GRANGER CAUSALITY APPROACH TO THE CONFIRMATION OF POST-COVID 19 KEYNESIAN TWIN-DEFICIT HYPOTHESIS IN NIGERIAN ECONOMY

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ABSTRACT
One of the recent critical post COVID 19 challenges being witnessed across the globe especially among the developing countries, Nigeria inclusive, has been the increasing cases of deficit financing aimed at providing economic and social overheads in view of insufficient private investment in these countries. Thus, while the developed countries are re-strategizing on how to contain this menace, the developing countries, Nigeria in particular, with her agrarian economy as the major employer of labor, is currently facing a monumental food crisis caused by a combination of socio-political imbalance in the system. This paper was aimed at investigating the extent to which changes in budget deficits predicts changes in current account balance in Nigeria using time-series data spanning from 1980 to 2022. The methodology adopted for the study was multiple regressions. The regression results show that at 5 per cent levels of significance and relevant degrees of freedom, changes in budget deficits (Bd) have a positive and significant long-run impact on current account balance (CAB) in Nigeria. Furthermore, a short-run negative relationship between budget deficit and export was also established, thus confirming the presence of twin deficits hypothesis in post COVID 19 Nigerian economy. Moreover, the result of the system equations confirmed the existence of a causal relationship between budget deficits and current account balance in Nigeria. The recommendation was that government should adopt fiscal management actions aimed at minimizing borrowing and capable of reducing fiscal deficits that often result in a large amount of transfer payments and questionable additional budget expenses in Nigeria.

Keywords: *Granger Causality, System Equation, Vector error correction model, Diversification*

JEL CLASSIFICATION: F3, F41, H6

1. INTRODUCTION
Budget deficits reveal an imbalance in the fiscal position of a government. Perpetual budget deficits normally imply that the government will always increase its stock of debts. Financing of these deficits and debts result in various macroeconomic imbalances. As reported by Kosimbei, (2009); Wosowei, (2013); Funke and Nickel, (2006); and Drakos, (2001) "lots of empirical researches have been carried out on the issue of budget deficits and macroeconomic performance of an economy".

In all these studies, opinion differs on how budget deficits affect the economy, especially as it concerns current account balance. For instance, Wosowei (2013) in his study maintained that the budget deficits, especially for an emerging economy, are the visible

key instruments disturbing other sectors of an economy. He believed that the link between budget deficit and other macroeconomic aggregates, such as current account balance, is a function of methods of financing such deficit. Reacting to the above analysis, Iyoha, Oyefusi and Oriaku (2004), further confirmed that in less developed nations, Nigeria inclusive, the major cause of imbalance on some macroeconomic variables such as current account balance has been blamed on the method of financing the deficits. In their submission "financing of deficits through external or internal loan always result in increased money supply and instability in macroeconomic variables especially a nation's current account figure". Their defense is that instead of using the loan on productive capital investment such as road construction, the building of dams, developing the agricultural sector, such loan is usually wasted on unproductive ventures. These have always resulted in uncontrollable increase in both capital and recurrent expenditure of the government at all levels.

The Nigerian economy has been experiencing budget deficits over the years, which seem to go hand in hand with declining growth rates and current account deficit. Moreover, low growth rates worsen the poverty situation and thus reduce the welfare of households and firms. Available statistics have shown that since the oil doom of the early 1980s, Nigeria has continued to witness increasing deficit budgeting in her economy. Since then, desperate efforts to exit the deficit trap have been taking but none has yielded any positive results. The resultant effect has been rapid monetary growth, exchange rate depreciation, low investment rate, as well as unfavorable balance of payment, and rising inflation and unemployment level.

Over the years, various macroeconomic policies have been adopted by the Nigerian government such as; the establishment of the National Manpower Board in 1962; National Directorate of Employment (NDE) charged with the responsibility of creating employment opportunities in the country; Structural Adjustment Programme (SAP), aimed at restructuring and diversifying the productive base of the economy for sustainable growth in the long term (FGN, 1986); National Economic Empowerment and Development Strategy (NEEDS) established in 2003 with the aim at reducing the adverse effects of the macroeconomic instability such as rise in inflation, exchange rate volatility, current account deficit, increase in deficit financing, and rise in interest rate; and finally, creation of Ministry of poverty eradication and youth empowerment in 2002 to address the increasing rate of unemployment and youth restiveness in the country. However, despite all these laudable policies, the economy still witnessed volatile budget deficit, low investment level, increase in the money supply with its attendant unemployment and, current account deficit, thus resulting in the dismal growth rate etc.

