

Sustainability of the Current Account in Malawi

Onelie Nkuna, PhD

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By

Onelie Nkuna, PhD
Reserve Bank of Malawi

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1.0 Introduction

Persistent current account imbalances in many developing countries in Africa, Asia and South America and recently in the US have excited considerable interest among economists and policy makers seeking to have a clear understanding of the role and importance of current account imbalances in macroeconomic issues. Evidence has shown that a lot of countries, both developed and developing, have run large and persistent current account deficits which have been followed by, among others, severe economic crises (Milesi and Ferreti, 1996). These crises exposed the weaknesses of the traditional theories of current account determination in explaining a country's external vulnerability (Phillip and Milesi-Ferreti, 2007).

Central to the debate is the sustainability of those deficits. The question is whether a country's current account imbalances can be justifiable and be considered as structurally normal and sustainable or whether there is need for fundamental policy shifts to correct them and hence evade crises. Researchers have defined sustainability from different perspectives and have come to a conclusion that there is no simple definition of an unsustainable deficit (Kaminisky *et al.*, 1998). Literature has, in general, focused on the following approaches: the structural approach by International Monetary Fund (2006), Chinn and Prasad (2003), Brissimis *et al.* (2010); assessment of indicators as in Milesi-Ferreti and Razin (1996), Kaminisky *et al.* (1998), Binatli and Sohrabji (2008) and Boljanović (2012); the solvency approach as in Nakamura and McPherson (2005); the accounting methodology as in Husted (1992) and Wu *et al.* (2001); and the inter-temporal optimal approach as proposed by Obstfeld and Rogoff (1996) and used by Opoku-Afari (2007) and others.

1.1 Research Problem

Being a member to a number of regional groupings that are moving towards monetary integration, for example Southern African Development Community (SADC) and Common Market for Eastern and Southern Africa (COMESA), Malawi is expected to achieve agreed targets in key macroeconomic indicators within a specified time period to enable a smooth integration process. One of these targets is achieving sustainable current account positions. Under SADC, the numerical target values for macroeconomic convergence criteria for the current account are as follows: 9% of GDP as we move towards a customs union between 2008 and 2012; and 3% of GDP

as we move towards creation of a monetary union in 2018. COMESA, however, does not attach specific convergence and sustainable target on the current account but emphasizes the reduction of current account deficit (excluding grants) as a ratio of GDP to a sustainable level. On the other hand, being in a convergence process requires the country to have high rates of investments to catch up with the frontrunners, which would fuel current account deficit.

In the later years, however, the Malawi economy was growing and striving to attain sustainable growth, and was on track to meet most of the Millennium Development Goals (MDGs). The Millennium Development Goals (MDGs) were eight international development goals that were to be achieved by 2015. The goals were: Eradicating extreme poverty and hunger; Achieving universal primary education; Promoting gender equality and empowering women; Reducing child mortality rates; Improving maternal health; Combating HIV/AIDS, malaria, and other diseases; Ensuring environmental sustainability; and Developing a global partnership for development. Of the eight (8) MDGs, Malawi achieved the following by 2015: Reduce child mortality; Combat HIV and AIDS, malaria and other diseases; Ensure environmental sustainability and reverse loss of environmental resources, and; Development of global partnership for development (United Nations, 2015). The current account deficit, on the other hand, has been persistent and widening. Persistent deficits have been a worry to policy makers in the Malawian economy. The current account balance, which predominates the behaviour of Malawi's balance of payments, has been persistent and widening since the late 1970s. Official grants were not sufficient to offset the deficit and, as such, the country borrowed extensively to finance the deficit. Consequently, this led to high interest payments, further worsening the current account balance.

Despite some positive developments among which include exportation of uranium, and stabilization of the country's debt position owing to the Highly Indebted Poor Countries (HIPC) debt relief and the Multilateral Debt Relief Initiative (MDRI) around mid to end 2000s, the current account position was still not favourable. Currently, external debt is slowly increasing; traditional exports of tea and tobacco are declining mainly due to developments on the international scene. All these factors necessitate the need to find out the required level of current account deficit that would stabilize the economy. Whether there is need for some fairly drastic adjustments in macroeconomic and structural policies or that a status quo on policies be maintained is a question unanswered. Results and policy implications drawn from this study will therefore provide critical input into the design and operation of a coherent and consistent policy framework that would guide policy makers to formulate policies that would lead to sustainable current account.

1.2 Research Questions

Conventional wisdom tries to explain that the current account is unsustainable by just focusing at the exchange rate and level of reserves (Milesi-Ferreti and Razin, 1996). But the questions are: what is the degree of unsustainability of these deficits? Have

they been very excessive such that there is need for some drastic policy change or are they structurally justifiable? What are the critical factors to pay attention to in order to achieve sustainability and remain on that path? What would be the required levels of deficits that the country should be aiming at to remain sustainable?

1.3 Objectives

The objective of this study, therefore, is to examine the sustainability of the Malawi current account using three methodologies, for the period 1980 to 2010. Specifically, the study aims to:

1. Empirically ascertain whether the current account deficits the country has been running have been excessive or not.
2. Know the critical factors that the country should pay particular attention to in order to ensure that the current account moves towards a sustainable path.

1.4 Hypothesis

The main hypothesis to be tested is that the current account deficits were unsustainable. The factors cited in literature are not important in ensuring that the current account is sustainable.

1.5 Justification of the Study

Despite the manifested importance of the issue of current account sustainability, empirical work on the subject in Malawi is quite limited. A few studies have emerged on current deficits in Malawi (Nkuna and Kwalingana, 2010) in single country analysis; Kahn and Knight (1983), Debelle and Faruquee (1996), and Chinn and Prasad (2003). These studies have dwelt on the determinants of current account but have not tackled the issue of sustainability. The IMF (2006) tackled the issue of sustainability but was in a multi-country framework, in which Malawi was inclusive. The problem with this study is that the coefficients derived were standard for a group of countries that have different initial conditions and are affected by different shocks. As such, undertaking a single country study is important as the results found from this study will be unique and relevant for Malawi.

Furthermore, this study covers the period 1980 to 2010 of which the start period was chosen because at the beginning of the 1980s, the current account had significantly deteriorated. The end period, on the other hand, covers the period when issues of globalisation and cross border operations which have affected Malawi's current account have come to the fore. Lastly, by using three complementary approaches, this study, to our knowledge, is the first comprehensive study of assessing the sustainability of Malawi's current account position. Thus, this study contributes to the existing literature on sustainability of the current account.

1.6 Limitation of the Study

One limitation of the study is that it does not use all approaches to sustainability; for instance, the inter-temporal optimal approach and the net foreign asset approach. As such, future research should consider these approaches.

1.7 Organization of the Paper

The rest of the paper is organized as follows: Section 2 presents background to the study. Section 3 reviews the theoretical and empirical literature on the subject under study. Section 4 describes the methodology and section 5 outlines empirical results. Section 6 provides the conclusion.

2.0 Economic Background

Malawi is a landlocked economy with a population of about 13.5 million and population growth of 4.6% (Government of Malawi, 2012). Its economic structure comprises a large but under-productive agricultural sector and an under-developed industrial sector. The economy is hugely dependent on agricultural production which contributes about 40% to GDP, generates about 80% of foreign exchange, and employs about 90% of the total labour force.

The service sector has lately assumed a bigger share of the national production, accounting for about 40% of GDP, though employing less than 10% of total labour force. The manufacturing sector is under-developed and accounts for only 19.9% of GDP (Government of Malawi, 2012). Being a rain-fed agrarian economy, the country is subject to both domestic and external shocks. The economy is influenced by, among others, weather vagaries, adverse terms of trade, and oil shocks. Infrastructural facilities are very poor; as such, the country has minimal private and foreign investment. The economy is therefore heavily dependent on financial support from international donors.

Though Malawi has undergone various trade reforms since the late 1980s, there are still some restrictions on trade. For example, the MFN Tariff Trade Restrictiveness Index (TTRI) was 20.5% above both the averages of its comparators; the Sub-Saharan Africa (SSA) index was 11.3% and low-income group countries' index was 11.6% (World Bank, 2010). However, with the progression of regional integration processes under the Common Market for Eastern and Southern Africa (COMESA) and the Southern African Development Community (SADC), it is expected that some of the remaining trade restrictions will be removed.

2.1 Evolution of Malawi's Current Account during 1980 to 2010

Malawi has run persistent current account deficits for decades except for 1998, despite large unilateral transfers from abroad. This perennial imbalance has been a cause of concern to policy makers. Malawi's current account deficits averaged 12% of GDP during the period 1980 to 2010.

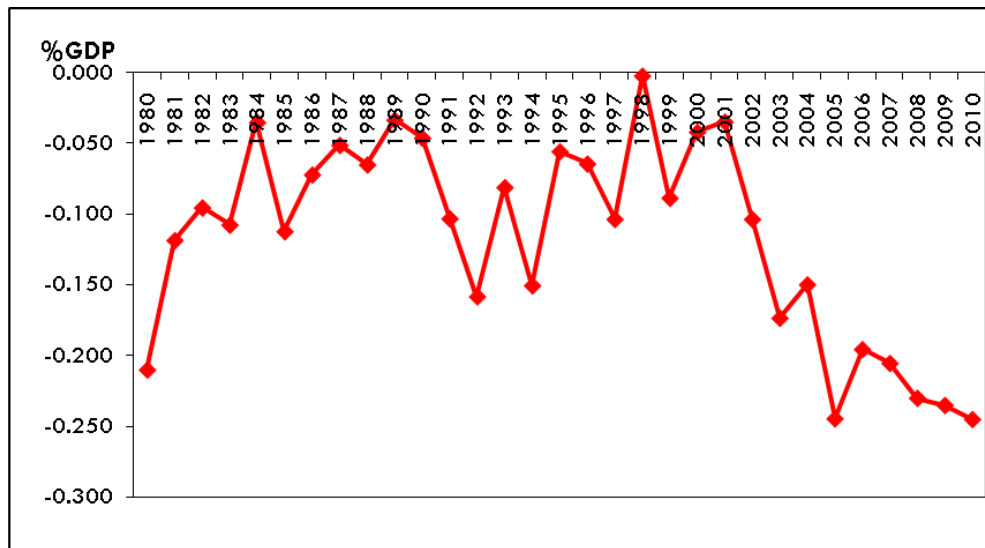
The performance of Malawi's current account will be evaluated over the following periods which mark turning points of the current account: 1980 (post-oil shock period

and worsening of the current account); 1981-1989 (improvement of the current account and structural adjustment period); 1990-2000 (period of multiple exchange rate regimes and see-saw pattern of the current account), 2000-2006 (expansionary fiscal policy and rapidly deteriorating current account) and 2007-2009 (Post-HIPC and external shocks with worsening current account). Figure 1 shows the trend of current account balance for Malawi for the period 1980 to 2010.

