

A Pooled Mean Group Analysis on the Determinants of Current Account Balance in the East Africa Community

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Abstract: Since 2010 the current account balance of the East Africa Community Countries has been deteriorating. The countries namely, Kenya, Uganda, Tanzania, Burundi, and Rwanda have maintained current account deficits that are above five percent of their GDP. This pattern raises doubts about the sustainability of these deficiencies and the resulting debts amassed to fund them. If not addressed the deficits may erode the bloc's competitiveness in addition to hampering the fiscal development of the member nations. It is against this backdrop therefore that this study sought to examine the determinants of Current Account Balance for the 5 East Africa Community countries. It sought to analyze the long-term and short-term impacts of the select macroeconomic variables in regards to the current account balance by utilizing the Panel ARDL approach. The study period spanned from 1970-2017 based on data availability and the period being ample to measure both the long- and short-run results. I'm, Pesaran and Shin (IPS) test for Stationarity and Pedroni test for Cointegration were applied to the data, after which dynamic panel data regression techniques i.e. the Pooled Mean Group was applied as suggested by the Hausman specification test. The study established that external debt positively affects the current account balance in the EAC, credit to the private sector which was used as a proxy to financial liberalization negatively affects the current account balance both in the short-run and the long-run. The fiscal balance was established to give a positive effect on the current account balance both in the short- and long-run. The actual effective exchange rate negatively affects the current account balance both in the short- and in the long-run. Finally, Terms of Trade negatively impacts on the current account balance in the long run.

Keywords: Current Account Balance, ARDL, Pooled Mean Group, East African Community

1. Introduction

Regardless of the comparatively extensive hypothetical and experiential literature, there exists no consent on the determinants of current account balance particularly among the nations that have come together to form regional integration such as the EAC community. Therefore, the performance, character, and determinants of the current account balance is still an experimental issue in various regions. To evaluate the determinants of the current account balance for the region, it's imperative, therefore, to make use of some models of current account balance determination.

Traditionally, economists have relied on elasticity, monetary and absorption methodologies as they try to establish evidence for the determinants of the current account balance. These approaches have been widely used with the notion that the chief component of the current account balance is trade balance, namely, the value of imports and exports of commodities and services. Consequently, much emphasis has been placed regarding the movement of real exchange rate and Gross Domestic product by relating them with the substitution and income effects in consumer demand theory. From a theoretical standpoint however, the shortcoming of this approach is that it is based on the assumption that the changes in exchange rate is not a critical factor in trade balance, and that the effect in the growth of income as a result of exogenous increase in demand is the same as that caused by the expansion of supply. This assumption poses an empirical challenge as it may become harder isolating stable association among current account balance, exchange rate, and changes when it comes to income.

Faced with problems that emanate from the weaknesses of elasticity and monetary approaches, economists led by Sachs (1981), Buitert (1981) and Obstfeld and Rogoff (1995) developed an alternative approach that concentrates on an economy's saving-investment nexus. The assertion was that the current account balance reflects the aggregate net savings within the financial system. The proponents of this proposition postulated that net savings draw attention to the factors that directly influence it. Specifically, they assert that the real interest rate, as well as the variations in the current and future, are likely to have a significant effect on the saving behavior of households and investment decisions of firms.

Other variables that are likely to have significance as determinants of the current account balance is fiscal policy such as corporate and personal income taxes. The current account balance and the fiscal policy relate vividly using this approach as opposed to the traditional approaches. The justification for this is that the net saving can be loosely interpreted as the fiscal surplus plus the private savings minus private investment.

