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Determinants of the Current Account Balance in the DRC: ARDL Approach to Cointegration

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Abstract

The aim of this study is to identify the factors underlying the behavior of the current account balance in the Democratic Republic of Congo (DRC). By exploring the DRC's economic-financial environment, the study identified a number of relevant variables whose behavior should have a determining influence on the behavior of the current account. These are the inflation rate, the real GDP growth rate, the real exchange rate, the demographic dependency ratio and the fiscal balance. To achieve our objective, we applied the intertemporal current account approach and the ARDL Approach to cointegration annual macroeconomic data of the Congolese economy covering the period 1982-2017. The results of our estimations reveal the existence of a cointegration relationship between the current account balance and all the aforementioned variables. Moreover, the inflation rate, the demographic dependency ratio and the budget balance exert a negative and significant influence on the current account balance. On the other hand, the exchange rate and the real interest rate have a negative but insignificant effect on the current account balance. The real GDP growth rate was found to have a positive and significant influence on the current account balance.

Keywords: Current account, Co-integration, ARDL model

1. Introduction

It is always desirable for a given country to balance its current account with a surplus. This situation enables it to increase its net foreign assets, easily meet its external commitments and increase its capacity to lend to countries in need of financing. Although having a current account surplus is by no means a sign of economic dynamism, in international economic relations, a country can be highly rated, particularly by investors, simply because it has maintained its current account on an upward trend. Indeed, countries with a current account deficit are likely to resort to borrowing to finance their transactions. Such a situation can expose the economies of the countries concerned to exogenous shocks. It can also erode part of their economic sovereignty. This can be a major source of vulnerability and trigger a currency crisis, particularly for countries experiencing a recession. However, a large and persistent deficit cannot be financed indefinitely by non-residents. At some point, an adjustment of the current account is inevitable. Thus, analysis of the factors underlying short- and long-term current account behavior is of considerable interest to open-economy macroeconomics, and can provide valuable implications in terms of economic policy. An examination of the evolution of the DRC's current account over the period 1982-2017 reveals the scale and persistence of imbalances. Statistics published by the Banque Centrale du Congo (BCC) show that the DRC's current account balance remained

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structurally in deficit throughout the period under review. Therefore, it is necessary to empirically determine the factors influencing the DRC's current account balance. The aim of this study is to identify the factors explaining the DRC's current account balance, in the short and long term, in order to strengthen the analytical and decision-making framework for economic policy and promote appropriate adjustments where necessary.

Empirical studies based on the intertemporal current account approach have followed two directions (Bussière et al., 2006; Ca'Zorzi and Rubaszek, 2008). On the one hand, several studies have applied the present value test, developed by Campbell (1987) and Campbell and Shiller (1987), to check whether the theoretical implications of the intertemporal current account model are borne out by the data (Bergin and Sheffrin, 2000; Nason and Rogers, 2006). On the other hand, a number of studies have applied standard econometric techniques to examine the long-term relationships between the current account and certain standard macroeconomic fundamentals suggested by the intertemporal approach (Chinn and Prasad, 2003; Bussière et al., 2006; Aristovnik, 2007; Brissimis and 2010; Morsy, 2010; Yang, 2011; Mwangi, 2014).

The present study is part of the second line of research, and in order to achieve our objective, co-integration techniques based on Autoregressive Staggered Lag (ARDL) modeling were chosen. This choice is justified by the limitations of traditional co-integration tests (Engel and Granger, 1987; Johansen 1991-1995). The ARDL co-integration technique developed by Pesaran and Shin (1999), and extended by Pesaran et al. (2001), is used to examine co-integration between series that are not necessarily integrated of the same order, and yields better estimates on small sample sizes.

The rest of the article is structured as follows: the second section describes the literature review. The methodology is presented in the third section. The fourth section is devoted to the results, and the fifth concludes the study.

2. Related literature

Alternative approaches have different predictions about the factors underlying current account dynamics and the signs and magnitude of the relationships between current account fluctuations and these factors. Only one of these approaches is presented below. This is the inter-temporal approach. The intertemporal approach to the current account, originally proposed by Sachs (1981) and Buiter (1981), then extended by Obstfeld and Rogoff (1995), considers the current account balance as the result of dynamic, forward-looking savings and investment decisions taken by economic agents under conditions of perfect price and wage flexibility. Indeed, since the current account determines the evolution over time of the country's stock of net claims (or liabilities) vis-à-vis the rest of the world, it reflects residents' inter-temporal savings and investment decisions. The starting point for this approach is the accounting identity of gross national product (PNB). National accounting implies that a country's gross national product over the period $\mathbf{t}$ is defined as follows:

