Journal of Economics and International Finance Vol. 2(8), pp. 156-163, August 2010
Available online at http://www.academicjournals.org/jeif
ISSN 2006-9812 ©2010 Academic Journals

*Full Length Research Paper*

# Can monetary policy enhance remittances for economic growth in Africa? The case of Nigeria

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Accepted 30 June, 2010

**Remittances are a vital component of liquidity flows in Nigeria. This paper evaluates the role of monetary policy in enhancing remittances for economic growth. The vector autoregressive methodology is applied with two stage deductions. The monetary policy rate first impacts intervening variables- exchange rate, interest rate, inflation etc- which in turn impact remittance flows. The data set are tested for temporal properties, including unit roots and co-integration. Preliminary evidence shows that domestic economic prosperity increases remittances to Nigeria; while exchange rate depreciation depresses remittances. The latter outcome reflects remitters' perception that a stronger Naira is a sign of things-getting-better-back-home.**

**Key words:** Monetary policy, remittance, vector autoregression.

## INTRODUCTION

For developing countries growth policies are better delivered as full packages since fiscal and monetary policies are inextricable, except in terms of the instruments and implementing authorities. However, monetary policy appears more potent in correcting short term macroeconomic maladjustments because of the frequency in applying and altering the policy tools, relative ease of its decision process and the sheer nature of the sector which propagates its effect to the real economy - the financial system.

The main objective of monetary policy in Nigeria is to ensure price and monetary stability. This is mainly achieved by causing savers to avail investors of surplus funds for investment through appropriate interest rate structures; stemming wide fluctuations in the exchange rate of the naira: proper supervision of banks and related institutions to ensure financial sector soundness; maintenance of efficient payments system; applying deliberate policies to expand the scope of the financial system so that interior economies, which are largely informal, are financially included. Financial inclusion is particularly important in the sense that the larger it is the larger is the interest rate sensitivity to production and aggregate demand and so the more effective monetary policy is. Remittances are a major avenue that could be explored for growing financial inclusion, especially, if monetary authorities can guide their receipt through official channels like the microfinance institutions.

Financial stability, through sound monetary policy, will attract remittances especially in the form of savings while the provision of products targeted at recipients, like remittance bonds and foreign currency accounts will help to pool remittances for planned investment for development. Remittances form a significant portion of total foreign inflows into the Nigerian economy. Between 1997 and 2006 the ratio of remittances to total GDP averaged 2.76. This ratio surpassed the contribution of foreign direct investment and portfolio investments put together in the comparable period.

The percentage contribution of remittances to GDP has been more pronounced since the favourable macroeconomic outcomes, due to a combina-tion of sound domestic monetary policy and high price of the bonny light crude in the international markets, beginning from 2004. Total remittances grew by an average of 121% from 2004 to 2006. In the same period the average contribution of remittances to GDP was about six times that contributed by all export proceeds except from oil[1]. This clearly indicates that the impact of domestic liquidity flowing from net foreign assets on account of remittances can not be ignored.

At the macro level, remittances promote stability by reducing the probability of current account reversals when inflows wane. In the face of international crisis-leading to fall in national reserves, as seen recently,

[1] The figures are computed from several Issues of the Central Bank of Nigeria Statistical Bulletin

remittances help to stem investor panic. It also directly stimulates demand for other goods and services. Basically, monetary policy is linked to remittances through domestic interest rates, exchange rates, macroeconomic stability, proxied by inflation, and financial stability generally.

This study aims at two objectives. One is to empirically verify the linkage between monetary policy actions and the flow of remittances to Nigeria. The second objective is to identify the strategies which monetary authorities will adopt to direct remittances to productive investments. In evaluating the first objective, the vector autoregressive (VAR) methodology is adopted. Data temporal properties including unit roots and co-integration would be ascertained using appropriate diagnostic tests - Augmented Dickey-Fuller and Engel-Granger tests, respectively. The second objective will be met using narrative and descriptive approaches. The rest of the paper is organized as follows; Part two reviews literature on the linkages between monetary policy and remittances and gives a word on current monetary policy issues in Nigeria. Part two contains methodology, while 4 presents empirical findings. Part 5 explains some strategies which monetary authorities can adopt to attract and channel remittance to growth oriented investments. The last part gives the conclusion.

