ECONOMIC POLICY UNCERTAINTY AND REMITTANCE INFLOW IN SELECTED AFRICAN COUNTRIES.

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Abstract

The study examines the asymmetric impact of Global economic Policy Uncertainty (GEPU) on remittance inflows in selected African countries. The study explores a Nonlinear Autoregressive Distribution Lag (NARDL) in achieving the objective. The study examines both the short-run and long run impacts of GEPU on remittance inflows. Yearly data were observed for the study across 17 African countries from 1997 to 2022. The result suggests that GEPU has a negative and significant impact on remittance inflow in the short run. Specifically, the negative partial sum has an impact on remittance inflow in the short run. Additionally, the long run does not suggest a significant impact on remittance except for the negative partial sum that is significant at 5% under the mean group. The outcomes suggest a symmetric relationship in the short run but an asymmetrical relationship in the long run based on the PMG model. The findings of the study enrich existing knowledge and understanding of the role of GEPU on remittance inflow. The outcome of the study will be of great value to policymakers, and various stakeholders, as they are actively involved in decision making and policy formulation on remittance inflows

Keyword: Remittance Inflow, Asymmetric, Global Economic Uncertainty, NARDL

1.0 Introduction

Remittance inflows accounted for a significant percentage of external inflows to African countries when compared with foreign direct investment (Mawusi, 2020). Remittance inflow has been witnessing a steady rise, reaching $47 billion in the year 2019 in sub-Saharan Africa, exceeding foreign direct investment (IMF, 2021; Plaza et al., 2019). The projection for the year 2020 suggests a 7% drop in total value. However, the recent data suggests a further drop in 2020 as compared to projections, with Nigeria contributing more than half of the region's inflow. The rise in remittance inflows plays a foremost role in alleviating poverty, advancing

investment, and stimulating economic advancement and development (Arapi-Gjini et al., 2020; Azizi, 2019; Kakhkharov, 2019; Hasan et al., 2019).

In a bid to achieve the objective, governments have continuously taken actions and instituted policies in an attempt to achieve economic development. However, government policies and actions have been of interest to stakeholders due to the uncertainties that are inevitable in modern-day economic development (Baker et al., 2016). Over time, these uncertainties have been witnessed in various events, such as the COVID-19 of 2019, Brexit in 2020, the Donald Trump election of 2016, and the global financial crisis of 2008. The delay in investment action due to future uncertainty underscores the role of uncertainty in the economy. Mawusi (2019) argued that economic uncertainty experienced in the migrant home, place of residence, or state can influence inward remittance via some channels. In a case of noticeable economic uncertainty, it may suggest a high degree of risk to migrants' assets and therefore reduce remittance inflows. Intuitively, economic uncertainty may signal risky economic fortune for the dependents of migrants, which may result in increasing remittance inflow in line with altruistic motives.

Some studies concluded that economic uncertainty has a negative influence on remittance inflows, employment rates, credit growth, financial development, and economic growth (Caggiano et al., 2020; Hu and Gong, 2019; (Luk et al., 2020), while few studies are of the view that economic uncertainty has a positive impact on remittance inflows and macroeconomic variables (Mawusi, 2019; Brazil, Oad Rajput & Siyal, (2019). These studies have not been able to establish the nature of the impact among the developing African countries. Hence, the justification of the study. The main objective of the study is to investigate the asymmetric relationship between economic uncertainty and remittance inflows.

2.0 Review of Literature

From the conceptual perspective, the pull and push theory of migration established that various factors such as political independence, economic reason, war, and political discrimination account for migration. According to Alchin (2014), economic disadvantage, poverty, and a high rate of unemployment sway people to migrate for a better future. Political uncertainty induces intending migrants to migrate abroad, as more intend to move, more remittances will be experienced to the country of concern (Nathaniel et al., 2017). Based on this notion, we are likely to validate a considerable connection in the theory that underpins migration between economic policy uncertainty and remittance inflows.

Bearing in mind the adverse impact of EPU on the economy, it is more astonishing to know that little research on the role of EPU on remittance inflow has been carried out. The dynamic of remittance inflows over business activity has not been fully exploited. Yayi (2022) concluded his findings on three notes. Firstly, in his study, he was able to establish that there exists a cyclical relationship between economic policy uncertainty and remittance inflow. He further established that remittance inflows tend to increase whenever the economy experiences downtime. As such, increments are used to support household consumption (Ebeke & Combes, 2013). Secondly, Cooray and Mallick (2013) are of the view that remittances tend to increase and decrease during economic growth and recessions, respectively. That is, remittance inflows are considered procyclical in nature. Thirdly, there have been some inconclusive results from studies with regards to the relationship between remittances and EPU ((Akkoyunlu & Kholodilin, 2008; Naudé & Bezuidenhout, 2012).

