INFLATION AND EXCHANGE RATE DYNAMICS PASS-THROUGH EFFECT: POLICY IMPLICATIONS

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How to cite this paper: Abel, S., Mauto, R. K., Jeke, L., & Le Roux, P. (2025). Inflation and exchange rate dynamics pass-through effect: Policy implications. *Risk Governance and Control: Financial Markets & Institutions, 15*(4), 134–141. https://doi.org/10.22495/rgcv15i4p12

ISSN Online: 2077-4303
ISSN Print: 2077-429X

Received: 14.05.2025
Revised: 11.08.2025; 05.09.2025; 18.11.2025
Accepted: 28.11.2025

JEL Classification: E4, O1, O2
DOI: 10.22495/rgcv15i4p12

Abstract

Understanding the mediating role of inflation on macroeconomic variables is essential for elucidating the transmission mechanism of monetary policy. Understanding the channels through which monetary policy influences inflation, which in turn affects exchange rates, is important in understanding the indirect channels through which monetary policy impacts the economy (Nwoko et al., 2016; Arestis & Sawyer, 2002; Mann, 1969). The objective of the study is to investigate the mediation role of inflation in the relationship between exchange rates and the interactions of money supply, interest rates, and economic growth (MIG index). The study utilised the structural equation modelling (SEM) to investigate the relationships discussed above. The study is premised on balanced panel data for five Southern African Development Community (SADC) countries during the period 2010–2024. The results reveal that inflation partially mediates this relationship, suggesting that monetary policy and economic activity influence exchange rates through both direct and indirect channels. The findings imply that policymakers should consider both direct and indirect effects of monetary policy on exchange rates and inflation. This study highlights the complex dynamics between monetary policy, economic activity, inflation, and exchange rates, emphasizing the need for informed policymaking.

Keywords: Mediation, Inflation, Money Supply, Interest Rate, GDP

Authors' individual contribution: Conceptualization — S.A. and R.K.M.; Methodology — S.A. and L.J.; Validation — S.A. and R.K.M.; Formal Analysis — S.A., R.K.M., and L.J.; Investigation — S.A., R.K.M., and P.L.R.; Writing — Original Draft — S.A., R.K.M., and P.L.R.; Writing — Review & Editing — R.K.M., L.J., and P.L.R.; Supervision — S.A.

Declaration of conflicting interests: The Authors declare that there is no conflict of interest.

1. INTRODUCTION

Understanding how different policies affect macroeconomic variables helps policymakers create focused actions to meet certain economic objectives. For well-informed decision-making, it is essential to comprehend the connections between macroeconomic variables. These connections support businesses, investors, and regulators in managing risks, predicting economic trends, and optimizing strategy. Both individuals and institutions can better traverse economic cycles, make wise investments, and create efficient policies by examining the interdependencies across various economic indicators. By comprehending how macroeconomic factors are interrelated, policymakers can make better choices regarding monetary and fiscal policy. Understanding the interactions between factors like

economic growth, interest rates, and inflation can help policymakers stabilize the economy and avert future crises. There are limited studies that examine the interaction among macroeconomic variables and how they interrelate among themselves, hence, this study seeks to fill this gap.

This study investigates the mediating role of inflation in the relationship between the interactions of money supply, interest rate, gross domestic product (GDP) growth rate (MIG) index and exchange rate. Guided by the null hypothesis that inflation does not mediate this relationship and the alternative hypothesis that it does, the study addresses three key questions: whether inflation mediates the MIG index-exchange rate nexus, the extent to which the MIG index influences inflation, and how inflation affects the exchange rate. Exploring the mediating role of inflation in the relationship between the interactions of the MIG index and exchange rate is crucial in economics due to its profound implications for monetary policy efficacy, economic stability, and informed decision-making. There have been limited studies that have sought to analyse the interactions among the MIG index, with the limited studies reviewing the relationships, looking at the relationships of dual variables at the same time (Urbanovský, 2016; Bello & Saulawa, 2013; Iorember et al., 2022). Given the non-existent studies reviewing the combined effect of these variables simultaneously, the studies seek to plug this gap. Covering this gap will assist in understanding the mediating role of inflation, enabling policymakers to develop effective economic stabilization strategies, promoting sustainable growth and development (Kim & Lim, 2018; Chen, 2022). By mitigating potential risks, policymakers can maintain economic stability, create a favorable business environment, encourage investment, and reduce poverty (Dahmani & Makram, 2024; Ayoo, 2022; Mahardhani, 2023). Insights from this analysis can inform macroeconomic policy frameworks, such as inflation targeting, to support sustainable economic development.

