International Journal of Economics, Business and Management Research

Vol. 10, No.03; 2026

ISSN: 2456-7760

Does Monetary Policy Efficiency Stabilise Exchange Rates? Evidence From Developing Economies

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doi.org/10.51505/IJEBMR.2026.10319 URL: https://doi.org/10.51505/IJEBMR.2026.10319

Received: Mar 17, 2026 Accepted: Mar 23, 2026 Online Published: Mar 31, 2026

Abstract

Exchange rate volatility is one of the major issues faced by developing economies, as exchange rate fluctuations often affect their macroeconomic stability. However, most of the literature has focused on the impact of individual monetary policy instruments on exchange rate volatility. Limited studies have been placed on the impact of monetary policy efficiency on exchange rate volatility. This paper aims to analyze the impact of monetary policy efficiency on exchange rate volatility in 48 developing economies from 2011 to 2023. A dynamic panel data analysis using the System Generalized Method of Moments (System GMM) is conducted to incorporate exchange rate volatility persistence and endogeneity. According to this analysis, exchange rate volatility is highly persistent, but monetary policy efficiency significantly reduces exchange rate volatility. However, inflation, money supply, and international trade exposure are factors that increase exchange rate volatility. On the other hand, exchange rate volatility is not significantly influenced by the central policy rate.

Keywords: Monetary Policy Efficiency; Exchange Rate Volatility; Emerging and Developing Economies; Dynamic Panel GMM; Macroeconomic Policy Transmission

1. Introduction

Volatility in exchange rates has become a key concern in the globalized financial environment, and its effects have been more pronounced in developing and emerging countries (Tiwary et al., 2022). With countries in the process of becoming more integrated in terms of trade, capital flows, and financial markets, exchange rate volatility has become a major concern (Kayani et al., 2023; Anwar, 2022). Exchange rate volatility can have serious economic consequences, including increased uncertainty for investors, a reduction in international trade, delayed investment decisions, and instability in the financial markets (Aftab et al., 2024). Developing countries have been more vulnerable to exchange rate volatility due to the relatively less

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developed state of their financial markets and the macro economy, which is highly susceptible to external shocks (Ali et al., 2025; Anwar, 2021).

Exchange rate stability has become extremely critical in the context of several economic crises that have affected the global economy (Wagner, 2025; Jamil et al., 2023). The Asian Financial Crisis, which occurred in 1997-1998, highlighted the effects of currency depreciation in the region. This had serious macro-economic consequences, including inflation and instability in the financial markets. Similarly, in recent times, the COVID-19 pandemic has led to unprecedented global economic uncertainty, resulting in increased exchange rate volatility in the context of several developing countries.

In this regard, the role of monetary policy in maintaining macroeconomic stability will assume critical importance (Anwar et al., 2022). Central banks can intervene in the foreign exchange market in various ways, including influencing the interest rates (Davis et al., 2023; Krušković, 2022). In this regard, the effectiveness of monetary policy can play a critical role in maintaining stability in financial markets (Khan et al., 2023). Moreover, the idea of monetary policy efficiency (MPE) defines the extent to which central banks can attain their macroeconomic goals while maintaining stability in macroeconomic variables such as inflation (Anwar et al., 2025). Efficient monetary policy can thus play a critical role in maintaining stability in the exchange rate (Liu & Lee, 2022).

In spite of the critical importance of monetary policy in maintaining stability in financial markets, the findings of prior research have been inconsistent in establishing the link between monetary policy and exchange rate volatility, which focus on specific monetary policy instruments such as interest rates, inflation, and money supply (Adoom et al., 2025; Anwar et al., 2022; Ilyas et al., 2022). However, the effectiveness of monetary policy in maintaining stability in financial markets cannot be comprehended by focusing only on specific monetary policy instruments. In this regard, the effectiveness of monetary policy efficiency in maintaining stability in financial markets remains relatively unexplored.

