

Crowding in or Crowding out? Government Expenditure and Private Investment in Ethiopia (1980-2012)

Frew Hailu (MSc)

Project coordinator of Adherence case management project a project assisted by center for disease control (CDC),
P. Box 589, Nekemte Ethiopia

Abstract

This study attempts to investigate crowding in or crowding out effect of government expenditure on private investment in Ethiopia over the period 1980-2012 the central question of this study is weather government expenditure a positive effect or crowding in effect (complementary hypothesis) or a negative effect or crowding out effect (the substitutability hypothesis)on private investment in Ethiopia to achieve its objective it adopted a modified flexible accelerator model in this paper multiple regression and cointegration methods were used to analyze the data and the empirical findings support the complementary hypothesis between government capital expenditure and private investment and that tends to crowd-in private investment in Ethiopia and the recurrent part of government expenditure shows crowding-out effect in private investment The analysis suggests that government should give more priorities to expenditures that compliment private investment rather than spending on expenditures that substitute for private investment.

Keyword: Government expenditure, private investment, crowding-In, crowding out, Ethiopia.

1. Introduction

The unsustainable economic growth has been blamed mainly on high /low government expenditure, low level of investment, unfavorable weather conditions, political instability and many other factors in the country. Economists have long been interested in knowing the factors that contribute to investment in different sector of economy. Investment is a central issue in macroeconomic theory; it plays an important role in economic growth of a country as it raises the productive capacity of the economy and promotes production techniques. In recent years, emphasis has been put on the development of the private sector in developing countries to help boost economic growth and reduce poverty. In the late 1980s an alternative development strategy was to develop the private sector to boost growth in developing countries. Econometric evidence, (Guhara & .Hadjimicael, 1996), indicates that private investment has a stronger, more favorable effect on growth rather than government investment, probably because private investment is more efficient and is less closely associated with corruption. Public and private sectors have played important roles in boosting economic development in the country.

Beside to this the interest of economists in the relationship between government spending and private investment is motivated mainly by the controversy over the crowding out or crowding in effect of government spending on private investment. With the renewed interest in the role of the private sector as an engine of economic growth, the examination of this relationship is given further impetus. The idea of a private sector led economic growth in Ethiopia is therefore traceable to the observed success of the major industrialized countries; which attributed to the resilience of their organized private sector (Nasir & Muhammad, 2009).

As a result of the poor performance of the economy over the period in which government played the leading role in the economy, there was a change in the expected role of the government. To this end, market oriented structural reform programs such as privatization and deregulation were adopted to ensure a reduction in the role of government in the economy. The guiding principle in this redefined role of government was that government should concentrate its resources in areas that compliments rather than crowd-out private sector investment, thereby creating an enabling environment for the private sector investment (Nasir & Muhammad, 2009).

To address the inefficiencies in public expenditure management in Ethiopia, the federal government introduced wide range of policies and institutional reforms, geared towards privatizing the economy, particularly since 1992 when the structural adjustment program (SAP) was implemented. The Transitional Government of Ethiopia, which was established after the downfall of the military regime in May 1991, initiated a new market-driven economic policy followed by a comprehensive structural and economic reform program. One of the major objectives of the reform program was to rectify the fiscal ills & attain a consolidated government budget. This objective called for rationalizing the state's role in the economy, implying reorientation of government expenditure, and at the same time enhancing revenue performance with the support of International Monetary Fund and the World Bank as well as other multilateral and bilateral donors (MoFED, 2010).

The Ethiopian economy is a mixed system in which the government and the private sector co-exist. The two could play complimentary roles to enhance economic growth. Thus, it is in line with this that the use of government expenditure to enhance private investment is being advocated.

However, as Ascharer (1989) noted, the precise effect of government expenditure on private investment depends on the type of government expenditure being considered. To the best of the knowledge of the researcher, there is paucity of literature conducted particularly on Ethiopia. Certain categories of government expenditure crowd out private investment while others complement or crowd-in private investment. Amidst the prevailing contradicting view; it is unquestionable to conduct an empirical study to understand the effects of government expenditures on private investment (Aschauer, 1989).

