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The Effect of Government Expenditure on Economic Growth in Kenya

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Abstract

The objective of this study was to determine the effect of government expenditure on economic growth in Kenya. The discourses of government spending and economic growth lead to varied conceptual evidence that is far from conclusive. For this study, government expenditure was the independent variable, and economic growth represents the dependent variable. Inflation and exchange rates operated as the control variables. The research employed Keynesian theory, Peacock and Wiseman's theory, Wagner's theory, and Musgrave's Theory of Public Expenditure to underpin the study. The study used a causal research design. Casualty was tested by determining the significance of the outcome under other conditions. Secondary data sources from original publications from KNBS (Kenya National Bureau of Statistics), Central Bank of Kenya publications, and World Bank formed the information for the entire study. To ensure that the study does not violate panel data, various diagnostic tests (multi-collinearity autocorrelation, Homoscedasticity, and normality) were performed to ensure that the study did not violate the panel. The study found that all of the variables have an impact on GDP, both individually and in combination. Government spending has a positive impact on GDP growth. The study concludes that there exists a positive relationship between the Trade-Weighted index and GDP growth levels. Moreover, combined variables strengthen the correlations but the difference is minor. Inflation as a predictor of economic growth had no statistical significance. The study recommends that the government use more development expenditure to maintain considerable economic growth. Additionally, the study recommends a moderate intervention by the CBK to maintain a healthy balance between local and international currency.

Keywords: *Government expenditure, Economic growth*

Introduction

Economic growth is an important metric for asserting the important welfare of a country. A growth in an economy suggests an increase in real GDP. In essence it refers to an increase in national income, total output and total expenditure (Fatemi & Behmanesh, 2012). The link between government spending and economic growth occupies a series of debates amid researchers. The discourses have fueled common among wide wide-ranging debates in economic literature giving varied conceptual evidence that is far from conclusive. Common ground from different studies portrays that government expenditure influences the performance of an economy; however, the direction of influence varies with time and the specified country (Bandrés, & Gadea 2019). Alexiou and Nellis (2017) remarks that under short term and long-term dynamics, government spending has a positive effect on the economic growth measurement regardless of the inflation scale.

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The research employs Keynesian theory, Peacock and Wiseman's theory, Wagner's theory, and Musgrave Theory of Public Expenditure to underpin the study. Keynes theory provided that an increase in government expenditure has a subsequent effect on a nation's money market thereby creating demand for money which also sparks an increase in the interest rates which also weakens private investments (Ventelou & Nowell, 2015). As per Wagner's theory, the government grows in response to growth in the general economy and society. The significant flaw in Wagner's theory is that it only relies on the demand side to explain government expenditure. Musgrave theory of public expenditure provides that the initial levels of development demand public capital for installation of major infrastructures and other installation demands (Uzuner, Bekun, & Akadiri, 2017). From this perspective public expenditure will reduce towards the end of a project and increase when the government introduces a new development. Wiseman and Peacock's theory postulate that government expenditure does not rise in an even and ceaseless manner, but in pace (Lonik 1998). From these connotations society and community demands creates necessity for public expenditure to increase to an extent that available sources of funds may deem inefficient (Magazzino, Giolli, & Mele, 2015).

In Kenya there is evident increase in government expenditure since independence without conclusive outcome on the economy for the same (Odero & Reeves, 2014). According to Otieno (2016), government expenditure on education had a positive effect on economic growth. Otieno (2016) focused on labor force education and concluded that an increase of education per workforce by 1% improved the work output by 5%. Gisore, *et al*, (2014) asserted that spending on health and defense have a positive impact on the growth of the economy while spending on education and agriculture yielded insignificant effects in the short run. Maingi (2017) observed that in Kenya, economic growth has been inconsistent despite the government expenditure being on an upward trend.

Government Expenditure

Government Expenditure is an outflow made by the central government, regional, and local authorities making up a substantial portion of GNP (Cvetanovic, Filipovic, Nikolic, & Belović, 2015). Ribeiro and Lima (2019) refer to government expenditure as the expenses incurred by a government for the maintenance of itself, society, economy, and assisting other nations. Public Expenditure is vital in the operation of all economies as they determine the size of the economy and economic growth.

The expenditure acts as a two-edge that boosts aggregate output especially in the developing countries which are characterized by massive market failures and poverty (Chilarescu & Viasu, 2013). On the other hand, it could have consequences such as unintended inflation (Alexiou, 2009). Public expenditure is an important tool for stimulating the diverse social economic and legal requirements for economic development.

