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The Impact of Domestic Public Debt on Private Investment in Kenya

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Abstract

Kenya's Public domestic debt reached a level of Ksh 444.7 billion in March 2008. This paper examined the impact of public domestic debt on private investment levels in Kenya over the period 1967-2007. An investment function with four independent variables, namely public domestic debt, GDP, interest rate and public investment was estimated by analyzing the unit root test and co-integration test. The unit root test revealed that all variables under investigation are integrated of order one and are co-integrated in the long-run. The results indicated that high levels of domestic borrowing have negatively impacted on private investment. The results also showed that the impact of public investment on private investment was not as significant as public domestic debt, GDP and interest rate variable suggesting that public investment has not been complementary on private investment. Interest rates have negatively impacted on private investments, while with regard to GDP, economic growth has induced more private investments. The findings of this paper call for designing appropriate policies that deal with the ever rising domestic public debt and the sale of domestic debt to donors under the Paris Club umbrella. The results have important implications for fiscal management in the context of the country's crying need to generate faster employment growth, meet the Millennium Development Goals and attain the Vision 2030 goals. Research results are also of significant value to the academia in helping them design other longitudinal studies.

Keywords: Kenya, GDP, domestic debt, private investment

1. Introduction

The overall performance of the Kenyan economy since attaining independence in the 1960s has been on a declining trend. In the period 1964-1973, Gross Domestic Product (GDP) grew on average by 6.6 percent per year. This rapid growth could be attributed to the successful rural development policies that led to increased agricultural output, import substitution industrialization strategy and good macroeconomic management (Economic Surveys, various issues). Since the mid 1970s, the performance of the economy has indeed been very poor. Positive shocks, like the coffee boom of the mid 1970s were perceived as permanent additional resources and not saved but used to finance expanded programmes. On the other hand, negative shocks like the oil crisis of the 1970s were perceived as temporary and therefore financed without implementing any long-term adjustment. GDP growth rate declined to an average of 5.2 percent per year 1974-1979(Economic Surveys, various issues).

The 1980s were characterized by high budget deficits, high inflation and unsustainable current account deficits. These financial imbalances were triggered by, among other things, the erosion of fiscal discipline following an expansionary fiscal policy implemented after the coffee boom of 1977-1978 and severe external shocks (oil shocks). During this period, GDP growth rate declined to an average of 4.1 percent per year. The high deficits were financed by a combination of domestic and foreign borrowing, and by 1981 public domestic debt to GDP ratio stood at 6.2 percent, up from 2 percent in 1977. Clearly, this trend of expenditure was not sustainable, and in 1982 Kenya had to turn to Bretton Woods institutions to be bailed out. Assistance was conditional on implementing Structural Adjustment Programs (SAPs) – market liberalization, privatization, currency devaluation and reduction of public expenditures.

Between 1990 and 1995, GDP grew by an average of 2.5 percent per year (Kenya National Development Plan 1997-2001). From 1995, the decline in growth rate of GDP was rapid. From a growth rate of 4.6 percent in 1996, it declined to 2.4 percent in 1997, 1.8 percent in 1998, 1.4 percent in 1999 and 1.8 percent in 2000. In the financial year 2000-2001, the Kenyan economy registered a dismal negative growth rate of 0.3 percent. This decline was reflected in almost all sectors of the economy (Economic Survey, various issues).

The debt crisis of the early 1980s turned Kenya into a highly indebted nation. The debt problem was exacerbated by macroeconomic mismanagement in the 1990s, leading to a reduction of donor inflows. The government thus resorted to occasional debt rescheduling and expensive short-term domestic borrowing to finance its

expenditures. As a result, Kenya today is regarded as one of the highly indebted countries in Africa even though she has not qualified for debt relief under the highly indebted poor countries (HIPC) initiative.

There are two main reasons why the Kenya government borrowed domestically despite high interest rates. First, rising external indebtedness, which required foreign exchange to service its amortization, greatly increased the vulnerability of the country. Secondly, in order to limit external vulnerability, many IMF and World Bank supported programmes put a cap on non-concessional borrowing. Thus where the Kenya government was unable to obtain sufficient concessional assistance to meet its financing requirements, it resorted to relatively expensive domestic borrowing.