Understanding the mediating role of inflation on macroeconomic variables is essential for elucidating the transmission mechanism of monetary policy decisions. By examining how the MIG index influences inflation, which in turn affects exchange rates, policymakers can better comprehend the indirect channels through which monetary policy impacts the economy. This knowledge can help policymakers refine their policy tools, such as interest rates and money supply, to achieve desired economic outcomes. Recent studies emphasize understanding inflation's role in monetary policy transmission. Inflation expectations shape monetary policy decisions and exchange rate dynamics (David et al., 2024; Sabu & Ramachandran, 2025; Visco, 2023). Studies (Kliem & Meyer-Gohde, 2022; Gürkaynak et al., 2021) established that monetary policy shocks impact exchange rates through inflation expectations and risk premia. It has been shown that inflation targeting monetary policy rules stabilize exchange rates and reduce volatility (Valogo et al., 2023; Ahmed et al., 2021). These findings suggest policymakers benefit from understanding inflation's mediating role.

Exchange rates are a critical macroeconomic variable, influencing trade balances, foreign investment, and economic competitiveness. The mediation analysis provides valuable insights into complex relationships driving exchange rate fluctuations, enabling policymakers to develop effective strategies for maintaining stability (Bello & Saulawa, 2013; Iorember et al., 2022). Understanding these dynamics allows policymakers to target specific variables, such as inflation expectations or interest rates, to mitigate exchange rate volatility (Albulescu & Oros, 2020). By leveraging mediation analysis, policymakers can refine their approaches to promote economic stability. By understanding how inflation mediates the relationship between the MIG index and exchange rates, policymakers can better anticipate and respond to exchange rate movements. For example, if the analysis reveals that inflationary pressures lead to exchange rate depreciation, policymakers can implement policies to mitigate inflation and maintain exchange rate stability. A nuanced understanding of exchange rate dynamics enables policymakers to make informed decisions on trade policy, foreign exchange intervention, and capital controls, ultimately contributing to a more stable and competitive economy (David et al., 2024). By understanding exchange rate impacts, policymakers can refine their approaches to promote economic stability and resilience (Albulescu & Oros, 2020).

Inflation's relationship with the exchange rate is complex, and investigating its mediating role provides valuable insights for policymakers (Kim & Lim, 2018; Chen, 2022). Understanding inflationary pressures from monetary policy decisions and economic activity informs effective inflation management strategies (Taslima et al., 2024; Gafurdjan, 2024; Mwiinga, 2024). Policymakers can adjust policy decisions, such as interest rates or money supply, to mitigate inflationary consequences (David et al., 2024; Alazaki & Okumuş, 2024; Ihimoyan et al., 2022). Effective inflation management promotes economic growth, investment, and poverty reduction.

The analysis of the interactions of macroeconomic variables can indeed inform policymakers on optimizing monetary policy decisions to achieve desired economic outcomes (Centinaio et al., 2024). By understanding the indirect effects of the macroeconomic interactions on exchange rates through inflation, policymakers can develop more effective policy interventions. This nuanced approach enables policymakers to balance competing objectives like inflation control, economic growth, and exchange rate stability, ultimately promoting economic stability and growth (Kliem & Meyer-Gohde, 2022; Gürkaynak et al., 2021).

To this end, the study aims to investigate the mediating role of inflation in the relationship between the interactions of the MIG index and the exchange rate.

The study will answer the questions:

RQ1: Does inflation mediate the combined effect of money supply, interest rate, and GDP growth rate?

