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Eita, Joel Hinaunye and Manuel, Victoria and Naimhwaka,
Erwin

University of Johannesburg, South Africa, Bank of Namibia,
Namibia, Bank of Namibia, Namibia

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Macroeconomic variables and current account balance in Namibia

Joel Hinaunye Eita

School of Economics, University of Johannesburg, South Africa, e-mail: jeita@uj.ac.za or

hinaeita@yahoo.co.uk

Victoria Manuel

Bank of Namibia, Windhoek, Namibia, e-mail: Victoria.manuel@bon.com.na

Erwin Naimhwaka

Bank of Namibia, Windhoek, Namibia, e-mail: Erwin.naimhwaka@bon.com.na

Abstract

This paper investigates macroeconomic determinants of the current account balance in Namibia. The results show that there is evidence of twin deficit hypothesis in Namibia. Evidence of twin deficit hypothesis suggest that it is important for Namibia to have fiscal discipline in order to improve its current account. Increase in capital flows, real GDP or per capita, results in a deterioration of the current account. Increase in interest rate, commodity prices and population cause the current account balance to improve. This suggest that contractionary monetary policy contributed to reduction of unproductive imports and improved the current account balance.

JEL Classification: F30; F32; C19

Keywords: current account, balance of payments, cointegration, Namibia

1. Introduction

One of the most discussed issue in macroeconomics in recent times is the current account balance. Increasing current account deficits are among the most serious problems in many developing countries. That is because large and persistent current account deficit may result in economic and currency crises, burgeoning external debt and reduction in international reserves (Deistaings et al 2013). Large CA deficits often raise concerns about the sustainability of such deficits and raise questions about their excessiveness, possible effect and adjustments that may result from such imbalances.

Disequilibrium in current account balance in many developing countries, and has become one of the most discussed topics in regional and international economics. There is a consensus that current account balance sustainability is very crucial for macroeconomic policy changes and decisions. Countries use the current account the balance of payments as an important macroeconomic indicator of the viability of the economy. It is a useful economic indicator because it represents other important economic variables. These other important economic indicators include (among others) savings, investment and the budget balance. All these indicators have a direct impact on economic growth, exchange rate and economic competitiveness (Boljanovic 2012). This suggest that it is important to understand the determinants of current account balance.

Empirical investigation of the determinants of current account balance is important for any country, and open economies such as Namibia are no exception to that. Namibia is one of the countries that experienced persistent current account deficit during the period 2009 to 2017. The

persistent current account deficit has reached worrisome levels. This persistent current account deficit puts pressure on Namibia's foreign reserves. Persistent current account deficit, such as the one experienced by Namibia from 2009 to 2016, raised a very important question on which variables play a role in the determination of the current account balance. An understanding the determinants of the current account balance deficits is important in analysing the sustainability of the country's external position. Empirical studies on the determinants of current account balance in Namibia are scanty or non-existent. This is despite the fact that the country experienced persistent deficit in recent years. To our best knowledge, there are only three studies in Namibia that came close to empirical assessment of drivers of current account balance. These studies are Fleermuys (2005), Eita and Gaomab II (2012) and Mushendami *et al.* (2007). Fleermuys (2005) and Mushendami *et al.* (2017) investigated the determinants of the overall balance of payments using the monetary approach to the balance of payments in Namibia. The focus these two studies was not specifically on current account balance. The focus of Eita and Gaomab II (2012) was on testing the effect of macroeconomic variables on the overall balance of payments in Namibia. All these three studies did not dwell much on the determinants of current account balance.

To our best knowledge, this paper will, be the first to investigate the determinants of current account balance in Namibia. The study will also test whether results depends on the econometric methods employed. This is contrary to previous studies that were conducted in Namibia. The rest of the paper is organised as follows. Section 2 provides an overview of the trends in Namibia's current account balance. Section 3 presents a review of the relevant literature. Section 4 outlines the methodology employed to estimate the models. Empirical results are presented in Section 5. The conclusion is provided in Section 6.

2. Overview of the trends in Namibia's current account balance

Trends in Namibia's current account balance for the period 1990 to 2016 are presented in Figure 1. Namibia's current account balance became negative in 2009. This came after the country largely maintained positive balances since its independence in 1990. The current account deficit is partly attributed to the recent expansion in economic activity, more specifically in the mining and construction sectors. This is coupled with slow global economic growth and lower commodity prices, especially from 2015, and resulted in large current account deficit. The increase in fiscal deficit has also been cited as one of the factors that contributed to the increase in current account deficit. Namibia's current account deficit has been deteriorating since 2009, and reached 13.6 percent of GDP in 2015. The deficit stood at 11.3 percent of GDP in 2016. The deficit averaged 6.5 percent between 2009 and 2016.