The election of a new government in 2002 led to major economic re-alignments meant to resuscitate the economy. The re-alignments were spelt out in the government's Economic Recovery Strategy for Wealth and Employment Creation (ERS) formulated in 2003, and the country's strategy to meet the Millennium Development Goals as spelt out in the 2002 Millennium Declaration. Positive results were realized as the economy registered real GDP growth rates of 2.8 percent in 2003, 4.9 percent in 2004, 5.8 percent in 2005 and 6.1 percent in 2006 (Economic Surveys, various issues).

By 2008 public domestic debt had reached unsustainable levels and for that reason the Kenya government has been looking for solutions to reduce the domestic debt which has impacted negatively on growth. Her stock of domestic debt stood at Ksh 206.1 billion in June 2000; Ksh 211.8 billion in 2001; Ksh 236 billion in 2002; Ksh 289.5 billion in 2003; Ksh 306.2 billion in 2004; Ksh 315.5 billion in 2005; Ksh 357.8 billion in 2006; Ksh 404.7 billion in 2007 and Ksh 444.7 billion in March 2008. Domestic debt as a percentage of GDP was at 22.8 percent in March 2008 (Central Bank of Kenya, Developments in Public Debt, 2008). In 1967 domestic debt stood at Ksh 19 billion and as a percentage of GDT was at 1.3 percent (Ministry of Finance and Planning, Debt Report 2001). The high level of domestic debt could result into a decline in investment through crowding out of private investment due to high interest rates.

1.1 Investment

Investment is a key variable to economic growth. Since Kenya started implementing Structural Adjustment Programs in 1986, the Kenya government has put in place several policies to promote investment. These include tax incentives to local and foreign investors, streamlining of investment code, improvement in the business environment (rules, procedures, and infrastructure), strengthening of Investment Promotion Center (IPC), Export Promotion Council (EPC) and the Export Processing Zone (EPZ) in coordinating and monitoring of local and foreign investment in the country (National Development Plan, 1997-2001). In 2004, the government formulated the Private Sector Development Strategy (PSDS) and the Investment Climate Action Plan (ICAP) to support private investment and address insecurity, improve roads, rationalize licensing procedures, improve business registration and improve customs and tax administration.

Kenya's total real investment has been on a declining trend since 1971. The decline was particularly severe after 1978 following the collapse of the coffee boom and the East African Common Market. Total real investment fell by 12 percent of the GDP between 1967 and 2006. As a share of real GDP, it was 9.5 percent in 2006 relative to 10 percent in 1988, 17 percent in 1978 and 22 percent in 1971 (IMF, 2008).

Private real investment was 5.2 percent of GDP in 2006 as compared to 5.8 percent in 1988, 14 percent in 1971 and 10.8 percent in 1967. Private investment in machinery and transport equipment has born a disproportionate share of the burden of this decline. It has fallen from around 7 percent of GDP to 3.5 percent between 1967 and 2006. Thus the share of equipment in Kenya's private investment has declined from 66 percent to 51.1 percent over the same period (IMF, 2008).

Despite the efforts made to enhance private investment in the country, investment has not been forthcoming. The response of private investment to government incentives has been lower than expected. This trend in private investments levels has become a major source of concern to policy makers and academics. In light of this, it was imperative to focus on the relationship between public domestic debt and private investment in Kenya for a given period of time. As a result, the aim of this study was to investigate the impact of public domestic debt on private investment in Kenya.

1.2 Statement of the Problem

The persistent increase in the stock of domestic debt has negatively impacted on private investment levels in Kenya. It has reduced the current and future investment through increases in the cost of capital (borrowing by the private sector). It has also affected the current flow of resources available in the economy when domestic debt is

used to service external debt. These claims deserve serious attention in the context of the country's crying need to generate faster employment growth, meet the Millennium Development Goals and attain the Vision 2030 goals.

