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FISCAL DEFICIT AND ECONOMIC GROWTH IN THE GAMBIA

Emmanuel Ating Onwioduokit, Godwin E. Bassey

Department of Economics, University of Uyo, Akwa Ibom State, Nigeria

ABSTRACT

The key objective of this paper is to empirically ascertain whether fiscal deficit enhance or retard economic growth in the Gambia between the period 1980 and 2009. The empirical results obtained from the estimation exercise are fairly robust and satisfactory, in that the variables conformed largely to a priori expectation in terms of statistical significance. The empirical results show that fiscal deficit affects the real economic growth positively and significantly with a lag of one year. The sign of the parameter estimate conforms to the presumptive expectation, given that the fiscal deficit in the Gambia was essentially used in financing economic and social infrastructure during the study period. Thus the results support the Keynesian assertion that fiscal deficits have positive impacts on economic growth.

Keywords: Fiscal Deficit, Economic Growth, The Gambia

INTRODUCTION

The impact of fiscal deficits on economic output has been the subject of extensive research over the past eight decades. The debate on the issue is far from settled. However three unique views on the debate can be gleaned from the literature. The Keynesians unequivocally advocate fiscal deficit spending by government believing that it has positive effect on economic growth, while the neoclassical argue that fiscal deficit is detrimental to economic growth. The Ricardian however, view the impact of deficits financing as being neutral to economic growth in the long run.

The conventional wisdom that deficit is bad for growth is based on the neoclassical theory of output and employment, which has two variants. The extreme version assumes the economy to be continuously at the level of output corresponding to full employment. An increase in government spending financed by borrowing leads to a rise in interest rates; higher interest rates lower private investment, thereby lowering output growth. The moderate version of the neoclassical theory (Blinder and Solow 1973) allows that unemployment may exist in the short run so that fiscal policy, specifically budget deficits, may have a positive impact on output. An increase in government expenditure, or a decrease in the tax rate, stimulates spending, output, and employment. However, once full employment has been achieved, the impact of continued government deficit spending becomes inflationary.

From a policy perspective, both variants of neoclassical theory imply that higher investment, output, and employment and lower interest rates and prices over the long run can be obtained only by lowering the budget deficit. The carefully orchestrated fiscal austerity as the principal means to increase long-run economic growth, by the authorities of diverse political persuasions, is rooted in this fundamental theoretical perspective. Yet, empirical reality has not substantiated the neoclassical perspective. Numerous studies including (Taylor 1985) have shown that the effect of budget deficits on growth is ambiguous: deficits can lower or raise output growth.

What is not in dispute however, is the fact that the quality and direction of expenditure that the government applies the deficit substantially determine the outcome of fiscal deficit on economic growth. Government spending can be divided into two categories: consumption spending (expenditure on goods and services) and public investment spending (expenditures on infrastructure, education, public health, research and development, and other expenditure that are conducive to raising business productivity). A number of empirical studies including Onwioduokit (2005) have found that a rise in public investment significantly reduces business costs and improves business profitability, thereby raising the long-run growth rate of the economy. Thus as a rule, where deficits are applied in a growth enhancing sectors including investment in infrastructure, the outcome has been found to be positive, while where deficits are deployed in supporting consumption, the impact on growth has been found to be negative. The other sticking point in the debate is the need to carry out case by case study on the deficit- growth nexus.

Taylor (1985) presented a classical growth cycles (CGC) model to demonstrate that the impact of budget deficits is far more complex than is generally predicted. The CGC model starts with the assumption that growth in output and employment is a persistent feature of the economy, in the short run and the long run. It assumes that investment decisions, rooted in profitability considerations and carried out in an uncertain world, are responsible for growth. This view contrasts with the standard view that growth is a long-run phenomenon resulting from exogenous changes in population and technology. Further, in a fundamentally uncertain world, there is no inherent reason why planned investment spending should match available savings and the mismatch is reflected in the demand for bank credit. Hence, the money supply is not under the total control of the central bank. If banks' profit expectations are the same as those of firms, banks will automatically extend to firms the credit they need, and the money supply will expand endogenously. The model also assumes that unemployment and excess capacity are recurrent features of the economy over the course of business cycles; however, structural unemployment (reflected in the relatively low employment rates of certain strata of the population) persists over the long run when productive capacity is utilized at the normal level. Finally, the model embedded a social accounting matrix with fully articulated stocks and flows.

Barro (1989) contended that the Ricardian results depended on "full employment", which definitely does not hold in Keynesian models. In a model Keynesian investigation, if every person thinks that a fiscal deficit makes them richer, the resulting increase of aggregate demand increases output and employment and in so doing essentially makes people better off. This outcome is valid if the economy commences in a state of "involuntary unemployment". There could even be several rational expectations equilibria, where the adjustment in actual wealth equals the change in perceived wealth. This outcome does not necessarily signify that fiscal deficits boost aggregate demand and wealth in Keynesian models. He further opined that if fiscal deficits made people feel poorer, the resulting contractions in output and employment would have made them poorer. Similarly, if we had started with the Ricardian notion that fiscal deficits did not affect wealth, the Keynesian results would have verified that speculation. The peculiar feature of the standard Keynesian model is that anything that makes people feel richer actually makes them better off, notwithstanding that perception and reality might not correspond one on one. This remark raises uncertainties about the formulation of Keynesian models, but says little about the effects of fiscal deficits.

Ball, et al. (1995) in their contribution maintained that in the long run an economy's output is determined by its productive capacity, which is

fundamentally determined by its stock of capital. When deficits shrink investment the capital stock grows more slowly than it otherwise would. Over a year, or two, this crowding out of investment has a negligible effect on the capital stock. But if deficits persist for a decade or more, they can significantly decrease the economy's capacity to produce goods and services. Furthermore, fiscal deficits by reducing national saving must reduce either investment or net exports. As a result, they must lead to some combination of a lesser capital stock and greater foreign ownership of domestic assets. If fiscal deficits crowd out capital, national income falls because a smaller fraction is produced; if fiscal deficits lead to trade deficits, just as much is produced, but less of the income from production accrues to domestic residents.

Taking the matter a step further, Devereux and Love (1995) investigated the impact of government deficit spending in a two-sector endogenous growth model developed by King and Rebelo (1990), they extended the model to accommodate an endogenous consumption leisure decision. The authors concluded that there is a positive relationship between lump sum financed government deficit spending and growth rates. They explained that, as in many "endogenous growth" models, the rate of growth are positively related to the rate of return on human and physical capital accumulation. The return on human capital accumulation is higher the greater the fraction of time spent working, in either sector. A higher rate of government deficit spending generates negative wealth effects, leading to a reduction in leisure and a rise in hours worked. Consequently, the rate of growth rises. Although government spending raises the long-run growth rate; it reduces welfare since government deficit spending is a less than perfect substitute for private spending.

