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EFFECT OF BUDGET DEFICT ON PRIVATE INVESTMENT IN EAST AFRICAN COMMUNITY FOR THE PERIOD 1981-2015: A PANEL DATA ANALYSIS

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ABSTRACT

Over the period of thirty four years, between 1981 and 2015, the East African Community economies have witnessed inconsistent and downward trend on the level of private investments as percentage of GDP. Several studies have been done regarding the determinants of private investment at country level while others have focused on budget/fiscal deficit, regional integration and economic growth but the findings are inconsistent. However, from the empirical literature review, most of the studies ignore effect of budget deficit on private investment. It is against this background that this study was carried out to investigate the effect of budget deficit on private investment in EAC using panel data over the period 1981-2015. The study adopted the Modified Flexible Accelerator model. Using Levin *et al.* (2002) to test the unit root, the study found the variable to be non-stationary at level. Co-integration test error correction model were carried to analyze the long-term and short-term dynamic of the selected macroeconomic variables on budget deficit account. The study results showed that fiscal deficit had a negative effect on private investment in the region. Debt reduction and government expenditure scaling down strategies should also be adopted in the region so as to improve the fiscal deficit hence boosting private investment and faster real GDP growth in the long run.

Contribution/ Originality: This study contributes in the existing literature in the field of public finance. This study uses new panel estimation methodology. This study originates new formula of controlling budget deficit. This study is one of very few studies which have used panel data. The paper contributes the first logical analysis that increasing budget deficit discourages investment. The paper's primary contribution is finding that fiscal deficit negates investment. This study documents controlling budget deficit.

1. BACKGROUND TO THE STUDY

Private investment is one of the key components to economic growth and development in most economies (Matwanga, 2000; Glovanni, 2014). This is because through private investment, new inventions can be adopted, employment opportunities can be generated, incomes can grow and standard of living of the people can improve and eventually leading to alleviation of poverty (Matwanga, 2000).

The major concern for private investment for most Sub-Saharan Africa countries is that the level is so low compared to developed nations. This is accredited to a variety of reasons and the one key factor is the relatively small size of the private sector, especially in industrial sector, and the difficulty in gaining access to credit for investment (Morrissey, 2009). Another factor is that many SSA countries can be characterized as subject to relatively high levels of economic and political instability, which discourages both foreign and private investments (Morrissey, 2009).

Least developed countries have relatively low levels of investment and the productivity of investment tends to be low and therefore increasing the level and productivity of private investment is a prerequisite for economic development in nay economy (UNCTAD, 2006). According to Pfeffermann and Madarassy (1992) private investment in many developing countries began rising and brought significant effect on economic growth than the previous periods before 1970s'; this is mainly closely linked with the SAPs which is associated with enhancing the efficiency of private sector investments.

The East African Community (EAC) was established in 2000 by Kenya, Tanzania and Uganda; Burundi and Rwanda joined in 2007. Its objectives are to deepen cooperation among member states in political, economic, and social fields - including establishment of a customs union (2005), common market (July 2010), monetary union and ultimately political federation of East African States. Burundi and Rwanda joined the customs union in 2009 (East African Community Secretariat (EAC), 2011; Gisore *et al*., 2014). While the current EAC has existed for more than a decade, there has been a long history of cooperation under successive regional integration arrangements in the region. Kenya, Tanzania and Uganda have participated in regional integration arrangements dating back to 1917, starting with a Customs Union between Kenya and Uganda in 1917, which the then Tanganyika joined in 1927; the East African Community (1967–1977) and the East African Co-operation (1993–2000) (EAC, 2011).

East African countries have embraced regional integration as an important requirement of their development strategies (Jean and Ambert, 2011). According to Jean and Ambert (2011) deepening regional integration in the Eastern Africa region implies creating the appropriate conditions for guaranteeing factor mobility, the free movement of persons and commodities. The policy thrust is also shifting more heavily towards the development of the private sector as the ultimate vehicle for the optimal allocation of resources and growth to the region.

According to Kasekende and Ngeno (2000) regional integration provide opportunities for addressing common challenges such as improving economic policy, attracting foreign direct investment (FDI), increasing market size and competitiveness and pooling resources for investments of mutual benefits. Since 2007, FDI remittance in EAC has grown by 23.4% and Kenya remains as the key hub for investment in EAC.