RQ2: Does the combined effect of money supply, interest rate, and GDP growth rate have a significant effect on economic development?

The structure of this paper is as follows. Section 2 reviews the relevant literature. Section 3 analyses the methodology that has been used to conduct empirical research on the mediation effect of inflation on the nexus between exchange rate and macroeconomic variable interactions. Sections 4 and 5 present and discuss results, respectively. Section 6 provides the conclusion.

2. LITERATURE REVIEW

The mediating role of inflation has been extensively scrutinized in various macroeconomic contexts, including the monetary policy transmission mechanism. Researchers have investigated how inflation mediates the impact of monetary policy decisions, such as interest rates and money supply, on macroeconomic variables like GDP growth rate and exchange rates (Bui & Kiss, 2021; Altınışık & Yücememiş, 2023; Asuzu & Anyanwu, 2023). Notably, studies have found that inflation can either amplify or dampen the effects of monetary policy on economic activity, contingent upon specific economic conditions (Jonung, 2025; Agénor & Pereira da Silva, 2023). For instance, inflation can influence the efficacy of monetary policy by altering the expectations of economic agents, thereby affecting the transmission of policy shocks to the real economy (Woodford & Walsh, 2005).

In the context of exchange rate dynamics, research has examined how inflation influences the relationship between exchange rates and other macroeconomic variables, such as trade balances and economic growth (Din et al., 2024; Olamide et al., 2022; Umeaduma & Dugbartey, 2023). This empirical literature shows that high inflation can lead to exchange rate depreciation, which can, in turn, affect trade balances and economic growth. Furthermore, studies have shown that the relationship between inflation and exchange rates can be influenced by various factors, including monetary policy, fiscal policy, and external shocks.

Regarding economic growth and development, research has explored how inflation affects the relationship between economic growth and other factors, like investment, consumption, and productivity (Muhammad, 2023; Girdzijauskas et al., 2022; Batrancea, 2021). Studies have found that moderate inflation can promote economic growth, while high inflation can have detrimental effects. The threshold beyond which inflation becomes detrimental to growth is, however, subject to debate, and further research is needed to determine the optimal inflation rate for economic growth.

In the context of fiscal policy and inflation, researchers have analyzed how fiscal policy decisions, such as government spending and taxation, impact inflation and, in turn, affect other macroeconomic variables (Taslima et al., 2024; Ali et al., 2023; Le & Finch, 2022). These empirical studies suggest that expansionary fiscal policies can lead to higher inflation, which can, in turn, affect economic growth and stability. The impact of fiscal policy on inflation can, however, be influenced by various factors, including the state of the economy, the level of government debt, and the monetary policy stance.

The theories and empirical studies on mediation analysis of the mediating role of inflation on macroeconomic variables have been trending recently (Dufour & Wang, 2023; Ali et al., 2022). These studies have extensively examined the impact of inflation on macroeconomic variables, including exchange rates, interest rates, and GDP growth rate (Khan & Hanif, 2020). Research has expanded to emerging markets, with studies exploring the mediating role of inflation. Country-specific studies have also provided valuable insights into the impact of inflation on macroeconomic variables.

Recent studies continue to investigate inflation's mediating role, focusing on its implications for monetary policy and economic stability (Dufour & Wang, 2023). The mediating role of inflation has been extensively studied in the context of its impact on selected macroeconomic variables, such as exchange rates, economic growth, and employment. However, there is a notable gap in the literature regarding the mediating role of inflation in the interactions between money supply, interest rates, and GDP growth rate. This knowledge gap is significant, as understanding the mediating role of inflation in these interactions can provide valuable insights into the transmission mechanisms of monetary policy and the dynamics of economic activity.