Similarly, Yavas (1998) showed that an increase in size of fiscal deficit will increase the steady-state level of output if the economy is at low steady-state (i.e. underdeveloped), and will decrease the steady-state level of output if the economy is at a high steady-state (i.e., developed). He argued that in the underdeveloped countries a significant portion of the deficits is directed to the building of the infrastructure of the economy and this type of expenditure will have a stimulating effect on private sector production. In contrast, the developed countries already have most of their infrastructure built and a major part of their deficit spending is on welfare programmes and various social services. Accordingly, the positive effect of spending on these programmes on private output will not be as great as that of expenditures on infrastructure.

Ahmed and Miller (2000) examined the effects of disaggregated government expenditure on investment using fixed- and random-effect methods. Using the government budget constraint, they investigated the effects of tax- and debt-financed expenditure for the full sample, and for sub-samples of developed and developing countries. The authors reported that, tax-financed government expenditure crowds out more investment than debt financed expenditure. Expenditure on social security and welfare reduces investment in all samples while expenditure on transport and communication induces private investment in developing countries.

Heitger (2001) viewed increases in size of government deficit arising from increased consumption as constraints on growth, while increases in size that arise from government investment should be positive in their effect on growth. His central hypothesis is that government expenditures on core public goods including the rule of law, internal and external security have a positive impact on economic growth, but this positive impact of government tends to decline or even reverse if government further increases expenditures in a way that it also provides private goods. The author stressed that two important reasons for a negative impact of excessive government spending on economic growth are the fact that the necessary taxes reduce the incentives to work, to invest and to innovate, and the fact that

government crowds out more efficient private suppliers.

Empirical findings on the relationship between fiscal deficits and economic growth have been uneven. Guess and Koford (1984) used the Granger causality test to find the causal relationship between fiscal deficits and inflation, gross national product, and private investment using annual data for seventeen OECD countries for the period 1949 to 1981. They concluded that fiscal deficits do not cause changes in these variables. Kormendi and Meguire (1985) conducted a cross-sectional study across forty-seven countries investigating the effects of monetary variance, risk, government spending, inflation and trade openness on growth. Specifically, with respect to government deficit spending, they found that the mean growth rate of the ratio of government deficit spending to output has a positive effect on GDP growth

Grier and Tullock (1989) repeated the work of Kormendi and Meguire (1985) on a larger sample of one hundred and thirteen (133) countries from which they constructed a pooled cross-section/time series data set. They tested for regularities in the data rather than robustness. They found that both the inflation rate and government deficit spending as a proportion of GDP were negatively related to growth. On the larger data set they found, contrary to Kormendi and Meguire, that the mean growth rate of the ratio of government deficit spending to output had a negative and significant impact on GDP growth.

Barro (1991) examined ninety eight (98) countries during the period 1960—1985 and reported a negative relationship between the output growth rate and the share of government consumption expenditures. He noted that growth rates are positively related to measures of political stability and inversely related to a proxy for market distortions. He found measures of political instability inversely related to growth and investment. He further averred that the first source of economic growth, human capital, can be measured in terms of education level and health. He concluded that the growth rate of real per capita GDP is positively related to initial human capital (proxied by 1960 school-enrolment rates). He explained that theories in which the initial values of human capital and per capita GDP matter for subsequent growth rates also suggest relations with physical investment and fertility. The author also suggested that countries with higher human capital also have lower fertility rates and higher ratios of investment to GDP. He noted that in endogenous growth models of Rebelo (1990) and Barro (1990), per capita growth and the investment ratio tend to move together. He stated that growth is inversely related to the share of government consumption in GDP, but insignificantly related to the share of public investment. Finally he submitted that when the share of public investment was considered; he found a positive but statistically insignificant relationship between public investment and the growth rate.

Easterly et al (1992) reported a consistent negative relationship between growth and fiscal deficits. Fischer (1993) supported Easterly et al. (1992) findings when they noted that large fiscal deficits and growth are negatively related. Among other variables such as inflation and distorted foreign exchange markets, he emphasized the importance of a stable and sustainable fiscal policy, to achieve a stable macroeconomic framework.

Easterly and Schmidt-Hebbel (1994) in their contribution to the debate attempted a comprehensive enquiry into the direct and indirect effects of deficits on macroeconomic variables for selected developing countries. An extensive discussion was undertaken on the measurement issues of fiscal deficits. The authors recognised a number of measurements of fiscal deficits which further confirmed the findings of researches on the subject. Series of techniques including correlation, percentages, frequency tables, regression analysis were explored. The graphics used gave deep insight into the trend and composition of deficits.

The authors principally argued that for efficient public investment, particularly in social or physical infrastructure and increased revenue generation through taxes, as this would encourage economic growth. The analysis also demonstrated that fiscal adjustments were important for improved economic performance. They concluded that the relationship between fiscal deficits and macroeconomic variables is complex and differs from country to country. In addition, the means of financing deficits contributed significantly to the impact of the deficits on the domestic economy.

Al-Khedair (1996) studied the relationship between the budget deficit and economic growth in the seven major industrial countries (G-7). The data utilized covered the period 1964 to 1993. The variable included in model were, budget deficit, the money supply, nominal exchange rate, and foreign direct investment. He found that the budget deficit has a significant positive impact on economic growth in France, Germany, and Italy. Overall results concluded that the budget deficit seems to positively and significantly affect economic growth in all the seven major industrial countries.

Kelly (1997) investigated the effects of public expenditure on economic growth among seventy three (73) nations (including developing and developed nations) over the period 1970- 89. This study used OLS to estimate economic growth as a function of various public expenditures including social expenditure, educational expenditure and other expenditures, and certain variables, which have been prominent in the empirical growth literature such as private investment, and the trade openness variable. The study found that public investment, and particularly housing expenditure, registered a uniformly positive and frequently significant relationship with growth. Although the results did not support a robust relationship between public investment and growth, it nevertheless conflicted with the crowding out thesis that dominated the theoretical literature. Social security expenditures were positively related to growth in each specification of the model and significantly so in several versions. The results are important because they suggested that nations may pursue social welfare and growth simultaneously. The results indicated that health expenditures were negatively and sometimes significantly related to growth, while those for education vary in sign and significance.

Jenkins (1997) motivated by the persistent deficits in Zimbabwe, examined public sector deficits and macroeconomic stability in Zimbabwe. The author identified an intense debt problem, drought and terms of trade shocks coupled with the government's unwillingness to engage in fiscal adjustment as fundamental macroeconomic setbacks in Zimbabwe. Findings of the study showed that uncertainty caused by the growing public-sector debt reduced private investment and further resulted in a decline in growth. The macroeconomic model explored by the researcher showed that the variable with greatest influence on overall growth was agricultural output. However, the budget deficit had an unambiguously negative impact on exports. It also reduced private welfare, worsened income distribution and reduced employment. The author concluded that the growth of government resulted in a drain on the economy, rather than facilitate economic growth and development.

Phillips (1997) critically analyzed the Nigerian fiscal policy between 1960 and 1997 with a view to identifying workable ways for the effective implementation of Vision 2010. He observed that fiscal deficits have been an abiding feature in Nigeria for decades. He noted that with the exception of the period 1971 to 1974, and 1979, there has been an overall deficit in the federal Government budgets each year since 1960. The chronic fiscal deficits and their financing largely by borrowing, he asserted, resulted in excessive money supply, worsened inflationary pressures, and complicated macroeconomic instability, resulting in negative impact on external balance, investment, employment and growth. He

contended however that fiscal policy could be an effective tool for moving Nigeria towards the desired state in 2010 only if it is substantially cured of the chronic budget deficit syndrome it has suffered for decades.

