Economic Determinants of Government Consumption Expenditure in Kenya

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Economic Determinants of Government Consumption Expenditure in Kenya

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Abstract

Government expenditure is a very instrumental demand tool in achieving economic stability and policy makers frequently use it to influence certain economic outcomes. Government expenditure majorly consists of two components: investment and consumption components. Many researchers concede that higher level of government consumption expenditure is growth retarding and therefore undesirable. The aim of this paper was to establish the economic determinants of government consumption expenditure in Kenya. The results showed that in the long-run, while 1 USD increase in GDP causes USD 1.3 increase in government consumption expenditure, a unit increase in inflation rate would cause USD 1.8 increase in consumption expenditure. However, 1 USD increase in foreign direct investment and external debt stock causes, respectively, USD 0.07 and USD 2.6 drop in government consumption expenditure. Corruption, democracy and political instability have positive effects on government consumption expenditure in Kenya. Urbanization and population dynamics jointly affect the variable in the short-run. This paper recommends that the government should strengthen its institutions that are mandated to deal with graft cases, create peaceful political setting at all times and ensure a friendly environment to foreign investors.

1.0 Introduction

There are two components of public expenditure; development expenditure and recurrent expenditure which the government can use to create certain economic outcomes. But in doing this development-recurrent ratio must be observed. However, it has been observed that development-recurrent ratio favors recurrent components and that creates development expenditure problem (Were, 2018). Government consumption expenditure is prone to increase and is often favored to development expenditure in circumstances of fiscal stringency and this is even glaring in the global scenes. World government consumption expenditure grew from USD 2,583 trillion in 1960 to USD 55,360 trillion in 2017. Growth in world’s consumption expenditure has been on the rise and reached its ever highest peak of USD 106,300 trillion in the year 2014 and this high peak was possibly attributed to fiscal expansion that many countries had to undergo after 2008 to counter the economic downturn from the negative global and domestic shocks. However, post fiscal consolidation periods following the global shock in oil prices have since been characterized by a fall in the level of government consumption expenditure in the whole world as shown in the figure below.
Kenya’s trend in government consumption does depart much from the world trends except for the last couple of years following post fiscal consolidation of the 2008 world shocks. It was expected that government expenditure would fall after recovery from the global shocks, however, consumption expenditure continued to trend upwards even long after economic recovery strategies adopted between 2008 and 2010.

Studying movements in government expenditure is central to state planning and of much concern is the composition of public expenditure. Government consumption expenditure is a very crucial part of government budget as it has always formed the major portion the budget almost in all countries across the world. In Kenya, government consumption has shown rapid growth from Ksh 31.2732 billion in 1963 to Ksh 2107.2 billion in the year 2018. Noting this relatively high level of consumption expenditure, the World Bank and IDA have issued caution to Kenya to downsize her consumption expenditure to create room for investment expenditure (Were, 2018; Kinuthia, 2018). The question that then lingers is how then should the government slash down consumption expenditure? The government has to identify the causes of growth to consumption spending and be able to effectively restrain the high tides exhibited in consumption expenditure in Kenya. While Kanano (2006) modelled the determinants of total public expenditure growth in Kenya, Maingi (2010) sought to establish the effects of consumption expenditure on economic growth in Kenya. However, both of them did not model the causes of consumption expenditure. Shonchoy (2010) modelled the determinants of consumption among developing countries but it suffers the shortcomings of panel analysis to apply in the Kenyan case. Thus, in light of this exposition, this study endeavored to establish the determinants of government consumption expenditure in Kenya using time series data for the period 1963-2017.

The lowest value of consumption expenditure that Kenya ever recorded was USD 86,715,965.24 in 1960 and the highest value of USD 10,687,876,290.12 in the year 2017 with an average of USD 2,330,652,945.90. It is notable that after the 2008/2010 fiscal consolidation period government expenditure was meant come down and indeed growth in consumption expenditure dropped from 26.2 % in 2007, further dropped to 20.3 % in 2008 and finally to 0.11 % in 2009. However, this drop did not stay as the country found itself in an expansion path of huge government consumption expenditure recording 19 % and 12 % growth in consumption expenditure in the year 2012 and 2013 respectively. This sudden expansion could be due to the roll out of devolution which had seen a speedy upsurge of administrative expenses, increased security spending, and the rising wage bill which has been associated with both national and county government employees.

On average, based on the past five years, Kenya tops the East African countries in consumption expenditure with USD 8,757,880,222.04 followed by Tanzania with USD 6,693,052,622.84. Somalia, Burundi and Rwanda are the least spenders in government consumption with USD 317,859,302.75, USD 635,739,775.28 and 1,182,610,788.62 respectively, on average.

