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An Intertemporal Assessment of Kenya's Current Account Deficits

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ABSTRACT

This paper explores the sustainability of the current account in Kenya. While the country has experienced large deficits for a number of years in the past, it's recent downward trend and the realization of its pivotal role in Kenya's development agenda raises concern. It employs the intertemporal approach based on pure time series data between the years 1975 and 2010. The results failed to support the existence of a long-run equilibrium between exports and imports in Kenya. This puts to question the effectiveness of Kenya's current long-term macroeconomic policies and suggests that Kenya is in violation of its intertemporal budget constraint. These results also point to the possibility of a crisis, given the usefulness of the current account in predicting a crisis.

Keywords: *Kenya's current account, sustainability, cointegration.*

1. INTRODUCTION

Attaining external balance is one of the most important macroeconomic objectives of a nation. The health of a country's external balance is indicated by, among other variables, the current account. The primary indicator of a looming macroeconomic crisis is the current account deficit in the form of large actual or projected current account deficits, or for countries that have to make heavy debt repayments, insufficiently large surpluses (Fischer, 1988). Despite this, trends in trade and current account deficits in Kenya show consistent and excessive deficits hitting a record high of 18.7% of GDP in 1998 and a decade high of 13.1% of GDP in 2012. There is a concern that since 2003, the upward trend in growth of deficits has continued unabated.

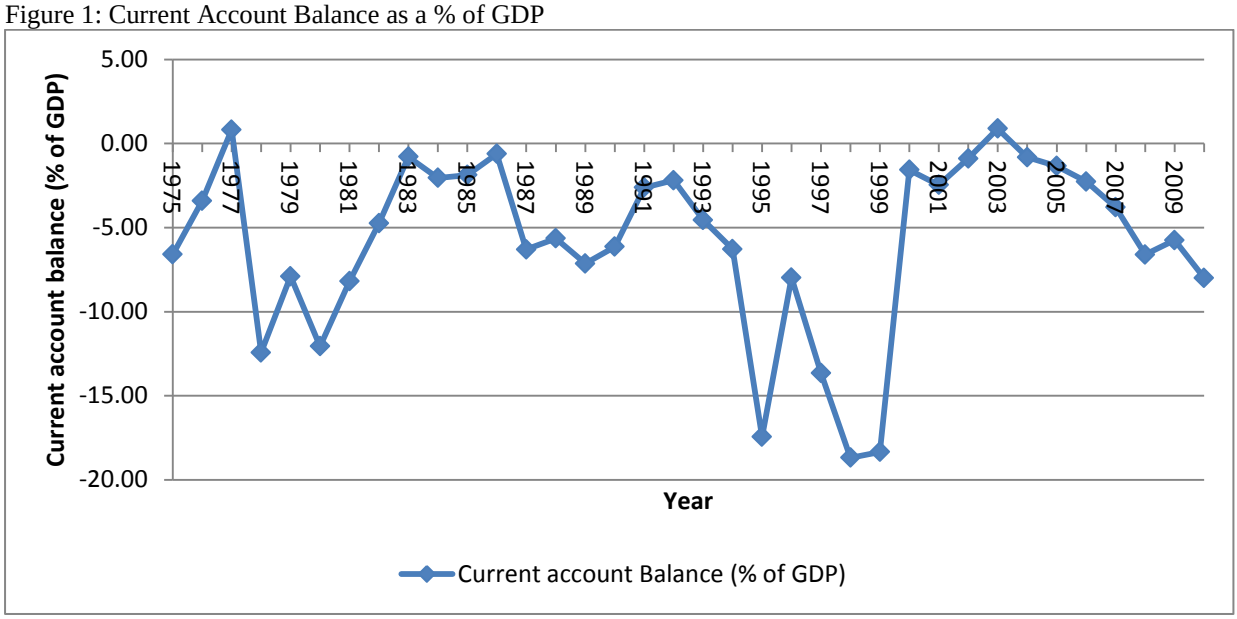
While a current account deficit may be a good thing when it measures the underlying investment finance gap that needs to be filled, it can reflect a dangerous and unsustainable imbalance between national savings, investment and the accumulation of debt. A current account deficit may also predict future changes in a floating exchange rate regime like Kenya's and therefore its sustainability becomes a major concern not only for policy makers, but also for the Central Bank of Kenya and market analysts. This, therefore, raises the question of the long-term sustainability of Kenya's current account deficits. Traditional financial market indicators may not predict the rising of the deficits to a crisis proportion and empirical literature on Kenya's current account sustainability is scarce. This therefore necessitates an inquiry into the sustainability of the current account to act as an early warning indicator to the likely emergence of a macroeconomic crisis.