Bekaert et al. (2013) established that one of the major drivers of economic policy uncertainty is monetary policy uncertainty. In the same line of thought, Hayford and Malliaris (2005) validated that during times of uncertainty, an asymmetry in market policy, such as monetary

policy, can be deployed as a means of reducing the risk associated with finance and reducing the doubt of financial distress. Consequently, it provokes the desire to study the asymmetric impact of economic policy uncertainty on remittance inflows to selected African countries. Given that migrants react to policies, a non-linear analysis of EPU would be more essential to accentuate its influence on remittance inflow. Therefore, the study hypothesized that economic policy uncertainty has an asymmetrical impact on remittance inflows.

Extant literature in the field of finance confirms the existence of a negative relationship between remittance inflows and economic policy uncertainty. Dinh et al., (2021) demonstrate that there is a negative relationship between economic policy uncertainty and remittance inflows. Economic policy uncertainty has a poor relationship with inflows from abroad (Okunoye et al., 2023). Additionally, economic policy uncertainty has a negative relationship with remittance inflow (Avom et al., 2020).

On the contrary, there are studies that confirm the strong impact of the EPU index on remittance inflow. Specifically, the change or rise in EPU can lead to an increase in remittance inflow, which may impact positively on the financial development of a country (Hussain et al., 2023; Mawusi, 2020). The impact of EPU spreads beyond remittance inflow. Its impact has the potential to affect the financial development of developing economies that often depend on remittance inflow as a means of financing their budgets (Avom et al., 2020). Therefore, increased economic policy uncertainty has the potential to impact remittance inflow, and foreign direct investment in the long run (Barrero et al., 2017).

However, the impact of economic policy uncertainty varies across sectors of the economy. Migrants' decisions, to a greater extent, are often influenced by the EPU (Kelly et al., 2016). The same condition holds true for investors who are faced with lots of uncertainty in the process of deciding on an investment option. When there is a lot of uncertainty, remittances and

investments back home may be less influenced and take longer to execute (Nguyan & Phan, 2017). The EPU has the potential to project return on investment and has some control over the rates of currency conversion (Yin et al., 2017)

Theoretical literature from the past suggests various ways in which EPU impacts economic activities. Studies contend that high economic uncertainty plays a negative role for investment prospects and remittance inflow and results in the delay of spending and investment (Baker et al., 2016; Rossi et al., 2016). Additionally, the instability in the macroeconomic variables raises inflation, which raises migration (Elbadawi & Rocha, 1992), and this leads to an increase in remittance inflow (Nathaniel et al., 2017), validating the positive association between high inflation rates and remittance inflows from abroad.

Some studies suggest a negative relationship exists between EPU and remittance inflows (Shahbaz & Aimir, 2009). Jijin et al. (2022) posited that exchange rate fluctuations can result in a potential decrease in remittance inflow. When currency is depreciated, in the short run, it can lead to an increase in remittance inflow. However, in the long run, it can reduce migrants' confidence (Bouhga-Hagbe, 2006). Other activities in the black market of the country of origin have the potential to lead to a decrease in remittance inflow (El-Sakka & McNabb, 1999; Helbling et al., 2005). Furthermore, political instability, unrest, tax legislation, and conflict have an inverse relationship with remittance inflow. (Agbhegha, 2006).

Also, studies in the past have suggested the existence of both symmetric and asymmetric relationships between EPU and macroeconomic variables and indicators. For instance, Rajput

et al,(2019) reported the existence of an asymmetric impact of EPU on remittance inflow in the short run in a few countries of study, such as Brazil, India, and Russia, while evidence of a run impact existed between EPU and remittance in two other countries (Russia and India). In the same line of thought, Foerster (2014) researched and concluded that macroeconomic variables such as employment and other economic activities are asymmetrically impacted by uncertainty. In line with the author's view, a rise in uncertainty has a harmful impact on the economic outlook and can delay the time required for the economy to rebound. Studies in the G7 nations suggest that economic policy uncertainty asymmetrically impacts money supply, investment, and demand significantly. This important finding continues when there is a persistent increase in economic uncertainty. Bahmani-Oskooee & Maki-Nayeri (2019) and Qalati et al., (2023) are of the view that economic uncertainty affects various economic dimensions such as economic outlook and financial policy.

