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ABSTRACT

Persistent current account imbalances in many least developed and emerging countries have excited considerable interest among researchers and policy makers to have a clear understanding of the dynamics of the current account and its role in macroeconomic outcomes. Based on the saving-investment theory, this paper uses cointegration analysis to identify the long run and short-run determinants of Malawi's current account deficit using annual data from 1980 to 2006. Results suggest that openness, terms of trade, external debt accumulation, and current account liberalization fundamentally determined the current account deficit in Malawi. Furthermore, results reveal that these deficits have been, to a large extent, persistent.

THE DETERMINANTS OF CURRENT ACCOUNT IMBALANCES IN MALAWI

1. INTRODUCTION

The behaviour of the current account balance conveys important information about an economy's macroeconomic performance, and provides useful insights about shifts in the stance of macroeconomic policy and other autonomous shocks. Persistent current account imbalances in many developing countries, excited considerable interest among economists and policymakers to have a clear understanding of the role and importance of current account imbalances in macroeconomic outcomes. Central to the debate have been questions about the determinants of a country's current account imbalances and also whether these imbalances can be considered as structurally normal and sustainable or need fundamental policy shifts to correct them to avoid financial crises.

In the case of Malawi, the need to understand the dynamics and determinants of the current account cannot be overemphasized. The current account balance has been in persistent deficits since the late 1970s, and the deficits have been widening over time-averaging over 10 percent of GDP during the last decade. These perennial external imbalances have been partly offset by external borrowing, leading to very high external debt stock-averaging over 150 percent of GDP just before the debt relief programme in 2006, thus placing Malawi as one of the highly indebted poor countries (HIPCs). This raises the question as to what has determined the current account deficits in Malawi and whether these deficits are consistent with the underlying economic fundamentals. Though not addressed in this paper, the issue of whether these deficits are sustainable is also another topical empirical question.

The objective of this study is therefore to empirically examine the factors that affect the long-run and short-run behaviour of Malawi's current account. Further, considering the interrelations among the variables involved, the paper will analyse the dynamic interactions among these variables.

Despite the manifested importance of understanding a country's current account determinants, empirical work on the subject in Malawi has been quite limited. While a number of studies on this subject have included Malawi (e.g. Khan and Knight, 1983; Debelle and Faruqee, 1996; and Chinn and Prasad, 2003), they have been carried out in a multi-country framework. Therefore, their methodological approaches have largely focused on cross-sectional and panel data analysis and their results have thus usually been in form of generalizations for developing countries, explaining "average" behaviour in these countries. The purpose of this study is therefore to go beyond these generalizations and to empirically examine the factors that specifically influence the behaviour of Malawi's current account deficits and assess their dynamics over time.

A better understanding of the factors underlying short and long-term developments in the current account will assist policymakers in assessing whether policies aimed at attaining domestic economic objectives are compatible with a sustainable external position. Furthermore, being a member to a number of regional groupings that are moving towards monetary integration (e.g. SADC and COMESA), Malawi is expected to achieve certain agreed targets in key macroeconomic indicators to enable a smooth integration process, one of which is achieving low and/or sustainable current account positions. Results from this study will therefore provide critical input into the formulation of a policy framework that would assist in reducing the current account deficits to sustainable levels, and in line with the convergence criteria.

The rest of the paper is organized as follows: In section 2 we review the historical development of Malawi's policies and experience with the current account. Section 3 reviews the theoretical and empirical literature of the current account behaviour to inform our choice of the relevant model for our empirical estimation. Section 4 presents the model specification, methodology, and the data sources we intend to use in obtaining our empirical results. Section 5 outlines empirical results and finally, section 6 presents conclusion and policy recommendations.

2. CURRENT ACCOUNT TRENDS IN MALAWI

Structure of the Current Account Balance

Developments in Malawi's external current account have been influenced to a large extent by effects of exchange rate movements on import demand and the performance of the tobacco sector. In the early 70s when the exchange rate was under a pegged regime, and the economy had favourable terms of trade, the country's external sector was performing extremely well. However, from 1976 the position of Malawi's balance of payments began to weaken and indeed since then the current account, which predominates the behaviour of the balance of payments, has been in persistent deficits. These perennial external imbalances have been a reflection of several factors, both external and domestic. On the international scene, the continuous terms of trade losses, exacerbated by disruptions to the traditional trading routes, oil price shocks, and exchange rate and interest rate changes, contributed to the deterioration of the current account.