## VIEWS ON LINK BETWEEN MONETARY POLICY AND REMITTANCES

The connection between monetary policy and remittances is invariant with respect to any operating framework. Remittance flows connect to monetary policy through interest rate structure, exchange rate management, financial stability, efficiency of payments system, general economic stability, as measured by inflation and of course, the extent of independence of policy actions from global economic realities. Prevailing economic conditions in the host country are exogenous. Starting from a point of exchange rate stability, an appreciation or depreciation of the receiving country's currency will have diverse effects depending on the motive for the remittances. The value of domestic consumption per dollar will raise following currency depreciation in the receiving country such that remitters for family support might cutback on amounts remitted while keeping receiving-family welfare unchanged. An appreciation produces the reverse effect.

Remittances could also increase when prices in the receiving country grow faster than in the remitting country under conditions of stable exchange rate, saying that there exists a positive correlation between remittances and real exchange rates. On the other hand, domestic currency depreciation will attract greater inflow of remittances for investment in real assets owing to the relative attractiveness of the latter with respect to the host country. Amuedo-Dorantes and Pozo (2004) show that when workers' remittances doubled, the real exchange rate appreciated by about 22% for selected 13 Latin American and Caribbean countries, implying that such flows might impede competitiveness in the tradable goods sector. Rajan and Subramanian (2005) post an opposite result and assert that countries with sound macroeconomic policies to keep the real exchange rate competitive are able to continually attract remittances. Elbadawi and Rocha (1992) ascribe the flow of remittances among other things to the black market exchange rate premium. Elsakka (1998) also reports a negative correlation between the differential of official and black market exchange rate and remittances.

Remittances are interest rate sensitive when tailored towards financial investments. A positive interest rate differential in favour of the receiving country would call forth more remittances. However, the flows will be conditioned on the expected behaviour of exchange rate (Loser et al., 2006) Bouhga-Hagbe (2004) show that there is no evidence that an increase in the interest rate differential in favour of Morocco will increase the long-run amount of deposits held in Morocco by Morrocans living abroad. Lowell and Garza (2005) report an effect on remittances of the lending cost in the host country and explained the observation that remitters commit some of their income to investment where they live. Domestic economic stability also affects remittance flows. Increasing domestic inflation will require that families in the home country would need more financial assistance to maintain current levels of consumption. Several studies show strong positive correlation between prices and remittances (Lianos, 1997; Durand et al., 1996; Lowell and Garza, 2005; Loser, 2006; Elbadawi and Rocha, 1992; Elsakka, 1998).

Literature also documents the effect of the level of economic activity on remittances. Generally, remittances for welfare tend to increase during adverse economic conditions. Empirical findings that support the counter-cyclical nature of remittances include Lowell (2005), and Bouhga-Hagbe (2004). On the other hand, Elsakka (1998) showed that growth in Jordan leads to increased remittance at home. This is explained that most migrant remittances are for investments.

The review of literature show that the link between remittances and exchange rate can not be predicted with precision, indicating that for each country of interest, there would be need to set preconditions for analysis for a meaningful interpretation of empirical results. Also, for interest rates, the fact that differentials between host and home country might be strong determinant of remittances for investments, research results are divergent, ditto other variables. How might monetary policy encourage remittance flow to Nigeria? This will depend on the response of the link variables to monetary policy impulses. Therefore, this study using Nigeria data evaluates the nature of the impacts which these variables might have

on remittances.

## Word on recent monetary policy implementation in Nigeria

Monetary policy formulation is in the hands of the Monetary Policy Committee (MPC) in the Central Bank of Nigeria (CBN). The MPC was formally constituted in 1999 but it has become a part of the statute in May 2007. The objectives of monetary policy are essentially to secure monetary and price stability. In this connection, two objectives of the CBN may be mentioned here. The CBN has to secure financial stability and safeguard the external value of the Naira.

