Determinants of Current Account in Nigeria

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Abstract

The study analyzed the determinants of the current account balance in Nigeria between 1981 and 2020, using three different models: oil current account balance, non-oil current account balance, and total current account balance. The dependent variables were the respective current account balances, while the explanatory variables included income, consumption, investment, budget deficit, exchange rate, financial deepening, broad money supply, unemployment rate, inflation rate, and age dependency ratio. The data was analyzed using the autoregressive distributed lag (ARDL) technique. The results indicated that budget deficit, exchange rate, and financial deepening were statistically significant in determining the oil current account position in the short run, while income, budget deficit, and exchange rate were statistically significant in the long run. For non-oil current account position, budget deficit, money supply, unemployment rate, inflation rate, and age dependency ratio were significant determinants in the short run, while budget deficit, money supply, unemployment rate, and inflation rate were significant in the long run. In the case of the total current account position, budget deficit, financial deepening, unemployment rate, and age dependency ratio were significant in the short run, while budget deficit, unemployment rate, and age dependency ratio were significant in the long run. The study suggests that policymakers in Nigeria should focus on reducing budget deficits, promoting financial deepening, and maintaining stable exchange rates to improve the current account balance, particularly in the short run.

Keywords: Oil; Non-Oil and Total Current Account Balances; ARDL; Nigeria

JEL Classification Codes: F00, F01, F10, F30, F32

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1. Introduction

The current account balance of a country reflects the difference between its national savings and investment (Vieira and MacDonald, 2020). A current account deficit occurs when a country's total imports of goods, services, and capital exceed its total exports, indicating that the country is a net borrower from the rest of the world. Conversely, a current account surplus arises when a country's exports exceed its imports, making it a net lender to the rest of the world (Niemine, 2022). Imbalances in the current account continue to be a regular occurrence in the international environment (Yurdakul and Cevher, 2015). The concern with deficits centers on the potential inability to repay external debt without significant economic adjustments in the future (insolvency), as well as the financial stress resulting from an increased risk of capital flow reversals or sudden stops (illiquidity) (Das, 2016). In light of macroeconomic crises in developing nations, it has become necessary to identify factors that determine a country's current account balance, which provides insight into the extent of a country's industries, services, and capital market activities. In Nigeria, recurrent deficits in the current account balance have become unsustainable and have resulted in the crowding-out of domestic savings or economic instability. Adegboyega and Oladeji (2020) have identified several factors that contribute to these imbalances, such as oil prices, dependency ratio, savings rate, investment, and government activities.

Financing a current account deficit through borrowing can be harmful to the economy, as it is considered unsustainable in the long term, resulting in high-interest payments and limited funds available for investment (Sanni *et al.*, 2019). Additionally, a current account deficit can increase the risk of capital flight if foreign investors lose confidence in the country, leading to a devaluation of the currency, declining living standards, and reduced investment (Niemine, 2022). This may also result in foreigners having an increasing claim on the country's assets, potentially reducing long-term income and causing an unbalanced economy (Kouadio and N'Guessan, 2021). A persistent current account deficit can indicate an overreliance on consumer spending, an unbalanced economy, and an overvalued exchange rate, which can lead to a decline in competitiveness (Beirne *et al.*, 2021). Furthermore, a large current account deficit can result in a fall in the value of the currency, causing imported inflation and affecting firms that rely on imports of raw materials (Narayan *et al.*, 2021). Given the above concerns, the study aims to explore the determinants of the current account in Nigeria in both the short and long term.

The study is motivated by the persistent current account deficits experienced by Nigeria, which have become unsustainable and have resulted in economic instability. Understanding the key determinants of the current account balance is crucial for policymakers to implement appropriate measures to improve the country's external position. Given the importance of this issue for the Nigerian economy, this study aims to provide a comprehensive analysis of the factors influencing the current account balance, both in the oil and non-oil sectors, as well as the overall current account.

This study contributes to the existing literature on the determinants of the current account balance in Nigeria in several ways. First, it employs a more comprehensive set of explanatory variables, including income, consumption, investment, budget deficit, exchange rate, financial deepening, money supply, unemployment rate, inflation rate, and age dependency ratio, compared to previous studies. Second, it examines the determinants of the oil, non-oil, and total current account balances separately, providing a more nuanced understanding of the underlying factors influencing these

different components of the current account. Finally, the use of the Autoregressive Distributed Lag (ARDL) approach allows for the analysis of both short-run and long-run relationships, which is essential for policymakers to design appropriate policy interventions.