Anyanwu (1998) deviated markedly from past studies that focused more on the effects of deficits and concentrated on the impact of deficits financing. He applied regression analysis to pooled cross-section and time series data for Nigeria, Ghana and the Gambia. The results did not reveal a significant positive association between overall fiscal deficits (and its foreign financing) and domestic nominal deposit interest rates. However, the author reported a significant positive relationship between domestic financing of the fiscal deficits and domestic nominal deposit rates. He concluded that the concern of economists in the Sub-region should shift from the deficits itself to the manner of financing the deficit.

Mugume and Obwona (1998), concerned about the role of fiscal deficits in the reform programme in Uganda, investigated public sector deficits and macroeconomic performance in Uganda. The study set out to provide a more systematic modelling framework to explain the interrelationships between fiscal deficits, current account deficits and real exchange rate depreciation. Another focus of the research was to analyse the behaviour of important aggregate variables such as price level, current account balance, external sector and money stock as influenced directly and indirectly by changes in fiscal deficits. A small macroeconomic model that captured the interactions between exports, import, real exchange rate, government expenditure, price, and money supply was specified. The empirical strategy attempted to build an integrated model linking the public sector with the financial market and then generate implications for the conduct of fiscal policy. A distinct finding of the estimations was the observed interaction of the public sector and monetary sector.

Adenikinju and Olofin (2000) focused on the role of economic policy in the growth performance of the manufacturing sectors in African countries. They utilized panel data for seventeen African countries over the period 1976 to 1993. Their econometric evidence indicated that government policies aimed at encouraging foreign direct investment, enhancing the external competitiveness of the economy, and maintaining macroeconomic balance have significant effects on manufacturing growth performance in Africa.

Prunera (2000) showed a possible mechanism through which deficit may hinder human capital accumulation and therefore economic growth. Taking deficit as an indicator for the presence of disequilibrium and inefficiencies in a country, the author highlighted deficit as a factor that could be reducing the effectiveness of time devoted to education and training. Following a simple growth model and allowing for slight changes in the law of human capital accumulation, the author noted that deficit might sharply reduce human capital accumulation. On the other hand, a deficit reduction carried on for a long time, taking that reduction as a more efficient management of the economy, may prove useful in inducing endogenous growth. He submitted that empirical evidence for a sample of countries seems to support the theoretical assumptions of an inverse relationship between deficit and human capital accumulation as well as the presence of a strongly negative association between the quantity of deficit in the economy and the rate of growth. However, the author averred that there was a certain role for budget deficit in economic growth.

Ahmed and Miller (2000) examined the effects of disaggregated government expenditure on investment using OLS, fixed-effect, and random effect methods. Their empirical results produced several conclusions. First, the openness variable has a significantly positive effect on investment only for developing countries. For developed countries, openness does not significantly affect investment. Second, expenditure on transportation

and communication, crowds in investment for developing countries only. Third, tax financed government expenditure, in general, crowds out investment more frequently that debt-financed government expenditure. That finding may suggest the existence of liquidity constraints within the economy. Finally, expenditure on social security and welfare crowds out investment for both tax and debt-financed increases and in both developing and developed countries. This is the only category of government expenditure that had such a consistent (negative) effect across all specifications.

In recent times as the debate on fiscal deficits and growth progressed, more elegant models and empirical strategies have been explored in the analysis of the subject. Prominent among these include, Adams and Bevan (2002), Korsu (2009) and Keho (2010). Their findings are divergent.

Adams and Bevan (2002) assessed the relationship between fiscal deficits and growth in a panel of forty five (45) developing countries. An overlapping generation's model in the tradition of Diamond (1965) that incorporated high-powered money in addition to debt and taxes was specified. The estimation strategy involved a standard fixed effect panel data estimation and bi-variate linear regression of growth on the fiscal deficits using pooled data. An important contribution of the empirical analysis was the existence of a statistically significant non-linearity in the impact of budget deficit on growth. However, this non-linearity the authors argued reflected the underlying composition of deficit financing. In effect, Adams and Bevan posited that for a given level of government spending, a shift from a balanced budget to a (small) deficit may temporarily reduce distortions especially if the distortions impact growth rather than output. Based on a consistent treatment of the government budget, the authors found evidence of a threshold effect at a level of the deficit around 1.5 percent of GDP. While there appeared to be a growth payoff to reducing deficits to level, this effect disappeared or reversed itself for further fiscal contraction. The magnitude of this payoff, but not its general character, necessarily depended on how changes in the deficit were financed (through changes in borrowing or seigniorage) and on how the change in the deficit was accommodated elsewhere in the budget. The authors also found evidence of the interactive effects between deficits and debt stock, with high debt stocks exacerbating the adverse consequences of high deficits.

Korsu (2009)'s finding supported the arguments of Jenkins (1997) and Mugume and Obwona (1998) who worked on Zimbabwe and Uganda, respectively. They argued that fiscal deficits were inimical to macroeconomic performance as a whole and advocated for fiscal restraint as a pathway to improving other sectors of the economy and welfare. Korsu (2009)'s work recognised economic growth, low and stable prices and healthy external balance as the macroeconomic policy objectives of the economy of Sierra Leone. These he argued have been hampered by the persistence of fiscal deficits following some background analysis and historical records. To provide empirical support to the background information, aggregate annual data for the period 1971 to 2005 were used in an econometric estimation. Predicated on an open economy model, equations for money supply, price level, real exchange rate and the overall balance of payments were specified. The empirical models were estimated using a 3-stage least square estimation technique. The estimated results showed that fiscal restraint improved the external sector of Sierra Leone by reducing money supply and the price level. The important contribution of Korsu's paper rested on the simulation experiments which differed from previous studies reviewed. The results pointed to the need for fiscal restraint and improved revenue generation to meet the expenditure requirements of the government.

In his contribution to the debate, Keho (2010) investigated the causal relationship between budget deficit and economic growth in seven

member countries of the West African Economic and Monetary Union (WAEMU). One specific objective was pursued which was to examine if fiscal deficits were really bad for economic growth in all countries of the WAEMU. The study employed the granger causality test developed by Toda and Yamatoto (1995). Annual time series data on real GDP growth, ratio of gross fixed capital formation and public deficit or surplus as a percentage of GDP were used. Unlike most empirical works on granger causality tests, the empirical analysis was undertaken in a multivariate form using gross fixed capital formation as a control variable. This mediating variable related meaningfully to economic growth in traditional growth models and mitigated the possibility of distorting the causality inferences due to omission of relevant variables. A striking feature of the descriptive statistics of the variables was that low levels of economic growth were associated with persistent fiscal deficits. In addition, the correlation coefficients showed that deficit and economic growth were positively related. The empirical results were mixed across countries. In three cases the author found no causality evidence between fiscal deficits and growth. Findings also indicated a two-way causality in three countries, deficits having adverse effects on growth. Overall the author argued that the results gave support to the WAEMU budgetary rule aimed at restricting the size of fiscal deficits as a prerequisite for sustainable growth and real convergence.