2. EVOLUTION OF KENYA'S CURRENT ACCOUNT DEFICITS

According to the World Bank (2012), Kenya is walking a tight rope with deficits at 13.7% of GDP and with imports growing by 20% compared to export growth at 10%. Import growth was attributed to oil imports, which accounted for 27.6 percent of the total import bill in 2011, jumping from 8.9 percent of GDP in 2010 to 11.6 percent of GDP in 2011. This was attributed to the rise in world crude prices by 33% and growth in the volume of consumption by 12% increase (from 3.2 to 3.6 million metric tons), which was due to the need to expand thermal power, as hydropower operated below potential. With factor incomes and transfers roughly constant, the deterioration in the trade balance was also apparent in the current account balance.

Kenya's current account has been in deficit for many years but the economy has recorded a surplus only twice in the period 1975-2012 in the years 1977 and in 2003. The trend of the (CAB) for Kenya as a percentage of GDP is shown in figure 1;

Figure 1: Current Account Balance as a % of GDP



Source: World Bank (2011), International Financial Statistics

Figure 1 shows Kenya's current account balance between 1975 and 2010. It shows that Kenya faced perennial deficits that have also stayed below the threshold that economists would consider sustainable. Going by Summer's (1996) and Kenen et al (1995) 5% threshold of CAB as a percentage of GDP, the country's CAB performance raises doubt over its sustainability. The first highest deficit occurred in 1979 and was caused by a severe drought combined with an oil shock which brought down the current account balance. In 1982, the country migrated from the fixed exchange rate regime to a crawling peg, which could have caused the spike in the deficit again. Aid inflows more than doubled during the 1980s (from 6 to 13% of GNI) and this could have contributed to the relative health of the current account during this period.

There was a decline in the CAB starting 1995 attributable to the stoppage of aid by the IMF and World Bank and the subsequent loss of confidence by investors. This increased the current account deficit to 17.45% of GDP. In 1996, the World Bank and IMF approved a loan to Kenya, which was later withheld in 1997 leading to a deterioration of the CAB. This demonstrates how vulnerable Kenya's balance of payment account had become to foreign borrowing. In 1998, the current account deficit was 18.7% of GDP, which has been so far the CAB's worst performance. This was attributed to the withholding of aid and subsequent drought which affected the country.

Resumption of aid in 2000 improved the CAB, which continued building up towards a surplus in 2003. After this surplus, the account has continued to plummet to hit 8% of the GDP in the year 2010. Only two surpluses have been recorded in Kenya. One in 1977 which was attributed to the coffee boom and the other in 2003 which was attributed to decline in imports as receipts from exports increased. Much of this increase was attributed to exports of tea, horticulture and non-traditional commodities, particularly manufactured goods and raw materials. Kenya has not only operated with deficits exceeding 5% for most of the years in her history, but the current account deficits have also exhibited some volatility.

3. EXISTING KNOWLEDGE

3.1 Theoretical arguments

Three different yet interrelated concepts about the current account stand out: an economy's solvency, current account sustainability and current account deficit excessiveness (Melesi-Ferreti and Razin, 1996a). An economy is solvent if the present discounted value of the future trade surplus is equal to the current external indebtedness. The current account is sustainable if the continuation of the current government policy stance and/or of the present private sector behavior will not entail a need for a 'drastic' policy shift or a balance of payments/currency crisis. The notion of 'excessive' current account deficits is based on deviations from an 'optimal' benchmark, which can be calculated under some strict assumptions such as perfect capital mobility and efficient financial markets.