The study is organized as follows. Section 2 provides a review of the relevant literature on the determinants of current account balances, both in Nigeria and other countries. Section 3 presents the data and methodology used in the analysis, including the ARDL modeling approach. Section 4 reports the empirical results, discussing the short-run and long-run determinants of the oil, non-oil, and total current account balances in Nigeria. Section 5 concludes the study and offers policy recommendations based on the findings.

2. Literature Review

The literature on the determinants of current account balances is extensive and covers a range of theoretical and empirical perspectives. One prominent literature is the role of saving-investment dynamics. Adegboyega and Oladeji (2020) examined the effect of the saving-investment nexus on the current account balance in Nigeria, finding support for the life-cycle hypothesis. The study concluded that increased savings tend to improve the current account, while higher investment has the opposite effect. Similarly, Uz (2010) explored the relationship between internal and external balances in Turkey, underscoring the importance of the saving-investment gap in determining the current account. Several studies also highlight the influence of fiscal policy on current account dynamics. Akanbi (2014) analyzed the case of Nigeria, an oil-rich economy, and finds that expansionary fiscal policy tends to worsen the current account balance. Oseni and Onakoya (2013) corroborated these findings, demonstrating the adverse impact of fiscal shocks on Nigeria's current account. Oshota and Adeleke (2015) extended the analysis to Ghana and Côte d'Ivoire, providing a comparative perspective on the determinants of current account balances in West Africa.

Another strand of the literature focuses on the role of exchange rates and capital flows. Iavorschi (2014) examined the influence of foreign direct investments and the current account on the Romanian Leu/Euro exchange rate, highlighting the complex interplay between these variables. Cecen and Xiao (2014) employed a nonlinear time series analysis to investigate the dynamics of capital flows and current account in Turkey, underscoring the importance of considering non-linear relationships. The issue of current account sustainability has also received attention in the literature. Kouadio and N'Guessan (2021) assessed the degree of sustainability of the current account in Côte d'Ivoire using a non-linear approach, while Murat, Hobikoğlu, and Dalyancı (2014) explored the structure and sustainability of the current account deficit in Turkey. A cross-country perspective is provided by several studies. Brissimis *et al.* (2012) analyzed the determinants of current account imbalances in the Eurozone, emphasizing the role of fiscal policy, competitiveness, and demographic factors. Gossé and Serranito (2014) extended this analysis to OECD countries, identifying long-run determinants of current accounts, such as relative income, population growth, and net foreign assets. The impact of specific sectors, such as tourism, on current account dynamics has also been investigated. Narayan, Narayan, and Tobing (2021) explored the case of Indonesia, finding that tourism has had a positive influence on the country's current account balance.

Methodologically, the literature employed a range of techniques, including panel data analysis (Brissimis *et al.*, 2012; Das, 2016; Cavdar and Aydin, 2015), time series analysis (Cecen and Xiao, 2014; Yurdakul and Cevher, 2015), and non-linear approaches (Kouadio and N'Guessan, 2021;

Niemine, 2022). This diversity of methods reflects the complexity of the subject matter and the need to account for country-specific characteristics and non-linear relationships. One notable observation is the predominance of studies focused on developing economies, particularly Nigeria and Turkey. This may reflect the significance of current account dynamics in these countries, which often grapple with persistent deficits and the associated macroeconomic challenges.

While the existing literature provides a comprehensive understanding of the determinants of current account balances, there are several areas for further research and critique. First, the majority of the studies are country-specific, limiting the ability to draw broader conclusions and compare the relative importance of different factors across countries. Second, the impact of global factors, such as international trade and financial conditions, on current account dynamics deserves more attention, as highlighted by Beirne, Renzhi, and Volz (2021). Additionally, the literature could benefit from a more integrated theoretical framework that combines various strands of the literature, such as the saving-investment approach, the fiscal policy channel, and the role of exchange rates and capital flows. Such a framework could help reconcile the sometimes-conflicting findings and provide a more holistic understanding of current account determinants. Finally, the literature could benefit from a more explicit focus on policy implications, providing guidance to policymakers on the most effective measures to address current account imbalances and promote external sector sustainability. This would enhance the practical relevance of the research and contribute to more informed policy decisions.

