

# Volatility of Capital Inflows and Public Debt Levels in the Emerging Economies.

Anyango Wiccliffe Otieno<sup>1</sup>, Dr. Agnes Njeru<sup>2</sup>, Dr. Antony Waititu<sup>3</sup>

<sup>1</sup>Department of Commerce and Economic studies

<sup>2</sup>Entrepreneurship, Technology and Leadership Management Department

<sup>3</sup>Department of Statistics and Actuarial Sciences

(Jomo Kenyatta University of Agriculture and Technology P.O Box 62000 – 00200  
Nairobi, Kenya)

---

**Abstract :** *The over-optimism of the developing economies in their fiscal situations has led to the decline in government revenue and an increase on the social expenditure due to factors such as population growth, new costs in the financial systems etc. thus many governments are trying to determine a no risk level of fiscal deficit and public debt in their economies, this is becoming a major issue for example in Kenya as she has experienced the highs of up to 105 shillings for a dollar in October 2015, expunging public debt levels of approximately 4 trillion by June 2016. The government has taken various measures such as relying more on external debt to avoid crowding out private investments and consequently promote economic growth. Despite these efforts, private investments and economic growth have remained low. In Kenya, the debt-to-GDP ratio stands at 46 per cent, the government stands for the argument that investments being made in infrastructure as well as good quality institutions. The studies' findings revealed that volatility of inflows has a positive influence on monetary policy as a result of the monetary effect elements in Kenya and thus concluding that since it is evident that the Kenyan Economy is classified as EME in economic reality, the liberalization on capital controls has increased the volume of inflows and changed its composition, but has not prevent the depreciation of the currency. It should be noted that, the use of capital controls represents a practical alternative that can allow governments to maintain a stable and competitive exchange rates, while at the same time pursuing a monetary policy that leads to sustainable stability and reasonable levels of inflation. The government needs to control the flow of capital into the economy, since its impact is passed on to other elements and so lack of practicality due to wrong diagnosis, similarly the government should encourage productivity of the economy to enable financial stability that in turn will practically regulate the interest rates, foreign exchange rate, consumer price index and ensure*

*balance of elements such as public debt by encouraging more of domestic borrowing.*

**Key Words:** *Volatility, Inflows, Public Debt, Emerging Economies*

## INTRODUCTION

Public debt is considered one of the main macroeconomic indicators that forms much of a countries' image in international markets (Abbas & Christensen, 2007). It is one of the inward foreign direct investment flow determinants. Moreover, since governments borrow mainly by issuing securities, their term, interest rates and overall costs of debt financing has significant impact on economy, future of the enterprises and social welfare for not only present, but also future generations. According to (Feldstein & Horioka, 1980), public debt can also serve as means of delaying increase in taxes and in turn reducing economic distortions.

Openness to foreign capital flows provides domestic residents with opportunities for diversification and may contribute to investment by reducing the country's overall cost of capital. It also alters the environment for monetary policy, however, by increasing the degree of de facto capital mobility. One of the central propositions of international monetary economics is that an increase in capital mobility sharpens the trade-off between internal and external objectives of monetary policy. An extreme version of this proposition called trilemma states that when capital mobility is perfect, a country cannot simultaneously pursue an exchange rate target (an external objective) and an interest rate target (an internal objective). One of three elements must be sacrificed: capital mobility must be restricted, the exchange rate must be freed, or domestic policy objectives must be ignored, evidence on gross capital flows suggests that monetary policy in

Kenya is in an intermediate position capital mobility is substantial but far from perfect, so that the CBK has at least limited scope for pursuing interest rate and exchange rate objectives simultaneously (Connell et al., 2010)

Over expansion of fiscal policies and great distortion trade policies especially the ones that create a heavy bias against exports, increase a country's indebtedness. Borrowing to finance public expenditures partly account for the big rise in growth of external debt (Paesani, Paesani, & Kremer, 2006). An increase in budgetary deficit means that the Government needs to borrow more if it is to meet its promises to its citizens. Increases in the level of budget deficits means that in order for the Government to deliver the budgeted services, it has to rely more on borrowed resources. As such, the levels of budgetary deficits play a key role in determining the level of borrowing for a government. For a number of years economists have debated the optimal speed and sequencing of economic reform recommending for the lifting of capital controls and the opening of the capital account of the balance of payments (Edwards, 2007).