Whereas Melesi-Ferreti and Razin (1996a) define an unsustainable current account deficit as one which is too large to be explained in terms of any given model of consumption, investment and production, Mann (1999)

describes an unsustainable current account deficit as one whose disequilibrium instigates by its own forces, a hike in interest rates, a large depreciation, or some other sudden domestic or global economic disruption. In other words, a current account deficit is sustainable when the continuation of the current policy stance will not require a "drastic" shift or a "sudden stop" (e.g. a sudden tightening of monetary and fiscal policy, causing a large recession), or lead to a "crisis" (e.g. sharp increases in interest rates, a sudden depletion of the reserves, or an exchange rate collapse). Mann (1999) prescribes by rule of thumb that a current account deficit greater than 4.2 percent of GDP is unsustainable. This rule of thumb, based on the 1980s and early 1990s, represents the average threshold at which current account deficits in several industrialized economies started to narrow after trending up for a sustained period. Unfortunately, few other analysts have offered estimates of the sustainability threshold. In figure 1, the threshold prescribed by Mann (1999) has been surpassed by more than five times. On this account, one would be tempted to hastily pass Kenya's current account deficit as unsustainable.

Generally, literature on the sustainability of current account deficits is divided into two broad strands: whether deficits are sustainable in the long-term or not. It is unlikely that any country can, over a long period of time, borrow more than 5 percent of its GNP annually unless it is growing at a very rapid rate (Summers, 1996). Therefore, a country can run a current account deficit for a limited period but no huge deficit is sustainable indefinitely (Corden, 1994). Large current account deficits raise the risk of a sudden stop where the inflow of capital coming into a country is reduced significantly in a very short period of time. Experience has shown that these episodes too often lead to large financial disruptions (Blanchard *et al*, 2011). There are exceptions to this rule, however. As Frankel and Rose (1996) have shown, Singapore was able to run deficits of over 20% of GDP but was growing at a rate of 8.6 % per year and never experienced a current account crisis.

A sustainable current account represents a stable state in which the deficit generates no forces of its own to change its course (Baharumshah *et al*, 2004). This means that large and persistent current account deficits tend to pose more difficult problems in the economy necessitating a policy response. Specifically, they tend to increase domestic relative to foreign interest rates, while simultaneously imposing an excessive burden on future generations as the accumulation of larger debt would imply increasing interest payments, and thus a lower standard of living. In the end, deficits provide a signal of macroeconomic imbalance, calling for devaluation and/or tighter macroeconomic policies.

Theory provides various methods to assess the sustainability of the current account deficits. These include the accounting approach, the intertemporal optimal approach and the structural assessment of indicators. The accounting approach focuses on a particular ratio, typically debt to GDP, so that a deficit is assumed sustainable if it remains a constant fraction of GDP or exports (Hudson and Stennet, 2003). The approach aims at maintaining the growth rate of debt lower than GDP or exports. It bases the external indebtedness of a country to an economy's net liabilities so that the financing constraint is the function of the interest rate of previous terms loan and the net liabilities. The budget constraint in this case becomes;

$$B_t = (1+i_t)B_{t-1} - (X_t - M_t) \tag{3.1}$$

Where B_t represents debt and X-M the trade balance so that if the trade balance equals zero, the country's debt will grow at a rate equal to i_t. If a country runs a deficit, the debt stock will grow at a rate that exceeds the world interest rates. The above expression can be manipulated to give the sustainability condition which becomes;