Malawi's current account has been fluctuating widely, and has been influenced, to a large extent, by developments in the merchandise trade account, as well as the service account. Being a predominantly agricultural based economy, the country's exports are mainly primary agricultural commodities, with unmanufactured tobacco (accounting for nearly 50 percent of the exports), tea and sugar as the principal exports. As a result of the export processing zones established for textiles under the AGOA initiative, there has been an increase in textile exports in the past few years. Further, under the Malawi Growth and Development Strategy (2006-2011) whose overall economic objective is to turn the economy into a predominantly producing and exporting economy, diversification policies are underway; focusing on economic policies that favour the production of export oriented goods.

On the other hand, Malawi imports most of its manufacturing intermediate products, in addition to fuel products and fertilizer. Given the economy's resource and capacity constraints, most of these essential imports have a low elasticity of substitution. As a result, the huge exchange rate changes experienced since the Kwacha floatation in 1994 have largely contributed to increases in the import bill. Additionally, due to a combination of recurrent droughts and high costs of agricultural inputs witnessed in the recent past, cereals have also constituted a significant proportion of the country's imports. The introduction of the agricultural inputs subsidy programme by government in 2005 is expected to partly reverse this trend.

The services account also constitutes a significant proportion of Malawi's current account. High services costs, particularly transportation costs have inflated the debit side of the services account. Being a land locked country, over 15 percent of the total import bill constitutes freight and insurance costs. This has negatively impacted on the country's current account and has been one of the serious impediments to trade and economic development.

The income account is very insignificant in the Malawi's current account, for two reasons. Firstly, just like in many other African countries, Malawi has not attracted much of the FDI inflows and at the same time the country has not invested much outwardly. Furthermore, considering the country's underdeveloped capital and financial markets, portfolio flows have been also very minimal.

The transfers account, on the other hand, is quite important to the Malawi's current account. Malawi has for quite some time been hugely dependent on transfers, particularly Oversees Development Assistance (ODA), to mitigate some of the current account deficits. Private remittances are also becoming increasingly important, though the recent global financial crisis may dampen this trend.

Current Account Trends in the Post-Liberalization Period

Since the commencement of the liberalization of its components in 1988, Malawi's external current account has not only been in persistent deficits but has also been fluctuating widely. Generally, Malawi's economic reliance on the export of agricultural commodities renders it vulnerable to external shocks. Malawi's terms of trade have deteriorated over the past decade, as the prices of its principal agricultural exports (tobacco, tea and sugar) have not kept pace with steadily rising import costs. This has negatively affected the trade balance and hence current account balance.

During 1988-1993, the current account deficit was on average about 11 percent of GDP. However, following the floating of the Malawi kwacha exchange rate in 1994, and its consequent significant depreciation, the current account deficit widened significantly, for the first time reaching over 20 percent of GDP. Nevertheless, in the following years, the current account started to improve, averaging around 13 percent of GDP between 1995 and 2000, probably reflecting the J-Curve phenomenon. This improvement was reversed from 2001 when the current account deficit started to significantly deteriorate again, reaching over 30 percent in 2005.

This outcome was largely explained by the unprecedented increase in imports during this period against stagnating exports. The rising imports stemmed from numerous factors. During this period the economy was hit by drought, as such the trade balance and hence the current account were not only affected by reduced export proceeds but also a by surge in imports on account of importation of the staple food-maize. In addition, the country had embarked on an input-subsidy program which entailed importation of more than usual quantities of fertilizers. The situation was also exacerbated by the relatively appreciated real exchange rate during this period leading to an influx of non-essential imports (cars and other merchandise) from Dubai and South Africa.

These deficits have consistently created a financing gap in the capital and financial account which has been filled partly by external debt creating flows. Other sources of inflows like FDI have not been that significant. Consequently, external debt stock has been quite high averaging 150 percent just before qualification for Debt relief under the HIPC and MDRI. On reaching the HIPC Completion Point, Malawi's external debt stock and hence debt service significantly declined, reaching K6.0 billion (US$44.1 million). This notwithstanding, Malawi's debt sustainability could be severely affected if the current account deficits are to remain around the same levels or worsen.

3. LITERATURE REVIEW

Models of Current Account Determination

Alternative theoretical models give different predictions about the factors underlying the current account dynamics and about the signs and magnitude of the relationships between current account fluctuations and the identified factors. Two basic frameworks are commonly used to model the behaviour of the current account, these are the elasticities approach and the absorption approach.