2.0 Research Methodology

The study was a non-experimental research in which a range of variables were measured and adopted correlational studies design, since correlation was used in the analysis. The study used data for the period 1963-2017 for the following set of variables: economic variables; gross domestic product, foreign...
aid, inflation, foreign direct investment, interest rate, trade openness and external debt stock; Structural variables; urbanization rate, young population and old population and finally Politico-institutional variables; market liberalization, political liberty, political instability, corruption and elections. The study used published data from World Bank Country Data Portal (2018) and UNCTAD, Country Development Index (2018). The collected data was analysed using Stata and Gretl econometric softwares. The systems of equations were estimated using VECM, VAR and OLS after carrying out time series property tests on the data. This study adopted public choice approach similar to that used by Hewitt (1991, 1992, 1993), Davoodi et.al (2001), Nyamongo (2007) and Akanbi and Schoeman (2010). The model analyses the relationship between government capital (infrastructure) spending, recurrent spending and overall government spending. Akanbi (2014) observes that previous studies mostly used the public choice model to examine the link between military spending and overall government spending, where military spending is considered as pure public good. Akanbi and Schoeman (2010) slightly deviated from this model where they explored the relationship between education spending and overall government. Akanbi (2014) further deviated from all the aforementioned studies by disaggregating capital and recurrent expenditure from overall government expenditure. Following the foregoing, this study disaggregated government consumption spending from total government expenditure and thus, the determination of consumption expenditure is modelled as a government optimization problem, meaning that the decision on the component of a budget for consumption expenditure is taken by the executive wings of the government. Assuming the welfare function of the government to be as follows: \( W = f (P, C, R, \text{and } Z) \)… (3.1) Where \( P = \) private consumption; \( C = \) government capital spending; \( R = \) government recurrent spending; and \( Z = \) state variables (i.e. GDP per capita, government revenue, governance index, population and urbanization index, etc.) The government’s decision of the level of recurrent and overall government spending is affected by the state variables. Overall government spending is represented by the following equation: \( G = C + R \) ……………………………… (3.2) Abstracting from private investment and the external account, the budget constraint is determined by the available resources in the economy: \( G = Y – P \)……(3) Where, \( Y \) represents the value of gross domestic product. In order to obtain a simple analytical solution, a Cobb-Douglas specification for equation (3.1) is considered, while abstracting from the presence of state variables. Thus, \( W = P^x C^y R^z \)……………………………(3.4) The paper used data for the period 1963-2017 for the following set of variables: economic variables; gross domestic product, foreign aid, inflation, foreign direct investment, interest rate, trade openness and external debt stock; Structural variables; urbanization rate, young population and old population and finally Politico-institutional variables; market liberalization, political liberty, political instability, corruption and elections. The study used published data from World Bank Country Data Portal (2018) and UNCTAD, Country Development Index (2018). The collected data was analysed using Stata and Gretl econometric softwares. The systems of equations were estimated using VECM, VAR and OLS after carrying out time series property tests on the data. Economic Model This system of equation consists of variables with cyclical behaviour and comprised of the following: gross domestic product, foreign aid, inflation rate, foreign direct investment, interest rate, trade openness and external debt stock. Thus, equation of the economic determinants was set as follows: \( GC = \beta_0 + \beta_1 \text{GDP} + \beta_2 \text{FA} + \beta_3 \text{INF} + \beta_4 \text{FDI} + \beta_5 \text{INT} + \beta_6 \text{TRO} + \beta_7 \text{DEBT} + \mu \)…………………………… (3.1) Where: \( GC \) is real government consumption expenditure; \( GDP \) is real Gross Domestic Product; \( FA \) is Foreign Aid; \( INF \) is Inflation rate; \( FDI \) is foreign direct investment; \( INT \) is interest rate; \( TRO \) is trade openness; \( DEBT \) is external debt stock; \( \beta_0, \beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6 \) are the coefficients or parameters are estimators, and \( \mu \) is a random error term, assumed to be normally distributed with a zero expected value (or mean). 4.0 Results and Analysis In time series analysis, descriptive analysis of data enables us to examine the variability of data so as to determine if the time series data can be subjected to further statistical analysis. Table A2 all through to Table A4 below show the STATA output summary for descriptive analysis for the three Models.
Table A1: Summary Statistics for Economic Model