$$\left(\frac{i_t - g_t}{1+g_t}\right)b_{t-1} - (x_t - m_t) \tag{3.2}$$

Again, if the trade balance $(x_t - m_t)$ is zero, then the change in debt is dependent on the growth rate of GDP and the interest rate of the debt. In this case g_t represents the growth rate of GDP and the lowercase letters represent the growth rates too. If the domestic growth rate is less than the interest rate on external liabilities, the debt to GDP ratio will increase and therefore will need a surplus to offset the growth in the debt stock as a result of the interest rate and growth rate differential. The accounting approach comes with the advantage of usefulness in assessing the consistency among the various macroeconomic policy targets but is mainly recommended for evaluation the internal debt. However, it comes with the shortcoming of assuming that debts must grow at the interest rate over GDP differential. This way, it ignores the role of lenders and investors in determining an economy's liabilities.

The intertemporal approach (also termed the present value approach), which has been the most used model since 1980 and has generated various versions, argues that a current account is sustainable if it is able to satisfy its long-run intertemporal constraint without necessitating drastic change in the private sector behavior or policy shifts. This model combines the advantage of allowing various elements of the current account to be considered. First, it realizes the current account balance is an outcome of optimizing behavior of agents in the economy. Second, it accommodates the behavior of economic agents by allowing them to react to government expenditure or investment and not assuming imbalances are a result of structural imbalances. Third, the current account is allowed to point towards the desired growth path of the economy by indicating either higher growth to help service the debts or a lower growth while receiving savings lent to foreigners. Fifth, the approach uses the sustainability criterion which according to Camarero *et al* (2009) is a sufficient condition for other conditions to hold as opposed to the reliance on the solvency condition which is less demanding.

The intertemporal approach views the current account as a change in the net foreign asset position of a country. It is founded on utility maximizing decisions by economic agents. Large deficits according to the intertemporal approach can be optimal and sustainable and therefore not a cause of concern for policymakers. It proposes that saving and investment decisions result from forward looking calculations based on the expected values of various macroeconomic factors. It achieves a synthesis between the trade and financial flow perspectives by recognizing how macroeconomic factors influence future relative prices and how relative prices affect saving and investment decisions (Obstfeld and Rogoff, 1995).

The intertemporal approach can be divided into two versions (Camarero et al, 2009). The first is the intertemporal solvency approach while the second is the intertemporal sustainability approach. The intertemproal solvency approach seeks to answer whether all the debts incurred will ultimately be repaid. This is equivalent to saying that large trade deficits today will be offset by equally large trade surpluses in some future periods. This would mean that a country can remain technically solvent so long as it makes the necessary policy adjustments needed in future to bring the requisite surpluses that enable the debts to be repaid. This is a weak approach which can be blamed for imposing too few restrictions on the current account based on solvency alone. The intertemporal sustainability approach adds over and above solvency the requirement that policies remain constant in the indefinite future. This would therefore mean that under the assumption that policies do not change, the country does not violate its intertemporal budget constraint.

According to Osakwe and Verick (2007), there is by no means any simple definition of an unsustainable deficit. Unsustainable current accounts can be found out by analyzing the current account deficit together with other structural indicators of sustainability as discussed in the literature especially Milesi-Ferreti and Razin (1996a) which can be summarized as follows;

Table 1: Structural indicators of current account sustainability

	Indicator	Criteria
1	Current account balance (trade deficit/GDP)	Current account deficits resulting from the trade component often indicate structural competitiveness problems and hence an indicator of sustainability.
2	Savings to GDP ratio	Low domestic savings to GDP ratios imply that the deficit is not financing future economic growth.
3	(FDI) (% of GDP)	FDI is a more sustainable way of financing CADs than other forms of capital flows such as portfolio investment so that low foreign direct investment denotes unsustainable repayments.
4	Economic growth rates	Low economic growth rates imply that future prospects for paying off debt are not strong.
5	Debt service to GDP, debt service to exports, and total debt to GDP ratios	If debt levels are high and unsustainable, it is difficult for an economy to continue to maintain a current account deficit.
6	Poor governance	Poor governance leads countries to implement poor macroeconomic policies, which are needed to correct imbalances.