A growing debt ratio inevitably raises returns on an economies securities market, as with an increasing sovereign bankruptcy risk creditors are only willing to finance the debt at higher prices. On the one hand, this increases government interest expenditures and makes less funds available for development purposes, while on the other hand, and this is of higher significance, elevated interest rate, and tends to discriminate part of private investments. It is not a circumstance to be ignored that a rising volume of government debt limits the chances of manoeuvring of anti-cyclical economic policy action, which implies that in the event of a deceleration of economic growth, the budget will only be sufficient for a lower-volume fiscal allocation, which further deteriorates the sense of security among economic agents and may lead to the postponement of private investments (Zsolt, 2012).

According to (Siddiqui, 2014), the mainstream economists and international financial institutions view that the foreign investment in developing countries would benefit those countries by increasing the availability of capital. This would have a positive impact over productivity and the general economic wellbeing of the host country they examine the link between capital inflows, financial development and economic growth. Alfaro & Chanda, (2004) argue that countries with developed financial markets are able to attract

capital inflows more efficiently. According to them, the potential of foreign direct investment (FDI) to create backward linkages in the absence of well-developed financial markets is severely impeded.

Volatile capital flows amplify boom-bust cycles and destabilize emerging market economies. The recent global financial crisis led to a reconsideration of the merits of capital account restrictions. An increasing number of policymakers believe that capital controls can effectively stabilize economies against volatile capital flows. In fact, some Emerging Markets Countries (EMCs) (Brazil, Taiwan, South Korea, and Thailand) have recently responded to instability by imposing capital controls. Even the IMF, a former critic of capital controls, has been forced to reconsider such measures as an important policy response to volatile capital flows under certain circumstances, (Leffcoat, 2014).

Proponents argue that capital controls are effective in stemming large and volatile inflows in recipient countries and can therefore be valid tools of macroeconomic and macro-prudential management, (Habermeier, Kokenyne, & Baba, 2011). However, the empirical evidence of effectiveness of capital controls in meeting domestic policy objectives is mixed. The skeptics' case was well summarized in 2013 by Felipe Larraín, former Finance Minister of Chile, who was cited in *The Economist* as having said that Controls have little effect on exchange rates. At best they change the composition of capital inflows a bit (only because one form of capital is disguised as another) and they increase the cost of capital for businesses and individuals.

Emerging markets that have implemented capital controls to stem volatile capital flows have deflected such flows towards economies with no controls in place, thereby creating political tension. The two types of spill overs may also interact, in the sense that spill overs stemming from capital controls may be larger in an environment of uneven global growth and easy monetary policies in advanced economies, (Pasricha, Falagiarda, Bijsterbosch, & Aizenman, 2009).

## 1.1 STATEMENT OF THE PROBLEM

The overoptimistic of the developing economies in their fiscal situations has led to the decline in government revenue and an increase on the social expenditure due to factors such as population growth, new costs in the financial systems etc. thus many governments are trying to determine a no risk

level of fiscal deficit and public debt in their economies, There is a contention that volatility of the exchange rates and capital inflows in Kenya are some of the main sources of economic instability around the country with the aggressive FDIs that are taking shape in the country, this is becoming a major issue in that Kenya as she has experienced the highs of up to, this is becoming a major issue in that Kenya as she has experienced the highs of up to 105 shillings for a dollar in October 2015, expunging public debt levels of approximately 4 trillion by June 2016. The government has taken various measures such as relying more on external debt to avoid crowding out private investments and consequently promote economic growth. Despite these efforts, private investments and economic growth have remained low. In Kenya, the debt-to-GDP ratio stands at 46 per cent.

Kenyan market promote local currency debt markets and has increased the role of FDI and portfolio equity inflows to ensure strength in the market or implement the controls (Gitau, 2014), despite the importance of the link between monetary and exchange rate policies in economic management, Kenya's policy makers have little real information on which to base their decisions (Ndung'u, 2000). Policymakers in all countries, including countries that generate large capital flows, should take into account how their policies may affect global economic and financial stability (IMF, 2012).