This study aims to fill the gap by focusing on the relationship between monetary policy efficiency and exchange rate volatility using a large sample of developing countries. The study uses a panel dataset comprising 48 developing countries over the period 2011 to 2023. The study uses a dynamic panel generalized method of moments (GMM) approach to account for persistence in exchange rate volatility and endogeneity in the macroeconomic variables. The study, apart from monetary policy efficiency, includes other important macroeconomic variables that have been widely documented in the literature, such as the policy rates of the central bank, inflation, money supply (M2), and trade.

This study contributes to the existing literature in three significant ways. First, it identifies monetary policy efficiency as an important factor in explaining exchange rate volatility, shifting the focus from specific monetary policy instruments to monetary policy efficiency (Yahaya, 2026; Wang et al., 2023). Second, it extends the existing literature by using a dynamic panel

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approach for a large sample of developing countries, offering new evidence for the impact of monetary policy efficiency on exchange rate volatility (Ullah & Nobanee, 2025; Olamide et al., 2022). Third, it complements the existing literature by incorporating monetary policy efficiency into a broader range of macroeconomic variables, offering a more holistic understanding of the drivers of exchange rate volatility in developing countries (Ghauri et al., 2024). From a policy viewpoint, important policy implications arise for central banks in developing economies. In fact, improving the efficiency in the implementation of monetary policy could support a decrease in exchange rate volatility, financial stability, and resilience to external shocks. Thus, beyond fine-tuning individual policy instruments, policymakers must focus on strengthening institutional credibility, policy communication, and monetary transmission mechanisms.

The remaining sections of this paper are structured as follows. In particular, in Section 2, we discuss the relevant literature on exchange rate volatility and monetary policy efficiency. Then, in Section 3, we describe the data and methodology used in this paper. In Section 4, we present our results, and their discussion is in Section 5. Finally, in Section 6, we draw some conclusions.

2. Literature Review

The volatility of exchange rates has been a major area of research in international macroeconomics, focusing on the results of interactions between monetary policy, macroeconomic fundamentals, and market expectations (Oyadeyi, 2026; Fabris & Lazić, 2022). A major theoretical base for understanding the causes of exchange rate volatility can be found in the Dornbusch overshooting model (Dornbusch, 1976; Dornbusch, 2019). This model states that in the short run, the exchange rate may not follow its long-run equilibrium path due to monetary policy shocks. This is because financial markets respond faster to economic changes than prices of goods. Therefore, changes in monetary policy, including interest rate or liquidity changes, can result in short-run exchange rate volatility. Another theoretical base for explaining exchange rate volatility can be found in the asset market approach (Murphy & Van Duyne, 1980). This approach explains that the relative demand for domestic and foreign financial assets determines the exchange rate. Changes in interest rates can result in exchange rate volatility. This can also be supported by the Interest Rate Parity (IRP) theory, which states that the difference in interest rates in different countries can result in the anticipated movement of the exchange rate (Aliber, 1973).

Inflation dynamics are also important in the Purchasing Power Parity (PPP) framework, which assumes that exchange rates respond to differences in price levels across economies (Vo & Vo, 2023). High inflation results in lower purchasing power and often leads to currency depreciation, then could lead to exchange rate volatility (Olamide et al., 2022). In a similar context, the Quantity Theory of Money assumes that changes in the supply of money affect inflation and macroeconomic stability, thereby affecting exchange rate volatility (Akbar, 2023). In this regard, a more comprehensive framework for understanding monetary policy is monetary policy efficiency (MPE). MPE is a more comprehensive framework for understanding monetary policy. According to Cecchetti et al. (2006), monetary policy efficiency is defined as the ability of central banks to minimize fluctuations in inflation and output, thereby achieving macroeconomic

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stability. Efficient monetary policy results in greater policy credibility and lower financial market uncertainty, which in turn could lead to lower exchange rate volatility (Purwanda & Rochana, 2017).