Several studies on private investments in Kenya have been carried out previously. These include cross-country studies by Blejer and Khan (1984), Greene and Villneuva (1991) and Oshikoya (1994). Kenyan specific studies have included Wachira (1991), Matin and Wasow (1992), Bwire (1992), Ronge and Kimuyu (1998) and Kariuki (2003). Interestingly, none of these studies attempted to investigate the impact of domestic public debt on private investment. Against this backdrop, an empirical analysis of impact of public domestic borrowing by the Kenyan government on private investment was urgently needed. The study focused on filling up the gap.

1.3 Objective of the Study

The objective of this study was to investigate the impact of public domestic debt on private investment levels in Kenya. Variables that were investigated included public domestic debt, real GDP growth rates, real interest rates and public investments.

1.4 Hypotheses of the Study

H_0: Domestic public debt is negatively related to private investment levels within the country.
H_1: Public domestic debt in Kenya does not affect private investment levels within the country.

1.5 Scope and Limitation

The study investigated the impact of public domestic debt on private investments over the period of 1967-2007. Variables such public investment, real GDP growth rates and interest rates were analyzed as well in order to determine their impact upon private investment.
The study utilized pure secondary data from several sources which might be ingrained with some errors and therefore might affect the findings from the purely econometric methodology utilized.

1.6 Justification

This study is important because attempted to examine the impact of domestic public debt in the determination of private investments in Kenya. Firstly, policy makers have to know whether domestic public borrowing is followed by any crowding-out effect on investment, through whatever channel, as is argued by the classicals. Secondly, the findings of this research will have important implications on fiscal management especially at the moment when the government embarks on implementing ambitious projects such as free primary and secondary education, universal healthcare, expanded transportation infrastructure across the country, job creation and alleviation of poverty. Private sector investments should also be an important issue as the government implements its "Vision 2030" which is intended to transform Kenya into a middle-income country by the year 2030. Lastly, the study might be of significant interest to the academia as they design other longitudinal studies.

1.7 Theoretical Framework

Excessive domestic debt affects the interest rates and interest rate structure. When the government borrows from the domestic market, there emerges a fund crisis (due to excess demand) which raises interest rates. The interest rate is an important determinant in investment decisions, so high interest rates reduce profit margins and deter investment especially since retained earnings are an important source of finance.

The second impact is through taxation. Debt has to be paid and the economy has to generate the revenues to service debt through taxation. A high debt burden sends signals on the magnitude of government liability and thus the taxation expectations for debt service. High taxes are a disincentive to investment.

Lastly, domestic debt cannot be defaulted, unlike external debt. This is because domestic debt is mostly held by the banking sector and default may trigger a banking crisis. Hence, rising domestic debt levels increases default risk in the financial sector players who in turn increase interest rate levels on funds loaned to the private sector.

2 Literature Review

2.1 Impact of Public Domestic Debt on Private Investment

The Commonwealth Secretariat (as cited in Ndung'u, 2001) defines public domestic debt as "the debt a government incurs through borrowing in its own currency from residents of its own country". On the other hand, "private investment refers to the accumulation overtime by firms of real capital goods (that is, those will yield a future flow of services) (Levacic and Rebmann, 2001).

The major preoccupation of literature has been on how to manage debt, either domestic or external debt (Ndung'u, 2001). However, domestic debt literature is fairly recent and the theoretical framework on the investigation of the impact of domestic public debt upon private investment originates from the different

viewpoints held by classical and Keynesian economists. While classical economists take a much conservative stance on public borrowing, the Keynesians are extremely flexible towards the same. The classical economists suggest keeping public undertakings such as borrowing as minimum as possible. In their view by borrowing public authority accumulates resources for its own use leaving private sector with less. This phenomenon is popularly termed as crowding-out of private investment (Roger and William, 2002).

