TWIN DEFICIT OR REVERSE CAUSALITY? AN EMPIRICAL VERIFICATION FOR NIGERIA

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ABSTRACT
In light of the persistent and coinciding internal and external imbalances across economies, there remains an argument that worsening trade deficit is the result of higher fiscal imbalance. However, no concrete consensus either theoretically or empirically exists, particularly, in the context of Nigeria. Therefore, the twin deficit hypothesis (TDH) phenomenon becomes more of an empirical question. Also, in the light of recent budgetary expansions and the growing deficits as well as the recent economic downturns, this paper revisits the TDH in Nigeria. To this end, the study used the Toda-Yamamoto (T-Y) procedure to test the validity of the TDH in the country spanning 1986 to 2021. Empirical findings revealed that fiscal deficits cause current account deficit in Nigeria, reinforcing the validity of TDH. Consequently, the study suggests enacting budget cuts to sustainable levels, together with a strong focus on export promotion, driven by gains in domestic production, to solve the issue that may arise as a result of this causal relationship.

Keywords: Twin Deficit, Reverse Causality, Fiscal deficit, Currents account deficit, Toda Yamamoto Procedure.
JEL Classification: C32, E62, F32, H62.

1 INTRODUCTION
Economic imbalances and their funding are a major issue and cause for concern in many economies (Caballero et al. 2021). Global debt alone reached a record $303 trillion in 2021, up from a record $226 trillion in 2020 (World Economic Forum, 2022). As such, the use of fiscal policy has gained attention as fiscal crises spread among national economies worldwide. Studies relevant to the twin deficit hypothesis (TDH) are once again becoming popular because many economies are currently experiencing negative levels of fiscal and external imbalances (Okafor et

al., 2022). According to the theory, an economy's current account deficit results from an ongoing budget deficit. The TDH states that expanding budget deficits cause expanding trade deficits (Nautiyal et al., 2022). Because these deficits are crucial indications of a country's macroeconomic performance, the rising fiscal and current account imbalances witnessed in many nations at the moment according to Okafor et al. (2022) are creating great concern.

In an open-economy, Okoli et al. (2021) reveals three mechanisms via which a positive relationship between fiscal and trade deficits can develop. The interest rate channel comes first- here, the current account deficit will worsen as the budget deficit grows because an increase in interest rates causes net capital inflows, which in turn causes local currencies to appreciate. Second, a negative current account balance lowers the amount of tax revenue that the government receives, resulting in a fiscal deficit. The income/expenditure mechanism makes up the third channel. This is due to the fact that when a government pursues an expansionary fiscal policy by reducing taxes, the additional revenue from the tax cut will increase the fiscal deficit by raising total absorption (private consumption, domestic investment, and government expenditure) above the level of aggregate domestic output; as a result, the additional spending in the economy is a result of higher imports (Okoli et al., 2021). Consequently, the current account deficit is inevitable as long as imports outpace exports in the economy.

There are two main views that explain the relationship between budget deficits and current account deficits- the Mundell-Fleming model and the Ricardian Equivalence Hypothesis (REH). Traditional Keynesians utilized the Mundell-Fleming model to explain the TDH, contending that the current account balance would deteriorate as domestic interest rates, real exchange rates, and capital inflow rates increase (Mundell, 1963; Fleming, 1962). Although the Mundell-Fleming model's critics concede to the damaging impact of substantial fiscal deficits on the economy, they however disagree with the inferred causal chain. The REH maintains that there is no connection between the fiscal deficit and the current account deficit, because tax cuts, which lower government revenue and savings, are the main reason for budget deficits; consequently, the REH predicts that because people would view these tax cuts as creating future tax burdens, they will save money rather than spend it (Barro, 1976).