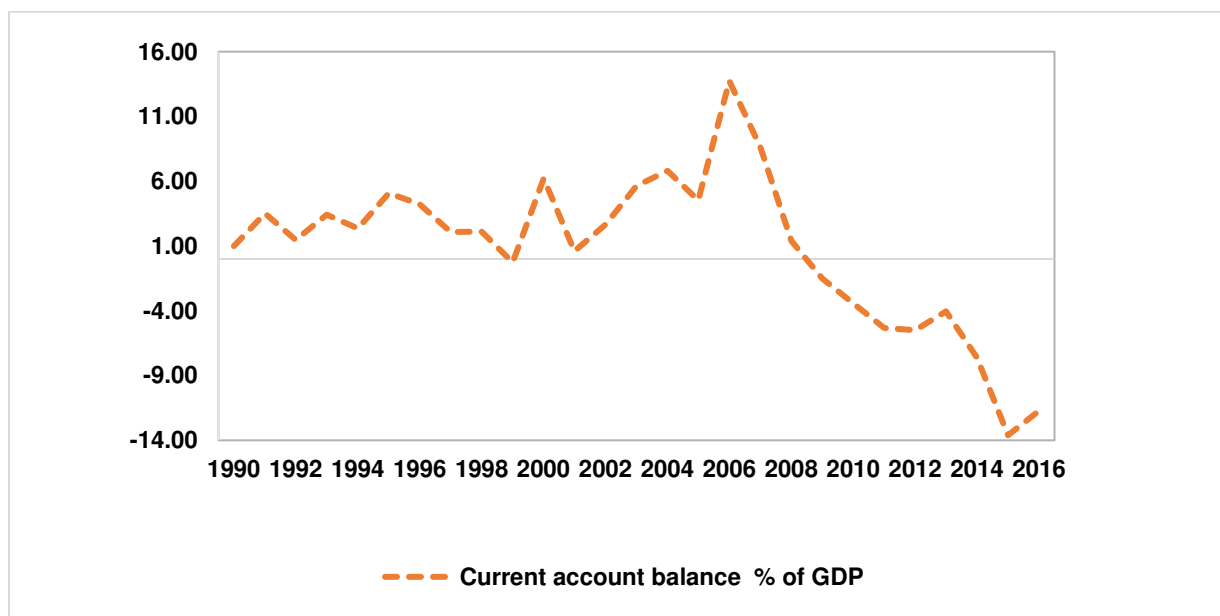


Figure 1: Current account as percent of GDP

Source: Data for the graph are obtained from Bank of Namibia (2017)

Several annual reports of the Bank of Namibia indicated that the deficit on the current account was caused by factors such as significant increases in investment and larger budget deficits. Private and public consumption as well as depreciation of the Namibia dollar also contributed to the deterioration of the current account balance during the period 2009 – 2016.

Other factors contributed to the deterioration of the current account. Among others, expansion in public expenditure, foreign direct investment (FDI) and private sector credit extension. The increase in government expenditure on projects, such as the Targeted Intervention Programme for Employment and Economic Growth (TIPEEG), expansion of Walvis Bay harbour, and the mass housing programme partly contributed to current account deterioration. . The increases in capital imports over the period 2010 to 2014 for both exploration and the commissioning of new mines such as Husab and B2Gold also contributed to movements in the current account., It is also important to mention that there was a tax relief in 2013 which was accompanied by the increase in private sector credit extension (PSCE). This caused an increase in imports.

3. Literature review

Several empirical studies investigated the effect of macroeconomic variables on the current account balance. Brissimis et al (2010) found that banks' private sector credit extension (PSCE) to be one of the main determinants of the current account deficit in Greece. The rise in PSCE due to financial liberalisation in the 1990s contributed to a fall in the private savings rate, which had a negative impact on the current account. Furthermore, Kueh (2015) also established that increased

household indebtedness contributed to the current account deficit in some of the European countries.