Government expenditure is an output that can be measured in scales (Jackson, 1990). Government expenditure is a monetary unit that the research will access from authentic publications. Okoth (2021) measured government expenditure through summation of the amount spent on defense services and development services. Weil (2013) accounts for administrative services, debt services, assistance to the States, and cost of maintaining the military. The general indicators of government expenditure include government deficit, general government debt, government and spending by destination (Magazzino, Giolli, & Mele, 2015) the research reviewed all the expenses in periodic intervals of years. The current study accommodates total government expenditure.

Economic Growth

Economic growth is an upsurge in GDP in comparison to one period to another (Weil, 2013). Palmer (2012) refers to economic growth as the increase in the capacity of an economy to produce additional quantities of goods and services. It is also an increment in productivity per head of the population over specified time span **(**Seater & Yenokyan, 2019**).** Weil (2013) defines Economic Growth as the increase of real GDP or GDP per capita, an increase of national product that is measured in constant prices. All increases in capital goods and technology contribute to economic growth (Jackson, 1990). The common assumption from all the definitions is that an economy is doing well when their production of goods and services is increasing. This assertion is important because it denotes enhanced living standards and increased consumption of goods and services. Any measure that will help the government know that the citizens' lives are improved denotes the importance of a holy grail.

Lisi and Pugno (2015) Measured economic growth through GDP. Ventelou and Nowell (2015) also measured economic growth through GDP and GNP. Manyeki and Kotosz (2017) also measured economic growth as percentage change in GDP between two different periods. The current study will rely on GDP as an indicator of growth in comparison to two different time periods. Manyeki and Kotosz (2017) concluded

that Musgrave theory suits Kenyan scenario given the long term and short-term effect. From 2012, changes have occurred Kenyan economy that may create an altercation to their initial findings. In this scenario it is important to enquire; what sectors yield positive results in Kenyan government expenditure responding positively to economic performance?

There is a need for further research on the relationship between government expenditure and economic growth, focusing on inflation and exchange rates. Current research has shown that government expenditure can lead to economic growth. However, there is still a lack of understanding of how inflation and exchange rates play a role in this relationship. It is possible that inflation and exchange rates can moderate the relationship between government expenditure and economic growth, and further research is needed to explore this.

Literature Review

Theoretical Review

Wagner (1835–1917) revealed the positive correlation between economic growth and government size. Wagner's theory is based on the experience of the initial phases of development in Europe (Adil, Ganaie, & Kamaiah, 2017). The theory suggests that it is the economic growth that dictates how the government spends. The results imply that economic growth dictates government expenditure (Udo & Effiong, 2014). An important contribution from the theory provides that public expenditure of today was a revenue from economic developments.

Furthermore, the theory also points that governments respond to the demands of the citizens especially when they constantly collect tax. Proponents supporting Wagner's theory argue that the implication of theory makes sense in the long run because the government will rely on past investment to finance its future expenditures (Babatunde, 2018). The significant flaw in Wagner's theory is that it only relies on the demand side to explain government expenditure (Magazzino, Giolli, & Mele, 2015). Critics of this theory also posit that it is difficult to tell whether Wagner's expenditure is proportion of the government spending or total expenditure that depends on the economic growth.

Despite the critics this theory is important to the study which focuses on long run and short run implication of public expenditure and economic growth (Magazzino, Giolli, & Mele, 2015). This notion will be important to underpin the progress of economic performance as a factor of past expenditure.

Determinants of Economic Growth

Economic growth is an upsurge in GDP. To authenticate whether or not there is growth in the economy there has to be a reference point for comparison. The common assumption from all the definitions is that an economy is doing well when production of goods and services is increasing. Economic growth is an important measure because it denotes enhanced living standards and increased consumption of goods and services.

Inflation

Inflation measures the rise in prices of goods and services. It is an important metric because it factors in the real value of goods in relation to time. Government expenditure may increase in value compared to one period and another which interfere with the real value of goods (Lisi & Pugno, 2015). The researcher will factor in the effect of inflation on government expenditure and economic growth through CPI index measurement.

Exchange Rates

Exchange rates consider the value of a country currency in relation to other currency. At the analysis stage the researcher considered exchange rates to compare Kenyan shilling with US Dollars (USD) (Bilateral exchange rates) (Ventelou & Nowell, 2015). To offer a standard measurement for exchange rates the study relied on the Trade-weighted index (TWI) of Kenya shilling from 1963 to 2018 from the World Bank database.

