

The Impact of Exchange Rate Dynamics on Capital Inflows in Nigeria (1970-2010)

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Abstract

Exchange rate dynamics has been a persistent factor affecting capital accumulation in developing economies especially in the area of capital inflows which measures the rate of movement of capital into an economy as it concerns its international consumption-investment relation with other economies. However, there are many factors that affect the rate of capital inflows and outflows into and out of a given economy. This work examines the impact of exchange rate fluctuations on capital inflows in Nigeria from 1970-2010. Using the generalized autoregressive conditional heteroscedasticity (GARCH) model, results obtained indicate that the impact of exchange rate fluctuations on capital movement into Nigeria economy at this period is not so intense as that of its trade openness. The study therefore, recommends that trade openness policies should be formulated and implemented such that they would induce maximum capital inflows needed for economic growth.

Key words: Capital, Inflows, Exchange rate, Volatility, and Inflation

Background of the study

In the 1970s and 1980s, the bank loan made up the bulk of capital inflows, accounting for about 48% and 30% respectively. Sub-Saharan Africa experienced the sharpest decline in private flow following the debt crisis of the early 1980s. Private capital inflows began to increase in the half of the 1980s only to decline again in the beginning of 1993 and 1995. FDI and other capital inflow component in the 2000 are unevenly distributed for instance, Angola, Nigeria and South Africa received 25%, 16% and 14% respectively of FDI flows to sub-Saharan Africa. The estimation shows that in the 2000, Nigeria received the lowest inflow of FDI among the above mentioned countries in the sub-Saharan Africa.

Egwaikhide (2008) estimated the rate of capital inflows into Nigeria economy from 1970-2008 during the 1970s the, percentage of average net capital inflow into Nigeria economy approximated 1.63, and early 1980s approximates-1.15, rise to the peak of 1.21% in 1985. During the later half of the 1990s, the annual net direct investment averaged 262 billion per annum, with a cumulative investment totaling ₦154.2 billion at the end of 1999. The proportion of foreign direct investment increases from 4.24% in 1999 to 5.63% in 2003. By 2005, FDI inflows amount to ₦ 269.8 billion representing about 75% increase from 1999. It becomes necessary and important to study how to sustain the inflows of these foreign capital investment of Nigeria economy by adjusting and manipulating the necessary macro economic variables.

A cursory look at the experimented exchange rate management policies in Nigeria and the application of both monetary and fiscal policies to regulate exchange rate fluctuation shows that it is mind-explosive problem for an economy to have high exchange rate swing. Exchange rate policies consist of the designs and deployment of strategies and measures to ensure the achievement of a stable and realistic exchange rate for the country's domestic currency which is consistent with overall macroeconomic objectives. The objective of any exchange rate policy is to determine the appropriate exchange rate that will be consistent with the trend of growth of the economy. Based on the above discussion, this paper is faced with the following research questions.

- What degree of exchange rate stability would induce optimal inflows of capital into Nigeria?
- What are the factors affecting capital inflows in Nigeria?
- What is the structural stability of inflows of capital in Nigeria?

Objectives of the study

The specific objectives of the study are:

- To determine the optimal level of capital inflows needed to induce steady growth.
- To highlight factors that need to be put in place to ensure stable and steady capital inflows into Nigeria economy.

- To determine the structural stability of inflows of capital..

Statement of Hypothesis:

1. There is no optimal level of capital inflows needed to induce steady growth.
2. There is no factor that can ensure stable and steady capital inflows into Nigeria economy
3. Ho: Structural stability of inflows of capital cannot be determined Nigeria.

Literature Review

Mint Power Parity emphasizes exchange method operational on the working of the international gold standard. Currency in used in power parity is gold or material readily convertible to gold at a fixed rate. The value of a currency is determined in terms of unit of gold or grains of gold. The monetary authority buys and sells gold at a specified price. The rate at which the standard of money is convertible to gold is the mint price of gold. Actual rate of exchange of gold at this practical method of gold standard varies not above and below the mint parity due to cost of shipping of gold between countries involved in exchange. Basic assumptions guiding the theory of mint parity include; price of gold is fixed by a country in terms of its currency.

The purchasing power parity theory as proposed and developed by Gustav (1920) determines the exchange rate between countries on convertible paper currencies. The theory postulates that the equilibrium exchange rate between two trading countries is motivated by the equality of the relative change in relative prices in the countries involved. The theory entails the absolute and relative power parity. The absolute power parity postulates that exchange rate between two countries with two currencies should equal the ratio of the price indices in the countries.