1980 (post-oil shock and worsening of the current account)

Following the oil shocks of mid to late 1970s, Malawi's current account significantly worsened, reaching 22% of GDP (including official grants) in 1980, in contrast to surpluses registered during the early 1970s. This was due to several factors: sharp decline in terms of trade, rising world interest rates and disruption of the traditional railway line to Nacala which carried the bulk of the country's imports and exports. This was compounded by loosened fiscal policy to contain the drought shock (Government of Malawi, 1982).

Figure 1: Current account balance (excluding grants) as a percentage of GDP 1980-2010



Source: Reserve Bank of Malawi, 2012

1981-1989 (Improvement of the current account and structural adjustment period)

In response to the poor current account position experienced in the 1970s, Malawian authorities took active exchange rates actions and devalued twice, by

15% in April 1982 and 12% in September 1983. This exchange rate regime could not be sustained; as such, in June 1984 the Kwacha was delinked to the Special Drawing Rights SDR and pegged to a basket of trade-weighted currencies and was devalued by 15% on 2 April 1984 and further by 10% on 6 August 1986 (Silumbu, 1995). The current account balance, though still negative, generally improved during this period.

To deal with the worsening current account deficit, the country had to seek recourse to borrowing from the World Bank under the Structural Adjustment Loans (SALs) which was accompanied by Structural Adjustment Programmes (SAPs). Among the reforms, the phased liberalization of imports in August 1988 was included (Mataya et al., 1998). Though the fiscal position had improved, it was still in deficit and so was the current account balance. As a result, authorities devalued further by 20% on 7 February 1987 and 15% more on 16 January 1988. The economy later recovered, with output averaging 3.2% between 1982 and 1989, and foreign reserves reaching a record high of 6.7 months of imports (Government of Malawi, 1989).

Following the financing of the current account, external debt to GDP rose and averaged about 80% in the latter half of the decade from very low levels in the previous decade. Debt service was absorbing 42% of export earnings and about 10% of GDP. Interest burden on external debt reached a high of 5% of GDP in 1986 (Reserve Bank of Malawi, 1987).

1990-2000 (Multiple exchange rate regimes and see-saw pattern of current account)

From 1989 to 1992, the withdrawal of donor assistance on account of good governance coupled with severe drought led to the current account deficit widening significantly, reaching 15.8% in 1992. In response to the worsening current account balance, the local currency was devalued by 7% on 24 March 1990, 15% on 28 March 1992 and a further 22% on 11 July 1992. Despite these devaluations, the current account position grew worse than in the previous five years. The economy went into recession again, shrinking by 7.9% in 1992 (Reserve Bank of Malawi, 1993). With the frequent devaluations, there was generally loss of confidence in the exchange system, leading to the floatation of the Kwacha in February 1994.

The current account continued to worsen even after adopting a floating regime in 1994, hence authorities switched to a number of floating regimes necessitated by the need to correct the persistent balance of payment disequilibrium. During the period 1995-97, the exchange rate fluctuated within a very narrow fixed band as was the nominal anchor for inflation at the expense of worsening external position. This was followed by unannounced crawling peg in 1997 to a more or less free-floating system in 1998, which saw the current account significantly improving. The near free float was short-lived as this was abandoned in favour of a managed float in 1999. Consequently, the current account also worsened but started to pick up in 2000.

2001-2006 (Expansionary fiscal policy and rapidly deteriorating current account)

Beginning 2001, the current account started to grow worse rapidly to levels never before, and in 2005 hit a record high of 26% of GDP. This outturn was largely explained by the unprecedented increase in imports against stagnating exports. In 2005, however, fiscal policy became restrained, sustained by the International Monetary Fund (IMF) monitored economic programmes. External debt stock burgeoned, averaging over 100% of GDP just before qualification for debt relief under the HIPC and MDRI (Government of Malawi, 2007). On reaching the HIPC Completion Point in August 2006, Malawi's external debt stock and hence debt service significantly declined, reaching K6.0 billion (US\$ 44.1 million).

2007-2010 (Post-HIPC and external shocks with worsening current account)

Following the bailing out by the IMF and Paris Club creditors, the external interest burden significantly declined, reaching almost zero percent of GDP (0.03% of GDP). This, coupled with improvement in terms of trade following a rise in world commodity prices led to the current account position narrowing to 17% of GDP in 2007, though temporarily. In 2008, the economy was hugely affected by the fertiliser and oil shocks, worsening the current account position. To contain these shocks, fiscal policy became overly accommodative. However, the economy remained buoyant as growth averaged 7.5% between 2007 and 2009. Despite the onset of the global economic and financial crisis, the economy remained resilient to the first round effects due to the under-developed financial system and low integration into the global financial system. Nevertheless, globalization did not spare the economy from the second round effects through the trade channel, thus negatively impacting on the current account (International Monetary Fund, 2011).

3.0 Literature Review

3.1 Theoretical Literature

3.1.1 The Concept of Current Account Sustainability

In the steady state, the current account must be in balance but, in practice, the current account position will vary over time, sometimes being in surplus and sometimes in deficit. This raises the more general question of whether or not a sequence of expected future current account position is sustainable (Wickens, 2008: 176). This said, the concept of current account sustainability has become of considerable interest among researchers in the aftermath of the Asian and South American crises of the 1990s and recently in the United States. These crises exposed the weaknesses of the existing theories of current account determination in explaining a country's external vulnerability. Following these crises, the then U.S. Deputy Secretary of the Treasury, Lawrence Summers stated that "Close attention should be paid to any current account deficit in excess of 5% of GDP" (Milesi-Ferreti and Razin, 1996). Thus any current account deficit above 5% should sound an alarm.

Later, several authors have come up with different definitions of sustainability. For instance, Milesi-Ferreti and Razin (1996) argued that the traditional measures of sustainability based solely on a specific threshold on persistent current account deficits (such as 5% of GDP for three to four years) is not in itself a sufficiently informative indicator of sustainability, but should be augmented with other indicators. Mann (2000) defines current account deficit as being sustainable when continuation of current policy stance will not require a drastic shift or sudden stop (for instance, sudden tightening of monetary or fiscal policy which would cause a large recession) or lead to a recession (e.g. sharp increases in interest rates, a sudden depletion of reserves, or an exchange rate collapse). Kaminisky *et al.* (1998) and McGettigan (2000) have complemented the work of Milesi-Ferreti and Razin (1996) and have come up with a variety of indicators that they have used to empirically analyse the sustainability of different countries' current accounts. Furthermore, others have developed empirical models to assess the sustainability of the current account. While debate has made researchers to come to a conclusion that there is no simple definition of an unsustainable deficit, we define sustainability as the ability of an economy to be able to meet its net external liabilities without drastic policy changes.

Literature has, in general, focused on the following approaches: the structural approach by International Monetary Fund (2006), Chinn and Prasad (2003), Brissimis *et al.* (2010); assessment of indicators as in Milesi-Ferreti and Razin (1996), Kaminisky *et al.* (1998), Binatli and Sohrabji(2008) and Boljanović (2012); the solvency approach as in Nakamura and McPherson (2005); the accounting methodology as in Husted (1992) and Wu *et al.*(2001); and the inter-temporal optimal approach as proposed by Obstfeld and Rogoff (1996) used by Opoku-Afari (2007) and others. We review the first three approaches which we use in assessing the Malawi situation.

3.1.2 The structural approach to current account sustainability

The theoretical basis for the structural approach is the savings-investment model. According to this approach, the current account balance is defined and derived from the national account identity. The current account deficits could arise from dissaving from both the private and public sectors as well as from higher investments. The saving-investment model is specified in the following general function as specified in equation 1:

$$Y_t = \alpha_0 + \alpha_i Z_t + \varepsilon_t \quad (1)$$

where the dependent variable Y_t is the current account position expressed as a ratio to GDP, Z_t is the vector of the explanatory variables and ε_t is the error term. Literature provides a vast range of variables that structurally influence the determination of the current account. Below is a theoretical discussion of some of these variables.

Fiscal balance: Fiscal deficits are theoretically expected to be positively related to current account deficits both in the short-term and long-term (the so called twin-deficit hypothesis). That is, higher fiscal deficits lead to higher private consumption in line with the Keynesian model. This would imply lesser private savings vis-a-vis investments, unless the country decides to borrow from abroad, hence current account deficit. A fiscal surplus induces a current account surplus, since it lowers disposable income of Ricardian agents and thereby aggregate consumption. Therefore, aggregate savings in the economy will increase. Furthermore, 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 under-developed or highly regulated financial markets, since liquidity constraints are expected to be more binding in these economies.

Net foreign asset: The relationship between net foreign asset (NFA) and current account is theoretically ambiguous. Economies with high net foreign asset can afford to run prolonged trade deficits and still remain solvent, hence net foreign asset

would be negatively correlated with current account balance (Wickens, 2008). On the other hand, economies with high levels of net foreign assets would earn higher net foreign investment income flows (which is a component of the current account balance), implying a positive relationship between NFA and current account balances. Standard open economy macroeconomic models predict that this second effect should be stronger (IMF, 2006). From an inter-temporal perspective, a country that has a significant stock of debt (less net foreign assets) is expected, in future, to run surpluses particularly in its trade account in order to pay off its liabilities.

Openness: Economies that are more open to trade have the capacity to generate foreign exchange earnings through exports and incomes on capital inflows which might signal a better ability to service external debt. Others also argue that countries with more exposure to trade tend to be relatively more attractive to foreign capital (Chinn and Prasad, 2003).

Terms of trade: The relationship between 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 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; that is, 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.