$$PNB_t = Y_t + r_t B_t \quad (1)$$

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where $Y_t$is the gross domestic product andr_tB_t the country's net income from abroad, i.e. the a posteriori return obtained on the stock of $B_t$net foreign assets entering the period t. A negative value forB_t indicates that the amount of outstanding assets held abroad by the country's residents is less than the amount of assets held by foreigners in the country, i.e. that the country is a net debtor to the rest of the world. Equilibrium on the production market requires that gross domestic production Y_t be equal to household consumption demandC_t government spending G_t investment I_t and net exports NX_t :

$$Y_t = C_t + I_t + G_t + NX_t \quad (2)$$

Net exports represent the difference between the country's exports and imports, or the balance of goods and services. It then follows that the Current Account (CA_t) conventionally defined as the sum of the trade balance and net income from abroad, can also be expressed as the excess of gross national product over domestic expenditure or absorption (Alexander S., 1952):

$$CA_t = NX_t + r_tB_t = PNB_t - (C_t + I_t + G_t) \quad (3)$$

In the same way, we can represent gross national product(PNB) described by equation (3), as the sum of the uses of individual income, with three possible uses: consumptionC_t private savingsSP_t and the sum of taxesT_t. We thus obtain the following equality:

$$PNB_t = C_t + SP_t + T_t \quad (4)$$

Substituting equation (4) into equation (3), we obtain the following equality:

$$CA_t = (SP_t - I_t) + (T_t - G_t) \quad (5)$$

Equation (5) shows that the current account balance (CA) is equal to the sum of the surpluses, respectively, of private savings over investment and government revenues over government expenditure. Knowing that the expression $(T_t - G_t)$ represents public savingsSG_t and national savings S_t is the sum of private savings SP_t and public savingsSG_t equation (5) of the current account can be rewritten as the difference between national savings and domestic investment:

$$CA_t = S_t - I_t \quad (6)$$

Equation (6) implies that a country that generates a financing capacity $(S_t - I_t > 0)$ also has a positive current account balance, i.e. it accumulates debt or lends to the rest of the world. Conversely, a country with a financing requirement$(S_t - I_t < 0)$ also has a negative current account balance, i.e. it accumulates debts or borrows from the rest of the world. According to this approach, the current account balance reflects savings and investment decisions, guided by the expected direction of economic activity, public spending, interest rates and various other economic factors. The approach thus consists in identifying the variables that directly or

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indirectly affect savings and investment. The first empirical studies of current account deficits focused on those of developed countries rather than those of developing countries, probably due to the lack of reliable data for the latter. It wasn't until the late 1970s that numerous studies were devoted to the current accounts of DCs, following the economic growth difficulties, oil shocks, deteriorating terms of trade and debt problems faced by the vast majority of these countries (DembaSy and HamatSy, 2013).

And since the seminal work of Khan and Knight (1983), Killick (1981) and Dell (1980) who, without having subjected the available data to robust econometric tests, highlighted the influence of the budget balance, public debt, exchange rate, foreign interest rate and terms of trade on the current accounts of 32 non-oil-exporting countries during the 1970s, research in this field has flourished. The following is a selection of empirical studies carried out since the 2000s in both developed and developing countries. Menzie and Prasad (2003) empirically analyzed the determinants of medium-term current accounts for a large sample of industrialized and developing countries, using an approach that highlights the macroeconomic determinants of long-term savings and investment balances. Cross-sectional and panel regression techniques were used to characterize current account variation between countries and over time. Both authors found a positive correlation of current accounts with government budget balances and initial stocks of net foreign assets. Among developing countries, these authors found that financial deepening measures were positively associated with current account balances, while indicators of openness to international trade were negatively correlated with current account balances.

Bussièreet al (2006) examined the large current account deficits of most EU member states using an inter-temporal model. The latter was estimated for a panel of 33 countries and revealed that budget balance, relative income and relative investment positions influenced the current account in the medium term. This means that countries with lower per capita incomes and higher investment ratios tend to have larger current account deficits. In addition, these authors found that the budget balance is positively related to current account positions. For his part, Aristovnik(2007) examined the short- and long-term empirical link between current account balances and a wide range of economic variables proposed in the literature. His study focused on the countries of the Middle East and North Africa (MENA). A panel regression technique was used to characterize the properties of current account variations in selected MENA economies over the period 1971-2005. The results of this analysis revealed, on the one hand, that investment, high public spending and high interest rates had a negative effect on the current account balance; on the other hand, a more open economy, higher oil prices and economic growth led to an improvement in the external balance. This means that economic growth was associated with a greater increase in savings than investment. In Greece, Brissimis et al (2010) analyzed the determinants of the current account balance over the period 1960-2007, focusing on the macroeconomic, financial and structural factors influencing savings and investment patterns. These authors found that the worsening of the current account deficit during the period under analysis was mainly the result of a significant drop in the private savings rate and exceptionally strong investment activity. Using cointegration analysis, their study showed that growth in domestic credit was essential in explaining the behavior of the current account.

