



Nexus between Exchange Rate Volatility and Economic Growth: A Theoretical Review

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ABSTRACT

Exchange rate volatility is one of the most noteworthy indicators of economic growth, and global trade and economic integration have been approved as important catalysts that accelerate a country's economic growth. Thus, the severe variations observed in recent decades are of great interest to non-industrialized economies like Rwanda. In general, when the value of the national currency decreases, exports rise because domestic goods and services are more affordable in foreign markets, while domestic demand for imports decreases at home. A rise in the value of the national currency has the opposite effect, increasing the competitiveness of imports and driving up the cost of exports, thus increasing Rwanda's trade deficit. The local currency's exchange rate, however, has a critical role in setting prices, productivity levels, the amount of foreign assets held in the country, and the nation's ability to draw in investments, especially considering its small and open economy. Various studies demonstrate that stable exchange rates contribute to the country's financial stability throughout the long run as well as the short term. Therefore, the primary objective of this research was to assess how exchange rate fluctuations affect economic growth. The Mundell-Fleming model, the model of Balassa-Samuelson, and the productivity effects model serve as the foundation for the study. This research employed a descriptive research design. The research findings proved that the volatility of the exchange rate has a higher influence on economic growth. The study recommends that policymakers should stabilize the exchange rate by promoting exports and building and managing an adequate level of foreign exchange reserves. Fiscal and monetary authorities should ensure a consistent and complementary approach to managing exchange rate fluctuations in the country's economy.

Keywords: *Economic growth, exchange rate volatility, imports, exports, Rwanda.*

1. Introduction

Since the decline of the Bretton Woods system approximately three decades ago, the resurgence of issues caused by fluctuations in exchange rates has become a prominent subject in closed and open economies (Michael *et al.*, 2004). These fluctuations also affected countries across the world, where liberalization efforts resulted in high prices due to excessive currency rate fluctuations. Most developing nations' currencies experienced regular value fluctuations, generating unpredictability for domestic exporters and importers (Calvo, 1999). This is because of the growth in reliance on external markets; the developing nations' currency exchange rate substantially influences both the level of prices and the balance of payments.

Mukunzi (2004) Aghion and *et al.*, 2009 scrutinized different indicators that shape the influence of effective exchange rates on the wealth of a nation. The studies investigated the impact of currency volatility on inflation and the monetary policy response to the volatility of exchange rates. The studies found that these issues are crucial, as they are linked to the influence of overseas exchange market developments on inflation and inflation expectations, as well as how monetary authorities choose to address these influences (Nkurunziza, 2016). Consequently, the exchange rate has a substantial role in shaping inflation trends and acts as a barrier against shocks.

However, the effectiveness of these monetary transmission channels diminishes during periods of low and stable inflation (Alagidede & Muazu, 2017). Monetary policy reacts strongly to changes in the exchange rate, introducing uncertainty and necessitating further investigation and enhanced communication efforts. The perception surrounding the stabilization of inflation and exchange rates has undergone significant changes, with many economies turning to inflation targeting as an alternative solution for stabilization (Sebastian, 1989). Despite the longstanding recognition of purchasing power parity, it has faced criticism and debate in recent decades due to factors such as non-tradable goods, trade costs, and disparities in consumer goods and production prices (Kanas, 2006).

Furthermore, shocks to the money and capital markets, both short and long-term, affected the exchange rate. In a study conducted by Adler and Lehmann (1983), it was demonstrated that even in the long run, purchasing power parity is either not consistently observed in reality or requires a significant amount of time for price differences to be equalized according to purchasing power parity (Balassa & Bela, 1964). Rogoff proposed three important modifications to the purchasing power parity theory, including the Balassa-Samuelson effect, trends in the current account, and the role of public spending. It is worth noting that not all of these changes were previously unknown in the existing literature.

Developing countries understand the components of inflation targeting as they actively consider its implementation as their next framework for monetary policy. This includes analyzing the relationships between various economic variables and evaluating their impact on inflation and the trajectory of monetary policy (Mukunzi, 2004). Exchange rate fluctuations can affect a country's economy through international trade, foreign direct investment, and economic development (Mancellari *et al.*, 1999). Whether a regime of fixed or flexible exchange rates is chosen, it affects macroeconomic stability, foreign investment, and trade. The value of a nation's currency under a flexible exchange rate regime is determined by the interplay of supply and demand for foreign currency (Razazadehkarsalari *et al.*, 2011).