The rising nature of EPU confirmed that the influence of EPU on inflation may be asymmetric, subject to whether it occurs during or after a financial crisis (Istiak & Alam, 2019). Hassan et al. (2018) demonstrated that the influence of economic policy uncertainty on trade is significant and strongly influences the equivalent decrease. Gupta et al. (2019) concluded that economic policy uncertainty has an asymmetrical impact on the insurance sector, where shocks in economic uncertainty lead to increases and decreases in non-life insurance rates and prices. Wei et al. (2022) reported that EPU positive shocks significantly and negatively impact economic growth.

It is instructive to know and deal with the information asymmetry effect that uncertainty in EPU has on investors. Stakeholders and marketers react reluctantly to the broadcast of information that is characterized by greater dispersion and shockwaves. Though, efforts are being made to reduce the challenges sprung by uncertainty and asymmetries by promoting

disclosure practices, such practices will reduce the negative upshot of uncertainty (Kumari et al., 2022). Willman (2017) argued that political affiliation may likely reduce the negative effects of uncertainty and asymmetric impact. According to the author, for uncertainty to be reduced, organizations need to invest in relationships.

3.0 Methodology

The study investigates the non-linear relationship between EPU and remittance inflows in selected African countries, exploring yearly data from 1997 to 2022. The choice of countries was informed by the availability of data that cut across countries of study. The study adopted the Global Economic Policy Uncertainty (GEPU) (current) index from https://fred.stlouisfed.org for the measure of EPU. The index details in comprehensive form the actions, decisions, future policies, and economic uncertainties (Baker et al. 2016). Also, to match the dependent variables, the study used yearly data on remittances as explanatory variables, while moderating variables such as inflation, per capita GDP, and financial development index were sourced from the World Development Indicator and explored for the study (Jackman, 2013; Yayi, 2022). A summary of the data source and variables is defined in Table 1.

3.1 Model Specification

The study uses a non-linear ARDL model (Shin et al., 2014). The adoption of the model is to examine the asymmetric impact of EPU on remittance inflows. The choice of NARDL is to capture the asymmetric relationship between EPU and remittance inflows, which are likely valuable when the relationship between both is not linear. The choice of model is informed by its usefulness in capturing complex relationships that may not be adequately captured in a linear model. The relationship among interactive variables may be nonlinear when remittance inflows react differently to optimistic and pessimistic changes in uncertainty.

Table 1: Variable Measurement and Source

Variable to Measure	Proxies used	Source
Economic policy uncertainty	GEPU index current	www.fred.stlouisfed.org
Remittance inflows	Persona remittance received in dollars	World development indicator (WDI)
Inflation	Consumer price index	World development indicator (WDI)
Gross domestic product (GDP)	GDP per capital	World development indicator (WDI)

Source: World Development Indicator & Federal Reserve Economic Data

However, the extension of Pesaran et al. 2001 model of asymmetrical model now referred to as NARDL by Shin et al 2014. Hence, we consider the asymmetric regression equation in order to build the NARDL model.

$$\log rem_t = \alpha_0 + \delta^+ gepu_t^+ + \delta^- gepu_t^- + \alpha_1 k_t + \varepsilon_t \quad \text{.....3.1}$$

Where δ^+ and δ^- are defined as long-run parameters linked with both increasing and decreasing particle sum respectively. The Economic policy uncertainty index is further decompose into partial sum

$$gepu_t = gepu_0 + gepu_t^+ + gepu_t^- \quad \text{.....2}$$

Where gepu_0 is defined as the initial value, while $gepu_t^+ (gepu_t^-)$ are the partial sum of gepu as a whole into positive and negative.

The gepu index is decomposed into both positive and negative partial sums. This allows for separate positive and negative changes in gepu. Shine et al. (2014) argued that the decomposition of variables into partial sums offers spontaneously interesting and economically significant interpretation in a wide series of applications. In line with Shin et al. (2014) and studies in the past, the NARDL will be modelled.

$$\log rem_t = \gamma_0 + \sum_{j=1}^{k} \gamma_{1j} \log rem_{t-j} + \sum_{j=0}^{p} \gamma_2^{+} gepu\_p^{+}{}_{t-j} + \sum_{j=0}^{q} \gamma_{3j}^{-} gepu\_p^{-}{}_{t-j} + \sum_{j=0} \gamma_{4j} k_{t-j} + \rho_0 \log rem_{t-1} + n^+ gepu\_p^{+}{}_{t-1} + n^- gepu\_p^{-}{}_{t-1} + \rho_1 k_{t-1} + \varepsilon_t \quad \text{.....3.2}$$

The NARDL model in equation 3 entails three stages. The first stage is to model the equation in OLS. The next step is to prove the presence of a non-linear relationship between predictor and estimator.