1.1 Statement of the problem

Undertaking macroeconomic policy, various development strategies and economic policies introduced by the government so as to increase private investment did not bring a desired result. As it is well established in the literatures the failure of the government to achieve rapid and sustained private investment in Ethiopia spurred the debate on whether the government or the private sector should spearhead the nation's economic growth process. To reconcile this issue, in the last five years the government dominated the economic activities of the country by changing the expenditure level. For example; growth in recurrent expenditure registered an average of 13.8 percent per annum over the past seven years (2003/04-2009/10) while the growth rate in capital expenditure averaged 30 percent per annum during the same period (MoFED, 2011).

Consequently, the share of capital expenditure to total expenditure increased from 40 percent in the fiscal year 2003/04 to 55 percent in 2009/10. While the share of recurrent expenditure to total expenditure declined from 58 percent in 2003/04 to 45 percent in 2009/10. Even if the government undertakes such tremendous increases and decrease in its expenditure components its contribution to increase private investment has been remained in significant. Thus private investment has been persistently low in Ethiopia; For instance, from 1992-2000 and 2001-2010 private investment as a percentage of GDP were recording 2.6 and 1.2 respectively. It was identified that this low performance of private investment is a factor responsible for the lowest share of private investment as a percentage of GDP. For instance, from 2006-2010 the average share of private investment as percentage of GDP was only 0.5% while average economic growth for the same period was about 11% (MoFED, 2011).

Standing with the above juncture, private sector operators argued that the factors which militate against their contributions to the economy include high cost of doing business, unstable macroeconomic policies, infrastructural bottlenecks, faltering consumer spending, and lack of capital investment and stifling effect of multiplicity of taxes. Hence low productivity/un competitiveness of the private sector is therefore as a result of the hostile business environment (Nasir & Muhammad, 2009). In view of the above trends in government spending and private investment in Ethiopia the following question became relevant for investigation; did government expenditure crowd in or crowd out private investment in Ethiopia over the period under study? What categories of government expenditure complement private investment and which had crowding out effect?

Hypothesis of the study

The hypothesis in this study were stated in null hypothesis

H01: That there is no significant relationship between government expenditure and private investment in Ethiopia.

H02: That all independent variable captured in the model do not influence private investment.

The scope of this study is limited to an empirical analysis of the effects of government expenditure on private investment between 1980 and 2012. The major focus is on the effects of government expenditure on private investment. The choice of this study period is based on the availability of data.

2. Theoretical Frame work and Review of Literature

The evolution of investment theory has its origin from Keynes' path breaking work. Keynes argued that investment depends to a large extent on the prospective Marginal Efficiency of Capital, relative to interest rate which is the opportunity cost of capital. He stresses the volatility of private investment given that investors cannot predict for a certainty the returns on investment. This collaborates with the views of both Keynesian and neoclassical model of investment (Keynes, 1936).

Subsequent theories of investment after Keynes were basically growth models. This growth models gained currency in the 1960s. One of the most important is the Accelerator Theory which argues that investment is a linear proportion of changes in output. (Jorgensen, 1967) and (1971) as cited in (Mamatzak, 1994) reviewed the restrictive assumptions of the accelerator theory and formulated the neoclassical approach. In this approach, optimal capital stock is a function of the level of output and user cost of capital. These works serve as the bases for the theories to be reviewed in this work (Mamatzak, 1994). The term investment defined differently based on the nature of investment (Physical aspect, financial aspect, owners, time horizon etc.).