Variations in the rate of exchange directly affect the cost of both domestic and imported goods, which influences inflation (Kola & Liko, 2011). A properly balanced real exchange rate contributes to a stable macroeconomic environment and the absorption of foreign capital, which is crucial for the economic development of any country, especially developing countries. Succinctly, the nexus amid the volatility of exchange rates and economic growth is essential for policymakers. The specific factors and transmission mechanisms involved in this relationship need to be thoroughly analyzed to inform appropriate policy measures. In order to manage exchange rate volatility effectively, policymakers need to establish measures promoting price stability, attracting foreign investment, and fostering sustainable economic growth (De Grauwe, 1988).

Flexible exchange rates have a crucial role in explaining fluctuations in inflation. A properly balanced real exchange rate contributes to the establishment of a stable macroeconomic environment, enabling the absorption of foreign capital. This aspect holds significant importance for the economic development of developing countries. De Grauwe (1988) also asserts that in certain developing nations, the fluctuations of exchange rates greatly impact aggregate demand and the expansion of investments. Similarly, Huaa (2011) concluded that an overvalued currency adversely affects employment. Rwanda is a small country that typically relies on international market prices for its products (NAEB, 2011).

Changes in the rate of exchange directly impact the prices of imported goods purchased by domestic consumers. Additionally, fluctuations in the exchange rate can also affect the prices of domestically produced goods. When the rate of real effective exchange is undervalued, the cost of imported inputs increases, leading to higher marginal costs and ultimately influencing prices. Ntagara and Mulyungi (2020) conducted a study and confirmed that there is a relationship between inflation and exchange.

2. Literature review

This section examines and updates the body of knowledge currently in existence encompassing the link between fluctuations in rates of exchange and the growth of an economy, both in terms of concepts, theories, and empirical studies.

2.1. Theoretical Review

This section emphasizes scrutinizing various studies linked to the factors of exchange rates and the growth of an economy. The research is attached to three models: the Mundell-Fleming Approach, the model of the Balassa-Samuelson Effect, and the model of productivity.

2.1.1. Mundell-Fleming Approach

Mundell-Fleming was proposed by Mundell and Fleming (1962), and they made significant contributions to the analysis of fiscal and monetary policies in an open economy with rates of flexible exchange. However, it is important to keep in mind that various economists contributed to the model's formulation and development over time, and they are linked to its advancement and acceptance. The IS-LM-BP model, which integrates the IS-LM framework with the balance of payments analysis, has been refined and expanded upon by numerous scholars since its inception (Mussa, 1986). The model of Mundell-Fleming provides a theoretical framework to explain the link between exchange rate fluctuations and economic growth.

This model suggests that changes in exchange rates can have multiple effects on economic growth. First off, fluctuations in exchange rates can affect a nation's trade balance and, in turn, its rate of economic expansion (Mussa, 1986). A decrease in the domestic currency's value can boost export volumes by increasing exports' competitiveness in global markets. This can boost economic growth by stimulating production and employment in export-oriented industries. Equally, an appreciation of the domestic currency may make exports more expensive and reduce their competitiveness, potentially slowing down economic growth. Secondly, exchange rate fluctuations can affect capital flows and investment decisions.

In the Mundell-Fleming model, a rise in domestic interest rates related to those in foreign countries resulting from the appreciation of the exchange rate can attract capital inflows (Dornbusch, 1976). These capital inflows can support investment and promote economic growth. Conversely, an exchange rate depreciation could lead to capital outflows, potentially reducing investment and slowing down growth. Additionally, the Mundell-Fleming model highlights the importance of fiscal policy in influencing the relationship between exchange rate fluctuations and economic growth. Fiscal policies that are expansionary, like tax breaks or higher government spending, can boost domestic demand and accelerate economic growth (Mussa, 1976).

Nevertheless, the impact of fiscal policy on growth can be influenced by exchange rate movements. For instance, a depreciation of the domestic currency may increase import prices and potentially dampen the positive effects of fiscal stimulus on growth (Obstfeld, 1985). In summary, according to the Mundell-Fleming model, exchange rate fluctuations can impact economic growth over their effects on trade balances, capital flows, and the interaction with fiscal policy (Mussa, 1986). The specific outcomes depend on the nature and direction of exchange rate movements and the underlying economic conditions in the country (Krugman, 1986).