According to Mariara and Kiriti (2002) there was a decline in private investment in the EAC region from 13% to 8 % in 1980-1990. This may be as a result of the donors imposing tough conditions on the governments before they can be given funds. For example the introduction of SAPs by IMF and World Bank forced the governments to borrow domestically which crowded out private investment especially in Kenya.

Private investment levels had been on a fluctuating trend in years between 1990 and 2000; this may be attributed to the fact that East African Community had not been revived after its collapse in 1977 hence less business transactions among the five countries due to existence of trade barriers. Private investment started picking up from the year 2000 onwards which may have been contributed by the removal of both internal and external tariffs after the EAC was revived in 1999 by the three heads of states of Kenya, Uganda and Tanzania and later joined by Burundi and Rwanda in the year 2007. The levels of private investment further increased in the subsequent years after 2010 though at a slow rate.

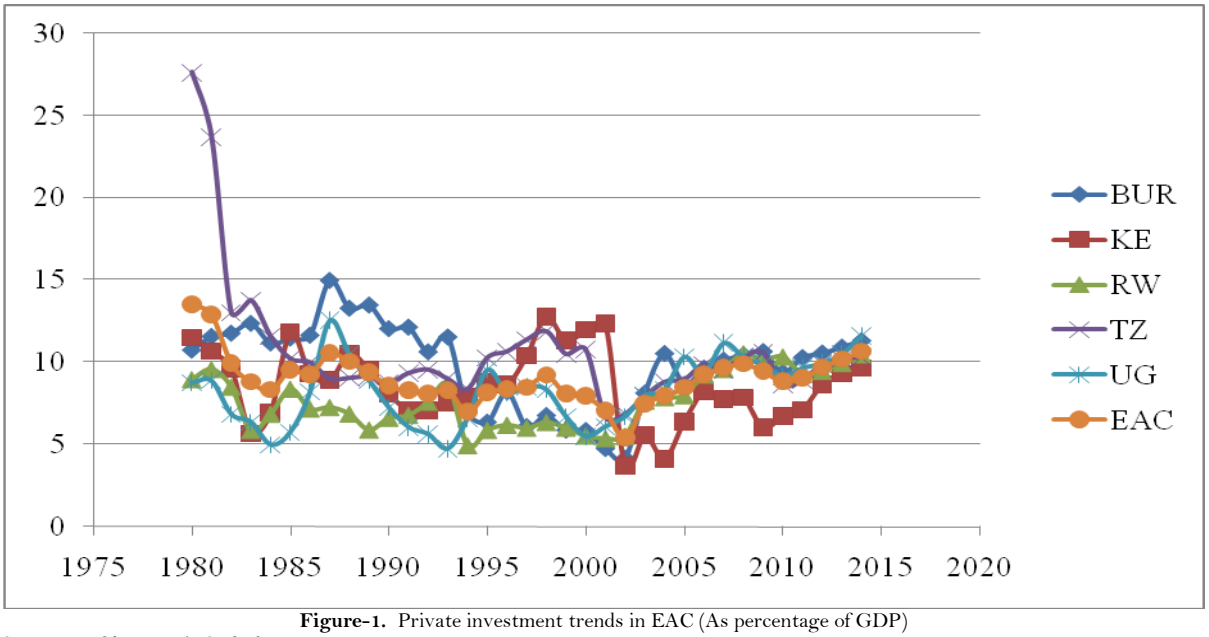

Figure-1. Private investment trends in EAC (As percentage of GDP)

Source: World Economic Outlook, 2014

2. THEORETICAL LITERATURE

Keynes (1936) concludes that interest rate and internal rate of return are the main determinants of investment through the marginal efficiency of capital. According to Keynes (1936) investment by a country occurs when marginal efficiency of investment on an addition investment exceeds the rate of interest. The importance of entrepreneurs' long term expectations is also highlighted but did not provide a clear-cut explanation of how expectations are formed. However, Keynes' analysis suffers from the following limitations: it assumes that the funds used in investment have the same opportunity cost, profits are certain and assumption of no credit constraints.

This theory of investment is attributed to Tobin (1969). According to the theory; the main driving force of investment is the ratio of the market value of the existing capital stock to its replacement cost (the Q ratio). This means that entrepreneurs will invest if the increase in the market value of an additional unit exceeds the replacement cost. Tobin (1969) concludes that the reason why Q would differ from unity is due to delivery lags and increasing marginal cost of investment. The main limitation of q theory is that its use tends to be chosen on an ad hoc basis rather than on optimization theory.