Like many other countries in the world, Nigeria is currently navigating through uncertain economic times, which is in part caused by the country's sole dependence on crude oil receipts which has made the country's earning susceptible to external shocks (Esele, 2022; Adejola, 2022; Odutola, 2020). Odutola (2020) maintained that Nigeria's vulnerabilities to external shocks can be adduced to increased dependencies on global economies for foreign exchange inflows, fiscal revenues, fiscal deficit funding, as well as the capital inflows required to sustain the nation's economic activities. These shocks manifest as changes in the price of oil, fluctuating exchange rates, the global financial crisis, and terms of trade shocks (Uzomba, 2022; Adofu & Adejoh, 2021; Emiola & Fagbohun, 2021). The country has faced daunting economic disruptions in recent times; recording a year-on-year negative growth rate of -1.51 and -1.9 per cents in 2016 and 2020 respectively (Adegbesan, 2021).

Economic imbalances and their funding are a major issue and cause for concern in developing economies. In particular, Nigeria is in a precarious situation as a result of its high fiscal imbalances. According to recent data, the Federal Government of Nigeria (FGN) reported a fiscal deficit of ₦7.3 trillion in 2021; particularly, the FGN's actual spending of N11.69 trillion far outpaced its projected revenue of ₦4.39 trillion for 2021 (Oyekanmi, 2022). In other words, the government

spent more than ₦11 for every ₦4 it received, making the fiscal imbalance in 2021 the largest since 2012. What's more stunning is that the ₦4.22 trillion (36.1% of total spending) paid in 2021 on debt repayment is a 29% increase over the ₦3.27 trillion reported in 2020 (Oyekanmi, 2022). This type of elevated level of government debt may lead to a tight budget, according to Acharya et al. (2021) and Pugsley and Ahin (2019). Nwala and Saleh (2021) and Oligbi (2020) added that Nigeria's revenue crisis has triggered a debt crisis. Similarly, the World Bank (2022) reports that Nigeria's current account balance decreased to a deficit of $16.98 billion in 2020 from a deficit of $14.63 billion the year before, making this the lowest Nigeria has seen in the past three decades.

Arguments that a worsening balance of payments may be caused by a larger fiscal imbalance derive from the fact that internal and external imbalances are chronic and predominantly coexisting (Afonso & Coelho, 2022; Peter et al., 2020). The TDH, therefore, becomes more of an empirical question because there is no clear theoretical or empirical consensus as to its causal link. As the data have shown, Nigeria's internal and external imbalances have risen to crippling and worrisome figures over the years; thus, the need for fiscal and external adjustments in the wake of the recent economic downturns has brought attention to the TDH. As such providing an informed position to policy makers and politicians as to the causal relationship between fiscal and trade deficit will provide the first point of call in addressing the issue. Consequently, this study revisits the TDH for the Nigerian economy spanning 1986 to 2021.

2 LITERATURE REVIEW

2.1 Theoretical Literature

The Twin Deficit Hypothesis and the Ricardian Equivalence Hypothesis are the two explanations put forth in the study to explain the relationship between the internal and external deficits.

2.1.1 The Twin Deficit Hypothesis

The Twin Deficit Hypothesis contends that the budget deficit tends to result in a current account deficit. This relationship can be explained in the framework of two perspectives: the Mundell-Fleming Model (Mundell, 1963; Fleming, 1962), and the Keynesian Absorption Theory (Keynes, 1964).

According to the first viewpoint, a growing budget deficit in an economy with a flexible exchange regime raises domestic real interest rates, which in turn draw in foreign capital and cause exchange rates to appreciate. A stronger national currency lowers net exports and lowers the economy's external competitiveness, which results in a current account deficit. This is because it makes exports less desirable and makes imports more desirable. In a system with a fixed exchange rate, a rise in the budget deficit raises income and prices, which in turn causes a real appreciation of the currency and harms the current account balance. Although the transmission mechanisms for a fixed and a flexible exchange rate regime are different, the current account deficit is made worse by the growing budget deficit. According to the second viewpoint, a growing budget deficit may put upward pressure on domestic consumption, which in turn may lead to more domestic spending and, in turn, higher imports, which would worsen the current account balance. Depending on how much more open the economy is and how much more transfer net taxes are adjusted, these consequences will be more significant.

From both vantage points, an expansion of the budget deficit leads to an aggravation of the current account deficit through increases in aggregate demand and real interest rates.