The elasticity approach tends to emphasize the role of the exchange rate and trade flows in current account adjustments (see Goldstein and Khan, 1985). Whilst the absorption approach takes cognizance of the fact that the current account position can be viewed as an outcome of economic agents' intertemporal utility maximization, and has thus been blended in modern literature with assumptions of intertemporal optimisation, leading to a blend of current account models known as the Intertemporal Current Account (ICA) approach. The ICA generally considers the current account from the saving-investment perspective and features an infinitely lived representative agent who smoothes consumption over time by lending or borrowing abroad (Bussiere et al, 2004).

Empirical Literature

Despite the importance of the topic for individual country policy formulation, comprehensive empirical studies on the subject are quite limited, especially in the case of developing countries. Further, most of the available empirical literature tends to focus on multi-country analysis. Nonetheless, there are several studies that have examined the determinants of the current account balances in developing countries using different methodologies and giving different findings, and we review some of these studies below.

Khan and Knight (1983) examined the behaviour of the current accounts for 32 non-oil developing countries over the period 1973-1980. Using a pooled time series cross-section data of the countries found that external factors (captured by rising foreign real interest rates, slowdown in the growth rate of industrial countries, and the secular decline in the terms of trade) as well as domestic factors (represented by increasing fiscal deficits and the real exchange rate appreciation) were relevant in explaining the deterioration of the current account of non-oil developing countries.

Debelle and Faruqee (1996) using economic theories of saving and investment as a guide, examined the extent to which a common set of underlying determinants has been relevant historically in explaining current account dynamics across countries and over time. Using a panel of 21 industrial countries over 1971-93 and an expanded cross sectional data set that included 34 industrial and developing countries (including Malawi), found that fiscal surplus, terms of trade and capital controls do not play a

significant role on the long term (cross-sectional) variation of the current account, while relative income, government debt and demographics do. Furthermore, a short-run examination of the determinants using both a partial adjustment model with fixed effects and an error correction model (to account for the possibilities of stationarity or non-stationarity of the ratio of net foreign assets to GDP, respectively) suggested that changes in fiscal policy, movements in terms of trade, the state of business cycle, and the real exchange rate affect the current account balance in the short run.

Calderon, Chong and Loayza (2002) complemented Debelle and Faruqee's work by applying more recent econometric techniques to control for joint endogeneity, distinguishing between within-country and cross-country effects, and by specifically targeting developing countries only. Using a large and consistent macroeconomic data set on current account deficits and other national income variables for 44 developing economies, and also using a reduced form approach instead of holding to a particular structural model, they found that that current account deficits are moderately persistent, a rise in domestic output growth generates larger current account deficits, shocks that increase the terms of trade or appreciate the real exchange rate are linked with higher current account deficits, and that either higher growth rates in industrialized economies or larger international interest rates reduce the current account deficit in developing economies.

Chinn and Prasad (2003), using an approach that highlights macroeconomic determinants of longer-term saving and investment balances, investigated the medium-term determinants of current accounts for a sample of industrial and developing countries (also including Malawi) using cross-section and panel regression techniques. They found that government budget balances and initial stocks of net foreign assets are positively correlated with current account balances. Their findings also indicated that, among developing countries, indicators of financial deepening and terms of trade are positively associated with current account surpluses (or smaller deficits), while measures of openness to international trade are associated with larger current account deficits.

In general, most of the recent empirical studies have tended to use the saving-investment approach in examining the determinants of current account deficits, in line with the ICA theories. From the empirical literature, evidence is still inconclusive as to the specific determinants of the current account balances in developing countries, as can be seen from the conflicting results on the different variables. Though Malawi has been included in a number of panel studies, there is no study that has used the intertemporal approach to specifically examine the determinants of Malawi's current account deficits.

4.0 EMPIRICAL SPECIFICATION AND METHODOLOGY

Modelling Current Account Determinants for Malawi

Our empirical model for estimating the current account determinants in Malawi builds on the work of Debelle and Faruqee (1996), estimating the current account model from the perspective that the current account balance is the difference between national savings and investment. This approach has received wide application in recent empirical literature as it emphasizes the special importance of long-term and short-term macroeconomic factors in determining current account deficits. However, while relying on different theoretical postulations to inform the variable selection for our model and to understand and interpret our results, we do not test the empirical strength of any specific theoretical model. In this respect, our work is also similar to that of Calderon et al (2002) and Chinn and Prasad (2003).

Based on the theoretical and empirical literature discussed above, we identify a number of factors that potentially determine a country's current account position. Following the work of Debelle and Faruqee (1996), Calderon et al (2002) and Chinn and Prasad (2003), we can specify the following general function:

$$CAB=F\,(TOT, REER, FD, DEBT, OPEN) \quad \ldots\ldots (4)$$

Where the dependent variable, CAB, is the Current Account Balance; TOT is the terms of trade; REER is the real effective exchange rate; FD is fiscal deficits; DEBT is the country's external debt stock; and OPEN is the indicator of openness to international trade.