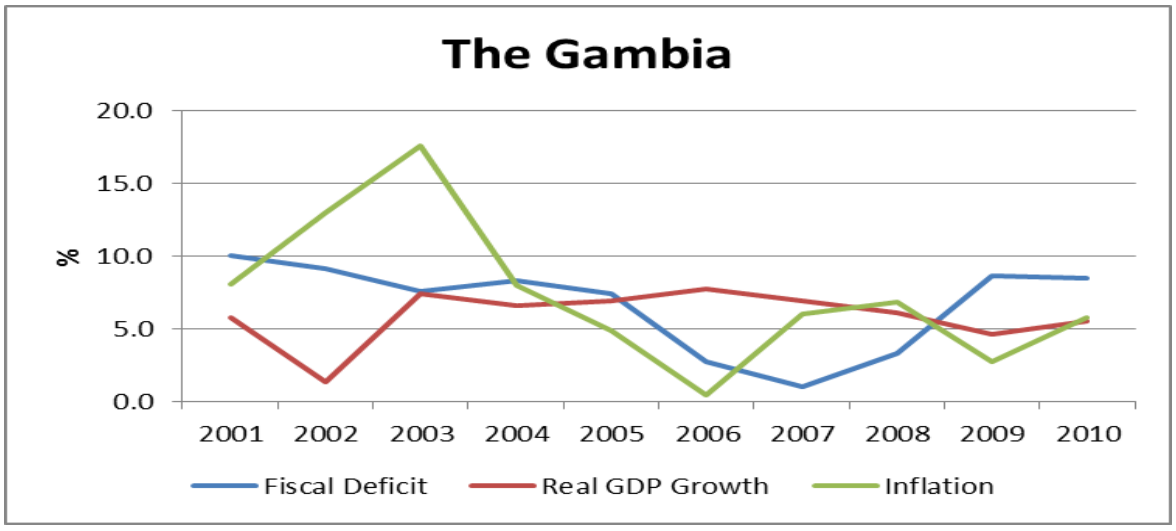
It can be concluded from the theoretical and empirical studies presented in this section that there are some similarities and differences between these studies dealing with the impact of public investment on private investment and economic growth. The key objective of this paper is to empirically ascertain whether fiscal deficit enhance or retard economic growth in the Gambia between the period 1980 and 2009. The outcome of this study is expected to contribute to the unfolding literature on the subject while serving as a guide for policy makers in the Gambia.

Stylised Facts on Fiscal Deficits, Inflation and Output in the Gambia

Domestic revenue/GDP ratio averaged 17.9 percent between 2001 and 2003. The ratio improved in the next four consecutive years (2004-2007) above 20.0 percent. The increase in revenue could principally be attributed to the commitment to fiscal transparency and accountability, and the response to the policy measures. However, between 2008 and 2010, the ratio fell marginally to an average of 18.3 percent, on account of a drop in tax revenue. While non tax revenue as a percentage of GDP increased from 1.8 percent in 2008 to 1.9 percent in 2010 this was inadequate to counterbalance the slight decline in tax revenue. Grants as a percent of GDP in 2009 registered a strong growth of 5.1 percent from a paltry 0.9 percent in 2008. This surge in grants (26 percent of total revenue) was principally due to increases in project disbursement and programme grants. Thus, total revenues (including grants) improved from 20.6 percent in 2008 to 24.6 percent in 2010.

With regards to the expenditure, total expenditure and net lending averaged 25.0 percent between 2000 and 2002.The average ratio increased to 26.1 between 2003 and 2006. In 2007 and 2008, respective ratios of 22.8 and 23.0 were registered. However considerable improvement to 27.8 percent was achieved in 2010. The quicker pace of growth stemmed mainly from increased capital spending. Within this total, there had been a shift from recurrent to capital expenditure, with the latter growing by 33.9 percent in 2010 from 24.2 percent in 2008. As can be gleaned from Figure 1, the relationship between the three variables fiscal deficit, real GDP growth and inflation exhibited a mixed trend.

Figure 1: Gambia: Fiscal Deficit, Output and Inflation



Given the more rapid growth rate of spending relative to revenue, the overall budget balance (excluding grants) worsened from a deficit of 3.3 percent of GDP in 2008 to 8.6 and 8.5 percent in 2009 and 2010, respectively. The deficit was financed from both external and domestic sources. Domestic debt as a ratio of GDP increased significantly by 26.1 percent in 2008 to 34.6 percent in 2010 as a result of Treasury Bills issued. The share of treasury bills to domestic debt widened from 79.7 percent in 2008 to 84.4 percent in 2010.

Inflation which was in double digits in 2002 and 2003 decelerated gradually over the review period to 2.7 percent in 2009 but nudged up to 5.8 percent in 2010. This was completely attributable to good harvest reinforced with a tight monetary policy stance of the Central Bank. A critical analysis of the inflation determinant (food and non-food), indicates that between 2000 and 2009, food inflation had always accounted for higher percentage contribution to CPI basket compared to non-food inflation, indicating that inflation in the Gambia could be dominated by high import content of food in the food basket.

In the last ten years (2001-2010) economic growth in the Gambia has been strong. Beginning from 2001, the real GDP growth rate had been constantly over 5.0 percent but for 2002, when a paltry 1.3 percent growth rate was achieved. The impressive growth experienced by the country was attributable to capital inflows, robust performance in tourism, telecommunication and construction.

Arising from the global economic slowdown which started in late 2007, that resulted in a decline in tourism, and in manufacturing production as well as wholesale and retail trade, the tempo of real GDP growth moderated to 5.6 and 5.0 percent in 2009 and 2010, respectively. The agricultural sector registered a growth rate of 5.5 percent compared to 3.6 percent in 2008, largely as a result of clement weather condition particularly, rains. The share of the service sector in GDP ranged between 54.6 percent in 2000 to 61.5 percent in 2009, fuelled by amplified activity in the construction, transportation and communications. The tourism sector was hard hit as the number of tourists' arrival in 2009 declined by 17.3 percent relative to 2008. Activities in the industrial sector were equally sluggish in 2010 and the share of industry to GDP whittled down to 3.5 percent from 3.8 percent in 2008.

ANALYTICAL FRAMEWORK AND RESEARCH METHODOLOGY

The analytical framework adopted for this study follows essentially the Keynesian framework. It would be recalled that in a simple Keynesian framework, desired aggregate demand relationship is specified in the goods market as:

$$Y = C + I + G + (X - M) \quad (1)$$

with the following behavioural equations:

$$C = a + bY^d, \quad b > 0$$

$$Y^d = Y - T$$

$$I = \delta + \gamma i, \quad \gamma < 0$$

$$G = \bar{G}$$

$$X = s + \sigma e, \quad \sigma > 0$$

$$M = m + \phi Y^d, \quad \phi > 0$$

Where Y is output; C, consumption; I, investment; G, government spending which is assumed to be exogenous; X, exports; M, imports; Y^d, disposable income; T, tax revenue; i, interest rate; e, exchange rate.