Iyoha (1999) found out that mounting external debt depresses investment through both a "disincentive" effect and a "crowding out" effect. Osei (2000) also observed that the debt service constitutes a considerable share of the budget in many countries and also imposes significant constraints on domestic investment. According to Ajayi (2000), the rising debt service levels severely limit the ability of the country to finance critical imports and new development projects. This happens through two ways. First, this happens through illiquidity effect, which arises from limited resources to be divided among domestic consumption, investment and external transfers to service the debt. Secondly, this happens through the disincentive effect due to the expectation of the future tax burden. Future debt burden tends to reduce incentive for current investment. According to Metwally and Tamaschke (2000), in their study of the foreign debt problem of North African countries, there is a negative relationship between debt service and economic growth through its adverse effect on investment and export multiplier for all the countries they tested.

As against the classical view, the Keynesians see no harm in public borrowing in case of necessity. Their argument is based on the principle of the multiplier that explains how a change in the public expenditure generates a greater change in output. They, however, are not unaware of the crowding-out effects of public borrowing. Keynes (1936) himself hinted at such effects in *"The General Theory"* by mentioning the multiplier limitation arising from adverse reactions on private investment, "confused" business psychology, and a tendency of the marginal propensity to consume to decline with rises in employment. However, their treatment of the crowding-out effect is quite different from that of the classicals. The Keynesians consider the issue for ensuring the smooth and optimum performance of the borrowing activities of government. The classicals, by contrast, raise the issue against undertaking any extent of public borrowing.

Kariuki (2003) studied the determinants of gross fixed capital formation in Kenya and found that increases in real interest rates do not deter private investment. Matwang'a (2000) found that debt service ratio negatively influence private investment. Miguel (2000) in his study on Mexico found public investment causing a crowding-in rather than a crowding-out effect on private investment. Crowding-in the antonym of crowding-out, meaning that expansion of private investment instead of reduction prompted by domestic public borrowing. A similar result was found by Bazaumana (2004) in the case of Senegal. Cruz and Teixeira (2001) examined a temporal framework with Brazilian data for 1947-1997 and showed that although a crowding-out effect occurred due to public investment in the short-run, a reversal appeared in the long-run effect of public investment. Chibber and Wijenbergen (2002) argued in their study with Turkish data that large budget deficit financed by borrowing domestically slowed down private investment causing real rate of interest to increase.

According to the neo-classical investment theory (also known as the "accelerator effect"), private investment is influenced by the growth rate of real GDP and the user cost of capital (Jorgensen 2002). The growth rate could be construed as a proxy for expectations about future demand and returns from the output of investments (Jayaraman 2001). Neo-classical theory also suggests that, as high interest rates discourage investment by raising user cost of capital, private investment is negatively related to interest rate. However, the interest rate can have a negative effect through the saving channel (McKinnon 2000; Shaw 2002). Low interest rates discourage saving, which would reduce the amount of resources for investment.

2.2 Impact of Public Investment and Other Variables on Private Investment

It is recognized that private and public investment are related. However, there is considerable uncertainty about whether, on balance, increases in total public sector investment raises or lowers private investment (Von Furstenberg and Malkiel 1999). Empirical evidence remains inconclusive. This is because public investment in production and in infrastructure can have opposite effects on private investment.

It is being increasingly acknowledged that public investment in infrastructure is more likely to be complementary to private investment because it raises the productivity of private capital. Several studies have examined this empirically (Aschauer 1992, Sundararajan and Thakur 1990, Blejer and Khan 1984, Chibber and Van Wijnbergen 2002). Only a few studies find evidence of a significant complementary relationship. If public investment in infrastructure and private investment are complements, we would expect that the coefficient of adjustment of private investment would become larger as the rate of public investment in infrastructure increases, implying a faster response of private investment.

One of the principal constraints on investment in developing countries is the quantity, rather than the cost of credit. The rates of return on investment in these countries typically tend to be quite high, whereas real interest rates on loans are kept low by governments for a variety of reasons (Note that Kenya's economy is liberalized; therefore, interest rates are determined by demand and supply of funds). In such circumstances the investor cannot be expected to equate the current marginal product of capital to its service cost. Indeed, because the total amount of financing is limited and the price mechanism is not allowed to operate smoothly, it would seem legitimate to argue that the private investor in a developing country is generally restricted by the level of available bank credit. An increase in real credit to the private sector encourages real private investment as is confirmed by several empirical studies (Blejer and Khan 1984, Fry 1990, Tybout 2000).