A considerable amount of empirical literature has examined the factors that determine exchange rate volatility, especially in the context of developing and emerging economies (Agosin & Diaz, 2023; Rashid & Basit, 2022; Olamide et al., 2022). According to the literature, there are three broad categories of factors that determine exchange rate volatility, including monetary policy instruments, macroeconomic factors, and external economic factors. The first category of literature focuses on the importance of monetary policy instruments in determining exchange rate volatility (Oyadeyi, 2026). According to Ghironi and Ozhan (2025), an increase in policy interest rates helps to reduce exchange rate volatility, especially due to enhanced credibility and capital inflows. Similar findings have been presented in other studies, including Ghauri et al. (2024), which demonstrated that the interest rate policy has a stabilizing effect on exchange rate volatility in the context of the Pakistani economy. However, other studies have argued that the effect of the interest rate policy may vary according to the economic conditions. For instance, according to Keefe (2020) and Ciro et al. (2017), changes in the interest rate policy may enhance exchange rate volatility in the presence of macroeconomic uncertainty.

A second group of studies focuses on macroeconomic fundamentals, particularly focusing on the effects of inflation and money supply. The empirical studies have proven that inflation increases the volatility of exchange rates, as it reduces the purchasing power of the currency. Ali et al. (2015) have proven that inflation increases the volatility of exchange rates. Similar findings were made by Mohammed et al. (2021) for the case of Ghana, both in the short and long term. Changes in the money supply have been proven to influence the fluctuations in exchange rates, as it affects the overall inflation rate. Expansionary monetary policies have been proven to increase the volatility of exchange rates due to the effects of inflation and currency depreciation. The third group of studies focuses on the effects of trade and external factors. Trade openness, export performance, and external financial conditions have been proven to be crucial factors for exchange rate volatility. Bahmani-Oskooee and Hegerty (2007) have proven that both exports and imports are positively related to exchange rate volatility. Similar findings were made by Calderón and Kubota (2018) for trade openness, as it increases the real exchange rate volatility due to external shocks. Similar findings were made for the case of bilateral trade, as Aftab et al. (2017), and Sharma and Pal (2018) have proven that export flows influence exchange rate volatility through trade competitiveness and capital flows.

Besides macroeconomic variables, modern studies have sought to understand the impact of economic uncertainty and external factors in explaining currency volatility. For example, Bush and Noria (2021) note that political uncertainty, economic uncertainty, and global financial risk indicators have a significant impact on explaining currency volatility. Similarly, Wang et al. (2019) note that economic sanctions have a significant effect in explaining currency volatility through their impact on investor expectations and capital flows. Other factors include commodity prices and financial market conditions, as shown by Mpofu (2021), who found that gold prices

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and overall financial market conditions have a significant impact in explaining currency volatility in South Africa. The recent literature has also sought to understand the impact of monetary policy and actions of the central banks in explaining currency volatility. For example, Goyal et al. (2010) found that actions of the central banks in improving market expectations and reducing overall uncertainty have a significant impact in explaining currency volatility and thus can be used to mitigate it.

Kuncoro (2020) found that monetary policy actions and overall financial market conditions have a significant impact in explaining currency volatility in Indonesia, suggesting that monetary policy actions and overall transparency of monetary policy have a significant impact in explaining currency volatility in emerging economies. Similarly, Suhendra et al. (2022) found that monetary policy actions in terms of policy rates have a significant impact in explaining currency volatility in both the short and long term, although the overall impact depends on prevailing macroeconomic conditions in a country. Although there is a significant amount of literature on currency volatility and its determinants, there are still some gaps in the overall literature and knowledge in this regard. Firstly, most of the literature and studies have sought to understand and analyze the impact of individual monetary policy actions and macroeconomic conditions such as interest rates, inflation, and money supply in explaining currency volatility, while few studies have sought to understand and analyze the efficiency of monetary policy in explaining currency volatility. Similarly, most of the studies have been country-specific and thus may not be representative of different macroeconomic conditions in different economies. There is a lack of cross-country studies in this regard and their impact on currency volatility and monetary policy efficiency.