Thus, the issues the study deals with include whether budget deficits have been the reason for poor performance of macroeconomic variables in Nigeria, especially current account imbalance and the causes and impacts of this imbalance on economic growth in Nigeria. This becomes important so that we can confirm Wosowei's (2013) assertion that budget deficits play a major function in accelerating economic growth and ensuring the steadiness of macroeconomic variable over time. Thus, the key aim of the study is to establish the impact of budget deficit on current account balance and the direction of effects between budget deficit and current account balance in Nigerian economy.

1.2 Hypotheses of the Study
Budget deficits have not significantly predicted, as well as Granger cause current Account balance in Nigeria

2. LITERATURE REVIEW

2.1 Theoretical Literature

The relationship between FD and CAD has been explained by several theories. Saloo, Babu and Dash (2022), in their analysis opined that the Keynesian absorption approach, a rise in FD would lead to a rise in the income and hence the demand for imports and thereby, a deterioration in the CAB (or rise in the CAD). The Mundell-Fleming model (Fleming, 1962; Mundell, 1963), on the other hand, suggests that a rise in FD will worsen the CAB indirectly through the interest rate and exchange rate channels. They argue that a rise in FD will have upward pressure on the domestic interest rate, which will attract more capital inflows. A rise in capital inflow will lead to an appreciation of the domestic currency, and thereby making imports cheaper as compared to exports. So the volume of imports will increase and the exports will fall, and as a result, the CAB will deteriorate Leachman and Francis (2002).

Vamvoukas (1999) and Abell (1990) found unidirectional causality running from FD to CAD. Similarly, Suresh and Tiwari (2014) and Parikh and Rao (2006) found that FD significantly contributes to CAD in India. However, the Ricardian equivalence hypothesis (REH) of Barro (1974, 1989) argues in a completely different way. It states that rise in the BD leads to an equal instantaneous increase in private savings with no effect on aggregate wealth, implying that there is no link between BD and CAD (Piersanti, 2000). Kim (1995) and Enders and Lee (1990) support the REH that BD does not have any impact on CAD. Apart from the above discussed theoretical relationships between FD and CAD, there can be two more possible causal links between the two. First, there can be reverse causality running from CAD to FD. For example, a country experiencing financial or solvency crisis resulting from chronic, excessive CAD may face a situation in which large injections of public funds are required to rehabilitate troubled financial sector, to improve the corporate governance system, and to attenuate the recession (Kim and Kim, 2006). Marinheiro (2008) in the case of Egypt, and Anoruo and Ramchander (1998) and Bose and Jha (2011) in the Indian context found the evidence of reverse causality running from CAD to FD. Second, a feedback relationship might also be possible between the two deficits. In this case, it may not be possible for the government to reduce the external deficits by cutting down the BDs (Kearney & Monadjemi, 1990).

In other hand, the neo-classical imagines household forecasting her spending over their entire life cycle. The theory emphasizes that by extending taxes to the upcoming generations, budget deficits augment current spending. The neoclassical school was of the opinion that under full employment of resources, bigger consumption will give rise to a fall in savings. This will cause interest rate to increase in the capital markets in order for equilibrium to be achieved. As the interest rate rises, private investment falls. The power of the government to control economic activity through fiscal measures will consequently reduced (George, 2009), in (Bailey, 1971; and Buiter, 1977). In a typical neoclassical macroeconomic model, as claimed by (Yellen, 1989), the ways of financing deficit influences the level of spending, savings and net exports. Taking into consideration full

employment of resources, increased current spending means equal reduction in the expenditures of others, he concluded. The weakness of this preposition is that very few economies, including Nigeria have attained the level of full employment of resources.