2.1 Keynesian Theory of Investment

The theories of investment date back to (Keynes, 1936), who first called attention to the existence of an independent investment, function in the economy. A central feature of the Keynesian analysis is the observation

that although savings and investment must be identical ex-post, savings and investment decisions are, in general, taken by different decision makers and there is no reason why ex-ante savings should equal ex-ante investment. The next phase in the evolution of investment theory gave rise to the accelerator theory, which makes investment a linear proportion of changes in output. In the accelerator model, expectations, profitability and capital costs play no role. Keynesians have traditionally favored the accelerator theory of investment while disregarding the role of factor costs that was the beginning of land mark development in the theory of investment. Keynes defined the marginal efficiency of a capital asset as the rate of discount which would make the series of annual returns on investment expected from the capital asset during its life just equal to its supply price (Keynes, 1936).

2.2 Flexible Accelerator Theory of Investment

A more general form of the accelerator model is the flexible accelerator model. The basic notion behind this model is that the larger the gap between the existing capital stock and the desired capital stock, the greater a firm's rate of investment. The hypothesis is that firms plan to close a fraction of the gap between the desired capital stock, K^+ , and the actual capital stock, K , in each period. This gives rise to a net investment equation of the form of:

$$I = d(K - K_{-1})$$

Where I = net investment, K^+ = desired capital stock,

K_{-1} = last periods capital stock, and d = partial adjustment coefficient

(Asante, 2000) explained that within the frame work of the flexible accelerator model, output, internal funds, cost of external financing and other variables may be included as determinants of K^+ . He noted that flexible accelerator mechanism may be transformed into a theory of investment behavior by adding a specification of K^+ and a theory of replacement investment (Asante, 2000).

Alternative econometric models of investment behavior differ in the determinants of K^+ , the characterization of the time structure of the investment process and the treatment of replacement investment. In the flexible accelerator model, K^+ is proportional to output, but in alternative models, K^+ depends on capacity utilization, internal funds, the cost of external finance and other variables (Asante, 2000).

Mankiw (1992) noted that net investment depends on the difference between the marginal product of capital and the cost of capital. He further explained that if the marginal product of capital exceeds the cost of capital, firms find it profitable to add their capital stock. If the marginal product of capital falls short of the cost of capital, they let their capital stock shrink (Mankiw, 1992).

2.3 Government Expenditure and Private Investment in Ethiopia: A Review of Empirical Literature

Although there is a large body of literature on crowding- in or crowding-out effect, a paper directly relating government spending to the crowding –in/out effect could not be traced. More importantly, no individual country study on the government expenditure –private investment relationship is available for Ethiopia data. However, views expressed in the print media, seminars, symposiums, workshops and interviews frequently claim that to meet the widening government deficit, the government is disproportionately borrowing from the scheduled banks and general public which are also the sources of fund for private investment. Often it is also observed that public sector corporations too are doing the same. In the absence of a detailed study discussing the crowding-in/out effect in the Ethiopian case, this section will review some of the available studies covering crowding-in/out effect triggered by government expenditure through focusing on countries other than Ethiopia.

Empirical research on the relationship between government spending and private investment mainly aim at rejecting or accepting the crowding out hypothesis. According to (Mehdi, 1998), the results of empirical research in this area are, however, controversial. The works of Aschaver (1985) and (Mehdi, 1998), provided evidence in support of the substitutability hypothesis. On the other hand, Monadjemi notes that, Aschaver (1989), (Erenburg, 1993), were supportive of the complementarity nature of public and private spending.

Erden and Holcombe have examined the impact of public investment on private investment. They applied several pooled specifications of a standard investment model to a panel of developing economies from the period 1980 to 1997. Their study find out that public investment crowds in private investment i.e. an average, a 10% increase in public investment is associated with 2% increase in private investment. Moreover, the results also indicate that in developing economies availability of bank credit is the major constraint for private investment (Erden & Holcombe, 2005).

Voss estimated the effect of public investment on private investment for the US and Canada from 1947-1996, applying a Vector Auto Regression (VAR) model. According to the reported results, innovations in public investment crowded out private investment (Voss, 2002).