In equilibrium (after substituting behavioural equations into the desired aggregate demand equation (1)), output will be given by

$$\bar{Y} = \frac{A}{\theta} + \frac{1}{\theta}\left(\gamma i + \sigma e + G - (b - \phi)T\right) \quad (2)$$

Where $\theta = 1 - b + \phi, \quad A = a + \delta + s - m$

From equation (2), increasing taxes will reduce output, while increasing government spending will increase output.

But fiscal deficit (FD) is given by

$$FD = G - T \approx G - (b - \phi)T \quad (3)$$

Fiscal deficit is the excess of government expenditure over its revenue. Assuming that the government derives its total revenue from tax sources (which is quite realistic), G-T gives the deficit position of the government. Since individuals do not spend all their income, the total revenue that could be generated from consumption expenditure is $(b - \phi)T$. Thus, subtracting this from government expenditure will give approximate position of the fiscal balance.

Putting (3) into (2) gives

$$\bar{Y} = \frac{A}{\theta} + \frac{1}{\theta}\left(\gamma i + \sigma e + FD\right) \quad (4)$$

Given that the countries in the WAMZ are essentially small-open economies (without ability to influence international price developments) and for holistic treatment of the economy, the model is extended to incorporate the money sector as well as the external sector. The money market in an open economy can be represented by the following equations:

Money Demand Function: $\frac{M^D}{P} = kY + \lambda i, \quad k > 0, \ \lambda < 0$ (5)

Money Supply Function: $\frac{M^S}{P} = m_1 \frac{B}{P} + m_2 i, \quad m_1, m_2 > 0$ (6)

Equilibrium Condition: $M^D = M^S$ (7)

Where $P \equiv$ is the general price level, $B \equiv$ international reserves held by the central bank and m_1, m_2 are coefficients.

From the above money market model, the LM schedule[1] can be specified as

LM Schedule: $i = \psi \frac{B}{P} + \varphi Y, \qquad \psi < 0, \quad \varphi > 0$ (8)

Given the importance of the external sector in the countries of study, the influence of the sector is incorporated through the balance of payments schedule. The balance of payments schedule is given as

BP Schedule: $B = A_2 - \theta_0 Y + \theta_1 e + \theta_2 i, \qquad \theta_0, \theta_1, \theta_2 > 0$ (9)

Where A_2 is the aggregate of exogenous components in the net export function and $\theta_0, \theta_1, \theta_2$ are coefficients.

Putting equation (8) into (4) gives

$$Y = A_1 + \beta_1 \frac{B}{P} + \beta_2 Y + \sigma e + FD \quad (10)$$

where $\beta_1 = \frac{\psi\gamma}{\theta}$ and $\beta_2 = \frac{\phi\gamma}{\theta}$

Putting equation (9) into (10) produces

$$Y = A_1 + \frac{\beta_1}{P}\left(A_2 - \theta_0 Y + \theta_1 e + \theta_2 i\right) + \beta_2 Y + \sigma e + FD \quad (11)$$

Isolating like terms and re-arranging equation (11) gives

$$Y = C + \frac{1}{P}\left(\alpha_1 e + \alpha_2 i\right) + \alpha_3 e + \alpha_4 FD \quad (12)$$

where $1 + \beta_1\theta_0 - \beta_2 = \varphi, \quad C = \frac{A_1 + \beta_1 A_2}{\varphi}, \quad \alpha_1 = \frac{\beta_1\theta_1}{\varphi}, \quad \alpha_2 = \frac{\beta_1\theta_1}{\varphi}, \quad \alpha_3 = \frac{\sigma}{\varphi}, \quad \alpha_4 = \frac{1}{\varphi}$

Recasting the second term on the right-hand side of equation (12) in logarithmic generic term gives

$$Y = C + \lambda e + \alpha_2 i - \pi + \alpha_4 FD \quad (12B)$$

where $\pi \equiv$ the rate of inflation and $\lambda = \alpha_1 + \alpha_3$.

In equation (12B), equilibrium output is positively related to fiscal deficit.

In a time series context, output is influenced by its own past level (output dynamics) which is consistent with accelerator principle. Equation (12B) can be restated as

$$Y_t = c + \varpi Y_{t-1} + \alpha_2 i_t + \lambda e_t + \alpha_4 FD_t - \pi \quad (13)$$

Recasting (13) gives

$$y_t = c + \delta_1 i_t + \delta_2 e_t + \delta_3 FD_t + \delta_4 \pi \quad (14)$$

where $y_t = Y_t - Y_{t-1}$ which captures the change in GDP (growth rate of GDP) and $\delta_1, \delta_4 < 0$. Equation (14) is essentially an output (GDP) growth model which gives the long-run relationship between output

growth (change in output) and fiscal deficit. This relationship is positive; implying the widening of fiscal deficit will improve growth. However, some empirical studies document the negative relationship between growth and fiscal deficit, while some others establish a positive relationship as given by the simple Keynesian framework.

From the supply-side of the economy, output is a function of capital stock and labour. A simple Cob-Douglas production function generates a growth model of the form

$$y = \omega_0 + \omega_1 \Delta \ln K + \omega_2 \Delta \ln L \qquad (15)$$

where *K* refers to capital stock, *L* refers to labour force growth, Δ is a change notation and $\omega_0, \omega_1, \omega_2$ are coefficients.

Specification of the Empirical Model

In specifying the empirical model, the study relies on the theoretical framework. From both the demand and supply sides of the economy, variables such as interest rate, exchange rate, inflation, fiscal deficit, investment (change in capital stock) and labour are identified as the key variables explaining growth. However, it is appropriate to include in the empirical model those reform variables that also influence economic growth. In the Gambia, financial sector reforms have been undertaken, while trade liberalization policies have also been implemented. Hence, it is appropriate to include financial reforms variable and trade openness variable in the empirical model. The key variables in the empirical model are defined as follows:

Dependent variable

Y_{it} = $GDPG_t$ = Growth rate of real GDP

Independent variables

INV_t = Gross fixed capital formation as a ratio of GDP as a proxy for growth in capital stock.

Lab = Secondary school enrolment as a proxy for labour force.

Def_t = FD/GDP = Fiscal Deficit/GDP, excluding grants

Inf_t = Inflation rate

$Int_t = Interest\ Rate = Lending\ Rate$

M_2GDP_t = M_2/GDP ratio – measuring financial depth

Dep_t = Exchange Rate expressed as a given amount of local currency per US dollar (Depreciation/ appreciation)

OPN_t = Degree of openness of the economy, measured as $\left[\frac{Imports+Exports}{GDP}\right]$

Besides investment, labour force and fiscal deficit; other control variables included in the model are, namely, interest rate (int), exchange rate depreciation/ appreciation (dep), inflation (inf), financial deepening M2/GDP and openness index (OPN).