2.1.2 The Ricardian Equivalence Hypothesis

The budget deficit and the external deficit are unrelated, according to Barro's (1974; 1989) Ricardian Equivalence Hypothesis, because budget changes cause an intertemporal reallocation of savings (when an intertemporal substitution between taxes and budget deficits occurs), but intertemporal fiscal constraints on private agents, the real interest rate, investment, and the current account balance all remain constant (Afonso & Coelho, 2022). Therefore, because there are no changes in interest rates or exchange rates as a result of budget deficits, there are no current account implications. According to Ricciuti (2003), when public spending is steady and there are no debt ceilings, a cut in current taxes has no impact on national savings.

Assuming that economic agents are rational, it follows that these agents are aware that an expansionary fiscal policy in one era would lead to a rise in the tax burden in another. Therefore, such agents reduce their level of consumption and increase their current savings by an amount equal to the growth in the budget deficit in order to support future tax hikes. More budget deficits only suggest higher taxes in the future; hence, present tax cuts result in higher taxes in the future, with little economic consequence.

The budget deficit and the external deficit are not causally related, according to this theoretical viewpoint.

2.2 Empirical Literature

A review of a number of recent studies made up this study's empirical literatures. Assessing the triple deficit hypothesis (TDH) of current account deficit, fiscal account deficit, and the financial account deficits of countries in the Sub-Saharan Africa (SSA) region, Okafor et al. (2022) evaluated the relationship between these deficits and its implications for the African Continental Free Trade Area (AfCFTA). The study employed panel data analytic methodologies and tested the deficits in the region using the pooled mean group-autoregressive distributed lag (PMG-ARDL) specifications. The study's findings showed that the triple deficit hypothesis is present in SSA- it established a unidirectional causal relationship between budget balance and saving gap and a bidirectional relationship between current account balance and budget balance.

Similarly, Lahiani et al. (2022) explored fiscal consolidation, social sector expenditures and twin deficit hypothesis using the system-GMM estimator, on a panel of 23 emerging and middle-income countries for the period of 2009 to 2018. The study's findings showed that when expenditures-driven fiscal austerity measures are enacted, government social spending actually reduces. Important social spending on health and education could be harmed by fiscal restructuring. Additionally, the study found that fiscal consolidation reduces the current account deficit, supporting the TDH.

Using 28 European Union nations from 1996 to 2019, Afonso and Coelho (2022) reviewed the relationship between budget deficits and current account deficits. The study used a static panel framework, based on a fixed effects estimator; and a dynamic panel framework, using a generalized method of moments (GMM) system model. According to the analysis, a percentage point rise in the budget deficit causes a 0.318 percentage point increase in the current account deficit, supporting the TDH. However, when a fiscal rule index is present, the dynamic panel estimates only partially support the Equivalence Ricardian Hypothesis. Additionally, the recent Eurozone banking and government debt crises have had a negative effect on the current account

balance, and the relationship between the two deficits is asymmetric; after 2010, the current account balance is positively impacted by the budget balance; and, the positive effect of the budget balance on the current account balance is greater in non-Eurozone nations with high budget deficits and low exports than in nations with low budget deficits and high exports from the Eurozone.

Shifting the focus to south Asia, Nautiyal et al. (2022) carried out an assessment of the interaction and the transmission process of twin deficit hypothesis in India using a quarterly data-set spanning 2000 to 2019. Using the autoregressive distributed lag (ARDL) model, the transmission mechanism describes how the budget deficit transcends and affects external sector variables. Evidence supports Mundell-Fleming and Keynesian theories by showing a strong positive correlation between the budget deficit and current account deficit. A similar result was established by Sahoo et al. (2022) who used quarterly data from 1996Q1 to 2016Q2 to study the dynamic link between fiscal balance and current account balance for the Indian economy. In addition, Sahoo et al.'s (2022) study also pointed to a reverse causality connecting the fiscal balance to the current account balance.

In a Nigeria-based study, Ayinde et al. (2021) tested for the validity of the TDH spanning 1981 to 2018 and further sought to ascertain the role of macroeconomic fundamentals in driving the hypothesis using the non-linear autoregressive distributed lag (NARDL) model, as well as the structural vector autoregressive (SVAR) model. The study used the variables of aggregate net export, fiscal deficit, trade openness, financial openness, real exchange rate, and real interest rate. The TDH for the Nigerian economy is validated by the NARDL model results, which include evidence from the Granger causality test. It was further proved that the twin deficits were mostly caused by Nigeria's levels of financial and trade openness because none of the macroeconomic fundamentals could be linked to any significant shock effects during the long-run equilibrium.

