ECONOMIC GROWTH AND PUBLIC SECTOR SIZE: EXAMPLES FROM KENYA'S VISION 2030

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Abstract: The Vision 2030 proposes to contain growth of total expenditures with expenditure rationalization that shifts resources from non-priority to priority areas. This is expected to see the development expenditure increase from 18% in 2006/07 to 35% by 2012/13. This study set out to determine the exact causative process between the size of the government and economic growth given that knowledge of the same has important policy implications for the attainment of the 'Vision' goals. Economic theory dictates that if government spending accelerates economic growth, in which case causality is Keynesian, then government expenditure acquires the status of an important policy variable. If on the other hand, growth causes expansion in government expenditure, in which case causality is Wagnerian, then government expenditure is relegated to a passive role. Working within the bivariate and trivariate frameworks using the theory of cointegrated processes, the study concludes that in Kenya, causality is Keynesian and therefore the relative size of government spending is a critical policy variable in attaining the vision 2030 goals. This implies that there is potential for achieving long run/potential growth envisaged in the 'Vision' by controlling the size of the government.

Keywords: Causality, Granger, Kenya, Vision 2030, Wagnerian

INTRODUCTION

Economic growth is a fundamental goal of any economy and nations the world over have long regarded their economic growth as a central and political objective. Sustained and equitable economic growth is a predominant objective of public expenditure policy, because appropriate public expenditures can, not only boost economic growth, but also have an important role to play in the formation of physical and human capital, over time. In Kenya, the weight of public opinion in economic debate has over the years, tended to the view that the government is spending too much, particularly in recurrent expenditure. The Medium-Term Expenditure Framework confirms that the expenditure levels in 2006/2007, at 26% of the GDP, are way above that for low income countries.

This realization perhaps, more than anything else, has informed the current fiscal strategy in the country, which focuses on expenditure reduction, expenditure restructuring and expenditure reform. The public sector in Kenya has been undergoing continuous reforms since the early 1990s with a view to reducing the share of government recurrent expenditure (especially wages) and increasing the development budget, especially those targeting government investment, education, health and core poverty expenditures.

These efforts resonate quite well with literature in this area, much of which is in agreement that government investment expenditure increases subsequent economic growth, while consumption expenditure does the exact opposite. A number of studies also confirm that the benefits of government investment in both physical infrastructure and human capital (mainly education, but also children's services and some components of healthcare) are greater than for private investment. Conversely, the negative growth effects of government consumption appear to be greater than those of private consumption, perhaps because government consumption tends to crowd out

government investment. It is worth noting however, that even though investment leads to growth there is still need for an appropriate mix between investment and consumption, since consumption is the ultimate purpose of economic activity, and investment is simply a means of generating higher consumption in the future.

Under the Vision 2030, Kenya aims to increase its annual GDP growth rate to 10% and to maintain that average till 2030. The Vision is to be implemented in successive five-year medium term plans, with the first such plan covering the period 2008-2012. To achieve its growth targets for the first plan, the government proposes to change not only the share of government expenditure in the GDP, but also the composition of the same, with an increasing share of development expenditure. The share of development expenditure in total government expenditure has consistently risen from 10.69 in 2001 to 25.15 in 2007. This is expected to increase to 35% by 2012/13.

Even though theory and evidence are sparse, for many decades, the size of government expenditure and its effect on long- run economic growth has been an issue of sustained interest. Wagner's law- the "Law of increasing expansion of public and state activities" is one of the earliest attempts at placing emphasis on economic growth as being the principal determinant of public sector growth (Lindauer and Velenchik, 1992). Literature in this area identifies two principal channels through which government activity may influence economic performance. First, government spending, particularly investment, may provide goods that enter directly into private sector production, such as education and infrastructure. In this way, public expenditure, through investment, therefore contributes to capital accumulation in a country. This is critical in filling up the holes that are left untouched in a market economy such as public utilities, healthcare etc. In addition, government spending may also indirectly influence the efficiency of private sector allocation of inputs by for instance, guaranteeing property rights and enforcement of contracts.