Wang examined the effect of disaggregated government expenditure on private investment for the Canadian economy from 1961-2004, applying an ECM technique. The empirical findings depicted that public expenditure on health and education had positive impacts while expenditure on infrastructure had negative effects on private investment. Likewise, other expenditure like debt charges and social security had negative,

though insignificant effects (Wang, 2005).

Afonso and St. Aubyn (2008) evaluated the macroeconomic effects of public investment and private investment through VAR analysis, for 14 European Union countries plus Canada, Japan and the US from 1960-2005. The results mostly pointed to the existence of positive effects of both public and private investment on output. On the other hand, the crowding in effects of public investment on private investment vary across countries, while the crowding in effect of private investment on public investment is more generalized (Afonso & Aubyn, 2008).

Ahmed and Miller (1999) tried to explore the effects of disaggregated government expenditure on investment employing fixed- and random-effect methods in the context of some developed and developing countries. One of the results of their study was that government expenditure on transport and communication induced crowding-in effect in developing countries while expenditure on social security and welfare reduces private investment in both developed and developing countries (Ahmed & Miller, 1999). Cruz and Teixeira (1999) examined a temporal framework with Brazilian data for 1947-1990 and showed that although crowding-out effect occurred due to public investment in the short-run, a reversal appeared in the long-run effect of public investment (Bruno de Oliveira, 1999).

Hence, any increase in government spending on infrastructure and social sectors seems likely to enhance private investment in that country. Therefore it is suggested that a more proactive fiscal policy increases the investment-GDP ratio stimulating higher growth rates (Uma & Michael, 2011).

Ouattara investigated the determinants of private investment in Senegal over the period 1970-2000. His methodology utilized the Johansen cointegration analysis and bound test approach. The estimation results indicated that public investment exerted a positive impact on private investment (Ouattara B. , 2004).

Badawi examined the issue of complementarity and substitutability of public investment and private investment in a neoclassical growth model for Sudan using VAR model for the period 1970-1998. The empirical findings revealed that both investments are substitutes, that is to say that public investment crowds out private investment (Badawi., 2003).

Finally the relationship between government expenditure and private investment has been the central point of a huge empirical work. The empirical work has been trying to prove the complementary hypothesis or substitutability hypothesis (crowding-out hypothesis or crowding-in hypothesis) using different techniques and different samples. The results of the empirical work are mixed. Several studies used pooled samples that mix regions with different macroeconomic problems and distinct situations. This makes it difficult to generalize the results.

3.Methodology

Multiple regression analysis was used in investigating the relationship between government spending and private investment. (Aschauer, 1989) noted, this relationship depends on the type of government expenditure being considered. Thus in the methodology we disaggregated government spending into its various component parts and examined their separate effects on private sector investment using regression analysis. Thus, the estimated coefficients serve to indicate the extent of crowding in and crowding out between government spending and private investment. The SPSS/STATA package was used in the analysis were private investment were regress on different categories of government spending to identify the categories of government spending that crowd in private investment and those that had crowding out effect. Data will be generated in line with the period covered by the study which is 1980-2012. The study used time series data set. The sources of data for this study are mainly secondary in nature. these includes Central Bank of Ethiopia (CBE); Ministry of Finance and Economic Development (MoFED); Ethiopian Economic Association (EEA). These three agencies served as the main sources of data for federal government capital and recurrent expenditures and their various sub-components. Private investment data and other explanatory variables data were sourced from World Bank (WB) development indicators.

Dependent variable

Private investment (PI): (i.e. Gross domestic investment) is the total change in the value of fixed assets plus change in stocks. Gross capital formation is used as proxy to private investment. The researcher used domestic private investment as dependent variable and other explanatory variables. The explanatory variables that may affect the decision making of domestic private investment in the literatures are very wide and only variables having sound theoretical explanations and complete data will be selected. In this section the researcher attempt to describe the theoretical explanations and empirical evidences of the explanatory variables selected for this study.