The balance of payment theory of exchange rate and capital inflow postulates that exchange rate of currency of a country is a function of its balance of payment. If the balance of payment is favourable, it induces exchange rate to rise. This in turn commands the inflow of capital in form of income, foreign direct investment, and tendency for private individuals and government to trade on foreign portfolio. On the other hand, unfavourable balance of payment induces a reduced exchange rate. Exchange is assumed to be controlled by forces of demand and supply. Under this theory, policies which propel and determine the behaviour of balance of payment, and exchange rate are discussed as they affect the economy.

Methodology

This work applies econometric tools at analyzing, and determining the significant relationship between exchange rate and capital inflows, and the relationship between other included macroeconomic variables in the model. Applied econometric methodology eliminates bias inherent in establishing vague relationship between exchange rate and capital inflows in this study. Hence, the methodology encompasses model adjustment method, and methods of estimation and evaluation. Depreciation in the real exchange rate will increase the net capital inflows into the economy. On this basis, the capital inflows function can be specified as follow:

$$FDI_t = F(REXR_t, INTR_t, INF_t, NX_t, GE_t, MS_t, RGDP_t, SAP).$$

$$FDI_t = \alpha_0 + \beta_0 REXR_t + \beta_1 INTR_t + \beta_2 INF_t + \beta_3 NX_t + \beta_4 GE_t + \beta_5 MS_t + \beta_6 RGDP_t + \beta_7 SAP + \mu_t$$

Where $D = 0$ pre SAP (1970-1985)

$$D = 1 \text{ post SAP (1986 – 2010)}$$

FDI = Foreign direct investment: It is used to proxy capital inflows.

REXR = Real exchange rate

INFR = Interest rate

INF = Inflation rate

NX = Net export

RDGP = Real GDP

GE = Government expenditure

SAP: Structural adjustment programme: Used to evaluate if there is structural stability in inflows of capital into the economy before and after the introduction of the programme.

Data source and data transformation: The time frame of data employed in this study ranges from 1970 – 2010. Data employed in the research were sourced from the Central Bank of Nigeria Statistical Bulletin.

Results

The result of the unit root shows that FDI, INF, GE are stationary at level form, while the other variables are stationary at first difference. Condition for stationarity demands that the ADF test statistic > the ADF critical value.. Thus, stationarity among the variables is obviously noticed.

Cointegration test

H_0 : linearly deterministic trend does not exist in the model

H_1 : linearly deterministic trend exist in the model

Decision rule

Accept H_0 if the likelihood ratio of each variable exceeds the critical value, reject if otherwise

Table 2: Cointegration Result

Eigen value	Likelihood ratio	5% critical value
0.881051	284.8760	156.00
0.863055	201.8426	124.24
0.728718	124.3038	94.15
0.683919	73.4245	68.52
0.335186	25.5059	47.21
0.205697	12.5843	29.68

Interpretation : The maximum Engle test indicates 4 cointegrating equations at 5% level, thus, we reject the H_0 (null hypothesis). This indicates that there is a long run equilibrium relationship among the variables, hence linearly deterministic trend exist among the variables.

The combine coefficient of the ARCH (1) and GARCH (1) models is not greater than 1(one). The effect of real exchange rate fluctuation on capital inflow is minimal. The intensity at which real exchange rate volatility affects capital inflows from this result is also minimal.

Conclusion

Exchange rate fluctuation impacts intensely on capital inflows into Nigeria , but not as that of fiscal and monetary policies. Also, exchange rate policy such as devaluation determines to a great extent to which inflow of capital is achieved. Thus, growth in gross domestic product, and increase in exportable should be ranked in the primary list of formulating an exchange rate policy. Constant devaluation, without a vibrant and productive industrial sector, and efficient exporting industry will end up pushing the economy into a tight end.

The degree of trade openness of the economy plays a very significant role in determining capital inflows in Nigeria. Trade openness policy, should be embarked upon and aggressively pursued. To avoid the detrimental effect of high openness, openness policy should be in such a way as to attract the maximum number of direct investors and portfolio investors sufficient to drive the economy. Government should direct the inflow of these capitals into the deficient sectors to avoid the misguided profit oriented investment in the oil sector alone. Government fiscal and monetary policies should be directed such that foreign investors are encouraged to invest in the deficient sectors of the economy.

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