By the same token, government regulation may impose excessive burdens on the private sector. High taxes, (being the entire financial source for public expenditures) do directly reduce the benefits to tax payers. Since human capital plays a key role in promoting economic growth, a lower benefit to citizens is associated with a lower economic growth rate. Besides, borrowing to finance government spending may also distort private incentives. In addition, if the financing of government investment project bids up interest rates, private investment may be crowded out, thereby slowing down growth. The second channel is the efficiency of the government as a producer, as distinct from a provider of goods and services. It has been argued that a larger government is typically detrimental to efficiency, productivity and growth. The basis of this argument is that the public sector is not responsive to market signals, a regulatory process that engenders higher production costs and distortions that arise from both fiscal and monetary policies.

Developing countries have experienced significant growth in government expenditure in the past two decades influenced by the development theory models which have emphasized the extent of market failure in the developing world. Most of these old theories evoke an image of the need for more government. Currently though, the market as the engine of economic growth has reversed the role of the government to that of creating an enabling environment for the private sector rather than being involved actively in productive activities. Kenya is no exception and the development agenda today lays more emphasis on the role of the private sector and the public private partnerships.

Since independence, the Kenya government through a number of parastatals operated several publicly owned commercial enterprises, a number of which operated as monopolies, and several others of which operated without strict adherence to commercial principles. Consequently, many of these enterprises collapsed under the weight of mismanagement, massive debts and losses, thereby occasioning a huge drain on the exchequer. Consequently, the government has been disengaging from commercial activities under a privatization program. The Economic Recovery Strategy (ERS) emphasizes the government's commitment to move away from commercial activities that could be performed more efficiently and effectively by the private sector. Towards this end, a Privatization Act was enacted in 2005 to provide for the establishment of a privatization commission and to help fast track the process, which targets key enterprises in the agricultural, tourism, financial and telecommunications as well as several other sectors. The new dispensation defines the role of the government differently; to develop satisfactory regulatory and legal frameworks, transfer of key operations within the government to the private sector, and ensuring the existence of competitive frameworks.

More recently, the evolution of positive theories of Government, often under the banner of "the public choice theories" has made the subject a rich area for intellectual and political debate. Four alternative approaches can be teased out of the wide expanse of literature. On the demand side, the literature proposes

a positive theory of government and arguments include;-the income effect captured by Wagner's law (which suggests that as incomes rise, the demand for government increases more than in proportion, primarily because of the technological requirements of industrialization and the urbanization that accompanies it). On the demand side the price effects account for the observed growth in government spending. The argument here is that the government sector (public) is more service intensive and because of this its productivity growth is much lower than that of the private sector. Therefore, the unit cost of government output is likely to rise overtime. Another argument concerns tastes. The larger issue here being whether some societies prefer public production including public production of rival goods. The argument here is that prevailing ideologies in different societies do reflect different attitudes about the role of government and hence different "tastes" may account for some of the variance in government spending.

Models of public choice theory provide yet another argument. The public choice school embraces a number of demand oriented models of growth, including theories of bureaucracy and median voter and public employee voting models. Common to these arguments is a consideration of who is demanding more government and how this demand results in excessive government expenditure. In models of bureaucracy for instance, the wishes of the state are placed above those of citizens. In such models, citizens and political institutions constitute at most a loose constraint against which political leaders and bureaucrats pursue their own personal interests.

On the supply side, there are two major arguments. One is the imbalance in productivity growth identified by Baumol (1967), which argues that productivity growth is slower in services than in non services because of different rates of technological change. Wage payments however, are equalized across sectors. Since government production tends to be service- intensive, the model predicts increasing costs of government output if real levels of publicly provided goods and services are maintained.

The other set of supply side arguments reflects Say's law of government spending; that public expenditure is driven by the availability of revenue. Also called the "Please effect" after Please (1967), the argument here is that public expenditure especially for consumption is driven by available resources rather than the other way around. For instance, if the government wishes to increase the rate of domestic saving through higher levels of public saving, the increase in tax revenue may encourage more spending, perhaps on public investment but equally likely on government consumption. This effect is evident in the experiences of Ivory Coast and Senegal (Devarajan and Melo (1987).

