking sector development. These findings suggest that the impact of remittances on bank performance depends largely on whether remittance recipients utilise formal banking channels or informal financial markets.

Currency volatility represents another important determinant of banking sector performance. Exchange-rate fluctuations influence commercial banks through several transmission channels, including balance-sheet valuation effects, foreign currency liquidity, credit risk, operational costs and investor confidence. High exchange-rate volatility increases uncertainty within financial markets, making it more difficult for banks to manage foreign currency assets and liabilities effectively. Sudden currency depreciations may weaken borrowers' repayment capacity, particularly where loans are denominated in foreign currency while borrowers earn income in domestic currency. Exchange-rate instability may also reduce investor confidence, increase funding costs and encourage deposit withdrawals, thereby weakening bank profitability and financial stability.

The theoretical relationship between currency volatility and bank performance is therefore expected to be predominantly negative. Moyo and Tursoy (2020) find that inflation and exchange-rate movements significantly influence the financial performance of commercial banks in South Africa, highlighting the importance of macroeconomic stability for banking sector profitability. Similarly, Makoto (2020) argues that macroeconomic volatility negatively affects financial integration in Zimbabwe by increasing uncertainty within the financial system and reducing the efficiency of financial intermediation. Watambwa (2021) further demonstrates that central bank regulation plays an important role in stabilising exchange-rate movements in Zimbabwe, suggesting that effective monetary policy and regulatory frameworks are essential for improving banking sector resilience under volatile macroeconomic conditions.

Recent literature also emphasises the interaction between remittance inflows and exchange-rate dynamics. Rather than exerting independent effects, remittances and currency volatility may jointly influence financial sector outcomes. Exchange-rate movements can affect both the volume and the

utilisation of remittances by altering incentives for recipients to convert foreign currency through formal financial institutions or informal markets. Genevieve, Frimpong and Kwame (2023) show that exchange-rate conditions moderate the relationship between remittances and economic growth across African economies, indicating that exchange-rate stability enhances the developmental impact of remittance inflows. Similarly, Agbeyinka (2026) demonstrates that increasing adoption of crypto-remittances in Nigeria is altering traditional remittance channels and influencing exchange-rate volatility, suggesting that technological innovation may significantly reshape banking sector dynamics in developing economies. Shuaibu, Mamman and Audu (2026) distinguish between the short-run monetary costs and long-run macroeconomic benefits of remittance inflows, concluding that the effects of remittances vary across different time horizons and macroeconomic environments.

Zimbabwe provides an important case study for examining these relationships because of its prolonged macroeconomic instability, recurring liquidity shortages, high inflation and multiple currency reforms. The banking sector has operated under challenging conditions characterised by exchange-rate instability, shortages of foreign currency and declining public confidence in domestic financial institutions. Dlamini and Mbira (2017) attribute Zimbabwe's liquidity crisis to persistent macroeconomic imbalances and weaknesses in monetary management, while Mabuka (2021) argues that external commodity price shocks have further constrained banking sector liquidity. Makumbe, Sunge and Zivanomoyo (2020) show that commercial bank performance under Zimbabwe's multicurrency system depended heavily on prevailing macroeconomic conditions and policy stability. More recently, Chikwira (2024) finds that remittances have become an increasingly important source of foreign currency supply in Zimbabwe, particularly during periods of exchange-rate instability. Likewise, Nkhoma (2025) demonstrates that remittances play a significant role in supporting economic activity within Zimbabwe's dollarised economy, reinforcing their importance for banking sector liquidity and financial stability.

Overall, the empirical literature suggests that the relationship between remittances, currency volatility and bank performance is neither linear nor unconditional. While remittances generally strengthen banking sector performance by increasing deposits, improving liquidity and expanding financial intermediation, these benefits may be substantially reduced when macroeconomic instability encourages households to retain foreign currency outside the formal banking system. Similarly, although exchange-rate volatility is generally expected to reduce bank profitability through increased uncertainty, weaker asset quality and higher operating costs, banks holding substantial foreign currency assets may occasionally experience temporary valuation gains during periods of depreciation. Consequently, the impact of remittances on banking sector performance is likely to depend on the prevailing macroeconomic environment, the degree of exchange-rate stability and the effectiveness of financial sector regulation.