Table 4.1 **Nonlinear Panel ARDL Model: 1998 to 2022**

Variables	Mg	Pmg
Ec	-0.622*** (0.115)	-0.402*** (0.073)
d.gepu_p	-0.000 (0.001)	-0.003*** (0.001)
d.gepu_n	0.000 (0.001)	0.000 (0.000)
d.rif	0.001 (0.011)	-0.001 (0.006)
d.lgdp	-0.127 (0.231)	0.509** (0.247)
gepu_p	-0.002 (0.002)	0.001 (0.000)
gepu_n	-0.008** (0.004)	-0.002 (0.001)
Rif	-0.0137 (0.055)	0.024 (0.016)
Lgdp	1.741*** (0.181)	1.451*** (0.109)
Constant	-22.47*** (3.944)	-11.47*** (2.0222)
Hausman Test	Prob Value 0.0644	
Number of countries	17	
Observations	425	

Extract from Stata 15, 2023. Note: Standard error in parentheses ***P<0.01, **P<0.05, *P<0.1

Non-linear Autoregressive Distribution Lag Results

Table 4.1 above detailed the output of predictors, predictive variables, and moderating variables regressed in the model. The study used Husmsan test criteria to select the best model for study. The probability value of the test, 0.06, suggests that it is not significant at 5%. As such, the best model for the study is the Pool Mean Group (PMG). In an attempt to achieve the objective of the study, the variable of interest (predictor) is decomposed into a partial sum of positive and negative values, respectively, and subject to both short run and long-run runs in the model.

The global economic policy uncertainty subjected to a partial sum of positive and negative proved to be significant only in the short run. The significance is only recorded at the negative partial sum of 5% with a coefficient of -0.003. This suggests that a unit increase in gepu will lead to a 0.003 decrease in remittance inflows to selected African countries. Out of the moderating variables explored in the model, only gross domestic product (gdp) appears to have a significant impact in both the long and short run. This further reveals its significant impact at 5 percent and 1 percent, respectively. In the short run, a percentage change in gdp will result in a 0.51 percentage point increase in remittance inflows, while in the long run, a 1 percentage point change in gdp will reflect a 1.45 percent increase in gdp.

The ec which measures speed of adjustment, conforms to acceptable expectations in terms of sign, and it reports -0.42 at a 1% significant level. However, the speed of adjustment under PMG is considered lesser compared to the mean group (MG) reported at -0.62. The adjustment time required to return to equilibrium under PMG will be considered longer compared to MG.

5.0 Conclusion and Recommendations

In today's world, developing economies in African countries are influenced to an extent by the impact of uncertainty on policy formulation and implementation. Given the role of remittance inflow in the developing economy, specifically on the wellbeing of the citizenry, business expansion, and affordable cost of financing, it becomes necessary and ideal to safeguard the benefit that comes along.

Precisely, the study empirically investigates whether global economic policy uncertainty has an asymmetric relationship with remittance inflows. The study deployed NARDL to achieve its objective by examining both the short- and long run asymmetrical impacts on remittance inflow in selected African countries. Yearly data were explored for the study. The result is

evidence for short-run output between the predictors. The result suggests a short run symmetrical relationship between EPU and remittance inflows. The most likely explanation for the inverse relationship could be policy uncertainty suffered by migrants who are also recipients in another country other than their recipient country. However, the result for the long-run output is only significant at 5 percent for the negative partial sum under the mean group model.

The study affirms to some extent that the predictive power of maintaining stable economic policy is devoid of inconsistency and misapplication. It further suggests the necessity for an all-inclusive and tactical approach by stakeholders such as migrants, policymakers, and recipients of remittance funds to address the influence of global economic policies on remittance inflows. Policymakers should address policy uncertainty and promote policies that will ease the flow of funds for migrants and encourage investment from abroad. This can only be achieved with stable economic policies, advanced financial literacy, a good tax system, and an improved financial system. These measures will advance the potential of remittance inflows and contribute to the overall economic development of the countries considered recipients. Also, migrants become more conscious of the possible risk and uncertainty in their remittance inflows as a result of the significance of remittance inflows in their home countries.

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