The paper will use cointegration analysis to estimate the long-run and short-run relationships between the current account balance and the variables identified in equation (4). To operationalize equation (4) for empirical analysis, we first specify a linear model of the equation to make it amenable to OLS estimation:

$$CAB_t=\alpha_0+\alpha_i Z_{it}+u_t \quad \ldots\ldots (5)$$

Where Z is the vector of the explanatory variables defined in (4). If cointegrated, the variables in equation (5) would form the basis for estimating a long-run equilibrium relationship to which the country's current account balances and the set of the explanatory variables converge over time.

Variable Definitions, Expected Signs and Data Sources

The dependent variable is the current account deficit, expressed as a ratio to GDP. The relationship between the terms of trade and the current account is theoretically ambiguous. The sign of the relation between these two variables is governed by the elasticity of substitution between foreign and domestic

goods and through the Harberger-Laursen-Metzler Effect (HLME). For example, provided that the Marshall-Lerner condition holds, the terms of trade and the current account are positively related, so that improvements in the terms of trade will bring about improvements in the current account balance. On the other hand, for the HLME, the sign of the effect of a terms-of-trade shock on the current account depends, to a certain extent, on the duration of the shock (transitory or permanent) and agents' expectations about it i.e. if the shock was anticipated or unanticipated by agents. Adverse transitory terms of trade shocks generate a decline in the ratio of permanent to current income and a deterioration of the savings and current account positions. Besides, there are other determinants that affect the sign of the HLME such as the type and significance of the transmission channel.

The link between the Real Effective Exchange Rate (REER) and the current account balance can also only be determined empirically. The Mundell-Flemming model predicts that an appreciation in the REER can adversely affect a country's competitiveness position, leading to a worsening trade balance and, through this, a worsening current account balance. Further, to the extent that a real appreciation reflects productivity gains in manufacturing (the Balassa-Samuelson effect) as well as demand-side influences such as the use of capital inflows and comparatively high government spending to build up infrastructure, it has a negative effect on the propensity to save, and consequently on the current account balance. On the other hand, according to the consumption smoothing hypothesis, a temporary real appreciation should result in an improvement of the current account (Herrmann and Jochem, 2005). According to this perspective, the current account acts as a buffer to smooth consumption in the face of shocks to national cash flow, which is defined as output less investment. For example, in response to a temporary positive terms of trade shock or real effective exchange rate appreciation, an open economy would prefer to run a current account surplus and invest abroad rather than allow consumption to increase.

Several theoretical explanations have been provided on the existence of a positive relationship between government's fiscal deficit and current account deficits both in the short-term and long-term. The life-cycle hypothesis holds that the way public spending is financed directly impacts on the disposable income and thus on the consumption of liquidity constrained (non-Ricardian) agents. A fiscal surplus induces a current account surplus, since it lowers disposable income of non-Ricardian agents and thereby aggregate consumption. Therefore, aggregate savings in the economy increase. Further, overlapping generations models also suggest that fiscal deficits tend to induce current account deficits by redistributing income from future to present generations (Chinn and Prasad, 2003). Milesi-Ferretti and Razin (1996) point out that the strength of this link may depend on the degree of development of the domestic financial systems. Stronger links between the fiscal stance and the current account balance are expected in countries

with underdeveloped or highly regulated financial markets, since liquidity constraints are expected to be more binding in these economies.

Theory holds that increases in the service payments on external debt are financed largely out of export earnings in small highly open developing countries and as such a result may lead to a weakening of the current account positions.

The openness variable measures the degree of Malawi's openness to international trade, and it is measured as the sum of exports and imports to GDP. This variable could be indicative of attributes such as liberalized trade, receptiveness of technology transfers, and ability to service external debt through export earnings. Thus, countries with more exposure to trade tend to be relatively more attractive to foreign capital (Chinn and Prasad, op.cit). We therefore expect a negative relationship between openness and current account deficit.

The sample for our analysis covers the period 1980 to 2007, obtained principally from International Financial Statistics (IFS), various publications from the Reserve Bank of Malawi and the National Statistical Office.

5. EMPIRICAL RESULTS

Time Series Properties of the Variables

To overcome the heteroskedasticity problem that would arise due to use of nominal variables in an equation, we normalized the current account and all nominal variables with nominal GDP. The temporal properties of all variables are investigated using the Dickey and Fuller tests. Results in Table 1 show that the null hypothesis of a unit root cannot be rejected for all variables. However, unit root tests for the variables in first difference indicate that the null hypothesis of a unit root is rejected at all levels for all the variables. This therefore implies that the variables are integrated of order one, I(1).