Several empirical studies have identified the fiscal balance as one of the key determinants of the current account deficit, thus confirming the presence of the “twin deficit hypothesis”. Kueh (2015) used panel data regressions and the General Method of Moments (GMM) approaches for 28 European countries and established the existence of a positive long run relationship between the fiscal deficit and the current account deficit with a coefficient of 0.4. This implied that a 1.0 percent increase in the fiscal balance worsened the current account by 0.40 percent. Bollano and Ibrahimaj (2015) through the variance decomposition exercise showed that between 40 percent and 42 percent of the current account balances were explained by the fiscal deficit. The results were largely consistent with other empirical studies that also showed a positive relationship between the fiscal balance and the current account balance, such as Chinn and Prasad (2003), Kariuki (2009), and Brissimis et al (2010). As a result, the studies rejected the presence of Ricardian equivalence in those economies.

Das (2016) considered international commodity prices as one of the current account determinants and found the existence of a negative relationship between the current account and commodity prices for developing economies. He used panel GMM techniques to evaluate the current account determinants for a sample of 106 countries. The study found the existence of a positive relationship between commodity prices, real GDP growth and trade openness in emerging economies, and a negative relationship between the same variables and the current account for the developing nations.

In addition, Kariuki (2009) examined the determinants of the current account balance in Kenya using the intertemporal approach for the period 1970 to 2006. The study includes economic growth, the fiscal balance, terms of trade, trade openness, money supply, dependency ratio, foreign direct investment and macroeconomic stability. The study also included a crisis dummy variable in order to capture effects of external shocks such as the oil crisis of 1973, mismanagement of the coffee boom in 1976/77 and the collapse of the East African Community. The model, based on time series analysis, showed that the terms of trade was the most significant positive determinant of the current account deficit in Kenya. Other positive determinants included the fiscal balance, real exchange rate and economic growth. Money supply, on the other hand, was the most significant negative determinant of the current account balance in Kenya, followed by the dependency ratio and foreign direct investment.

Oshota and Badejo (2015) also examined the determinants of current account balance, using the panel ARDL model for West African countries. The results confirmed that in the long run, GDP per capita, domestic investment, financial deepening and the dependency ratio had a positive impact on the current account balance while the real effective exchange rate had a negative impact on the current account for West African countries. A potentially important standard current account variable, the fiscal balance, was, however, not included in their model.

Despite using different methodologies, many empirical studies found common factors as determinants of the current account balance. The fiscal balance, economic growth, dependency ratio, real effective exchange rate, stage of development, the stock of foreign reserves, real interest

rates, terms of trade, openness to trade, financial deepening (using M2 as the proxy), and financial liberalisation (using PSCE as the proxy), have been found to be the main standard determinants of current account imbalances. The relevant studies include those by Chinn and Prasad (2003), Kariuki (2009), Brissmis et al (2010), Unevska and Jovanovic (2011), Atoyan et al. (2013), Bollano and Ibrahimaj (2015), Oshota and Badejo (2016) and Kueh (2015).

At present, no study has directly investigated the determinants of Namibia's current account balance. Fleermuys (2005) applied the monetary approach to the balance of payments for the period 1993 to 2003 and found that monetary variables did not play an overwhelming role in determining Namibia's balance of payments. The study concluded that imbalances in the balance of payments were not caused purely by monetary variables. Eita and Gaomab II (2012) investigated the macroeconomic determinants of the balance of payments in Namibia for the period 1999 to 2009 and identified the fiscal balance, GDP and interest rate as main drivers of the balance of payments. They posit that the positive effect of GDP on the balance of payments suggests that exports (the production of which is included in GDP) had a positive impact on the current account and the overall balance of payments.

Most of the studies reviewed in this section identified gaps. A wide range of literature is available for economies, which have a complete different economic structure than that of Namibia, which makes it difficult to apply as a benchmark for Namibia. African empirical studies, such as Osakwe and Verick (2007) and Nkuna (2013), did not include Namibia in their analysis, despite Namibia falling in the same region covered in their respective studies. Furthermore, despite Namibia

recording a persistent current account balance deficit for the past 7 years, little is known about the drivers of Namibia's current account. Therefore, this study attempt to answer this question.