## 1.2 THEORETICAL REVIEW

### 1.2.1 Neo Classical theory

The term 'classical economics' was coined by the German Political philosopher and economist Karl Marx (1954), who stated that by classical political economy, for many purposes. Preferences can remain specified only up to a certain abstract structural features, more specifically, rational individuals are assumed to respond to any increase in the price of a good by consuming less of it. This simple relative price proposition turns out to be surprisingly powerful in predicting behaviour in economic settings and includes specifically the basis of institutional analysis: institutions yield different social outcomes because they alter incentives that agents face. Two fundamental propositions about the effect of the quantity of money on the economy predate the emergence of monetary economics as a recognized discipline of study. The first is that increases in the quantity of money that are not accompanied by corresponding increases in real output eventually lead to inflation (Milonakis, 2009).

An increase in some inputs relative to other fixed inputs will in a given state of technology cause total to increase; but after a point the extra output resulting from the same additions of extra inputs is likely to become less and less. This falling off of extra returns is a consequence of the fact the new doses of the varying resources have less and less of the fixed resources to work with (Olicy & Swift, 2006).

Liberalizing policies are intended to make the market system less incomplete and less imperfectly competitive by removing some restrictions on free trade and competition. The desirability of such policies is the topic of the third theorem of neoclassical welfare economics, concerning the gains from trade and other forms of liberalization. Considering (i) Efficiency of the Invisible Hand, (ii) Optimal Allocations, (iii) Gains from Liberalization as the theorem; claims that liberalization makes Pareto improvements possible, but they cannot be guaranteed unless those directly harmed by liberalization are suitably compensated. The first theorem shows that perfect markets generate Pareto efficient allocations. Under several important qualifications, the second theorem shows that any particular Pareto efficient allocation can be achieved through perfect and complete competitive markets with appropriate lump-sum redistribution of wealth (Hammond, 1992).

With globalization and international capital flows, financiers roam every corner of the world searching for the last drip of profits. This class has gained enormous power by undermining others, in particular labor. Today, capital does not need to move at all; the simple threat of moving undermines the fallback position of labor. Thus, to correct this imbalance of power a set of progressive policies is needed to control international flows and to achieve sustained full employment and greater equality of income and wealth. According to this view, capital controls limit the ability of international financiers and multinationals to curtail labor. Also, they advance the objective of full employment at least in the short to medium term (Epstein & Epstein, 2000).

Following neoclassical theory, capital controls are just bad policies because they remove the discipline of the international market which, as the National Center for Policy Analysis (1998) explains, always stands to reward countries that implement effective pro-growth policies. Nonetheless, governments of many countries have used capital controls. There are different forms of controls; negative interest rates, controls on foreign investment, lending restrictions, dual exchange

rates, just to mention a few. For example, in Venezuela to cope with inflows during mid-1990s, exchange controls were used. Romania closed its foreign exchange market in 1996, South Africa postponed the elimination of its remaining controls in 1996 (Rowden, 2011).

Prohibition of prepayments of foreign loans was the tool used in Brazil in 1994. In terms of direct controls, Chile and Brazil are two good examples. Chile imposed a one-year minimum maintenance period for nonresident inflows, while Brazil prohibited some nonresident transactions, (Gu & Baomin, 2009) sitting Goh (2005) explains, Malaysia relied on controls to regain monetary autonomy. Friedman and Schwartz's attribution of causality from money to business cycles was criticized by (James, 1970), who claimed that they had committed the post hoc ergo propter hoc fallacy assigning a causal relationship to two events on the basis of which happened first. In a rejoinder, (Friedman, 1970) argued that temporal precedence was only one of several criteria from which they inferred the direction of causality and that the case for a significant role for money in leading to business cycle fluctuations was clear independent of the precise timing of changes (Nagel, 2003).

### 3. METHODOLOGY

This study used a mixed research design approach guided by a complex factorial and analysis research design, this study used a mixed research design approach guided Complex factorial research design involves the consideration of three or more independent variables simultaneously (Kothari, 2004). Secondary and primary data was used to construct the estimates for the function parameters. Secondary data was extracted from the CBK annual reports, the Volatility of inflows for the period June 2000- June 2015. This involved comprehensive data collections on all of the variables inconsideration for the data collected both through primary and secondary data collection procedures. , the variability was plotted on the time differentials for both the short and long run periods of June 2000 – June 2015. Preliminary stages of analysis of time-series data involved generation of trend curves depicting the up or down oscillation of observations across the sample period.