Until the recent financial crises, as liquidity has been in abundance mainly owing to large accretion of foreign exchange assets with the banking system as a whole, the CBN wields open market operations as a regular tool of policy. It also issues its own short term paper along with the Federal Government which issues both treasury bills and treasury bonds. The two way quotes are allowed. Repo market exists. However, the crisis induced temporary measures to inject liquidity, especially through the expanded discount window operations, which extended accommodation of liquidity shortfalls for deposit money banks up to 360 days. The window admitted commercial papers and bankers' acceptances, as distinct from government securities in the normal discount operations.

Exchange rate of the Naira is market determined with the CBN fast becoming a relatively small player in the exchange market. CBN sales/purchases of foreign exchange influence market liquidity. The CBN announces the Monetary Policy Rate (MPR) as required by law: it is essentially to signal its intention about the rate of interest and to influence the term structure of interest rates. The inter-bank call rate has thus become the focal point of attention.

The inter-bank call market and the government securities market have been growing since the reforms have been unveiled though the secondary market transactions have not acquired adequate depth. It is against this background, the CBN has revealed its intention to move from the current policy framework that is a hybrid of monetary targeting and a loose form of interest rate targeting to inflation targeting framework by a period that is yet to be firmly established. The CBN does not have an explicit reaction function. However, from the tone of communiqués of the Monetary Policy Committee, a simplistic reaction function can be figured thus,

$$R = a + a1 (Ќ) - a2 (Й) +- a3 (Ъ) - a3 (e)$$

R is the minimum rediscount rate now monetary policy rate, Ќ is realized inflation and Й is the anticipated growth in the supply of broad money. Ъ is a measure of deviations of the interbank rate from the monetary policy rate. e represents expected government expenditure in the following quarter.

The inflation component is the most important such that target is a1 > 1, Ъ relate to money market stability and can take up any sign depending on its direction. Й and e signal prevalent liquidity situation in the system and have negative correlation with the policy rate.

## METHODOLOGY

Monetary policy actions are propagated through series of intricate connections among macroeconomic variables in time and space. To effectively capture the complex inter-linkages, vector autoregression (VAR) method is often used since it is a dynamic system that permits simultaneity of activities among included variables. In other words, the variables in the system freely express themselves at the same time and the impulse response function serves to trace out the actions due to each variable in the entire system. The strategy adopted in this study comprises two stages. Monetary policy actions do not impact directly on remittances. Rather its effects touch on intervening variables – interest rates, exchange rates, Gross Domestic Products, Inflation etc- and then transmitted to decisions to remit or invest in host country. Thus, the first stage is to isolate the strength of the channels of transmission of monetary actions due to the intervening variables. The second stage traces the effects of policy actions through each of the intervening variables to flow of remittances.

The appeal of this methodology for evaluating the effects of monetary policy is that monetary policy impacts on the economy when other developments also play out -such that the interdependences of the parameters of the variables can be estimated without holding any one constant. For instance, the effect of exchange rate on remittances would not be held constant while a monetary policy action is being contemplated. The method also captures the contemporaneous and lagged responses of the variables simultaneously (Mbutor, 2005).

VAR is expressed in terms of vectors. And typically has the form

$$Yt = A(L)\, Yt\text{-}1 + B(L)\, Xt + Ut \quad \text{---------- (1)}$$

Y is a vector of endogenous variables while X is a vector containing the exogenous variables. Endogenous variables are variables within the control of domestic monetary actions. These are the intervening variables between remittances and monetary policy impulses. The exogenous variables, on the other hand, explain factors without the influence of domestic monetary policy actions. These often include variables that capture developments in the world that guide the flow of remittances. However, this study evaluates the impacts of monetary policy on remittances and domestic monetary policy action in Nigeria is not expected to change the course of growth, interest rate and or price developments, say, in the United States or any other country where most remittances flow from. Therefore, the vector of exogenous variables is shut out of the system, confining any effects not explained by the vector endogenous variables to the error term.