Real effective exchange rate: The Mundell-Flemming model predicts that an appreciation in the real exchange rate can adversely affect a country's competitiveness position, leading to a worsening trade balance and hence the current account balance. From the supply side, a real appreciation could reflect productivity gains in manufacturing spilled over to the non-tradable sector (the Balassa-Samuelson effect). On the demand-side, influences on real appreciation could be due to massive capital inflows, which would lead to an appreciation of the nominal, hence real exchange rate. Also, the use of donor capital inflows and hence comparatively high government spending to build up infrastructure would fuel inflation and hence appreciation of the real exchange rate. Further, high government spending would have 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 smoothen consumption in the face of shocks to national cash flow, defined as output less investment. For example, in response to a temporary positive term of trade shock or real exchange rate appreciation, an open economy would prefer to run a current account surplus and invest abroad rather than allow

consumption to increase.

Dependency: This is to capture that part of the country's demographics that would have an impact on the current account. The economy's demographic profile over time is expected to be positively associated with current account deficits. This relationship is derived from the life-cycle hypothesis where younger and older parts of the population save less and worsens the current account balance. Countries with high percentage of young populations (under age of 15) need to invest more in schools while those with high percentage of older population (ages 65 and over) need to invest more in the health sector. Thus, if over time the age structure is systematically changing, it is expected to affect the national saving behaviour, and hence the current account balances. In some studies, this is defined as the ratio of people younger than 15 and older than 65 years of age over the total population.

External debt: Increases in the service payments on external debt are financed largely out of export earnings in small highly open developing countries and may result to a weakening of the current account positions. Further, such capital inflows might induce an increase in the consumption on foreign goods, hence worsen the current account position.

Official Development Assistance (ODA): Official grants and/or concessional lending reduces the pressure on the current account and, as such, a negative sign is expected.

Economic growth (G): As the economy grows, it is expected that the export sector would also grow, which would improve the current account. However, economies that are in early stages of economic development have a greater need for investment and are likely to finance investment through borrowing (Obstfeld and Rogoff, 1996). As they develop and approach the income levels of the advanced countries, their current account should improve.

3.1.3 Indicators to sustainability of the current account

Milesi-Ferretti and Razin(1996) argued that the size of current account imbalances should be considered in conjunction with exchange rate policy and structural factors such as the degree of openness, the levels of saving and investment, and the health of the financial system. Furthermore, they argued that the notion of inter-temporal solvency may not always be appropriate, hence proposed an alternative notion of sustainability that emphasizes the country's willingness to repay its external obligation and the willingness of the foreign investor to continue lending on current terms. This approach uses a number of practical indicators that obviously support the theoretical underpinnings discussed earlier. These indicators include, among others, economic growth, openness and trade, composition of external liabilities, financial structure, capital account regime, the degree of exchange rate flexibility and exchange rate policy, fiscal balance and political instability. Below is a discussion of these indicators.

Composition of the current account balance: A current account imbalance may be deemed to be less sustainable if it is derived from a large trade deficit rather than

from large negative factor income from abroad. This is due to the fact that large and persistent trade deficits may be a reflection of structural problems, while large net factor income deficits may be just due to foreign debt incurred in the past (Adedeji, 2001).

Stock and composition of external liabilities: The ability to sustain current account is also dependent on the country's stock and composition of international liabilities. Therefore, the structure of equity and debt liabilities is of importance. Equity financing is preferred to debt financing as the asset price adjustment absorb some of the negative shocks, hence part of the burden is borne by the foreign equity investors. Furthermore, under equity financing, foreign direct investment is said to be more preferred because it is potentially less volatile than portfolio investment. With regard to debt, it is important to look at the stock, maturity structure, currency composition and interest structure of the debt. It is argued that huge debt stock reduces the capacity to finance a current account imbalance. Furthermore, large debt servicing can erode all export revenues and hence make it impossible for the importation of investment goods which are drivers of growth.

Degree of exchange rate flexibility and exchange rate policy: The degree of exchange rate flexibility in response to external shocks can affect the ability of an economy to sustain current account deficits. In this case, the level of real exchange rate (RER) is an important indicator of sustainability. In practice, however, it is difficult to use RER as an indicator due to the difficulty in attempting to gauge the extent of overvaluation (McGettigan, 2000). A persistent appreciation in the Real Effective Exchange Rate (REER) can be driven by fundamental factors (e.g. productivity growth in traded goods sector, favourable TOT shocks, etc) and might not necessarily be an over-valuation. One commonly used approach involves comparing the current exchange rate with its level in a reference year in which the REER is deemed to be in equilibrium. This method, however, implicitly assumes an unchanging equilibrium REER. The alternative is the use of sophisticated econometric techniques to assess the equilibrium REER (Edwards, 1989).

Economic growth: When an economy is growing rapidly, it can sustain persistent current account deficits without increasing the level of its external debt to GDP ratio. That is, higher rates of economic growth are expected to lead to more sustainable external positions. Furthermore, sector composition of growth maybe an additional indicator of potential external imbalances. Thus, low export growth could be a pointer to future unsustainable current account balances.

Openness and trade composition: The more open an economy is in terms of exports as a share of GDP the easier it is for that economy to generate foreign exchange earnings and hence capable of servicing external debt payments. This notwithstanding, a more open economy is more vulnerable to terms of trade shock, particularly if it has a very narrow export base and if exports are predominantly in raw materials, whose prices are very volatile. As such, to reduce a country's vulnerability there is need to diversify trade across commodities.

Fiscal balance: Current account deficits may emanate from either public savings

investment balance or private savings investment balance or a combination of the two. It is argued that if private external debts are not guaranteed by government, and if private economic agents base their savings decisions on accurate forecast of relevant economic variables, then a current account deficit arising from private savings investment balance is considered to be more sustainable than the one arising from public savings investment balance. This argument is based on the fact that fiscal deficits may induce excessive monetary growth, generating the possibility of speculative attacks, especially in an environment of a fixed exchange rate. This might lead to reduction in capital inflow and also capital flight. In a non-Ricardian Equivalence context, Milesi-Ferretti and Razin (1996) suggested that there should be a stronger link between current account and fiscal imbalance in under-developed financial systems (i.e. where liquidity constraints are likely to be more binding). Thus, fiscal deficits (lower taxes) increase private consumption and hence current account deficit. Given that liquidity constraints are likely to be prevalent in Malawi due to its generally under-developed financial systems, the Ricardian equivalence would not hold, hence we should expect a correlation between fiscal deficit and current account deficits.

Political instability, policy uncertainty and credibility: The political economy plays a vital role in determining the importance of many of the indicators alluded to above. Political instability, policy uncertainty and credibility play a very crucial role in influencing macroeconomic decisions and hence in influencing capital flows. For instance, there is the risk of policy reversals in countries that are politically unstable; this, therefore, reduces the credibility of current policy stance by both domestic and foreign investors.

3.1.4 Solvency approach to debt and current account sustainability

This approach focuses on debt ratio analysis, following Husted (1992), Hudson and Stennett (2003), Opoku-Afari (2007) and others. This framework defines a sustainable current account as the one that does not generate increases in the foreign debt to GDP ratio. This is drawn from the general understanding that external indebtedness evolves from the trade balance as well as interest payments. The framework for the accounting approach defines the external financing constraint as:

$$\frac{B_t}{B_{t-1}} = (1 + i_t) - \frac{(X-M)_t}{B_{t-1}} = (1 + i_t) - \frac{(X-M)_t}{B_{t-1}}, \quad (2)$$

Where B denotes the debt stock, i_t represents the interest rate payable on the debt and $(X - M)_t$ represents the trade balance. Equation (2) can be re-written as:

$$B_t = ((1 + i_t))(B_{t-1}) - (X - M)_t, B_t = ((1 + i_t))(B_{t-1}) - (X - M)_t. \quad (3)$$

Given the time paths for i_t and $(X - M)_t$, equation (3) describes the time path of the net external liabilities. Therefore, if trade is exactly balanced, that is if $(X - M)_t = 0$, the country's net external indebtedness would grow exactly as the rate of interest (i_t). It follows from this same logic that should the economy run a trade deficit, the debt stock would grow at a rate that exceeds the interest rate.

The unsustainability condition is derived by setting equation (3) in growth terms by dividing through by Y on the assumption that $Y_t/Y_{t-1} = (1 + g_t)$, where g_t is the growth rate of GDP. This would return equation (3) as:

$$\frac{B_t}{Y_t} = (1 + i_t) \frac{B_{t-1}}{Y_t} - \frac{(X - M)_t}{Y_t} \quad (4)$$

For simplicity, we denote the ratios as lower case letters and recast equation (4) as

$$\begin{aligned} b_t &= \left[\frac{1+i_t}{1+g_t} \right] b_{t-1} - (x - m)_t \\ b_t &= \left[\frac{1+i_t}{1+g_t} \right] b_{t-1} - (x - m)_t, \end{aligned} \quad (5)$$

and subtracting (b_{t-1}) from both sides

$$\begin{aligned} \Delta b_t &= \left[\frac{1 + i_t}{1 + g_t} \right] b_{t-1} - \left[\frac{1 + g_t}{1 + g_t} \right] b_{t-1} - (x - m)_t \\ &= \left[\frac{i_t - g_t}{1 + g_t} \right] b_{t-1} - (x - m)_t \end{aligned} \quad (6)$$

Therefore the condition for sustainability would be given by:

$$\left[\frac{i_t - g_t}{1 + g_t} \right] b_{t-1} - (x - m)_t = 0 \quad (7)$$

and equation (7) implies that should the trade position be exactly balanced, the change in the debt to GDP ratio (b_t) would depend on the deviation between the interest rate on the economy's net external liabilities (i) and the growth of GDP (g).

That is if $g > i$, it is an indication that growth is enough to counter increases in debt build-up. When $g < i$, then the debt to GDP ratio would increase; unless trade balance is in surplus to offset this, then the position is unsustainable. Positive values of the equation would occur when the term $(x - m)$ is < 0 , thus trade deficit, in that case the current account deficit, has the potential of increasing the debt stock, thus an early warning for future current account unsustainability. The negative values of equation (7) would occur if the term $(x - m)$ is > 0 or a trade surplus, which would more than offset the build-up of debt (the first term).

3.2 Empirical Literature

There is a vast body of empirical literature that has used one or a combination of the above explained approaches. Table 1 provides a summary of some of the literature, methodology and main findings.