3. Methodology

The theoretical framework of this study was based on the absorption approach, which is a general equilibrium concept rooted in Keynesian national income relationships. The approach considers the income effect of devaluation in contrast to the price effect and the elasticity approach. According to the theory, when a country experiences a balance of payments deficit, it implies that its people are consuming and investing more than they are producing. This leads to domestic expenditure on consumption and investment exceeding national income. Conversely, if a country has a surplus in the balance of payments, it implies that domestic expenditure on consumption and investment is less than national income. In this framework, the balance of payments is defined as the difference between national income and domestic expenditure. This absorption approach was first developed by Sydney Alexander in 1952, and it can be represented in the following equation.

$$Y = \mathrm{C} + I_d + G + X - M \qquad (1)$$

Where Y is national income, C is consumption expenditure, I_d total domestic investment, G is autonomous government expenditure, X represents exports and M imports. The sum of ($C + I_d + G$) is the total absorption designated as A, and the balance of payments ($X - M$) is designated as B. Thus equation (1) becomes

$$Y = \mathrm{A} + B \qquad (2)$$

Therefore, BOP becomes

$$B = Y - \mathrm{A} \qquad (3)$$

Which means that BOP on current account is the difference between national income (*Y*) and total absorption (*A*). BOP can be improved by either increasing domestic income or reducing the absorption. For this purpose, Alexander advocates devaluation because it acts both ways. First, devaluation increases exports and reduces imports, thereby increasing the national income. The additional income so generated will further increase income via the multiplier effect. This will lead to an increase in domestic consumption. Thus, the net effect of the increase in national income on the balance of payments is the difference between the total increase in income and the induced increase in absorption, i.e.,

$$\Delta B = \Delta Y - \Delta \mathrm{A} \tag{4}$$

Total absorption (ΔA) depends on the marginal propensity to absorb when there is devaluation. This is expressed as a. Devaluation also directly affects absorption through the change in income which we write as *D*. Thus

$$\Delta A = a\Delta Y - \Delta D \tag{5}$$

Substituting equation (5) in (4), we get

$$\Delta B = \Delta Y - \Delta Y - \Delta D \tag{6}$$

$$\Delta B = (1 - a)\Delta Y - \Delta D \tag{7}$$

The equation points toward three factors which explain the effects of devaluation on BOP. They are the marginal propensity to absorb (a), change in income (ΔY) and change in direct absorption (ΔD). It may be noted that since a is the marginal propensity (*MP*) to absorb, ($1 - a$) is the propensity to hoard or save. These factors, in turn, are influenced by the existence of unemployed or idle resources and fully employed resources in the devaluing country. Therefore, the study specified a model based on the theoretical framework above on absorption approach and other economic variables include are chosen from the work of Uz, (2010); Udah, (2010); Uneze and Ekor, (2012); Brissimis *et al.*, (2012); Gossé and Serranito, (2014); Oshota and Adeleke, (2015); Sadiku *et al.*, (2015); Yurdakul and Cevher, (2015); Beirne *et al.*, (2021); Narayan *et al.*, (2021) & Niemine, (2022).

$$ca = f(inc, cons, inv, ge, exr, fd, m_2, unemp, inr\&adr) \tag{8}$$

Where *ca* is current account balance, *inc* is income, *cons* is consumption, *ge* is government expenditure, *exr* is exchange rate, *fd* is financial deepening, m_2 is broad money supply, *unemp* is unemployment, *inr* is inflation rate and *adr* is age dependency ration.