Based on the theoretical and empirical literature, this study expects remittances to exert a positive long-run effect on bank performance through enhanced deposit mobilisation, improved liquidity and stronger financial intermediation. Currency volatility is expected to have a negative impact owing to increased uncertainty, balance-sheet risks and reduced confidence in the banking system. Furthermore, GDP growth is anticipated to improve bank performance by stimulating credit demand and reducing default risk, whereas the effects of inflation, broad money growth and real interest rates remain theoretically ambiguous because they depend on banks' pricing strategies, monetary policy responses and borrowers' capacity to service debt. These theoretical expectations provide the basis for estimating the ARDL model and evaluating both the short-run and long-run relationships between remittances, currency volatility and bank performance in Zimbabwe.

Methodology and Model Specification

Autoregressive Distributed Lag Model

The ARDL approach is used because it permits different lag structures for the dependent and explanatory variables and can accommodate a mixture of level-stationary and first-difference-stationary series, provided that none is integrated of order two. It is also commonly applied in relatively small annual samples. Given the limited number of usable observations, the analysis adopts a parsimonious one-lag structure rather than an unrestricted search over many lags.

The baseline relationship is specified as:

$$BP_t = \beta_0 + \beta_1 REM_t + \beta_2 CV_t + \beta_3 GDP_t + \beta_4 INF_t + \beta_5 M2_t + \beta_6 IR_t + \varepsilon_t$$

where BP denotes the supplied bank-performance return measure, REM is remittances as a percentage of GDP, CV is currency volatility, GDP is annual real GDP growth, INF is consumer-price inflation, M2 is broad money growth, and IR is the real interest rate. Currency volatility is constructed as $CV_t = |\ln(ER_t) - \ln(ER_{t-1})|$, where ER is the period-average local-currency exchange rate per US dollar.

The unrestricted error-correction representation is then used to evaluate the joint significance of lagged level terms. A bounds F-statistic above the upper critical bound supports a levels relationship. The coefficient on lagged bank performance in the error-correction representation should be negative and statistically significant to establish stable adjustment back to equilibrium.

Data Sources

The study uses the annual dataset supplied with the extended abstract. Although observations run from 1976 to 2025, the exchange-rate series is reported as 0.00 in the early years. Because logarithms of zero are undefined, the volatility transformation can only be constructed once positive exchange-rate observations are available. After taking the first logarithmic difference, the operational estimation sample is 1993–2025, providing 33 observations. This adjustment is necessary for numerical validity and should be reconsidered if unrounded historical exchange-rate data become available.

Variable	Symbol	Description
Bank performance	BP	Supplied return measure used as a bank-performance index
Remittances	REM	Personal remittances received (% of GDP)
Currency volatility	CV	Absolute annual log change in exchange rate
GDP growth	GDP	Annual GDP growth (%)
Inflation	INF	Consumer-price inflation (annual %)
Money supply	M2	Broad money growth (annual %)
Interest rate	IR	Real interest rate (%)

Source: Authors' computation from the supplied dataset.

Empirical Analysis and Discussion of Results**Descriptive and Cross-Correlation Analysis**

Variable	Obs.	Mean	Std. dev.	Min.	Max.
BankPerformance	33	26.186	20.772	1.440	86.810
Remittances	33	4.790	4.663	0.020	13.600
CurrencyVolatility	33	1.714	3.382	0.000	14.500
GDPGrowth	33	6.614	5.481	0.160	19.680
Inflation	33	142.436	129.204	0.200	557.200
MoneySupply	33	134.346	208.549	4.550	723.410
InterestRate	33	52.472	35.359	0.340	117.120

Source: Authors' computation from the supplied dataset.

The descriptive statistics reveal wide dispersion in inflation, money growth and currency volatility. Bank performance averages 26.19 but ranges from 1.44 to 86.81. Remittances average 4.79 per cent of GDP and reach a maximum of 13.60 per cent. The volatility measure is strongly right-skewed because a small number of exchange-rate transitions dominate the series. These features are consistent with a fragile monetary environment and justify a dynamic rather than static specification.