Table 1: A summary of key literature on sustainability of current Account

Authors	Methodology	Description of main findings
Milesi-Ferretti and Razin (1996)	List of a structural and macroeconomic indicators	Australia, Ireland, Israel and Malaysia ran large current account deficits for several years, but were able to sustain the deficits while Chile and Mexico did not. Concluded that a specific threshold on persistent current account deficits is not in itself a sufficient measure.
Chinn and Prasad (2003)	Cross section and panel regression techniques for different country grouping, 1971-1995	Financial deepening, openness, relative income, initial net foreign asset positions had significant effect on the current account deficits of all groupings. Terms of trade volatility significant to developing countries excluding Africa. Foreign aid receipts had a significant effect on Africa but not on other groupings.
Nakamura and McPherson (2005)	Panel regression techniques of African HIPCs, 1975-2002	Real exchange rate, openness, aid and growth are important determinants. Weak persistence in African HIPCs.
	Solvency Approach-Debt stabilizing current account	All but four countries (Benin, C ^{ote} d'Ivoire, Ghana, and Madagascar) have unsustainable current accounts.
Opoku-Afari (2007)	Solvency Approach- net foreign assets stabilizing current account	All but four countries (Benin, C ^{ote} d'Ivoire, Ghana, and Madagascar) have unsustainable current accounts.
	Inter-temporal approach (present value model) for Ghana, 1960-2002	The actual current account was in excess of the optimal current account.
IMF(2006)	Other institutional measures	Current account deficit driven by trade deficit, financed by volatile and pro-cyclical foreign capital inflows.
	Structural approach (macroeconomic balance approach)	The results varied significantly across country groups. For European advanced countries, the gap between actual and CA norm was 0.3%. That for the non-European advanced countries was 2.5%. For the group of 10 Asian emerging-market economies, the gap was 0.7%.

Source: Own compilation based on empirical literature

4.0 Methodology

The empirical strategy of the paper is to use three different approaches, namely: the narrative approach using a list of indicators (Milesi-Ferretti and Razin 1996), the structural approach (International Monetary Fund, 2006) and the solvency approach (Nakamura and McPherson, 2005). Although each of these approaches has its own weaknesses, they can complement each other and give policy makers a broader perspective on how to sustain Malawi's current accounts, enabling them to take informed policy actions.

The study uses annual data covering the period 1980-2010. Data are obtained from various publications of the Reserve Bank of Malawi, and the statistical bulletin of the National Statistical Office. Terms of trade (TOT) data is author's own calculation; this was done so as to have a consistent data set as some TOT data were missing in some years.

5.0 Empirical Analysis

5.1 An Assessment of Current Account Indicators in Malawi

While there are a number of indicators proposed by Milesi-Ferretti and Razin (1996) to assess the sustainability of current account, we use the following list of indicators that seem to be more reliable in explaining the sustainability of Malawi's current account deficits. These are: the structural composition of Malawi's current account over time, openness and trade composition, stock and composition of external liabilities, degree of exchange rate flexibility and exchange rate policy, economic growth and fiscal balance.

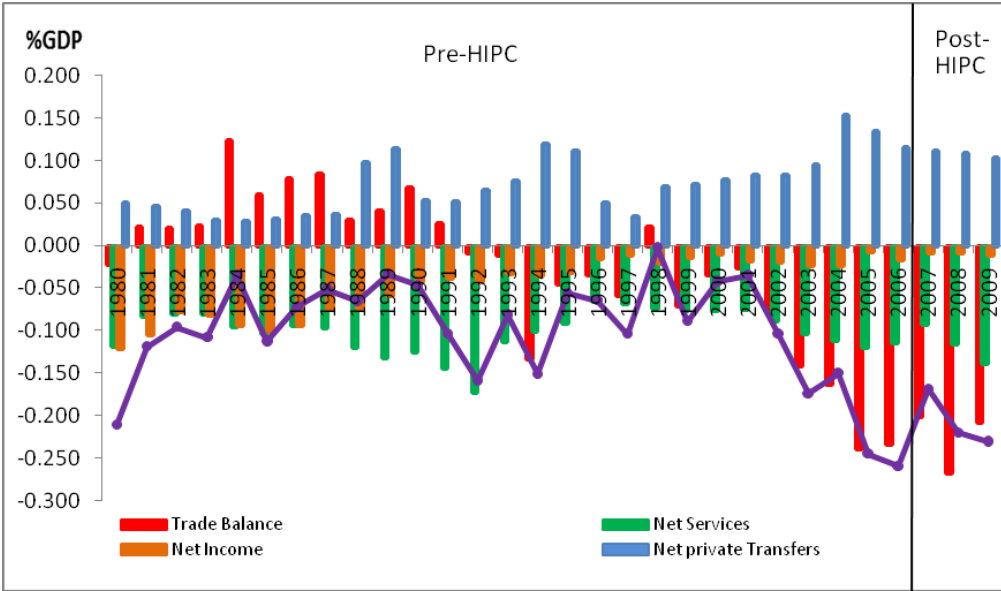
Structure of the current account

Malawi's current account has been influenced, to a large extent, by developments in the merchandise trade account, as well as the service account. From 1980 to 1991. The service and income accounts were predominantly negative and high (Figure 2), causing the current account to be in deficit.

The service account was negative largely due to the high transport costs, while the income account was negatively impacted by the high interest payments on external debt. On the other hand, the trade balance and private transfers were positive during this period, except for 1980.

The trend, however, reversed from 1992 to 1997 as the trade balance became negative and persistent. This was compounded by the negative, though, narrowing service balance. Notwithstanding this, the current account position was partly offset by private transfers that remained positive. From 1999, while private transfers continued to increase, the trade deficit was burgeoning over time, coupled with the service balance, which during this time started to widen, leading to a widening current account deficit. From the above analysis, it is evident that the structure of the current account has led to unsustainable deficits. This, therefore, calls for a paradigm shift in the design of the structural policies that would move the current account balance from deficits into surpluses.

Figure 2: Structure of Malawi's current account

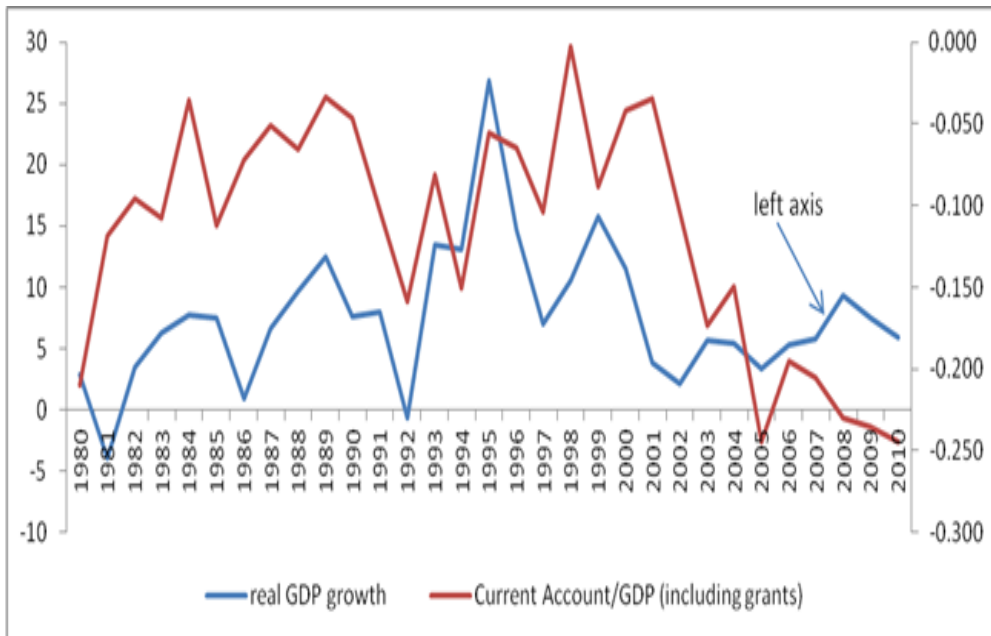


Source: Reserve Bank of Malawi, 2012

Economic growth

In the past decade or so, Malawi has attained solid economic growth, averaging about 6% (Figure 3). However, this growth has been associated with worsening of the current account deficit, particularly during the later years. An analysis of national output from the expenditure approach shows that gross fixed capital formation constitutes about 17.8%. It is argued that increased investments which would consequently lead to the worsening of the current account can only be considered sustainable if such a deficit is perceived to reverse in subsequent periods with strong export performance. While investment spending has been reasonable, it has not led to growth in exports, which continue to remain low. The potential export growth sectors for Malawi are agriculture (high value crops), mining and manufacturing, accommodation and food services.

Figure 3: Real GDP growth and current account



Source: Data from Reserve Bank of Malawi and National Statistical Office

An analysis of GDP by activity shows that while increased growth has been registered in the agriculture sector (which contributes about 30-40% of GDP) most of the growth is in maize production, which has a positive welfare effect but is not highly exported. Other sectors such as mining have registered significant growths largely owing to the commencement of uranium mining activities. Nevertheless, this sector only contributes 1% to GDP. Similarly, manufacturing has grown by 4% with 10% contribution. With very low exports contributing to GDP, the country therefore does not have sufficient capacity to generate foreign exchange to meet the import demand and service its debt, pointing to unsustainable position.