1.1 Trends for East Africa Community's Current Account Balance

East Africa community countries just like other developing countries are among the countries worst affected by the current account deficit. These countries are characterized by economies formed on the basis of markets, with various infrastructure projects that are owned by the state, laissez-faire kind of external systems of trade and their present accounts have continuously witnessed constant discrepancies. These countries gained independence around the same time

(1960-1964). The first ten years after they gained their independence, their economies developed at very remarkable speeds. The Gross Domestic Product of these countries inflated by more than 6 percent on average during this period. Their current account deficits were low at an average of 2.9. However, this notable growth during the first decade after independence was not long-lasting as a chain of exogenous elements exacerbated by lacking macroeconomic strategy turned around this growth. The current account deficit shot up by 4 percent from 2.9 percent of Gross Domestic Product during the period between 1964 and 1973 to 6.9 percent between 1974 to 1979 as a result of a couple of oil shocks. It broadened the balance of trade and exerted too much pressure on the countries household currencies. Long-term flows took a turn to a -6 percent of Gross Domestic Product over the period between 1996 and 2000 from 5 percent of Gross Domestic Product from 1964 to 1973. The nations have therefore been prompted into relying more

progressively on short-term flows that are quite perilous as a way of balancing their accounts. Money related developments have been negative which is a demonstration of feeble remote trade stores positions.

Aggravated with the 2007-2008 world fiscal crisis, the centrality of such incessant current account deficiencies represents a danger to the long haul financial growth of the East African Community nations. The current account scarcities persistence have the illusion that there is a surplus in relation to the demand to invest as compared to that of saving. This poses a risk to the balance of payment, accrual of debts, and the decrease of international reserves levels. The trend of present account deficits as a percentage of the Gross Domestic Product is as shown in Figure 1 below.

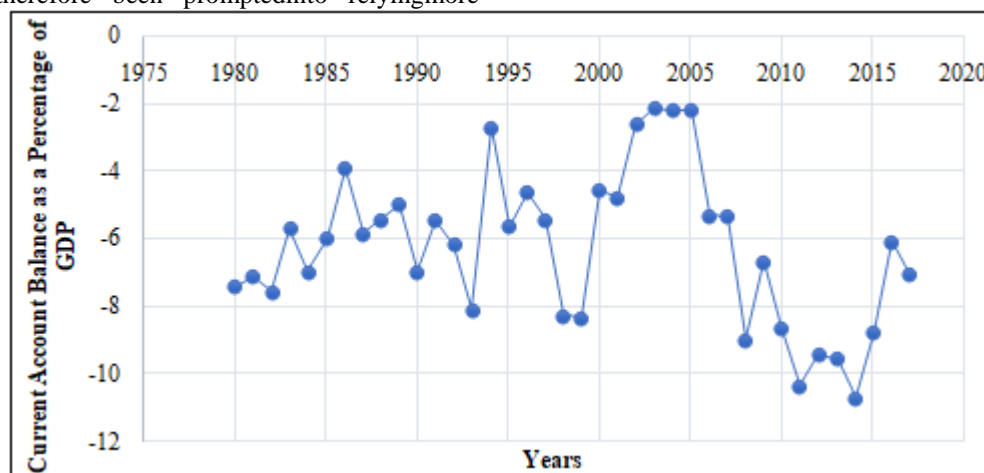


Figure 1: Current Account Balance as a Percentage of GDP Trend for EAC
Source: United Nations Conference on Trade and Development Statistics, 2018

1.2 Research Problem

The present account balance in EAC has been falling apart since 2005 and has been exacerbated by the universal economic and financial crisis of 2008 to 2009. If not addressed, the continued deficit may erode the bloc's competitiveness. Besides, the increased current account deficit hampers the economic growth of the member countries leading to low welfare improvement for the citizens. In the long run, it is most probable that these effects will get felt like most of the measures adopted for the reduction of the current account deficit especially as a repercussion of the financial catastrophe are regarded as cyclic and momentary.

In spite of the moderately broad hypothetical literature that exists in respect to this topic, just a set number of studies exist that observationally look at the effect of macroeconomic factors on the present account balance. Additionally, there is no agreement that exists in line with the determinants of the current account balance particularly on nations that have come together to form a regional economic bloc such as the EAC. The absence of exact attestation causes apprehension given that the present account balance is a key marker of future monetary implementation. Therefore, there is a need to understand the selected macroeconomic aspects which manipulate the current account

balance within the EAC in pursuit of identification of various features that contribute to high current account deficit. This information may help the respective members of EAC to consider policies that would improve current account balance and hence improve trade competitiveness.

2. Theoretical Framework

This section highlights the theoretical foundation of this study.