2.2 Empirical Review

Empirical studies on the existence of Twin deficit hypothesis and its direction of effects to an economy remains conflicting and inconclusive among scholars. For instance, Abu, and Gamal (2020) investigated the twin deficits hypothesis for Nigeria over the 1981- 2017 period using the Autoregressive Distributed Lag (ARDL) and Dynamic Ordinary Least Squares (DOLS) estimation techniques. The result of causality test using the Toda and Yamamoto (1995) approach illustrated the existence of a one-way causality from current account deficits to budget deficits. This finding validated the Keynesian assertion, but refuted the Ricardian Equivalence Hypothesis with respect to the relationship between the two deficits in Nigeria. Based on this evidence, this study recommended policies to reduce both deficits.

In a related study, Akolapo and Adele (2020), examined the effect of structural break on the validity of twin deficit hypothesis in Nigeria as well as the dynamic interaction among the variables. The study employed the ARDL approach, variance decomposition, VAR-impulse response and Granger causality test to show dynamics between budget deficit and the current account deficit in Nigeria. Granger causality test confirmed no causality between the twin deficits. The policy implication is that since the persistent increase in budget deficit tends to deteriorate current account balance, government of Nigeria should thus, exercise caution in using budget deficit to influence current account deficit even when structural break effect is noticeable.

Moreover, Olanikpekun (2020) undertook a study on the impact of budget deficit on current account balance in Nigeria. Among the techniques employed is the Granger causality test carried out to check the possibility of any feedback effect among the variables. The results of the regression show that budget deficits and current account balance are positively related. Moreover, bidirectional causality was confirmed between budget deficits and current account balance, thus validating existence of twin-deficits hypothesis in Nigeria economy.

Likewise, Udah (2011) embarked on the study of the direction of causality between current account balance and budget deficit in Nigeria. The study worked with the standard econometric methodologies and discovered that bi-directional causality existed between current account balance and budget deficits. The Granger causality examination also discovered the existence of one-directional causality running from current account balance to exchange rates. In conclusion, the study suggested that a supply-side approach will be adopted as a way of tackling unfavorable fluctuations on the trend of the current account.

Besides, Ikubor, Oladipo, Zakare, and Abraham (2022) examined the impact of government capital expenditure in economic services' sector on Nigeria's economic growth between 1981 and 2020, using ARDL model. The results of the findings revealed that at 5% level of significance, both AGEX and MGEX have positive and significant relationship with economic growth in Nigeria. The study therefore recommended that since spending in the areas of infrastructural facilities is a good determinant of output growth, government should ensure that basic infrastructural facilities needed in these sectors

(agriculture and manufacturing, mining and quarrying) such as good roads, storage facilities stable electricity and so on, are provided.

Iyeli and Okey (2017) examined the impact of budget deficits and current account disequilibrium in Nigeria. Using the techniques of co-integration and error correction mechanism, the study discovered that apart from inflation which caused a reduction in the current account balance of Nigeria, the rest of the variables particularly budget deficits stimulates an increase in Nigeria's current account. However, some policy recommendations have been made believing that government through these recommendations will consider it appropriate for the growth of the Nigerian economy and curtail unnecessary fluctuations in her balance of payments.

Studies for emerging economies also abound. Example, Baharumshah, Evans, and Khalid (2006) examined twin deficits theory in Indonesia, Malaysia, Philippines as well as Thailand economy. The regression results confirmed a unidirectional causality without feedback effect which runs from budget deficit to current account deficit for Thailand. For Indonesia economy, it was confirmed that there was the existence of current account targeting, while reverse causality was confirmed in Malaysia and Philippines economy.

Furthermore, Vishai, Masudul, and Ashok (2021) re-investigated the impact of fiscal deficit (FD) on current account deficit (CAD) in India. For the empirical investigation, the study employed the nonlinear autoregressive distributed lag (NARDL) approach to cointegration. The results found the evidence of an asymmetric effect of FD, SI and EXR on CAD in the long run only, thus validating the Keynesian view in India.