Openness and trade composition

Malawi's current account is relatively open if we consider the ratio of the sum of exports and imports to GDP, averaging about 46% in the period under review. However, the trade composition in Malawi is, to a large extent, driven by imports. Notwithstanding this, Malawi's imports are dominated by industrial intermediate and raw materials which account for about 47% of total imports (TIPS, 2007). In addition, transport, equipment and machinery account for about 26% of the total imports. As such, consumer goods constitute a smaller proportion of the total, indicating that a significant proportion of imports are for growth enhancement. While economic activity has been buoyant and growing, most of the manufactured products are directed to local consumption and not exports. The export base is very narrow, only averaging

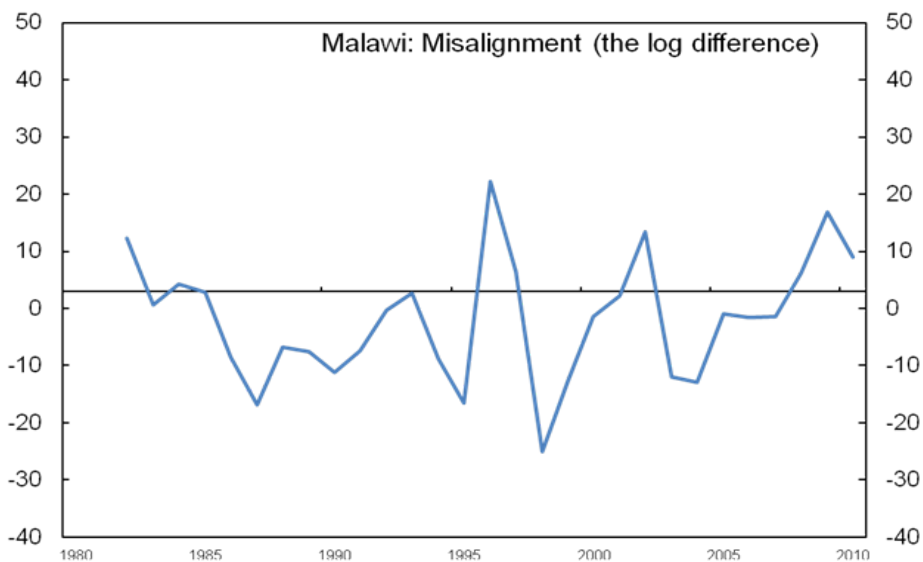
20% as a share of GDP. These exports are predominantly raw materials (tobacco, tea, cotton), accounting for about 80% of total exports. However, beginning 2009, the country diversified into exportation of minerals, uranium in particular, which accounted for about 20% of total exports. Notwithstanding the commencement of uranium exportation, there is limited vertical export diversification vis-a-vis growing imports to support the growing economy, which puts the economy in a less sustainable position. As such, diversification policies towards high value exports are imperative. Thus industrial policies that will foster structural transformation are vital.

Degree of exchange rate flexibility and exchange rate policy

To assess the sustainability of Malawi’s current account deficit, we use the equilibrium REER estimates by earlier studies for Malawi (Lwesya, 1997; Mathisen, 2002; Nkuna and Malala, 2009; IMF, 2011). This enables us to investigate how changes in the fundamental determinants of the current account are affecting the real effective exchange rate. According to earlier studies for Malawi, results were consistent with each other. They all found that the equilibrium real exchange rate over the period showed some variability. It therefore follows that at least part of the observed REER variability was related to the equilibrium behaviour reflecting changes in fundamentals.

The calculated misalignment from Figure 4 and Appendix 1 was found to be between 30% and -50% (IMF, 2011; and Nkuna and Malala, 2009). Both studies found that the local currency was often times under-valued than over-valued.

Figure 4: Malawi real exchange rate misalignment

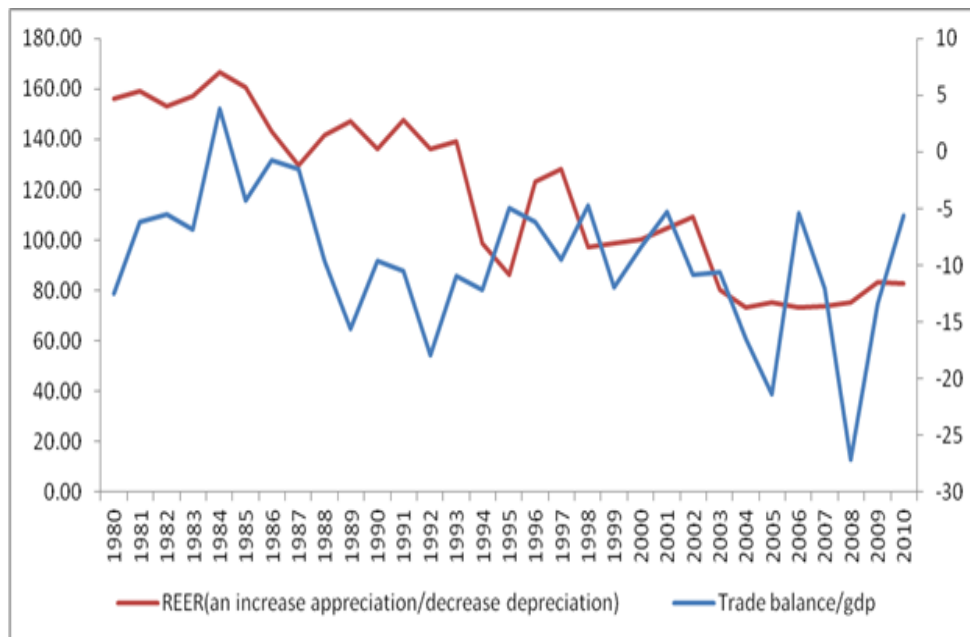


Source: IMF Malawi: Real Exchange Rate Assessment, March 2011

The REER was mostly under-valued during the period following the floatation of the Kwacha in 1994 and 1995 and also in 1998 following an announcement of the crawling peg. However, from the chart, it is observed that there were periods when the REER was highly appreciated than what the underlying fundamentals would call for, mostly during periods of 1996-1997 and 2001 and 2002, and in the recent years (IMF, 2011).

Further analysis as shown in Figure 5 reveals that trade balance, to some extent, tracked movements in real exchange rate with a correlation of 41%, and causality tests indicate a statistical significance of 12.8% between the two variables (Appendix 2).

Figure 5: Real exchange rate and trade balance



Source: Reserve Bank of Malawi and National Statistical Office

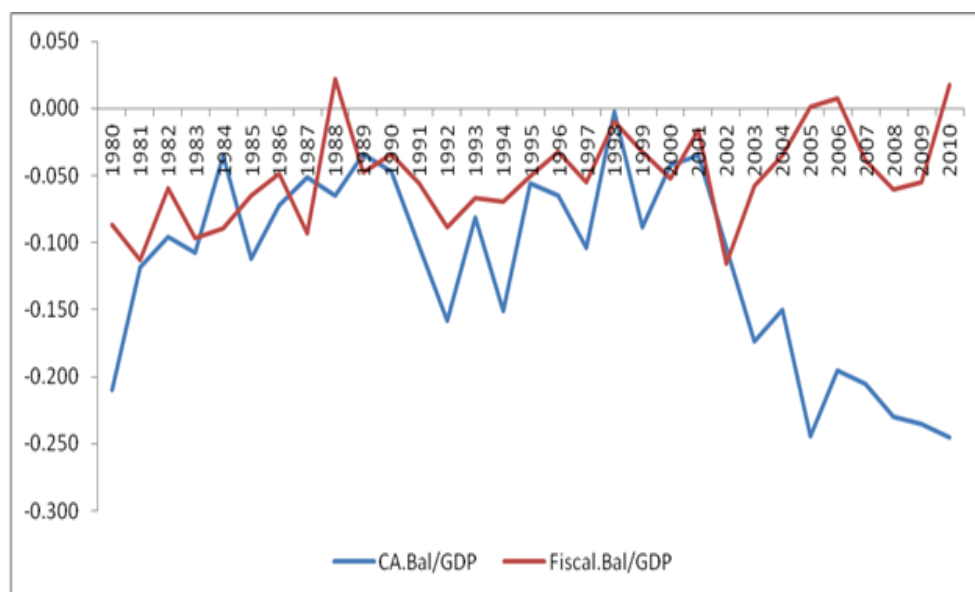
It can therefore be concluded that the worsening of the current account was, at times, caused by the REER appreciation. The REER misalignment, therefore, is an immediate threat to Malawi's current account sustainability.

Fiscal balance

In a non-Ricardian Equivalence context, there should be a stronger link between current account and fiscal imbalance in under-developed financial systems as liquidity constraints are likely to be more binding (Milesi-Ferretti and Razin, 1996). Liquidity constraints are prevalent in Malawi due to its generally underdeveloped financial systems. The Ricardian equivalence would not hold and, therefore, by implication fiscal deficits should be correlated with current account deficits. Further, over the

years, Malawi has experienced large and persistent fiscal deficits even after grants (Figure 6). These have often been monetized, thus inducing excessive monetary growth, inflation and appreciation of the real exchange rate. As such, fiscal imbalances should have directly and indirectly influenced the current account balance. However, the correlation coefficient only reveals a relationship of 18% between fiscal balance and current account deficit (Appendix 3). This might be explained by the fact that though the foreign component of the capital budget of Malawi is about 50%, it just constitutes 20% of the total budget while the foreign component in the recurrent budget is less than 10% (Government of Malawi, 2012). As such, the weak correlation between the country's fiscal deficits and current account deficits could point to the fact that the latter emanated from the private sector. This should have pointed to a sustainable current account position only if the deficit from private sector was used for investment that in future would generate foreign exchange. Unfortunately, most of these imports were either consumables or gone into sectors whose output is for domestic consumption, hence unsustainable.

Figure 6: Fiscal balance and current account



Source: Reserve Bank of Malawi, 2012

Malawi's external liabilities

Although Malawi's debt ratios were low, much owed to the Heavily Indebted Poor Countries (HIPC) debt relief and the Multilateral Debt Relief Initiative (MDRI), the country's debt carrying capacity has not substantially increased in recent years, rendering the country to be at medium risk of external debt distress (IMF, 2010).

As alluded to above, the country's concentrated export base, reliance on rain-fed agriculture and weak international reserves leave it vulnerable to adverse external shocks. Malawi's external liabilities are slowly increasing, limiting the future ability to source finance externally and hence finance the current account.

Non-debt creating flows, particularly in form of foreign direct investment, have been very insignificant compared to other countries in Sub-Saharan Africa that are also non-mineral rich. For instance, FDI inflows as a percent of GDP was less than 1% for Malawi as compared to 3.8% for Uganda, 2.2% for Swaziland and 5.4% for Lesotho during the period 2000 and 2006 (UNCTAD, n.d.). This therefore implies that the current account was to a large extent financed through unsustainable ways. Indeed, the capital and financial account of Malawi's balance of payments have mainly been characterised by the debt creating flows.

While the traditional lenders before HIPC were the Paris Club creditors and multilateral institutions, the country's past and recent external liabilities were owed to bilateral creditors (the Kuwait Fund, Export and Import Bank of India and the Export and Import Bank of China) accounting for over 60%. The currency composition was considered as desirable since the risk of currency mismatches between the debt service payments and sources of foreign exchange was minimal. Most debt service payments were made in US dollars and the Euro, and a large proportion of official reserves were also denominated in these currencies. Nonetheless, Malawi's external debt portfolio is exposed to the risk of depreciation of the local currency to the foreign currencies, which would lead to increased debt service costs in local currency and hence unsustainable deficits.