THE PATTERNS AND TRENDS IN GOVERNMENT SPENDING IN KENYA

Table 1 reports the structure and composition of government expenditures over the periods 2001/2002 to 2005/2006. The total government expenditure did not vary much over the period, but showed a consistent increase over the period 2003 to 2006, rising from 20.2% to 24.8%. This trend is replicated for both recurrent and development components.

Despite attempts to re-orient public expenditure towards development activities, there is no significant decline in recurrent expenditure share of the GDP. Instead, it rises from 17.2% to 19.3% over the period 2003 to 2006. Development expenditure share of the GDP however, increases significantly over the same period, rising to a peak of 5.5% in 2005/2006 from a low of 2.4% in 2001/2002. Curiously though, the real GDP growth rate momentum is sustained, rising from 1.1% in 2001/2002 to 4.1% in 2005/2006. The growth figures are particularly impressive after 2003, a phase over which the government size also increased consistently. A critical policy shift that could explain this trend is the operationalization of the government's new economic blue print; the Investment Program for Economic Recovery Strategy (IP-ERS) in 2003. The ERS identifies new structural and social policies as well as associated external financing needs and sources.

How does the government size compare to others? Table 2 reports the government expenditure share of real GDP for Kenya, Ghana, Mauritius and Malaysia, over the period 1955 to 2003.

With regard to the size of the government, no clear pattern is discernible from the comparison tables. Kenya starts off with the smallest size, at 5.7% and 9.55% respectively in the first two decades, while Ghana exhibits the largest size at 25.1% and 23.4% but with robust average real GDP growth rates surpassing 10% for each of the decades. It is followed by Malaysia at 17.4% and 19.2% respectively, with an equally impressive 2.4% and 6.1% GDP growth rates. The large sizes of the government expenditures show an increasingly predominant role of the public sector in Ghana and Malaysia in these early decades. This probably reflects the heavy outlay in these early stages of development on building physical capital through basic infrastructure that was required to jump start the growth process. Mauritius registers a fairly modest size at 9.1% and 11.1%, with an equally modest, but rising growth at 0.3% and 0.9% respectively.

Table 1: Structure and Composition of Government Expenditure in Kenya

	2001/02	2002/03	2003/04	2004/05	2005/06
Total Government Expenditure as % of GDP	22.4	23.0	20.2	21.3	24.8
Recurrent Expenditure as % of GDP	20.0	19.8	17.2	17.8	19.3
Development Expenditure as % of GDP	2.4	3.2	2.9	3.4	5.5
Real GDP growth rate	1.1	1.3	2.5	3.7	4.1

Source: Republic of Kenya (2007)

Table 2: Country Comparison Tables

Country	Year	Government Expenditure % GDP	Growth Rate of Real GDP per capita
Kenya	1955-1964	5.7	0.8
	1965-1974	9.5	0.3
	1975-1984	14.2	-0.2
	1985-1994	13.3	0.6
	1995-2003	21.0	-0.4
Ghana	1955-1964	25.1	10.1
	1965-1974	23.4	12.3
	1975-1984	21.2	1.0
	1985-1994	24.4	0.9
	1995-2003	29.3	2.3
Mauritius	1955-1964	9.1	0.3
	1965-1974	11.1	0.9
	1975-1984	14.2	2.9
	1985-1994	12.1	5.3
	1995-2003	11.4	4.0
Malaysia	1955-1964	17.4	2.4
	1965-1974	19.2	6.1
	1975-1984	22.0	4.5
	1985-1994	19.8	4.4
	1995-2003	17.6	3.8

Source: Penn World Tables 6.2

Although for Kenya, the size of the government expenditure expands, albeit inconsistently over the decades to hit a high of 21% in the period 1995-2003, this is not reflected in the GDP growth figures. In fact over the five decades under consideration, the economy registers negative growth in two of them. Ghana maintains a consistently large public size that averages 25%, but with mixed results, with an average growth rate of 1.4% in the last three decades. Mauritius consistently exhibits the smallest share of public spending; averaging 11.6% over the five decades but with a fairly good growth record averaging 2.7%. Malaysia shows a consistently large government size, averaging 19.2%, but with an equally impressive growth record averaging 4.2%.