Moreover, Rossanto, Angga, and Nita (2020) analyzed the relationship between the current account and budget deficit (twin deficits hypothesis), measuring the account performance and other macroeconomic indicators in predicting the debt crisis in Indonesia. This was followed by the application of the ARDL, Early warning system (EWS) method, which was conducted through Quadratic Probability Score (QPS), and Global Squared Bias (GSB). The results confirmed a long-term positive relationship between the current account and budget deficit, while the short-term studies reveal a negative association, termed twin divergence, which occur on instances where a country has high savings rate.

In addition, Hango (2021) analyzed the effect of budget deficit dynamic on macroeconomic variables in Nambia for the period 1990 to 2018 (28 years) using Autoregressive Distributed Lag Model (ARDL) and bond test for the co-integration approach using time series annual data for the period. The study used Error Correction Model (ECM), and decisions were made based on a five level of significance. The result shows a negative and significant relationship between budget deficit and economic growth, both in the short run and in the long run. This Implies that budget deficit deteriorates the growth rate of the economy. In addition, budget deficit shows a negative but insignificant relationship between deficit and interest rate of the economy both in short run and long run. As a result, the study holds that the neoclassical theory stands in Namibia.

Finally, Bernardin and Godson (2021) investigated the twin deficit hypothesis for Ghana. Employing Granger causality test, the study confirmed support for the reverse causality argument, thus invalidating the existence of twin deficit hypothesis for Ghana.

For a comparative analysis, Naib, and Mahmut (2020) tested and compared the validity of the twin deficit hypothesis in the opinion of Keynesian view and Ricardian – Equivalence hypotheses in Kenya, using both the Breaking Periods of the Westerlund-Edgerton Breaking Cointegration Test (2008) and the Dumitrescu & Hurlin (2012) Panel Causality Test. According to the cointegration and causality analyzes, it was concluded that there was a long-term relationship between budget deficits and current account deficits. This result supports the Traditional Keynesian Approach. Furthermore, it was seen that there is a two-way relationship between budget deficits and current account deficits. Long term coefficients were obtained by using the AMG test. When the panel coefficient results are considered, it was seen that the twin deficit hypothesis was valid, but the results are obtained contrary to the analysis found by Feldstein Horioka (1980). However, when the individual countries are examined, it was seen that the twin deficit hypothesis applies to some countries, and the twin divergence hypothesis applies to some other countries. Based on these findings, it was understood that the results do not support the Feldstein-Horioka (1980) hypothesis in Kenyan economy as well as Nigerian economy.

3. METHODOLOGY

3.1 Theoretical Framework

This study was anchored on the famous model developed by the works of Robert Mundell (1968) and J. Marcus Fleming (1967), otherwise known as Mundell-Fleming model. The model assumes that capital is mobile across the globe with a uniform interest rate (Olga, 2000). It maintains that a positive link exists among the two deficits (budget and trade deficits) and as put by Olga (2000), "causality runs from budget deficit to current account deficit and not the reverse as discovered by some authors". In all, the summary of this hypothesis is that as budget deficit rises, demand for interest will be stimulated thereby attracting inflows. This will as well cause rise in the prices of exchange rates thus facilitating rise in trade account deficit.

The use of Mundell – Fleming model becomes appropriate especially as it captures the transmission mechanism of effects of government expenditures to variables such as current account and national income. This provides an underpinning for the empirical evaluation of the effects of budget deficits on current account balance, since it links budget variables to national income.

3.2 Model Specification

The principal instrument adopted for this study was Vector Error Correction Model (VECM). This was because the order of integration of all the series employed was discovered to be at order 1(1). Thus, the model specification was developed from the theoretical framework (Mundell-Fleming model) presented in the previous chapter and was modified and adapted to suit Nigeria's case. Subsequently, the following modified Mundell-fleming model in a VECM equation as presented below were specified and tested:

Thus, in other to determine how budget deficits predict the current account balance in Nigeria within the period under investigation, the model below was specified;

$$CAB_t = \delta_0 + \delta_1 Bd_{t-i} + \delta_2 EXCHR_t + \delta_3 Export_t + \mu_{3t} \quad (3.1)$$

Where;

CAB = Current account balance

Bd = Budget deficits
EXCHR = Nominal exchange rate
Export = Export rate
A priori criterion: $\delta_1, \delta_2, \delta_3 > 0$
The justification for inclusion of other variables in the model follows the Keynesian economics that hypnotized that budget deficits are positively related to the balance of payments through exchange rate and exports. Thus, the inclusion of exchange rate and export as control variables was necessitated by the fact that literature reviews have established the existence of the twin deficits in some economy. Model (3.1) was thus formulated to test the existence or not of the twin deficits hypothesis in Nigeria within the sample period as demonstrated by Opeyemi, (2012) for Nigeria and Ogbonna, (2014) for South African economy as depicted in equation 3.1 above.