<table>
<thead>
<tr>
<th>Variable</th>
<th>Obs</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>GC</td>
<td>55</td>
<td>3.08e+09</td>
<td>2.18e+09</td>
<td>3.51e+08</td>
<td>8.92e+09</td>
</tr>
<tr>
<td>GDP</td>
<td>55</td>
<td>2.28e+10</td>
<td>1.39e+10</td>
<td>4.79e+09</td>
<td>5.81e+10</td>
</tr>
<tr>
<td>FA</td>
<td>55</td>
<td>1118.779</td>
<td>825.5417</td>
<td>280.3</td>
<td>3572.62</td>
</tr>
<tr>
<td>INF</td>
<td>55</td>
<td>10.60218</td>
<td>8.323728</td>
<td>.099</td>
<td>45.979</td>
</tr>
<tr>
<td>FDI</td>
<td>55</td>
<td>9.64e+10</td>
<td>1.52e+11</td>
<td>1.28e+08</td>
<td>5.19e+11</td>
</tr>
<tr>
<td>INT</td>
<td>55</td>
<td>.1804364</td>
<td>.0533659</td>
<td>.12</td>
<td>.36</td>
</tr>
<tr>
<td>TRO</td>
<td>55</td>
<td>1.750309</td>
<td>.4833703</td>
<td>1.087</td>
<td>3.008</td>
</tr>
<tr>
<td>DEBT</td>
<td>55</td>
<td>4.94e+09</td>
<td>4.79e+09</td>
<td>2.27e+08</td>
<td>2.57e+10</td>
</tr>
</tbody>
</table>

Source: Author, 2018

A closer look at the mean and standard deviation for Economic Model and Structural Model show that there was no case where the standard deviation was greater than the mean, thus, an implication that the mean was a good indicator of the parameters in the two models.

Table A2: Correlation coefficients for Economic Model

<table>
<thead>
<tr>
<th></th>
<th>GC</th>
<th>GDP</th>
<th>FA</th>
<th>INF</th>
<th>FDI</th>
<th>INT</th>
<th>TRO</th>
<th>DEBT</th>
</tr>
</thead>
<tbody>
<tr>
<td>GC</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GDP</td>
<td>0.6490*</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FA</td>
<td>0.0324</td>
<td>0.5552*</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INF</td>
<td>0.0561</td>
<td>0.0732</td>
<td>0.4480*</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FDI</td>
<td>0.07206</td>
<td>0.0713</td>
<td>0.4826*</td>
<td>0.4663*</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INT</td>
<td>0.07325</td>
<td>0.0755</td>
<td>0.0589</td>
<td>0.0593</td>
<td>0.5538*</td>
<td>1.0000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRO</td>
<td>0.6128*</td>
<td>0.6113*</td>
<td>0.4370*</td>
<td>0.5538*</td>
<td>0.2701*</td>
<td>0.6960*</td>
<td>1.0000</td>
<td></td>
</tr>
<tr>
<td>DEBT</td>
<td>0.0455</td>
<td>0.0467</td>
<td>0.0711</td>
<td>0.0823</td>
<td>0.0423</td>
<td>0.3442</td>
<td>0.0381</td>
<td>1.0000</td>
</tr>
</tbody>
</table>

Source: Author, 2018

The Correlation matrices revealed that there was indeed some degree of association among the variables under study and, thus, implying that each of the variables could be used to specify the respective models for prediction and forecasting purposes in regression models. The variables did not exhibit very high correlations to worry about multicollinearity problem in the models except for Structural Model in which all the variables showed high correlation coefficients. This scenario suggested a case of multicollinearity among the aforementioned variables. The respective p-values show that correlation coefficients were significant since their respective p-values were less than 5% significance level. This condition was double checked by running variance inflation factors to affirm if indeed there existed a problem of multicollinearity among the variables.
Variance Inflation Factor Analysis

The time series in the Economic Model and Structural Model were subjected to collinearity test to examine the extent of multicollinearity among the variables in the system of equations. In practice, variance inflation factor test statistics are used to gauge the level of multicollinearity in a system of equation. The results of variance inflation factor analysis for the two system equations in Economic Model and Structural Model are presented in Table A8 and Table A9.