In the rest of Africa except South Africa, government share of GDP did not reach double digits until after 1965. Between 1955 and 1964 for instance, Egypt registered 7.3%, Morocco 9.4% and South Africa, 15.4%. In Europe, Luxembourg had 8.2%, Belgium 13.7%, France 16.6%, Denmark 13.8%, Finland 11.7% and Sweden, 15%. In the US, the share of government expenditure in GDP stood at 14%, while in Asia Taiwan registered 25%, Singapore 4.2%, Hong-Kong 2.9%, Indonesia 20.3% and Japan, 14.8% over the same period. Over the period 1955 to 2004, Hong-Kong maintained a consistently small and stable share of government expenditure in GDP, averaging 5%. At the same time, it registered impressive average growth rate of 5.8%. Similarly, Singapore also kept the size of its public spending low and stable at 7% with equally good growth figures, averaging 4.1%. On the opposite end, Taiwan with a large and unstable share of government expenditure in GDP averaging 18.5% also registered an impressive 5.9% average growth rate over the same period as did Botswana, with an average public size of 18.6% and an average growth rate of 5.5%.

Although there are strong analytical reasons to believe that the share of government expenditure in GDP is an important variable that influences growth, this is not readily discernible from the above comparative analysis or from Table 2. Understanding and even quantifying such effects however, are important from a policy perspective, particularly in view of the fact that Vision 2030 suggests several public expenditure reform and management measures aimed at spurring growth through adjustment of public spending in Kenya. In that respect, it is not clear whether such adjustments can lead to higher growth by promoting macroeconomic stability or, on the contrary, they would hamper growth by leading to excessive cuts in some productive components of public spending.

The goal of this paper is to understand better, at the empirical level, how public spending contributes to growth by focusing on the share of public spending in the GDP, in connection to the dynamics of GDP per capita growth. It attempts to answer two specific questions: (a) Does government spending accelerate economic growth? or (b) Does growth cause expansion in government spending?

THEORETICAL BACKGROUND

A significant amount of empirical analyses have been carried out with a view to exposing the channels through which different types of public spending can affect growth. Public funds can have a direct or indirect effect on growth. The former effect is experienced when an economy's capital stock increases owing to higher flows of public funds, while the latter occurs when the flow of public funds lead to an increase in the marginal productivity of both publicly and privately supplied production factors. Similarly, other components of public spending, related for instance to the enforcement of property rights and maintenance of public order, can also exert a positive indirect effect on growth.

Dodson (2008) suggests that in developing countries, externalities associated with infrastructure spending may have a sizeable impact on human capital as well. He contends further, that there is a direct linkage between infrastructure and education.

Within the Solow-Swan growth accounting framework (Romer,2001), public spending is shown to impact growth by affecting capital and/or labour as well as the generation and/or assimilation of technological progress reflected in the total factor productivity. On the contrary, endogenous growth models, such as Barro (1990), predict that productive public spending will indeed affect the long-run growth rate and not its transitional changes, in which case public spending may change the growth path, by affecting the production factors and/or total factor productivity.

Empirically, the relationship between public spending and growth in support of either neoclassical or endogenous models has been difficult to establish. A large part of the recent empirical literature on growth has examined the impact on growth of both the level and composition of government expenditures. Overall, the evidence on the nature of this relationship is mixed and the findings do not seem to indicate consensus on the impacts of the size of government on growth. Whereas some studies have found a negative relationship between the size of the government and economic growth (Landau 1983 and 1986; Barro 1990; Devarajan et al; 1996 and Folster and Henrekson, 2001), others have found a positive relationship (Ram 1986; Aschauer 1989, Barro, 1991). This situation is further aggravated by the fact that economic theory does not provide any well

developed methodology for the incorporation of government expenditure in standard growth models.