Empirical Studies

In the USA, a study by Dudzevičiūtė, Šimelytė, & Liučvaitienė (2018) showed that federal spending at a national level has a diverse impact on economic progress. This study focused on developed countries with different economic settings as Kenya. The study will not be a sufficient textbook when testing hypotheses in developing countries with substantial debts. This study also lacks the time as a factor of measuring development.

In regards to the EU nations, studies of the long and short-term association between federal spending and economic progress were done by Magazzino, Giolli, & Mele (2015). The long-term analysis revealed that the relationship was not stable and weakened over long durations. While the study has an important factor of time, its geographical setting may be inapplicable in African nations given the different variables driving economic development in the different environs.

(Gisore, et al., 2014) asserted a study to ascertain the empirical impact of government spending on the economic growth of East Africa (Kenya, Uganda and Tanzania) from 1980 to 2010. The researchers showed that spending on health and defense has a positive impact on the growth of the economy. On the other hand, spending on education and agriculture yielded insignificant effects. The study did not consider the long term and short run effect with inflation and exchange rates as important denominators.

Methodology

The study employed a causal research design. Researchers utilize this approach to dissect the phenomenon of contingent explanations assuming a correlation between two variables (Abenavoli, *et al.,* 2021). The target population included all the three main sectors of the economy namely the Agriculture, Industry, and services. Secondary sources of data from authentic publications from KNBS (Kenya National Bureau of Statistics) and Central Bank of Kenya publications formed the source of information for the entire study. Yearly data for the variables in the study from 1963 – 2018 were collected from these sources. Regression analysis was used to determine the relationship.

Descriptive Statistics

Table 1: Time series variables

Statistics				
	Government expenditure in Billions (KSH)	GDP in Billions (KSH)	CPI	Bilateral exchange rates (TWI)
Mean	374.697	3362.542	10.4869	41.8408
Median	268.323	3172.455	9.3295	25.2113
Std. Deviation	0.272.	2.038.	8.29794	34.53891
Minimum	41.244	696.336	-.17	7.00
Maximum	1088.333	8327.604	45.98	103.41

For all the variables under consideration in table 1, the mean tends to drift away from the median. This indicates that the average values tend to be far from the center of each individual series. The mean remains well above the median, indicating a significant shift in values as time progresses from 1963–2018.

Correlation Analysis

The purpose of this study was to find out if government spending has an impact on gross domestic product by establishing the correlation between the variables. A Pearson test was used to examine the temporal linkages between GDP, inflation, and government expenditure. The results are summarized in the table 2

Table 2: ***Correlation matrix***

N=56		**Correlations**			
		Expenditure	GDP	CPI	WTI
Expenditure	Pearson Correlation	1			
	Sig. (2-tailed)		.000	.933	.000
GDP	Pearson Correlation	.989	1		
	Sig. (2-tailed)	.000		.763	.000
CPI	Pearson Correlation	-.011	.041	1	
	Sig. (2-tailed)	.933	.763		.916
WTI	Pearson Correlation	.947	.929	.014	1
	Sig. (2-tailed)	.000	.000	.916	
Correlation is significant at the 0.01 level (2-tailed).					

The results of the correlation between government spending and GDP gave a two-tailed correlation of 0.989, indicating a strong positive correlation. The significance value for the correlation is below 0.05 the conclusion herewith is that there's a significant relationship between the two variables. The results also showed the bidirectional causality. In other words, models to support both the Keynesian and Wagnerian hypotheses. The evidence points more towards GDP influencing the government expenditure from the data; it is also an indication that government expenditure influences GDP. It's reasonable to assume that the level of Gross Domestic Product (GDP)—or national income—may have an impact on how much the government spends. And while the results may not be conclusive, a position is reasonable that is consistent with both Wagner's law and Keynesian ideas.

Regression Analysis

To investigate this, regression analysis was first performed to examine if there was a linear relationship between the independent and dependent variables. All relationships had a strong positive correlation except for inflation. Another analysis was performed to determine the relationship between government expenditures, inflation, and exchange rates.

Multiple Regression Analysis

Results of the multiple linear regression indicated that there was a very strong collective significant effect between the Expenditure, inflation, Exchange rates, and GDP. From the results CPI and government expenditure r was -0.011 with a significance of 0.933. This indicates a weak negative correlation with no statistical significance. CPI and GDP correlation coefficients were 0.041 with significance of 0.763 another indication of weak positive correlation with no statistical significance. The exchange rates and Government expenditure coefficients were 0.947 with significance below 0.05. This indicates a strong positive correlation with statistical significance. A strong positive correlation between exchange rates and GDP with a coefficient of 0.929 with less than 0.05 significance. There could be a correlation between the variables.