2.1.2 The Balassa-Samuelson Effect Model

The Balassa-Samuelson Effect model was developed jointly by Balassa and Samuelson in 1964. They collaborated on the research, and their work was published in the same paper. The Balassa-Samuelson Effect model was first presented in a 1964 paper titled "The Relevance of the Two-Sector Production Model in Trade Theory.". The theoretical concept known as the effect of Balassa-Samuelson can influence how exchange rate fluctuations affect economic growth. This effect posits that exchange rate movements can have significant implications for relative prices, inflation, and ultimately, economic growth (Obstfeld & Rogoff, 2001).

According to the effect of Balassa-Samuelson, exchange rate fluctuations can affect the relative prices of tradable and non-tradable goods and services within an economy. Tradables refer to goods and services that can be easily traded across borders, such as manufactured goods, while non-tradables are primarily domestically consumed services like housing or healthcare. When a country's currency appreciates in comparison to tradable goods, it causes the prices of goods and services that are not tradable to rise. This is because non-tradables are typically more insulated from international competition and rely more on domestic factors of production. As a result, the rising prices of non-tradables can contribute to higher domestic inflation. The impact of this inflationary effect on economic growth depends on several factors.

An increase in non-tradable prices can lead to higher incomes for workers in those sectors, as they benefit from the appreciation of the currency (Owen, 2005). This rise in income can stimulate domestic consumption and potentially contribute to economic growth. On the other hand, the inflationary pressures resulting from the appreciation of the currency can have adverse effects. It can erode the competitiveness of tradable sectors as their prices become relatively more expensive compared to foreign rivals. This can lead to a decline in exports and a contraction of tradable industries, which can negatively impact economic growth. Furthermore, the effect of Balassa-Samuelson suggests that exchange rate fluctuations can influence productivity differentials between goods and services that are tradable and not subject to international trade.

In economies where tradable sectors experience greater productivity growth, the appreciation of the currency can exacerbate the wage differentials between the two sectors, further affecting competitiveness and growth. It is important to note that the effect of Balassa-Samuelson provides a theoretical framework and that the real influence of exchange rate fluctuations on economic growth is affected by additional factors, such as monetary and fiscal policies, the dynamics of the labour market, and external shocks (Cheung & Chinn, 1996). In conclusion, the effect of Balassa-Samuelson suggests that exchange rate fluctuations can impact economic growth through their effects on relative prices, inflation, and the competitiveness of tradable sectors. Appreciation of the currency can lead to higher non-tradable prices, which may have both positive and negative consequences for economic growth.

2.1.3 Productivity Effects Model

The model of productivity effects was proposed by economists Balassa and Samuelson (1964), who explained the association between productivity and exchange rates. Samuelson and Balassa (1964) published a joint paper in 1964 titled "The Theory of Economic Integration," in which they discussed the productivity effects model in the context of global trade and exchange rates. Therefore, Balassa and Samuelson can be considered the first promoters of the productivity effects model in explaining exchange rate fluctuations, and their work in the mid-1960s is significant in establishing this concept within economic theory.

The model of productivity effects has a crucial role in shaping the influence of rate of exchange fluctuations on economic growth. The relationship between exchange rates and productivity is complex and multifaceted, but it provides valuable insights into how currency movements can influence economic growth (Elhanan, 1984). Fluctuations in exchange rates can affect productivity through various channels. Firstly, exports may be more competitive in foreign markets if the home currency declines. This increased competitiveness can lead to an expansion of export-oriented industries, boosting productivity growth as firms strive to meet higher demand. The export sector's growth can spill over into other sectors through backward and forward linkages, further enhancing productivity in the overall economy (Bernard, 1996).

However, if the value of the home currency increases, exports may become comparatively more costly, which could reduce the competitiveness of home businesses. This can lead to a contraction in export-oriented sectors and a shift of resources towards non-tradable sectors, which may have lower productivity growth. As a result, productivity growth in the economy as a whole may slow down. Exchange rate fluctuations can also influence productivity through their impact on imports. The cost of imported inputs may increase due to a decline in the home currency value, which could have a negative impact on the productivity of businesses that depend on imports. But a rise in the value of the currency can lower the price of imported inputs, which could help businesses and boost productivity growth.