3.3 Estimation Procedure

(i) Unit Root Tests

The following procedures were adopted at the course of the study:
The first step concerned testing for the Stationarity of the data used. This is a typical practice used to make sure that the variables have a stable mean so that the resultant regression results are meaningful. Otherwise, if the stationarity of the variables is present and not checked, the existence of drift in the data sequence will signify that the regression outcome was false.

Two major procedures for testing for the existence of unit roots were the Augmented Dickey-Fuller (ADF) and Phillips Peron (PP) tests. The ADF process attempts to maintain the strength of the tests based on white-noise errors in the regression model by ensuring that the errors were certainly white-noise. On the other hand, the Phillips-Peron (PP) process corrected for serial correlation through a non-parametric modification to the normal statistic (Oduor, 2008). Phillip-Peron acts to change the statistics after the evaluation so as to take into account the effects that autocorrelation errors had on the outcome. For that reason, ADF is desirable because it does not require evaluation of other parameters that would have required extra data and also did not exhaust degrees of freedom.

The fundamental equation used in the ADF test remains identical with the one used in the PP test. The ADF tests the null hypothesis that $|P| = 0$ against an alternative that $|P| < 0$ in the autoregressive equations:

(i) ADF without intercept and trend

$$\Delta y_t = py_{t-1} + \sum \delta_t \Delta y_{t-1} + \mu_t \quad \ldots\ldots\ldots\ldots \quad (3.2)$$

(ii) ADF with an intercept but no trend

$$\Delta y_t = \alpha + py_{t-1} + \sum \delta_i \Delta y_{t-I} + \mu_t \quad \ldots\ldots\ldots\ldots\ldots\ldots \quad (3.3)$$

(iii) ADF with both the intercept and trend

$$\Delta y_t = \alpha + \beta_t + py_{t-1} + \sum \delta_i \Delta y_{t-1} + \mu_t \quad \ldots\ldots\ldots \quad (3.4)$$

In this study, the researcher employed Augmented Dickey-Fuller techniques to examine the existence or not of random walk process. The null hypothesis of the presence of unit roots is rejected when the theoretical value is less than the computed ADF and the alternative hypothesis of absence of unit roots accepted.

(ii) Co integration Analysis

Co integration refers to a long-run equilibrium link among series. The idea of long-run stability implies that two or more series may drift away from one variable to the other in the short-run but shift collectively in the long-run (Enders, 1995). When variables wander away from each other, the process is known as a random walk. In the long-run, however these variables may shift in a similar path, that is; have a long-run link. In this case, the present of a linear combination of these random walk processes is established. As submitted by Enders, (1995), "the variables are said to be co integrated".

(iii) Vector Error Correction Model (VECM)

If variables are co integrated, vector error correction model shall be specified and estimated using standard diagnostic tests. According to Gujarati, (2003), "the coefficient of Error Correction term measures the speed of adjustment of the short-run relation to unexpected shocks". When the dependent variables are above the level indicated by the explanatory variables, the dependent variable will be expected to fall, and vice versa, to maintain long-run equilibrium.

As noted by Koutsoyannis, (2003), "the Vector Error Correction Model (VECM incorporates both the long-run and short-run effects simultaneously". The advantage of vector error correction model is that once variables are confirmed to be non-stationary but co integrated, the estimates from such a vector error correction model are more efficient than the OLS. The vector error correction model also saves one from the agony of the endogeneity.

(iv) Granger Causality Tests

The causality test was conducted to establish the existence or not of any feedback relationship, and the direction of causality (if any) among budget deficit and current account balance. This was done using the system equations generated from the residual of OLS regression results and supported with the Granger causality tests.