Independent variable

Government capital Expenditure (GCE): It is the government expenditure on capital overheads. It was measured by the total government expenditure less recurrent expenditure.

Government recurrent Expenditure (GRE): It is the current expenditure for purchase of goods and services at all levels of government. It encompasses purchases of materials, office supplies, fuel and lighting, salaries and

wages, travel services and payment of rent. It was measured by recurrent expenditure on labor costs and other goods and services.

Inflation rate (INF): inflation results from the macroeconomic effect of government spending and is the fourth variable that the researcher was used in the study as a proxy to measure macroeconomic stability of the country. There is no uniformity on the theoretical explanation of the variable and its effect on domestic private investment. Some models such as the cash-in-advance models (e.g. Stockman, 1981) forwarded that inflation raises the cost of acquiring capital which then lowers capital accumulation. This model further states that the existence of high inflation may make it difficult and costly for economic agents to extort the right relative price which could then lead to misallocation and inefficient resources. However, other models like the Tobin-Mundell model argues that higher anticipated inflation lowers the real interest rate which then causes to be made portfolio adjustments away from real money balances to real capital which then expected higher inflation to raise real investment (Ghura & Goodwin, 2000) Empirical studies such as (Bakare A. , 2011) and (Léonce, 2000) reported that inflation has a negative effect to private investment.

Economic growth (GDP): The gross domestic product GDP is used as proxy for economic growth. This indicates the level of output in the economy. Its rate of growth is therefore an indication of the rate of growth of the economy and it is one of the most commonly variable used as explanatory variable to measure its effect on domestic private investment. Some literatures such as (J.Greene & Villanueva, 1991) explained that private investment is positively related with real GDP growth of one country. This is because countries with higher income level inclined to allocate more of their wealth to domestic savings which could be then used to help in financing private investment.

Structural Break (SAP): This variable will be included as a dummy variable introduction of the structural adjustment programme in 1992 had as its major policy objective that is a reduction in government participation in the economy, while at the same time giving priority to the private sector to lead economic growth process. This called for a substantial reduction in government expenditure and thus a structural break in the economy. The dummy variable D, in our model captures the effect of structural break as a result of government partial disengagement from the economy.

In determining crowding in or crowding out effect of government expenditure on private investment in Ethiopia, the multiple regression analysis and cointegration methods are used in estimating the parameters of the model. Thus, the estimated coefficients served to indicate the extent of crowding in and crowding out between government expenditure and private investment SPSS and STATA are used in carrying out the estimation. The SPSS aspect covers the multiple regression analysis were private investment were regress on different catagories of government expenditure to identify the catagories of government expenditures that compliment private investment and those that had crowding out effect. While the aspect of STATA covers the cointegration analysis that examine the long run relation ship between the crowding variable.

In the case of cointegration, recognizing the fact that most macroeconomic data are non stationary, the analysis is preceded by first undertaking a philips perron unit root test, followed by augmented dickey fuller unit root test and finally the cointegration test. In addition some pre and post estimation tests such as: unit root test, autocorrelation and multicollinarity tests are performed to ascertain that valid models were applied.

3.1 Model Specification

The model to be estimated in this study is derived following (Blejer & Kahn, 1984) and (Aschauer, 1989) and (Ekpo A. H., 1996) by disaggregating government expenditure into its various components and examined their separate effects on private sector investment. The analytical framework underlying this position is fashioned in this study in line with the variants of the flexible accelerator investment macro-economic theory designed to investigate the quantitative effect of disaggregate government spending along with a set of variables on private investment The disaggregate and aggregate effect of fiscal and non-fiscal variables was therefore captured through the variations in output. Structural reform has influence on private investment. In Ethiopia, structural reform was taken place in 1992 a vector of dummy variable were included in the model to capture the effects of these reforms on private investment.