Also, exchange rate fluctuations can affect firms' incentives for innovation and technological upgrading. When a currency depreciates, firms face increased import costs, which may encourage them to seek cost-saving measures and adopt more efficient technologies (Schott, 2003). This can lead to productivity gains and contribute to economic growth. Conversely, an appreciation of the currency may reduce firms' incentives for innovation and investment in productivity-enhancing activities. The interplay between exchange rates and productivity is also influenced by factors such as labor market dynamics, technological capabilities, and the business environment (Head, 2003). These factors interact with exchange rate movements and can either amplify or mitigate the productivity effects.

The influence of exchange rate fluctuations on productivity is not uniform across all industries or countries. Industries that are more globally integrated and have higher exposure to international trade are likely to experience stronger productivity effects from exchange rate movements. Furthermore, the effect may differ based on the trade openness, policy framework, and development level of the nation (Ottaviano, 2002). Concisely, productivity effects

provide insights into how exchange rate fluctuations can influence economic growth. Currency movements can affect competitiveness, export performance, import costs, and firms' incentives for innovation and technological upgrading (Kohler, 2004). These factors collectively shape the productivity dynamics of an economy and can have significant implications for its growth trajectory.

Table 1: Summary of the Following Theories

Theory	Promoter	Argument	Relevance
Mundell & Fleming Approach	Mundell & Fleming, (1962)	The theory explains the rapport among exchange rates, interest rates, and output in an open economy. It makes clarification of how a nation cannot have unrestricted capital flows, an independent policy of monetary, and a fixed exchange rate all at the same time.	The Mundell-Fleming approach has relevance for understanding the policy trilemma and the challenges faced by countries in managing their exchange rates and monetary policies.
The Balassa-Samuelson Model	Balassa & Samuelson, (1964).	The model predicts that differences in productivity growth between tradable and non-tradable sectors will lead to an appreciation of the real exchange rate in countries with higher productivity growth.	The Balassa-Samuelson effect model is relevant for explaining long-term trends in real exchange rates and the impact of productivity differentials on a country's competitiveness.
Productivity Effects Model	Balassa & Samuelson (1964).	This theory emphasizes on the influence of productivity growth in driving economic growth and development. It argues that nations demonstrating raised productivity levels tend to have higher living standards and economic prosperity.	relevant for understanding the importance of productivity-enhancing policies and investments in fostering long-term economic growth.

Source: Author, 2023

2.2. Empirical Review

This section reviews the conceptual and empirical literature on rate of exchange fluctuations, economic growth, and other macroeconomic factors related to economic growth.

2.2.1 Investment and Capital Flows Effects

The influence of rate of exchange fluctuations on economic growth can be understood through the lens of investment and capital flows (Obstfeld, 1986). Exchange rate movements can affect investment decisions and the flow of capital, which in turn can have implications for economic growth. Exchange rate fluctuations can influence investment decisions by altering the relative returns and risks of domestic and foreign assets. A currency's decline in value can attract portfolio investments and foreign direct investment because it can lower the cost of domestic assets for investors from other countries. This influx of capital can contribute to increased investment, stimulate economic activity, and promote growth.

An increase in the value of the national currency may make domestic assets relatively more expensive for foreign investors, discouraging them from investing. This capital flight could hinder economic growth, stifle activity, and diminish investment opportunities (Obstfeld, 1995). Furthermore, changes in rates of exchange may influence the profitability of companies engaged in international trade. When the value of a currency declines, domestic exporters can increase their competitiveness by reducing the cost of their goods and services in foreign markets. Enhanced export earnings and revenues possess the capacity to stimulate investment and drive economic growth.

A rise in the national currency value could reduce the competitiveness of domestic exporters, resulting in decreased export revenue and profitability. This might deter people from making investments, which would be bad for the economy's growth. Exchange rate fluctuations may also impact the cost of borrowing and the accessibility of financing. Governments and companies with significant foreign debt may find it more costly to settle their debt in foreign currencies if the value of their home currency declines. They may therefore find it more difficult to finance and invest in initiatives that foster growth. The cost of servicing debt denominated in foreign currencies can be decreased by the appreciation of the home currency, relieving debtors and possibly encouraging investment and expansion.