Table 1: Unit Root Test in levels

Variable	t-statistics	Macknon 1%	Critical 5%	Value 10%	Longest lag	Order of Integration
CAB	0.219	-3.74	-2.99	-2.64	2	1
TOT	-2.826	-3.71	-2.98	-2.63	1	1
REER	-1.022	-3.71	-2.98	-2.63	2	1
FD	-3.68	-3.71	-2.98	-2.63	2	1
DEBT	-3.04	-3.71	-2.98	-2.63	1	1

Theory predicts that the current account should be normally stationary (Bannaga, 2002)[1]. However, the existence of a unit root in the current account time series implies that the deficit has been permanent in nature, and has continued to drift away from its previous level without showing signs of returning back to a constant mean. This therefore implies that policies that have been implemented in the past three decades or so to improve the current account position have not been effective.

The Long-run (Cointegrating) Relationship

The consequence of working with non-stationary time series in the estimation process is that there is danger of obtaining apparently significant regression results from unrelated data i.e. it may yield spurious results. The presence of a cointegrating relationship allows one not only to estimate the long-run relationship but also, through the Error Correction Mechanism (ECM), to further analyze the short-run dynamics and how adjustment to equilibrium is achieved.

We first use the Engel-Granger methodology to carry out cointegration tests. Equation (5) is estimated by OLS on the I(1) variables reported in Tables 1. We add a dummy variable to account for current account liberalization from 1988 onwards. Dropping the fiscal deficit variable, because it turns out

[1] In the Savings-Investment framework, the current account is viewed as the difference between the aggregate supply and Demand: CA = Y-C-I-G; where Y(income) C(consumption), I(Investment) and G(government) are their equilibrium permanent values. Thus, as a residual, the current account should be stationary in this equation for the long run relationship to hold.

to be statistically insignificant, leads to more robust results. The resultant residuals from the static OLS estimation were used to carry out the ADF test. Table 2 reports the OLS (long-run) results while Table 3 reports the results of the ADF tests on the residuals.

Table 2: Long–Run Engle-Granger Equation

Dependent Variable: LOG(CABADJ)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(DEBT)	0.821525	0.135852	6.047222	0.0000
LOG(OPEN)	-1.040151	0.426905	-2.436493	0.0238
LOG(REER)	0.841783	0.400083	2.104024	0.0476
LOG(TOT)	0.533789	0.196851	2.711634	0.0131
LIB	-0.532230	0.179602	-2.963383	0.0074
C	-12.62257	1.832227	-6.889196	0.0000

R-squared	0.858459	Mean dependent var	-1.970489
Adjusted R-squared	0.824758	S.D. dependent var	0.712901
S.E. of regression	0.298434	Akaike info criterion	0.612592
Sum squared resid	1.870316	Schwarz criterion	0.900556
Log likelihood	-2.269995	F-statistic	25.47330
Durbin-Watson stat	2.135960	Prob(F-statistic)	0.000000

Table 3: Unit Root Test For the Residuals

Null Hypothesis: CAB RESIDUALS has a unit root

Exogenous: None

Lag Length: 1 (Automatic based on SIC, MAXLAG=6)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-5.587503	0.0000
Test critical values:	1% level	-2.660720	
(take the critical values from Engle and Granger (1987))	5% level	-1.955020	
	10% level	-1.609070	

*MacKinnon (1996) one-sided p-values.

Comparing the calculated ADF statistic to its critical values from Engle and Granger (1987), we reject the null hypothesis of a unit root in the residuals at 1.0 percent level. This therefore indicates that there is a

long-run relationship between the current account deficit and the explanatory variables. The results of the long-run equation are generally quite robust.

Taking into account the possible joint endogeneity among the variables in the long-run relationship, we also tested for cointegration using the Johansen methodology. Preliminary tests for the VAR order favoured conducting the Johansen test using a first-order VAR with trend. The results (see Appendix 1) show that both the maximal eigenvalue and the trace test statistics indicate one cointegrating vector, further confirming that a long-run relationship exists between the current account balance and the given explanatory variables. Given that there is one cointegrating vector, imposing a normalisation on the current account deficit results in a long-run (cointegrating) equation for the current account balance obtained as:

$$CAB=-17.0+0.76debt-0.47open+1.71reer+0.60tot+0.01trend \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (6)$$

The results are qualitatively similar to those obtained from the first step of the Engle-Granger test, with statistically significant coefficients and similar signs. The results suggest that external factors which include openness, terms of trade, accumulation of external debt and the liberalization of current account variable fundamentally determine the current account behaviour in Malawi.