The acceleration principle was first suggested by Clark (1917) and it is well known for its applications by Samuelson (1939) to business cycles. The accelerator principle assumes that firms' preferred capital-output ratio is constant. The theory begins with the assumption that a certain amount of capital stock (K) is a requirement to support a given level of growth. This relationship is defined as being proportional to output (Y), that is $K_t = kY_t$ such that net investment is proportional to change in the desired output:

$$K_t - K_{t-1} = I_t = k\Delta Y_t \quad (2.1)$$

Where k- capital-output ratio, Y - output, I- net investment, K_t - capital stock in time t

K_{t-1} - Stock of capital at time t-1.

The incremental rate between the desired and the existing capital stock is given by:

$$I_t = \delta(K^* - K_{t-1}) \quad (2.2)$$

This implies that the parameters that affect the desired level of capital tend to influence the level of investment. Increase in output and reduction in interest rate leads to increased rate of investment. In conclusion, GDP growth and interest rate are key determinants of private investments. The model is flexible in the sense that it allows investment to vary with other relevant variables, hence it is important when analyzing investment behavior in developing economies.

According to Agenor and Montiel (1996) neither the neo-classical nor Tobin's-Q theories of investment are applicable in developing countries because of the assumptions on which these models are founded on: perfect information; perfect capital markets; no government intervention. Typically, these countries do not have equity markets and have for a long time suffered financial repression, debt overhang, a dominant role of imported capital goods, and macroeconomic (Agenor and Montiel, 1996). On the other hand, the simple accelerator theory explains that investment is a function of output growth only but ignored the influence of other variables on investment. Although these factors act as barriers to private investment, they are often not incorporated in traditional models of investment. For example; private investors in developing countries face enormous financial and physical resource constraints such as credit and infrastructure, which are normally ignored in conventional theories. Therefore this study adopted a modified private investment model derived from the flexible accelerator model so as to suit the study.

3. EMPIRICAL LITERATURE

Private investment in developing countries is commonly restricted by the availability of bank credit. This is because of limited financing and also the price mechanism is not allowed to operate smoothly. According to empirical study done by Greene and Villanueva (1991) using the double logarithmic form of OLS (Ordinary Least Square), they investigated the determinants of private investment between 1975 and 2005. The study concluded that both credit and foreign exchange had positive effects on private investments, affirming the result in most empirical studies where an increase in the real credit to private sector encourages private investment. A negative effect of foreign exchange rate depreciation was also found to crowd out private investment (Greene and Villanueva, 1991).

Menjo and Kotut (2012) studied the impact of fiscal policy on private investment and GDP growth in Kenya. The study employed a time series data from 1973 to 2009. The method of two stage Instrumental variable estimation was employed to perform regression analysis. The results showed that fiscal policy impacts on private investment and private investment plays a major role in the determination of the economic growth in Kenya. The recommendation from the study was that government spending be re-examined so as to eventually make it complementary to investment, more credit channeled to the private sector, and putting in place policies to curb increasing public debt and budget deficit.

Babu *et al.* (2015) examined the effect of private investment on GDP growth in East Africa economies during the period 1990-2010 using OLS technique. The findings reveal that private investment has a positive effect on growth and concluded that investment in an economy leads to increased capital spending as it involves construction of industries, buying new machines, investing in skills and education increases labour productivity.

Asante (2000) investigated the determinants of private investment in Ghana using panel data. The findings showed that macroeconomic instability was a major obstacle in smoothing the path of private investment. They also proved that both private and public investment were complementary and suggested that the government should develop infrastructural based economy to boost private sector. Aschauer (1989) concluded that the positive effect of public investment towards private investment can be observed by the public capital hypothesis and the study provided empirical evidence in favor of this hypothesis in United States of America.

3.1. Theoretical Framework

The theory of flexible accelerator has been developed in various forms by Chenery (1952) and Koyck (1954). The approach by Koyck (1954) was chosen for this study since it is based on the assumption that investment by firms is a fraction of the difference between the actual level of capital and the desired level of capital hence it is aligned to Jorgenson's idea on the flexible accelerator. The Koyck (1954) lag model assumes that the firm's investment level in each period is a fraction $(1-\lambda)$ of the gap between its existing level of capital and its targeted level.