Adopting this pattern therefore, the present study specifies the following models

$$PI_t = \beta_0 + \beta_1 CEX_t + \beta_2 RCEX_t + \beta_3 INFL_t + \beta_4 Y_t + \beta_5 D + \mu_t \dots \dots \dots (1)$$

Where pI is the private investment GDP Gross domestic product CEX government capital expenditure RCEX government recurrent expenditure INF inflation D dummy variable for structural adjustment program and μ_t is Error term encompassing all other factors determining private investment but not captured in the model.

4. Result and Discussion of Findings

The result of the estimation result of equation 1 were as follows

Table 1 Regression result of the estimate of equation 1.

pi	Coef.	Std. Err.	P -value	
Gdp	0.0212915	.0344077	0.054	
Infl	-20.44898	27.42263	0.462	
Cex	0.1728164	.063974	0.012	
Rcex	-0.3083115	.0414885	0.560	
d	-1582.835	777.2012	0.052	
cons	-4660.132	1518.188	0.505	
R-squared = 0.8320				
Adjusted R-squared = 0.8009				
Durbin Watson =0.5632227				

4.1 Regression Result

Multiple regression analysis was also used in estimating the parameters of the model. Thus, in the estimated equation 1 the coefficient of capital expenditure is 0.172 indicating a positive relationship between capital expenditure and gross domestic private investment. The relationship is significant even at 5% level. The positive sign of the relationship indicates that capital expenditure crowded in private investment over the period of analysis.

The coefficient of recurrent expenditure, measures the effect of recurrent expenditure on private investment. In equation 1, the coefficient of government recurrent expenditure is -0.308 indicating a negative relationship with insignificant t value of 0.560 the sign of the coefficient is negative indicating that Federal Government recurrent expenditure crowded out or substituted for private investment over the period under study. That is a 1% increase in recurrent expenditure reduced private investment by 0.308. The variable GDP measures the effect of economic growth on private investment. The estimated coefficient for this relationship as indicated in the estimated equation 1 is 0.021. These indicate a positive relationship between economic growths on private investment. The relationship is significant even at 5% level as indicated by the significant t value of 0.054.

The estimated coefficient for the policy dummy variable D is -1582.835 indicating a negative relationship between the policy dummy on private investment, but the relationship is significant at 5% level as indicated by the significant t value of 0.052. Finally, the coefficient of constant is -4660.132 negative with insignificant t-value of 0.505. This indicates that even all other variables are zero; an increase in government expenditure will reduce investment by 4660.132.

R^2 value is a measure of goodness of fit. That is it is a summary measure that tells how well the sample regression line fits the data. The R^2 value shows the extent to which the variation in PI is explained by the variation in Cex, Rcex, Infl, GDP and Policy Dummy. The value of R^2 is 0.8320. This indicates that 83.2% of the variation in PI is explained by the variation in our explanatory variables Cex, Rcex, Infl, GDP and Policy Dummy.

Also, adjusted R^2 value is 0.8009. Corrects for the defects of R^2 as measure of goodness of fit in our regression model. The adjusted R-Squared shows the R squared value even after taking care of other errors in the estimation not captured by the R^2 value. The F statistics is used in the multiple regressions to verify the adequacy of the model.

Table 2 Result of stationarity (Philip perron unit test)

s/n	Variables	t- statics	Critical values at			stationary
			1%	5%	10%	
1	Pi	1.197 **	-2.649	-1.950	-1.603	At level
2	Gdp	7.605*	-2.649	-1.950	-1.603	At level
3	Infl	-3.241*	-2.649	-1.950	-1.603	At level
4	Cex	2.902*	-2.649	-1.950	-1.603	At level
5	Rcex	7.366*	-2.649	-1.950	-1.603	At level

*(**) denotes rejection of the null hypothesis at 1 % (5%) significance level.