Justifying the choice of intervening variables, generally most reaction functions are set to achieve, mainly price and growth objectives. Therefore, the Gross domestic product and inflation, traditionally, enter the system to provide gauges for the success of monetary policy. The aggregate price level is measured in Nigeria by the consumer price indices and the Central Bank of Nigeria Act 2007 explicitly ranks monetary and price stability as the prime objective of monetary policy. However, the CBN is keen to move as mentioned already to a policy framework such as the inflation targeting in the near future, in which event the variant that would be

**Table 1.** Unit root test results.

| Variable | Inflation | GDP | Remittance | Deposit rate | Treasury bill rate | Exchange rate |
|---|---|---|---|---|---|---|
| Order of integration | 1 (0) | 1 (1) | 1 (1) | 1 (1) | 1 (1) | 1 (1) |

targeting would require to be announced before hand. In case, the Bank settles for flexible inflation targeting, the parameters for output and any other variables to be included will be greater than zero in the CBN's reaction function. In other words, the CBN will not only focus on price but also, implicitly, on other macroeconomic variables.

Exchange rate consideration is nearly indispensable for monetary policy making for two major reasons. One, the economy is largely a mono-product exporter, relying mainly on oil related revenue. In 2006, total government's revenue to GDP ratio stood at 32.7%, out of which the revenue from the oil sector accounted for 29% of GDP (that is, 89% of total revenue). As a result, the largest asset on the balance sheet of the central bank is the net foreign assets and predominantly drives money supply. Two, whatever the motive for remittances, the value of the Naira vis-à-vis the US Dollar is a major factor that influence remitters' decision. Deposit interest rates will be cardinal for remittances meant for investment in financial assets.

Until December 2006, the CBN used the MRR (Minimum Rediscount Rate) as the policy rate. However, it was not a transactions rate as it only signaled the direction of policy stance. The monetary policy rate therefore replaced the MRR and has since become the effective repo rate. For this study, MRR and the MPR will be used interchangeably. However, because of the length of time MRR was used in the data series, it is advisable to use a proxy that more reflected market conditions. The Treasury bill rate is adopted. The operational model could be cast as,

$$Rm = v\ (GDP, Inf, Dr, Xr, Tbr) + Ut$$

Rm is remittance inflow, GDP is Gross Domestic Product, Inf is inflation, Dr is deposit rate, Xr is exchange rate, tbr is treasury bills rate and Ut is error term.

The data set for the study span between 1970: and 2008. Usually, the temporal properties of time series data inform the specification of the VAR model and the approach to be adopted. A common consideration is whether the data should be differenced before application or applied in levels. Generally, if the variables in the model are non-stationary, then the data should be differenced to avoid spurious results. However, while differencing improves the statistical efficiency of the parameter estimates, it could lead to substantial loss of economic interpretations of data.

Treating the data for temporal properties, the Unit root test, using the Augmented Dickey Fuller show the following order of integration presented in Table 1. The Augmented Engel- Granger test on the residual from the combined equation shows a long run relationship among the variables, being 1(0) so that irrespective of the different levels of integration, the regression of the variables is plausible. The ordering of the variables in the model will follow the standard Cholesky decomposition which is based on the length of time it will take for each variable to respond to extraneous shocks. Theoretically, remittance flows depend on the intervening variables such that it changes last. Output takes a longer time to change in the face of policy changes than prices, while exchange rate reacts faster than prices.

## EMPIRICAL RESULTS

The results are presented in two parts. Part one traces the response of the intervening variables to innovations on the policy rate, proxied by the treasury bills rate while the second filters the effect due to each of the variables on the flow of remittances. The latter is achieved by exogenizing each of the intervening variables, one at a time, and comparing remittance flows in the new model to the flows in the baseline model-which contains all the intervening variables. Any observed change in time and quantity is adjudged due to the exogenized variable.