While conceding to the use of these structural indicators to serve in identifying some of the weaknesses of a country's current account, Sasin (2001) stated that long-run sustainability ratios could be misleading and it is in fact hard to conclude whether in the short-run the current account deficit is truly excessive. Therefore, he cautioned against the use of these ratios exclusively to determine the sustainability of current accounts. Furthermore, according to Camarero, et al (2009) the policy formulations at the Central Banks, government

organizations, International Monetary Fund and the World Bank require an empirically tractable and econometrically estimable model to verify the theoretical propositions.

3.2 Empirical Studies

In this section, we have reviewed fourteen empirical studies that assessed the current account sustainability in different countries. Apart from Osakwe and Verick (2007) who combined structural indicators and the Probit model and Ramona, and Razvan (2009) who used the autoregressive moving average (ARIMA) approach, twelve studies used a variant of the intertemporal approach. This indicates that that the intertemporal approach is the most predominant. This could be attributed to the merits of this approach that were discussed in section 3.1. This lends credence to the assertion by Baharumshah *et al* (2004) that "The claims that the current account is sustainable if exports and imports are cointegrated with the cointegrating vector being (1, -1), is, by now, a widely accepted theory'. On this basis, and in keeping with most studies done in the recent past on this subject, the intertemporal approach is adopted by our study to assess the sustainability of the current account in Kenya.

The variants of the intemporal approach include the bounds test approach (Heidari et al (2012), markov switching model (Bildirici and Kaycki, 2012) and dynamic OLS (Baharumshah et al, 2004). These variants are derived from the different empirical techniques that the authors employ, although the underlying theory is the intertemporal approach.

Current account deficits were sustainable in the following countries: Czech Republic and Slovenia (Konya, 2008), New Zealand (Kunhong et al, 2001), 15 countries in the Euro zone (Holmes et al, 2007), Seychelles, Mali, Zambia, Mozambique, Lesotho and Gambia (Osakwe and Verick, 2007), Barbados (Greenidge et al, 2011), Iran (Heidari et al, 2012). The results for India were mixed (Tiwari, 2012). The current account deficits were sustainable only when non-oil exports and imports were regressed. However, there was no evidence of sustainability of the current account deficit when oil exports and imports were regressed. This implies that the sustainability of the current account deficits in India was sensitive to the type of variables considered by the researchers.

Studies that established unsustainable currents account deficits include Husted (1992) for United States of America, Konya (2008) for Hungary, Wu et al (2001) for the G7 (France, Italy, Canada, Germany, UK, US and Japan), Dülger and Ozdemir (2005) for major economies in the world (Germany, UK, US and Japan), Osakwe and Verick (2007) for Burundi, Burkina Faso, Rwanda and Togo, Perera and Varma(2008) for Sri Lanka. Therefore, it is clear that current account problems affect both developed countries and poor countries alike.

Most of the studies that we have reviewed in this section were done for countries that are located in America, Europe, Asia, Australia and India. Only one study by Osakwe and Verick (2007) was conducted for a cross-country panel of African countries. Kenya was one of the countries that were included in the panel. Empirical literature on current account sustainability for Kenya is scarce save for its inclusion in panel regressions. This study therefore seeks to evaluate Kenya's case individually.

4. METHODOLOGY

4.1 Analytical Framework

As discussed is sections 3.1 and 3.2, this paper is based on the intertemporal optimization approach as applied by Konya (2008), and Trehan and Walsh (1991). The proposition of this approach is that if real exports and imports are integrated of order one then cointegration between them is a necessary and sufficient condition for the economy to satisfy the intertemporal budget constraint. It seeks to establish whether a long-run relationship exists between Kenya's exports and imports, or rather, to establish that the two series wouldn't drift too far apart.

