

Stabilization Policy Measures and Current Account Balance in Nigeria: An Autoregressive Distributed Lag (ARDL) Approach.

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Abstract

This study empirically examined the effects of stabilization policy measures on current account balance in Nigeria for a 40-year time period, from 1980 to 2019. Time series data on current account balance, money supply, interest rate, exchange rate, government expenditure and government tax was sourced from the Central Bank of Nigeria (CBN) statistical bulletin. The study adopted the Auto Distributed Lags (ARDL)/ Bounds testing approach to cointegration to estimate the models. The test for unit root was carried out using the Augmented Dickey-Fuller (ADF) test for stationarity and the result showed that all the variables used in the study were stationary at first difference except for government tax revenue which attained stationarity at levels. The Bounds test result showed that the variables in the model have long run relationship. It was further revealed that monetary policy has been leveraged on to boost the current account balance in Nigeria. The error correction term for models depicted mild speed of adjustment to equilibrium. On the balance, fiscal policy did not effectively play the role of improving current account balance in Nigeria while monetary policy indicators contributed meaningfully to current account balance in Nigeria for the study period. It is therefore recommended amongst others that expansionary measures on fiscal policy should be encouraged as they play vital role in improving the current account balance in Nigeria.

Keywords: *Stabilization Policy, Current Account Balance, Autoregressive Distributed Lags and Nigeria*

Over the years, stabilization policy and its effect on the current account have been at the fore in debates among policy makers and governments in general as a result of growing global imbalances. The responsibility of government to achieve set goals is made possible through the use of stabilization policy. The economic goals can be referred to as target variables while the policy variables used to achieve them are referred to as instrumental variables (Onuchuku, 2016). These instrumental variables are usually being manipulated by the authorities in charge of stabilization to achieve desired economic goals.

One of the aims of any nation's stabilization policy amongst others is to maintain external balance which is reached when a country does not have excess current account deficit or current account surplus. It reflects a steady current account deficit financed on a lasting basis by expected capital inflows (Komolafe 1995; Baffes *et al* 1997). The sustainability of current account balance is an indicator which provides information on the state of the economy, the level of productivity and the extent of the susceptibility of the economy or otherwise to external shocks that trigger economic crisis (Sanni *et al*, 2019). The balance further shows the credit worthiness of an economy while serving as a good indicator to determine its comparative advantage in the global economy. Broadly speaking, it records a country's net trade in goods and services, plus net earnings from rents, interest, profits and dividends and also net transfer payments to and from the rest of the world during a specified period.

Current account can be expressed as both the difference between the values of exports and imports of goods & services and the difference between national savings and investment. Current account deficits reflect the expansion in domestic absorption that could not be satisfied by domestic supply indicating low national savings which can trigger the depletion of external reserves. Conversely, current account surpluses, which is excess export over imports, reflects a high level of national savings in relation to national investments.

To attain a favourable balance in the current account, countries strive to ensure that the earnings they receive from exports outweighs the payments they make for importation of goods and services to promote economic stability and improve their credit worthiness (Barro, 1996).

Some strategies have been recommended to tackle current account deficits. The first is the devaluation of a country's currency with respect to other currencies. The ration here is that devaluation makes exports cheaper thereby reducing domestic consumption and spending on imports which in turn improves the competitiveness of domestic industries. This situation however, depends on the country's elasticity of demand for exports and imports as illustrated by the Marshall Learner Condition which states that devaluation will improve the balance on the current account if the combined elasticity's of demand for imports and exports is greater than one. This is because the effect on the current account depends on the total value and not just the quantity of exports (Bird, 1981). The Second strategy is deflating demand which entails a deliberate reduction of consumer spending through fiscal contraction like increasing direct taxes or by monetary contraction through raising interest rate or reducing currency in circulation. The disadvantage of the deflationary policy however, is that it can trigger unemployment. The motivation of this study is based on the fact that the effect of stabilization policy on the external balance has led to controversies among policymakers and other researchers. This study therefore, is aimed at investigating how stabilization policy measures affect current account balance in Nigeria. The rest of this work is sectionalized into literature review, materials and methods, results and discussion as well as conclusion and recommendations.

2 LITERATURE REVIEW

2.1 Theoretical Framework

The absorption approach explains the balance of payment from national income perspective, highlighting the changes in domestic spending relative to domestic absorptive capacity that affect the trade balance of a country. It takes cognizance of the fact that a deficit in a country's balance of payment implies that the citizens are "absorbing" (consuming) more than they produce. Invariably, domestic expenditure on consumption and investment is higher than national income. Conversely, a surplus in the balance of payment shows that they are absorbing less which means that expenditure on consumption and investment is less than national income. The approach introduces the income effects to the analysis of devaluation effects. The proponents of this approach posit that devaluation would only have positive effects on trade balance if the propensity to absorb is less than the rate at which devaluation would induce increases in the national output of goods and services. There is therefore a need to achieve a conscious reduction of absorption capacity to accompany devaluation since increased productivity would increase income in an economic system with absorption.

Iyeli (2017) recognized this as the path of adjustment preferred by the International Monetary Fund (IMF) and World Bank although in his opinion, an alternative to increase productivity would have been preferred to inject income into the system with absorption or even surpass absorption levels.