Eregha et al. (2022) looked at how the fiscal and current account deficits changed dynamically in response to changes in oil prices in a few African oil-producing nations. The period from 1981 to 2018 was covered by annual data for the twelve oil-producing African nations. Due to cross-sectional dependence, results using the Dynamic Fixed Effect and Augmented Mean Group methodologies support the twin deficits hypothesis for the chosen African oil-producing nations. The bi-directional relationship between the fiscal and current account deficits is further supported by the panel data granger causality finding. Similarly, Okoli et al. (2021) examined a nonlinear/threshold relationship between the deficits among the BRICS economies using the Panel ARDL model using quarterly data spanning from 2000:Q1 to 2019:Q4. The efficient estimator of the model based on the Hausman test showed that twin divergence holds among the BRICS market up to a certain threshold beyond which the hypothesis holds. This suggests that BRICS countries face a dampening effect of fiscal/current deficits on their current account/fiscal deficits to a point after which further increases in either of the deficits will significantly raise the other.

The causal relationship between the fiscal deficit and the current account deficit was examined by Marimuthu et al. (2021) for ASEAN nations. The panel data set covering the years 1990 to 2019 was examined using the ARDL, panel co-integration regression with fully modified ordinary least squares (FMOLS) and dynamic ordinary least squares (DOLS), and causal analysis using the Dumitrescu and Hurlin (DH) technique. The analysis used the variables of GDP, current account deficit, budget deficit, interest rate, and exchange rate. The FMOLS and DOLS estimates indicate that the current account deficit is sensitive to both the budget deficit and the exchange rate. The current account deficit significantly affects the budget deficit, according to the DH causality test.

The analysis finds that while it contributes to both deficits- the fiscal deficit and the current account deficit- the interest rate also serves as a moderating influence. As a result, a reverse causal relationship between the current account deficit and the budget deficit was proven.

Also, Samotu and Orisadare (2020) examined the effect of structural break on the validity of the twin deficit hypothesis in Nigeria using quarterly data from 1970:Q1 to 2017:Q4. The study used the ARDL approach, the Vector Auto-regression (VAR) model, and the Granger causality test to carry out the analysis. The study used the variables of fiscal deficit, current account deficit, gross domestic product, and interest rate. The results from ARDL model indicated that the TDH is true for Nigeria since the budget deficit has both a positive long-term and short-term effect on the current account deficit. However, the Granger causality test showed that there is no linkage between both deficits. The variance decomposition result demonstrates that the current account deficit has a sizable impact on the country's fiscal deficit, while the impulse response result demonstrates that a fiscal deficit shock has a negative impact on the current account deficit. Regardless of the approaches employed, the study discovered that the structural break has no impact on the link between the deficits.

In contrast to the research that only examined deficits at the federal level and used Nigeria as a case study, this study distinguishes itself by examining fiscal deficits at both the federal and state levels in order to capture a more comprehensive fiscal deficit for the TDH analysis in Nigeria.

3 METHODOLOGY

3.1 Theoretical Framework

The Twin Deficit Hypothesis served as the study's theoretical framework. This study following Afonso and Coelho (2022, p. 3) uses the conventional macro identity to explain the relationship between the current account balance (CA) and the government budget balance (GB);

[3.1] $Y \equiv C + I + G + X - M$

where, Y represents domestic output, C is the private consumption expenditure, I represents private investment, G is the government expenditure, X stands for exports of goods and services, and M represents imports of goods and services. Using the definition of national income (R) and net factor income (NFI) from the rest of the world we have,

[3.2] $R \equiv Y + NFI$

Therefore, disposable income ($R - T$) is consumed or saved:

[3.3] $R \equiv C + S + T$

where S represents private saving, and T taxes, and the CA is the sum of the trade balance ($X - M$) and NFI;