The long-run relationship between the current account deficit and external debt stock is positive, with a statistically significant coefficient. This implies that the accumulation of debt has led to the worsening of the current account over time. From the Savings-Investment perspective, this suggests that the pace of domestic investment in the country has been higher than the rate of national saving. This result fits well in the Malawian situation, where the levels of national savings are very low (sometimes negative), so that financing for development projects has largely relied on external borrowing.

The long-run equation also shows significant negative relationships between openness and the current account liberalisation dummy variable on one hand and current account deficits. The results are in line with a priori expectations that current account liberalisation policies are expected to reduce the current account deficit.

The coefficient for degree of terms of trade is positive and significant, implying that an improvement in terms of trade does not reduce the deficit as hypothesized by HLME hypothesis. This result may be explained by the fact that, for the HLME to hold, the Marshall-Lerner condition must also hold. On the contrary, Simwaka (2008) finds that the Marshall-Lerner condition does not hold in Malawi. Further, in line with the Mundell-Flemming hypothesis, the positive and significant coefficient on the real exchange rate implies that real exchange rate appreciations have adverse effects on Malawi's current account balances in the long-run.

Dynamic Analysis

Estimating the Error Correction (Short-run) Model

Having established that the variables cointegrate, we proceed to examine the short-run dynamic relationships by the error correction model and generate impulse response functions showing the response of the current account deficit to shocks in the other variables. We use the Hendry-type general-to-specific approach to come up with a parsimonious and statistically meaningful error correction model, the results of which are presented in Table 4 below.

Table 4: An Error Correction Model

Dependent Variable: D(LOG(CAB))				
Included observations: 26 after adjusting endpoints				
Variable	Coefficient	Std. Error	t-statistics	Prob.
D(LOG(DEBT))	0.735131	0.137317	5.353520	0.0000
D(LOG(OPEN))	-1.580182	0.359767	-4.392242	0.0002
D(LOG(TOT))	0.429854	0.186660	2.302873	0.0311
ECT(-1)	-0.959164	0.255308	-3.756893	0.0011
R-squared	0.672188	Mean dependent var		-0.076586
Adjusted R-squared	0.627487	S.D. dependent var		0.534242
S.E. of regression	0.326069	Akaike info criterion		0.737222
Sum squared resid	2.339060	Schwarz criterion		0.930775
Log likelihood	-5.583884	F-statistic		15.03723
Durbin-Watson stat	1.830032	Prob(F-statistic)		0.000015

The error correction term is negative, thus establishing that the system is able to converge to the long-run position each time we have a shock in the external sector. The rate of adjustment to the long-run position is high, as evidenced by the size of the coefficient at 0.95.

As reflected in the results, the major short-run determinants of current account imbalances are external debt stock, openness and the terms of trade shocks, all of which have contemporaneous effects on the current account. Conspicuously missing among these short-run determinants is the real effective exchange rate. Including the real exchange rate variable in the model gives a positive but insignificant coefficient and reduces the fit of the model both in terms of the adjusted R^2 and the information criteria. This therefore implies that, while the real effective exchange rate may be an important policy variable for long-term external balances, real exchange rate policies aimed at improving the country's current account may not have been effective in the short-run.

Impulse Responses Analysis

We carry out further dynamic analysis using impulse response analysis. Based on the Granger causality results in Appendix 2 and economic theory, the following order of variables is assumed: terms of trade (TOT), Real Effective exchange rate (REER), degree of openness (OPEN), debt as a ratio of GDP (DEBT) and current account deficit (CAB). TOT is expected to be relatively exogenous, which theoretically fundamentally determines REER. The current account was found to be granger caused by all variables and hence ordered last. This notwithstanding, alternative orderings might give different results for impulse response analysis and variance decomposition analysis.

Results of the impulse response analysis are presented in Appendix 3, which illustrates the response of current account deficit to one standard deviation innovation in each of the variables. The time paths resulting from the response coefficients do not generally converge to zero except for openness and current account deficit itself. This implies that a positive shock to the current account deficit brings about an immediate significant increase in the current account deficit itself and that the effects on current deficit of a unitary shock in terms of trade, real effective exchange rate and debt do not die off over time. Further, the responses to the innovations are not increasing with time, confirming that the whole system is stable (see also the AR graph in Appendix 4).