4.2 Philips Perron Unit Root Test for Stationarity

The Philips perron unit root test was used to diagnose the stationarity of the variables in the model. The result established that five series variables are stationary and one other variable is not stationary. Therefore we must find the difference value of the non-stationary variable through conducting Augmented Dickey Fuller (ADF) unit root test and see if they are stationary in their first difference values. The Augmented Dickey Fuller unit root tests indicate that the variable which is not stationary in their level was stationary in their first difference. As such, they are integrated of the same order necessitating the conduct of cointegration test.

4.3 Cointegration Test

The first test undertaken before cointegration proper was the test for Philips Perron unit root test, and Augmented Dickey Fuller unit root test. The aim was to test that both variables have the same order of integration that is they are both $I(1)$. OLS cointegration regression was used to regress the dependent variable on all the cointegrated explanatory variables at their log level values. The null hypothesis (H_0) of no cointegration (the residuals are not stationary that is has unit root) is rejected, and alternative hypothesis (H_1) of cointegration is accepted (That is the presence of long run relationship between the cointegrated variables).

5. Summary, Conclusion and Recommendation

The study used cointegration test and multiple regression analysis to determine the influence of some identified explanatory variables on private investment in Ethiopia. The study concluded that the result of the analysis confirmed the basic findings of some earlier studies that the actual effect of government expenditure on private sector investment varies depending on the type of government expenditure under consideration and also concludes that having a sound expenditure management and allocation policy at hand together with other fiscal policy is imperative in determining private investment in Ethiopia. The government plays a leading role in determining private sector participation by designing prudent investment policy that attracts the private investors and finally financing budget deficit, from either domestic or foreign borrowing, will have their own repercussions on private investment.

Given the outcome of this research therefore, the following policy recommendations are proposed:

- ✓ Government should give more priorities to spending that crowd in private investment, rather than spending on expenditures that crowd out private investment.
- ✓ Government spending cannot be separated from its macroeconomic effect. Therefore effective macro-economic management must be ensured in order to cushion the adverse effect of rising inflation on private investment.
- ✓ The study also established the effect of structural adjustment program (SAP) on private investment. This was captured by the dummy variables D in equation 1 with significant substitutability relationship on private investment. Therefore the government should encourage its privatization programme towards achieving a very good investment climate in Ethiopia.
- ✓ The government should embark on selective expenditure downsizing. This is because the expenditure downsizing is counterproductive to private investment. The government ought to target areas which are not likely to crowd-out private investment. If it is a must that expenditure be cut on areas likely to impede private investment, government should consider involving private sector in provision of certain services through Public-Private Partnership (PPP). Joint efforts between government and private sector, in provision of services such as infrastructure, energy, health and education will ease the burden to the government without affecting investment environment.

Reference

- Afonso, A., & Aubyn, M. S. (2008). "Macroeconomic Rates of Return of Public and Private Investment: Crowding-in and Crowding-out Effects", Working Paper Series No. 864, European Central Bank.
- Ahmed, H., & Miller, S. M. (1999). Crowding-Out and Crowding-In Effects of the Components of Government, University of Connecticut.
- Asante, Y. (2000). Determinants of Private Investment Behavior: Ghana 1970 – 1991 Nairobi AERC Research paper No. 27.
- Aschauer, D. A. (1989). "Does public capital crowd out private capital? Journal of Monetary Economics, 24: , 171 – 188.
- Badawi, A. A. (2003). Private Capital Formation and Public Investment in Sudan: Testing the Substitutability and Complementarity Hypotheses in Growth Framework, Journal of International Development, 15,, 783-799.
- Bakare, A. (2011, July). The Macroeconomic Impact of Foreign Aid in Sub-Sahara Africa: The Case of Nigeria. Business and Management Review, 1(5), 24 – 32.
- Blejer, M., & Kahn, M. (1984, June). Private investment in developing countries. Finance and Development. 21, 26-29.
- Bruno de Oliveira, C. T. (1999, April.). The Impact of Public Investment on Private Investment in Brazil, 1947-1990, Cepal Review,, 67.
- Ekpo, A. H. (1996). "The public sector and Economic Growth in Nigeria". In: Fiscal and Monetary policy during structural adjustment in Nigeria proceedings of a seminar of national policy workshop. AETC/CBN.
- Erden, L., & Holcombe, R. G. (2005). 'The Effects of Public Investment on Private Investment in Developing Economies' Public Finance Review, 33 (5), , 575-602.