2.1 Intertemporal Approach to Current Account Balance

This study is guided by the intertemporal approach to the current account balance theory. The earlier proponent of this theory was Sachs in (1981) and Butler (1881). Their works were subsequently advanced by Obstfeld and Rogoff (1995) and Gandolfo (2002). The current account balance is viewed as an aggregate combination of the behavior of the savings of households as well as firms' investments that are taken into account the future expectations of the economy's trajectory. The theory therefore assumes that the current account balance has its basis on the intertemporal decisions of both households and firms. The theory moved to a more savings-investment definition from the trade view of the current account.

The theory defines current account balance as net savings. It asserts that current account balance is given by the addition of fiscal surplus and aggregate private savings less private investment. The theory has drawn much of its assertion from the rational expectation hypothesis as well as firms make their decisions by analysing and speculating the future macroeconomic climate. The intertemporal approach, therefore, tries to establish an analysis of the pattern of current prices and macroeconomic factors and use that information to forecast the impact they are likely to have on future prices of investments and savings and consequently the current account balance (Edwards, 2001).

2.2 The Augmented Intertemporal Approach to Current Account Balance Model

The intertemporal approach to current account balance has been adjusted severally over the years. Among the new proponents of the approach are DeBelle and Faruqee, 1996; Blanchard and Giavazzi, 2002; Chinn and Prasad, 2003; Bussière et al., 2005). These scholars attempted to empirically investigate the applicability of the model by using modern econometric techniques and augmented the model to include other macroeconomic factors deemed important in the determination of the current account balance.

These scholars, in their application, started by stating the accounting identity of the current account balance as the discrepancy between domestic savings and investment. They further decomposed net savings into net private saving, given by the variation between private saving and private investment, and the net government saving which is given by fiscal surplus. The model illustration of this is shown in equation 1.

$$S - I = (S_p - I_p) + (S_g - I_g) \quad (1)$$

The model is normalized by expressing all the variables as ratios of the GDP. From this analysis, the current account balance can be said to be made up of private savings to Gross Domestic Product ratio, less private investment to Gross Domestic Product ratio plus fiscal budget as a percentage of Gross Domestic Product. The model illustration is shown in equation 2.

$$\frac{CA}{Y} = \frac{S_p}{Y} - \frac{I_p}{Y} + \frac{S_g - I_g}{Y} \quad (2)$$

Gandolfo (2002) postulated that the current account balance main determinant is the private savings, this is particularly the case in developing economies. Going by this assertion, there is a need to investigate the determinants of private savings and link them to the current account balance. In this regard, a new equation is developed which specifies private saving to GDP ratio as a function of a number of macroeconomic variables which include, real Gross Domestic Product per capita, real effective exchange rate, the ratio of fiscal balance to GDP, and the ratio of private investment to GDP. The private saving equation is therefore specified of the form:

$$\frac{S_p}{Y} = f\left\{\frac{Y^*}{N^*}, REER, \frac{S_g - I_g}{Y}, \frac{I_p}{Y}\right\} \quad (3)$$

In addition to the basic specification above, Net domestic credit and External debt (both as percentages of GDP) are incorporated into the model as they are important financial

factors in explaining the private saving rate. Therefore, the extended private saving specification will read as:

$$\frac{S_p}{Y} = f\left\{\frac{Y^*}{N^*}, REER, \frac{S_g - I_g}{Y}, \frac{I_p}{Y}, NDC, ED\right\} \quad (4)$$

Substituting equation 4 into 2 yields:

$$\frac{CA}{Y} = f\left\{\frac{Y^*}{N^*}, REER, \frac{S_g - I_g}{Y}, \frac{I_p}{Y}, NDC, ED\right\} + \frac{S_g - I_g}{Y} - \frac{I_p}{Y} \quad (5)$$

From the above models, the possible determinants of the current account balance can get summarised as per capita GDP, real effective exchange rate, fiscal balance, external debt, private investment, and net domestic credit.