The multivariate GARCH model with mean effects is specified in a general form in the equation (i) below:

$$\sigma^2 = \omega + \alpha_1 a_{t-1}^2 + \beta_1 \sigma_{t-1}^2 \dots \dots \dots (i)$$

Where

$y_{t+1} = \{ER_{t+1}, Z_{1,t+1}, \dots, Z_{K,t+1}\}$  is a vector of over performance of the monetary policy and K the observable macroeconomic factors used in the estimations,  $H_{t+1}$  is a conditional variance-covariance matrix,  $I_t$  is the information space at time  $t$ , and  $\text{Vech}\{.\}$  is a mathematical operator which converts the lower triangular component of matrix into a vector. For estimating the model, the study considers Volatility of inflows ( $\pi$ ), together with the market discrepancies, the vector of variables in the system, corresponding to specification (i) was:

$$y_{t+1} = \{\pi_{t+1}\} \dots \dots \dots (ii)$$

### 4. FINDINGS

**Table 4.1: Volatility of Capital Inflows**

Coefficient	Estimate	Std.error	T value	Pr(> t )
omega	3.167943	0.524212	6.0433	0.000000
alpha1	0.078165	0.022418	3.4868	0.000489
beta1	0.642782	0.040766	15.7674	0.000000

Fitted equation is:

$$\sigma^2 = 3.167943 + 0.078165a_{t-1}^2 + 0.642782\sigma_{t-1}^2$$

LogLikelihood : -577.0648

Box-Ljung test data: coredata (ret^2), X-squared = 62.752, df=12, p-value = 7.078e-09

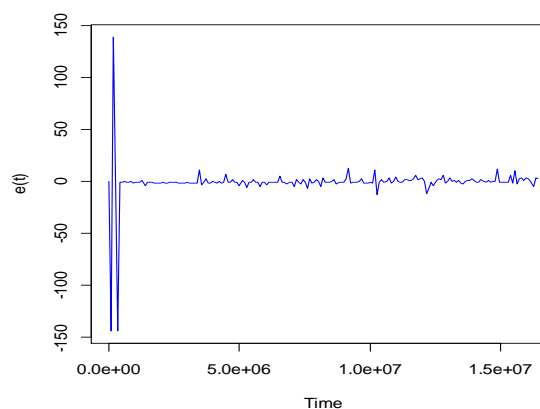
The significance of beta1 (p value=0.0000<0.05) shows persistence of volatility

The significance of alpha1 (p value=0.0005<0.05) shows existence of conditional volatility

The Box-Ljung test shows that fitting a garch (1,1) model was adequate (X-squared = 62.752, df =12, p-value = 7.078e-09<standard p value of 0.05)

**InformationCriteria**

Akaike	6.0844
Bayes	6.1526
Shibata	6.0836
Hannan-Quinn	6.1120



**Figure 4.1: Plot of residuals**



**Figure 4.2: ACF Squared returns**

The ACFs suggest significant serial correlation or in other words conditional heteroscedasticity in the standardized residual series. Big percentage changes occurred occasionally, but there were certain stable periods as shown in Figure 4.10 and 4.11. Figure 4.12 shows sample residence debt levels and clearly the series has no serial correlation. This findings are consistent with that of (Davis & Presno, 2014) on Capital Controls as an Instrument of Monetary Policy saying Large swings in capital flows into and out of emerging markets can potentially lead to excessive volatility in asset prices and credit supply thus need for the use of capital controls. The findings revealed that volatility of inflows has a positive influence on monetary policy in Kenya. The findings are supported by the coefficient determination which shows that the variations in volatility of inflows is explained by money supply and interest rates in the short term.

## CONCLUSION

The study concluded that since it is evident that the Kenyan Economy is classified as EME in economic reality, the government needs to control the flow of capital into the economy, since its impact is passed on to other elements and so lack of practicality due to wrong diagnosis, similarly the government should encourage productivity of the economy to enable financial stability that in turn will practically regulate the interest rates, foreign exchange rate, consumer price index and ensure balance of elements such as money supply. On the same point the government should encourage local borrowing despite criticism of its disadvantages, this can be justified on the basis of the long-term benefits that can be generated from the concept, and this benefit is the main economic reason to introduce greater discipline in fiscal policy.

