



ADMINISTRATION AND ECONOMIC INVESTMENT: A REALISTIC FUTURE FOR ECONOMIC GROWTH

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ABSTRACT

This work decomposed the government capital expenditure to investigate the reality of a better future for Nigeria via administration and economic services as capital expenditures based on the WDI data from 1981 to 2021. Evidence of statistical significance of cointegration by Johanson Cointegration led to the use of VECM by accepting GDP as the regressand on ADMIN and ECONS as the regressor. Indications of the findings after acceptable pre-post tests analysis include, a unit change in the ADMIN caused an 8.6% increase in GDP in the short run while the previous years' deviation from the

Introduction

Annual statistics bulleting categorize the Capital expenditures of the federal republic of Nigeria into Administration, Economics services, Social Community services, and Transfer. In 2014, over 29% and 50% of the capital expenditure was on Administration and Economic services and as of 2021, capital expenditure on Administration and Economic services stands at 176,075.50 and 635.73 billion Naira respectively. This makes the two categories the largest shares of the capital expenses of the federal government of Nigeria.

Statement of the Problem

Having the knowledge that can provide a long-run understanding of any national economic theory depends on the Economic History of such a nation (Brownlow & Colvin, 2022). Therefore, understanding the future of the economic growth of Nigeria rely on many factors among which the government expenditure is inclusive. Such expenditure can be recurrent or capital but the latter is of high interest for this work. So, decomposing the capital expenditure aids in ascertaining the portion that each of such categories of expenses earns from the total capital expenditure of the federal republic of Nigeria. Thus, the lot fell upon the administration and Economics services as the predictor variables while the economic growth is proxy by the gross national product as the criterion variable.

Objectives of the Study

The aim of this work is to:

1. empirically analyze how sure is a better future for Nigeria via government capital expenditure on economic services
2. discover the link between government capital expenditure in administration and the economic growth of Nigeria.

Research Questions

The research questions for this work are centered on;

1. How sure is a better future for Nigeria via government capital expenditure on economic services?



long-run equilibrium is been corrected at a speed of 6.7% in the current year. The ADMIN and ECONS variables statistically possess an asymmetric relationship on GDP, in the long run a percentage change in admin will cause an increase of 175% and that unit increase in economics will result in a decrease of 80% in GDP respectively. Close all loopholes that drains national wealth is essential but better economic investments that will meaningfully advance this nation is a matter of necessity as a policy suggestion.

Keywords: Investing, Economy, Future-hope

2. Is there a link between government capital expenditure in administration and the economic growth of Nigeria?

Research Hypothesis

To achieve the objectives, the below hypothesis becomes relevant.

H₀₁: There is no significant relationship between a better future for Nigerians and government capital expenditure in economic services

H₀₂: There is no significant relationship between Government capital expenditure in administration and economic growth in Nigeria

Theoretical Review

The value theory of investment philosophically evaluates how, why, and to what extent investors value the investment. This aids the development of public administration which is incomplete without the work of Nicholas Henry after the famous article of Woodrow Wilson (Bojang, 2021). Similarly, the economic services are of high data values which keep increasing regularly. So, managing such becomes a necessity due to its economic potential underutilization (Baldenweg-Bölle, Meierhofer, & Mertes, 2022). Since it is a belief that high value attracts more investment than lesser ones, the value of administration and economic services based on efficiency theory can be determined by their percentage of total capital expenditure in ascertaining their contributions to the economic growth of any nation (Gunuboh, 2023). Other theories of investment include Flow Fund Theory which deals with the major sources and uses of funds to determine the returns, Efficient Market Hypothesis shows that price can be rightly determined in the face of all necessary required market information, Greater Fool Theory is on the assumption that investors buy overpriced assets in the hope of selling to a higher fool that will be paid a much higher price.

The most related to this work are Capital Asset Pricing and marginal cost-benefit theory. Capital asset theory evaluates the required risk and returns on a diversified portfolio of assets with a beta as a measure of systematic risk. So, it is expected that enough measures should be initiated on the capital expenditure of the government to be at leverage. Or advantageous sometimes if returns are higher based on the risk-taking in such investments. The marginal cost-benefit theory engages the benefit of each government expenditure being compensated for by the benefit to be derived. At leverage, the financial cost must meet the opportunity benefit. One vital key here is that though the financial implication might not match the funding of administrative and economic services since the social financial cost usually outweighs the revenue base on the social commitment of the government, the



opportunity cost of such services should be enough ways to measure the advancement in economic growth.