The linear regression of the model is given in equation (9) below

$$ca = \beta_0 + \beta_1 inc + \beta_2 cons + \beta_3 inv + \beta_4 bd + \beta_5 exr + \beta_6 fd + \beta_7 m_2 + \beta_8 unemp + \beta_9 inr + \beta_{10} adr + \mathrm{e} \tag{9}$$

In the logarithmic form, Equation (9) becomes:

$$lca = \beta_0 + \beta_1 linc + \beta_2 lcons + \beta_3 linv + \beta_4 lbd + \beta_5 exr + \beta_6 lfd + \beta_7 lm_2 + \beta_8 unemp + \beta_9 inr + \beta_{10} adr + \mathrm{e} \tag{10}$$

Therefore, $ß_0$ is the intercept coefficient and the slope coefficients in the models $ß_1 - ß_{10}$ define elasticity's of the variables. The study specified three autoregressive distributed lag (ARDL) models in order to show the short-run and long-run determinants of oil, non-oil and total current account balance.

$$loca = \beta_0 + \beta_1 linc + \beta_2 lcons + \beta_3 linv + \beta_4 lbd + \beta_5 exr + \beta_6 lfd + \beta_7 lm_2 + \beta_8 unemp + \beta_9 inr + \beta_{10} adr + \sum_{K=1}^{n} \beta_1 linc_{K-1} + \sum_{K=1}^{n} \beta_2 lcons_{K-1} + \sum_{K=1}^{n} \beta_3 linv_{K-1} + \sum_{K=1}^{n} \beta_4 lbd_{K-1} + \sum_{K=1}^{n} \beta_5 exr_{K-1} + \sum_{K=1}^{n} \beta_6 lfd_{K-1} + \sum_{K=1}^{n} \beta_7 lm_{2K-1} + \sum_{K=1}^{n} \beta_8 unemp_{K-1} + \sum_{K=1}^{n} \beta_9 inr_{K-1} + \sum_{K=1}^{n} \beta_{10} adr_{K-1} + \lambda ECM_{t-1} \quad (11)$$

$$ln\,o\,ca = \beta_0 + \beta_1 linc + \beta_2 lcons + \beta_3 linv + \beta_4 lbd + \beta_5 exr + \beta_6 lfd + \beta_7 lm_2 + \beta_8 unemp + \beta_9 inr + \beta_{10} adr + \sum_{K=1}^{n} \beta_1 linc_{K-1} + \sum_{K=1}^{n} \beta_2 lcons_{K-1} + \sum_{K=1}^{n} \beta_3 linv_{K-1} + \sum_{K=1}^{n} \beta_4 lbd_{K-1} + \sum_{K=1}^{n} \beta_5 exr_{K-1} + \sum_{K=1}^{n} \beta_6 lfd_{K-1} + \sum_{K=1}^{n} \beta_7 lm_{2K-1} + \sum_{K=1}^{n} \beta_8 unemp_{K-1} + \sum_{K=1}^{n} \beta_9 inr_{K-1} + \sum_{K=1}^{n} \beta_{10} adr_{K-1} + \lambda ECM_{t-1} \quad (12)$$

$$ltca = \beta_0 + \beta_1 linc + \beta_2 lcons + \beta_3 linv + \beta_4 lbd + \beta_5 exr + \beta_6 lfd + \beta_7 lm_2 + \beta_8 unemp + \beta_9 inr + \beta_{10} adr + \sum_{K=1}^{n} \beta_1 linc_{K-1} + \sum_{K=1}^{n} \beta_2 lcons_{K-1} + \sum_{K=1}^{n} \beta_3 linv_{K-1} + \sum_{K=1}^{n} \beta_4 lbd_{K-1} + \sum_{K=1}^{n} \beta_5 exr_{K-1} + \sum_{K=1}^{n} \beta_6 lfd_{K-1} + \sum_{K=1}^{n} \beta_7 lm_{2K-1} + \sum_{K=1}^{n} \beta_8 unemp_{K-1} + \sum_{K=1}^{n} \beta_9 inr_{K-1} + \sum_{K=1}^{n} \beta_{10} adr_{K-1} + \lambda ECM_{t-1} \quad (13)$$

Where o*ca* is oil current account balance (₦'million); *noca* is non-oil current account balance (₦'million); *tca* is total current account balance (₦'million); *inc* is income using GDP at 2010 constant basic prices (₦'billion); *cons* is consumption using final consumption expenditure of household (₦'billion); *inv* is investment using gross fixed capital formation (₦'billion); *bd* is budget deficit (using different between government expenduture and government revenue (₦'billion)); *exr* is exchange rate using average official exchange rate of the naira (N/US$1.00); *fd* is financial deepening using credit to private sector (₦'billion); m_2 is broad money supply (M2) (₦'billion); *unemp* is unemployment rate, total (% of total labor force) (modeled ILO estimate); *inr* is inflation rate inflation rate (consumer price index %) & *adr* is age dependency ratio (% of working-age population). Time series data from 1981 to 2020 was used and it was obtained from

Central Bank of Nigeria Statistical bulletin (CBN, 2020) and World Development Indicator (WDI, 2020).