[3.4] $CA \equiv (X - M) + NFI$

based on the prior relationships, the CA is defined as the sum of net private saving (net lending position of the private sector) and net public saving, the general government balance, ($GB = T - G$):

[3.5] $CA \equiv (S - I) + (T - G)$

Consequently, fiscal shocks may therefore cause the current account to move in the same direction. In particular, a current account deficit (CA < 0) would follow from a government budget deficit ($T - G < 0$). This reasoning is valid if local private savings are insufficient to cover the entire government budget and foreign capital inflows are required. Afonso et al. (2018) stated that a budget deficit, however, may cause the private sector's net loan position to rise to such a high level that it has no impact on the current account balance, or the latter may even move in the opposite direction and turn positive, producing a twin divergence.

3.2 Data and Method of Analysis

The research employed secondary data. It used annual time series data covering the years 1986 to 2021. The annual CBN statistical bulletin and the World Bank database served as the sources of data for the fiscal and the current account deficits data respectively. The base year captured the era of the structural adjustment programme while the terminal year was determined by the availability of recent data.

To determine the causal relationship between fiscal and the current account deficits in Nigeria, the study used the Toda-Yamamoto (T-Y) procedure given by Toda and Phillips (1994). The T-Y's use is justifiable since it helps solve the issue of asymptotic critical values when carrying out causality tests in the presence of a non-stationarity or no co-integration. The probability of an improperly recognized integration order is thereby decreased by the T-Y test. The method is also applicable to any degree of variable integration.

3.3 Model Specification

Adopting the stance of the Mundell-Fleming and the Keynesian Absorption theory, the study argues in favor of the TDH by stating that that when budget deficit increases, the current account balance will deteriorate. Marimuthu et al.'s (2021) model was adapted for this study. Unlike Marimuthu et al. (2021), this study limits its analysis to the variables of interest, excluding interest rate, and exchange rate. As such, the causal model specification for the T-Y procedure are given in Equations [3.6] and [3.7]:

[3.6] $$CAD_t = \alpha_0 + \sum_{i=1}^{k} \varphi_{1i} CAD_{t-1} + \sum_{j=k+1}^{k+d\max} \varphi_{2j} CAD_{t-j} + \sum_{i=1}^{k} \lambda_{1i} FID_{t-1} + \sum_{j=k+1}^{k+d\max} \lambda_{2j} FID_{t-j} + \varepsilon$$

[3.7] $$FID_t = \beta_0 + \sum_{i=1}^{k} \phi_{1i} FID_{t-1} + \sum_{j=k+1}^{k+d\max} \phi_{2j} FID_{t-j} + \sum_{i=1}^{k} \varpi_{1i} CAD_{t-1} + \sum_{j=k+1}^{k+d\max} \varpi_{2j} CAD_{t-j} + \varepsilon_{1t}$$

where, α_0 and β_0 are the intercepts; φ, λ ϕ and ϖ represents the parameters of the model; ε_t is the residuals of the models; *k* represents the optimal lag length; The maximum order of integration that could possibly occur in the system is represented by *dmax; CAD* represents the current account deficit, while *FID* represents fiscal deficit.

3.4 Estimation Procedure

The maximum order of integration is determined in the first stage. It involves testing the time series to ascertain the system's variables' maximum order of integration (*dmax*). This was done using the Augmented Dickey-Fuller (ADF) and the Kwaiatkowski, Phillips, Schmidt and Shin (KPSS) unit root tests. The ADF is an augmented version of the Dickey-Fuller test given by Dickey and Fuller (1979), while the KPSS test was given by Kwiatkowski et al. (1992).

Determining the ideal lag length (k) constitute the second step. The *k* in the model is always unknown, hence it must be determined by estimating the variables in their levels using a Vector Autoregression (VAR) process. Numerous selection criterion that can be used to choose the best lag order have been put forth in the econometric literature. This study considers several criteria- the Akaike Information Criterion (AIC), the Schwarz Information Criterion (SIC), and the Hannan-Quinn Criterion (HQC).