This theory assumes that the actual capital stock depends on previous output levels with weights reducing geometrically. It can therefore be illustrated as follows:

$$K_t = v(1-\lambda)\left(Y_t + \lambda Y_{t-1} + \lambda^2 Y_{t-2} + \cdots \lambda^n Y_{t-1}\right) \quad (2.3)$$

Where, $0 < \lambda < 1$. If there is no change in income and it is equal to $\bar{Y}$ the expected volume of output also remains unchanged, then

$$\bar{K} = v\,(1-\lambda)\,(\bar{Y} + \lambda\,\bar{Y} + \lambda^2\,\bar{Y} + \ldots\ldots\ldots\ldots \lambda^n \bar{Y})$$

$$= v(1-\lambda)\bar{Y}(1+\lambda+\lambda^2+\ldots\ldots\ldots+\lambda^n) \quad (2.4)$$

Where $(1+\lambda+\lambda^2+\ldots\ldots\ldots+\lambda^n) = 1/(1-\lambda)$ are the weights in geometric series and equation (2.5) becomes:

$$\bar{K} = v\,\bar{Y}\,(1-\lambda)^*\ 1/(1-\lambda)$$

Given that $\bar{K} = vY$ and if equation (2.5) is valid, then K_{t-1} is also true. Therefore we can write equation (2.6) as

$$K_{t-1} = v\,(1-\lambda)\,(Y_{t-1} + \lambda^2\,Y_{t-2} + \lambda^3\,Y_{t-3} + \ldots\ldots\ldots\ldots\ldots \lambda^n\,Y_{t,n})$$

Multiplying by λ we have

$$\lambda K_{t-1} = v\,(1-\lambda)\,(\lambda\,Y_{t-1} + \lambda^2\,Y_{t-2} + \lambda^3\,Y_{t-3} + \ldots\ldots \lambda^{n+1}\,Y_{t,n-1} \quad (2.7)$$

Subtracting equation (2.7) from (2.5) we get

$$K_t - \lambda\,K_{t-1} = v\,(1-\lambda)\,(Y_t + \lambda^{n+1}\,Y_{t,n-1}).$$

Since the term λ^{n+1} tends to zero, the above equation becomes

$$K_t - \lambda\,K_{t-1} = (1-\lambda)\,v\,Y_t$$

$$K_t = (1-\lambda)vy_t + \lambda\,K_{t-1} \quad (2.8)$$

This process of rewriting equation (2.5) as equation (2.8) is called the Koyck transformation. Net investment is the change in the stock of capital, $K_t - K_{t-1}$. Therefore we subtract K_{t-1} from both sides of the equation to get the expression of net investment

$$K_t - K_{t-1} = (1-\lambda)\,v\,Y_t + \lambda\,K_{t-1} - K_{t-1}$$

$$I_{n,t} = (1-\lambda)\,v\,Y_t + K_{t-1}(\lambda-1)$$

$$I_{n,t} = (1-\lambda)vY_t - (1-\lambda)\,K_{t-1} \quad (2.9)$$

The net investment $(K_t - K_{t-1})$ is called the distributed lag accelerator which is inversely related to the capital stock of the previous period and is positively related to output level. To convert net investment to gross investment we add depreciation (D_t) to both sides of equation (2.9) to get,

$$I_{n,t} + D_t = (1-\lambda)v\,Y_t - (1-\lambda)\,K_{t-1} + D_t \quad (2.10)$$

Depreciation is assumed to be proportional to last year's capital stock and is estimated by $D_t = \delta K_{t-1}$. By adding this to equation (2.10), gross investment $(I_{g,t})$ is:

$$I_{g,t} = (1-\lambda)\,v\,Y_t - (1-\lambda)\,K_{t-1} + \delta K_{t-1}$$

$$= (1-\lambda) v Y_t - [(1-\lambda) + \delta] K_{t-1}$$

$$I_{g,t}=(1-\lambda)vY_t-(1-\lambda\delta)K_{t-1} \quad (2.11)$$

Equation (2.11) represents the final flexible accelerator principle. It represents that net investment is some fraction of the gap between planned and actual capital stock in the previous period. The coefficient (1-λ) tells us how rapidly the adjustment takes place. If λ=0, then adjustment takes place in the unit period.

4. RESEARCH METHODOLOGY

The study used historical research design as it seeks to establish the effect of budget deficit on private investment in EAC over the period 1981-2015.