3. Method

3.1 Data

This paper uses a panel data set for 48 developing countries from 2011 to 2023. The sample period is chosen to reflect recent developments in global monetary policy and exchange rate movements, including important macroeconomic events such as those in the aftermath of global financial crises and those resulting from the COVID-19 pandemic. The paper uses annually available macroeconomic data from secondary sources. Exchange rate volatility, defined as the dependent variable, is modeled using a Generalized Autoregressive Conditional Heteroskedasticity (GARCH) model, which is based on exchange rate data from the World Bank database. The GARCH model is commonly used in empirical literature for modeling exchange rate volatility. The most important independent variable is Monetary Policy Efficiency (MPE), which incorporates the effectiveness of monetary policy in maintaining macroeconomic stability. Similar to most literature, monetary policy efficiency is modeled as an index reflecting the ability of monetary policy to manage fluctuations in macroeconomic indicators.

In addition to the primary variable of interest, there are other macroeconomic control variables incorporated into the model to account for other determinants of exchange rate volatility identified in the literature. These control variables are the central bank policy rate, inflation,

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money supply (M2), and international trade. The policy rate of the central bank is used as an indicator of monetary policy stance, affecting capital flows and hence exchange rate volatility. Inflation serves as an indicator of macroeconomic stability and the effects of inflation on the power of purchase. The money supply reflects the liquidity position of the economy. International trade is included to account for the exposure of economies to external shocks through trade flows. The use of cross-country panel data enables the capturing of both time-series and cross-country variation of exchange rate volatility and monetary policy performance across developing economies. This dataset provides a comprehensive framework to investigate the relationship between monetary policy efficiency and exchange rate volatility in developing countries over time.

Table 1: Variable Definitions

Variable Name	Abbreviation	Measurement	Sources	Period
Exchange Rate Volatility	ERV	Exchange rate volatility calculated using the GARCH model based on exchange rate movements	Authors' Calculation based on World Bank data	2011–2023
Monetary Policy Efficiency	MPE	Index measuring the efficiency of monetary policy based on the trade-off between inflation variability and output variability using the efficiency frontier approach	Purwanda & Rochana (2017); Anwar et al. (2022)	2011–2023
Central Bank Interest Rate	CBR	Policy interest rate set by the central bank	The World Bank	2011–2023
Inflation	INF	Annual percentage change in the Consumer Price Index (CPI)	The World Bank	2011–2023
Money Supply	M2	Broad money supply (M2) representing liquidity conditions in the economy	The World Bank	2011–2023
International Trade	TRADE	Total international trade measured as exports plus imports as a percentage of GDP	The World Bank	2011–2023

Table 1 outlines the definition and measurement of the variables used in this study. Volatility in exchange rate movements can be estimated using the GARCH model. Monetary Policy Efficiency (MPE) can be expressed as an index that represents the efficiency of monetary policy in the trade-off between inflation and output. Moreover, the central bank rate (CBR), inflation (INF), money supply (M2), and international trade (TRADE) can be expressed in percentage

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terms. All the macroeconomic variables used in this study have been obtained from the World Bank database over the period from 2011 to 2023.

3.2 Econometrics Methodology

The empirical model used in this study is based on the theoretical foundations of exchange rate determination and monetary policy transmission. Consistent with the Dornbusch overshooting model, exchange rates show rapid responses to monetary policy changes due to price rigidities in the goods market, which can cause exchange rate volatility over the short run. Moreover, based on the asset market approach and the theory of interest rate parity, monetary policy impacts exchange rates through interest differentials and capital flows between countries. In addition, based on the macroeconomic indicators of inflation and the money supply, exchange rates are affected by the Purchasing Power Parity theory and the quantity theory of money, and vulnerability to international commerce can increase currency sensitivity to global economic events.

On the basis of the proposed theoretical framework, it is expected that exchange rate volatility will be influenced by monetary policy efficiency as well as other macroeconomic factors. Therefore, it is proposed that:

H1: Monetary policy efficiency has a negative impact on exchange rate volatility.