2.3 Implications of the Literature Review

The above discussion suggests that there is no conclusive theoretical or empirical finding on whether domestic public borrowing crowds-out private investment or not. The impact of public investment, external debt and foreign aid is also open to debate. On balance, it is perceived that the impact of domestic public borrowing on private investment varies from case to case depending on the socio-economic setup.

3.0 Research Methodology

3.1 Research Design

Domestic public debt figures were analyzed against private debt investment figures to identify if there is any correlation between them. A private investment function was estimated considering domestic public borrowings, weighted average interest rate and GDP as explanatory variables. Theory suggests that while the coefficients of GDP and the interest rate are expected to assume respectively positive and negative signs, that of domestic public borrowing would be either positive or negative depending upon the liquidity position in the economic system, the nature of the loan backed public expenditure, psychological impact on private investors and the like.

3.2 Study Area

The study was conducted in Kenya. Data was collected from the headquarter offices of the Ministry of Finance, Ministry of Planning, Investment Promotion Centre, the Central Bank of Kenya and Central Bureau of Statistics, all located in Nairobi.

3.3 Data Collection

The study used data collected from secondary sources. Various issues of *Kenya Monthly Economic Review* published by the Central Bank of Kenya provided GDP and interest rate data, while public borrowing figures were derived by using data published by the *Department of Debt Management* in the Ministry of Finance. On the other hand, private investment data were picked up from the Economic Surveys. The investments figures are the fixed capital formation observations for Kenya in the period 1967-2007.

3.4 Data Analysis

The equation of private investment considered in this paper extended the neoclassical flexible accelerator model (Jorgensen 1967) by taking into account various constraints faced by private investors in developing countries. Natural logs of the variables were taken for the estimation of the model (see Ouattara 2004, Servatu and Jayaraman 2001). The model is expressed as an equation as follows:

$$LRPRINV = \acute{a}0 + \acute{a}1LRGDPG + \acute{a}2LRINT + \acute{a}3LRDDEBT + \acute{a}4LRPUBINV + \varepsilon \ldots\ldots(1)$$

Where,

LRPRINV:	Logarithm of real private investment as a percentage of GDP
LRGDPG:	Logarithm of real GDP growth rate
LRINT:	Logarithm of real interest rate
LRDDEBT:	Logarithm of real domestic public debt
LRPUBINV:	Logarithm of real public investment
á0:	Intercept
á1 to á4:	Parameters
ε:	Error term

3.5 The Variables

3.5.1 Real GDP Growth Rates

An economy that exhibits an increasing growth is favoured by investors who foresee increased profits in the

future. Output growth increases consumption demand and savings, and therefore funds for investment. Lorrain and Vergara (1993) posit that there is a positive relationship between output growth and private investment. Therefore real GDP growth rate is expected to have a positive coefficient.

3.5.2 Interest Rate

High interest rates mean high cost of capital, hence a crowding-out effect on private investment. The study incorporates the real interest rate to capture this effect. A negative sign of the coefficient is expected ($á2<0$).

3.5.3 Domestic Public Debt

The coefficient of domestic public borrowing will be either positive or negative depending upon the liquidity position in the economic system, the nature of the loan backed public expenditure, psychological impact on private investors and the like, ($á3 \neq 0$).

3.5.4 Public Investment

There is considerable uncertainty about whether, on balance, increases in total public sector investment raises or lowers private investment. Empirical evidence remains inconclusive. This is because public investment in production and in infrastructure can have opposite effects on private investment. Therefore, the sign of the public investment coefficient cannot be determined a priori, but an effect is envisaged due to the high proportion of public investment to GDP in Kenya ($á4 \neq 0$).