One the theories that explain the relationship between government budget deficit and trade deficit is the Ricardian equivalence hypothesis which posits that fiscal deficit has no effect on the current account deficit because consumers are considered to be rational and forward looking and would save any additional expenditure or tax reduction made by the government in other to pay expected future taxes by the government which could either finance their spending by taxing current taxpayers or through borrowing. In any case, if the spending is financed by borrowing, they must eventually repay this borrowing through increased taxes above what it would have been in the future. The argument is basically that for a given path of government expenditures, the timing of taxes should not affect the consumption decision made by individuals paying the taxes since rational agents realize that substituting taxes today for taxes plus interest tomorrow via government debt financing is the same (Barro, 1996). The choice is between tax now and tax later leaving the national savings unaffected. Therefore, the financing of government spending via debt or taxes should not affect the current account. (Merza *et al* 2012).

In contrast to the Ricardian equivalence hypothesis is the Keynesian Proposition which advocates the existence of a positive relationship between budget deficit and current account deficit. The twin deficits hypothesis specifically states that a budget deficit leads to a current account deficit while a budget surplus will improve the current account deficit. Here, changes in budget deficits can trigger changes in interest rate, exchange rate and income level thereby affecting the current account balance. The argument is that when a government increases its fiscal deficit by increasing expenditure or reducing taxes, individuals spend some of the additional income on consumption and part on foreign goods and services. The economic basis for the connection between budget deficit and current account deficit is provided by the national income accounting identities.

$Y = C + I + (X - M)$1.) where Y is national income; C is consumption; I is real investment; G is government expenditure; X is exports of goods and services while M is the import of goods and services. Also, national income; $Y = C+S+T$2.) where S is savings and T represents taxes government. Combining the two equations (1 and 2), we then have;

$$C + I + G + (X-M) = C + S + T$$
.....3.)

In other words; $T - G = (I - S) + (X - M)$4.)

If the excess of government taxes over expenditure is equal to net export plus the excess of investment over savings, it therefore means that government budget surplus is equal to current account surplus as implied in equation 4. In a situation where government expenditure exceeds taxes, it takes its toll on imports exceeding exports or savings exceeding investment or both (Ebi & Uli, 2016). In practice however, results of testing this hypothesis turned out dissimilar for different countries and different econometric techniques.

2.2. Stabilization Policy Developments in Nigeria

Stabilization policies refers to those measures by the government or/and its central bank aimed at achieving set macroeconomic goals which include; the attainment of full employment, the achievement of price stability, the attainment of a sustainable rate of economic growth and importantly, the maintenance of external balance. Stabilization policy measures are usually categorized into two; monetary policy and fiscal policy.

Monetary policy refers to the deliberate or conscious actions taken by the monetary authorities, usually central banks, to regulate the quantity, value, availability and cost of money in an economy with a view to achieve specific macroeconomic objectives. Robinson (2014) argued that an effective monetary policy is assessed according to its ability to

maintain not only monetary and economic stability, but also in increasing the utilization of the country's economic resources and securing the highest degree of welfare in the economy. Monetary policy in Nigeria is anchored by the Central Bank of Nigeria (CBN) through the Monetary policy Committee headed by the governor of CBN. The committee meets regularly to set objectives in line with the economic situation prevalent in the nation. They make decisions to lower, maintain or raise policy rates as the case may be through the use of open market operations (OMO) (Anochie, 2015). The strategy of monetary policy in Nigeria requires modifying the amount of base money in circulation through continuous market transactions which in turn affects other market variables like exchange and interest rates. To strengthen the stabilization of the naira exchange rate and interest rate, the CBN has relied on the policy framework of market base techniques driven by increased bank credit to the domestic sector (Enoma *et al*, 2011). The distinction between the different monetary policy strategies lies primarily with the set of targets, instruments and variables employed by the central Bank to achieve set objectives. Basically, monetary policy strategies are classified into; monetary targeting, price level targeting, inflation and exchange rate targeting. The Central Bank of Nigeria (CBN) however uses basically two frameworks namely exchange rate targeting and monetary targeting in the implementation of its monetary policy (Onuchuku *et al*, 2018). Monetary policy in Nigeria has transitioned over the years covering both the direct and indirect era. The exchange rate target was adopted between 1959 and 1973 while the monetary targeting was adopted from 1973 till date. The monetary targeting included direct monetary control which spanned from 1973 to 1993 and indirect control from 1993 till date. Independent monetary policy however did not commence till 1979. The switch in target did not change or stop objectives of the monetary policy (CBN, 2016). In practice, fiscal policies do not work in isolation, they are implemented alongside monetary policies.

Fiscal Policy deals with taxation as a form of government revenue and government expenditure which is usually administered under the laws of a legislature and impacts directly on the goods market (Anochie, 2015). It is a purposeful tool used by the government to manipulate economic activities by raising revenue through taxation and other means and also the pattern of expenditure. Onuchuku (2016) in addition, argued that fiscal policy involves any attempt to regulate aggregate demand (C+I+G) in order to promote full employment without inflation. Fiscal policy simply put is the budgetary policy of the government relating to taxes, public expenditure public borrowing and deficit financing (Sanni, 2012). One of the objectives of fiscal policy amongst others is to maintain a healthy balance of payment position in order to safeguard the external value of the national currency (Ewubare and Uzoma, 2019). The absence of a viable fiscal policy can trigger capital flight which can be detrimental to external balance (Shuaib *et al*, 2013).