### Effects of monetary policy on intervening variables

Exchange rate of the naira is expressed in units of naira per US dollar so that an increase signifies depreciation of the naira. Using the impulse response analysis (Figure 1), a one unit innovation on the policy rate does not have an immediate impact on all the intervening variables. In the second period, GDP stays unchanged: aggregate prices rise by 2.2%; deposit rates decline marginally; while exchange rate appreciates by 1.4%.

The outcomes are expected except the deposit rate which is expected to move in the same direction as the policy rate. However, two reasons might explain the seeming anomaly. These are information asymmetry and stickiness of financial contracts. All through the periods covered in the result, the deposit rate maintains the wrong sign. From the third period to the end, GDP grew by an average of 0.14%. By contrast, inflation declined from the fourth period to the end. After the initial appreciation of the naira, beginning from the third period it depreciated strongly until the eight period when the extent of depreciation decelerated.

### Impacts of intervening variables on remittances

The tables' shows the response of remittance flows to an increase in the policy rate with all the variables present in the model. That is the transpose of column 6 in Table 2.

The table indicates that the unexpected positive innovation on the monetary policy rate will cause the flow of remittances to decline in the second period by 0.04%. The trend continues until the fifth period when it fell by 0.19%. Inference is therefore, that the combined effect of all the intervening variables on the flow of remittances in Nigeria, in the face of contractionary monetary policy, is negative. However, the objective here is not to measure the direct effect of the monetary policy rate on remittances, rather the goal is to isolate the separate impact of the intervening variables. To achieve this, as mentioned earlier, we exogenize, that is, remove, each of