Similarly, exchange rate fluctuations can influence capital flows and financial stability (Eichengreen, 2001). Large and abrupt exchange rate movements can create uncertainties and volatility in financial markets, which can disrupt capital flows and lead to financial instability. Such instabilities can hinder investment and impede economic growth (Eichengreen, 2002). It has been noted that the impact of exchange rate fluctuations on investment and capital flows is influenced by various factors, including economic fundamentals, investor sentiment, monetary policies, and regulatory frameworks (Reinhart & Rogoff, 2008). These factors interact with exchange rate movements and shape the investment climate, affecting the growth dynamics of an economy.

In conclusion, exchange rate fluctuations have implications for investment decisions, capital flows, and ultimately, economic growth. Currency movements can influence the attractiveness of domestic assets for foreign investors, impact the profitability of exporters, affect the cost of borrowing, and create financial stability concerns (Subramanian, 2011). The connection between exchange rates, investment, and capital flows is necessary to assess how exchange rate fluctuations affect economic growth (Subramanian, 2013).

2.2.2. The Financial Channel Effects

The financial channel effect makes it possible to comprehend how changes in exchange rates relate to economic growth. It focuses on the different financial channels that fluctuations in exchange rates pass through and the effects those fluctuations have on the economy as a whole (Franke, 2002). Exchange rate fluctuations can have a range of financial effects on economic growth. First off, the valuation of assets and liabilities expressed in foreign currencies could be influenced by changes in exchange rates. A decrease in the home currency value can improve balance sheets and the financial standing of people, companies, and the government by raising the value of foreign assets and lowering the burden of foreign liabilities (Chinn, 1999). This increased financial stability.

Growth in the value of the home currency has the potential to reduce foreign asset values and increase foreign liability levels, weakening balance sheets and limiting investment and spending. This could prevent the economy from growing. Exchange rate fluctuations may also affect the availability of credit and the cost of borrowing. Inflationary pressures could arise from a decline in the home currency value, which would raise the cost of imported goods and services. In response to inflation, central banks may raise interest rates, which could result in increased borrowing costs and a reduction in the amount of credit available (Engel, 1994). This could impede investment and economic growth.

However, a strengthening of the national currency can mitigate the effect of import-related inflation, allowing central banks to keep interest rates lower (Corsetti, 2008). This can reduce borrowing costs and promote investment and growth. Moreover, how lenders and investors view risk may also be impacted by fluctuations in exchange rates. When an economy's value decreases, it may be perceived as riskier, which could lead to higher borrowing costs and risk premiums (Lane, 2009). This could deter investors and prevent the economy from growing. Conversely, a rise in the national currency's value has the potential to reduce the perceived level of risk attached to an economy, thereby resulting in reduced borrowing costs and risk premiums. This could lead to investment and economic growth.

Intensification in the country's currency value can diminish the perceived level of risk associated with an economy, which could lead to lower risk premiums and borrowing expenses. Growth in the economy and investment may result from this. Furthermore, the stability of the financial system may be impacted by exchange rate changes. Significant fluctuations in exchange rates can cause operational challenges for the banking sector and other financial institutions. They can also increase market volatility and uncertainty (Hausmann, 2004). Financial instability has the potential to stifle investment, impair credit flows, and obstruct economic expansion. The structure of the financial system, the existence of debt denominated in foreign currencies, the success of the monetary policy, and the degree of financial development are some of the variables that impact the financial channel effect. These variables interact with changes in exchange rates to form the financial environment that impacts economic expansion (Reinhart, 2009).

In conclusion, the financial channel effect highlights the transmission mechanism through which exchange rate fluctuations can impact economic growth. Currency movements influence the value of foreign assets and liabilities, the cost of borrowing, risk perceptions, and financial stability. Understanding these financial channels is essential for measuring the influence of fluctuations in exchange rates on economic growth. Empirical research is crucial to further exploring these relationships and identifying specific dynamics in different economic contexts.