In Nigeria, fiscal policy is being managed by the federal ministry of finance which is headed by the coordinating minister of the economy. The ministry manages and controls the public finance of the nation (FMF, 2015). Specifically, the ministry annually prepares the national budget showing the revenue and expenditure estimates. The ministry also monitors the oil and non-oil revenue accruing to the nation through taxation and other means.

Nigeria, like other oil dependent nations, is faced with the challenge of implementing fiscal policy in an environment with highly volatile oil revenue flows which has the capacity of spilling into the budget (Baunsguard, 2003). Over the years, fiscal volatility has been transmitted to the rest of the economy with negative implications on the economy. Government revenue and expenditure in Nigeria has been influenced by oil driven volatility. During periods of oil boom, revenue and expenditure increase remarkably while the reverse is the case when oil price and production declines although usually with a lag effect. The effects of such "booms and dooms" driven fiscal policies are transmitted to the rest of the economy. This has resulted to the failure of public expenditure to diversify the non-oil sector and also

reduce poverty (Baunsguard, *ibid*). In Nigeria also, there is a weak revenue base as a result of high marginal tax rate with a narrow tax base which has led to low tax compliance. A major challenge of fiscal policy in Nigeria is tax evasion. Tax evasion affects the government political and economic programmes. Fiscal policy changes are said to be the cause of current account deficits and also plays prominent roles in the determination of the future development of external imbalances (IMF, 2005).

Some scholars have advocated the use of stabilization policies to correct distortions in the economy while some others have opposed it. According to the advocates of the use of stabilization policies, when Gross Domestic product (GDP) falls below its natural rate, expansionary monetary/fiscal policy should be used to prevent a recession. Conversely, when GDP rises above its natural rate, contractionary monetary /fiscal policy should be used to reduce an inflationary boom. Those against the use of stabilization policies argue that because monetary and fiscal policies have lags, such policies may destabilize the economy instead of helping it.

2.3 Current Account Balance in Nigeria

The current account balance no doubt, reflects a country's performance in foreign trade and also serves as an indicator of the competitiveness of an economy. The current account balance of Nigeria shows the difference between exports and imports of commodities between the nation and the rest of the world. The trends of current account balance between 1981 and 2019 are showed in figure 1.

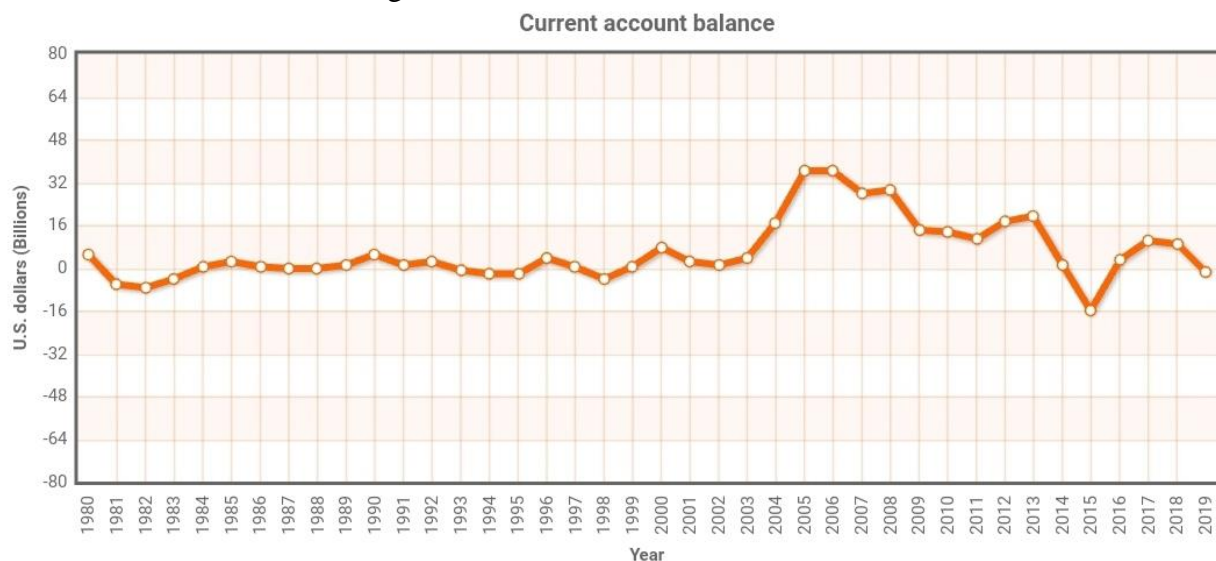


Figure 1: Current account balance in Nigeria between 1981 and 2019.

Source: Author's compilation with data from International Monetary Fund.