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Morsy (2010) examined the determinants of the medium-term current account of oil-exporting countries using dynamic panel estimation techniques. This author extended the specifications commonly used in the literature to include an oil wealth variable, as well as an indicator of the degree of maturity of oil production. The results of his analysis revealed that the factors that mattered in determining the current accounts of oil-exporting countries were the fiscal balance, the oil balance, oil wealth, the population dependency ratio and the degree of maturity of oil production. In a study of Turkey, Idil(2010) examined the short- and long-term impact of the exchange rate, private savings and the budget balance on the current account balance. The ARDL methodology was used and the results indicated that the cointegration relationship between the current account balance and the selected variables was strongly supported. The exchange rate had the strongest impact on the current account, but the signs varied in the short and long term. In the long term, the impact of the exchange rate on the current account balance was negative, while in the short term, the impact was positive. Finally, his study confirmed the presence of a twin deficit phenomenon in Turkey, but the relationship was slightly weak. Focusing on Asian economies, Yang (2011) empirically examined the short- and long-term impacts of the initial stock of net foreign assets, the degree of openness to international trade, the real exchange rate and relative income on current account balances over the period 1980-2009, using co-integrated VAR (Vector AutoRegressive) methodology. This author found that current account behavior in emerging Asian economies was heterogeneous. The initial stock of net foreign assets and the degree of openness to international trade were important factors in explaining the current account behavior of these economies.

Bationo(2013) analyzed the determinants of current account deficits in UEMOA countries and found that increased dependence on foreign goods and services, an appreciation of the real effective exchange rate and a rise in the budget deficit had an aggravating effect on the current account deficit. On the other hand, he noted that improvements in the export rate, the domestic savings rate and the terms of trade attenuated the deficit. As for the deepening of the financial system, it contributed to the control of the current account deficit when the credits granted were oriented towards financing export sectors. Negative effects were observed in the case of financing for the import of everyday consumer goods. DembaSy and HamatSy (2013) examined the factors behind Senegal's current account deficits over the period 1980-2010, applying the ARDL methodology. The results of their study revealed the existence of a cointegrating relationship between the current account balance, the exchange rate, the import rate, the investment gap and the budget balance. In addition, the results showed that the exchange rate, the import rate and the lagged current account balance explained the long-term behavior of the current account. The lagged current account and exchange rate positively influenced the current account balance, while the impact of the import rate and budget balance on the current account was negative. In the short term, the import rate and the investment gap were mainly responsible for the current account's behavior. The investment gap had a negative effect on the current account. Kurt and Ozkiper (2015) studied the causes of current account deficits in 19 developing countries. They found, on the one hand, that the growth rate of real GDP, inflation volatility and investment volatility had a negative impact on the current account balance; on the other hand, the results of their research revealed a positive impact of the terms of trade, the import coverage rate and the domestic savings rate on the current account. The current account balance and

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investments of the previous year had a positive impact on the current account, while the real interest rate, the terms of trade, the budget balance, the import coverage ratio and the domestic savings rate of the previous year had a negative effect on the current account.

3. Methodology

Classical estimation methods require the series used to be stationary, as the inference procedures of classical econometrics are no longer valid in the presence of series containing stochastic trends. The question is why not eliminate the trend by differentiation. The answer is that this approach leads to reduction in information insofar as the series is deprived of long-term movements. Hence the interest in working with non-stationary series using the theory of cointegration (Mabiala, 2023).

Pesaran and Shin (1997) and Pesaran, Shin and Smith (2001) have developed a new technique for testing the existence of a long-term relationship between variables characterized by different orders of integration. This is the boundary co-integration test for a long-run relationship in an ARDL (Auto Regressive Distributive Lags) staggered lag autoregressive model. This technique is known as the "ARDL approach to cointegrating". This approach is preferred to other cointegration techniques for several reasons. Firstly, this approach is better suited to small sample sizes, whereas Johansen's cointegration technique requires a large sample to obtain a valid result (Pesaran et al., 2001; Ghatak and Siddiki, 2001; Narayan, 2004). In addition, the ARDL methodology concedes a convergent estimator of the long-run coefficients irrespective of whether the underlying regressors are purely stationary, integrated of order 1 or mutually co-integrated (Pesaran et al., 2001). The only requirement is that the explained variable must be I(1) and the explanatory variables I(0) or I(1). In other words, to apply this methodology, we need to be sure that there are no I (2) variables. Indeed, according to Ouattara (2004), the critical statistics of the Fisher Test are not valid in this approach in the presence of an I (2) variable.