Empirical Review

Chebbis and Ounaies (2023) investigate the classical optimal investment problem of the Merton model in a discrete-time with market friction due to loss of wealth in trading by considering the case of the finite number of investors of which each is represented by a convex penalty function. The results prove the existence of an optimal strategy of investment by using a new approach based on the formulation of an equivalent general equilibrium economy model via constructing a truncated economy, and the optimal strategy is obtained using a classical argument of limits.

Alobre, Farhan, and Dhananjaya (2023) used SPSS in the general Statistics Book and the Agricultural Statistics Book data to know the evaluation of Yemen's agricultural investment to the total investment in 2009. The correlation is a verdict to the average total investment in agriculture given the high percentage in 2015 within the range of the period studied as the decline in the investment led to a downward trend of job opportunities in Yemen. So, the future of Yemen depends on realistic investment in agriculture.

In search of the future of economic inequality, Schmidt and Juijn (2023) engaged in intertemporal consequences of income inequality via escalating its potential effects on humanity's long-term future. The major gap was to access such instrumental reasons for the reduction of economic inequality based on intertemporal effects in the short, medium, and long term. Findings include access to good short and medium-term instrumental avenues to lower economic inequality. This stands for the future economic inequality reduction inspired due to its consequences such as climate change, polarization and conflicts, and so on. Obeng (2019) inquired about the Rationality of Information; How Embedded in Classical and Behavioural Theories in investment decisions based on reviews of the literature on rationalism theory as the classical financial model in investment decisions. Findings show that investors' reaction differs due to information availabilities and the mode of interpretation of such information. So, economic development can help less-endowed societies to develop via sound capital investment policies.

Gap in Literature

Capital structure is a drive to investors and investment(Chebbi & Ounaies, 2023). The economic future of nations depends on investment in their available natural resources.(Alobre, Farha, & Dhananjaya, 2023). The choice of investment should be rational in achieving the best reward for such investment(Obeng, 2019). The ability of the government to succeed in any investment rest on its control over the available resources in changing the masses' perspectives towards the actualization of the national goal(Schmidt & Juijn, 2023). The interest of this work is to fill the gap by knowing how government administration and economic services as decomposed capital expenditure have aided economic growth in Nigeria. this is expected to add to the pull of knowledge in economic growth via government capital expenditure.

Methodology

Model Specification

The Gross Domestic Product is a function of National Debt [$GDP = f(\text{Expenditure})$](Adekunle, 2022). Hence, an adjustment and modification give a functional specification of Gross Domestic Product as a function of Government Capital Expenditure ($GDP = GE$). Therefore,



GDP = f (ADMIN, ECONS) where the estimated model becomes;

$$GDP = \alpha + \beta_1 ADMIN + \beta_2 ECONS + \epsilon_t \text{ were;}$$

Where GDP is the Gross Domestic Product at Current Market Prices as ADMIN and ECONS remain to be total capital expenditure on administration and economics services respectively.

VECM, modification of this model gives

$$\Delta Y_t = \beta_1 + \beta_2 \Delta X_t + \beta_3 v_{t-1} + \epsilon_{t-1} \dots \dots \dots$$

$$\Delta GDP_t = \alpha_0 + \sum_{j=1}^p \alpha_{0j} \Delta GDP_{t-j} + \sum_{j=1}^{q1} \beta_1^* \Delta ADMIN_{t-j} + \sum_{j=1}^{q2} \beta_2^* \Delta ECONS_{t-j} + \delta_1 ECM(-1) + \epsilon_T$$

The a priori expectation of the model is that there is a symmetrical relationship between economic growth, the Total Capital Expenditure in administration, and economic services.

Discussion of Results

Table.1 PP AND ADF STATIONARITY TEST

UNIT ROOT TEST								
variable	AT FIRS DIFFERENCE				AT FIRST DIFFERENCE			
	Tool	T Stat	5% CV	Mackinnon Pro Z(t)	T Stat	5% CV	Mackinnon Pro Z(t)	Order
GDP	PP	12.233	-2.958	1	-3.428	-2.961	0.0101	I(1)
	ADF	12.547	-2.958	1	-3.46	-2.961	0.0091	I(1)
ADMIN	PP	1.673	-2.958	0.9981	-10.611	-2.961	0	I(1)
	ADF	0.51	-2.958	0.9852	-10.717	-2.961	0	I(1)
ECONS	PP	1.176	-2.958	0.9958	-6.751	-2.961	0	I(1)
	ADF	0.169	-2.958	0.9705	-6.758	-2.961	0	I(1)
SOCOM	PP	0.932	-2.958	0.9935	-10.343	-2.961	0	I(1)
	ADF	0.026	-2.958	0.9606	-9.869	-2.961	0	I(1)
GNI	PP	12.384	-2.958	1	-2.961	-2.961	0.0106	I(1)
	ADF	12.138	-2.958	1	-3.459	-2.961	0.0091	I(1)