4. Results and Discussion

4.1. Pre-Estimation Test

Table 1 shows the result of the descriptive analysis and exchange rate has the highest yearly mean and budget deficit has the lowest yearly mean. All the variables fall within their minimum and maximum value. Also, some variables are skewed to the right and to the left that is positive or negative. For the variables that are skewed to the right, their mean value is greater than their median while for the variables shewed to the left, their mean value is lesser than their median. Only total current account balance is leptokurtic from the result of the kurtosis while others are platykurtic, because a distribution with a coefficient smaller than 3 is platykurtic, while distribution larger than 3 is said to be leptokurtic.

Table 1: Descriptive Analysis

Variable	Obs	Mean	Median	Min.	Max.	Std. Dev.	Skewness	Kurtosis	Jarque-Bera [*p*-value]
ltca	40	50.51	32.84	-2227.7	4923.58	933.29	3.32	20.71	596.39 [0.00]
loca	40	13.50	14.23	8.56	16.44	2.67	-0.60	1.90	4.38 [0.11]
lnoca	40	24.19	3.01	-60.22	335.99	67.89	2.65	12.36	192.65 [0.00]
linc	40	10.39	10.17	9.69	11.19	0.53	0.31	1.54	4.20 [0.12]
lcons	40	8.02	8.24	2.61	11.59	2.78	-0.37	1.84	3.15 [0.21]
linv	40	9.04	9.01	8.64	9.67	0.22	0.52	3.40	2.10 [0.35]
lbd	40	6.20	6.89	2.27	9.23	2.31	-0.43	1.78	3.74 [0.15]
exr	40	100.87	107.02	0.61	358.81	100.76	0.89	2.99	5.23 [0.07]
lfd	40	6.43	6.46	2.15	10.28	2.77	-0.08	1.58	3.40 [0.18]
lm_2	40	6.22	7.06	2.78	8.30	1.93	-0.58	1.74	4.85 [0.09]
umemp	40	7.50	7.50	7.40	7.70	0.09	0.30	2.09	1.98 [0.37]
inr	40	18.41	11.41	5.38	11.41	17.11	1.83	5.14	30.02 [0.00]
adr	40	88.61	87.91	86.23	87.91	1.99	0.61	1.96	4.31 [0.12]

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Source: Own Computation

Note that *ltca* is log of total current account balance, *loca* is log of oil current account balance, *lnoca* is log of non-oil current account balance, *linc* is log of income, *lcons* is log of consumption, *linv* is log of investment, *lbd* is log of budget deficit, *exr* is exchange rate, *lfd* is log of financial deepening, lm_2 is log of broad money supply, *unemp* is unemployment rate, *inr* is inflation rate & *adr* is age dependency ratio.

The degree and direction of association among the variables are shown in Table 2. Correlation analysis is used for two purposes, which are to know the degree of linear association among variables and to see whether there is no multicollinearity among variables. A number of the signs exist and also, no serious problem of multicollinearity exists, as the Pairwise correlation coefficient for any of the variables does not exceed 0.80 (Gujarati, 2003).

Table 2: Pearson Correlation Analysis

	ltca	*loca*	*lnoca*	*linc*	*lcons*	*linv*	*lbd*	*exr*	*lfd*	lm_2	*unemp*	*inr*	*adr*
ltca	1												
loca	-0.23	1											
lnoca	-0.01	-0.03	1										
linc	-0.24	0.78	-0.15	1									
lcons	-0.22	0.79	-0.07	0.94	1								
linv	-0.23	0.30	-0.31	0.47	0.29	1							
lbd	-0.25	0.79	-0.07	0.39	0.69	0.34	1						
exr	-0.17	0.80	-0.16	0.29	0.87	0.46	0.86	1					
lfd	-0.24	0.69	-0.10	0.79	0.59	0.38	0.69	0.78	1				
lm_2	-0.23	0.79	-0.08	0.87	0.79	0.28	0.48	0.80	0.59	1			
unemp	-0.13	0.77	-0.02	0.57	0.72	0.15	0.74	0.54	0.69	0.82	1		
inr	-0.09	-0.30	0.37	-0.40	-0.33	-0.33	-0.33	-0.41	-0.36	-0.32	-0.36	1	
adr	-0.04	-0.41	0.32	-0.54	-0.43	-0.43	-0.42	-0.49	-0.49	-0.45	-0.57	0.61	1