Developments in the external sector also show that Nigeria's balance of payments profile has been characterized by periodic deficits in the current account. The period of 1980-2019 revealed negative and positive balances. Current account recorded negative balances from 1980 to 1983. In 1984 and 1985, a positive balance of about N441million and N2.2billion was recorded respectively. The fluctuation in the current account balance continued with the figures for the period, 1986 to 1988 showing a negative balance and the period 1989 to 1992 recording a positive balance. The fluctuation continued till 2003 when it recorded only positive balances. A net surplus of \$25.57billion was recorded in 2005 which further improved to \$29.34billion in 2008. Owing to growing import bills and higher net deficits in the service and income accounts, as well as the declining value of exports, the balance

dropped to \$10.75 billion in 2015. Negative balances were however recorded in 2015 and 2019 with the figures standing at -N3,033 billion and -\$17.02 billion respectively. The deficits in the current account position could be traced to the high dependence of the Nigerian economy on importation and also to fluctuation in oil prices and output. The inflows into the current account have remained basically dependent on favourable dollar oil earnings, remittances from citizens in the diaspora, lower import bills on goods and services and a reduction in the income account (Sanni *et al*, 2019).

2.3 Empirical Literature

Empirical studies also abound on the impact of monetary and fiscal policies and its relationship with current account balance both for developed and developing countries. Onafowora *et al* (2006) employed the generalized impulse response analysis and vector error-correction techniques to examine the “twin deficits” phenomenon in Nigeria. Evidence from their study showed a positive relationship between trade and budget deficits in Nigeria refuting the Ricardian Equivalence Hypothesis. They argued that an increase in government deficit will lead to an increase in aggregate demand and the domestic rate of interest.

Akanbi (2014) carried out an investigation using the Johansen estimation techniques on the link between fiscal policy and current account in Nigeria for the period 1970 to 2012. The study separated the effects of oil on the fiscal balance and the current account balance. Findings from the study showed that there exists a positive relationship between government budget surplus and the current account balance in Nigeria. On the other hand, the non-oil segment showed evidence of a twin deficit.

Attiya *et al* (2011) analyzed the effect of fiscal policy on the current account and other macroeconomic variables like real output, interest rate and exchange rates in Pakistan for the period 1960-2009 using the Vector Autoregressive (VAR) approach. After controlling the business cycle effects on fiscal balances, the study identified the exogenous fiscal policy shocks. From the findings of his study, fiscal expansion led to an improvement of the current account balance and exchange rate depreciation contrary to most economic theories.

Danmola & Olateju (2013) investigated the impact of monetary policy on the components of current account for the period 1970 to 2010 in Nigeria employing the Johansen Cointegration, error correction model (ECM) and ordinary least square (OLS) technique. The results show evidence of long run relationship between money supply and the components of current account employed in the study. The study also revealed that money supply has positive influences on all the variables except the exchange rate that it influences negatively. The study equally discovered that money supply has significant effect on imports, exports and industrial output in Nigeria.

Ener & Arica (2012), in their study, examined the relationship between current account balance as a percentage of GDP and real interest rate over the period 1980 to 2009 for a sample of 21 high income OECD countries using a two-way panel estimation technique to investigate the relationship between the variables. Findings from their study revealed a positive relationship between current account and real interest rate. They therefore recommended that current account imbalances can be tackled by altering interest rates.

Hossein and Bahram (2015) examined the impact of monetary and fiscal policies on trade balance of payment in Iran for the period 1979-2012 using autoregressive technique and vector Error correction method (VECM). The result obtained from the study showed that

government spending had a positive effect on imports of goods implying that government expenditure through importation channel worsens the balance of trade. In the same vein, the results of vector error correction model showed that the model convergence and error correction factor decreased by 0.82.

Lumengo (2017), set out to determine which policies between monetary, fiscal and exchange rate policies is capable of adjusting external imbalances in three large African countries; Nigeria, south Africa and Egypt (NSE). He employed the panel vector Autoregressive (PVAR) method to achieve this. From his findings, it is evident that the effectiveness of monetary and fiscal policies and exchange rate policy in addressing external balances in NSE. Additionally, findings from his study showed that currency appreciation in NSE resulted to a current account surplus because of high import dependency of those countries. The study also showed that expansionary fiscal shock led to current account surplus in NSE.

Makanza and Dunney (2015) carried out a study on Fiscal Consolidation, Fiscal Policy Transmission, and Current Account Dynamics in South Africa. They employed a structural vector autoregressive (SVAR) model to analyse the effect of fiscal shocks on the current account. The study went further to investigate the channels through which fiscal shocks are transmitted to the current account to understand how current account management policies should be formulated. Findings from their study showed that expansionary fiscal shocks improved the current account via public investment and household savings which is a divergence from the twin deficit hypothesis.

Nickel & Vanbsteenkiste (2008) in assessing the relationship between fiscal policy and current account considered how the Ricardian equivalence affects this relationship in 22 developed countries. Their findings revealed that the countries that had a debt to GDP ratio that is up to 90% experienced an increase in fiscal deficit leading to higher current account deficit.