The interest rate policy of central banks is considered to be one of the primary instruments used to influence capital movements as well as exchange rates. In this regard, it is expected that higher interest rates will attract capital, thus stabilizing the exchange rate in line with the interest rate parity theory.

H2: Central bank policy rates have a significant impact on exchange rate volatility.

Inflation is considered to be an indicator of macroeconomic stability as well as the changes in the purchasing power of the domestic market. In the context of the purchasing power parity, it is expected that higher rates of inflation will lead to a depreciation of the domestic currency, thus affecting the exchange rate volatility.

H3: Inflation has a positive impact on exchange rate volatility.

Alterations in the money supply are considered to affect the liquidity as well as the inflationary pressures in the domestic market. In this regard, it is expected that in line with the quantity theory of money, higher rates of monetary expansion will lead to the weakening of the domestic currency, thus affecting the exchange rate volatility.

H4: Money supply has a positive impact on exchange rate volatility.

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Exchange rate volatility is also influenced by international trade, as it is expected that economies that are more open to international trade will be more sensitive to changes in the global economy.

H5: International trade has a significant impact on exchange rate volatility.

Based on these hypotheses, the empirical model is specified as follows:

$$ERV_{it} = \alpha_0 + \alpha_1 ERV_{it-1} + \alpha_2 MPE_{it} + \alpha_3 INF_{it} + \alpha_4 MS_{it} + \alpha_5 TRD_{it} + \varepsilon_{it} \quad (1)$$

$$ERV_{it} = \alpha_0 + \alpha_1 ERV_{it-1} + \alpha_2 CBIR_{it} + \alpha_3 INF_{it} + \alpha_4 MS_{it} + \alpha_5 TRD_{it} + \varepsilon_{it} \quad (2)$$

$$ERV_{it} = \alpha_0 + \alpha_1 ERV_{it-1} + \alpha_2 MPE_{it} + \alpha_3 CBIR_{it} + \alpha_4 INF_{it} + \alpha_5 MS_{it} + \alpha_6 TRD_{it} + \varepsilon_{it} \quad (3)$$

Where ERV is exchange rate volatility; MPE is monetary policy efficiency, CBIR is central bank interest rate; MS is money supply, and TRD is international trade.

In order to estimate the model, this study makes use of the dynamic panel generalized method of moments (GMM) estimator, as developed by Arellano and Bond (1991) and extended by Blundell and Bond (1998). The GMM estimator is deemed appropriate for addressing the issue of endogeneity, country-specific effects, as well as the dynamic nature of exchange rate volatility. The System GMM estimator is employed to improve efficiency in the estimation process. In order to test the robustness of the results obtained, a series of diagnostic tests are performed. The Sargan-Hansen test is used to test the validity of the instrumental variables, while the Arellano-Bond test is employed to test for serial correlation in the residuals. The results obtained provide consistency and reliability for the estimates.

4. Results

Table 2 reports the results from the System GMM estimates of the exchange rate volatility equation across the three model specifications. Overall, the results appear robust and confirm that exchange rate volatility indeed exhibits high persistence over time, given the high and statistically significant coefficient estimate of the lagged dependent variable, ERV(-1), in all three models. This result points to the strong influence of past exchange rate volatility on the present. In terms of the results for the key variable of interest, namely Monetary Policy Efficiency (MPE), the estimates in Models 1 and 3 reveal a negative and statistically significant coefficient, thereby confirming that higher levels of monetary policy efficiency result in lower levels of exchange rate volatility. This result provides support for the proposition that more efficient monetary policy helps to promote stability in the macroeconomic environment, thereby reducing the scope for excessive currency fluctuations. In contrast, the results for the central bank policy rate (CBIR) in Models 2 and 3 reveal a negative but statistically insignificant coefficient.