Research has shown that inflation can play a crucial role in mediating the effects of monetary policy on the economy. For instance, an increase in money supply can lead to higher inflation, which in turn can affect interest rates and GDP growth rate. However, the specific mechanisms through which inflation mediates these interactions are not well understood, and further research is needed to explore this topic. Studies that have investigated the mediating role of inflation on money supply, interest rates, and GDP growth rate have found that inflation can have contradictory effects on the transmission of monetary policy (Falck et al., 2021; Ishak et al., 2022; Bauer et al., 2024). For example, some studies have found that inflation can amplify the effects of monetary policy on GDP growth rate, while others have found that inflation can reduce the effectiveness of monetary policy in stimulating economic activity (Forbes, 2019).

3. METHODOLOGY

This study adopts a structural equation modelling (SEM) method, which provides a robust framework for examining complex mediation relationships. The methodology is modified to accommodate the specific research questions and objectives of this study. SEM is particularly handy for testing theoretical models, assessing indirect effects, and analyzing multiple dependencies within a single framework. The method is appropriate in this case since the study seeks to understand the structural interrelationships among macroeconomic variables. Further, the study seeks to assess the direct and indirect relationships among the variables.

Alternatively, the study could have adopted the fully modified ordinary least squares (FMOLS) but would fall short of providing the indirect effect of the dependent variable on the independent variable. The intricacies of endogeneity, nonstationary, and cross-sectional dependence that frequently define panel data — especially when variables are cointegrated — are handled by FMOLS. It accounts for these problems to produce estimates of long-term associations that are more reliable and effective. Given this shortfall, the SEM is most favourable for this study.

In statistical modeling, the combined influence of two or more predictor variables on a response variable is represented by an interaction term, which illustrates how the value of one predictor affects the relationship between the response and the predictor. In essence, it captures circumstances in which the impact of one variable varies with the level of another variable. The interaction term is produced by multiplying the predictor variables collectively. It is a result of the MIG index in this study.

The primary objective of this study is to investigate the mediation effect of inflation in the exchange rate-interactions of the MIG index nexus. The study used three equations specified below. The paper employs Eq. (1) to investigate the direct effect of MIG index on the exchange rate.

$$Exchange\ rate_{it} = \beta_1 + \beta_2 MIG_{it} + V_{it} \quad (1)$$

where,

• V_{it} represents the error term;

• β_1 and β_2 are the intercept term and coefficient of MIG index, respectively;

• *it* represents bank (*i*) at time (*t*).

The paper employs Eq. (2) to evaluate the effect of MIG index on inflation.

$$INFL_{it} = \tilde{n}_1 + \tilde{n}_2 MIG_{it} + G_{it} \quad (2)$$

where, G_{it} denotes the error term, $\tilde{n}_1$ and $\tilde{n}_2$ are the intercept terms.

Furthermore, the study used Eq. (3) to explore the impact of MIG index and inflation on the exchange rate.

$$Exchange\ rate_{it} = \varsigma_1 + \varsigma_2 MIG_{it} + \varsigma_3 INFL_{it} + Q_{it} \quad (3)$$

where, Q_{it} denotes the error term while ς_1, ς_2, and ς_3 are the intercept terms.

Inflation, a sustained increase in the general price level of goods and services in an economy over time, resulting in a decrease in the purchasing power of money, can be measured in various ways, including consumer price index (CPI), which measures the average change in prices of a basket of goods and services consumed by households, GDP deflator, which measures the average price level of all goods and services produced within a country (according to Bureau of Economic Analysis — https://www.bea.gov/taxonomy/term/796), producer price index (PPI), which measures the average change in prices of goods and services produced by firms, and inflation expectations, which measures the expected rate of inflation over a specific period, often based on surveys or financial market data (Forbes, 2019).

The exchange rate, the price of one country's currency in terms of another, influences international trade, investment, and economic activity, and can be measured in various ways, including the nominal exchange rate, the real exchange rate, which adjusts for differences in price levels between countries, and effective exchange rate, a weighted average of exchange rates with trading partners. Exchange rates can impact macroeconomic variables like trade balances, economic growth, and inflation, with recent studies examining the relationship between exchange rates and these variables. Understanding exchange rates is crucial for policymakers and businesses to navigate the complexities of international trade and finance.