3. Methodology

This study used panel data regression analysis; a basic regression equation was used to specify the selected macroeconomic factors identified from the literature review that has an effect on the current account balance of East Africa community nations. The current account balance gets described as a function of credit to the private sector, real effective exchange rate, fiscal balance, terms of trade, and external debt. Accordingly, this empirical model is specified as follows:

$$CAB_{it} = \alpha_{0i} + \alpha_{1i}CPS_{it} + \alpha_{2i}REER_{it} + \alpha_{3i}ED_{it} + \alpha_{4i}TOT_{it} + \alpha_{5i}FB_{it} + u_{it} \quad (6)$$

$i=1... N; t=1, ...T$

Where:

- CAB_{it} is the current account balance as % of GDP,
- CPS_{it} is Credit to the private sector as % of GDP,
- $REER_{it}$ is the Real Effective Exchange Rate as a % of GDP.
- ED_{it} is External Debt as % of GDP,
- FB_{it} is Fiscal Balance as % of GDP,
- TOT_{it} is Term of Trade.
- u_{it} is the error term.

α_0 is the intercept term

And $\alpha_1, \alpha_2, \alpha_3$ and α_4 are slope coefficients

However, this study intended to capture the long-run correlation that exists between the current account balance and various macroeconomic variables. Therefore, the basic regression equation used to estimate the relationships while taking into account individual effects reads as:

$$CAB_{it} = \sum_{j=1}^p \lambda_{ij}CAB_{i,t-j} + \sum_{j=0}^q \delta_{ij}X_{i,t-j} + \mu_i + \epsilon_{it} \quad (7)$$

Where:

- CAB_{it} - is the dependent variable (Current Account Balance).
- X_{it} - set of explanatory variables which include, real effective exchange rate, credit to the private sector, external debt, fiscal balance and terms of trade.
- μ_i - country-specific effects.
- δ_{it} - $k \times l$ coefficient vector,
- ϵ_{it} - is the error term.
- i - the number of countries, $i=1,2,...,N$
- t - the time period of study, $t=1,2,...,T$
- T needs to be large enough to accommodate the fitting of each of the groups into the model independently.

For instance, if the variables in equation 7 get incorporated of order one that is, I (1) and cointegrated, then the error term is an I (0) process for all i . A primary element of cointegrated variables is their receptiveness to whichever digression from long-run equilibrium. The attribute implies an error correction model whereby the short-run dynamics of the

variables in the system get influenced by the deviation from equilibrium. It is, therefore, not uncommon to reparameterize equation 7 into the error correction equation.

$$\Delta CAB_{it} = \phi_i (CAB_{i,t-1} - \theta'_i X_{it}) + \sum_{j=1}^{p-1} \lambda_{ij}^* \Delta CAB_{i,t-1} + \sum_{j=0}^{q-1} \delta_{ij}^* \Delta X_{i,t-j} + \mu_i + \epsilon_{it} \quad (8)$$

Where;

$\phi_i = -(1 - \sum_{j=1}^p \lambda_{ij})$, and is the error-correcting speed of adjustment term and in the case that it equals zero, then there would be no substantiation of a long-run relationship.

$$\theta'_i = \sum_{j=0}^q \delta_{ij} / (1 - \sum_k \lambda_{ij}),$$

and represents the long-run coefficients of the model

$$\lambda_{ij}^* = -\sum_{m=j+i}^p \lambda_{im}, j=1,2,\dots,p-1,$$

$$\delta_{ij}^* = -\sum_{m=j+1}^q \delta_{im}, j=1,2,\dots,q-1.$$

Pesaran *et al.*, (2001) suggested the use of Schwarz Bayesian information Criteria in choosing the optimal lag-length because it showed better performance on small samples as compared to other criteria. Further, they recommend a maximum lag-length of 2 in the case of annual data.

4. Results and Analysis

This segment shows the analysis of data and discourse of results acquired.