The panel unit root test was carried out to establish the stationarity of a data series. This test is necessary because failure to do this may lead to generation of spurious results. A panel unit root test for panel data developed by Levin *et al.* (2002) was employed in the study since it requires that the ratio of the number of panels to time periods tend to zero asymptotically and it is suitable for data sets with small number of panels like in this study.

The null hypothesis is that each character time series contains a unit root against the alternative. The model is specified as;

$$\Delta Y_t = \mu_i + \rho Y_{t-1} + \sum_{l=1}^{pi} \theta_{iL} \Delta Y_{it-L} + \alpha_{mi} d_{mt} + \varepsilon_{it} \qquad m=1, 2, 3 \qquad (4.1)$$

Panel co-integration test was applied out to check if there exists a long run or short run relationship between private investment and the explanatory variables. Following Pedroni (1999) panel co-integration test was applied on the model. The Pedroni (1999) cointegration test was used in this study since it allows for considerable heterogeneity among the individual members of the panel in the short-run while in the long-run information is selectively pooled across the panel, Pedroni (1999). First, the regression residuals from the hypothesized co-integrating regression were computed as follows:

$$Y_{i,t} = \alpha_i + \delta_i + \beta_{1i} X_{1i,t} + B_{2i} X_{2i,t} + \cdots + \beta_{Mi} X_{Mi,t} + \varepsilon_{i,t} \ldots \quad t=1,\ldots,T: I=1,\ldots,N \quad (4.2)$$

The Hausman (1978) test was applied to underpin the application of the panel fixed or random effects model in this analysis. This statistical test was generally used for deciding between applying a fixed or random effects model. The Hausman test (H) was estimated by the following equation:

$$H = (\beta_{FE} - \beta_{RE}) * INVERSE[V_{FE} - V_{RE}] * (\beta_{FE} - \beta_{RE}) \quad (4.3)$$

4.1. Empirical Model Specification

The neoclassical flexible accelerator model has been widely applied in empirical tests of investment behavior by Jorgeson (1967) and Clark (1917). However, it has generally been difficult to test this model in developing countries, because the key assumptions such as perfect capital markets and enormous role of government in capital formation in these countries makes the model inappropriate. Furthermore, data for some variables such as capital stock and real wages are inadequate in some countries.

A more general form of the private investment model modified specifically for this study is:

$$PI_{i,t} = \alpha_i + \beta_i X_{i,t} + v_i + \varepsilon_{i,t} \quad (4.4)$$

Thus, a private investment model can be specified in functional form as:

$$PI = f(OPN, CRP, FD, PBI, RGDPPC) \quad (4.5)$$

where,

PI = Private investment

OPN = Openness of the economy (Intra-EAC imports + exports/GDP)

CRP = Credit to private sector

FD = Fiscal deficit

PBI = Public investment

$RGDPPC$ =Real Gross Domestic Product Per Capita

Post-estimation panel diagnostic tests were carried out in this study before estimating the models in equation (4.4). These tests include: cross sectional dependence, autocorrelation and test for heteroscedasticity.

5. RESULTS AND FINDINGS

5.1. Panel Unit Root Test

Panel unit root test is a necessary step prior to estimation of the model in the study so as to determine the order of integration of the variables. This is because failure to do so may lead to generation of spurious regression results and inconsistent estimates hence meaningless inferences. Therefore the study employed (Levin *et al*., 2002) method since it is suitable for data sets with small number of panels as is the case for this study.

Table-5.1. Unit Root Test Results using Levin-Lin-Chu

Variables	LLC test at level	LLC P-value at Level	LLC test at First difference	LLC P-value at first difference	Order of integration
Ln Pi	-4.6867 -1.0833	0.1393	-9.2004 -6.0523	0.0000	I(1)
Ln Fd	-4.0252 -0.4673	0.3202	-9.4246 -6.0836	0.0000	I(1)

Source: Author generated (2016)

The results from Table 5.1 reveal that all the variables in the study except the domestic credit to private sector were non-stationary at level. The variables were then differenced once to make them stationary, meaning that the variables are integrated of order one.

5.2. Cointegration Test

Having conducted the panel unit root test and established that the series are non stationary that is I(1) except the domestic credit to private investment, the study then tested whether there exist long-run or short run relationship between the variables. Therefore cointegration test was carried out using (Pedroni, 1999) cointegration test so as to establish whether two or more non-stationary variables move together in the long-run. The findings are presented in Table 5.2 below.