Source: Own Computation

Note that *ltca* is log of total current account balance, *loca* is log of oil current account balance, *lnoca* is log of non-oil current account balance, *linc* is log of income, *lcons* is log of consumption, *linv* is log of investment, *lbd* is log of budget deficit, *exr* is exchange rate, *lfd* is log of financial deepening, lm_2 is log of broad money supply, *unemp* is unemployment rate, *inr* is inflation rate & *adr* is age dependency ratio.

Table 3 shows the result of the unit root test using both the augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests. The study examines both the level and first difference of each of the test to know the stationarity of the variables which will dictate the appropriate estimation technique to use. The outcomes of both ADF and PP revealed that the variables are stationary at level and ay firs difference that is I(0) and I(1).

Table 3: Unit Root

Variable		ADF-Test	PP-Test
ltca	Level	-6.51 [0.000]***	-6.52 [0.000]***
	First Diff.		
loca	Level	-1.36 [0.5938]	-1.47 [0.5379]
	First Diff.	-6.45 [0.000]***	-6.51 [0.000]***
lnoca	Level	-7.66 [0.000]***	-7.65 [0.000]***
	First Diff.		
linc	Level	-0.33 [0.9112]	0.45 [0.9827]
	First Diff.	-3.78 [0.0065]***	-3.78 [0.0065]***
lcons	Level	-2.98 [0.0460]**	-2.98 [0.0460]**
	First Diff.		
linv	Level	-3.27 [0.0235]**	-3.41 [0.0167]**
	First Diff.		
lbd	Level	-1.18 [0.6729]	-1.23 [0.6508]
	First Diff.	-7.57 [0.000]***	-7.40 [0.000]***
exr	Level	2.16 [0.9999]	2.38 [0.9999]
	First Diff.	-4.13 [0.0026]***	-4.08 [0.0030]***
lfd	Level	-0.81 [0.8047]	-0.76 [0.8198]
	First Diff.	-4.48 [0.0010]***	-4.41 [0.0012]***
lm_2	Level	-2.74 [0.0761]*	-2.15 [0.2275]
	First Diff.		-4.75 [0.0004]***
unemp	Level	-1.299 [0.6201]	-1.58 [0.4828]
	First Diff.	-9.49 [0.0000]***	-9.29 [0.0000]***
inr	Level	-2.88 [0.0568]*	-2.76 [0.0737]*
	First Diff.		
adr	Level	-1.81 [0.3691]	-1.50 [0.5241]
	First Diff.	-2.24 [0.0077]***	-2.07 [0.0058]***

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Source: Own Computation

Note that *ltca* is log of total current account balance, *loca* is log of oil current account balance, *lnoca* is log of non-oil current account balance, *linc* is log of income, *lcons* is log of consumption, *linv* is log of investment, *lbd* is log of budget deficit, *exr* is exchange rate, *lfd* is log of financial deepening, lm_2 is log of broad money supply, *unemp* is unemployment rate, *inr* is inflation rate & *adr* is age dependency ratio.

Since the unit root test confirmed the combination of order zero and one that I(0) and I(1), the next step is ARDL bounds test for co-integration and result from the bounds test co-integration is presented in Table 4. The result revealed that computed F-Statistics for oil current account balance Wald test was 4.25. The value exceeds both the upper bounds and lower bounds critical values for 1%, 5% and 10% level of significance indicating evidence of long-run relationship between oil current account position with all its determinants. The result revealed that computed F-Statistics for non-oil current account Wald test was 6.72. The value exceeds both the upper bounds and lower bounds critical values for 1%, 5% and 10% level of significance indicating evidence of long-run relationship between non-oil current account position with all its determinants. The result revealed that computed F-Statistics for total current account Wald test was 5.37. The value exceeds both the upper bounds and lower bounds critical values for all level of significance indicating evidence of long-run relationship between total current account position with all its determinants.