The interactions between the MIG index are complex and influential in shaping economic activity. An increase in money supply can lead to lower interest rates, stimulating borrowing and spending, which can, in turn, boost the GDP growth rate. Conversely, higher interest rates can reduce borrowing and spending, slowing down the GDP growth rate. The relationship between these variables is crucial for monetary policy, as central banks use money supply and interest rates to regulate economic activity and achieve macroeconomic objectives. Understanding these interactions is essential for policymakers to make informed decisions about monetary policy and promote economic stability. The study used an unweighted multiplicative approach to construct the MIG, where the three paired variables were multiplied together. This assumes that each variable has an equal impact on the outcome. Given the lack of prior research or theoretical guidance on assigning weights to these specific variables, an equal weighting scheme seemed a reasonable and objective approach. This method also avoids introducing potential bias that could arise from arbitrarily assigning weights. Alternatively, the study could have adopted the principal component analysis to develop the MIG.

This research utilised a balanced panel dataset from the World Economic Forum database. The panel data approach was chosen for its ability to capture dynamic relationships, account for individual differences, and provide more accurate estimates. The balanced structure allows for robust estimations, and the use of panel data enhances precision, improves model specification, and controls for omitted variables, offering a comprehensive understanding of the relationships being studied.

4. RESULTS

The results of the study are presented in this section. The section starts by discussing the characteristics of the data that were used for the study. To this end, the descriptive statistics, correlation coefficients, and unit root test are presented and explained, showing the implications for the study. Table 1 presents the descriptive statistics of the study.

Table 1. Descriptive statistics results

Statistic	*GDPGR*	*INFL*	*EXR*	*MS*	*INTR*	*MIG*
Mean	5.969	24.812	65.260	0.582	0.127	0.369
Median	4.080	5.710	13.250	0.550	0.110	0.200
Maximum	60.900	667.400	373.330	1.050	0.350	2.800
Minimum	-8.100	-2.430	2.540	0.210	0.040	-0.370
Std. dev.	9.405	86.912	124.870	0.229	0.069	0.511
Observations	75	75	75	75	75	75

Note: GDPGR = GDP growth rate, INFL = inflation rate, EXR = exchange rate, MS = money supply growth rate, INTR = interest rate, MIG = MIG index.
Source: Authors' elaboration.

The GDP growth rate (*GDPGR*) data shows a mean of 5.969 and a median of 4.080, indicating a positive growth trend with potential skewness. The standard deviation of 9.405 reveals significant variability, with growth rates ranging from -8.1 to 60.900, indicating substantial fluctuations.

The annual inflation rate (*INFL*) data exhibit extreme variability and non-normality, with a mean of 24.812 and a median of 5.710, differing significantly due to skewness. The high standard deviation (86.912) reflects substantial fluctuations, with a wide range between the maximum (667.4) and minimum (-2.430) values.

The descriptive statistics for exchange rates (*EXR*) reveal a large difference between the mean (65.260) and median (13.250), indicating significant skewness due to extreme values. The exchange rates exhibit substantial variability, ranging from 2.540 to 373.330, with a high standard deviation (124.870).

The money supply growth rate (*MS*) data show a mean of 0.582 and a median of 0.550, indicating a relatively stable growth trend. The standard deviation of 0.229 suggests moderate variability, with growth rates ranging from 0.210 to 1.050.

The descriptive statistics for interest rates (*INTR*) reveal a mean of 0.127 and a median of 0.110, with a range of 0.040 to 0.35, indicating considerable variation. The standard deviation of 0.069 suggests moderate variability.

The MIG index (*MIG*) data exhibits a mean of 0.369 and a median of 0.200, indicating a positive central tendency with potential skewness. The standard deviation of 0.511 suggests notable variability, with data ranging from -0.370 to 2.80.

The non-normality has been identified as one of the weaknesses of the variables under consideration, but studies have shown that in models such as the SEM used for this study, it does not affect the robustness of parameter estimates, which is the most important aspect of this study. Alternative methods, such as FMOLs, would become useful for future studies.