Source: Author's Computation 2023, underlying data from WDI Database. All are based on a 5% Statistically significant

SELECTION-ORDER CRITERIA		2	OBSERVATION	41
JOHANSEN TESTS FOR COINTEGRATION		2	PRO CHI ²	0
VARIABLE	STANDARD DEVIATION	MEAN	MIN	MAX
GDP	50434.86	37550.91	139.31	176075.5
ADMIN	167.3191	140.1839	26	635.73
ECONS	277.2858	254.0768	66	1102.46

There is evidence of some of the variables stationary at level, while some are stationary at first difference, and others at both levels by the outcome of both the PP and ADF. Based on the objectives of this work and subject to the statistical significant of the Mackinnon Z(t) outcomes, we accept the variables to be stationary at first difference.

DESCRIPTIVE ANALYSIS PRE AND POST-ESTIMATION TEST

S/NO	EXAMINATIONS	Chi ²	Pro Chi ²	DECISION
1.	NORMALITY TEST			



a.	Jarque-Bera test	5.126	0.52779	Normal Dist.
b.	Skewness test	1.493	0.68395	Normal Dist.
c.	Kurtosis test	3.633	0.30392	Normal Dist.
d.	Supported by the Histogram Appendix 2d			Normal Dist
2. COVARIANCE				
a.	Covariance Ave. Matrix of Coefficient	ADMIN/ECONS	-	0.00060815
b.	PWCORRELATION	CORRELATION	P-VALUE	
	GDP/ADMIN	0.2698	0.0923	
	GDP/ECONS	0.2617	0.1029	
	ADMIN/ECONS	0.4602	0.0028	
3. AUTOCORRELATION				
a.	LANGRANGER MULTIPLIER TEST	LAG	Chi ²	Pro of Chi ²
		1	8.0441	0.52971
		2	5.7346	0.76616
b.	DURBIN-WATSON	d-statistic	Pro d stat	
		(3, 40)	1.177626	
c.	RESIDUAL TEST OF GDP MODEL	z stat	Prob> z	
		-0.16	0.87	
4. HETEROSCEDASTICITY				
	Breusch-Pagan / Cook-Weisberg test for heteroskedasticity	Chi ²	Pro of Chi ²	DECISION
a.	Variables: fitted values of the GDP model	1.31	0.2519	HOMOSCE
b.	Cameron & Trivedi's decomposition of the IM-test	2.45	0.7845	HOMOSCE
c.	Breusch-Pagan / Cook-Weisberg test for heteroskedasticity	RHS F-Stat	Pro of F - Stat	HOMOSCE
	Variables: ADMIN AND ECONS	0.78	0.4654	
5. MULTICOLLINEARITY				
	VARIANCE INFLATION FACTOR (VIF)	VIF	1/VIF	DECISION
	MEAN	1.27	0.788197	NO MULT.
6. OMITTED VARIABLE				
a.	Ramsey RESET test using powers of the: FITTED VALUES OF GDP MODEL	F(3, 34)	Prob> F	DECISION
		0.63	0.6014	GOOD
b.	Ramsey RESET test using powers of the: INDEPENDENT VARIABLES	F(6, 31)	Prob> F	
		2.12	0.0793	GOOD
7. STABILITY				
	Cumulative sum test for parameter stability	Test Stat	5% C. V.	DECISION
a.	Recursive	0.9512	0.9479	GOOD
b.	Supported by the recursive graph Appendix 6c			GOOD

Source: Author's Computation 2023, underlying data from WDI Database.
 All are based on a 5% Statistically significant



The outcomes of the JarqueBera, Skewness, and Kurtosis tests based on the probability of their Chi² reveal that the model is normally distributed. This is pictured in the Appendix 2d Histogram. In checking the interrelationship of the variables, the Covariance Matrix of the Coefficient shows that there exists a correlation between the independent variables. Similarly, the PairWise correlation reveals no statistical relationship between the regressors and the regressed variable but there is a statistically significant correlation among the explanatory variables. This lunch is an avenue to ascertain the level of the relationship to avoid autocorrelation. The Lagrangian Multiplier findings at Lag 1 and 2 indicate no statistical significance of autocorrelation in the model. This is statistically similar to the outcome of the Durbin-Watson. Checking the residual run test for the GDP model also shows the same evidence statistically. Hence, the relationship is healthy for the model prediction.

Two scenarios of the Breusch-Pagan / Cook-Weisberg test for heteroskedasticity were considered for the GDP model. First is on fitted values of the GDP model as response variables which shows that there is no evidence of heteroscedastic statistically. This is in agreement with Cameron & Trivedi's decomposition of the IM-test since their probability of Chi² is more than a 5% test of statistical significance.