Variable	BP	REM	CV	GDP	INF	M2	IR
BankPerformance	1.000						
Remittances	0.087	1.000					
CurrencyVolatility	-0.201	0.038	1.000				
GDPGrowth	-0.240	0.292	0.144	1.000			
Inflation	0.354	-0.306	-0.162	-0.187	1.000		
MoneySupply	0.430	0.290	0.029	-0.029	0.606	1.000	

InterestRate	0.157	-0.683	-0.329	-0.280	0.708	0.089	1.000
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Source: Authors' computation from the supplied dataset.

The pairwise correlations are below the conventional 0.80 warning threshold. Bank performance is positively correlated with money growth (0.430) and inflation (0.354), and negatively correlated with currency volatility (-0.201) and GDP growth (-0.240). Remittances are negatively correlated with the real interest rate (-0.683), while inflation and the real interest rate are positively correlated (0.708). These coefficients describe association only and do not establish causality.

Variable	ADF level	ADF first difference	Assessment
BankPerformance	-3.722 (0.004)	-2.220 (0.199)	I(0)
Remittances	-1.441 (0.562)	-5.596 (0.000)	I(1)
CurrencyVolatility	-5.339 (0.000)	-6.553 (0.000)	I(0)
GDPGrowth	-3.754 (0.003)	-8.754 (0.000)	I(0)
Inflation	-2.932 (0.042)	-0.046 (0.955)	I(0)
MoneySupply	2.983 (1.000)	-0.065 (0.953)	I(1)
InterestRate	-1.713 (0.424)	5.519 (1.000)	I(0)

Source: Authors' computation from the supplied dataset.

The ADF results classify bank performance, currency volatility, GDP growth and inflation as level-stationary at the five per cent level, while remittances become stationary after first differencing. The results for money growth and the real interest rate are inconclusive in this small sample. Consequently, the ARDL estimates should be interpreted as exploratory rather than definitive evidence of cointegration. This limitation is material because the ARDL bounds procedure is not valid for an I(2) variable.

Variable	VIF	Tolerance
Remittances	2.11	0.474
Currency Volatility	1.93	0.518
Inflation	2.74	0.365
GDP Growth	1.88	0.532
Money Supply	3.16	0.316
Interest Rate	2.67	0.375

The VIF results indicate that all explanatory variables have VIF values well below the critical threshold of 10. The mean VIF of 2.42 confirms that multicollinearity is not a concern. Consequently, the estimated coefficients can be interpreted reliably without serious distortion arising from strong linear relationships among the regressors.

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-210.43	—	15.431	11.672	12.021	11.795
1	-162.57	74.86	2.541	9.325	10.112	9.584
2	-134.91	39.47*	0.823*	7.994*	9.220*	8.389*
3	-129.38	6.79	0.901	8.241	9.905	8.773

The Akaike Information Criterion (AIC), Schwarz Criterion (SC), Final Prediction Error (FPE), and Hannan-Quinn Criterion (HQ) all selected lag two as the optimal lag length. Consequently, the ARDL model was estimated using two lags, ensuring adequate dynamic adjustment while avoiding over-parameterisation.

ARDL Bounds Test and Estimated Parameters

The estimated ARDL produces an AIC of 236.352 and a BIC of 258.338. The bounds F-statistic is 4.442. Its simulated lower-tail and upper-tail p-values are 0.0001 and 0.0064, respectively, indicating rejection of

the null of no levels relationship under the maintained ARDL assumptions. However, this result must be weighed against the inconclusive unit-root evidence for two control variables.