Interest rate has an important role in economic growth. Higher interest rates reduce the growth of consumer spending and economic growth. This is because more incentive to save in a bank rather than spend, more expensive to borrow, therefore less spending on credit and less investment; increase cost of mortgage repayments, therefore, reduce disposable income and therefore consumer spending. Consequently, an inverse relationship is expected between interest rate and economic growth.

Exchange rate development impacts on the economic growth process. On balance we expect a positive relationship between depreciation and economic growth.

Inflation is another significant variable influencing output growth rate. This variable is especially significant for the WAMZ countries, where food price and other exogenous factors including high imports of food and intermediate products play very important role. In general, very high levels of inflation may undermine economic growth. However if the inflation rate is low, stable and sustainable, it may be interpreted as an indicator of macroeconomic stability that would enhance growth. And if the economy is at equilibrium higher inflation should impact adversely on growth. Hence, we expect to get inverse relationship with output growth.

Financial deepening measured by the ratio of M_2 to GDP essentially seek to capture the role of the financial sector development in economic growth. The conventional theory predicts a positive correlation between the level of financial deepening and economic growth. In modern economic theory the role of the financial sector is seen to be catalytic to the growth of the economy. Also, the index of openness proxy by the ratio of the sum of imports plus export over GDP is expected to positively influence growth, all things being equal, the more open the economy the more access to foreign capital that is expected to increase investment and economic growth. Thus, the level of openness of the economy is expected to positively impact on economic growth.

Budget deficit is another significant variable influencing output growth rate. This variable is especially significant for such developing countries including the Gambia, where fiscal discipline plays very important role. In general very high levels of fiscal deficit may undermine economic growth. However if the budget deficit is low, stable and sustainable, it may be interpreted as an increased demand for goods and services. And if the economy is below its equilibrium on Keynesian cross, higher fiscal deficit, that is increased government expenditures, should stimulate growth. Consequently we expect to get positive relationship with output growth.

Based on the general framework provided and the foregoing variables identified, the linear growth equation is explicitly specified as follows:

$$GDPG_t = \alpha_0 + \alpha_1 INV_t + \alpha_2 Def_t + \alpha_3 inf_t + \alpha_4 int_t + \alpha_5 M2GDP_t + \alpha_6 Dep + \alpha_7 OPN_t + \alpha_8 Lab + U_t \quad \ldots.16$$

Where, $\alpha_1, \alpha_2, , \alpha_5, \alpha_6, \alpha_7, \alpha_8 > 0$ and $\alpha_3, \alpha_4 < 0$.

EMPIRICAL RESULTS

Descriptive Statistics for all Variables

Descriptive statistics are used to describe the basic features of the data in a study. They provide simple summaries about the sample and the measures. They form the basis of virtually every quantitative analysis of data. Descriptive Statistics are used to present quantitative descriptions in a manageable form. They help us to simplify large amounts of data in a sensible way. Each descriptive statistic reduces lots of data into a simpler summary. A fundamental task in many statistical analyses is to characterize the location and variability of a data set. A further characterization of the data includes skewness and kurtosis. Skewness is a measure of symmetry, or more precisely, the lack of symmetry. A distribution, or data set, is symmetric if it looks the same to the left and right of the center point. Kurtosis is a measure of whether the data are peaked or flat relative to a normal distribution.

The distribution properties of the variables for the model indicate that most of the variables are well behaved (see Table 1). Fiscal deficit for example has a mean value of -8.82, a median of -7.95 and relatively small standard deviation (5.54).

Table 1: Gambia: Descriptive Statistics

	DEF	DEP	INF	INV	LENDR	RGDPG	M2GDP	OPEN
Mean	-8.816667	7.673633	9.775000	33.22467	24.14500	3.752333	18.75600	42.18633
Median	-7.950000	5.681976	6.900000	36.54000	25.02000	3.585000	11.92000	42.94500
Maximum	-1.000000	43.94813	56.56000	55.61000	36.50000	18.04000	47.80000	52.01000
Minimum	-23.00000	-12.82154	0.190000	11.75000	14.48000	-3.510000	8.860000	29.23000
Std. Dev.	5.547543	11.62596	10.74105	12.37696	4.602662	3.835462	12.12909	7.093805
Skewness	-0.628803	1.000153	2.916793	-0.351503	-0.083534	1.306697	1.094004	-0.341789
Kurtosis	2.654468	4.666725	13.12616	2.383029	3.730866	7.953970	2.679358	1.710861
Jarque-Bera	2.126207	8.473997	170.7124	1.093589	0.702595	39.21456	6.112743	2.661448
Probability	0.345382	0.014451	0.000000	0.578802	0.703774	0.000000	0.047058	0.264286
Sum	-264.5000	230.2090	293.2500	996.7400	724.3500	112.5700	562.6800	1265.590
Sum Sq. Dev.	892.4817	3919.729	3345.735	4442.488	614.3503	426.6123	4266.328	1459.340
Observations	30	30	30	30	30	30	30	30

The probability of 0.35 for the deficit indicates that it is fairly normally distributed. Real GDP was normally distributed with a mean of 3.75, a median of 3.59 and standard deviation of 3.51. Lending rate and investment were negatively skewed with values of -0.08 and -0.35, respectively.

Analysis of the Correlation Matrix

The results of the correlation are shown in Table 2. Fiscal deficit for example is negatively correlated to real economic growth rate, inflation and the measure of openness of the economy. The relationship as indicated in the results is consistent with economic theory in the case of inflation, but inconsistent in the case of real GDP growth rate, particularly in a Keynesian sense. However, when sustainability issues are violated, it could have some negative implications on growth. Nevertheless, it should be noted that descriptive statistics merely show the direction of relationship and not causation. The strongest level of correlation (-0.671533) is between M2GDP and openness variable, followed by the rate of depreciation and inflation (0.651131) while the weakest level of correlation (0.008368) is between the rate of exchange and fiscal deficit.

Table 2: Correlation Matrix

	DEF	DEP	INF	INV	LENDR	M2GDP	OPEN	RGDPG
DEF	1.000000							
DEP	0.008368	1.000000						
INF	-0.179530	0.651131	1.000000					
INV	0.428352	-0.323423	-0.555570	1.000000				

LENDR	0.431751	0.057464	0.134879	0.481341	1.000000			
M2GDP	0.389957	-0.184990	-0.274691	0.342545	0.166330	1.000000		
OPEN	-0.285512	0.034307	0.412514	-0.502520	0.058057	-0.671533	1.000000	
RGDPG	-0.102158	-0.050961	-0.160854	-0.064879	-0.221453	0.049077	-0.266729	1.000000

However, the matrix has indicated that fiscal deficit is positively correlated with lending rate, exchange rate and investment. Overall, the results of the correlation matrix would be of information value when we embark on empirical analysis.

Unit Root Test Results

Fundamentally this study implemented both the Augmented Dickey-Fuller (ADF) and the Phillip-Perron (PP) tests for stationarity of the variables used in this study. The results are presented below.