5.2 Structural Approach to Current Account

Following the International Monetary Fund (2006), this approach consists of three steps. The first step is to estimate an econometric model that relates the current account to its medium term fundamentals. In other words, the significant coefficients will be interpreted as important values for the current account to be on a sustainable path. The second step is to calculate the current account norm by multiplying the coefficients obtained from the current account model with medium term fundamental values. In the last step, the actual current account is compared to the current account norm. When the actual current account deficit is larger than the norm, that means that the current account deficit is unsustainable, while if the deficit is smaller than the norm, that means it is sustainable. Equation (8) represents the linear functional formulation of model (1);

$$CAB_t = \beta_0 + \beta_1 D_t + \beta_2 NFA_t + \beta_3 OPEN_t + \beta_4 TOT_t + \beta_5 REER_t + \beta_6 ODA_t + \beta_7 DEP_t + \beta_8 EXT_t + \beta_9 G_t + \varepsilon_t ,$$

(8)

where: CAB=current account balance (excluding grants) as a percentage of GDP, FD is the fiscal balance including grants over GDP, NFA_1 is the net foreign asset at the beginning of the period, OPEN is the ratio of the sum of imports and exports to GDP, TOT is the price of exports over the price of imports, REER is the real effective exchange rate, ODA is the official development assistance, DEP is the Dependency ratio, EXT is the external debt, G is the real output growth, β_0 is a constant, $\beta_1 - \beta_9$ are coefficients and ε_t is error term.

5.2.1 Definition and justification of variables

The current account deficit (CAB): is the current account deficit (excluding grants) as a percentage of GDP. We chose this definition because we want to pin down the variables that influence the current account deficit as the inclusion of grants would give biased results as the level of current account is shown to be improved with grants. Since our dependent variable is deficit, a positive relationship means increasing the deficit (worsening the current account balance) and a negative relationship means reducing the deficit (improving the current account balance).

Fiscal balance (FD): As alluded to earlier, the Malawian economy had persistently experienced fiscal deficit, which was expected to have influenced the current account balance. In our study, we use the fiscal balance, including grants, expressed as a percentage of GDP. In Malawi, donor budget support accounts for about 60% of the total budget; as such, it is important to use this definition and the expected sign is positive. Data is from International Monetary Fund (IMF) International Financial Statistics (IFS).

Net foreign asset lagged once (NFA_1): The initial NFA position used in the empirical model is measured before the period of reference for current account balance so as to avoid capturing a reverse link from the current account balance to NFA. The country has generally been running very low reserves, often times below the minimum required by international standards. As such, it would be important to validate its influence on Malawi's current account. The expected sign is negative and data are obtained from IMF's IFS.

Openness (OP): We include this variable for Malawi because active liberalization of the current account and hence openness to trade started in 1988 and was only completed in 1994 with the flotation of the Malawi Kwacha exchange rate. In view of this, it is important to see how this variable affected the current account over time. In our study, we measure the degree of openness as the ratio of the sum of imports and exports to GDP and is expected to be negatively correlated with current account.

Terms of trade (TOT): A priori, the expected sign is ambiguous. In this study, TOT is defined as price of export over the price of imports, and is theoretically ambiguous, a priori. Data are author's own calculation, in order to have consistent data set as some TOT data was missing in some years. Terms of trade was calculated as price of export over price of imports. Exports included tea, tobacco, cotton, sugar, pulses, rice, coffee, accounting for 90% of total exports. Imports included petrol, diesel and

others, fertilizer and coal.

Real effective exchange rate (REER): As explained in earlier sections, the country's REER had periods of both over-valuation as well as under-valuation. In this study, the real effective exchange rate is obtained from the IMF's IFS, an increase is an appreciation and a decrease is depreciation. The expected sign is positive.

Dependency (DEP): The economy's demographic profile over time is expected to be positively associated with current account deficits. In our study, we use population growth to capture the share of economically dependent young people. In this case, we discount the older population to be part of the dependency as the life expectancy for Malawi is relatively low, averaging 40 years of age. The expected sign is positive. Data are obtained from the National Statistical Office.

External debt (EXT): The economy had been running high levels of external debt prior to the HIPC programme. In this study, it is defined as external debt over GDP, and the sign is expected to be positive. Data is from World Bank indicators.

Official development assistance (ODA): Official grants and/or concessional lending reduce the pressure on the current account; as such, a negative sign is expected. Data is from World Bank indicators.

Economic growth (G): In this study, we use the real output growth and the expected relationship with the current account deficit is a priori unknown. Data is obtained from the National statistical office.

5.2.2 Results and discussion

Some econometric issues

Preliminary analysis of data is conducted and the summary statistics are contained in Appendix 4. The next step is to find out the appropriate estimation technique. We carry out Granger causality tests (Appendix 3) to check for reverse causality between the regressors and the dependent variables. Results indicate that there are no statistically significant causalities, implying no serious potential endogeneity of the regressors in our model. Further, during the period under study, there were episodes when both FD and REER were potentially influenced by the current account deficits. As such, we further check the possibility of significant reverse causality in our data set by setting REER and FD, respectively, as dependent variables. Results in Appendix 5 (a and b) show the current account variable to be insignificant in both equations. In view of this, we proceed to use OLS estimation techniques. Unit root test were performed using ADF test and the results are mixed (Table 2). From the graphical analyses, we included the trend in the test equation.

Results indicate that series CAB, and NFA_1 are integrated of order one, while series of EXT, TOT, ODA FD, G, and DEP are found to be stationary. However, series REER and OPEN are found to be trend stationary. Since unit root test results indicate that some variables are $I(1)$ while others are $I(0)$, we cannot use cointegration

methodology and make inference from the obtained regression estimates. As such, a bounds test approach developed by (Pesaran *et al.*, 2001) is adopted for testing the level relationships.

Table 2: Unit root test of the Augmented Dickey Fuller (ADF) test

Variable	Level		First Difference		Longest lag	Order of Integration
	Includes constant	Includes Constant and linear trend	Includes constant	Includes Constant and linear trend		
CAB	-0.958		-8.091*	-8.286*	4	I(1)
EXT	-2.881***	-2.76	-8.079*	-8.210*	7	I(0)
TOT	-3.001**				7	I(0)
FD	-4.131*	-6.151*			7	I(0)
ODA	-3.176**		-8.079*	-8.213*	7	I(0)
G	-6.911*	-7.489*			7	I(0)
REER	-1.317	-5.013*	-6.309*		7	I(0)
NFA1	-1.655	-1.886	-5.207*	-5.117*	7	I(1)
OPEN	-1.084	-4.766*	-6.964*		7	I(0)
DEP	-4.148*				7	I(0)

Note: Used E-views 7.0 to derive the results. Lags were selected based on Shwartz Information Criterion. *, **, *** indicate significance at 1%, 5% and 10%, respectively.

Source: Own estimations based on compiled and own data

A bounds test approach to the analysis of level relationships

A bounds test developed by Pesaran *et al.* (2001) for testing level relationships is applicable to test the level relationship between a dependent and a set of regressors, irrespective of whether the underlying regressors are stationary, non-stationary or a mixture of both. There are two statistics (the F-statistics and Wald test) used to test for the significance of the lagged levels of the variables under consideration in a conditional unrestricted equilibrium correction model. The F-statistics have non-standard asymptotic distribution under the null hypothesis that there exists no level relationship regardless of whether the variables are I(1) or I(0). These are then analyzed against two sets of critical value bounds that cover all possible classifications of regressors into purely I(0), purely I(1) or mutually cointegrated (a mixture of I(0) and I(1) variables). The critical bounds are developed by Peseran *et al.* (2001). If the computed F-statistic falls outside the Upper Critical Bound (UCB), then the series are cointegrated. If it is below the Lower Critical Bound (LCB), then there is no cointegration. If the calculated F-statistics is between the UCB and LCB, then it is inconclusive as to whether there is cointegration or not.

The Autoregressive Distributed Lag (ARDL) approach to the estimation of level relationship in an ECM framework is adopted for two reasons. Firstly, as alluded to above, some variables are of I(1) while others are of I(0), hence the ARDL is applicable.

Secondly, we have a fairly small sample and it is argued that the ARDL model or the bounds testing approach to cointegration is better suited to small samples (Romilly *et al.*, 2001). The unrestricted error correction method used to examine the long and short run relationships is of the following form:

$$\Delta CAB = \alpha_0 + \alpha_1 CAB_{t-1} + \alpha_2 X_{t-1} + \sum_{p=1}^p \alpha_3 \Delta Z_{t-p} + \alpha_4 \Delta X_t + \mu_t \quad (9)$$

Where, Δ denotes the difference operator, X_{t-1} is vector of regressors in level form lagged once, ΔZ_{t-p} represents differenced regressors and CAB_{t-1} dependent variable lagged; with p maximum lag length, α_0 is the intercept term, and α_2, α_3 and α_4 are slope coefficients.

To choose the optimal lag length for the error correction term, the Akaike Information Criterion (AIC) was used, hence have the following error correction version of an ARDL(1,2,2,0,0,2,0) in variables REER,NFA1,G,OP,TOT,ODA,EXT. Following Campbell and Perron (1991), we use the general-to-specific testing strategy to determine the appropriate length of the ARDL so as not to compromise in degrees of freedom as our sample period is short.

To test for serial correlation, we apply the Breusch–Godfrey tests and with probability chi squared of 0.143, we fail to reject the null of no serial correlation at standard levels of significance. However, since there is presence of serial correlation at 14%, we correct for the problem of serial correlation, hence OLS estimation techniques with the coefficient covariance matrix of the HAC Newy-West are used. With the probability of F-statistics of 0.895, we fail to reject the null of no heteroskedasticity at standard levels of significance.

We evaluate the stability of the coefficients by using the recursive estimate, and results show that there was a structural break in 1998. As such, a dummy variable (DUM98) is included to account for this structural break. A dummy variable (LIB) is also included in the model to account for current account liberalization, which commenced in 1988 as explained in earlier sections.