4. RESULTS AND DISCUSSIONS OF FINDINGS

4.1 RESULTS

Tests for Stationarity

The result of the Augmented Dickey-Fuller Unit Root test showed that the whole series employed (Budget deficit, Current account balance (CAB), Exchange rate and Export are non-stationary at level form but became stationary only after first differencing, ie I (1). This is because their respective ADF test-statistics exceeded the 5% critical value.

The co integration test was equally conducted and the result showed 2 cointrgrating equation for Trace statistics and 2 cointegrating equation for maximum eigen value. Thus, a long run equilibrium condition was achieved.

To still confirm the existence of the simultaneous effects of both short-run and long-run relationship between the current account balance and budget deficits, exchange rate and export, the researcher carried out vector error correction test supported with the normalized co integrating coefficient as shown below:

Normalized Co integration coefficients (standard error in parentheses)

CAB	Bd	EXCHR	EXPORT
1.00000	3.71E-05	-0.295434	-2.15E-05
	(6.5E-06)	(0.07307)	(3.0E-06)

The result shows a positive co integrating equation. The t-statistics are statistically significant (-0.94283). The value of VECM is -0.476281. This shows that about 48 % of the short-run errors of the economy are corrected each year.

Table 4.2 System Equation

Dependent Variable: D(CAB)
Method: Least Squares
Date: 11/18/14 Time: 06:05
Sample (adjusted): 1983 2012
Included observations: 30 after adjustments
D(CAB) = C(1)*(CAB(-1) + 3.70988424689E-05*Bd(0.295434397136
*EXCHR(-1) - 2.15300664908E-05*EXPORT(-1) - 37.1433291238) +
C(2)*D(CAB(-1)) + C(3)*D(CAB(-2)) + C(4)*D(Bd(-1)) + C(5)*D(Bd(-2))
+ C(6)*D(EXCHR(-1)) + C(7)*D(EXCHR(-2)) + C(8)*D(EXPORT(-1)) +
C(9)*D(EXPORT(-2)) + C(10)

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	-0.476281	0.132003	3.608095	0.0011
C(2)	-0.388863	0.218687	-1.778171	0.0906
C(3)	-0.382678	0.208789	-1.832851	0.0818
C(4)	-7.07E-07	7.66E-07	-0.923653	0.3667
C(5)	-4.56E-07	7.10E-07	-0.642004	0.5282
C(6)	0.036301	0.029004	1.251570	0.2252
C(7)	-0.004034	0.025124	-0.160554	0.8741
C(8)	9.53E-07	9.02E-07	1.056957	0.3031
C(9)	4.61E-07	8.60E-07	0.536076	0.5978
C(10)	1.000170	0.846292	1.181827	0.2511

R-squared	0.599507	Mean dependent var	0.216108
Adjusted R-squared	-0.015715	S.D. dependent var	1.580500
S.E. of regression	1.592870	Akaike info criterion	4.030153
Sum squared resid	50.74469	Schwarz criterion	4.497219
Log likelihood	-50.45230	Hannan-Quinn criter.	4.179572
F-statistic	0.950147	Durbin-Watson stat	1.997500
Prob(F-statistic)	0.506243		

Source: Author's computations using Eviews 7 computer software

From the result of system equations in table 4.3 above, the ECM-1 coefficient of -0.476281 satisfies the requirement of being negative and significant. However, it is not fractional. The implication of not being fractional reflects the reality of Nigeria's consistent trade deficits. The non-fractional nature implies that the current account imbalance is persistent and explosive thus, contracting Muhammed, Idris, and Shehu (2021) submission that public expenditure (fiscal deficit) exhibit a positive and significant impact on economic growth in both directions in Nigeria.

However, the result of the Granger causality tests failed to indicate the direction of causality between the budget deficits and the current account balance in Nigeria at 5 per cent levels of significance as shown below:

Table 4.3 Granger Causality Tests Result for GD on CAB

Pairwise Granger Causality Tests
Date: 11/18/14 Time: 06:08
Sample: 1980 2012
Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
Bd does not Granger Cause CAB	31	0.07103	0.9316
CAB does not Granger Cause Bd		1.04522	0.3659

Evaluation of working Hypotheses

H_{01}: Budget deficits have not significantly predicted the current account balance in Nigeria.