This study differs from Landau (1983) and Thuo (2013) in which both economists found a positive and negative relationship between inflation and economic growth. The study agrees with Landau (1983) and Thuo (2013) in that there is a linear relationship between government expenditure and economic growth, and that GDP changes marginally as a result of an increase or decrease in expenditure.

Analysis of Variance

A one-way ANOVA was conducted to find the variance of the data across various components. The following are the squares, mean squares, degrees of freedom, F- and P-values:

Table 3: ***Analysis of Variance***

Analysis of Variance Results					
Groups	**N**	**Mean**	**Std. Dev.**	**Std. Error**	
Expenditure	56	374.7	272.08	0.36	
GDP	56	3362.54	2038.22	0.27	

ANOVA Summary					
Source	**DF**	**Sum of Square**	**Mean Square**	**F Statistic**	**P-value**
Regression (between $\hat{y}_i$ and $\bar{y}$)	2	223973098100	111986549000	1314.24	0
Residual (between y_i and $\hat{y}_i$)	53	4516123588	85209879.14		
Total (between y_i and $\bar{y}$)	55	228489221700	4154349485		

Table 4: Coefficients

Coefficient Table Iteration 1 (adjusted R-squared)

	Coeff	**SE**	**t-stat**	**lower**	**upper**	**Stand Coeff**	**p-value**	**VIF**
B	429823.34	84382.42	5.09	260497.61	599149.07	0	0.000	
X1	7.98	0.44	17.85	7.084	8.87	1.06	1.110	9.69
X2	13417.980	4722.34	2.84	3941.91	22894.05	0.05	0.006	1.00
X3	-4745.185	3520.59	-1.34	-11809.77	2319.40	-0.08	0.183	9.69

Coefficient Table Iteration 2 (adjusted R-squared

	Coeff	**SE**	**t-stat**	**lower**	**upper**	**Stand Coeff**	**p-value**	**VIF**
b	450256.02	83646.61	5.38	282482.17	618029.88	0	0.000	
X1	7.41	0.14	51.22	7.12	7.70	0.98	0	1.00
X2	12918.50	4743.91	2.72	3403.42	22433.58	0.05	0.008	1.00

R square (R2) equals 0.980. It means that the predictors (Xi) explain 98% of the variance of Y. Adjusted R square equals 0.97. The coefficient of multiple correlation (R) equals 0.990. It means that there is a very strong correlation between the predicted data (ŷ) and the observed data (y). $\hat{Y} = 450256.0274 + 7.410834 X_1 + 12918.50204 X_2$

Conclusions

The empirical results imply that government expenditure influences GDP and that their relationship is essentially of a feedback causal nature in the long term. Government expenditure increases aggregate demand, leading to higher economic growth. However, as the government size grows the marginal return on investment decreases, which means that the effect of government expenditure on economic growth is watered down. More government expenditure boosts economic growth in the long run because it leads to more investment in things like infrastructure and education, which leads to a more productive economy.

However, this effect may be watered by an increasing government size because as the government gets bigger, it may crowd out private investment and become less efficient. This finding may partly explain the tendency of government expenditures and hence the size of government to increase as the levels of GDP rise. Thus, more government expenditure boosts economic growth in the long run but this effect may be watered down by the effects of an increasing government size.

Consistent evidence is also found that the effect of total government expenditure which is generally mimicked by recurrent expenditures is negative in the short run but positive in the long run. The government's total expenditure includes its recurrent spending (such as salaries and benefits for government employees) and its capital expenditure (such as building new roads and bridges). The effect of the government's total spending can be negative in the short run if it crowds out private investment, but it can be positive in the long run if it leads to economic growth. There is however no evidence that development expenditure can influence GDP for the Kenyan data used. Overall, government expenditures and size of government have marginal effects on GDP which are sustained in the medium to long term. It means that if the government wants to stimulate the economy in the short run, it should cut recurrent expenditures. Still, it should increase recurrent spending if it wants to smooth out the business cycle or promote long-run growth.

Kenya can use government spending to stimulate economic growth. One of the most direct ways is through infrastructure spending. This can be used to create jobs and spur economic activity directly. Government spending can also be used to fund research and development, leading to new and innovative products and services being developed. This can also ripple effect through the economy as new industries and sectors are created. Finally, government spending can provide targeted tax breaks or subsidies to businesses, incentivizing them to invest and expand their operations. All of these government spending measures can be effective in stimulating economic growth.

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