The regression passes the functional form misspecification test and, overall, the regression results fit reasonably well and pass the diagnostic tests, hence provides a sound basis for analysis. The estimated results of the ECM form are shown in Table 3. The computed F-statistics for testing the hypothesis that there exists no level relationship between CAB and the regressors, F(11, 28) is 8.5. The appropriate critical value bounds from Pesaran *et al.* (2001) are (1.83, 2.94), (2.06, 3.24), (2.54, 3.86), respectively, at 90%, 95% and 99% level of significance. This falls outside upper critical value bounds. Therefore, the null of no level relationship with dummy variables is rejected, irrespective of whether the variables are all I(0) or I(1) or a mixture of I(0) and I(1) variables. We therefore proceed to make inferences from the estimated results.

Long Run Equation

The ECM form as in Table 3 allows us to have a better insight into the dynamics of the current account. However, from the ECM, we can also obtain the implied long-run-level relationship between the current account and the other explanatory variables. Following Ozanne (2006), the long run equation is found by:

$$CAB_t = \gamma X_t + \varepsilon_t; \quad (10)$$

where γ is $-(\alpha_2/\alpha_1)$ from equation (9)

Table 3: Results of the error correction from the ARDL model

Dependent Variable (D(CAB))	Coefficients	Standard Error
CAB(_1)	0.549***	0.164
D(CAB(_1))	-0.041	0.144
REER(_1)	-0.002*	0.0008
D(REER)	-0.0002	0.0008
G(_1)	0.003	0.002
D(G)	-0.0003	0.002
LIB	0.046*	0.022
NFA_1	-0.552**	0.196
D(NFA_1)	0.001	0.204
OP(_1)	-0.332*	0.170
D(OP)	-0.731***	0.088
TOT(_1)	0.002***	0.0005
D(TOT)	0.0005*	0.0002
ODA(_1)	-0.164	0.125
D(ODA)	0.166**	0.068
D(ODA(_1))	-0.349***	0.055
D(ODA(_2))	0.371***	0.108
EXT(_1)	-0.071***	0.013
D(EXT)	0.025	0.022
DUM98	0.154***	0.030
C	0.192	0.161
Adjusted R ²	0.85	
F-statistic	8.51	
Prob(F-statistic)	0.004	
Dubin Watson	2.89	
Serial Correlation	F(2,5)	0.143
Heteroscedasticity	F(20,7)	0.895
Reset(2) specification test	F(1,6)	0.761

Note: superscript *, ** and *** means significant at 10%, 5% and 1%, respectively.

Source: Own estimations

Substituting the results from the ECM above into 10, we have equation (11) below and t-statistics are in parenthesis.

$$\begin{aligned}
 CAB = & -0.349 + 0.003REER - 0.006G + 0.303ODA + 0.107EXT - 0.230DUM + \\
 & (-2.000) \quad (1.789) \quad (-1.313) \quad (-5.650) \quad (5.168) \\
 & +1.005NFA_{-1} + 0.604\theta - 0.003TOT \quad (11) \\
 & (-2.823) \quad (-1.956) \quad (3.906)
 \end{aligned}$$

The population growth (DEP) variable was found to be statistically insignificant and was dropped. Similarly, the fiscal deficit (FD) variable was found to be insignificant in all lags and was dropped. The results are, however, different from Chinn and Prasad (2003), Nakamura and McPherson (2005) and International Monetary Fund (2006), as they both found that government budget balance was statistically significant in their current account balance panel regressions. Also, in the earlier section, the correlation was found to be low. This is also contrary to the twin deficit hypothesis and to conventional wisdom as one would expect that the high fiscal deficits the country has been running should strongly impact the current account deficits. The results should, however, be taken with caution as it could be due to measurement problems of the variable.

The estimated coefficient on the Real Effective Exchange Rate (REER) is positive and significant, which implies that an over-valuation worsens the current account deficit. The results for external debt (EXT) indicate a positive and significant coefficient, which implies that accumulation of debt either private or public worsens the current account balance through high interest payments. With traditional sources of capital flows (official development assistance) declining, Malawi has heavily relied on external borrowing as other sources of capital flows such as foreign direct investment and portfolio flows have been insignificant. As such, this has put pressure on the current account through interest payments, which slowly started increasing after the HIPC relief. Further, the inflow of these resources have promoted domestic consumption of foreign goods and services, further worsening the current account.

With regard to openness (OPEN), the coefficient was statistically significant but had unexpected positive sign, implying that liberalization of the current account worsens the current account deficit. One reason can be attributed to the way the index is measured. With the growth of imports outpacing the growth of exports, it is not surprising that the relationship is positive. The other explanation could be that towards the later years, the country had opened up to other trading partners such as China. Following that, there has been an influx of cheap imports from China against very little exports.

The estimated coefficient for terms of trade (TOT) was found to be negative and

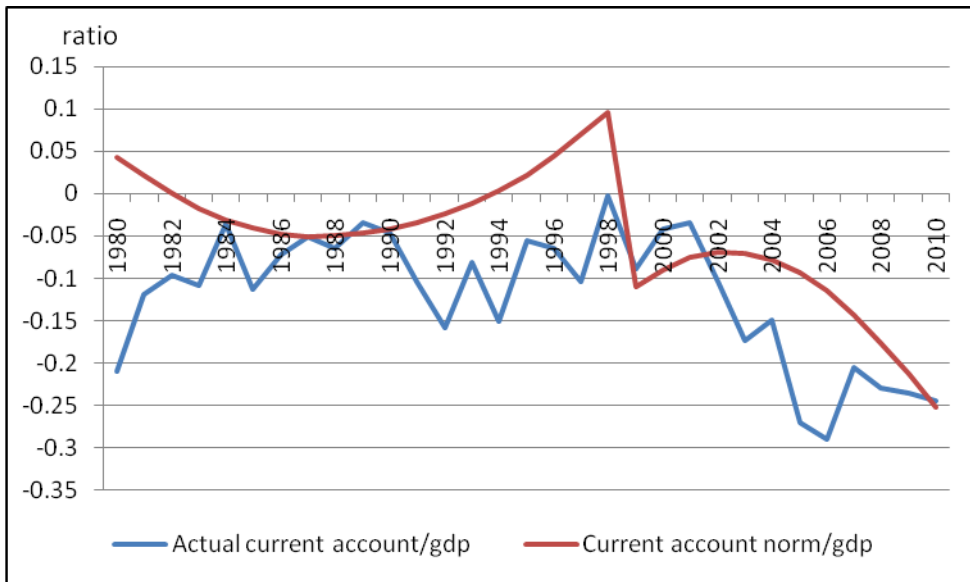
significant, implying that an improvement in terms of trade improves the current account deficit. The coefficient for the level of net foreign assets is theoretically ambiguous and was found to be positive and significant, implying that increasing net foreign asset (NFA_1) increases the deficit. The estimated coefficient for growth (G) was found to be negative and significant, suggesting that an increase in output growth improves the current account deficit. This result is relevant to the Malawian economy which requires growth in its tradable sector to improve its trade.

Current account norm

The estimated results of the long run equation indicate that real exchange rate, external debt, openness, net foreign assets and growth in output are fundamental determinants of the current account. These, therefore, are the important variables required to influence the current account to be on a sustainable path. In the second step, the estimated coefficients of the above variables are multiplied by the medium term values of these variables. In this study, we take the HP filter of the variables to be the potential or medium term values while the IMF uses the four year averages (IMF, 2006). We use the HP filter because it has the following advantages: firstly, it is simple to apply, secondly it requires few judgmental assumptions and little reliance on economic theory to produce results, and thirdly it produces a variable that is stationary and the trend follows a stochastic process (Yap, 2003). The estimated current account norms are plotted against the actual current account as in Figure 7.

The current account norm is able to track the actual current account with a correlation of about 60%. Overall, the current account deficit was frequently excessive than the norm would predict, with an average deviation of about 5% of GDP for the whole period, with the widest deviation in 2005. The chart further reveals that after receiving the debt relief under the HIPC programme in 2006, the current account deficit, though temporarily improved, was still in excess of what the structural fundamentals would call for.

Figure 7: Actual current account balance vs current account norm, 1980-2010



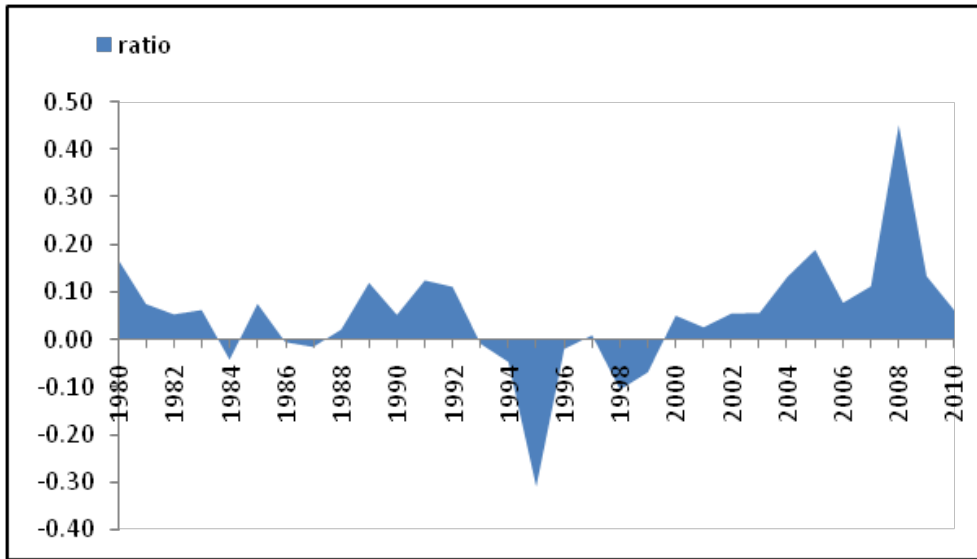
Source: Own estimations and calculations

5.3 Solvency Approach to Debt and Current Account Sustainability

Using equation (7), computations were done and the results are shown in Figure 8. As earlier stated in section 3.1.4, a ratio above zero means that the current account is unsustainable. The chart shows that the current account was above zero only during a few years, 1984, 1987, 1994 and 1995, 1998 and 1999, which implies that these were the periods when the current account was sustainable. The situation started to worsen in 2000 and was worst in 2008, even though it somewhat improved in later years. These findings are generally consistent with the earlier approach discussed, as trade surpluses have not been sufficient to repay the existing debt.