Table A3: Variance Inflation Factor Analysis for Economic Model

<table>
<thead>
<tr>
<th>Variable</th>
<th>VIF</th>
<th>1/VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP</td>
<td>25.51</td>
<td>0.039200</td>
</tr>
<tr>
<td>DEBT</td>
<td>22.29</td>
<td>0.044863</td>
</tr>
<tr>
<td>FDI</td>
<td>5.33</td>
<td>0.187617</td>
</tr>
<tr>
<td>FA</td>
<td>5.14</td>
<td>0.194553</td>
</tr>
<tr>
<td>TRO</td>
<td>5.03</td>
<td>0.198807</td>
</tr>
<tr>
<td>INF</td>
<td>2.09</td>
<td>0.478469</td>
</tr>
<tr>
<td>INT</td>
<td>1.52</td>
<td>0.656623</td>
</tr>
</tbody>
</table>

Source: Author, 2018

Overall correlation was relatively low in the Economic model as indicated by the mean VIF values of 11.19 for Economic Model. The test results for multiple correlation coefficients for the Economic Model show that there was moderate multicollinearity exhibited by the variables except for external debt overhang and gross domestic product whose VIF statistics were above 5 which is the minimum threshold for tolerating multicollinearity problem.

Table A4: Variance Inflation Factor Analysis for Structural Model

<table>
<thead>
<tr>
<th>Variable</th>
<th>VIF</th>
<th>1/VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>YOUNG</td>
<td>87.75</td>
<td>0.011396</td>
</tr>
<tr>
<td>URB</td>
<td>43.41</td>
<td>0.023035</td>
</tr>
<tr>
<td>OLD</td>
<td>42.16</td>
<td>0.023721</td>
</tr>
</tbody>
</table>

Source: Author, 2018

Schartz-Bayesian criterion to be used to determine the number of optimal lags to be considered in the conditional Error-Correction Model. However, this study settled on the optimal lag lengths suggested by more of the lag selection criteria. When the coefficient of the error term is negative and its corresponding probability value is inferior to 5 percent critical value, then the null hypothesis of long run causality running from the endogenous variables to the target model is not reject or rather the null hypothesis is accepted. The short run dynamics of the system equation in Economic Model was also obtained by examining their significance by comparing their respective p-values with 5 percent critical value in which case the latter is superior then short cause running from the lagged value to the dependent variable is confirmed. The results of the vector error-correction are presented in Table A26 below.

Long-Run Coefficients of Economic model

This paper estimated the system equation in Economic Model which comprised of economic variables: gross domestic product, foreign aid, inflation rate, foreign direct investment, interest rate, trade openness and external debt stock using VECM model as was earlier envisaged. The estimation was conducted on the variables for the period 1963 to 2017 covering a total of 55 observations. Pesaran et al. (2001) proposed factor test statistics are used to gauge the level of multicollinearity in a system of equation. The results of variance inflation factor analysis for the two system equations in Economic Model and Structural Model are presented in Table A8 and Table A9.
The estimated VECM system reveals one error correction term (ce1), whose coefficient indicates the speed of adjustment of towards the long-run equilibrium. As indicated in the table above, the coefficient of the error term is negative and therefore the presupposition that the system converges towards a long-run equilibrium could not be ruled out. The coefficient of the error term was -0.0338675 indicating that the speed of adjustment towards long-run equilibrium was 3.4 per cent towards the long-run equilibrium.

**5.0 Summary and Conclusions**

This paper established the factors influencing government consumption expenditure in Kenya. The specific aim was to establish the economic factors which cause the growth in government consumption expenditure in Kenya. The economic model showed that gross domestic product and its first lag, inflation rate foreign direct investment, and external debt stock are all statistically important in providing explanations to the changes in government consumption expenditure in Kenya at the 5 percent significance level. The inflation rate, gross domestic product and first lag of gross domestic product, on the one hand, have positive effects on government consumption expenditure. In the long-run, 1USD increase in domestic resources causes USD 1.3 increase in government consumption expenditure in Kenya. Interestingly, a unit increase in inflation rate causes USD 1.8 increase in government expenditure. 1USD increase in foreign direct investment leads to USD 0.07 decrease in expenditure while 1USD increase in external debt stock results in USD 2.6 decrease in government consumption expenditure in Kenya.

The findings from the economic model established that economic determinants of government consumption expenditure are gross domestic product, inflation rate, foreign direct investment and external debt stock. While gross domestic product and inflation rate are positive determinants, foreign direct investment and external debt stock turned out to be negative determinants of government consumption spending in Kenya in the long-run.

The results obtained from this study are quite informative and is very useful to policy formulation and implementation. Prudent fiscal policy measures should be put in place to cushion inflationary measure. Inflationary fiscal policies have the tendency of bloating the government budget. The government should create conducive environment for foreign investment as this will complement a good portion of activities and reduce its financial burden. Foreign investors will absorb labor and reduce the government burden on remuneration of employs.
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Ong’iyo (2019)