Investigating the impact of current account balance on economic growth of South Africa, Algeria, Nigeria and Egypt, Ogunniyi, Iwebgu and Adekoya (2018), employed the ARDL estimation technique to investigate the comparative analysis. The fully modified panel OLS (FMOLS) was also employed to examine the overall impact of current account balance on economic growth. Findings from their study revealed that current account balance has a significant negative impact on economic growth for Algeria, Egypt and Nigeria while it has a significant positive impact on economic growth for South Africa. It was also discovered that the structure of an economy in relation to the main source of foreign exchange earnings determines the impact of such activities reflected by her current account balance on the country's economic growth. They therefore recommended that special attention be paid to the diversification of the export base basically through technological innovations, agriculture etc.

Okoro (2013) examined the effects of deficit financing on balance of trade in Nigeria for the period 1980-2008 using the Granger-Causality and Vector Auto-Regression (VAR) techniques. The short run dynamic result reveals a positive relationship between deficit financing and trade balance (surplus). The long-term result however showed that an increase in deficit financing reduced trade deficit in Nigeria. The implication of the result therefore is that in the short run, deficit financing can be used by the government to improve trade while deficit financing could be used to reduce trade deficit in the long run if properly managed by government.

Olanipekun & Ogunsola (2017) examined the effects of exchange rate on balance of payments, current account balance and capital account balance using the autoregressive

distributed lag (ARDL) approach to cointegration. From their findings exchange rate appreciation adversely affected balance of payment and current account balance although no significant effect of exchange rate on capital was obtained. The study therefore recommended an effective management of the exchange rate by the monetary authority in order to achieve a favourable balance of position in Nigeria.

Ozdamar (2015), carried out an investigation on the relationship between current account balance and various macroeconomic variables in Turkey using the Johansen cointegration test and cointegrating regression analyses (FMOLS, CCR and DOLS) for the period, 1994 to 2014. Findings from their study showed that foreign trade balance is a strongly explains the current account balance; terms of trade and gross domestic product which also have statistically significant effects on the current account balance. Furthermore, results of the study also reveal that domestic interest rates and real effective exchange rate affects Turkey's current account balance as expected though insignificantly.

Proso & Okoye (2016) analyzed the relationship between Balance of payment and monetary policy in Nigeria for the period 1980 to 2015 using the OLS technique. Their results showed a positive relationship between Balance of Payment and Money Supply, Interest rate and Exchange rate. Money supply and Interest rate had significant relationship with Balance of Payment whereas Exchange rate was not statistically significant.

Shahbaz *et al* (2012) employed the Autoregressive Distributed Lag (ARDL) approach to cointegration to investigate the relationship between changes in real exchange rate and trade balance in Pakistan. Their study showed the existence of a long-run relationship between the series and non-existence of J-curve relation. The implication of their finding is that currency depreciation deteriorated Pakistan's trade balance.

In analyzing the impacts of budget deficit on macroeconomic aspects of Pakistan, Wakeel & Ullah (2013) employed the 3 stage Least Square method. From their findings, it was observed that changes in imports and exports are affected by the relative prices and exchange rate respectively which in turn depends on money supply. The study in conclusion, states that increasing government expenditure to achieve higher output will eventually result to trade deficits.

Yang (2011) investigated the long-run and short-run impacts of initial stock of net foreign assets, degree of openness to international trade, real exchange rate and relative income on current account balances for eight emerging Asian economies for the period 1980 to 2009, making use of the cointegrated VAR (Vector Autoregression) methodology. Findings from the study showed that current account behaviours in emerging Asian economies are heterogeneous. The results indicates that the initial stocks of net foreign assets and trade openness are important in explaining the long-run behaviours of current accounts, but have less important roles in interpreting the short-run variations in current accounts in most of the selected economies. The Real exchange also didn't explain current account adjustments, both in short-run and long-run.

This study reviewed a number of related empirical works of other researchers. However, none of the studies showed the relationship between fiscal and monetary policies as a whole and current account balance in Nigeria. Also, the study extended the time frame adapted in past studies in order to reflect the present realities on ground in Nigeria. Thus, it is the above gap and the desire to contribute to knowledge in literature that motivated this study.

3. METHODOLOGY

This section showed the various techniques employed to obtain and analyze the necessary information to meet the objectives of this study. The dataset for this research work was time series data, secondarily sourced from Central Bank of Nigeria (CBN) statistical bulletin, spanning from 1981 to 2019.

3.1. Model Specification

The model has its independent variables as money supply, interest rate, exchange rate, and government expenditure as well as government tax while current account balance is the dependent variable. The functional form of the model is as follows: $GDP = f(MSS, INR, EXR, GXP, GTX)$ (1)

It was further specified in econometric form as follows:

$$\text{LnCAB}_t = \alpha_0 + \alpha_1 \text{LnMSS}_t + \alpha_2 \text{LnINR}_t + \alpha_3 \text{LnEXR}_t + \alpha_4 \text{LnGXP}_t + \alpha_5 \text{LnGTX}_t + U_t$$

..... (2)

Where: CAB = Current Account Balance, MSS = Money Supply, INR = Interest Rate, EXR = Exchange Rate, GXP = Government Expenditure, GTX = Government Tax, μ_t = Random Variable, α_0 = Intercept, $\alpha_1, \alpha_2, \alpha_3, \alpha_4$ & α_5 = Estimated parameters of the independent variables.