Ram (1986) marked a vigorous attempt to incorporate a theoretical basis for tracing the impacts of government expenditure on growth through the use of production functions specified for both public and private sectors. Cashin (1995) incorporates the impacts of distortionary taxes on growth through use of an endogenous growth model encompassing public investments and transfers. The inclusion of taxes in this study is based on the notion that the size of government is limited by the need to finance such spending through taxes. Results of this study show that public transfers and capital are growth enhancing.

Empirical Framework

This study uses time-series data for Kenya covering the period 1950 to 2004, derived from Penn World Tables version 6.2. Income growth Y_t is measured by real GDP per capita at current prices in year t. Various researchers use various measures for government size including total government spending, government consumption, total government revenue, or functional categories of government expenditure among others. Most of these measures are expressed as shares in GDP either as levels or as growth rates. Since the choice of a given measure depends on which data series are available to a researcher, our measure of the public sector size G_t is the ratio of government expenditure in current prices, to the real GDP per capita in current prices.

Openness variable, *OPN*, measured in current prices as the sum of exports plus imports divided by the GDP, is the total trade as a percentage of GDP. This variable helps to capture the connection between growth and export-led development strategies in Kenya. Since the price level (conversion factor) for domestic absorption and imports and exports is the same, when the import and export figures and GDP are expressed in real values, the value of *OPN* in current prices remains the same.

Finally, the lagged values of the dependent variable, Y_{t-1} is included to take into account growth inertia factors. This provides a natural way to distinguish between short and medium-run effects on growth. Also included are the lagged values of the explanatory variables G_{t-1} and OPN_{t-1}. The lag lengths are restricted to one year to conserve degrees of freedom.

Economic theory provides little guidance as to the functional form appropriate for the relationship in our model. For expository convenience, we use the following general function;

$$Y_t = f(Y_{t-1}, G_t, OPN_t)$$

where

t = the year index
Y_t = real GDP per capita
Y_{t-1} = the lagged value of real GDP per capita
G_t = ratio of government expenditure to real GDP per capita
OPN_t = degree of openness of the economy

A multiplicative form of the same can be specified as follows;

$$Y_t = Y_{t-1}^{\alpha 1} \; G_t^{\alpha 2} \, OPN_t^{\alpha 3}$$

Constraining a functional specification to take one particular form or another can lead to erroneous results when not enough a priori information is available. We chose a log-linear specification, because it gives direct estimates of elasticities, is simple to use and it satisfies the homoscedasticity assumption underlying the use of least squares estimates. The log-linear form of the above function gives the estimable equation, stated as follows;

$$lnY_t = \alpha_1 lnY_{t-1} + \alpha_2 lnG_t + \alpha_3 lnOPN_t + u_t$$

The notion that there is a long-run tendency for the public sector to grow relative to national income has been an issue in economics that is rarely questioned. Thus, if the variable Y_t and G_t are considered as stochastic trends and if they follow a common long-run equilibrium relationship, then these variables should be cointegrated. According to Engle and Granger (1987), cointegrated variables must have an ECM representation.

If Y_t and G_t are cointegrated, then an ECM representation could have the following form;

$$\Delta Y_t = a_0 + a_1 E_{t-1} + \sum_{i=1}^{n} a_{2i} [1-L]\Delta Y_{t-i} + \sum_{i=1}^{n} a_{3i} [1-L]\Delta G_{t-i} + \mu_t \qquad (1)$$

$$\Delta G_t = b_0 + b_1 C_{t-1} + \sum_{i=1}^{n} b_{2i} [1-L]\Delta Y_{t-i} + \sum_{i=1}^{n} b_{3i} [1-L]\Delta G_{t-i} + e_t \qquad (2)$$

Where L and Δ are the lag and difference operators respectively, E_{t-1} and C_{t-1} are error-correction terms which correspond to the lagged values of the residuals from the OLS regression of Y_t on G_t and G_t on Y_t respectively. According to Granger (1969, 1988), in a cointergrated system of two series expressed by ECM representation, causality must run in at least one way. Within the ECM formulation of (1) and (2) therefore, G_t does not Granger cause Y_t if all $a_{3i} = 0$ and $a_1 = 0$ and Y_t does not Granger cause G_t if all $b_{2i} = 0$ and $b_1 = 0$. It is possible however; that the causal link between Y_t and G_t estimated from the ECM formulation (1) and (2) could have been caused by a third variable. In this study, we explore such a possibility by including openness, OPN_t within a multivariate framework.