- Erenburg, S. (1993). The Real Effects of Public Investment on Private Investment A Rational Expectation Model In: Applied Economics. 25:, 2 - 7.
- Ghura, D., & Goodwin, B. (2000). Determinants of private investment: a cross-regional empirical investigation. Applied Economics,, 32(14), 1819-1829, ISSN 0003-6846.
- J.Greene, & Villanueva, D. (1991). private investment in developing countries. An imperical analysis IMF staff paper, 38(1), 33-58.
- Jorgensen, M. (1967). the theory of investment behavior, national bureau of economics research, Robert Feber edition, London.
- Keynes, J. (1936). The general theory of employment, interest and Money.
- Léonce, N. (2000). Financial Determinants of Domestic Investment in Sub-Saharan Africa: Evidence from Panel Data,. World Development, 28(2), , 381-400, ISSN 1873-5991.
- Mamatzak, E. (1994). The effect of public expenditure on private investment An empirical application”. Monetary Economics,, 12, 6-9.
- Mankiw, M. G. (1992). Macro Economics fifth edition.
- Mehdi, S. (1998). Public Expenditure and Private Investment Evidence from the U.K and U.S.A”. Applied Economics, 10, 3 - 16.
- MoFED. (2010). Growth and Transformation Plan (2010/11-2014/15).Federal Democratic Republic of Ethiopia Ministry of Finance and Economic Development.
- MoFED. (2011). Annual Report on Macroeconomic Development EFY 2002 (2009/10). Addis Ababa, Ethiopia: Macro Economy Policy and Manegement Directrote.
- Nasir, M., & Muhammad, Z. (2009, August). An Analysis of the effect of Government expenditure on Domestic private investment in Nigeria Department of Economics, Faculty of Social Sciences Usmanu Danfodiyo University Sokoto. European Scientific Journal, 8(17).
- Ouattara, B. (2004). Modelling the Long Run Determinants of Private Investment in Senegal,. Centre for Research in Economic Development and International Trade (CREDIT), University of Nottingham.
- Uma, K., & Michael, N. (2011). “Nature and Association of Public and Private Investment: Public Policy Implications for South Africa”, Journal of Economics and International Finance,, 3(2): , 98-108.
- Voss, G. M. (2002). “Public and Private Investment in the United States and Canada”, Economic Modelling,. 19(4): , 641-664.
- Wang, B. (2005). “Effects of Government Expenditure on Private Investment:Canadian Empirical Evidence”, Empirical Economics, , 30(2): , 493-504.

The IISTE is a pioneer in the Open-Access hosting service and academic event management. The aim of the firm is Accelerating Global Knowledge Sharing.

More information about the firm can be found on the homepage:

<http://www.iiste.org>

CALL FOR JOURNAL PAPERS

There are more than 30 peer-reviewed academic journals hosted under the hosting platform.

Prospective authors of journals can find the submission instruction on the following page: <http://www.iiste.org/journals/> All the journals articles are available online to the readers all over the world without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. Paper version of the journals is also available upon request of readers and authors.

MORE RESOURCES

Book publication information: <http://www.iiste.org/book/>

Academic conference: <http://www.iiste.org/conference/upcoming-conferences-call-for-paper/>

IISTE Knowledge Sharing Partners

EBSCO, Index Copernicus, Ulrich's Periodicals Directory, JournalTOCS, PKP Open Archives Harvester, Bielefeld Academic Search Engine, Elektronische Zeitschriftenbibliothek EZB, Open J-Gate, OCLC WorldCat, Universe Digital Library, NewJour, Google Scholar