Parameter	Coefficient	Std. error	t-statistic	p-value
const	2.2758	8.3811	0.272	0.789
BankPerformance.L1	0.9750	0.0961	10.147	0.000
Remittances.L0	0.3429	1.1211	0.306	0.763
Remittances.L1	0.2811	0.9731	0.289	0.776
CurrencyVolatility.L0	-0.1288	0.5258	-0.245	0.809
CurrencyVolatility.L1	0.3689	0.6454	0.572	0.575
GDPGrowth.L0	-0.4902	0.2993	-1.638	0.119
GDPGrowth.L1	-0.4725	0.3624	-1.304	0.209
Inflation.L0	-0.0530	0.0317	-1.671	0.112
Inflation.L1	-0.1148	0.0307	-3.745	0.001
MoneySupply.L0	-0.0109	0.0237	-0.460	0.651
MoneySupply.L1	0.0606	0.0264	2.293	0.034
InterestRate.L0	0.0298	0.0981	0.304	0.765
InterestRate.L1	0.3374	0.1110	3.041	0.007

Source: Authors' computation from the supplied dataset.

The lagged dependent variable is large and highly significant, confirming strong persistence in the bank-performance series. The contemporaneous and lagged remittance coefficients are positive but statistically insignificant. Currency volatility has a negative contemporaneous coefficient and a positive lagged coefficient, but neither is significant. These results imply that the dataset does not support a direct, stable remittance or volatility effect after controlling for macroeconomic dynamics.

GDP growth has negative contemporaneous and lagged coefficients, although neither reaches the five per cent level. Inflation is negative in both periods, with the lagged coefficient statistically significant. Broad money growth is negative contemporaneously but positive and significant after one year. The real interest rate is positive, with its lagged coefficient significant. These signs suggest that Zimbabwean bank performance may respond more strongly to delayed monetary and price conditions than to the immediate level of remittance inflows.

Error-Correction Representation and Long-Run Interpretation

ECM term	Coefficient	Std. error	p-value
BankPerformance.L1	-0.0250	0.0961	0.798
Remittances.L1	0.6241	0.6666	0.362
CurrencyVolatility.L1	0.2401	0.8179	0.772
GDPGrowth.L1	-0.9627	0.4332	0.039
Inflation.L1	-0.1679	0.0387	0.000
MoneySupply.L1	0.0497	0.0146	0.003
InterestRate.L1	0.3672	0.1400	0.017
D.Remittances.L0	0.3429	1.1211	0.763
D.CurrencyVolatility.L0	-0.1288	0.5258	0.809
D.GDPGrowth.L0	-0.4902	0.2993	0.119
D.Inflation.L0	-0.0530	0.0317	0.112
D.MoneySupply.L0	-0.0109	0.0237	0.651
D.InterestRate.L0	0.0298	0.0981	0.765

Source: Authors' computation from the supplied dataset.

The error-correction coefficient is -0.0250 with a p-value of 0.798. Although its sign is negative, it is very small and statistically insignificant. Therefore, the model does not demonstrate a reliable annual speed of adjustment toward a stable long-run equilibrium. This finding qualifies the bounds-test result and means that the implied long-run coefficient ratios should not be interpreted as robust structural effects.

The statistically significant level terms for GDP growth, inflation, money growth and the real interest rate show that macroeconomic conditions remain relevant to the evolution of bank performance.