Causation is tested in the third stage. The Modified Wald approach is used for the causality test in the *VAR* system, with $k+d\max$ serving as the ideal lag length. The Modified Wald test has an asymptotic chi-square distribution with *k* degrees of freedom and an estimated $VAR(k+d\max)$. Taking into account these choice rules, the causation between two variables can be classified as unidirectional, bidirectional, or not causal at all. If either null hypothesis is rejected, unidirectional causality occurs; if neither null hypothesis is rejected, bidirectional causality exists, and if neither null hypothesis is accepted, there is no causality. Cointegration was tested as part of the study. In testing for the TDH, the cointegration process can be viewed as crucial. There must be a causal relationship between two or more time-series data if they are cointegrated; this relationship might be one- or two-directional. As a result, the TDH was validated in this study using the Johanson (1991) co-integration process.

The VAR Residual Serial Correlation LM test was used for the study's residual diagnostic test to check for serial correlation in the model, and the inverse root test was used to determine the model's stability.

4 RESULTS AND DISCUSSION OF FINDINGS

4.1 Unit Root Test

The study ran the ADF and KPSS tests considering how sensitive the T-Y process is to the sequence in which a data set was integrated. It is important to note that the null hypotheses for these two tests are mirror opposites; that is, while the ADF tests the null hypothesis for the existence of a unit root, the KPSS technique does the opposite. Table 1 displays the outcomes of the two tests.

Table 1: *ADF & KPSS Unit Root Test Results*

Variable	ADF Stat.	Order	KPSS Stat.	KPSS Stat.
FID	-5.388648	1(1)	0.185530	1(1)
	(-2.951125)		(0.463000)	
CAD	-3.152134	1(1)	0.262864	1(1)
	(-2.951125)		(0.463000)	

Fig. in parenthesis represents the critical values at the 5% level.
Source: *Authors' computation using E-views.*

For the ADF test, a data-set is stationary if its calculated value is greater than its critical value, however, the converse holds for the KPSS test. Considering the results on Table 1, both test statistics indicate a similar order of integration (I(1)) for both variables. Consequently, the dmax for the T-Y procedure in this study was 1.

4.2 The Lag Length Selection Test

Choosing the best lag length is the first step in carrying out the T-Y estimation based on the Augmented VAR process. As a result, the T-Y procedure's estimation of the ideal lag structure was carried out as shown in Table 2.

The majority of the test criteria, according to an analysis of the selection criteria, selected 2 lags. As a result, 2 lags were used in the study's T-Y estimation.

Table 2: *Optimal Lag Length Result*

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-1125.604	NA	1.64e+27	68.33965	68.43035	68.37017
1	-1035.262	164.2588	8.76e+24	63.10678	63.37887	63.19833
2	-1024.234	18.71361*	5.74e+24*	62.68086*	63.13435*	62.83345*
3	-1021.729	3.946873	6.34e+24	62.77148	63.40636	62.98510

Source: *Authors' Computation using E-views.*

* indicates lag order selected by the criterion

where LR: sequential modified LR test statistic (each test at 5% level), FPE: Final prediction error, AIC: Akaike information criterion, SC: Schwarz information criterion, HQ: Hannan-Quinn information criterion

4.3 Co-integration Test

To ascertain whether there is any long-run relationship between the variables in the study, the Johansen cointegration test result, as shown in Table 3, was employed.

Table 3: *Johansen Cointegration Result*

Null Hypothesis	Trace Stats.	0.05 Critical Value	Max-Eigen Stat.	0.05 Critical Value
None *	17.03362	15.49471	16.97029	14.26460
At most 1	0.063333	3.841466	0.063333	3.841466

Source: *Authors' Computation using E-views.*

According to the results of the Johansen Cointegration test, the Trace test contained one cointegrating equation at the 0.05 level. Similarly, at the 0.05 level, the Max-eigenvalue test likewise revealed 1 cointegrating equation. The analysis came to the conclusion that the fiscal deficit and current account deficit move together over the long term.

4.4 Toda Yamamoto Result

Table 4 displays the results of the T-Y causality test.