2.2.3. Exchange Rate Volatility and Economic Growth

A substantial amount of research on the relationship between exchange rate volatility (RER) and economic growth in industrialised and developing nations has been published in the literature. Alieyu et al. (2009) discovered a positive link rather than a negative one, in contrast to earlier empirical investigations (Musyoki et al., 2012; Schnabl, 2007) that revealed a significant negative association between them. Similarly, research by Levy-Yeyati and Sturzenegger (2003), Edwards and Levy-Yeyati (2005), and Barguelli et al. (2018) supports the idea that countries with flexible exchange rates are better able to withstand shocks and hence experience economic growth.

Nevertheless, a few other studies have discovered that significant macroeconomic indicators like GDP, employment, foreign trade, inflation, and investment are negatively impacted by exchange rate volatility (Belke & Setzer, 2003). Frankel (2003) enumerates four advantages of stable exchange rates: they serve as a nominal anchor for monetary policy, promote trade and investment, and avoid speculative bubbles. They also prevent competitive devaluation. The several advantages of flexible exchange rates over fixed ones are explained, and these advantages include the Central Bank's ability to adapt to various shocks, maintain its independence in monetary policy, and prevent significant losses from speculative movements. If a country chooses to adopt a regime of flexible exchange rates, Korkmaz (2013) states that it can base its monetary policy strategy on either targeting the money supply or targeting the rate of inflation.

Changes in rates of exchange significantly affect the distribution of capital inflows, exports, and imports in many developing market economies, including Albania, regardless of the monetary system chosen. Instability in the economy may result from this. A study by Ghosh et al. (1996) found a tenuous connection between changes in exchange rates and increased output. The study found that while countries with fluctuating exchange rates saw lower productivity, those with stable exchange rates saw higher levels of investment. According to the same study, exports may benefit from more erratic and subject-to-swing exchange rates as long as invoices are issued in the exporter's local currency.

Exchange rate volatility and exports are negatively correlated when invoices are issued in the currency of the importer. Kamin (1997) examined potential relationships between macroeconomic variables and exchange rates after examining several countries in Asia, Latin America, and the US. The study concluded that there was a relationship between the inflation rate and the exchange rate in these countries. Levy and Yeyati (2003) conducted a study with 183 participants from the post-Bretton Woods era (1974–2003). They used the OLS technique to classify exchange rate regimes according to their estimates. The results demonstrated that economic expansion was meaningfully impacted by the chosen exchange rate regime.

Stronger economic growth has been associated with the system of flexible exchange, whereas regimes of fixed exchange rates have been demonstrated to be harmful to economic growth, particularly for developing countries. Many prior studies have demonstrated a negative correlation between exchange rate volatility and a few macroeconomic variables. This is because fluctuating exchange rates can negatively affect FDI inflows, employment, import and export volumes, and inflation—all of which can obstruct economic growth. These findings are consistent with several studies that demonstrate a fluctuating exchange rate frequently results in a decrease in the level of global trade (Hooper and Kohlhaugen, 1978). Sekkat and Varoudakis (2000) used econometric techniques, and the study demonstrated that changes in rates of exchange had a negative influence on exports of chemical and textile products.

3. Research Methodology

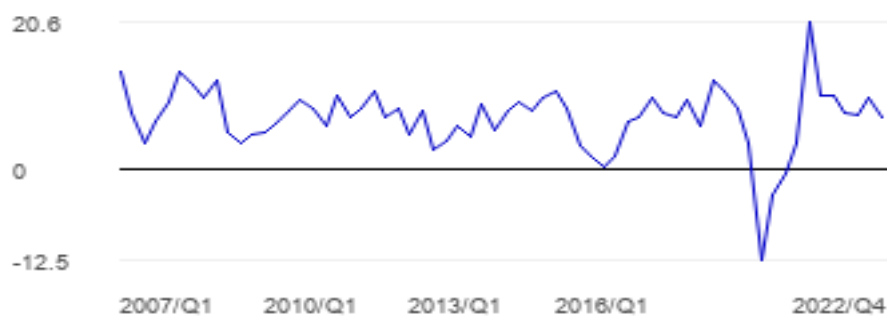
The methodology of the study revolved around a theoretical analysis, and the process of gathering data involved sourcing relevant secondary data from reliable sources, such as GDP growth rates, inflation rates, economic indicators, and exchange rate facts. These sources may include government reports, central bank publications, international organisations, and reputable research institutions. Qualitative methods were used to analyse the data that was gathered from theories, empirical studies, and literature. The analysis involved a systematic examination and synthesis of the collected information, identifying patterns, trends, and theoretical insights related to the influence of fluctuations in exchange rates on economic growth. The research findings were synthesised and interpreted to derive meaningful conclusions. This involved integrating the key findings, theories, and concepts identified in the literature review and drawing connections and relationships between exchange rate fluctuations and economic growth.