4.1 Panel Unit root Test

So as to keep away from spurious regression issues, Im, Pesaran, and Shin (2003) procedure were used for panel unit root testing. The IPS assessments have their basis on the heterogeneity of autoregressive parameters and it is the average of individual Augmented Dickey fuller test without trend and it takes on a normal distribution. Unlike other panel unit root testing approaches for instance, the Levin-Lin-Chu's (2002), Harris-Tzavalis (1999), Breitung and Das (2005) and Hadri (2000), this method was more appropriate for the study because primarily, this assessment can get used in relationship to whichever parametric unit root test, provided the panel data in question has a strong balance and all the t-statistics for the unit-root in every cross-section are independently and identically distributed (iid). The implication of this is that the mean and the variance will be constant. The panel data, in this case, have met the above-mentioned criteria and therefore, unit root test using Im, Pesaran, and Shin (2003) method was carried out. The Null Hypothesis in the IPS unit root test asseverates that all series included in the panel contain unit root (they are non-stationary) while the alternative hypothesis states that some series included in the panel are stationary. Rejection of the null therefore implies that there are some series that are stationary or simply put, they converge to their mean over time. The results are shown in Table 1.

Table1: Panel Unit Root Test

Variable	Statistic	IPS Levels	P-Value	IPS First Difference	P-Value	Order of Integration
LnCAB	t-bar	-4.4919	0.0000	-	-	I (0)
	t-tilde-bar	-3.6933		-		
	Z-t-tilde-bar	-6.1424		-		
LnFB	t-bar	-4.8918	0.0000	-	-	I (0)
	t-tilde-bar	-3.8629		-		
	Z-t-tilde-bar	-6.6142		-		
LnCPS	t-bar	-2.4615	0.0117	-	-	I (0)
	t-tilde-bar	-2.2932		-		
	Z-t-tilde-bar	-2.2669		-		
LnED	t-bar	-1.9666	0.1377	-7.3815	0.0000	I (1)
	t-tilde-bar	-1.8683		-4.7703		
	Z-t-tilde-bar	-1.0908		-9.1266		
LnREER	t-bar	-2.1019	0.0843	-6.7789	0.0000	I (1)
	t-tilde-bar	-1.9715		-4.7782		
	Z-t-tilde-bar	-1.3765		-9.1485		
LnTOT	t-bar	-1.6162	0.3681	-6.4537	0.0000	I (1)
	t-tilde-bar	-1.5738		-4.2649		
	Z-t-tilde-bar	-0.3370		-7.9249		

Source: Authors Construct

Table1 shows panel unit root test results. The p-value for log of current account balance, fiscal balance, as well as credit to the private sector is zero at levels, this is lower than the conventional vital value of 0.05, we, therefore, reject the null hypothesis and conclude that the variables do not contain unit root and are thus stationary. The results also denote that current account balance, fiscal balance, and credit to the private sector are integrated of order zero I (0).

Conversely, the log of external debt, real effective exchange rate, and terms of trade were established to be non-stationary in levels as shown by the p-values which were quite high in comparison to the conventional critical value of 0.05. Hence, the null hypothesis was therefore accepted concluding that

they contained a unit root. The variables were then differenced and tested for panel unit root using the IPS method, it was established that they were stationary after the first difference as shown by the p-values that were below 0.05. All of the model's variables are either integrated of order zero or order one, this is the ideal condition for the Panel Autoregressive distributed lag (ARDL).

4.2 Panel Cointegration Test

This study used the panel cointegration assessment proposed by Pedroni (2004). Unlike other panel cointegration tests such as Kao (1999), Maddala and Wu (1999), and Westerlund (2007), a peculiar aspect of the Pedroni (2004)

test is that the test is comprehensive and gives room for heterogeneity in the intercepts and slope coefficients of the cointegrating equations and thus it is a superior technique. Additionally, the strength of the test lies in its ability to overcome the bias associated with the small sample size as well as the problems of more than one cointegrating relationship. Pedroni cointegration measures seven statistics and all are normally distributed with a mean of zero and a variance of one that is, $N(0, 1)$, under a null of no cointegration and diverges to a negative infinity apart from panel v (variance ratio statistic). The results are shown in Table 2.