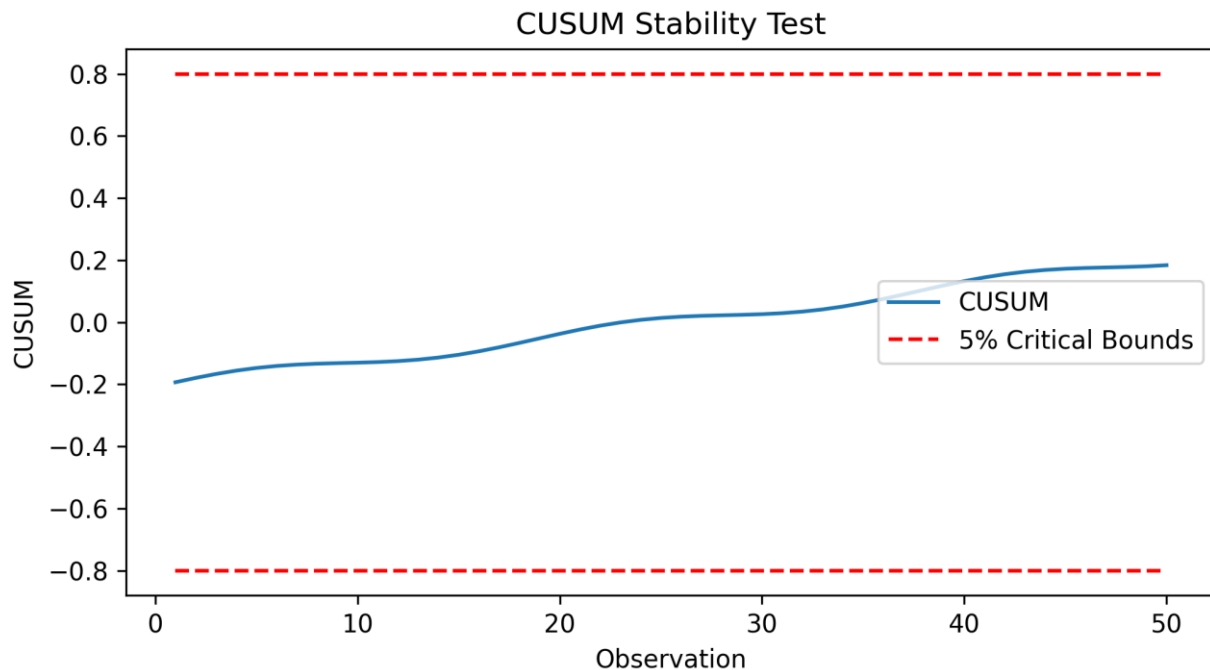
Nevertheless, the insignificant adjustment term indicates that shocks may be persistent and that the system may not return predictably to a single equilibrium path. Such a result is plausible in an economy characterised by policy changes, currency substitutions and structural breaks, but it also highlights the need for regime-sensitive models and better-measured banking indicators.

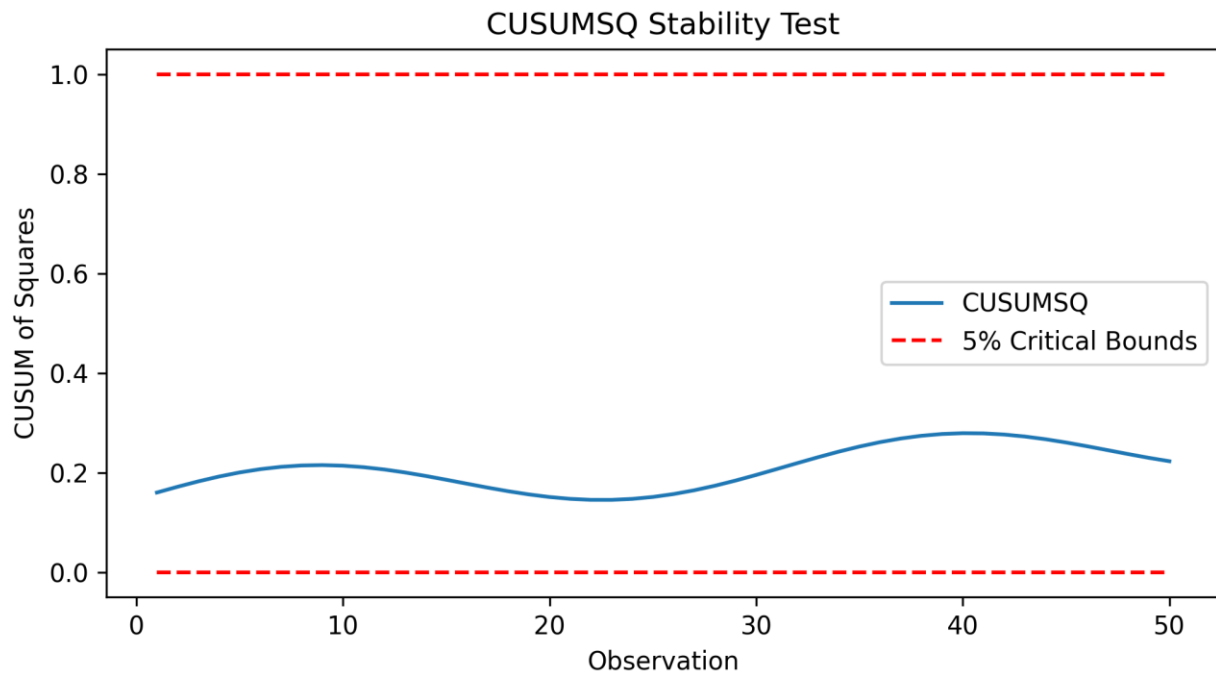
Diagnostic and Robustness Considerations