4. Conclusion and Policy Recommendation

4.1. Conclusion

The link between exchange rate volatility and economic growth is nuanced and indistinct. This complexity originates from the fact that exchange rate fluctuations don't directly affect economic growth; instead, they have an indirect impact on the factors influencing macroeconomic growth. To understand the influence of exchange rate oscillations, a thorough analysis of the many variables affecting economic growth and the wide range of relationships impacted by exchange rates is necessary (Wang *et al.*, 2016). To analyze a nation's economic development, two measures that are commonly used are the growth of the country's economy and per capita income.

Graph 1. Economic growth of Rwanda during the period 2007-2022



Source: Bank of Rwanda, 2023

Rwanda's economy grew rapidly between 2007 and 2011, with a GDP growth rate of roughly 8% on average per year. This period was marked by the government's focus on economic reforms, investment in infrastructure, and promotion of key sectors such as agriculture, services, and tourism. Between 2012 and 2014, economic growth remained robust, averaging around 7% annually. The government continued to implement policies to attract investment, diversify the economy, and improve the business environment. Key sectors such as construction, manufacturing, and financial services contributed to this growth. The economy expanded at an average annual growth rate of about 6% between 2015 and 2017.

During this period, Rwanda faced challenges such as lower commodity prices and adverse weather conditions affecting agricultural production. However, efforts to promote export diversification and attract foreign investment contributed to sustained growth. Between 2018 and 2022, Rwanda's economic growth remained steady, albeit with slight fluctuations. Over this time, the yearly growth rate average was approximately 7%. The country continued to invest in infrastructure development, improve the ease of doing business, and promote sectors such as ICT, tourism, and manufacturing.

The COVID-19 pandemic caused a considerable economic slowdown across the world. Notably, Rwanda has consistently upheld a flexible exchange rate policy. This implies that the value of other currencies, like the US dollar and the euro, about the Rwandan franc (RWF) is influenced by the state of the foreign exchange market. The rate of real exchange for the Rwandan currency has fluctuated fairly consistently over the last ten years. The fluctuations of the national currency concerning the US dollar and euro exhibit a consistent pattern. The third quarter of 2020 saw little activity in the foreign exchange market, and the performance of the exchange rate between the US dollar and the euro was comparatively stable.

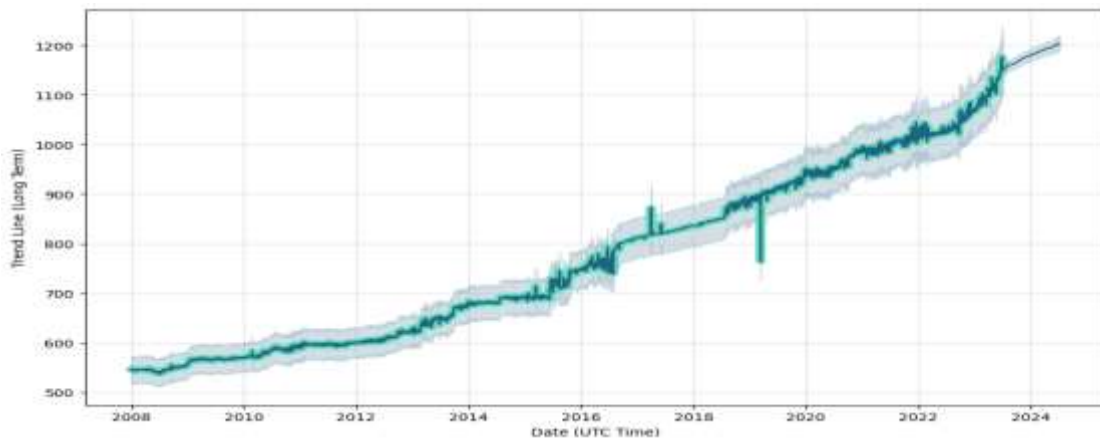
Furthermore, there appears to be equilibrium as the bias indicator, which measures the ratio of currency supply to demand, has fluctuated close to the equilibrium value. With government restrictions on the spread of the pandemic gradually lifted, all of these developments show a reduction in market uncertainties.