Table 2: Pedroni Cointegration Tests

Test statistic	Panel	Group
V	.7353	-
Rho	-3.641	-2.991
T	-5.514	-5.658
Adf	-2.41	-2.752

Source: Authors' Construct

From the cointegration result in Table 2, six out of seven statistics have values which are larger than 2 in absolute terms, this is an indication that the tests are significant at 5 percent level and therefore, the null hypothesis of no cointegration is rejected. In a nutshell, therefore, the variables in the model move together in the long-run. Allowing for country-specific effect there exists a long term correlation between current account balance and the independent variables namely, credit to the private sector, external debts, fiscal balance, real effective exchange rate and terms of trade in the EAC.

4.3 Hausman Specification Test

Pesaran, Shin, and Smith (1999) provide a couple of significant techniques for estimating non-stationary dynamic panels whereby parameters remain heterogeneous in all the groups: The Pooled Mean Group (PMG) and the Mean Group (MG). The Mean group estimator depends on estimating N time series regression as well as averaging the coefficients, while the Pooled Mean Group estimator is dependent on a permutation of pooling and averaging the coefficients. So as to establish which of the two methods is most appropriate, Pesaran, Shin and Smith (1999) recommended the Hausman (1978) specification test. The Hausman procedure tests the null hypothesis of homogeneity through a Hausman-type test, based on the comparison between MG and PMG.

Table 3: Hausman Test

Variables	(b) Mean Group	(B) Pooled Mean Group	(b-B) Difference	sqrt(diag(V _b -V _B)) Standard Error
LnFB	1.3460	0.2050	1.141	1.0324
LnCPS	-2.8336	-0.8288	-2.0048	1.8423
LnED	-1.2987	0.2000	-1.4987	1.2342
LnREER	0.9333	-0.6966	1.6299	1.4271
LnTOT	2.0505	-0.4376	2.4881	2.2461
$\chi^2(5) = (b-B)'[(V_b - V_B)^{-1}](b-B) = 0.02$ Prob > $\chi^2 = 0.9999$ (V _b -V _B is not positive definite)				

Source: Authors' Construct

The Hausman test results in Table 3 shows that the P-value is 0.9999 and is distributed Chi-square (5) the null hypothesis of homogeneity cannot be rejected. Hence the model supports the Pooled Mean Group as the efficient estimator under the null hypothesis. The PMG estimator constrains the long-run coefficients to be equal across all the panels. Hereby, the pooling of all the five East African Community countries will yield efficient and consistent estimators as constraints are true as indicated by the Hausman test (Pesaran, Shin & Smith, 1999).

4.4 Pooled Mean Group Model Estimation

The model estimated a Panel ARDL (1, 0, 0, 0, 0) model which was selected using the Schwarz-Bayesian Information Criteria (SBIC) for lag selection. The pooled mean group estimator was selected as the preferred estimator under the null hypothesis of the Hausman test. Since the study established the existence of a long term association involving the current account balance in addition to all the variables, the PMG will be useful in estimating the magnitude of the relationship. The default outcomes for the PMG include the long term factor approximations as well as the short-run factor approximations. Long-run results are presented in Table 4 and short-run results in Table 5.

Table 4: Long-run Regression Result

ΔCAB	Coefficient	Standard Error	Z	P-value
LnFB	0.2050	0.0916	2.24	0.025
LnCPS	-0.8288	0.1917	-4.32	0.000
LnED	0.2000	0.0556	3.60	0.000
LnREER	-0.6967	0.2926	-2.38	0.017
LnTOT	-0.4376	0.1520	-2.88	0.004

Source: Authors' Construct

Results in Table 4 show that fiscal balance has a positive effect on the current account balance in the long run as expected. This is shown by the coefficient of 0.2050, this implies that in the long-run, a 10 percent rise in fiscal balance leads to a 2.05 percent in the current account balance and vice versa. These results are in line with the twin deficit hypothesis and the Keynesian proposition that the fiscal deficit and current account deficit are related. These results also agree with the study by Ratha (2010) who established a positive relationship between fiscal balance and current account balance in India. They are also similar to Hakvo (2009) who found out that in Pakistan fiscal surplus contributed positively to current account surplus through a channel that begins with the prices of the commodity which affects the interest rate which in turn, affects the capital flow and finally current account balance. Finally, the consistency of the results with the works of Vyshnyak (2000) who found a cointegration between budget deficit and current account deficit in Ukraine are notable.