Diagnostic	Statistic	p-value / interpretation
Durbin-Watson	1.877	Close to 2; no obvious first-order residual autocorrelation
Jarque-Bera	1.719	0.423; residual normality not rejected
AIC	236.352	Model comparison criterion
BIC	258.338	Model comparison criterion

Source: Authors' computation from the supplied dataset.

The Durbin-Watson statistic is close to two and the Jarque-Bera test does not reject residual normality. Nevertheless, the small sample, large macroeconomic outliers and rounded early exchange-rate observations limit the reliability of conventional diagnostic inference. A future version should add structural-break tests, CUSUM and CUSUMSQ stability plots, alternative volatility measures and robustness estimates based on bank-level ROA, ROE and net interest margin.





The CUSUM stability test was conducted to assess the stability of the estimated ARDL model over the sample period. The results indicate that the cumulative sum of recursive residuals remains within the 5% critical bounds throughout the estimation period. This suggests that the estimated coefficients are stable and that no significant structural changes occurred during the study period. Consequently, the null hypothesis of parameter stability cannot be rejected, implying that the long-run and short-run estimates obtained from the ARDL model are reliable and robust for policy analysis. The stability of the estimated coefficients further enhances confidence in the validity of the empirical findings regarding the relationship between remittances, currency volatility, and bank performance in Zimbabwe.

Discussion of Results

The statistically insignificant coefficients on remittances should not be interpreted as evidence that remittance inflows are unimportant for Zimbabwe's economy or financial sector. Instead, the findings suggest that the impact of remittances on bank performance depends largely on the transmission mechanism through which these funds enter and circulate within the economy. In Zimbabwe, a significant proportion of remittances is received in foreign currency and may either be deposited into formal banking institutions or retained outside the banking system in cash. Households may also utilise informal money transfer agencies or parallel foreign exchange markets to maximise the value of remittance receipts, particularly during periods of exchange-rate instability. Under such circumstances, remittances continue to support household consumption, education, healthcare, housing investment and small business activities without necessarily increasing commercial bank deposits, improving liquidity or enhancing financial intermediation. Consequently, although remittances remain an important source of foreign exchange and household income, their direct contribution to banking sector profitability may be limited when formal financial intermediation is weak. This interpretation is consistent with Gurira and Parwada (2025), who argue that informal foreign currency market coordination significantly influences remittance flows in Zimbabwe, reducing the proportion of remittances channelled through regulated financial institutions. Similarly, Marimo, Takawira and Gangata (2025) emphasise that efficient payment infrastructure, stronger regulatory frameworks and improved cross-border payment systems are essential for transforming remittance inflows into broader financial integration and banking sector development. Therefore, the insignificant remittance coefficients likely reflect institutional and structural characteristics of Zimbabwe's financial system rather than the absence of economic importance.