Table-5.2. Cointegration Test Results

Within dimension		Between dimension	
Test statistics		Test statistics	
Panel v-statistics	0.4525	Group rho-statistic	-0.2286
Panel rho-statistics	-0.8631	Group P-statistic	-3.3768
Panel PP-statistics	-3.169	Group ADF statistic	-4.135
Panel ADF statistics	-3.487		

(Significance level 5% Source: Author (2016)

From the results in the table, except the variance ratio statistic test, the results of the within-group test and the between-group tests generated a negative sign. In conclusion, co integration findings showed that all the six test statistics reject the null hypothesis at 5% level of significance. Hence it is established that long-run relationship exists between private investment and explanatory variables in the study for the panel of East African Community countries.

Both the PP (-3.327) and ADF (-3.487) statistics shows that the statistic values are higher than the critical value except the panel v-statistics. The Pedroni (1999) cointegration test results therefore indicate that there is a long run relationship between private investment and explanatory variables.

The Hausman (1978) test results, the p-value 0.41 which is more than 0.05 and therefore the study accepts the null hypothesis and concludes that the country specific effects are uncorrelated with the regressors and hence we choose the RE model.

5.3. Regression Analysis

Table-5.3. Regression Results of Budget deficit and Private Investment in EAC

Variable	Coefficient	Std .Error	Z Statistic	P Value
Ln Fd	-0.1801715	0.0532198	-3.39	0.001
Ln Opn	0.2912602	0.0248928	11.70	0.000
Ln Crps	0.2687497	0.0228642	11.75	0.000
Ln Pub	-0.3365829	0.0840969	-4.00	0.000
Ln Rgdppc	0.2459337	0.0297878	8.26	0.000
Const	0.129406	0.0411682	3.14	0.002
Adjusted R^2 =0.8164				
Breusch Pagan LM test of Cross sectional dependence			$Chi^2(10) = 8.614$ p-value= 0.3273	
Modified Wald test for group wise heteroscedasticity			$Chi^2(10) = 5.816$ p-value= 0.3402	
Wooldridge Test for Autocorrelation			p-value= 0.5931	

Source: Author (2016)

The results of the estimated model show that the sign of the coefficient of fiscal deficit is negative (-0.1802) and statistically significant at 1 percent level. These results conform to the a priori expectations that lower budget deficits lead to higher levels of private investment. Therefore a 1 percent increase in fiscal deficit leads to 0.1802 percent decrease in private investment. This is an indication that fiscal deficit crowds out private investment in the region with a consequence of impeding economic growth.

These results are consistent with the findings by Asogwa (2013) and Isah (2012) who also found that budget deficits crowds out private investment. The crowding out effect of fiscal deficit on private investment in EAC region may be contributed by the government policies regarding the financing of the deficit. These deficits are mainly financed through sale of bonds in the stock exchange market which decreases the loanable funds available for private investment due to the increase in lending rates. This leads to decline in private investment due to inefficient allocation of resources and therefore low economic growth in the region. The high levels of fiscal deficits can lead to increase in the level and volatility of inflation especially when there is lack of independence of the Central Bank

since the government may resort to more printing of money. This therefore may lead to significant decline in the level of private investment. Large fiscal deficit also signifies macroeconomic instability and therefore private investors may not be willing to carry out huge investments in the region.

The large fiscal deficit may also be as a result of non-developmental expenditure due to servicing the existing debts in the EAC countries. According to Ram (1986) when the size of public expenditure is large, it will impede the growth of an economy since it reduces the efficiency of the private sector. When the government finances its deficit through borrowing from the domestic financial institutions, it retards the growth of the private sectors in the region which indicates the presence of crowding out effect.

The regression results show a negative significant relationship between public investment and private investment with the coefficient being (-0.3366). This implies that 1 percent increase in public investment leads to 0.3366 percent decline in private investment. The existing empirical findings give conflicting results on the effect of government investment on private investment. However, the findings of this study are consistent with the findings of Erenburg (1995) and Wai and Wong (1982).

The real GDP per capita shows a positive effect on private investment and it is statistically significant at 1percent. It has a coefficient of (0.2459) which implies that an improvement in the real GDP per capita by 1 percent may lead to an increase in private investment by 0.2459 percent. The results obtained in this study are similar to those of Sakr (1993) as well as those of Greene and Villanueva (1991) who found a positive relationship between GDP per capita growth and private investment.