As expected, the long-run estimate of credit to private sectors (a proxy to financial liberalization) is negative and statistically significant at 1 percent. The long-run coefficient is -0.8288 which is interpreted as a 10 percent increase in credit to private sector would result in an 8.28 percent decrease in the current account balance. Justification for this is that financial liberalization allows banks to lend more freely and at a lower cost to individuals, mainly for

consumption and investment purposes this, in turn, contributes to a rise in domestic credit along with a momentous decline in saving hence current account balance Kumbofet *al.*, (2012). These results also align with the works of Kumbofet *al.*, (2012) who by use of GMM established that the credit to the private sector (used as a proxy to fiscal liberalization) is negatively associated with the current account balance. It also agrees with the study done by Kraff and Jarkov (2005) which found that the two variables have a negative relationship, the study concluded that the rapid credit growth increased the probability of credit quality corrosion and as a result current account balance. Finally, these outcomes are the same as those of Mendoza and Terrones (2008) who observed that there was a deterioration of the current account balance in 21 industrialized nations that had experienced a credit boom.

The external debt had a coefficient of 0.200 which was statistically significant at 1 percent. These results indicate that a 10 percent rise in external debt stock causes a 2 percent increase in the current account balance. The sign, did not, however, come out as expected. The findings are in line with the works of Alam (2013) who established a considerably positive effect of external debt on 14 Asian pacific countries. The findings also agreed with the works of Balanchard and Giavazzi (2002) who asserted that external debt would most plausibly result in a current account balance surplus in developing economies that have a higher financial integration such as EAC bloc.

The long-run estimate of the real effective exchange rate was negative as the study had anticipated. These results are shown by the coefficient of -0.6967 , implying that a 10 percent increase in real effective exchange would bring about a decline in the current account balance by 6.48 percent, and vice-versa. An appreciation in the real effective exchange rate would cause an increase in domestic purchasing power which resulted from the increase in imports as their prices become cheaper. This effect will raise the level of consumption in an economy by leading to an increase in the marginal propensity to consume and lowering the marginal propensity to save. Therefore the level of domestic savings declines with the current account balance (Senadheera, 2015). Finally, the coefficient for the log of terms of trade is negative (-0.4376) and statistically significant at 1 percent. This means that a 10 percent rise in terms of trade would lead to a 4.38 percent decrease in the current account balance. The results are in line with the works of Chin and Prasad (2003) who established a negative correlation between current account balance and terms of trade. These results further confirm that there is no HLM effect of terms of trade on the current account balance in EAC.

Table 5: Short-run Regression Results

	Coefficient	Standard Error	Z	P-value
Constant	9.5935	2.6391	3.64	0.000
ECT	-0.5613	0.1589	-3.53	0.000
$\Delta \ln \text{FB}$	0.0925	0.0313	2.95	0.003
$\Delta \ln \text{CPS}$	-0.4513	0.3290	-1.37	0.170
$\Delta \ln \text{ED}$	-0.6199	0.3778	-1.64	0.101
$\Delta \ln \text{REER}$	-0.3885	0.2249	-1.73	0.084
$\Delta \ln \text{TOT}$	0.1574	0.3423	0.46	0.646

Source: Authors' Construct

Table 5 shows the short-run coefficient results of the pooled mean group estimator. The error correction term (ECT) is -0.5613 and statistically significant at 1 percent. It substantiates that there exists a long term relationship that had previously been obtained using the Pedroni cointegration test. Particularly, the result shows that variation that subsists from the long-run gets corrected at a 56.1% adjustment rate per annum.

The estimated short-run coefficient for fiscal balance is significantly positive (0.0925), meaning that a 10 percent increase in fiscal balance would bring about a 0.9 percent increase in the current account balance. Although the percentage change is small, it still confirms the existence of the twin deficit hypothesis in the short-run, essentially, an increase in fiscal balance would result in a rise in the current account balance and a decrease in fiscal balance would result in a decline in the current account balance. This result is in line with Ratha (2010) whose study established a positive short-run relationship between current account balance and fiscal balance in India. The explanation is that whenever there is a budget deficit, the deficit flows to prices of commodities, to interest rate to capital flows to exchange rates and finally to current account deficit (Hakro, 2009).