Table 4: *Toda Yamamoto (T-Y) Test Result*

Null hypothesis	Chi-sq	df.	Prob.	Remark
LnFCD does not Granger Cause *LnCAD*	5.462902	2	0.0651	Causality
LnCAD does not Granger Cause *LnFCD*	2.639714	2	0.2672	No causality

Source: *Authors' Computation using E-views.*

The result of the T-Y test conducted at the 10% level of significance indicates that a uni-directional causality exists between fiscal deficit (*FCD*) and current account deficit (*CAD*) in Nigeria for the period under analysis. Fiscal deficit was found to cause current account deficit. This finding

suggest a positive association between the budget deficit and current account deficit, which reinforces the validity of Mundell-Fleming and Keynesian theories. This means the country's economy is importing more than it is exporting, and the country's government is spending more money than it is generating. Additionally, there is a significant risk of inflation because deficit financing drives up overall spending, which in turn drives up overall demand. This position is corroborated by the findings of Ayinde et al. (2021), and Lahiani et al. (2022)

4.5 Residual Diagnostic Test

To ensure model adequacy, the VAR residual serial correlation test and the inverse root of AR characteristic polynomial stability tests were conducted.

4.5.1 Serial Correlation Test- Table 5 displays the outcome of the VAR Residual Serial Correlation LM test.

Table 5: *VAR Residual Serial Correlation LM Test Result*

Null hypothesis: No serial correlation at lag h

Lag	LRE* stat	df	Prob.	Rao F-stat	Df	Prob.
1	1.997628	4	0.7362	0.499324	(4, 48.0)	0.7363
2	2.333731	4	0.6746	0.585355	(4, 48.0)	0.6748

Null hypothesis: No serial correlation at lags 1 to h

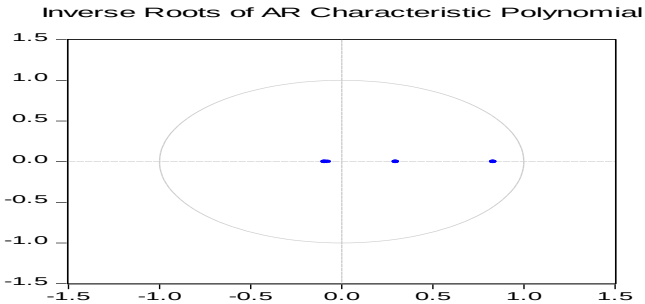
Lag	LRE* stat	df	Prob.	Rao F-stat	Df	Prob.
1	1.997628	4	0.7362	0.499324	(4, 48.0)	0.7363
2	7.953964	8	0.4380	1.014180	(8, 44.0)	0.4396

Source: *Authors' Computation using E-views.*

The outcome of the VAR residual serial correlation LM test allowed the null hypothesis to be accepted when the probability values for the lags were taken into account at the 5% level. The analysis came to the conclusion that the T-Y model was free of serial correlation as a result.

4.5.2 Stability Test

Figure 1 shows the plot of the inverse roots of the AR characteristic polynomial that was used to check the model's stability.



Source: *Authors' Computation using E-views.*

Figure 1: *AR Stability Graph*

The inverse roots of the AR characteristic polynomial graph in Figure 1 have roots with moduli that are less than one and they are located within the unit circle, demonstrating the stability of the model and the accuracy of the inferences made from it.

5 CONCLUSION AND POLICY RECOMMENDATIONS

5.1 Conclusion

The study concludes that Nigeria's current account deficit results from an ongoing budget deficit. The study's findings corroborate the TDH by showing that Nigeria's current account has a significant long-run causal relationship with budget deficits. This conclusion supports the Mundell-Fleming and Keynesian hypotheses as well as more recent empirical investigations by Ayinde et al. (2021) and Lahiani et al (2022). The study comes to the conclusion that as the country's budget deficit grew, the growing fiscal deficits and the accompanying debt servicing load on the Nigerian economy had a negative impact on the country's external position by stifling local production and driving up import demands.

5.2 Policy Recommendations

This study suggests lowering public spending to levels that are sustainable while increasing revenue collection to solve the issue that may arise as a result of this causal link. Similar to this, the government should also focus on export-oriented businesses and promote import substitution through fostering business-friendly settings by providing suitable infrastructure (such a sufficient supply of power) to boost domestic production and lower imports.

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