Consider the following specification:

$$CA_t = f(INFLATION_t, TXCROIS_t, TXCHANGE_t, TXINT_t, TXDEP_t, SOLDBUDG_t) \quad (7)$$

Generally, the autoregressive model with staggered delays takes the following form:

$$Y_t = \pi_0 + \sum_{i=1}^{p} \alpha_i Y_{t-i} + \sum_{j=0}^{q} \beta_i X_{t-j} + \mu_t \quad (8)$$

Where μ_t is white noise that is uncorrelated with X_t, nor with the past values of X_t, nor with the lagged values of Y_t. The explained variable Y_t depends not only on the present values of X_t and its past values, but also on its own past values. The maximum values of p and q are chosen according to the AIC (Akaike Information Criterion) or SBC (Schwarz Bayesian Criterion) criterion, based on the principle of parsimony. In this model, staggered lag implies that the long-term response of Y_t to a unit change in X_t is different from the immediate short-term response of Y_t to a shock to X_t . To estimate the long-term and short-term effects between the current

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account balance and its various determinants, the ARDL representation of equation (7) is given by :

$$\Delta CA_t = \pi_0 + \sum_{i=1}^{p} \alpha_i \Delta CA_{t-i} + \sum_{j=0}^{q} \beta_i \Delta X_{t-j} + \sum_{i=1}^{7} \theta_i X_{t-1} + u_t (9)$$

With X_{t-j}:vector of exogenous variables in difference; X_{t-1}: vector of exogenous variables in level Δ; difference operator; π_0: constant $\mu_t \sim iid\ (0, \delta)$; error term (white noise); β_j short-term effects ($j = 1, \ldots\ldots, q$); θ_i: long-term effects ($i = 1, \ldots\ldots, 7$).

By virtue of Granger's representation theorem, an Error Correction Model (ECM) is inevitable in the case of co-integrated variables. Also, thanks to the PSS procedure, an error-correction model can help confirm the existence or otherwise of co-integration between variables. In our case, the MCE to be estimated is as follows:

$$\Delta CA_t = \pi_0 + \sum_{i=1}^{p} \alpha_i \Delta CA_{t-i} + \sum_{j=0}^{q} \beta_i \Delta X_{t-j} + \lambda \mathrm{ECM}_{t-1} + u_t (10)$$

Where λ is the error correction coefficient, which must be significantly negative. It indicates the speed of adjustment of the endogenous variable to return to long-term equilibrium following a short-term shock. And **ECM** represents the residuals obtained from estimating the equation of the cointegrated model.

In the present study, the selection of variables likely to influence the direction of the current account balance is inspired in particular by the theoretical relationships and results of previous empirical studies presented in the first section. We considered it useful to retain only a small number of explanatory variables deemed relevant, in order to avoid certain problems linked to multicollinearity, loss of degrees of freedom and, above all, econometric redundancy.

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Table 1: Selected variables, their sources and expected signs

Variables	Code	Description	Expected sign	Source
Current account balance	CA	Ratio of current account balance excluding official transfers to real GDP		Central Bank of Congo
Inflation	INFLATION	Inflation rate measured by the consumer price index	+/-	Central Bank of Congo
Growth rates	TXCROIS	Real GDP growth rate	+/-	Central Bank of Congo
Real interest rate	TXINT	Real interest rate	+/-	Central Bank of Congo
Demographic dependency ratio	RDD	Demographic dependency ratio defined as the ratio of the young and elderly population (under 15 and over 64) to the working-age population.	-	World Bank
Budget balance	SOLDDG	Ratio of budget balance to real GDP	+/-	Central Bank of Congo

Source: The authors

4. Results

In our study, the Dickey-Fuller Augmenter and Philips-Perron (PP) tests are used to perform the stationarity test.

Table 2. Unit root tests

Variables	Order of integration
Current account balance (CA)	**I(1)**
Inflation (INFLATION)	**I(0)**
Growth rate (TXCROIS)	**I(0)**
Exchange rates (TXCH)	**I(1)**
Interest rates (TXINT)	**I(0)**
Demographic dependency ratio (DDR)	**I(1)**
Budget balance (SOLDDG)	**I(0)**

Source: The authors

Table 2 shows that the dependent variable (CA) is integrated of order 1. As for the explanatory variables, the exchange rate and demographic dependency ratio are integrated of order 1, while the inflation rate, real GDP growth rate, interest rate and budget balance to real GDP ratio are stationary in level. No series is integrated of order two I(2) or higher, allowing the application of

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the ARDL approach. Table 3 shows that the inflation rate, the exchange rate, the interest rate and the budget balance fluctuate widely around their averages. Over the period studied, the kurtosis coefficient is well above 3 (the value of the kurtosis coefficient for the normal distribution) for the inflation rate, the interest rate and the budget balance. This implies a fairly high probability of extreme points and that these three variables have thicker tails than those of the normal distribution.