Table 4: Bounds Testing for Co-integration Analysis

	loca		*lnoca*		*ltca*	
	Wald *F*-statistic: 4.25; *K* = 10		Wald *F*-statistic: 6.72; *K* = 10		Wald *F*-statistic: 5.37; *K* = 10	
Bound level	Lower Bound	Upper Bound	Lower Bound	Upper Bound	Lower Bound	Upper Bound
1% critical bounds value	2.54	3.86	2.54	3.86	2.54	3.86
5% critical bounds value	2.08	3.24	2.06	3.24	2.06	3.24
10% critical bounds value	1.83	2.94	1.83	2.94	1.83	2.04
*** $p<0.01$, ** $p<0.05$, * $p<0.1$						

Source: Own Computation

Note that *loca* is log of oil current account balance, *lnoca* is log of non-oil current account balance and *ltca* is log of total current account balance.

4.2. Estimation Test

Table 5 shows the short-run and long-run effects of the factors that determine the oil, non-oil and total current position balance in Nigeria. The result on the determinants of oil current account position in Nigeria shows that budget deficit, exchange rate and financial deepening are statistically significant in determine oil current account position in the short-run with a negative significant effect while income, budget deficit and exchange rate are statistically significant in determinants oil current account position in the long-run with a negative significant effect also. From this outcome, there is the existence of twin deficit phenomenon on the oil current account position of Nigeria. Twin deficit phenomenon state that there is a strong causal link between a nation's government budget balance and its current account position. Since the coefficient of budget deficit is negative and significant both in the short-run and in the long-run, this implies that as the budget deficit increases by a percent, oil current account position will fall by 0.93% and 1.08% in both the short-run and long-run leading to a trade deficit that will cause twin deficit. In the same manner, exchange rate depreciation will worsen the oil current account position in Nigeria. The coefficient of the error correction term (ECM) indicated that 86% deviation from the long-run equilibrium in oil current account position is corrected for annually. The adjusted R-square of 0.2511 indicated that about 25.11% total variation in oil current account position can be explained by all the explanatory variables and the F-statistic of 2.0620 with the probability value of 0.0596 implied that the overall model is statistically significant at 1% level of significance while the Durbin-Watson statistic of 2.2380 means that there is no serious autocorrelation in the model. In the same vein, the outcome of the determinants of non-oil current account position in Nigeria shows that budget deficit, money supply, unemployment rate, inflation rate and age dependency ratio are statistically significant in determine non-oil current account position in the short-run with variables like budget deficit and money supply exerting negative significant effect and variables like unemployment rate, inflation rate and age dependency ratio exerting positive significant effect while budget deficit, money supply, unemployment rate and inflation rate are statistically significant in determinants non-oil current account position in the long-run with variables like budget deficit and money supply exerting negative significant effect and variables like unemployment rate and inflation rate exerting positive significant effect. There is also the existence of twin deficit phenomenon on the non-oil current account position of Nigeria in both the short-run and long-run. Also, exchange rate depreciation will worsen the non-oil current

account position in Nigeria. The coefficient of the error correction term (ECM) indicated that 59% deviation from the long-run equilibrium in non-oil current account position is corrected for annually. The adjusted R-square of 0.6198 indicated that about 61.98% total variation in non-oil current account position can be explained by all the explanatory variables and the F-statistic of 6.1625 with the probability value of 0.0000 implied that the overall model is statistically significant at 1% level of significance while the Durbin-Watson statistic of 2.4227 means that there is no serious autocorrelation in the model.

Furthermore, the result of the determinants of total current account position in Nigeria shows that budget deficit, financial deepening, unemployment rate and age dependency ration are statistically significant in determine total current account position in the short-run with negative significant effect while budget deficit, unemployment rate and age dependency ratio are statistically significant in determinants total current account position in the long-run with negative significant effect. There is also the existence of twin deficit phenomenon on the total current account position of Nigeria in both the short-run and long-run. The coefficient of the error correction term (ECM) indicated that 26% deviation from the long-run equilibrium in total current account position is corrected for annually. The adjusted R-square of 0.5601 indicated that about 56.01% total variation in total current account position can be explained by all the explanatory variables and the F-statistic of 4.7216 with the probability value of 0.0000 implied that the overall model is statistically significant at 1% level of significance while the Durbin-Watson statistic of 2.1023 means that there is no serious autocorrelation in the model.