Table 3: ADF Unit Root Test Results

VARIABLE	ADF-STATISTIC AT LEVEL	ADF-STATISTIC AT 1ST DIFFERENCE	CONCLUSION
DEF	-2.967767**	-	I(0)
DEP	-3.67322***	-	I(0)
INF	-3.679322	-3.689194***	I(1)
INV	-2.647120	-2.650145***	I(1)
LENDR	-3.679322	-3.689194***	I(1)
M2GDP	-4.309824	-4.323979***	I(1)
OPEN	-4.309824	-4.323979***	I(1)
RGDPG	-3.679322***	-	I(0)

Source: Author's Computation *** Significant at 1%, ** Significant at 5%

The results of the unit root tests (ADF) show that all the variables with the exception of (the fiscal deficit, rate of exchange and real GDP growth rate) failed the unit root test at 5.0 percent level of significance in their level form. All the variables, however, passed the test for stationarity in their first difference form (Table 3). Similar results were recorded when we applied the Phillip Person (PP) to test for the existence of unit roots in the variables. The results are reported in table 4. As indicated in the Table 4, inflation, investment, lending rate, broad money as a ratio of GDP and the openness variable were stationary at first difference

Table 4: Phillip-Peron (PP) Unit Root Test Results

VARIABLE	PP-STATISTIC AT LEVEL	PP-STATISTIC AT 1ST DIFFERENCE	CONCLUSION
DEF	-2.967767**	-	I(0)
DEP	-3.679322***	-	I(0)
INF	-3.679322	-3.689194***	I(1)
INV	-2.647120	-2.650145***	I(1)
LENDR	-3.679322	-3.689194***	I(1)
M2GDP	-4.309824	-4.323979 ***	I(1)
OPEN	-4.309824	-4.323979***	I(1)
RGDPG	-3.679322***	-	I(0)

Source: Author's Computation *** Significant at 1%, ** Significant at 5%

Co-integration Tests Results

Having established that some of the variables are stationary at first difference I(1) while the rest are stationary at levels, that is I(0), it is necessary to examine further if there is a likelihood of a long-run relationship among the variables. That is to say, to examine if variables are co-integrated. Once this is established, it implies that although some of the variables exhibit random walk, there is a stable long-run relationship amongst them and that the randomness will not make them to diverge from their equilibrium relationship. To do this, we carried out the Engle-Granger two-step (EGTS) procedure on the variables that are I (1). The test involves first regressing these variables and obtaining the residuals. Next, the residuals are tested for unit roots by applying ADF framework. Once the results show a stationary process, it means that the variables are co-integrated. The result for this test is reported in Table 5.

Table 5: Cointegration Test Result-Engel Granger First & Second Steps Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
INV	-0.761632	0.171952	-4.429340	0.0002
LENDR	1.411679	0.416809	3.386873	0.0023
M2GDP	-0.189375	0.171830	-1.102102	0.2809
OPEN	-0.313790	0.347652	-0.902599	0.3754
C	17.78456	16.96139	1.048532	0.3044

R-squared	0.542430	Mean dependent var	9.775000
Adjusted R-squared	0.469219	S.D. dependent var	10.74105
S.E. of regression	7.825362	Akaike info criterion	7.103629
Sum squared resid	1530.907	Schwarz criterion	7.337162
Log likelihood	-101.5544	Hannan-Quinn criter.	7.178338
F-statistic	7.409119	Durbin-Watson stat	1.515484
Prob(F-statistic)	0.000443		

Engle-Granger Second Step Results

Null Hypothesis: RESID02 has a unit root

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.301770	0.0001
Test critical values:	1% level	-2.647120	
	5% level	-1.952910	
	10% level	-1.610011	

The ADF tests on the residuals at level confirm that the calculated ADF statistic (-4.301770) is greater (in absolute sense) than the tabulated critical value (-2.647120) at 1.0 percent level of significance. Thus, the null hypothesis of non-stationarity of the residuals is rejected. The obvious conclusion from these results is that the variables used in this study are co-integrated. That is, there is a stable long run relationship between them although there might be some deviations in the short run.

Presentation and Analysis of Regression Results

The estimation of results for the linear growth (equations 16) for The Gambia is presented in Table 6. The equation represents formulation of the hypothesis that the growth in real output in The Gambia depends on the fiscal deficit as a ratio of GDP, real investment (INV_t), ratio of broad money stock (M_2) to GDP (measure of financial depth), the lending rate ($LENDR_t$), the rate of

depreciation of the domestic currency vis-ad-vis the US dollar, rate of inflation (INF_t) and the degree of openness of the economy ($OPEN_t$). The general to specific methodology was adopted in the estimation process. The parsimonious equation reported here was arrived at after an iterative process of variable elimination.

The results obtained from the estimation exercise are fairly robust and satisfactory, in that the variables conformed largely to *a priori* expectation in terms of statistical significance. However, some of the variables were wrongly signed. The empirical results show, for example, that fiscal deficit affects the real economic growth positively and significantly with a lag of one year. The sign of the parameter estimate conforms to the presumptive expectation, given that the fiscal deficit in The Gambia was essentially used in financing economic and social infrastructure during the study period.

Table 6: Deficit-Growth; Parsimonious Model Results (Explanatory variable: RGDPG)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	27.58703	3.807670	7.245121	0.0001
RGDPG(-1)	-0.148737	0.058696	-2.534009	0.0350
RGDPG(-2)	-0.631433	0.057553	-10.97127	0.0000
DEF	-0.547303	0.065954	-8.298234	0.0000
DEP	-0.113618	0.031725	-3.581328	0.0072
INF	0.150288	0.040128	3.745192	0.0057
M2GDP	1.796494	0.202605	8.866962	0.0000
DEF(-1)	0.670188	0.087320	7.675067	0.0001
DEP(-1)	-0.612927	0.055203	-11.10322	0.0000
INV(-1)	-0.167959	0.037579	-4.469504	0.0021
LENDR(-1)	0.842226	0.107557	7.830507	0.0001
M2GDP(-1)	-1.077264	0.202764	-5.312900	0.0007
OPEN(-1)	-0.157620	0.060156	-2.620213	0.0306
DEF(-2)	-0.463448	0.081428	-5.691477	0.0005
DEP(-2)	0.113810	0.042053	2.706354	0.0268
INF(-2)	-0.290455	0.043797	-6.631804	0.0002
INV(-2)	-0.221739	0.036038	-6.152850	0.0003
LENDR(-2)	-0.478798	0.114499	-4.181685	0.0031
M2GDP(-2)	-0.998883	0.153442	-6.509824	0.0002
OPEN(-2)	-0.128748	0.064036	-2.010559	0.0792
R-squared	0.976436	Mean dependent var		3.367500
Adjusted R-squared	0.920471	S.D. dependent var		2.762123
S.E. of regression	0.778943	Akaike info criterion		2.514052
Sum squared resid	4.854023	Schwarz criterion		3.465627
Log likelihood	-15.19673	Hannan-Quinn criter.		2.804958
F-statistic	17.44729	Durbin-Watson stat		2.400806
Prob(F-statistic)	0.000157			

Accordingly, the economic growth trends moved in sympathy with movements in fiscal deficit. Indeed, one explanation for the observed positive relationship is the quality of capital expenditure especially in the tourism related infrastructure. Thus, the empirical evidence largely corroborates (Onwioduokit and Jarju, 2006) who arrived at the similar results in their study of determinants of private investment in the Gambia.