4. Empirical model, data and estimation techniques

4.1 Empirical model

Following a review of the theoretical and empirical literature, the empirical model for determinants of CA balance is specified in five variations as follows:

$$CAB_t = \alpha_0 + \alpha_1 FB_t + \alpha_2 INV_t + \alpha_3 POP_t + \alpha_4 EX_t + \alpha_5 RESBAL_t + \varepsilon_t \quad (1)$$

$$CAB_t = \alpha_0 + \alpha_1 FDI_t + \alpha_2 CPRICE_t + \alpha_3 FINA_t + \alpha_4 REER_t + \varepsilon_t \quad (2)$$

$$CAB_t = \alpha_0 + \alpha_1 FDI_t + \alpha_2 CPRICE_t + \alpha_3 FINA_t + \alpha_4 REER_t + \alpha_5 IR_t + \varepsilon_t \quad (3)$$

$$CAB_t = \alpha_0 + \alpha_1 FDI_t + \alpha_2 CPRICE_t + \alpha_3 FINA_t + \alpha_4 REER_t + \alpha_5 IR_t + \alpha_6 Y_t + \varepsilon_t \quad (4)$$

Where, CA is the ratio of the current account balance to GDP, INV is the ratio of investment to GDP, EX is a measure of exchange rate (Namibia dollar/USA dollar), REER is real effective exchange rate, , FB is the fiscal balance as ratio of GDP, RESBAL is resource balance (measure of capital flows), POP is population, , FINA is financial development, IR is the interest rate (prime

rate), Y is real GDP, FDI is foreign direct investment as ratio of GDP, and $CPRICE$ represents a commodity prices index.

The effect of exchange rate changes on the current account balance can be positive or negative. A depreciation of the local currency is expected to promote exports and improve the current account balance (if the Marshall-Lerner¹ condition holds). An increase in exports however also implies higher income. This will cause domestic spending to increase, raises imports and worsens the current account balance. It is important to mention that Namibia is a member of the Common Monetary Area (CMA) where its currency, the Namibia dollar, is pegged to the South African Rand. . Namibia exports a high percentage of its products to South Africa. Namibia also obtain more than 50 percent of its imports from South Africa. This implies that the exchange rate is not expected to impact significantly on the current account balance.

The ratio of the fiscal balance to GDP also can have a positive or negative effect on the current account balance. This depends on whether the twin deficit hypothesis exists or not. If the twin deficit hypothesis exists, the effect of fiscal balance on the current account will be positive. If twin deficit hypothesis does not hold, the coefficient of the current account will affect negatively on the current account balance. Hence, the effect of the fiscal balance to GDP on the current account cannot be assignment *a priori*. An increase in capital flows (proxied by resource balance) also cannot be assigned *a priori*. The effect of this variable can cause the current account balance to improve or deteriorate. Population and the ratio of FDI to GDP can impact positively or negatively on the current account. If the population is large, it may suggest that the country is self-sufficient and is able to produce a variety of goods and services. This will improve the current account

¹ Depreciation of a currency improves the current account of the balance of payments, if the sum of price elasticities of demand for export and imports are greater than one.

balance. However, an increase in population may also suggest a high capacity to import and worsen the CA balance. Most empirical studies found that foreign direct investment improves the CA balance. Other studies also found that an increase in foreign direct investment implies high income, and this may encourage spending on imports which worsens the CA balance.

The effect of financial development on the CA balance can be positive or negative. A more developed financial sector makes it easier to produce goods and services and this can accelerate production and export of goods and services, which may improve the CA balance. The improvement in financial development can also make it easier to import goods and services. This will lead to deterioration of the CA balance.

Real GDP and commodity prices are expected to either improve or worsen the CA balance, while oil prices are expected to have a deteriorating effect for an importing country. The effect of real GDP, which is a measure of income, can be positive or negative. The effect of commodity prices on the CA balance can be positive or negative. That is because an increase in commodity prices means more income for a commodity exporting country. The increase in income may lead to increase in imports, which will worsen the CA balance.

4.2 Data

One of the objectives of this study is to test whether the determinants or drivers of current account balance in Namibia depends on the period of estimation and type of data used. Therefore, this study used both annual and quarterly data. The first category of annual data covers the period 1980 – 2016. The second category of data covers the period 1990 – 2016. The reason for grouping

annual data into two categories is that Namibia became independent in 1990 (from South African occupation) and the data for the period 1980 – 2016 may not give a true picture of Namibia’s current account. That is because all policies related to the current account before 1990 were made in South Africa. That means, the estimation results for the period 1980 to 2016 should be interpreted with caution. It was then decided to have another category of annual data, which covers the post-independence period of 1990 – 2016, although with limited observations.