The theory begins by considering a hypothetical household living in a small open economy that produces and exports a single composite good and has no government. The household is able to borrow and lend in the international markets using one-period financial instruments, faces a given world rate of interest, and is assumed to maximize lifetime utility subject to budget constraints. The household's resources are composed of endowments of output and redistributed profits from firms. These resources are used for consumption and savings. The current period budget constraint of this household is given by;

$$C_t = Y_t + B_t - I_t - (1 + r_t)B_{t-1} \qquad (4.1)$$

Where C_t denotes current consumption; Y_t is output; I_t is investment; r_t is the interest rate per period; B_t is net borrowing (borrowing minus lending), which could be positive or negative, and $(1+r_t)B_{t-1}$ is the initial debt of the representative household, corresponding to the country's external debt.
Since equation (4.1) must hold every time period, the period-by-period budget constraints can be solved forwards to form the economy's intertemporal budget constraint expressed as:

$$B_t = \sum_{i=1}^{\infty} \mu_i (X_{t+i} - M_{t+i}) + \lim_{n\to\infty} \mu_n \beta_{t+n} \qquad (4.2)$$

Where $(X_t - M_t) = Y_t - C_t - I_t$ is the trade balance in period t i.e. exports minus imports also equal income less absorption and $\mu_t = \prod_{j=1}^{i} \frac{1}{1+r_{t+j}}$ (the product of the first i discount factors).

The important aspect of Equation (4.2) is that assuming the last term $\lim_{n\to\infty} \mu_n \beta_{t+n}$ equals zero, the amount that a country borrows or lends in the international markets equals the present value of the future trade surpluses or deficits i.e. the discounted value of the expected future stock of debt converges to zero as the time horizon goes to infinity. If this were not the case and if B_t is positive, then the country is "bubble-financing", that is, borrowing too much to repay its maturing debts using new loans. And if B_t is negative and the limit is non-zero, the country is making pareto-inferior decisions – implying that welfare could be raised by lending less. Therefore, the issue at hand is whether the data are consistent with $\lim_{n\to\infty} \mu_n \beta_{t+n}$ (Husted, 1992).

To arrive at a testable empirical model, and assuming that the world interest rate is stationary with unconditional mean r, then equation (4.1) can be rewritten as follows:

$$X_t - M_t = Y_t - C_t - I_t = -B_t + (1+r_t)B_{t-1}$$
$$M_t + (1+r_t)B_{t-1} + rB_{t-1} - rB_{t-1} = X_t + B_t$$
$$M_t + (r_t - r)B_{t-1} + (1+r_t)B_{t-1} = X_t + B_t$$

Rearranging the equation for B_t and letting $Z_t = M_t + (r_t - r)B_{t-1}$ equation 4.1 can be rewritten as;

$$B_t = Z_t - X_t + (1+r)B_{t-1} \qquad (4.3)$$
$$B_{t+1} = Z_{t+1} - X_{t+1} + (1+r)B_t$$
$$\vdots \qquad \vdots$$
$$\vdots \qquad \vdots$$
$$B_{t+n} = \sum_{j=0}^{n} (1+r)^{n-j}(Z_{t+j} - X_{t+j} + (1+r)^{n+1} B_{t-1}$$

From this expression and letting n approach infinity where $\mu = \frac{1}{1+r}$ then,

$$B_{t-1} = \sum_{j=0}^{\infty} \mu^{j+1}(X_{t+j} - Z_{t+j}) \lim_{n\to\infty} \mu^{n+1} \beta_{t+n} \qquad (4.4)$$

By expanding the above expression and rearranging, we have

$$Z_t + r_t B_{t-1} = X_t + \sum_{j=1}^{\infty} \mu^j (\Delta X_{t+j} - \Delta Z_{t+j}) + r \lim_{t\to\infty} \mu^{n+1} \beta_{t+n} \qquad (4.5)$$

Assuming that X_t and Z_t are random walks with a drift

$$X_t = \alpha_1 + X_{t-1} + \varepsilon_{1t}$$
$$Z_t = \alpha_2 + Z_{t-1} + \varepsilon_{2t} \qquad \varepsilon_{1t}, \varepsilon_{2t} : I(0)$$