In addition, the skewness coefficient, which is significantly different from 0 for all three variables, indicates the presence of skewness, which contradicts the Gaussian distribution criterion. Also, the probability associated with the Jarque-Bera normality test reveals that only the current account to GDP ratio, the GDP growth rate, the exchange rate and the demographic dependency ratio are normally distributed. The normality hypothesis is rejected at the 1% level for the inflation rate, the interest rate and the fiscal balance/GDP ratio.

Table 3. Descriptive statistics for variables

	CA	INFLATION	TXCROIS	TXCH	TXINT	RDD	SOLDDG
Average	-5.329610	85.26655	1.052366	339.1118	-6081639	9459800	-1424248
Median	-4.304631	29.33124	2.505760	1292590	-7.950000	9451332	-0.434928
Maximum	0.841320	547.5339	9.048298	1465900	21.80000	97.65972	-0.434928
Minimum	-15.64993	-11.58288	-14.46680	1.92E-11	-9561.900	91.38896	2.604401
Standard deviation	4.012791	124.8945	5.805978	423.1883	1856767	1.997896	-9.494547
Asymmetry coefficient	-0.794554	2.0766411	-0.850295	0.878482	-3.676672	0.019413	2.893008
Flattening coefficient	2.851879	7.066411	3.006572	2.561949	16.76917	1.873282	-1.396247
JarqueBerastatistics	3.820805	50.68695	4.338070	4.918212	365.4927	1.906501	13.95819
P-value	0.148021	0.000000	0.114288	0.085511	0.000000	0.385486	0.000931
Number of observations	36	36	36	36	36	36	36

Source: Computed by the authors.

Performing the Pesaran co-integration test requires first specifying a general ARDL model and then selecting the reduced form of the model based on one of the lowest Schwartz-Bayesian Criteria (BIC) and Akaike Information Criterion (AIC). As our series are adapted to proceed with the PSS approach, the information criterion used to determine the optimal delay (values of p and q) is the Akaike Information Criterion (AIC). The results of the ARDL model estimation (see Appendix 1 and 2) show that the ARDL model (1, 3, 0, 0, 0, 3, 2) is the most optimal of the 19 top models, offering the smallest AIC value.

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Table 4. Boundary co-integration test

Fisher statistic: 4.879033		
Significance threshold	Lower terminal	Upper terminal
10%	2.12	3.23
5%	2.45	3.61
1%	3.25	4.43

Source: Results obtained by the authors.

In view of the information in Table 3, the null hypothesis of the absence of a possible co-integration relationship between our variables under consideration is rejected at the various thresholds (10%, 5% and 1%). This is justified by the superiority of the value of the Fisher statistic in relation to the various critical values of the upper bound. We therefore conclude that there is a long-term relationship between the current account balance and its various explanatory variables.

Furthermore, the results of the long-term equation indicate that in the long term, the inflation rate, the demographic dependency ratio and the fiscal balance exert a negative and significant influence at the 5%, 1% and 1% threshold respectively on the current account balance. In the long term, a one-percentage-point increase in these three variables worsens the ratio of the current account balance to real GDP by 0.02 points, 1.25 points and 2.34 points respectively. On the other hand, the real GDP growth rate has a significant positive impact on the long-term current account balance. The results show that, in the long term, a one-percentage-point increase in the real GDP growth rate improves the ratio of the current account balance to real GDP by 0.41 points. As for the exchange rate and the real interest rate, the results reveal that their effect on the current account balance is not significant in the long term.

Table 5. Long-term coefficients

Variables	Coefficients	Standard deviation
INFLATION	-0,017261**	0.007219
TXCROIS	0.406323**	0.140585
TXCHANGE	-0.002830	0.002135
TXINT	-0.000562	0.000463
RDD	-1.249556***	0.390716
SOLDBUDG	-2.635085***	0.655401
Constant	113.943238***	35.912062

Source: Computed by the authors. ***p<0.01, **p<0.05, *p<0.1 are 1%, 5% and 10% levels of significance, respectively.