The study recommends Use of capital controls provides emerging economies with the option of implementing, simultaneously, an independent monetary policy and a viable external intervening sector. This is seen to be feasible when countries face the threat of capital inflow as well as speculative threats on the domestic currency when expectations or the perception of risk becomes less favourable. In Kenya, the liberalization on capital controls has increased the volume of inflows and changed its composition, but has not prevent the depreciation of the currency. It should be noted that, the use of capital controls represents a practical alternative that can allow governments to maintain a stable and competitive exchange rates, while at the same time pursuing a monetary policy that leads to sustainable stability and reasonable levels of inflation thus recommending a policy implementation to govern on capital inflow.

## REFERENCES:

- [1] Abbas, S. M. A., & Christensen, J. E. (2007). *The Role of Domestic Debt Markets in Economic Growth: An Empirical Investigation for Low-income Countries and Emerging Markets*.
- [2] Alfaro, L., & Chanda, A. (2004). FDI and economic growth: the role of local financial markets. ... *of International Economics*, 713–743. [http://doi.org/Doi:10.1016/s0022-1996\(03\)00081-3](http://doi.org/Doi:10.1016/s0022-1996(03)00081-3)
- [3] C. R. Kothari. (2004). No Title. In *Research Methodology* (2nd ed., pp. 31–35). New Delhi: Nwe Age International (P) Limited.
- [4] Change, T., & Dynamics, I. (2009). Working Paper Series, (August).
- [5] Connell, S. a O., Maturu, B. O., Mwega, F. M., Ndung, N. S., & Ngugi, R. W. (2010). Capital Mobility , Monetary Policy , and Exchange Rate Management in Kenya by, (2006), 1–41.
- [6] Davis, S., & Presno, I. (2014). Capital Controls as an Instrument of Monetary Policy \*, (171).
- [7] Edwards, S. (2007). Introduction, (May).
- [8] Epstein, G., & Epstein, G. (2000). Political Economy Threat Effects and the Impact of Capital Mobility on Wages and Public Finances : Developing a Research Agenda. *Journal of Economics and Political Science*, (7).
- [9] Feldstein, M., & Horioka, C. (1980). Domestic Saving and International Capital Flows. *Economic Journal*, 90(358), 314–329. <http://doi.org/10.2307/2231790>
- [10] Friedman, M. (1970). The Social Responsibility of Business is to Increase

- its Profits. *The New York Times*.
- [11] Gu, X., & Baomin, D. (2009). International Capital Flows : Tradeoff at Optimum and Delay in Bargaining, 1–32.
- [12] Habermeier, K., Kokenyne, A., & Baba, C. (2011). The Effectiveness of Capital Controls and Prudential Policies in Managing Large Inflows. *IMF Staff Discussion Note*, (SDN/11/14), 1–35.
- [13] Hammond, P. J. (1992). Credible Liberalization : Beyond the three theorems of neoclassical welfare economics, 1–20.
- [14] IMF. (2012). *The liberalization and management of capital flows: an institutional view*.
- [15] James, T. (1970). *Stabilization Policy Ten Years After. Brookings Papers on Economic Activity*. Yale.
- [16] Jeffcoat, H. (2014). Research summaries. *Breastfeeding Review*, 22(3), 44–51 8p.
- [17] Milonakis, D., Fine, B., & Schools, B. H. (n.d.). *From Political Economy to Economics*.
- [18] Nagel, A. (2003). Empirical Macroeconomics : The Effects of Monetary Policy.
- [19] Ndung, N. S. (2000). The Exchange Rate and the Interest Rate Differential in Kenya : A Monetary and Fiscal Policy Dilemma, (1).
- [20] Olicy, P., & Swift, D. (2006). Human Capital as a Reaslist Foreign, 2(2), 68–91.
- [21] Paesani, P., Paesani, P., & Kremer, M. (2006). *Public Debt and Long-term Interest Rates: The Case of Germany, Italy and the USA* (No. 656). Frankfurt.
- [22] Rowden, R. (2011). Impacts of IMF Policies on National Education Budgets and Teachers, (June), 1–83.
- [23] Siddiqui, K. (2014). Flows of Foreign Capital into Developing Countries : A Critical Review, 2(1), 29–46.
- [24] Gitau, T. kabura (2014). *The relationship between exchange rates and foreign direct investment in kenya*:-Research project submitted in partial fulfilment for the requirements of masters degree in business administration to the school of business , University of Nairobi . (November).
- [25] Zsolt, S. (2012). *The Effect of Sovereign Debt on Economic Growth and Economic Development*.