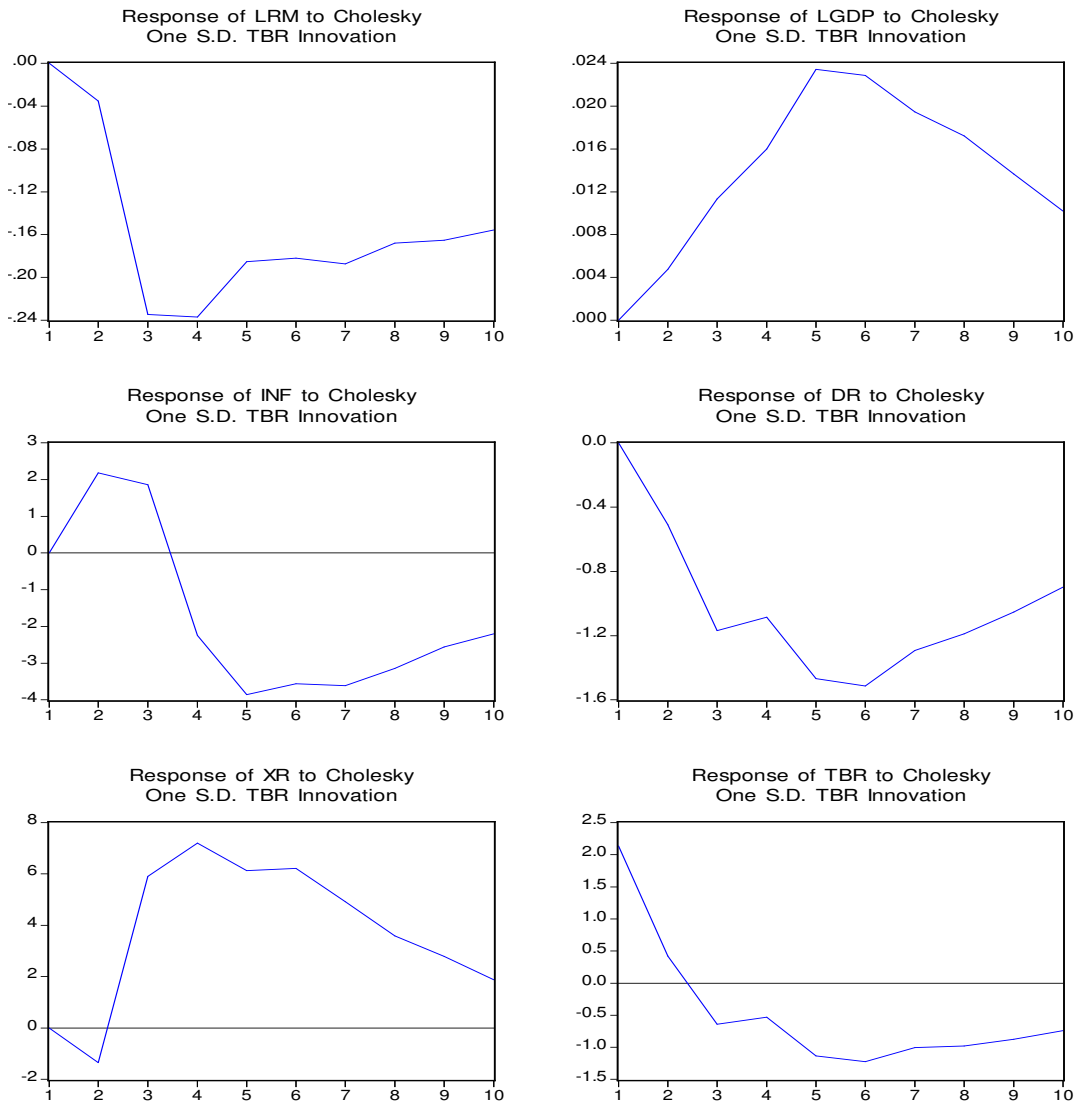


**Figure 1.** The Impulse response of intervening variables to monetary policy shocks.

**Table 2.** Impulse response of intervening variables.

| Period | gdp | Inflation | Deposit rate | Exchange rate | Remittances |
|---|---|---|---|---|---|
| 1 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2 | 0.01 | 2.17 | -0.51 | -1.35 | -0.04 |
| 3 | 0.01 | 1.86 | -1.17 | 5.90 | -0.23 |
| 4 | 0.02 | -2.23 | -1.08 | 7.20 | -0.24 |
| 5 | 0.02 | -3.85 | -1.47 | 6.12 | -0.19 |

the variables in turns and rerun the models. Then compute the response of the flow of remittances in each of the models. The results are shown in Table 3. The net effects of the intervening variables are calculated as the numeric difference between the response of the flow of remittances in the baseline model Table 4 and the models in Table 3. The net effects are summarized following from the computation scheme shown in Table 5. Column 1 contains the response period. Column 2 contains the response of remittances to monetary policy action with all the intervening variables in the model. Column 3 is the response of remittances with each of the

**Table 3.** Response of remittances with variables excluded.

| Period | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| No xr | 0.00 | -0.07 | -0.14 | -0.1 | -0.08 |
| No dr | 0.00 | -0.08 | -0.07 | -0.01 | 0.15 |
| No inf | 0.00 | -0.12 | -0.26 | -0.2 | -0.2 |
| No gdp | 0.00 | -0.06 | -0.31 | -0.37 | -0.39 |

**Table 4.** Response of remittances in the baseline model.

| Period | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| Resp remittances | 0.00 | -0.04 | -0.23 | -0.24 | -0.19 |

**Table 5.** The computed net effects of monetary policy on remittances.

| Period | Exogenize exchange | | Net effect |
|---|---|---|---|
| 1 | 0 | 0 | 0 |
| 2 | -0.04 | -0.07 | 0.03 |
| 3 | -0.23 | -0.14 | -0.09 |
| 4 | -0.24 | -0.1 | -0.14 |
| 5 | -0.19 | -0.08 | -0.11 |
| **Period** | **Exogenize deposit rate** | | **Net effect** |
| 1 | 0 | 0 | 0 |
| 2 | -0.04 | -0.08 | 0.04 |
| 3 | -0.23 | -0.07 | -0.16 |
| 4 | -0.24 | -0.01 | -0.23 |
| 5 | -0.19 | 0.15 | -0.34 |
| **Period** | **Exogenize inflation** | | **Net effect** |
| 1 | 0 | 0 | 0 |
| 2 | -0.04 | -0.12 | 0.08 |
| 3 | -0.23 | -0.26 | 0.03 |
| 4 | -0.24 | -0.2 | -0.04 |
| 5 | -0.19 | -0.2 | 0.01 |
| **Period** | **Exogenize gross domestic product** | | **Net effect** |
| 1 | 0 | 0 | 0 |
| 2 | -0.04 | -0.06 | 0.02 |
| 3 | -0.23 | -0.31 | 0.08 |
| 5 | -0.19 | -0.39 | 0.2 |