The value of the adjusted R^2 is (0.8164) statistically significant indicating that the model had a good fit. This means that 81.64 percent of the variations of the dependent variable are explained by the variations in the explanatory variables.

5.4 Post Estimation Diagnostic Tests

Cross-sectional dependence refers to interaction between cross-sectional units and this can lead to efficiency loss for least square estimators. This test was done using the Breusch Pagan LM test of independence. From the results, the p-value is 0.3273 which is greater than 0.05, as a result the study accepts null hypothesis meaning cross-sectional dependence is not a problem in the study.

Test for heteroscedasticity was carried out in the study so as to establish whether the error terms exhibit constant variance across observations or not. The study employed the Modified Wald test for GroupWise Heteroscedasticity. From the results, the p-value is (0.340) which is greater than 0.05 and therefore heteroscedasticity is not present. Serial correlation test was carried out so as to establish whether the error terms of different time periods are correlated. The Wooldridge (2006) test was used in this study. From the results, (0.5931) which is greater than 0.05 and therefore the study accepts null hypothesis and concludes autocorrelation is not a problem.

5.5Error Correction Model

Co integration test was conducted using Pedroni (1999) and it was established that there was evidence of cointegration.

Table-5.4. ECM RESULT

Variable	Coeff	Std err	Z	p>/z/
$\Delta ln\ Fd$	-0.1406437	0.0242067	-5.81	0.000
ECT_{t-1}	-0.3355685	0.0839332	-4.00	0.000
Constant	0.5389554	0.2163021	2.49	0.013
Adjusted R^2 = 0.6083				

Source: Author (2016)

The short-run results further confirm that fiscal deficit crowds-out private investment in the EAC. The coefficient of fiscal deficit is (-0.141) and it is significant at 1 percent. This implies that a 1 percent increase in fiscal deficit will lead to a decrease in private investment in the region by 0.141 percent.

6. SUMMARY AND RECOMMENDATIONS

There was a negative and significant effect of fiscal deficit on private investment in the region. This shows that budget deficits retard the growth of private sector investment in the region since most funds are diverted to servicing of recurrent and long-term debts by the respective governments. These funds could otherwise be reallocated to the private sector so as to boost its investments which has been viewed as an engine of growth.

There was a negative and significant effect of fiscal deficit on private investment in the EAC region. The reason for this negative effect of fiscal deficit may be because the respective governments mainly finance their budget deficits though borrowing from the domestic banks which are the sole lenders to the private investors. This therefore reduces the liquidity of these banks hence may be unable to lend as much as is required to undertake private investment in the region.

Given that public investment crowds-out private investment in the EAC, then for the region to attain high levels of private investment there is need for respective EAC member governments to invest in infrastructure and this may increase the productivity of private sector capital. Therefore the EAC region countries should encourage both private and public investment such that the investments undertaken by the public sector are those that have positive externalities such as infrastructural development. This can be done through harmonization of regulatory framework so as to come up with a common investment platform that promotes both public and private investment.

From the regression results, it was evident that fiscal deficit negatively impacts on private investment. Since this deficit mainly increases due to the fact that most of the EAC countries are heavily indebted, it therefore implies that these countries should adopt debt reduction strategies so as to improve the state of fiscal deficit and hence boost private investment and promote economic growth in the region. The EAC should also formulate fiscal policies that favour private sector investment by discouraging high levels of government expenditure. The domestic private investors should be given incentives such as tax holidays and import duties on equipment and machinery required to start a business so as to reduce the cost of business and increase productivity.

The EAC regulatory body should devise methods of encouraging the financial institutions within the region to channel credit facilities to the private investors so as to encourage domestic investment. The lending rates should also be regulated by the EAC central authority to enable easy access to loanable funds by prospective investors. Given the low levels of savings in the region, the citizens should be encouraged to save more in the banks through increasing the interest rate on savings thus making accessible the loans for investment purposes. Therefore the respective governments of EAC should put in place measures to ensure that potential private investment can easily access credit to undertake investments in the region.

6.1. Areas for Further Research

This study has focused on the effects of fiscal deficit on private investment in the EAC region but the effect at country level has not been examined. Therefore there is need for future researchers to focus on the effects of budget deficit on private investment individual country level so as to provide a platform for comparison of the findings.

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