Quarterly data for the current account balance are only available for the period 2000 – 2016. Hence, the estimation with quarterly data covers only that period. The use of these different period of estimation will help to answer the question of whether the results are sensitive to the type of data used (sample period). The data used in this study are summarised in Table 1.

Table 1. Data description

Variable	Description	Source	Sign of coefficient
CA	Current account balance as percent of GDP	Bank of Namibia	
INV	Ratio of investment to GDP	Bank of Namibia	+/-
EX	Namibia dollar/USA dollar exchange rate	Bank of Namibia and IMF’s International Financial statistics	+/-

FB	Fiscal balance as percent of GDP	Bank of Namibia and	+/-
RESBAL	Resource balance	Data for computation of this variable are obtained from Bank of Namibia.	+/-
POP	Population	Bank of Namibia and the World Bank	+/-
FDI	Foreign direct investment as percent of GDP	Bank of Namibia	+/-
CPRICE	Indices of commodity prices	IMF's International Financial Statistics	+/-
FINA	Financial development, proxied by credit extended to the private sector as percent of GDP	Bank of Namibia	+/-
IR	Interest rate (prime lending rate)	Bank of Namibia	+/-
Y	Real GDP	Bank of Namibia and Namibia Statistics Agency	+/-

REER	Real effective exchange rate	Bank of Namibia	+/-
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4.3 Estimation technique

To estimate Equations (1) - (4), the study adopts the Autoregressive Distributed Lag Model (ARDL) or bound cointegration technique developed by Pesaran, Shin and Smith (2001). Using Equation (4) as an example to illustrate the ARDL bound cointegration technique, the empirical model is specified in Equation (5). The ARDL bound cointegration technique is specified as follows:

$$\begin{aligned}
\Delta CA_t = & \beta_0 + \sum_{i=1}^n \mu_{1i} \Delta FDI_{t-i} + \sum_{i=1}^n \mu_{2i} \Delta CPRICE_{t-i} + \sum_{i=1}^n \mu_{3i} \Delta FINA_{t-i} \\
& + \sum_{i=1}^n \mu_{4i} \Delta REER_{t-i} + \sum_{i=1}^n \mu_{5i} \Delta IR_{t-i} \\
& + \sum_{i=1}^n \mu_{6i} Y_{t-i} \\
& + \delta_1 CA_{t-1} + \delta_2 FDI_{t-1} + \delta_3 CPRICE_{t-1} + \delta_4 FINA_{t-1} + \delta_5 REER_{t-1} + \delta_6 IR_{t-1} \\
& + \delta_7 Y_{t-1} + v_t
\end{aligned}$$

(5)

Here β_0 represents the intercept, and μ_i are short run parameters, γ_i are long run coefficients and Δ indicates that the variables are in first difference. The most important part of equation (5) is to test the null hypothesis of no cointegration. This is tested as follows:

$$H_0: \delta_1 = \delta_2 = \delta_3 = \delta_4 = \delta_5 = \delta_6 = \delta_7 = 0$$

$$H_a: \delta_1 \neq \delta_2 \neq \delta_3 \neq \delta_4 \neq \delta_5 \neq \delta_6 \neq \delta_7 \neq 0$$

If the null hypothesis is not rejected it means that there is no cointegration. If the null hypothesis is rejected, it indicates that the variables in the equation are cointegrated. The ADRL cointegration technique identify the long run relationship among the variables in the models. The technique uses the Wald or F-statistics to test for joint significance of $\delta_1, \delta_2, \delta_3, \delta_4, \delta_5, \delta_6$ and δ_7 . After establishing the long run relationship between the variables, estimation of the long run coefficients is the next step. This study uses a methodology developed by Narayan (2005) to estimate long-run relationship between the variables. This estimation methodology is called Dynamic Ordinary Least Square (DOLS). This methodology builds on what was initiated by Stock and Watson (1993). DOLS is preferred because it removes the sample bias and correct for endogeneity and serial correlation in the model. The use of DOLS requires that there should be cointegration between the variables in the model to be estimated. The DOLS methodology is expressed as follows:

$$Z_t = \vartheta_0 + \vartheta_1 Y_t + \sum_{j=m}^m \Delta Y_{t-1} + v_t \quad (6)$$

where Z_t is the current account balance as ratio of GDP, Y_t is a vector of explanatory variables discussed in equations (1-4) and Δ is a lag operator. The use of DOLS suggest that it is not necessary to estimate short run or error correction model (Mosikari and Eita, 2017).