The lagged real GDP variable unexpectedly exhibited the negative sign contrary to *a priori*. Perhaps this negative sign suggests that there is disconnect within the production process in the Gambia. This is surprising, given that real GDP growth are expected to correlate positively with their past levels. In the present case it can be argued that, there is no virtuous relationship between the output of the current output and the

level of past output. The reasoning here is that while rising past output levels were expected to impact positively on the current output, the result seems to suggest no such relationship. Perhaps the dominance of the foreign interest in the tourism sector could partly explain the unconventional results, since most of the tourism packages are tailor-made from the outside the Gambia and the real benefits of tourism to the Gambian economy has been reducing over time even though, on the face value the numbers of tourists arrival has maintained an upward trend. Again, the quality of tourists that visit the country, who are classified as low income earners may partly also explain this development. The statistically significant nature of the parameter estimate suggests that past output levels can be considered a useful predictor of the output in the Gambia. The variable passed the significant test at the stringent 1.0 percent level, thus qualifying it to be considered a policy relevant variable.

Contrary to expectations, the investment variable shows a negative but significant relationship with economic growth. The results indicate that a 10.0 percent increase in investment will lead to a reduction in the real GDP growth rate of 1.7 and 2.2 percent with a lag of one and two year, respectively. While it is difficult to explain the results, especially as the variable is significant at 1.0 percent, the quality of investment might be responsible of the observed non conformity of the variable to theoretical expectations.

The coefficient of the interest rate variable was, as expected, negatively signed, implying that high and rising lending rates that were recorded within the period covered by this study served to retard output. This explanation for the finding may be that high and perhaps prohibitive interest rates tend to discourage potential borrowers, manufacturing sector players inclusive, from borrowing to finance their activities. The empirical finding is not surprising in view of the fact that the deregulation of interest rates in the economy following the adoption of the Economic Recovery Programme (ERP) in 1985/86 fiscal year brought in its wake unparalleled upswing in lending rates in the economy. Interestingly, this variable passed the significance test at the 1.0 percent level, implying that interest rate is indeed a significant negative determinant of output. It is thus a policy relevant variable.

The rate of depreciation of the domestic currency as expected, impacted positively on real GDP growth, although with a two year. The variable was also significant. Indeed, rate of depreciation is critical to the production of goods and services and higher levels of depreciation *ceteris paribus* should elicit higher levels of output in a country like the Gambia where tourism is one of the major contributors to economic growth. And this finding is intuitively plausible since, as it has been argued, depreciation, expectedly, should support rather than supplant domestic investment in the various sectors of the economy, the real sector inclusive. The variable passed the significance test at the 1.0 percent significance level. The conformity of the sign of the variable, coupled with its statistical significance makes it a policy relevant variable.

Nevertheless, the coefficient of current year depreciation is negatively signed. The negative sign indicates that output declines with a rise in the quantum of the dalasi that is needed to purchase a unit of the foreign currency in the current period. Contrariwise output would tend to rise with an appreciation in the exchange rate. This finding is intuitively plausible though at variance with received *a priori* expectation and the vast body of existing empirical evidence. The import-dependent nature of the Gambian economy largely explains this finding. When the exchange rate appreciates, imports become cheaper and manufacturing sector players are better able to import needed intermediate inputs. This thinking partly informed the philosophy of maintaining an overvalued exchange rate in most developing countries in the 1970s when these countries sought to develop their nascent industrial base through the strategy of import substitution. The outset of

economic reforms with the adoption of the ERP package in 1985/1986 brought in its wake, prompt and steep depreciation of the country's exchange rate.

The inflation rate variable exhibited a positively signed coefficient in the current year but a negatively signed coefficient with a two year lag. What this implies is that although rising inflation rate may contemporaneously serve as a booster for the output growth in the current year, the reverse holds in the subsequent years. The explanation for this finding may be that rising inflation rates serves to raise cost of inputs into the production process in the various sectors of the economy. The rising cost of production serves to stifle the output of the sector in the medium to long run. But it can be argued on the other hand that declining output can be a causative factor giving rise to inflationary pressures. The reasoning in this regard is that a decline in the output of the sector translates to a shortage in the supply of goods and services, which engender an inflationary situation. However, the issue of the direction of causality between inflation and the output is not the focus of this study. Thus, the empirical evidence obtained suggests that while inflation rate may impact positively on growth contemporaneously, it impacts adversely on output with a lag of at least two years. Specifically, while a 10.0 percent increase in the inflation rate contemporaneously increases output growth by 1.5 percent; it reduces the output growth by 2.9 percent with a two year lag. Consequently, the overall impact of inflation on output growth is negative.

The variable that was introduced to capture the financial depth (M2GDP) had a positively signed coefficient estimate. This sign agrees with *a priori* expectation, and it implies that financial depth impacted positively on the output in The Gambia within the period covered by the study. This finding is not surprising, given that financial depth is critical for investment and production decisions. Financial sector deregulation that saw the number of financial institutions quadrupled during the study period in the Gambia, served to enhance the output of the economy within the period covered by this study. A one increase in the ratio of broad money to the GDP will bring about a 1.8 percent increase in growth and this is statistically established at 1.0 per cent statistical confidence level.

The openness variable coefficient was negatively signed contrary to aprori expectation. However, the variable was significant at 5.0 percent. This is very instructive, though at variance with the conventional theory that suggests a positive relationship. Perhaps the plausible reason for the empirical outcome is the relative underdeveloped nature of the manufacturing sector of the Gambian economy. What this means is that if there is no strong manufacturing sector to take advantage of the openness of the economy, and then there will be every possibility for dumping. The negative relationship could also be explained by the fact that import dominates exports, and that most of the imports were food and not capital goods. This is probably the case for the Gambia where the more open the economy the more adverse the impact on growth. Indeed, the results suggest that a 10.0 percent increase in the level of openness of the Gambian economy will reduce real economic growth by 1.5 and 1.2 percent in the first and second year, respectively.

The summary statistics of the estimated model are reasonably impressive. The adjusted R^2 value for example shows that we could account for up to 92 percent of the total variations in output (as captured) using the regressors in the specification. The standard error of regression is reasonably low. In addition, the statistical significance of each of the parameter estimates, taken alongside the robust coefficient of determination obtained in the estimation suggest that the problem of multicollinearity did not rear its head in the estimated model.

CONCLUSION

The paper sought to establish the relationship between fiscal deficit and economic growth in the Gambia from 1980 to 2009. The results obtained from the estimation exercise are fairly robust and satisfactory, in that the variables conformed largely to *a priori* expectation in terms of statistical significance. However, some of the variables were wrongly signed. The empirical results show, for example, that fiscal deficit affects the real economic growth positively and significantly with a lag of one year. The sign of the parameter estimate conforms to the presumptive expectation, given that the fiscal deficit in The Gambia was essentially used in financing economic and social infrastructure during the study period.

Thus the results support the Keynesian assertion that fiscal deficits have positive impacts on economic growth.

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