intervening variables excluded. The last column is the computed net effects.

From the net calculated net effects (Table 6), it could be read that monetary policy action which appreciates the naira by 1.4% (from the impulse response analysis in the base line model) will increase the flow of remittances to Nigeria by 0.03% in the year following the period when the policy action is taken. In the third period when monetary policy induced a depreciation of 5.9%, the flow of remittances contracted by 0.09%. The contraction is seen on all the years when monetary policy action caused a depreciation of the naira. It could therefore, be argued that a stronger naira is positively correlated with the flow of remittances to Nigeria. This observation is explained by the psychology of remitters who see a strong naira as a sign of “things-getting-better-back- home”. Rising inflation increases the flow of remittances to Nigeria Monetary policy action which increases inflation

**Table 6.** Net effects of variables on remittances.

| Period | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| No xr | 0.00 | 0 .03 | -0.09 | -0.14 | -0.11 |
| No dr | 0.00 | 0.04 | -0.16 | -0.23 | -0.34 |
| No inf | 0.00 | 0.08 | 0.03 | -0.04 | 0.01 |
| No gdp | 0.00 | 0.02 | 0.08 | 0.13 | 0.20 |

by 2.2% will induce a rise in remittances flow of 0.08 per cent in the period after the policy action. In the third period, when the rise in inflation decelerated to 1.9%, the increase in the flow of remittances, in response, slowed to 0.03%. In the fourth and fifth periods, aggregate prices fell and the flow of remittances also declined. This outcome shows that remitters are concerned about the purchasing power of recipients at home. Thus, a rise in inflation which erodes the real value of the naira induces increased flow of remittances. The countercyclical pattern of remittances is not confirmed for Nigeria as favorable economic conditions enhances the flow of remittances. GDP growth of 0.01% increases the flow of remittances by 0.02% in the period after policy action. In the third period, the same size of economic expansion will induce remittance flows by 0.08%. The size of Deposit Money Banks' deposit rates do not appear to be significant for remitters. A decrease of 0.5% in the deposit rate increases remittance flow by 0.04%. More so, from the third to the fifth periods, deposit rates declined consistently, but the flow of remittances increased by an average of 0.24%. The direct link of the flow of remittances to income levels shows that a sizeable proportion of remittances flow for investments at home, but the neutrality of deposit rates can be seen as an indication that such investments are not mainly held in financial assets.

## MONETARY POLICY STRATEGY FOR ATTRACTING REMITTANCES

This first part of the strategies is directly derived from the empirical connections, established above, between monetary policy actions and the flow of remittances in Nigeria. As reported, economic prosperity as measured by positive growth in the national income is an important consideration for the flow of remittances to Nigeria. Therefore, the monetary authority- Central Bank of Nigeria- would need, in addition to its mandate of maintaining price stability, to support the economic growth policies of the federal government. Such support could take any form, not limited to advisorial services, complementary research, and financial support. More importantly, efforts must be concerted to ensure effective policy coordination between the fiscal authorities and the central bank of Nigeria.

Exchange rate management is vested with the Board of the Central Bank of Nigeria. Steep depreciation of the naira is found to be impediment to the flow of remittances to Nigeria. Therefore, the monetary authorities should ensure it intervenes appropriately in the foreign exchange market to avoid wide volatility of the naira exchange rate. Slight appreciation is preferred to depreciation as the former incentivises the flow of remittances to Nigeria.