3.2. Method of Data Analysis

Autoregressive Distributed Lags Model

The Autoregressive Distributed Lags (ARDL)/bound test approach to co-integration, proposed by Pesaran *et al* (2001) was adopted in this study to determine whether the underlying time series variables has long run relationship. The null hypothesis of no cointegration is tested against the alternative hypothesis of cointegration. Restating equation (1) as an ARDL model we have:

$$\Delta \text{CAB}_t = \pi_0 + \sum_{i=1}^p \theta_{1i} \Delta \text{CAB}_{t-1} + \sum_{i=0}^p \theta_{2i} \Delta \text{MSS}_{t-1} + \sum_{i=0}^p \theta_{3i} \Delta \text{INR}_{t-1} + \sum_{i=0}^p \theta_{4i} \Delta \text{EXR}_{t-1} + \sum_{i=0}^p \theta_{5i} \Delta \text{GXP}_{t-1} + \sum_{i=0}^p \theta_{6i} \Delta \text{GTX}_{t-1} + \delta_1 \text{CAB}_{t-1} + \delta_2 \text{MSS}_{t-1} + \delta_3 \text{INR}_{t-1} + \delta_4 \text{EXR}_{t-1} + \delta_5 \text{GXP}_{t-1} + \delta_6 \text{GTX}_{t-1} + \varepsilon_t$$

..... (3)

Where Δ denotes the difference operator

π_0 is the vector of the intercept

$\theta_1 - \theta_6$ is the short run dynamic coefficient

$\delta_1 - \delta_6$ is the long run coefficients of the explanatory variables

ε_t is the error term

The null hypothesis of no cointegration is tested under the asymptotic distribution of the F-statistic. From the ARDL model in equation (3), the null and the alternative hypotheses are expressed respectively below:

$$H_0: \delta_1 = \delta_2 = \delta_3 = \delta_4 = \delta_5 = \delta_6$$

$$H_1: \delta_1 \neq \delta_2 \neq \delta_3 \neq \delta_4 \neq \delta_5 \neq \delta_6$$

Pesaran *et al* (2001) reported two sets of critical values. One critical value requires that all the variables in the ARDL model are I(0), while, the other assumes that the variables are I(1). If the computed F-statistic is greater than the upper bound I(1) of the critical value, the null hypothesis of no co-integration would be rejected. However, if the falls below the lower bound, the null hypothesis of no co-integration cannot be rejected. The test is however inconclusive if the F-statistic falls in between the bounds (Ewubare and Uzoma, 2019).

4. 4.1. Descriptive Statistics on variables of the Study

4.1. Descriptive Statistics on variables of the Study

The summary of the descriptive statistics for the variables in the study are presented in the table below.

Table 1: Descriptive Statistics of variables

Statistics	CAB	MSS	INR	EXR	GXP	GTR
Mean	576155.5	5895781.	17.46825	93.61033	1972788.	1394028.
Maximum	4698047.	29137241	31.65000	307.5000	9714842.	5324453.
Minimum	-7153.100	11856.60	8.430000	0.546780	9636.500	5819.100
Std. Dev.	1241830.	8723650.	4.937159	95.75104	2506831.	1739410.
Skewness	1.948752	1.337599	0.191107	0.880122	1.303282	1.064303
Kurtosis	5.506537	3.393933	3.594224	2.940366	3.911995	2.726870
Sum	23046219	2.36E+08	698.7300	3744.413	78911532	52973062
Observations	40	40	40	40	40	40

Source: Authors Computation using E-view 10

The descriptive statistics in table 1 above revealed that the money supply, interest rate and exchange rate averaged N5.9 trillion, 17.5% and 93.6% respectively. The result further showed that current account balance was N5.7trillion on the average. Government expenditure recorded a mean value of N1.97 trillion while government tax averaged N1.4 trillion. Money supply recorded a maximum value of N29.1 trillion. Interest rate and exchange rate had maximum values of 31.6% and 307% respectively. Government expenditure grew to a peak of N9.7 trillion while government tax recorded a maximum value of N5.3 trillion. The standard deviation calculated for money supply was the most volatile in the series while exchange rate was the least volatile variable.

The calculated values for the skewness statistics revealed that current account balance, money supply, government expenditure and government tax were positively skewed, having a long right tail. Interest rate variable showed a normal distribution. Also, the kurtosis statistics of all the variables were leptokurtic, suggesting that their distributions were more peaked than a normal distribution except for exchange rate and government tax which were platykurtic showing distributions that are flatter than normal. These observations show how imperative it is to conduct a unit root test to check the stationary characters of the variables. In this study, the Augmented Dickey Fuller (ADF) unit root test procedure was adopted.

4.2 Unit Root Test

The unit root test for stationarity was conducted and the result is presented in Table 2 below.