Table 5: Parsimonious Logn-run and Short-run ARDL-ECM Results

	loca		*lnoca*		*ltca*	
Variable	Short-run	Long-run	Short-run	Long-run	Short-run	Long-run
d(linc)	1.39 [0.1090]	1.62 [0.0970]*	-10.56 [0.4675]	-66.55 [0.4661]	5.26 [0.3005]	-2.46 [0.1859]
d(lcons)	-0.05 [0.8713]	-0.06 [0.8718]	43.06 [0.3756]	27.14 [0.3724]	6.18 [0.4114]	4.90 [0.4137]
d(linv)	-0.42 [0.4471]	-0.48 [0.4805]	-4.49 [0.9571]	-2.83 [0.9571]	-1.12 [0.4694]	-8.91 [0.4600]
d(lbd)	-0.93 [0.0555]*	-1.08 [0.0511]*	-10.01 [0.0309]***	-6.31 [0.0032]***	-4.52 [0.0047]***	-3.59 [0.0044]***
d(exr)	-0.10 [0.0014]***	-0.30 [0.0081]***	-0.42 [0.1307]	-0.26 [0.1263]	5.81 [0.2042]	4.61 [0.2100]
d(lfd)	-0.38 [0.0059]***	-0.45 [0.3669]	-4.88 [0.9359]	-3.08 [0.9359]	-7.75 [0.0099]***	-6.15 [0.4509]
d(lm_2)	0.46 [02435]	0.54 [0.2320]	-14.77 [0.0132]***	-93.12 [0.0120]**	4.13 [0.6605]	3.28 [0.6610]
d(unemp)	0.65 [0.7489]	0.76 [0.7464]	8.69 [0.0073]***	5.48 [0.0063]***	-9.48 [0.0821]*	-14.65 [0.0164]**
d(inr)	0.00 [0.9963]	0.01 [0.2709]	1.75 [0.0280]**	1.10 [0.0292]**	-2.37 [0.8501]	-1.88 [0.8498]
d(adr)	-0.00 [0.9594]	-0.01 [0.9596]	76.07 [0.0576]*	7.27 [0.3589]	-5.94 [0.0156]**	-4.72 [0.0169]**
ecm(-1)	-0.86 [0.0004]***		-0.59 [0.0000]***		-0.26 [0.0000]***	
cons		-10.76 [0.6971]		-40.18 [0.0721]*		1.81 [0.0069]***
R^2	0.4876		0.7399		0.7106	
Adj. R^2	0.2511		0.6198		0.5601	
F-Stat.	2.0620 [0.0596]*		6.1625 [0.0000]***		4.7216 [0.0004]***	
DW	2.2380		2.4227		2.1023	
			*** p<0.01, ** p<0.05, * p<0.1			

Source: Own Computation

Note that *loca* is log of oil current account balance, *lnoca* is log of non-oil current account balance, *ltca* is log of total current account balance, *linc* is log of income, *lcons* is log of consumption, *linv* is log of investment, *lbd* is log of budget deficit, *exr* is exchange rate, *lfd* is log of financial deepening, lm_2 is log of broad money supply, *unemp* is unemployment rate, *inr* is inflation rate & *adr* is age dependency ratio.

5. Conclusion

The study provided insight into the determinants of current account balance which was divided into oil, non-oil and total. The study concluded that there was the existence of a twin deficit phenomenon on the current account position of Nigeria that was a strong causal link between a nation's government budget balance and current account position. Also, exchange rate depreciation worsens the current account position in Nigeria. Based on the findings, the study recommended that policymakers in Nigeria should focus on reducing budget deficits, promoting financial deepening, and maintaining stable exchange rates to improve the current account balance, particularly in the short run. Additionally, measures to increase income, money supply, and reduce unemployment rates and inflation could also help improve the non-oil current account balance in the long run.

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