An exogenous increase in terms of trade brings about a negative, though marginal, adjustment (decreases) in current account deficit during the first two years, thus as terms of trade improves, the purchasing power of a county's exports increases and consumption smoothing effect leads to individuals to save more and consume later, hence improving the current account balance. This is consistent with the HLM effect and Caldron, Chong and Loayza (1999)'s findings. However after two years, the adjustment is that of increasing the current account deficit. This is consistent with the argument that a permanent shock in TOT leads to changing investments decision with time (thus an improvement in TOT would lead to increasing investment hence worsening the current account balance). This is in line with Kent and Cashin (2003) who found that while consumption smoothing dominates for short lived temporary TOT shock (hence a positive relationship), investment effect dominates for permanent shocks (negative relationship).

An exogenous increase in the real exchange rate (overvaluation) does not have an immediate impact in the initial year but increases the current account deficit up to the seventh year. The responses do not converge to zero. This might explain the persistency of the current account deficit.

An exogenous positive shock to openness leads to an immediate improvement in the current account deficit and persist for seven years. This is consistent with findings of Gruber and Kamin (2005) and N.Onder (2006). The accumulated response of openness, however, gradually dies off over time.

Innovations in external debt have an immediate effect and that of worsening the current account deficit and persist for about four years.

Variance Decomposition

While impulse response functions trace the effects of a shock to one endogenous variable on to the other variables in the VAR, variance decomposition separates the variation in an endogenous variable into the component shocks to the VAR. Thus, the variance decomposition provides information about the relative importance of each random innovation in affecting the variables in the VAR. Appendix 5 shows the relative contribution of the other variables in the variation of the current account deficit over time. It also shows the forecast error variance i.e. how much of the forecast variation in the current account departs from the true value due to variations in the current and future values of the innovations in the other variables.

The results show that innovations in all variables have significant effects on current account movements. Evidently, after three years innovations in the other variables can explain about 51 percent of the current account variations. This notwithstanding, current account deficits seem to be quite unresponsive to openness as only after 10 years only 1.9 percent of the current account is explained by exogenous shocks in the openness. The current account deficits, however, seem to be increasingly responsive to the real exchange rate innovations with time.

6. Conclusion and Policy Recommendations

The objective of the paper was to identify the long run determinants of the current deficit and also examine the dynamic relationships of the country's current account deficit and its determinants. Annual data from 1980 to 2006 was used. The analysis was based on the Savings-Investment theory as a base of defining the factors that influence the current account in the long run.

An analysis of the Malawi's current account balance indicates that it has been in persistent deficit largely dominated by the merchandise trade balance. The study used the cointegration analysis to identify the long-run determinants of Malawi's current account deficit and the error correction model to examine the short-run dynamics. The study also used impulse response analysis to capture dynamic interactions among the variables. Generally the results indicate that external factors which are openness, terms of trade, accumulation of external debt and the liberalization of current account, fundamentally determined the current account deficit in Malawi during the period under study. Impulse response analysis indicate that the exogenous shocks to the real exchange rate persistently worsens the current account deficit and forecast error variances demonstrates that even at three years real exchange rate can explain significant proportion of the current account, and the explanatory strength is increasing with time. These findings suggest that government can directly control the behaviour of current account through exchange rate policy hence underscoring the importance of exchange rate policy in managing the current account deficits.

The immediate impact of debt on current account deficit significantly worsens the current account deficit and then improves it after a while. The forecast error variances indicate that the innovations to debt significantly explain movements in current account deficits, even in the relatively short term. This finding therefore implies that government needs be cautious in financing its fiscal deficit, as recourse to external borrowing and the consequent accumulation of external debt will directly have a negative impact on the current account balance.

The persistence of the current account deficit in Malawi implies that policies that have been implemented in the past three decades or so to improve the current account position haven't worked. This therefore calls for a change in policy.

7.0 References

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APPENDICES

Appendix 1: Johansen Cointegration Test Results

Series: LOG(TOT) LOG(REER) LOG(OPEN) LOG(DEBT) LOG(CABADJ)
Lags interval (in first differences): 1 to 2
Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.888994	113.2903	88.80380	0.0003
At most 1	0.704336	60.53422	63.87610	0.0925
At most 2	0.430113	31.28949	42.91525	0.4276
At most 3	0.319956	17.79387	25.87211	0.3579
At most 4	0.299397	8.539523	12.51798	0.2107

Trace test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.888994	52.75611	38.33101	0.0006
At most 1	0.704336	29.24474	32.11832	0.1079
At most 2	0.430113	13.49561	25.82321	0.7646
At most 3	0.319956	9.254350	19.38704	0.6980
At most 4	0.299397	8.539523	12.51798	0.2107