3.6 Estimation Issues

Time series properties of the variables and their co-integration characteristics were tested before the estimation of Equation 1 above. Unit root test (test of stationarity) and Johansen co-integration test were used with a view to estimating the long-run impact of domestic public borrowing on private investment. Next, the error correction method was applied to find out the speed of adjustment the variables follow towards the long-run equilibrium path in response to any divergence occurred in the short-run. The whole process of estimation was run by the fourth version of the package *Econometric Views*, that is, *EViews 4*.

3.6.1 Unit Root Testing

Non-stationary data used in estimation produces unreliable *t*-statistics of the estimated coefficients that have theoretically infinite variances. Unit root tests were used to test for stationarity or order of integration of each series of the variables. Two tests are involved:

(i) The Augmented Dickey Fuller (ADF) test (Dickey and Fuller, 1979)
(ii) The Phillips-Perron (PP) test (Phillips and Perron, 1988).

The two tests were used so that the deficiencies inherent in either are overcome. A problem with the ADF test is that it involves the inclusion of extra differenced terms in the testing equation. The power of the testing procedure is reduced due to the incurred loss of degrees of freedom. PP test suffer severe size distortions where autocorrelations of the error term are predominantly negative, with the actual size much greater than the nominal size (Campbell and Perron, 1991).

3.6.2 Co-Integration Tests

Co-integration tests were conducted in case of non-stationarity of the series to ensure long-run relationships. The long-run equilibrium relationship among the variables was tested via the Johansen approach. The method is superior to the Engle-Granger (1987) two-step procedure in the estimation of long-run relationships as is applicable in a multivariate case that might be linked by more than one co-integrating vector. The Johansen approach also determined the number of co-integrating vectors and provided estimates of these vectors together with estimates of the adjustment parameters.

4.0 Results and Discussion

Summary statistics of the model variables are presented in Table 1.

Table 1: Summary Statistics

Variable	Mean	Median	Maximum	Minimum	Std. Dev.	Skewness	Kurtosis
LRPINV	2.56867	2.587187	2.914294	2.20982	0.163043	-0.391334	2.755095
LRGGDPG	1.340496	1.614675	2.212023	-4.65122	1.181851	-3.459351	17.11797
LRINT	3.08538	3.335889	3.927244	-5.56196	1.451701	-5.668796	34.18467
LRDDEBT	3.489483	3.632683	4.656151	2.633659	0.506683	-0.094505	2.177398
LRPUBINV	2.146082	2.248545	2.558722	1.573455	0.265297	-0.669539	2.725001

*Unit Root Results***:** Unit root tests of the variables in the analysis are shown in Table 2.

Table 2: Unit Root Test Results

Variable	Levels		First Difference		Level of Integration
	ADF	PP	ADF	PP	
LRPINV	-1.435	-2.132	-4.427	-7.795	I(1)
LRGGDPG	-2.931	-3.632	-5.934	-8.236	I(1)
LRINT	-0.303	-0.212	-6.686	-15.877	I(1)
LRDDEBT	-1.262	-1.246	-4.672	-6.884	I(1)
LRPUBINV	-0.442	-0.785	-3.766	-6.686	I(1)

Two unit root tests have been used, that is, Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests. The tests were carried out with a constant and no trend whose critical values were as follows:
(i) 1% Critical Value -3.656
(ii) 5% Critical Value -2.969
(iii) 10% Critical Value -2.626
As shown in the Table 2, all the variables are integrated of order one (I(1)) and become stationary after differencing once. The decision is clear especially with regard to 1% significance level.

Co-Integration Results: The co-integration test results obtained using Johansen are reported in Table 4.3. Both the Trace and Max-Eigen statistics reported in this table indicate that there are at least three co-integrating vectors between LRPRINV, LRGDPG, LRINT, LRDDEBT and LRPUBINV at both 1 and 5 percent levels of significance. Thus it can be claimed that there is a long run equilibrium relationship between real private investment, real GDP, real interest rate, real domestic debt and real public investment.