The adverse effects of high and rising inflation in an economy are well documented in literature. But the appropriate threshold of inflation which supports optimum growth for different countries is less researched. From the empirical findings, a rise of 2.2 and 1.9% in inflation after monetary policy action boosts the flow of remittances by 0.08 and 0.03% respectively. But are these levels of increase in inflation suitable for optimum growth in Nigeria? The challenge for the Central Bank of Nigeria would be to establish, through research, the minimum acceptable level of inflation which would support optimum growth. The optimum-growth inflation should be pursued so that remittances to Nigeria could more flow through the remittance-GDP nexus.

### Other strategies and investment for growth

This leg of the discussion on strategies for attracting and investing remittances for growth is not derived directly from the empirical findings, but is advanced based on knowledge of the nature and structure of the economy. Generally, an efficient payment system which guarantees that recipients receive their remittances on time and without losses would encourage the inflow of remittances to Nigeria. Therefore, the CBN should work to improve the efficiency of the payments system.

Particularly, the microfinance institutions should be encouraged to get involved in money transfer operations. 74 and 76% of recipients in Nigeria prefer remittances disbursed in Dollars and near their homes, respectively. Microfinance institutions (MFIs) by their nature are grass root based such that the need for proximity of point of receipt can easily be met. For receipt in US dollars, the CBN should consider empowering the MFIs to deal in foreign exchange. The need for awareness, among remitters, of the various business opportunities at home cannot be overemphasized. The federal government in collaboration with the CBN should engage in sensitization programmes through the various foreign missions for Nigerian migrants. Such information should include types of business opportunities, location, and material requirement (if any). As a compliment, certified business managers could be established for Diaspora investments. The last point is important because some migrants who ordinarily have funds to remit but do not have trusted ones to deal with back home would be dissuaded from remitting.

Attracting remittances and directing them to growth oriented investments requires targeting the prime areas where funds can be pooled and made available for

investors. From the survey conducted by the research department of the central bank of Nigeria (2009) 22.5% of all remittances to Nigeria are devoted to home family maintenance. To pool this amount and make it available for investment, the federal government and the monetary authorities should consider, opening the national contributory pension scheme to cover Nigerian migrants and relatives who depend on remittances from abroad. For the migrants, such admission will provide an avenue for life savings, while the home dependants are assured of regular stream of income, while the funds garnered are made available for investments through the pension fund custodians and administrators. The health of relatives at home is also a major source of concern for remitters as 8.8% of all remittances are spent on health related matters. Another strategy which will attract remittances and make them available for investment is by admitting recipients to the national health insurance scheme, even if they are not employed. This way, remittances which are currently spent haphazardly can be rerouted into the formal financial sector and hence available for investors.

The mortgage market is in its infancy in Nigeria, except in a few urban centers. Yet it is a form of investment which promises extended return periods and relatively safe. Remittances could be harnessed to grow this industry. The federal government should consider floating remittance-mortgage-backed bonds with the aim to establishing housing estates in choice areas. This will attract remitters to invest at home and also make funds available for other investors. At the state and local government levels, specific development projects should be identified and town hall groups abroad contacted for partnership.

## Conclusion

This paper has identified the impact of monetary policy on the flow of remittances to Nigeria and suggested strategies for attracting and directing remittances for growth oriented investments. It utilized the vector auto regression to achieve the first objective.

The major inferences from the study are that economic prosperity as measured by the positive growth in national income is an important inducement for remittances to flow to Nigeria; exchange rate depreciation has a negative effect on remittances because the psychology of remitters is that a strong naira depicts 'things-getting-better-back-home'; rising inflation also increases the flow of remittances as remitters aim to ensure that dependants at home maintain their levels of purchasing power.

The author has suggested that the government among other things should open the national pension scheme to migrants and their dependants back home; admit recipients to the national health insurance scheme; float a remittance-mortgage-backed-bond; and empower the microfinance institutions to act as money transfer operators and deal in foreign exchange to direct remittances to growth oriented investments.

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