The estimated short-run coefficient for real effective exchange rate is significantly negative at 10 percent (-0.3885), meaning that a 10 percent increase in the real effective exchange rate would result in a 3.885 reduction in the current account balance and vice versa. Depreciation in the real effective exchange rate makes imports relatively cheaper and therefore the trade balance rises and thus current account balance. Credit to the private sector had a negative coefficient (-0.4513) but statistically insignificant, implying that trade liberalization does not affect current account balance in the short-run, the reason for this could be that the period is so short to influence consumption patterns especially in foreign products and thus imports remain unaltered.

The coefficient for external debt is also negative and insignificant (-0.6199), implying that external debts do not affect current account balance in the short-run. A possible explanation for this is that an increase in external debt leads to an increase in foreign exchange reserves in the short-run temporarily balancing the exchange rate and therefore no significant change in the trade balance and hence the current account balance. Finally, terms of trade had a positive coefficient (0.1574) but also statistically insignificant. Improvement of terms of trade is unlikely to affect current account balance in the short-run because it would result in an increase in counties' real income but this rise will be lower than the rise in permanent income.

5. Conclusion and Recommendation

5.1 Conclusion

As a wrap-up, therefore, the objective of this research has been met in analyzing the determinants of the current account balance in the East Africa Community. This study's framework had conceptualized that external debt, financial liberalization, fiscal balance, real effective exchange rate,

and terms of trade as major determinants of the current account balance in East Africa Community

According to this study, it has been established that, in the long term, external debt positively impacts on the current account balance. East Africa Community has over the years relied on external debts to finance the current account balance deficit and the existing gap between saving and investment. Additionally, East African community countries have been pursuing massive infrastructural development and as a result, they resorted to taking foreign debt to finance the development projects, a huge portion of these debts have been used in sourcing for foreign contracts and importation of capital goods. It is for the aforementioned reasons that the external debt consequence is not felt in the short-run and felt in the long-run.

It can also be concluded that financial liberalization in the East Africa Community has contributed to the deterioration of the current account balance. This is shown by the negative effect of it both in the short-run and the long-run. Financial liberalization in EAC has majorly been characterized by the ease in access to credit by households. In EAC households mostly spend the loans in the purchase of consumer items. As a bloc that relies more on the importation of commodities as opposed to the production of goods, the increase in loans to households means that they spend more on imported goods. This situation has a far-reaching implication on the current account balance both in the short term and in the long term as it directly affects the balance of trade.

The conclusion drawn from the third objective is that fiscal deficits of governments in EAC worsen current account balance in the long-run and therefore confirming the twin-deficit hypothesis in EAC. However, the effect is weaker in the short-run. The study also concludes that the real effective exchange rate has a negative effect on the current account balance. A depreciation in the real effective exchange rate will result in a current account surplus while its appreciation would result in a current account deficit. Appreciation slows down exports and increases imports. Concurrently, government spending (consumption) on imported goods increases, increasing the deficit. If the economy slows down with currency appreciation, government revenues decrease and government spending increases.

Finally, terms of trade have a negative effect on the current account balance, an increase in terms of trade would lead to a reduction in the current account balance. The conclusion that can be drawn from this is that there is no HLM effect of terms of trade in EAC.

5.2 Policy Recommendations

As established by the findings, the weakening of the region's current account balance is due to a contribution by the fiscal deficit. It will, therefore, be of interest for the EAC governments to strive at improving their fiscal balance by minimizing fiscal profligacy through regulating public spending. The study also recommends that EAC governments should pursue policies and programs that support the growth of exports as well as the economies

productive capacities to reduce the current account deficit, one of such measures include devaluation of exchange rate to advance exports demand and diminish that of imports. Finally, the governments should ensure that a better fraction of external debt borrowed is used to finance infrastructure development and investment as opposed to recurrent expenditure. Infrastructure development will create a capacity for a favorable investment environment that will be realized in the long-term and eventually result in increased trade facilitation and consequently current account surplus.

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