Table 1 Panel 1: Unit Root Test using ADF

VARIABLE	**ADF STATISTIC**	**5% CRITICAL VALUE**	**NATURE**
lnG	-2.278015	-3.4952	NON-STATIONARY
lnY	-1.782880	-3.4952	NON-STATIONARY
lnOPN	-3.147502	-3.4952	NON-STATIONARY

Table 1 Panel 2: Unit Root Test using ADF

VARIABLE	**ADF STATISTIC**	**5% CRITICAL VALUE**	**NATURE**
lnG	-9.902525	-2.9178	STATIONARY
lnY	-7.726668	-2.9178	STATIONARY
lnOPN	-6.426020	-2.9178	STATIONARY

Table 1 Panel 3: Cointergration Analysis

RESIDUAL	ADF T-STATISTIC	ADF CRITICAL VALUE 5% CRITICAL POINT	NATURE
RESDLNCGDP	-6.426020	-2.9190	COINTERGRATED

Table 3: ECM Results; Dependent Variable is Real GDP per capita (Y_t), t-stats in parentheses.

Variable	**Panel 1**	**Panel 2**	**Panel 3**
	Coefficients	**Coefficients**	**Coefficients**
Constant	0.0325 (14.8)	0.0390 (19.1)	0.0405 (44.8)
Government size (G_t)	-0.0311 (2.4)	-0.0208 (2.1)	----
Lagged Government size (G_{t-1})	0.0807 (6.3)	0.0730 (7.3)	0.0711 (15.6)
Lagged Real GDP per capita (Y_{t-1})	----	-0.1838 (5.7)	-0.1973 (13.4)
Openness (OPN_t)	----	-----	0.1133 (14.2)
Lagged Openness (OPN_{t-1})	----	-----	0.0505 (6.1)
ECM	1.0000 (20.4)	1.0000 (26.4)	1.0000 (59.9)
Adjusted R-squared	0.9003	0.9404	0.9885
Durbin Watson stat	2.2081	1.8399	1.9891
F-statistic	154.56	202.09	874.10

Table 4: Pair wise Granger Causality Tests

Null Hypothesis	F-statistics
G_t does not Granger Cause Y_t	2.3720
Y_t does not Granger cause G_t	0.8873

$$\Delta Y_t = \alpha_0 + \alpha_1 E_{t-1} + \sum_{i=1}^{n} \alpha_{2i}[1-L]\Delta Y_{t-i_t} + \sum_{i=1}^{n} \alpha_{3i}[1-L]\Delta G_{t-i} + \sum_{i=1}^{n} \alpha_{4i}[1-L]\Delta OPN_{t-i} + \mu_t \quad (3)$$

$$\Delta G_t = \beta_0 + \beta_1 C_{t-1} + \sum_{i=1}^{n} \beta_{2i}[1-L]\Delta Y_{t-i_t} + \sum_{i=1}^{n} \beta_{3i}[1-L]\Delta G_{t-i} + \sum_{i=1}^{n} \beta_{4i}[1-L]\Delta OPN_{t-i} + e_t \quad (4)$$

Such causal relationship between Y_t and G_t is examined within the following multivariate ECM representation in (3) and (4).

Empirical Results

To test for the presence of a unit root for each variable in the model, we perform a stationarity test on the variables at their levels using an ADF test statistic. Results are reported in Table 1 Panel 1. All the variables are non-stationary at 5% level of significance.

The variables are then differenced and subjected to the same test to confirm stationarity. Results of stationarity tests after differencing are reported in Table 1 Panel 2.