So that they are integrated of order one $I(1)$ and noticing that $0<\mu<1$ yields

$$Z_t + r_t B_{t-1} = X_t + \sum_{j=1}^{\infty} \mu^j \{\alpha_1 - \alpha_2 + \varepsilon_{1,t+j} - \varepsilon_{2,t+j}) + r \lim_{t\to\infty} \mu^{n+1} \beta_{t+n}$$

$$= X_t + \frac{\alpha_1 - \alpha_2}{r} + \sum_{j=1}^{\infty} \mu^j \{\varepsilon_{1,t+j} - \varepsilon_{2,t+j}) + r \lim_{t\to\infty} \mu^{n+1} \beta_{t+n} \quad (4.6)$$

From the definition of Z_t above, the left hand side of equation (4.5) is equal to $M_t + r_t B_{t-1}$. Note that by subtracting X_t on both sides of the equation, then multiplying the whole expression by minus one, the left hand side becomes the current account balance. Thus assuming that the limit term equals zero and letting;

$$\alpha_0 = \frac{\alpha_1 - \alpha_2}{r},\ \alpha_1 MM_t = M_t + r_t B_{t-1},\ \varepsilon_t = \sum_{j=1}^{\infty} \lambda^j (\varepsilon_{1,t+j} - \varepsilon_{2,t+j}).$$

Equation 4.5 yields the following simple linear regression model of exports X_t on the sum of imports and interest rate payments on debts MM_t;

$$X_t = \alpha_0 + \alpha_1 MM_t + \varepsilon_t \quad (4.7)$$

4.2 Empirical Model

Following Hakkio and Rush (1991), the above model can be tested in ratio form as;

$$\left(\frac{X_t}{Y_t}\right) = \alpha_0 + \alpha_1 \left(\frac{MM_t}{Y_t}\right) + \varepsilon_t \quad (4.8)$$

Where X_t is exports of goods and services, MM_t is imports of goods and services minus net factor incomes and net unilateral transfers and $X_t - MM_t = CA$. Given that $\left(\frac{X_t}{Y_t}\right)$ and $\left(\frac{MM_t}{Y_t}\right)$ are non-stationary variables, failure to detect co-integration between them would indicate that the economy fails to satisfy its long-run budget constraint and, therefore, is expected to default on its external debt according to Hakkio and Rush (1991). If, however, exports and imports are co-integrated, that is ε_t is an $I(0)$ process, and moreover (α_0, α_1) is $(0,1)$ then this would mean external debt sustainability, because in this case the current account would be balanced. If exports and imports are co-integrated, but $\alpha_1 < 1$ or $\alpha_0 \neq 0$ and $\alpha_1 = 1$ then the current account is out of balance and the debt is unsustainable and can increase without bound.

4.3 Data Type and Source

In this study, we used Kenya's annual data from 1975 to 2010 that was obtained from the World Bank's online data base. We captured data on xports as a fraction of GDP and imports as a fraction of GDP.

4.4 Diagnostic tests

Before the analysis of the data was done various diagnostic tests were done to ensure that the time series properties of the data were not violated in the estimation. Unit root tests were conducted through the Augmented Dickey Fuller test (ADF), and the Phillip Perron (PP) test. The test for cointegration employed the Jacobsen-Juselius test.

5.0 EMPIRICAL RESULTS AND DISCUSSION

5.1 Unit Root Tests

Unit root tests showed that the two variables were nonstationary at levels as shown in the table 2. This called for a need to establish the order of integration of the variables in readiness for cointegration tests since using them in their current state would give spurious results. Therefore, the tests were repeated after transforming the variables through differencing.