The study employed the Pearson correlation method to test for the problem of multicollinearity; the results are in Table 2 below. The results are rounded to three decimal places.

The Pearson correlation matrix reveals relatively low multicollinearity among most variables, with coefficients below 0.8. Table 3 provides the SEM model.

Table 2. Pearson correlation matrix

Variable	*INFL*	*GDPGR*	*MS*	*INTR*	*EXR*	*MIG*
INFL	1.00					
GDPGR	-0.03	1.00				
MS	0.11	-0.13	1.00			
INTR	0.56	-0.06	-0.15	1.00		
EXR	0.28	0.03	-0.05	0.76	1.00	
MIG	0.25	0.86	0.02	0.31	0.25	1.00

Source: Authors' elaboration.

Table 3. Structural equation modelling results

Direction of effect	*Coefficient*	*Standard error*	*Z-value*	*Probability*
MIG index to inflation	42.046	19.023	2.21	0.027
Inflation in the exchange rate	47.954	27.393	1.75	0.008
MIG index to exchange rate	0.332	0.161	2.06	0.039

Source: Authors' elaboration.

The SEM results reveal a significant positive relationship between the interaction of the MIG index on inflation. The coefficient of 42.046 indicates that the combined effect of these variables substantially fuels inflation, likely due to demand-pull pressures arising from expansionary monetary policy and rapid economic growth. This finding underscores the complex dynamics at play in the economy, where the interplay between monetary policy, economic growth, and inflation can have far-reaching consequences.

The positive relationship between the interaction term and inflation highlights the critical need for policymakers to balance economic growth with inflation risks when setting monetary policy. Inflation targeting emerges as a crucial strategy, allowing policymakers to maintain price stability while fostering economic growth. By carefully monitoring the interactions between money supply, interest rates, and GDP growth, policymakers can develop nuanced and responsive policies that address the multifaceted nature of inflation.

The findings have significant policy implications, emphasizing the importance of careful consideration of macroeconomic variables to achieve economic stability and control inflation. By understanding the complex relationships between these variables, policymakers can craft targeted strategies that promote stability and balance competing objectives. Effective policymaking in this context requires a deep understanding of the economy's underlying dynamics, enabling policymakers to respond proactively to emerging challenges and opportunities, ultimately fostering a more stable and sustainable economic environment.

The findings that the combined influence of MIG index positively and significantly influences inflation are consistent with various economic theories and studies. These include the monetarist theory that an increase in money supply can lead to inflation (Friedman, 1963) and Keynesian economics, which suggests that changes in aggregate demand, influenced by monetary policy, can impact inflation rates. Empirical evidence supports these theories, with studies showing that expansionary monetary policies can lead to increased money supply and subsequent inflationary pressures (Gmeiner, 2025) and that monetary policy tools can influence inflation rates (Ali et al., 2023). Recent research reinforces these findings, highlighting the role of monetary policy in shaping inflation dynamics (Abbate et al., 2023), the impact of quantitative easing on inflation (Khodakevich et al., 2024), and the importance of coordinated monetary and fiscal policy responses to mitigate inflationary pressures, as well as the significance of interest rates in managing inflation expectations.

The results have revealed a positive and significant relationship between inflation and exchange rate, with a coefficient of 47.954

and a probability value of 0.008. This suggests that higher inflation leads to depreciation of the currency, supporting the purchasing power parity (PPP) theory. The findings imply that inflation can significantly influence exchange rate movements, potentially affecting trade balances and economic competitiveness.

The mediation results reveal a positive and significant indirect effect of the interaction between money supply, interest rates, and GDP growth rate on the outcome variable, with a coefficient of 0.332 and a probability value of 0.039. This suggests that the combined effect of these macroeconomic variables influences the outcome variable through a mediating pathway, highlighting the complex dynamics at play in the economy. The positive coefficient indicates that an increase in the interaction term leads to an increase in the outcome variable. The statistical significance of the mediation effect confirms that the relationship is real and not due to chance, with a moderate standard error of 0.161 indicating reasonable precision.