Table 2: Unit Root Test Results for Stationarity

Variab les	ADF Statistic	5% Critical Value	Order of Integration
CAB	-7.1025	-3.5331	I(1)
MSS	-5.1151	-3.5366	I(1)
INR	-5.6791	-3.5366	I(1)
EXR	-5.4157	-3.5331	I(1)
GXP	-0.329	-3.5366	I(1)

GTX	-3.5942	-3.5366	I(0)
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Data on each series were tested for stationary in order to avoid a spurious regression. For this study, the Augmented

Dickey-Fuller (ADF) was used to test the null hypothesis of a unit root at 5 percent significance level. The null hypothesis of a unit origin is rejected in favour of the alternative in each case if the test statistic is more negative than the critical value. A rejection of the null hypothesis means that the series do not have a unit root. The result of the test in table 2 above shows that all the variables were stationary after first difference except government tax which attained stationary at levels. Since the variables have attained stationarity, we then proceed to conduct the co-integration test.

4.3 ARDL Form and Bounds Test Results

Performing the cointegration test is necessary in order to establish whether or not, a long run relationship exists between the variables. However, since the unit root test conducted showed that the series were integrated of different order, I(0) and I(1), the bounds test proposed by Pesaran, Shin and Smith was relevant. The Long Run Autoregressive Distributed Lagged Form and Bounds test for cointegration on each model were conducted and the result is presented below;

Table 3: ARDL Bounds Test Result

Test statistic	Value	K
F-statistics	4.94	5
Critical value bounds		
Significance	I0 Bound	I1Bound
10%	2.26	3.35
5%	2.62	3.79
2.5%	2.96	4.18
1%	3.41	4.68

As presented in the table above, the analysis of the long run relationship between current account balance and the underlying independent variables are seen. The computed F-statistics (4.94) is greater than the upper bound critical values at 5 percent significance level, (3.79). Therefore, the null hypothesis of no levels relationship will not be accepted. It is therefore concluded that there is long run relationship between the variables.

4.4 Long Run Coefficient

Observing the mixed integration of our series, the ARDL was applied and the results are shown in the table below;

Table 4: Long Run Coefficient Test Result
Dependent Variable: LCAB

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LMSS	0.141197	0.049509	2.851935	0.0102
LINR	0.600742	0.316048	1.900785	0.0699
LEXR	-0.269603	0.104337	-2.583956	0.0155
LGXP	-0.192484	0.145905	-1.319244	0.2028
LGTX	-0.034067	0.013698	-2.487016	0.0194
C	10.60643	6.872524	1.543309	0.1364

The long run coefficients of the current account balance were presented in table 4. As shown by the result, the coefficient of money supply was rightly signed (positive), and statistically significant at 5 percent level implying that a percentage increase in money supply increased the current account balance by 0.14 percent. This aligns with theoretical expectation and the submission of Olanipekun & Ogunsola (2017). This is indicative that monetary policy has been leveraged on to boost the current account balance in Nigeria. Interest rate had its coefficient positive and statistically significant at 10 percent level. From the result, a unit increase in interest rate improved current account balance by 0.6 units. This is in line with the findings of Ozdamar (2015). The argument here is that higher interest rates have the capacity of improving savings which leads to lower disposable income causing consumers to spend less on imports thereby improving the current account balance. The coefficient of exchange rate was negative and statistically significant at 5 percent level. This finding aligns with the theoretical expectation that increase in exchange rate undermines the competitiveness of the domestic currency and as such, negatively impacts on the current account position due to the decrease in exports, in line with the finding of Lumengo (2017). Government expenditure exerted a negative (although not significant) influence on current account balance. This supports the submission of Egwaikhide (2005), Nickel *et al* (2008) & Akanbi (2014) but at variance with the position of Makanza & Dunney (2015) and Lumengo (2017).

4.5 Short Run Coefficient

The result of the short run dynamic model of current account balance is depicted in table below.

Table 5: Summary of the short-run ECM
Dependent Variable: LGDP

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LMSS	0.239930	0.078115	3.071497	0.0101
LMSS(-1)	0.711555	0.257739	2.760754	0.0106
LINR(-1)	0.174422	0.044851	3.888981	0.0037
LINR(-2)	0.269603	0.104337	2.583956	0.0155
LEXR	-0.034067	0.013698	-2.487016	0.0194
LEXR(-3)	0.843911	0.290247	2.907563	0.0103
LGXP	-0.574352	0.323563	-1.775087	0.0949
LGXP(-1)	-0.025182	0.013548	-1.858786	0.0816
LGTX(-1)	-0.627800	0.403351	-1.556460	0.1392
LGTX(-3)	-0.616051	1.867306	-0.329914	0.7451
ECM(-1)*	-0.269603	0.104337	-2.583956	0.0155
C	28.62791	15.81344	1.810351	0.0833

$R^2 = 0.76$, R^2 -adjusted = 0.67, F-stat = 6.5, F-Prob. = 0.00, AIC = 5.1, SC = 6.1, HQC = 5.45

The result of the short run error correction model of the current account balance showed that the coefficient of money supply at its current and lagged levels were positive and significantly linked to current account as expected in theory. This is coherent with the submission of Proso, Inaya & Okoye (2017) and in line with the long run result. The coefficient of the lag one and two forms of interest rate showed a significant positive relationship with current account balance, similar to the long run results. Although the lag one form was not statistically significant, the lag two form was significant at 5 percent level. This is in line with *a priori* expectation. Exchange rate impacted negatively and significantly on current account balance implying that exchange rate appreciation improved current account balance in Nigeria for the period covered by the study. This finding was in line with the work of Olanipekun & Ogunsola (2013). Both the current and the lagged values of government expenditure showed significant negative relationships with current account balance in Nigeria for the period under review. Government tax also had a significant negative impact on current account balance in its current and third lagged period.