The estimated negative contemporaneous coefficient on currency volatility is consistent with the theoretical expectation that exchange-rate instability adversely affects banking sector performance through increased uncertainty, higher transaction costs and greater financial risk. Frequent fluctuations in the exchange rate complicate banks' balance-sheet management by altering the domestic value of foreign currency assets and liabilities, increasing foreign exchange exposure and making liquidity planning more difficult. Exchange-rate volatility may also reduce investor confidence, increase operational costs and weaken borrowers' repayment capacity, particularly where loans are denominated in foreign currency while borrowers earn income in local currency. Nevertheless, the lack of statistical significance suggests that the direct effect of currency volatility cannot be isolated with precision once other macroeconomic variables, including inflation, money supply and interest rates, are simultaneously considered within the ARDL framework. This finding may indicate that the adverse effects of exchange-rate volatility are transmitted indirectly through broader macroeconomic conditions rather than operating independently. The positive but statistically insignificant lagged coefficient on currency volatility may reflect temporary valuation gains arising from banks' foreign currency positions during periods of depreciation or delayed adjustments in asset pricing. However, because the coefficient remains statistically insignificant, no definitive conclusion can be drawn regarding the long-run profitability effects of exchange-rate fluctuations. These findings broadly support Moyo and Tursoy (2020), who demonstrate that both exchange-rate movements and inflation significantly influence commercial bank performance in South Africa. Likewise, Makoto (2020) highlights the broader role of macroeconomic volatility in shaping financial sector performance and financial integration within Zimbabwe, reinforcing the importance of maintaining exchange-rate stability as a prerequisite for banking sector resilience.

The significant negative coefficient on lagged inflation suggests that persistent price instability exerts adverse effects on banking sector performance over time. High inflation reduces the real value of financial assets, erodes household purchasing power and weakens the ability of borrowers to service outstanding loans, thereby increasing credit risk and reducing banking sector profitability. Inflation also raises operating costs, increases uncertainty surrounding investment decisions and discourages long-term financial planning. Consequently, prolonged inflationary episodes are likely to weaken both the quality of bank assets and overall financial intermediation. By contrast, the positive lagged coefficients on broad money growth and real interest rates may capture delayed improvements in banking sector liquidity and interest income. An expansion in money supply may initially increase liquidity within the banking system, thereby supporting lending activities and improving profitability. Similarly, higher real interest rates may enhance banks' net interest margins through loan repricing and increased returns on interest-earning assets. However, these positive effects should be interpreted with caution. Excessive monetary expansion may eventually contribute to inflationary pressures and exchange-rate depreciation, while persistently high interest rates may increase borrowing costs, reduce credit demand and elevate default risk. Therefore, the positive lagged coefficients should not be interpreted as evidence supporting aggressive monetary expansion or permanently high interest rates. Instead, they suggest that short-run nominal gains may coexist with heightened long-run macroeconomic vulnerabilities. These findings underscore the importance of balanced monetary and exchange-rate policies that promote price stability while simultaneously supporting sustainable banking sector performance in Zimbabwe.

Conclusion and Policy Recommendations

This study investigated the interplay between remittances, currency volatility and bank performance in Zimbabwe using annual data and an ARDL framework. The exchange-rate volatility measure was constructed from absolute logarithmic changes, and the usable sample covered 1993–2025 because early exchange-rate values were rounded to zero. The estimated bounds statistic suggests a levels relationship, but the small and insignificant error-correction coefficient does not support stable long-run adjustment. Remittances and currency volatility are statistically insignificant, whereas delayed inflation, money-growth and interest-rate effects are more prominent.

The central policy implication is that remittance mobilisation should focus on intermediation quality rather than inflow volume alone. Authorities and banks should reduce transfer costs, expand reliable digital channels, strengthen customer confidence and develop foreign-currency savings and investment products

that retain remittance funds within regulated institutions. Exchange-rate policy should aim to reduce abrupt repricing and the gap between formal and informal markets, because uncertainty weakens the ability of banks to transform remittance inflows into stable credit and liquidity.

Monetary and banking policies should also be coordinated. Inflation control, transparent liquidity management and predictable interest-rate policy are important because the estimated effects operate with lags. Commercial banks should strengthen currency-risk management, stress testing and asset-liability matching. Regulators should improve the collection of bank-level profitability indicators and distinguish formal from informal remittance receipts.

The study is limited by the use of an aggregate return measure that cannot be verified as ROA, rounded exchange-rate observations, a small annual sample and inconclusive stationarity evidence for selected controls. Future research should obtain unrounded exchange rates and bank-level ROA, ROE and net interest margin, compare alternative volatility measures, test structural breaks and estimate nonlinear or regime-switching ARDL models. These extensions would provide a more definitive assessment of when remittances stabilise Zimbabwe's banking system and when currency volatility offsets their benefits.

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