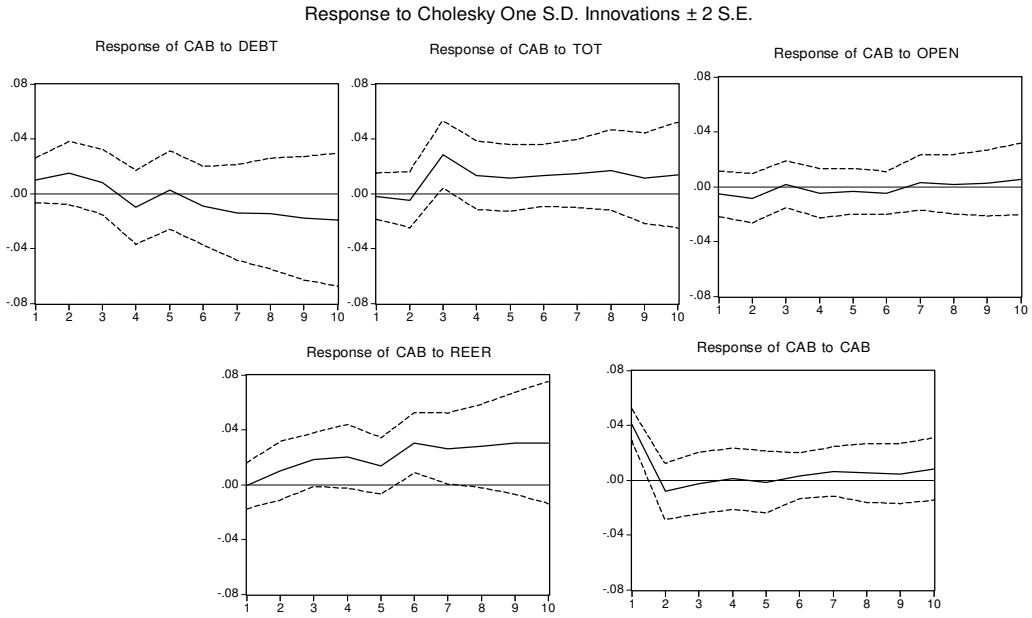
Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Appendix 2: Pairwise Granger Causality Tests

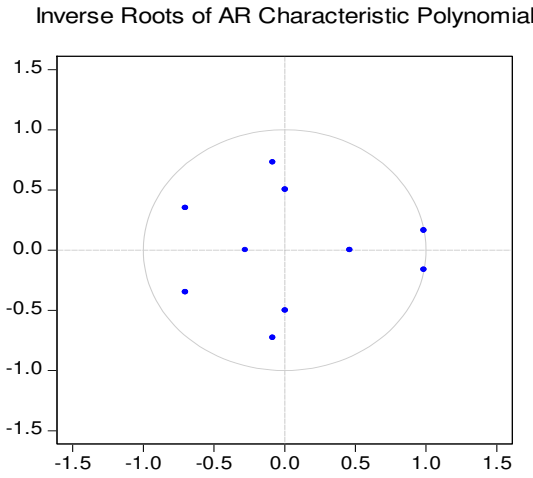
Sample: 1980 2006; Lags: 2; observations:25

Null Hypothesis	Prob.
CAB does not Granger Cause OPEN	0.1185
REER does not Granger Cause CAB	0.0259
RIR does not Granger Cause CAB	0.0928
TOT does not Granger Cause CAB	0.0657
REER does not Granger Cause FD	0.0965
YF does not Granger Cause FD	0.0312
TOT does not Granger Cause OPEN	0.0050

Appendix 3: Response to Cholesky One S.D. Innovations



Appendix 4: Inverse Roots of AR Characteristic Polynomial



Appendix 5: Variance Decomposition of CAB

Variance Decomposition of CAB:						
Period	S.E.	TOT	REER	OPEN	DEBT	CAB
1	0.0	0.2	0.0	1.5	5.5	92.8
2	0.0	1.1	4.4	4.4	14.3	75.8
3	0.1	24.1	12.4	2.9	11.2	49.3
4	0.1	24.2	20.1	3.0	11.7	40.9
5	0.1	25.3	22.7	3.0	11.0	38.0
6	0.1	22.9	34.0	2.8	10.1	30.1
7	0.1	22.2	38.3	2.5	11.3	25.7
8	0.1	22.2	41.7	2.1	12.1	21.9
9	0.1	20.3	45.1	1.9	13.7	19.0
10	0.1	19.1	47.0	1.9	15.1	16.9

Cholesky Ordering: TOT REER OPEN DEBT CAB