Inflation is positive and highly significant in all models, suggesting that exchange rate volatility is positively related to inflation. This is in line with the purchasing power parity and

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macroeconomic instability theories. Consistent with this is the money supply, which is also positive and significant in all models. This suggests that exchange rate volatility is positively related to money supply. International trade is also significant in all models, with a positive coefficient. This suggests that exchange rate volatility is positively related to international trade. Diagnostic tests show that the results are valid. First, the AR(1) is significant in all models, as required in first-difference GMM. Second, the AR(2) is insignificant in all models, suggesting no second-order serial correlation. Finally, in all models, the Sargan tests show that the p-values are greater than conventional significance levels, suggesting that the instruments used in the System GMM are valid. All in all, this suggests that monetary policy efficiency is important in maintaining exchange rate stability in developing countries. However, inflation, money supply, and international trade increase exchange rate volatility in developing countries.

Table 2: Panel System GMM Estimation

	Dependent Variable: Exchange Rate Volatility		
Variable	Model 1	Model 2	Model 3
ERV (-1)	0.2381*** (0.0001)	0.2364*** (0.0001)	0.2346*** (0.0001)
MPE	-0.0017*** (0.0001)		-0.0016*** (0.0001)
CBIR		-0.0051 (0.087)	-0.0042 (0.212)
Inflation	0.0481*** (0.0001)	0.0492*** (0.0001)	0.0475*** (0.0033)
Money Supply	0.0069*** (0.0001)	0.0073*** (0.0001)	0.0068*** (0.0001)
International Trade	0.0044*** (0.0000)	0.0047*** (0.0000)	0.0043*** (0.0000)
Constant	-0.7214*** (0.0001)	-0.7382*** (0.0001)	-0.7528*** (0.0001)
AR (1) (p-value)	0.0000	0.0000	0.0000
AR (2) (p-value)	0.3480	0.3285	0.3671
Sargan Test (p-value)	0.5129	0.5928	0.5730
No. of Cross-section	48	48	48
No. of Observation	624	624	624

Note: Symbols * is Prob. < 10%, ** is Prob. < 5%, and *** is Prob. < 1%.

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5. Discussion

The results offer important insights into the factors affecting exchange rate volatility in developing economies and highlight the importance of monetary policy efficiency in managing exchange rate fluctuations. The strong and significant coefficient on the lagged dependent variable in all specifications suggests significant exchange rate volatility persistence. This suggests that exchange rate movements in developing economies are path-dependent, i.e., past exchange rate volatility affects current exchange rate fluctuations (Bassi et al., 2023). This is consistent with the Dornbusch framework on exchange rate overshooting, which suggests that exchange rates in developing economies may deviate from their equilibrium or fundamental values in response to monetary policy shocks due to price rigidities and sluggish goods market adjustments.

One important contribution of this paper is that monetary policy efficiency significantly reduces exchange rate volatility. The negative and significant coefficient on MPE in all specifications support the hypothesis that monetary policy efficiency significantly reduces exchange rate volatility. This is theoretically consistent with Cecchetti et al. (2006) efficiency frontier framework, which suggests that monetary policy regimes that effectively minimize fluctuations in inflation and output can significantly enhance macroeconomic stability. In developing economies, monetary policy efficiency is particularly important in managing exchange rate volatility since institutional credibility and financial market depth are limited (Anwar et al., 2022). This paper is consistent with prior research by Goyal et al. (2010), which finds that effective monetary policy actions by central banks significantly reduce exchange rate volatility by shaping market expectations.

The result for the coefficient of the central bank policy rate (CBIR) is negative, but it is statistically insignificant, implying that the policy interest rate might not be an effective tool for determining exchange rate volatility in developing countries. The result implies that the exchange rate might not be stabilized by adjusting interest rates, but rather by the overall success of monetary policy. In other words, developing countries might need to look beyond adjusting interest rates as a tool for stabilizing the exchange rate, as monetary policy might be sensitive to external shocks. Although the result obtained is slightly different from the findings obtained by Mohammed et al. (2021) and Ali et al. (2015), who found that developing countries can stabilize the exchange rate by increasing interest rates, as it attracts more capital inflows, it might be due to the structural features of developing countries, as capital inflows might not only depend on interest rate differentials, but might also be affected by global financial conditions.