In Table 6, the results of the short-term model show that the error correction coefficient ECM(-1) is negative and significant at 1%, confirming a cointegrating relationship between the variables.

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The value of -0.6869 indicates a very high speed of convergence towards long-term equilibrium. This means that short-term deviations from the long-term equilibrium of the current account balance are corrected at 68.69% per year by feedback effects. The short-run model, which shows the effects of variations in the explanatory variables on variations in the explained variable, gives almost identical results to the long-run model. The effects of variations in the exchange rate and real interest rate on variations in the current account balance remain negative but insignificant in the short term.

Table 6. Short-term coefficients

Variables	Coefficients	Standard deviation
D(INFLATION)	-0.021899***	0.006072
D(TXCROIS)	0.279141***	0.084299
D(TXCHANGE)	-0.001944	0.001515
D(TXINT)	-0.000388	0.000320
D(RDD)	-2.608001	0.139063**
D(SOLDBUDG)	-0.750071	0.139063***
ECM(-1)	-0.686993	0.100559***

Source: Computed by the authors. ***p<0.01, **p<0.05, *p<0.1 are 1%, 5% and 10% levels of significance, respectively.

Variations in the inflation rate, demographic dependency ratio and budget balance have a negative impact on variations in the current account balance in the short term. In the short term, variations in the real GDP growth rate have a positive effect on the current account balance, but the long-term effect (0.41) remains greater than the short-term effect (0.28).

The present study reveals that, among the factors likely to explain the behavior of the current account balance, inflation confirms a negative and statistically significant effect. These results, relating to the DRC's current account balance, resemble those obtained by Mwangi Kimani S. (2014) for Kenya and by Kurt E. and Ozkiper O. (2015) for a sample of 19 developing countries including the Republic of South Africa. Indeed, contrary to the predominant finding in the literature that agents in economies characterized by more volatile inflation tend to save more for precautionary reasons in order to smooth consumption flows against future income flows, these authors point out that high inflation volatility can lead to a reduction in savings, as it increases spending over time by creating a climate of insecurity that favors present consumption over future consumption, to the effect of deteriorating the current account balance. Taking the Congolese context into account, the negative effect of inflation on the current account balance may reflect the phenomenal evolution of inflation in the DRC.

As for the real GDP growth rate variable, the study's result reveals its positive and significant effect on the current account balance. This result corroborates with that obtained by Aristovnik (2007) for Middle Eastern and North African (MENA) countries, but departs from that found by Mwangi (2014) for Kenya and Kurt and Ozkiper (2015) for 19 developing countries. The results show that the demographic dependency ratio negatively influences the current account balance of the balance of payments. This result is similar to that found by Morsy (2010) for a sample of oil-

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exporting countries, and confirms the life-cycle hypothesis, according to which the young and elderly are net consumers. The age profile of the population is therefore a structural determinant of domestic savings, and hence of the current account balance. An increase in the demographic dependency ratio lowers the savings rate, which in turn worsens the current account balance.

With regard to the influence of the budget balance on the current account balance, the results of this study diverge from those obtained by certain authors, notably Menzie and Prasad (2003) for a large sample of industrialized countries, Bussière M. et al. (2006) for European Union member states, IdilUz (2010) for Turkey, Bationo (2003) for WAEMU countries and Kimani (2014) for Kenya, who revealed a positive effect of the budget balance on the current account balance. For these authors, the positive relationship between the budget balance and the current account balance is explained by the Keynesian model, according to which a budget deficit, as a result of lower taxes or higher public spending, increases disposable income and hence consumption, which in turn reduces savings, leading to a deterioration in the current account balance. This model supports the twin deficits hypothesis, according to which larger budget deficits should generally be accompanied by larger current account deficits. In other words, according to the Keynesian model, the budget balance has a positive influence on the current account balance.

However, the results of our study, concerning the budget balance-current balance relationship, resemble those obtained by DembaSy and HamatSy (2003) for Senegal and by Kurt and Ozkiper (2015) for a sample of 19 developing countries. The negative relationship observed between the budget balance and the current account balance can be partly explained by the Ricardian model. Indeed, according to this model, when households perceive the fiscal situation as increasingly unsustainable, they therefore expect that a reduction in taxes or an increase in public spending today may affect their future wealth. In this case, a budget deficit reduces consumption and increases precautionary savings, so that households maintain their long-term consumption levels, leading to an improvement in the current account balance. In other words, the Ricardian approach establishes a negative relationship between the budget balance and the current account balance.

To ensure the robustness of our results, a series of econometric tests were carried out to validate the model. These included tests for normality of Jarque-Bera residuals, absence of autocorrelation of Breusch-Godfrey second-order residuals, Breusch-Pagan-Godfrey homoscedasticity, coefficient stability (CUSUM test) and Ramsey model specification. In the context of our work, the results of these various tests (see appendix) validated our model.