5. Empirical results

5.1 Unit root test results

Before the estimation of the empirical models as specified in Equation (1) to (4), it is important to establish the univariate characteristics of the variables. This involves unit root test. The unit root in this study is tested using the Augmented Dicky Fuller (ADF) test statistics. The results indicate that most variables are I(1). There is no I(2) variable. The absence of I (2) variable also suggest that it is appropriate to use ARDL. The unit root test results are not presented in this paper, but can be obtained from the authors on request.

5.2. Estimation results

The variations of the current account model as specified in Equation (1) to (4) were estimated using two sample periods. The first sample period uses annual data and covers the period 1980 to 2016. The second sample uses quarterly data covers the period 2000 to 2016. Quarterly data for most variables in Equations (1) to (4) are only available from the year 2000.

5.2.1. Estimation results of the 1980 - 2016 sample

The results for the 1980 – 2016 are estimated using three econometric methodologies. The results for the annual data, which covers the period 1980 to 2016, are presented in Tables 2 - 3. The results for this sample period are only available for equation 1. The data for some variables in Equation (2) to (4) such as financial development and commodity prices are not available. Hence, some variations of the current account balance model are not estimated for this sample period. The results show that fiscal balance to GDP (FBGDP) is positively associated with the current account balance. This shows that when the fiscal balance is in deficit, the CA balance will also be in deficit. This provides evidence in favour of the twin deficit hypothesis in Namibia. The results of the ARDL or DOLS also provide evidence in favour of the twin deficit hypothesis.

Table 2. ARDL methodology (1980-2016): cointegration test results

Equation number	F-test	I(0)	I(1)
Equation 1	4.991	2.39	3.38

Table 3. DOLS estimation results: ARDL methodology (1980-2016)

Dependent variable: CABGDP

Variables	Coefficient
FBGDP	0.219 (2.490)
LNINVGDP	-28.029 (-1.947)
LNPOPU	55.030 (2.304)
LNEXCH	-2.548 (-0.490)
RESBAL	-5.432 (-0.162)
TREND	-0.865 (-1.669)
CONSTANT	-680.062 (-2.206)
R-squared	0.920

Note: Figures in brackets are t-statistics

The effect of the ratio of investment to GDP on the current account is negative. The results indicate that an increase investment causes current account balance to deteriorate. This can be partly

attributed to the fact some equipment for the investment have to be imported and this can deteriorate the current account balance.

The exchange rate impacts negatively on the current account, but the coefficient is not statistically significant. A depreciation of the exchange rate causes the CA balance to deteriorate, while an increase in population causes an improvement in the current account balance. Increases in capital flows and real GDP cause the CA balance to deteriorate. The coefficient of the capital flow proxy (resource balance or RESBAL) is negative.

5.2.1 Estimation results of quarterly data for the 2000 -2016 sample

The quarterly data are only available for the period 2000 – 2016. There are no quarterly data (for most variables such as current account balance and others) before the year 2000. The results of quarterly data for the sample 2000 -2016 are presented in Table 4 to 5. A fiscal balance variable is not included in this sample, because quarterly data for this variable is not available.

Table 4. ARDL methodology: Cointegration test results

Equation number	F-test	I(0)	I(1)
Equation 2	5.891	2.56	3.49
Equation 3	6.275	2.39	3.38
Equation 4	6.460	2.27	3.28

Table 5: DOLS estimation results

Dependent variable: CA

Variables	Coefficient of second Variation (Equation 2)	Coefficient of third variation (Equation 3)	Coefficient of fourth variation (Equation 4)
FDI	-0.194 (-0.478)	-0.073 (-0.200)	-0.081 (-0.241)
CPRICE	12.528 (2.475)	4.411 (0.811)	4.262 (0.964)
FINA	-19.817 (-5.343)	-9.666 (-1.728)	2.334 (0.255)
REER	-9.543 (-0.360)	49.462 (1.481)	42.692 (2.078)
IR		2.015 (2.245)	1.756 (2.710)
Y			-25.668 (-2.087)
CONSTANT	82.275 (0.764)	-228.408 (-1.444)	
R-squared	0.668	0.728	0.761

Note: Figures in brackets are t-statistics

The effect of FDI on CA is negative in all estimations, but statistically insignificant. The effect of financial development on current account balance is negative for all variations of the estimated equation. This suggest that an improvement in financial development may cause spending (including spending on imports) to rise and deteriorate the current account balance.