The researcher used the coefficient of the t-statistics of the upper region of the vector error correction result (not attached because of page limitation) to test this hypothesis. As shown from the regression result, with the coefficient of t-value of 5.74104 for the budget deficit at the upper region of the VECM, it is clear that the budget deficits have a positive long-run significant impact on the current account balance in Nigeria. The negative connection between the budget deficits and the export in Nigeria as shown by the lower region of the VECM is a pointer that the "twin deficits hypothesis" prevails in Nigeria in the short-run but not in the long-run as shown by the positive relationship between the budget deficits and the current account balance at the upper region of the VECM results. This conforms to the discovery by Olanikpekun (2020) who revealed a positive long-run link among the current account deficits and the budget deficits but still, found weak short-run support that these deficits are strongly connected.

H_{02}: Causality does not significantly run from the budget deficits to the current account balance in Nigeria.

This hypothesis was tested using the P-values of the systems equation generated from the least square residuals and supported by the Granger causality tests. The necessary requirements for the existence of causality are that the ECM-1 coefficient be fractional, negative and significant. Based on these conditions, the variables were subjected to the causality tests in order to confirm the hypothesis as stated above. The results are as follows:

There are feedback effects between the budget deficits and the Current account balance (CAB) in Nigeria within the period under review. This was confirmed by the ECM-1

coefficient value of the systems equation for the variables which satisfied the conditions of being fractional, negative and significant. However, the Granger causality tests failed to show the direction of causality between the series.

4.2 Discussion of Findings

The key objective of this paper is to examine the impact of budget deficits on the current account balance in Nigeria within the period under investigation. The unit root tests result showed that all the series are stationary after first differencing. The co integration result also confirmed 2 each for co integrating equation for trace and maximum eigen values. The existence of at least I co integrating equation is a condition to run for vector error correction (VECM) model.

As a result, vector error correction test statistics was carried out and the result revealed that about 2 per cent imbalance between short-run and long-run is corrected annually. Furthermore, the VECM result also showed that the budget deficits, exchange rate and the exports exerted a strong significant long-run impact on the current account in Nigeria. The result also revealed that positive relationship exists between the budget deficit and the trade balance in Nigeria, which imply that a percentage change in the budget deficits cause an increase in trade balance by about 71 per cent. The R-squared value of 0.599597 means that about 60 per cent of the variability in current account balances was attributable to changes in the included explanatory variables. That means that about 40 per cent of changes in current account were construed to be determined by other factors outside the model.

It was also established that there is a causal relationship between the budget deficits and the current account balance using the systems equation. However, the result of the Granger causality tests failed to show the direction of the causal relationship between the variables. However, it was confirmed that the twin deficit postulation is present in the post COVID 19 Nigerian economy in the short-run. This submission invalidates Bernardin and Godson (2021) for Ghana but conforms to Olanikpekun (2020) who confirmed an existence of twin deficit hypothesis in Nigeria in both short run and the long run.

5. CONCLUSION AND POLICY RECOMMENDATIONS

5.1 Conclusion

In all, this paper submits that what should be the overriding interest to economists and the government with regard to economic development in Nigeria should be the methods involved in funding budget deficit, the effects on current account balance, as well as the absorptive capacity of the economy.

5.2 Policy Recommendations

In view of the foregoing, the following policy prescriptions were proffered by the present study.

Governments should urgently implement budgetary management measures aimed at reducing borrowing and able to cut down the size of the budget deficits that frequently create transfer payments and doubtful additional budgetary operating cost. For example, governments should make sure that unwarranted wasteful expenditure does not enter into the proposed budget of the federal government.

There is need also for more efforts from the governments to improve on the budgetary processes and fiscal forecast as well as supervision practices to usher in a significant fall in the level of budget deficits and transfer public spending from extravagant expenditure to fruitful human and material infrastructural investment. To achieve this, it will require openness in budget preparation by the government.

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