In addition, the result shows that the effect of inflation is positive and highly significant, implying that developing countries might experience more exchange rate volatility as a result of high levels of inflation. The result obtained is consistent with the PPP theory, as it suggests that changes in exchange rates are brought about by differences in inflation rates between two countries. In developing countries, high levels of inflation might be an indication of economic instability, which might have a negative effect on the exchange rate. The result obtained is

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consistent with the findings obtained by Mahmood Ali et al. (2015) and Keefe (2020), as it shows a positive relationship between inflation and exchange rate volatility.

Likewise, the money supply (M2) also shows a positive and statistically significant result. This implies that expansionary monetary policy may result in higher currency volatility. In line with the quantity theory of money, higher money supply may result in higher levels of inflation and currency devaluation, thereby leading to higher levels of currency volatility. This result is in line with the prior empirical findings of Ali et al. (2015) and Mpofu (2021), who also showed that expansionary monetary policy may result in higher levels of currency volatility. In the case of emerging countries, higher levels of monetary expansion may result in higher levels of currency volatility due to the strong response of financial markets to signs of economic instability.

In addition, the analysis shows that international trade exposure has a positive impact on exchange rate volatility. This means that more open economies will experience more exchange rate volatility due to their exposure to various economic shocks. This is in line with the findings by Bahmani-Oskooee and Hegerty (2007) and Calderón and Kubota (2018) that exchange rate volatility is elevated by trade openness, which makes economies more aligned with global economic cycles. This means that for developing countries that are largely dependent on exports and imports, exchange rate volatility could be influenced by fluctuations in global demand, prices, and capital flows.

6. Conclusion

This study aims to explore the interrelationship between monetary policy efficiency and exchange rate volatility in developing countries, using a panel dataset covering 48 developing countries over the period 2011 to 2023. The System GMM estimator is employed to control for the dynamic nature of exchange rate volatility and endogeneity among the macroeconomic variables. The results provide some significant findings. First, the results show that exchange rate volatility is highly persistent, as reflected by the significance of the lagged dependent variable, implying that currency volatility in developing countries is path-dependent, such that past exchange rate volatility affects current and future exchange rate movements. Second, monetary policy efficiency has a significant and negative effect on exchange rate volatility, implying that more efficient monetary policy frameworks in developing countries stabilize exchange rate movements. Third, inflation and money supply have a significant and positive effect on exchange rate volatility, implying that macroeconomic instability and monetary policy expansions exacerbate currency volatility. Lastly, international trade exposure has a significant and positive effect on exchange rate volatility, implying that developing countries are vulnerable to external shocks and global market movements. However, the central bank policy rate does not have a significant direct effect on exchange rate volatility, implying that the effectiveness of monetary policy depends more on the efficiency of monetary policy frameworks rather than the policy rate.

These findings have several policy implications for developing economies. Firstly, the enhancement of the efficiency and credibility of monetary policy frameworks should be a

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primary concern for developing economies. For instance, the enhancement of institutional capacity and the refinement of communication strategies may help in stabilizing market expectations and exchange rate volatility. Secondly, the maintenance of price stability is critical in stabilizing exchange rate dynamics, given the strong positive correlation between inflation and exchange rate volatility. Thirdly, prudent management of monetary expansion is critical in order to avoid the risk of inflation and currency instability that may result from excessive growth in liquidity. Furthermore, the positive correlation between international trade exposure and exchange rate volatility implies that developing countries should not rely only on monetary policy to manage exchange rate volatility. Instead, they should use a combination of macroprudential and macroeconomic stability tools to manage and stabilize exchange rate dynamics. For instance, developing countries can enhance economic resilience and manage global economic shocks that may affect exchange rate dynamics.

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