The effect of commodity prices on the CA balance is positive in all estimations. The coefficient of this variable is statistically significant under the first variation of ARDL or DOLS. This indicates that when commodity prices increase, Namibia should export more products in order to enhance its current account balance.

The results show that FDI as ratio of GDP is associated with a deterioration of the current account balance. Financial deepening also causes the current account balance to worsen. The coefficient of the real exchange rate variable yielded results that are conflicting. The second variation of the current account model indicates that an appreciation of the real exchange rate results in a deterioration of the of the current account balance. The results of the third and fourth variation are not in line with those of the first variation. They indicate that an appreciation of real exchange rate enhances the current account balance. However, this coefficient is also insignificant for the second and third variation. Increase in interest rates impact positively on the current account. The Bank of Namibia (Namibia's central bank) indicated several times that increase in interest rates is necessary to reduce unproductive imports in order to improve the current account balance. The positive effect of interest rates could give credence that contractionary monetary policy of the Bank of Namibia partly contributed to the improvement in the current account balance. The effect of GDP is negative in all variations. The negative impact of GDP suggest that as income increase, spending (including spending on imports) rise and the current account balance worsen.

6. Conclusion

The study investigated the effect of macroeconomic variables on the current account balance in Namibia. The investigation was conducted through an extensive review of the relevant theoretical models and empirical literature. Several variations of the current account empirical models were estimated. The empirical models were ARDL or DOLS estimation methodology. The empirical model was estimated using annual data for two periods. The first sample covers the period 1980 - 2016 and uses annual data. The second sample covers the period 2000 – 2016 and uses quarterly data. The results of the study indicate that current account balance in Namibia is determined by fiscal balance at percent of GDP, investment to GDP ratio, foreign direct investment to GDP, exchange rate, real exchange rate, population, resource balance (proxy for capital flows), commodity prices, real GDP, and interest rate. The study found evidence of twin deficit hypothesis in Namibia, suggesting the fiscal balance as one of the main determinants of the current account balance. A larger fiscal deficit is associated with a larger current account deficit. Evidence of twin deficit hypothesis suggests that it is important for Namibia to maintain fiscal discipline in order to improve the current account balance.

The effect of investment to GDP ratio is associated with a deterioration of the current account balance. This is attributed to the fact that some equipment for investment need to be imported and this may deteriorate the current account balance. A depreciation of the Namibia dollar/US dollar exchange rate is weakly related to the current account balance. This is not surprising because most Namibia's exports and imports are with South Africa. South Africa and Namibia have 1 to 1 exchange rate and it means that exchange rate variation does not have a significant impact on the

current account balance. When real exchange rate is used to capture the competitiveness of Namibia, the coefficient produced conflicting results. This variable was used for quarterly data. The first variation of the estimated equation showed that the effect is negative while the third and fourth variation indicate that an appreciation of the real exchange rate improve the current account balance. This suggests that the effect of real exchange rate on the current account balance depends on the specification of the empirical model.

The effect of commodity prices on the current account balance is positive. All variations of the model estimated using quarterly data indicated that an improvement in commodity prices improve the current account balance. This suggest that when commodity prices are rising, Namibia should increase its exports in order to improve its current account balance. That is because Namibia is a commodity exporting country.

Increase in capital flows, which was proxied by resource balance results in a deterioration of the CA balance. Real GDP is associated with a deterioration of the current account balance. This suggest that as Namibia's income increase spending (including spending on imports) also increase. This results in a deterioration of the current account balance. The positive effect of population on the current account balance suggest that as population increase, the current account balance improve. This suggest it would be beneficial for Namibia to increase its population in order to improve the current account balance.

Interest rate has a negative positive effect in all variations of the estimated model. This means that an increase in interest rate causes the current account balance to improve. The Bank of Namibia has on several occasion stated that it normally increases interest rate in order to discourage unproductive imports. The increase in interest improves the current account balance, and it can be concluded that increase in interest rate has assisted in the improvement of the current account balance. However, this should be interpreted with caution because it is currently not clear what is productive and unproductive imports in the current account of the balance of payments. Future studies should investigate what is productive and unproductive imports in order to effectively test the impact of an increase in interest rates on unproductive imports and ultimately, the current account balance.

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