The variables are stationary after being differenced once, an indication that all the variables are integrated of order one. Each of the variables therefore has a stochastic trend. To test whether the stochastic trends in these variables are related, we generated residuals from OLS regression of the differenced variables, and tested the residuals for stationarity in order to confirm cointegration. Results are reported in Table 1 Panel 3.

Since the residuals are stationary the two variables, government expenditure as a share of real GDP per capita and real GDP per capita have common trends. Upon confirmation of cointegration between Y_t and G_t, we next investigate the causal pattern between Y_t and G_t within the ECM models. We construct error correction terms for both variables from the residuals generated, by differencing the residuals and lagging them once using the Autoregressive Distributed Lag (ADL) model. Table 2 reports the ECM regression results.

Table 3 reports ECM regression results, with growth as the dependent variable. Panel 1, estimates the coefficients without any controls, but includes the current government size and its lagged value. Panel 2 controls for the lagged value of growth, while Panel 3 omits current government size, but introduces two more control variables- openness and its lag.

The coefficients on the lagged values G_{t-1}, Y_{t-1}, and OPN_{t-1} are short-run parameters that measure the immediate impact of independent variables on Y_t and G_t. Results show that the coefficients on all the explanatory variables are statistically significant and therefore past changes in government size and growth should contain useful information for predicting future changes in the same variables. Current Government size is inversely related to growth in both cases, while its lag is positively related to growth across all the three specifications. Implication is that the short run effect of government size on growth is positive while the long-run effect is negative. Lagged growth is inversely related to current growth in both cases. In the short-run growth and its lag are inversely related, probably owing to growth inertia related factors. Openness and its lag are positively related to growth, implying that both the short and long-run effects are positive.

For all the specifications, the error correction terms are positive and statistically significant. Its value indicates some long-run proportionality between government size and growth. When non-stationary variables are cointegrated, there exists a direction where a meaningful long-run relationship among them exists. Table 4 reports the Granger causality tests between government size and growth.

Results show one-way causality running from government size G_t to growth Y_t. These results are consistent with the Keynesian notion suggesting that the causal linkage flows from *DG* to *DY* both in the long-run and the short-run.

CONCLUSION AND RECOMMENDATIONS

Our results suggest some long-run proportionality between government size and growth. It further implies that causation flows from government size to growth and further, that the two variables move in opposite directions. This confirms that the size of the government is a critical policy variable on the road to 2030. This brings into focus the kind of behavior expected of the institutions that determine public expenditure in Kenya. An ambitious annual growth rate of 10% as projected in the Vision 2030 would actually require drastic reductions in levels of public expenditure. To the contrary however, it is proposed in the 'Vision' document and Republic of Kenya (2007), that future expenditure plans will target

raising the total government expenditure by adjusting its development component upwards, while reducing the consumption component. Besides, the IP-ERS proposes that expenditure items of the budget over the first phase of the vision be fixed as proportions of the GDP, implying that they should move together. The results of this study are consistent with the notion of a stable long-run relationship between government size and growth of real GDP, when openness is taken into account. There is potential therefore, for achieving long run/potential growth, by controlling the size of the government. We suggest that public expenditure be projected as some reducing share of the anticipated future level of income. A good starting point would be to plan a reduction of public expenditure over the first phase of the 'vision' in relation to prospective resources.

Second, the results of this study underscore the role of trade in explaining growth in Kenya. A significant proportion of the country's income growth is related to export trade. More efforts must therefore be put in promotion of export related trade. In particular, the country must aim at reducing the top trade tariff rate, reduce duty on raw materials, harmonize investment incentives, diversify exports away from primary commodity exports, increase its international market share, particular in the untapped North American market and above all, develop a clear and comprehensive policy guideline on investments.

Similarly it highlights the information value of past expenditure, growth and trade figures in predicting future trends. Finally the coefficients on the error correction terms suggest that changes in per capita income respond mainly to short-term variations in government size. This indicates a high level of flexibility in expenditure plans in line with short-term fluctuations in income.

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