The Long-Run Equilibrium: Johansen co-integration method provided a relationship which may be represented by the following equation:

LRPRINV=11.822 + 1.346LRGDPG – 0.063LRINT – 0.711LRDDEBT + 0.793LRPUBINV
t-value [14.07] [3.63] [-9.46] [1.28]

According to the equation, in the long-run, GDP, interest rate and public domestic borrowing seem to have statistically significant impact on private investment, whereas the impact of public investment on the same is found to be statistically not significant.

Overall Results Interpretation: The long-run model results conform to the study's null hypothesis, which is: Domestic public debt is negatively related to private investment levels within the country. Factors that significantly influence private investments are GDP, interest rates and public domestic debt.

Interest rates have a negative impact on private investments in Kenya. A 1% increase in interest rates leads to approximately 0.05% decrease in private investment in the long-run. For a long time Kenya had a controlled interest rates regime. Interest rates were liberalized in 1991. With increasing liberalization and privatization the Kenyan economy has witnessed high interest rates play a significant crowding-out effect. By increasing stocks of public domestic debt, the government crowds out private investment via rising interest rates. A 1% increase in domestic debt leads to a 0.17% decrease in private investments.

With regard to GDP, the results show that economic growth induces more private investments. A 1% increase in real GDP leads to a 0.09% increase in investments in the long-run. This is the "accelerator effect". A rapidly growing economy would be expected to boost expectations and hence investments.

The impact of public investments on private investments was found to be not as significant as the public domestic debt and interest rate variable. This was surprising, given that the Kenyan economy has depended on public investments as the engine of growth for a long time. The government virtually invested in every aspect of the economy including banking, textile, transport (air, marine, railway and pipeline), communication, meat processing and housing. Increased public investments in economic and social services were thought would lead to a crowding-in effect on private investments. Indeed, this was so but not statistically significant as domestic debt and interest rate variables.

Conclusions

The study was conducted with a view to examining the impact of public domestic debt on private investment in Kenya over the period 1967-2007. To accomplish the task, a model for investment function has been specified and estimated considering public domestic debt, interest rate, GDP and public investment as independent variables. A long-run relationship has been estimated and analyzed by performing unit root test and co-integration test. The main findings of the study confirm with statistical significance that increasing levels of domestic public debt crowd-out private investment. Private investment is positively and negatively affected by GDP and interest rates respectively.

Recommendations

The Kenyan debt problem has been under discussions in local and international forums and therefore the importance of this empirical study. A high level of domestic debt induces uncertainty and affects private investment via high interest rates. High interest rates dictate that a large proportion of expenditure must be allocated to interest payments. Thus it distorts the economy and complicates macroeconomic management. Domestic debt also forces the government to impose a high tax burden on private investments and hence is a disincentive to investment. This is because a high domestic debt level is construed by investors as a future taxation of income to service the debt and also as signaling macroeconomic uncertainty.

Though Kenya does not qualify for debt relief, one of the options that can be pursued by the government is the sale of domestic debt to donors under the Paris Club umbrella. External debt sustainability is defined as the ratio of Net Present Value (NPV) of external debt to exports at 150 percent or to government revenues at 250 percent. Those highly indebted poor countries (HIPCs) with ratios above these levels have been given relief to bring these ratios down to these levels, provided they demonstrated a track of economic and social reform. Kenya could benefit from this scheme if it converts its public domestic debt into external debt.

Over 70 percent of interest payments are for domestic debt though the stock of domestic debt is only 49 percent of the total debt. Negotiations towards the lengthening of debt maturities and writing-off of Kenya's external debt need to be prioritized by the government. Debt-relief measures should be undertaken within the framework of the Paris Club and through their cancellation and equivalent relief of bilateral official debt.

Suggestions for Further Research

The following aspects may be taken up by future researchers as extensions of the present study:

- Empirically examining the effect of domestic public borrowing on poverty reduction in the context of Kenya;
- Decomposing private investment by category and taking them as separate dependent variables;
- Finally, splitting domestic public borrowing by sources and taking all of them as explanatory variables;

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