5. Conclusion

In this study we used cointegration techniques based on ARDL modeling to identify the Determinants of the current account balance in the DRC. The results indicate that the inflation rate exerts a negative and significant influence on the current account balance. On the other hand, the real GDP growth rate has a positive and significant impact on the current account balance. Furthermore, the results reveal that the exchange rate and the real interest rate have a negative but insignificant effect on the current account balance. On the other hand, the demographic dependency ratio has a significant negative impact on the current account balance. The budget balance has a negative and significant impact on the current account balance.

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The results of this study have economic implications worth highlighting. The DRC's current account deficits could be mitigated by mobilizing domestic savings to finance investment in growth sectors. This mobilization of domestic saving must be accompanied by a stabilization of prices, an increase in lending rates and an extension of the decentralized financial system to rural areas and the informal sector. In this case, investment-friendly conditions and the adaptation of financial services to the needs of the various sectors must be pursued: improving the business climate, increasing the quality of infrastructure.

References

Alexander, S. S. (1952). Effects of a Devaluation on a Trade Balance. *Staff Papers-International Monetary Fund*, *2*(2), 263-278.

Aristovnik, A. (2007). Short-and medium-term determinants of current account balances in Middle East and North Africa countries.

Babacar D. (1997). Analyse monétaire de la balance des paiements du Sénégal. Mémoire d'Etudes Approfondies : Macroéconomie appliquée. Université Cheikh Anta Diop, Dakar.

Banerjee, A., Dolado, J. J., Galbraith, J. W., & Hendry, D. (1993). Co-integration, error correction, and the econometric analysis of non-stationary data. Oxford university press.

Bationo, B. (2013). Analyse de la viabilité et des déterminants du déficit courant des pays de l'UEMOA, Banque Centrale des Etats de l'Afrique de l'Ouest.

Bergin, P. R., &Sheffrin, S. M. (2000). Interest rates, exchange rates and present value models of the current account. *The Economic Journal*, *110*(463), 535-558.

Boone, L. (1997). Estimation du cycle à l'aide d'un modèle à tendance stochastique et application au Royaume-Uni. *CEPII, document de travail*, (97-11).

Boone, L., & Hall, S. G. (1995). Stylized facts of the business cycles revisited: A modelling approach. *DISCUSSION PAPER-LONDON BUSINESS SCHOOL CENTRE FOR ECONOMIC FORECASTING*.

Bourbonnais R. (2015). Econométrie : cours et exercices résolus, 9ème édition, DUNOD.

Brissimis, S. N., Hondroyiannis, G., Papazoglou, C., Tsaveas, N. T., &Vasardani, M. A. (2012). Current account determinants and external sustainability in periods of structural change. *Economic Change and Restructuring*, *45*(1-2), 71-95.

Bussière, M., Fratzscher, M., & Müller, G. J. (2006). Current account dynamics in OECD countries and in the new EU member states: An intertemporal approach. *Journal of Economic Integration*, 593-618.

Campbell, J. Y. (1986). Does saving anticipate declining labor income? An alternative test of the permanent income hypothesis. *Econometrica*, 55(6), 1249-1273.

Ca'Zorzi, M., &Rubaszek, M. (2012). On the empirical evidence of the intertemporal current account model for the euro area countries. *Review of Development Economics*, *16*(1), 95-106.

Chinn, M. D., & Prasad, E. S. (2003). Medium-term determinants of current accounts in industrial and developing countries: an empirical exploration. *Journal of international economics*, *59*(1), 47-76.

Delgay D. (2017). Relations monétaires internationales. Licence Administration économique et sociale, Faculté des Sciences Economiques, Université de Rennes 1, France.

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Demba, S. Y., &Hamat, S. Y. (2013). Les causes du déficit structurel du compte courant du Sénégal. *Agence Nationale de Statistique et de la démographie. Rapport_Etude_CDSCC_oct-2013*.

Dhliwayo, R. (1996). *Balance of payments as a monetary phenomenon: an econometric study of Zimbabwe's experience*. African Economic Research Consortium, Nairobi, KE.

Frenkel, J. A., & Johnson, H. G. (Eds.). (2013). *The monetary approach to the balance of payments*. Routledge.

Ghatak, S., &Siddiki, J. U. (2001). The use of the ARDL approach in estimating virtual exchange rates in India. *Journal of Applied statistics*, *28*(5), 573-583.