The second part of the Breusch-Pagan / Cook-Weisberg test for heteroskedasticity is on the ADMIN and ECONS as explanatory variables to the GDP model. Out outcome of the F-statistics indicate that the model is homoscedastic statistically.

The mean of the VARIANCE INFLATION FACTOR (VIF = 1.27) and the reciprocal (1/VIF = 0.788197) are within the range of the economic rule of thumb to make the model non-multicollinear.

The omitted variable test of the Ramsey RESET test using powers of the fitted values of the GDP model, and that of independent variables (ADMIN and ECONS) shows that the outcome of their probability of F statistics 0.6014 and 0.0793 are respectively more than a 5% test of statistical significance to establish that the model is well modeled.

The model is statistically stable in that the outcome of the Recursive value (0.9512) for the Cumulative sum test for parameter stability is more than the 5% Critical Value (0.9479) and has supported by the recursive graph in Appendix 6c

Discussion of Findings

VECTOR ERROR CORRECTION MODEL OUTCOME.

VECM Short Run Causality Test			
Variables	Coefficient	Std Err / [pro of Z(t)]	Decision
GDP Model	-0.0677881	0.0287819 / [0.019]	Speed of Adjustment (-cell1)
	0.1224656	0.0316 / 0.000	Constant
ADMIN	-0.0862294	0.0403329 / [0.033]	Existence of Significant Causality
ECONS	0.0595362	0.0329599 / [0.071]	Existence of Significant Causality
ADMIN MODEL	0.2020774	[0.138]	Not Statistically Significant
ECONS MODEL	-0.0076402	[0.962]	Not Statistically Significant
VECM Long Run Causality Test			
Variables	Coefficient	Std Err / [pro of Z(t)]	Decision
GDP	1		Normalization
ADMIN	-1.7477	0.2784698 / [0]	Significantly Proportional to GDP
ECONS	0.8048	0.2845451 / [0.005]	Inversely Significantly to GDP



Constant	-3.824324		
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Source: Author's Computation 2023, underlying data from WDI Database.
 All are based on a 5% Statistically significant

The short-run analysis of VECM help to infer causality. Among the three (GDP, ADMIN, and ECONS) models established, only the model for GDP is statistically significant for causality in the short run. The pro of $Z(t = 0.019)$ for the GDP Model is statistically significant while it is only the ADMIN variable with the pro of $Z(t)$ of 0.033 that statistically caused GDP.

The short-run equation then gives;

$$\Delta \ln GDP_{t-i} - \text{STD error} - \text{stat} = -0.0677881 \text{ ECT}_{t-i, 0.019} - 0.0862294 \Delta \ln \text{ADMIN}_{t-i, 0.033} + 0.0595362 \Delta \ln \text{ECONS}_{t-i, 0.033} + 0.1224656$$

Test of the Hypotheses

Hypothesis 1

H_{01} : There is no significant relationship between a better future for Nigerians and government capital expenditure in economic services

A unit change in the ADMIN caused an 8.6% increase in GDP in the short run while the previous years' deviation from the long-run equilibrium is been corrected at a speed of 6.7% in the current year.

Conclusion

It has been statistically and empirically established that, in the short run, the future of government capital expenditure on economic services in Nigeria is challenging and a better future is questionable in that it statistically reduces the GDP as a measure of the economic growth in Nigeria. Therefore, we reject the null hypothesis and conclude that there is negative significant relationship between a better future for Nigerians and government capital expenditure in economic services

Hypothesis 2

H_{02} : There is no significant relationship between Government capital expenditure in administration and economic growth in Nigeria

The error correction equation is:

$$\text{ECT}_{t-1} = 1.000 \ln \text{GDP} - 1.7477 \ln \text{ADMIN} + 0.8048 \ln \text{ECONS} - 3.824$$

Since the ADMIN and ECONS variables statistically possess an asymmetric relationship on GDP, in the long run, a percentage change in admin will cause an increase of 175% and that unit increase in economics will result in a decrease of 80% in GDP respectively.

Conclusion

Since the ADMIN and ECONS variables statistically possess an asymmetric relationship on GDP, in the long run, a percentage change in admin will cause an increase of 175% and that unit increase in economics will result in a decrease of 80% in GDP respectively, we therefore reject the null hypothesis and conclude that there is positive significant relationship between Government capital expenditure in administration and economic growth in Nigeria



Recommendations

A better economic investment that will meaningfully advance this Nation is hereby essential as a policy suggestion.

All loopholes that drain national wealth should be closed for maximum utilization of the national scarce resources.

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