Graph 2. Fluctuations of the nominal USD/ RWF exchange rate in the years 2004-2022.



Source: Central Bank of Rwanda (2022)

Graph 2. Fluctuations of the nominal Euro/RWF exchange rate in the years 2008-2022.



Source: Central Bank of Rwanda (2023)

In recent years, there has been a significant depreciation of the Rwandan Franc (RWF) against a diverse range of currencies. Based on year-on-year data, the RWF has depreciated by an annual average of 5.3% against the Euro and US dollar from 2004 to 2021. Therefore, given the prolonged period of RWF depreciation, an important consideration for the National Bank of Rwanda is to what extent this has impacted import activity and domestic business operations within the country. Such a nominal depreciation could result in higher import prices in RWF terms, affecting the importing behavior of firms. This influence may extend to the domestic economy through the decisions made by importers regarding their domestic sales and purchases.

Based on the study findings, the research concluded that most studies were not able to demonstrate a clear relationship amid exchange rate volatility and economic growth. The empirical studies were conducted on both industrialized and growing nations and exhibited mixed outcomes concerning the nexus between exchange rate fluctuations and economic growth

4.2. Policy Recommendation

The policy recommendations were formulated based on a theoretical scrutiny of the influence of rate of exchange fluctuations on economic growth:

The results of the investigation demonstrated the necessity of putting policies in place that support exchange rate stability. Businesses and investors can feel secure when there is a stable exchange rate, which promotes investment and economic expansion. To effectively manage monetary policy, the central bank can play a critical role in achieving exchange rate stability.

The investigation's findings showed that there is a need to develop and implement strategies to promote exports from Rwanda. There is a need to diversify and expand export markets, which can help lessen the adverse effects of fluctuations in exchange rates. Policymakers might focus on sectors with comparative advantages and provide support to exporters, and then the country can enhance its competitiveness in international markets and stimulate economic growth.

The investigation's findings showed that policymakers need to establish and maintain a sufficient amount of reserves of foreign exchange to lessen the impact of changes in exchange rates. Sufficient reserves act as a buffer, enabling the central bank's involvement in the foreign exchange market necessary to stabilize the currency.

The investigation's findings showed that there is a need to implement policies that promote productivity enhancement and competitiveness in industries. Investments in technology, infrastructure, education, and skills development can help increase productivity levels, making domestic industries more resilient to exchange rate fluctuations and boosting overall economic growth.

The investigation's findings showed that policymakers need to provide support and resources to businesses, especially small and medium enterprises, to manage exchange rate risks. This can include financial literacy programmes, hedging instruments, and access to foreign exchange markets at competitive rates. By equipping businesses with tools to navigate exchange rate fluctuations, their resilience and ability to contribute to economic growth can be enhanced.

The investigation's findings showed that there is a need to strengthen coordination among fiscal and monetary authorities to ensure a consistent and complementary approach to managing exchange rate fluctuations. Policy coherence can help maintain a stable macroeconomic environment, which is favourable to investment as well as economic growth.

The investigation's findings showed that policymakers have to improve data collection and analysis on exchange rates and their impact on the country's economy. Accurate and timely data is essential for policymakers to make improved decisions and design effective policies to lessen the negative impact that change rates have on economic growth.

5. Limitations of the Study and the Path to Future Research

This research used secondary sources to scrutinize the influence of rate of exchange fluctuations on influencing economic growth. These secondary data were crucial since such sources of data included comparisons between various desk studies. This is because assessing the effectiveness of various exchange rate policies and interventions on economic growth would be beneficial for policymakers. However, the absence of primary data may limit the generalizability and real-world applicability of the findings.

Future research could evaluate the outcomes of different policy approaches, such as flexible versus fixed exchange rate regimes or the use of capital controls, to understand their implications for economic growth and stability. To address these areas, future researchers can further expand their insights of the interplay between exchange rate fluctuations and economic growth, leading to more informed policy decisions and strategies for sustainable economic development.

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