Table 2: Unit root tests at levels

VARIABLE	ADF test statistic	ADF critical values	Phillip Peron statistic	PP critical values	Conclusion
EXPORTS/GDP	-2.893	-3.633 -2.948 -2.613	-2.856	-3.633 -2.948 -2.613	Nonstationary
IMPORTS/GDP	-2.692	-3.633 -2.948 -2.613	-2.697	-3.633 -2.948 -2.613	Nonstationary

All the variables were stationary at first difference as shown in the table 3. This meant that the variables are integrated of order one I(1). Given this outcome, we proceeded to perform cointegration analysis.

Table 3: Unit Root Tests at First Difference

VARIABLE	ADF test statistic	ADF critical values	Phillip Peron statistic	PP critical values	Conclusion
EXPORTS/GDP	-5.654	-3.639 -2.951 -2.614	-9.305	-3.639 -2.951 -2.614	Stationary
IMPORTS/GDP	-8.066	-3.639 -2.951 -2.614	11.194	-3.639 -2.951 -2.614	Stationary

5.2 Cointegration Test

Having found the presence of a unit root and the two variables were integrated of the same order, a cointegration test for the variables was done. The result for exports/GDP and imports/GDP at first difference is shown in table 4.

Table 4: Unrestricted Cointegration Rank Test (Trace)

Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None	0.263	13.317	15.495	0.104
At most 1	0.083	2.9508	3.8415	0.086

Trace test indicates no cointegration at the 0.05 level

The results provide evidence on the absence of a cointegrating relationship between Kenya's imports and exports. We therefore conclude that the intertemporal condition is violated and the continuation of current policy stance would be unable to turn the large deficits evidenced in the period into surpluses enough to cover the deficits. There are several implications of this result. First, there is no long-run relationship between exports and imports. Second, the lack of this relationship implies that Kenya's current account is unlikely to achieve a steady state in the near future, and that exports would not eventually finance the imports nor pay the international debts owed. Therefore, large and persistent current account deficits are likely to precipitate crisis.

6.0 CONCLUSION AND POLICY IMPLICATIONS

6.1 Conclusion

This study assessed the sustainability of Kenya's current account deficits using the intertemporal optimal approach which ensures that if the proportions of real exports and real imports to GDP are integrated of order one, then cointegration is a necessary and sufficient condition for the economy to satisfy its intertemporal budget constraint.

The analysis consisted of two stages where the unit root tests for the time series was conducted using the Phillip Perron and Dickey Fuller methodology then the cointegration test followed using the Johanssen procedure. The unit root tests confirm that the time series data were integrated of the same order for the two tests applied but the results of the cointegration procedure suggest that Kenya's current account deficits are unsustainable in the long-run. Based on these findings, we conclude that Kenya's current account is in violation of its intertemporal budget constraint and therefore its trade balance is unsustainable.

6.2 Policy Implications

Several policy implications and issues of policy concern can be deduced from these study findings. The findings suggest a paradigm shift from what has traditionally been the policy approach in terms of the CAB with a view to improving its sustainability. The country needs to sell more abroad than it has done so far by among other things, improving the competitiveness of her exports in order to widen her share in the world market. Policy should prioritize value addition activities in Kenya's export sector so that the share of high value exports in total exports can improve.

There is need to evaluate whether the tax relief measures for capital are really working according to the intended purpose. This is because while the country looses a lot of revenue by granting tax incentives, there seems not to be a corresponding increase in the volume of exports. To this end, tax relief could be offered at the point of exportation rather than at the point of importation.

Another area that needs policy action is training to improve skills in the workforce to ensure continued production of competitive goods. This training should not only focus on producers targeting exports, but also mainstreaming the training in the education system. There is need to increase investments in research and development which will enhance the quality of exported products. Technical training to improve methods of production should be upheld even in middle level colleges.

There is need to increase private savings to meet the demand for local investment and reduce foreign debt. This can be done through better development of financial markets and development of more attractive financial instruments to attract savings. Key towards this is a reduction on dependants by increasing the scope of population control initiatives, which will help to lower dependency ratios in the country, induce private saving and reduce government expenditure per child.

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