Hounsou, R. (2017). Analysis of current account deficit determinants of balance of payments in fixed and flexible exchange rate regimes: a comparative study in CFA franc and non-franc zones. *Journal of Economics and Public Finance*, *3*(3), 447-469.

Howard, M., &Mamingi, N. (2002). The monetary approach to the balance of payments: An application to Barbados. *The Singapore economic review*, *47*(02), 213-228.

Khan, M. S., & Knight, M. D. (1983). Determinants of CurrentAccount Balances of Non-OilDeveloping Countries in the 1970s: An Empirical Analysis. *Staff Papers-International Monetary Fund*, 819-842.

Mabiala N. C. (2023). Determinants of inflation in the Democratic Republic of Congo: An application of ARDL Modeling, *International Journal of Economics, Business and Management Ressearch, 7(7)*, 251-262.

Morsy, H. (2012). Current account determinants for oil-exporting countries. *EmergingMarkets Finance and Trade*, *48*(3), 122-133.

Mwangi, K. S. (2014). Determinants of current account balance in Kenya. *An Unpublished M. Sc. Thesis Submitted to the University of Kenya, Kenya*.

Nason, J. M., & Rogers, J. H. (2006). The present-value model of the current account has been rejected: Round up the usual suspects. *Journal of International Economics*, *68*(1), 159-187.

Ozkiper, O., & KURT, E. (2015). Determinants of current account balance: an empirical analysis for developing countries.

Pesaran, M. H., Shin, Y., & Smith, R. J. (2001). Bounds testing approaches to the analysis of level relationships. *Journal of appliedeconometrics*, *16*(3), 289-326.

Rouabah, A. (2005). *Les déterminants du solde de la balance des transactions courantes au Luxembourg* (No. 13). Central Bank of Luxembourg.

Sachs, J. D., Cooper, R. N., & Fischer, S. (1981). The current account and macroeconomic adjustment in the 1970s. *Brookings papers on economic activity*, *1981*(1), 201-282.

Stojkov, A. (2006). A survey of competing theoretical approaches to current account determination. *CEA Journal of Economics*, *1*(1).

Uz, I. (2010). Determinants of current account: the relation between internal and external balances in Turkey. *Applied Econometrics and International Development*, *10*(2), 115-126.

Yang, L. (2011). An empirical analysis of current account determinants in emerging Asian economies (No. E2011/10). Cardiff EconomicsWorkingPapers.

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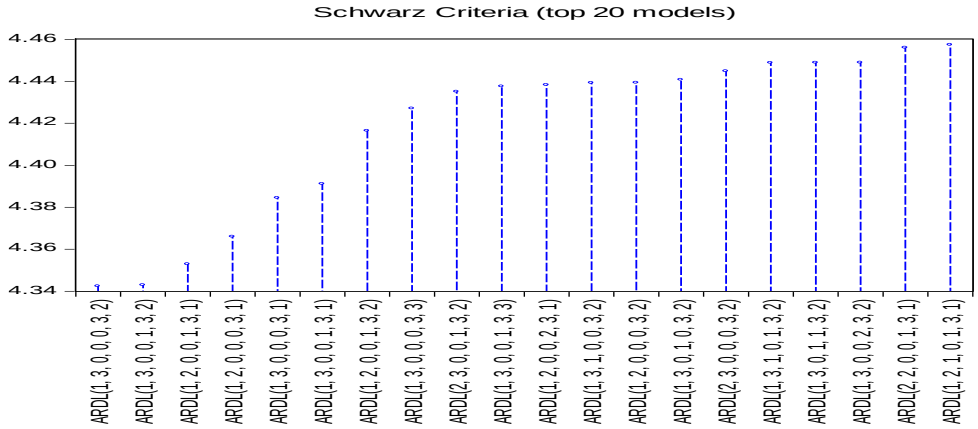
Appendix



ARDL Bounds Test

F-statistic	4.879033	6

Significance	I0 Bound	I1 Bound
10%	2.12	3.23
5%	2.45	3.61
2.5%	2.75	3.99
1%	3.15	4.43

R-squared	0.741458	Mean dependent var	-0.188886
Adjusted R-squared	0.513333	S.D. dependent var	2.045815
S.E. of regression	1.427192	Akaike info criterion	3.855697
Sumsquaredresid	34.62690	Schwarz criterion	4.581277
Log likelihood	-47.61900	Hannan-Quinn criter.	4.099833
F-statistic	3.250226	Durbin-Watson stat	2.397301
Prob(F-statistic)	0.010964		

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Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.902596	Prob. F(15,17)	0.5756
Obs*R-squared	14.63002	Prob. Chi-Square(15)	0.4784
Scaled explained SS	2.697275	Prob. Chi-Square(15)	0.9998