5. DISCUSSION

The results have significant policy implications, emphasizing the need for policymakers to manage inflation and stabilize the currency. This can be achieved through a combination of monetary policy instruments, such as interest rates, and targeted interventions in the foreign exchange market. By understanding the relationship between inflation and exchange rates, policymakers can develop informed strategies to promote economic stability and competitiveness. Inflation and exchange rate exhibited a positive relationship, indicating the importance of monitoring inflation to maintain economic stability. Central banks should consider the impact of inflation on exchange rates when setting monetary policy, as unchecked inflation can lead to currency depreciation and economic instability. Effective monetary policy can help mitigate the adverse effects of inflation on exchange rates. Inflation's positive impact on the exchange rate suggests that a country's currency tends to appreciate when its inflation rate increases relative to other countries. This finding is consistent with various economic theories, including the PPP theory and the interest rate parity (IRP) theory, which suggest that exchange rates are influenced by differences in inflation rates and interest rates between countries. Empirical studies have also found a positive relationship between inflation and exchange rates, such as research on the Nigerian economy that found that inflationary pressures led to an appreciation of the exchange rate. Other studies have also confirmed this finding, highlighting the importance of inflation differentials in determining exchange rates. However, not all studies agree with this finding, with some research suggesting that high inflation rates can lead to currency depreciation, rather than appreciation, due to decreased confidence in the currency and reduced purchasing power (Krugman, 2000; Obstfeld & Rogoff, 2001). Recent studies have continued to validate the positive relationship between inflation and exchange rates, while others have found mixed results or argued that the relationship is more complex and dependent on various factors, such as economic structure and policy framework.

The mediation analysis confirms that inflation partially mediates the relationship between the exchange rate and the interaction of the MIG index. This indicates that the interaction term affects the exchange rate through both direct and indirect channels, with inflationary pressures being a key indirect pathway. The findings highlight the complex dynamics between macroeconomic variables, underscoring the need for policymakers to consider multiple transmission channels when designing monetary policy. This nuanced understanding is crucial for effective policymaking and exchange rate management.

6. CONCLUSION

The results of the study elucidate the convoluted dynamics between inflation, exchange rates, and the symbiotic interactions of the MIG index, underscoring the paramount significance of these macroeconomic variables in delineating exchange rates and inflationary trajectories. Specifically, the results reveal that the confluence of MIG index exerts a positive and statistically significant influence on inflation, which in turn precipitates a concomitant appreciation in exchange rates, highlighting the intricate transmission mechanisms through which macroeconomic variables interact and impinge upon one another. This sophisticated understanding of the interstices between these variables has profound implications for policymakers seeking to promote macroeconomic stability, attenuate inflationary pressures, and manage exchange rates efficaciously. This will guide future monetary policy making, taking cognisance that all macroeconomic variables are interrelated. Monetary authorities should judiciously modulate the interactions between money supply, interest rates, and GDP growth rates to mitigate the inflationary pressures emanating from these interactions, which in turn exert a positive influence on exchange rates. While fiscal authorities should craft policies that judiciously account for the impact of GDP growth rates on inflation and exchange rates, eschewing excessive fiscal expansion that can precipitate increased money supply and subsequent inflationary pressures, this can have a positive impact on exchange rates. Prudent fiscal management should prioritize macroeconomic stability, ensuring that fiscal policies are aligned with monetary policy objectives to mitigate inflationary risks. Given the positive nexus between inflation and exchange rates, and the indirect impact of the interactions between the MIG index on exchange rates through inflation, policymakers should adopt a managed exchange rate regime that strikes a balance between flexibility and stability.

The study is important in the sphere of macroeconomic policy making especially monetary policy development in developing countries. Macroeconomic variables don't have isolated effects but usually interact with one another, hence the need to evaluate the pass-through effect by analysing the combined effects of the variables. Hence, this study, though not conclusive, gives future direction for macroeconomic studies and interactive relations among variables. The limitation of the study is the short-term data sets that were used, hence the need for future studies to look at data sets with a long-term span.

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