The absolute value of ECT (-1) term shows a 26 percent speed of convergence to equilibrium. That is to say that 26 percent of any disequilibrium is restored annually. The R-squared value implies that 76 percent of the systematic variations in current account balance are explained by the explanatory variables. Also, the overall model is significant at 5 percent level as shown by the F-statistics of 6.5 with its probability value as 0.000018. The Durbin Watson value will not be interpreted as a measure for autocorrelation as our model is an autoregressive scheme, having the lagged dependent variable as an explanatory variable (Gujarati, 2007).

4.6 Diagnostic Test

A summary of the diagnostic tests is reported in the table below

Table 6: Summary of the Diagnostics Test

Test	F-statistic	Prob.	Conclusion
Jarque-Bera	2.0489	0.3589	Normally Distributed
Breusch-Godfrey Serial Correlation LM	0.949732	F(2, 12) 0.4141	No Serial Correlation
ARCH Heteroskedasticity	0.2242	F(1, 33) 0.6389	No heteroskedasticity
Ramsey RESET	0.771411	F(1, 8) 0.9724	No specification errors

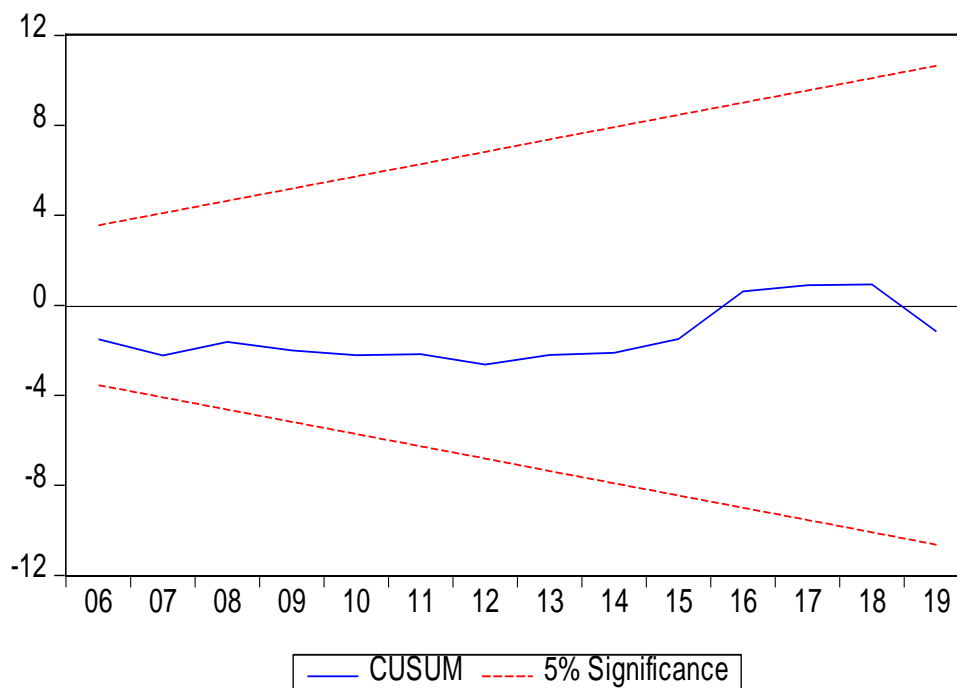


Figure 2: CUSUM Test of Stability

The results of the diagnostic test in Table 6 revealed that the model scaled through the diagnostic tests as they show a probability value greater than 0.05 implying that the null hypotheses of normal distribution, no serial correlation, no heteroscedasticity and no specification errors are accepted based on the Jarque-Bera normality test result, Breusch-Godfrey serial correlation LM result, ARCH test result and Ramsey RESET tests

respectively. Also, the stability of the parameters of the model was examined using the plot of the cumulative sum of recursive residuals (CUSUM). The CUSUM in figures 2 stayed within the 5 percent critical line, indicating the constancy or stability of the regression estimates throughout the period covered by the study.

5. CONCLUSION AND POLICY RECOMMENDATIONS

The study employed the ARDL model/Bounds testing approach to examine the effect of some selected stabilization policy variables on the current account balance in Nigeria using data from 1980 to 2019. The analysis started by examining stochastic characteristics of each time series by testing their stationarity status using Augmented Dickey-Fuller test which showed that all the variables were integrated at order I(1) except government tax which was stationary at levels. The F-statistics obtained from the bound cointegration test shows a stable long run relationship among the variables in the model. Monetary policy measures played the role of improving the current account balance in Nigeria. This is to say that that monetary policy has been leveraged on to boost the current account balance in Nigeria. The error correction term for models depicted mild speed of adjustment to equilibrium. On the balance, fiscal policy did not effectively play the role of improving current account balance in Nigeria while monetary policy indicators contributed meaningfully to current account balance in Nigeria for the study period. It is therefore recommended amongst others that expansionary measures on fiscal policy should be encouraged as they play vital role in improving the current account balance in Nigeria.

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