It is interesting to note that in 2006 when the country had received HIPC debt relief, results from this approach revealed that the current account still remained unsustainable, though it improved marginally. One reason for this finding could be that this approach only focuses on interest rate and growth rate differentials

Figure 8: Solvency approach current account sustainability



Source: Own calculations

and the solvency condition (the ability of a country to generate future external trade surpluses to repay existing debt). The approach does not take into account the role of foreign investors and lenders. Furthermore, this approach undermines the role of political economy; that is, whereas trade surpluses may be theoretically sufficient to repay the external debt, diverting resources from the domestic economy to repay external debt may not be politically feasible (Millessi *et al.*, 1996).

5.4 Discussion of the Approaches

All approaches confirm that the current account deficit was unsustainable. The structural approach shows the degree of unsustainability at each point in time. Further, the approach gives out critical factors policy makers need to pay attention to for the current account to remain sustainable.

From the narrative approach, all indicators analysed point to an unsustainable current account. This approach, however, fails to give out the degree of sustainability. Similarly, the solvency approach also revealed that the current account was unsustainable but failed to specifically show by how much the current account was unsustainable. In addition, this approach as alluded to earlier concentrates on interest rate on external debt and growth, ignoring the role of other forms of financing the current account, such as foreign direct investment and ODA, which could have an impact on the current account.

In light of the discussion above, therefore, the structural approach is the one that is more reliable.

6.0 Conclusion and Recommendations

The main objective of this study was to examine the sustainability of the current account in Malawi for the period 1980 to 2010.

An analysis of the current account indicators shows that the path of the current account was, to a larger extent, being driven by structural factors influencing the trade and net services balances, which were in persistent deficits. Foreign reserves were persistently low, pointing to an unsustainable current account position. While there were modest investments and economic growth was generally sustained during the period, it was not associated with growth in the export sector. Notwithstanding the commencement of uranium mining, the export sector remained low, stagnant with limited vertical diversification against growing imports. All these factors point to the fact that Malawi's current account balance was less sustainable. The analysis further shows that for the period under study, the local currency was often times under-valued than over-valued. Nevertheless, it was highly appreciated than what the underlying fundamentals would call for, mostly in the later years, further compounding the current account deficit problem.

Results from the econometric analysis reveal that for Malawi's current account to move towards a sustainable path, particular attention should be paid to the following factors: real exchange rate, terms of trade, economic growth, external debt, net foreign assets and openness to trade. Results further show that Malawi's current account deficits were excessive and unsustainable. Overall, the current account deficit was frequently excessive than the norm would predict, with an average deviation of 5% of GDP for the whole period.

The accounting approach to external debt sustainability shows that external debt for the country was unsustainable. Even after the country had received HIPC relief, the situation still points to the potential future unsustainability, hence further confirming the other approaches.

Results from all approaches confirm that Malawi's current account deficits were excessive and unsustainable during the period under review. From these findings, we can draw a number of policy recommendations. Firstly, the study found that economic growth and particularly in the export sector is an important factor in the sustainability of the current account. However, exports were persistently low and not diversified. This therefore calls for a paradigm shift in the design of the structural policies which would move the current account balance from deficits into surpluses. In particular,

policies that will ensure growth in the exportable sector as well as diversification towards high value exports are imperative. Thus, industrial policies that will foster structural transformation are vital.

The study also finds the exchange rate to be an important factor in the sustainability of the current account. In particular, an appreciated exchange rate worsens the current account. In view of this, it is therefore important for the authorities to pursue an active exchange rate policy that will ensure that the exchange rate is not misaligned so as to positively influence the current account balance.

Further, the study finds that openness to trade worsens the current account deficit. This positive relationship could be due to the way the openness index was defined.

In addition, the study finds that an improvement in terms of trade improves the current account position. Though the country is a price taker in most of its major exportable commodities, there is still room for improving its terms of trade, for example by improving the branding or packaging, and this should be encouraged.

Further, the findings reveal that external debt is also critical for Malawi's current account deficits to be on a sustainable path. It was found that external debt for the country was unsustainable, even after accessing the HIPC relief, further worsening the current account position. This is worrisome and therefore calls for a serious review of the country's external debt strategies and policies in this post-HIPC era.

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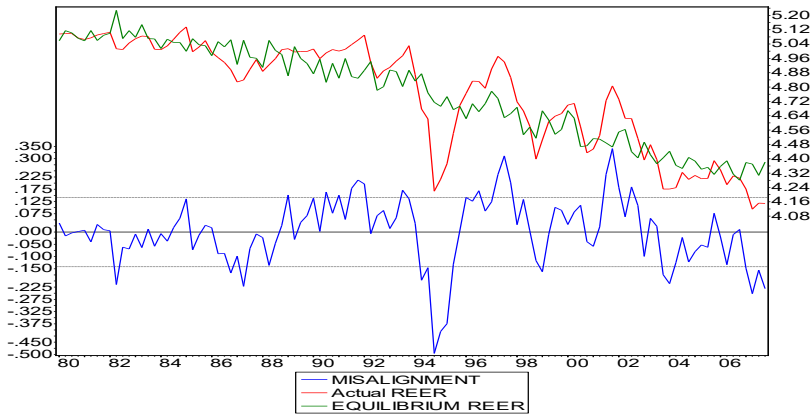
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Appendices

Appendix 1: Actual, equilibrium and REER misalignment



Source: Nkuna and Malala (2008)

Appendix 2: Granger causality test, 1980-2010 with 2 lags

Null Hypothesis	Probability
EXT does not granger cause CAB	0.587
CAB does not granger cause EXT	0.220
FD does not granger cause CAB	0.804
CAB does not granger cause FD	0.504
G does not granger cause CAB	0.224
CAB does not granger cause g	0.282
ODA does not granger cause CAB	0.753
CAB does not granger cause ODA	0.127
OP does not granger cause CAB	0.149
CAB does not granger cause OP	0.672
REER does not granger cause CAB	0.101
CAB does not granger cause REER	0.353
DEP does not granger cause CAB	1.672
CAB does not granger cause DEP	0.864
TRADE BALANCE does not Granger Cause REER	0.593
REER does not Granger Cause TRADE BALANCE	0.128

Source: Own estimations

Appendix 3: Correlation matrix for Malawi data

	CAB	REER	G	FD	DEP	LIB	NFA_1	OP	TOT	ODA	DUM HIPC	EXT
CAB	1											
REER	0.5	1										
G	-0.05	-0.22	1									
FD	-0.18	-0.48	0.23	1								
DEP	0.16	0.22	0.04	0.18	1							
LIB	-0.15	-0.67	0.21	0.52	-0.36	1						
NFA_1	-0.15	-0.68	0.06	0.36	-0.3	0.8	1					
OP	-0.68	-0.55	-0.1	0.06	-0.13	0.18	0.31	1				
TOT	0.54	0.42	-0.27	-0.16	-0.07	-0.12	-0.35	-0.42	1			
ODA	0.31	-0.18	0.13	0.28	0.47	0.14	-0.01	-0.18	0.25	1		
DUM HIPC	-0.69	-0.55	0.28	0.31	0.04	0.26	0.26	0.48	-0.37	-0.03	1	
EXT	0.4	-0.21	-0.36	0.01	-0.34	0.28	0.28	-0.13	0.4	0.19	0.52	1

Source: Own estimations

Appendix 4: Summary statistics of Malawian data

	CAB	EXT	FD	G	NFA_1	ODA	OP	DEP	REER	TOT
Mean	-0.12	0.93	-0.15	3.46	-0.01	0.20	0.50	3.17	117.34	107.35
Median	-0.10	0.86	-0.15	4.04	0.00	0.19	0.49	2.80	123.08	115.45
Maximum	0.00	3.09	0.02	15.01	0.10	0.43	0.71	9.00	166.74	186.80
Minimum	-0.29	0.17	-0.12	-11.61	-0.13	0.09	0.35	0.73	73.29	27.69
Std. Dev.	0.08	0.65	0.04	5.35	0.06	0.08	0.10	1.75	31.96	33.09
Skewness	-0.64	1.27	0.24	-0.81	-0.24	0.96	0.56	1.52	-0.04	-0.22
Kurtosis	2.33	5.21	2.63	4.29	2.12	3.92	2.66	5.50	1.50	3.08
Jarque-Bera	2.67	14.61	0.49	5.57	1.29	5.87	1.74	20.01	2.92	0.27
Probability	0.26	0.00	0.78	0.06	0.52	0.05	0.42	0.00	0.23	0.88
Sum	-3.74	28.79	-1.58	107.12	-0.34	6.34	15.63	98.16	3637.4	3327.89
Sum Sq. Dev.	0.18	12.69	0.04	859.20	0.12	0.22	0.28	91.74	30647.4	32852.8
Observations	31.00	31.00	31.00	31.00	31.00	31.00	31.00	31.00	31.00	31.00

Source: Own estimations

Appendix 5: Estimating REER and FD with CAB as dependent variable

Dependent Variable: REER

Sample: 1980 2010

Source: Own estimations

Included observations: 31

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CAB	131.8621	100.9044	1.306803	0.2032
TOT	0.462167	0.138038	3.348115	0.0026
OP	139.9266	59.88060	2.336761	0.0278
FD	-287.1478	162.4733	-1.767354	0.0894
G	0.625394	0.960376	0.651197	0.5209
NFA1	-225.5477	93.80583	-2.404410	0.0239
R-squared	0.347780	Mean dependent var		117.3359
Adjusted R-squared	0.217336	S.D. dependent var		31.96219
S.E. of regression	28.27641	Akaike info criterion		9.693918
Sum squared resid	19988.89	Schwarz criterion		9.971464
Log likelihood	-144.2557	Hannan-Quinn criter.		9.784391
Durbin-Watson stat	1.775676			

Source: Own estimations

Dependent Variable: FD

Method: Least Squares

Sample: 1980 2010

Included observations: 31

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CABXCL	-0.079999	0.119981	-0.666759	0.5110
TOT	0.000130	0.000191	0.678548	0.5037
OP	-0.073218	0.075302	-0.972319	0.3402
REER	-0.000387	0.000219	-1.767354	0.0894
G	0.001042	0.001105	0.943081	0.3547
NFA1	0.095080	0.119299	0.796985	0.4330
R-squared	0.286408	Mean dependent var		-0.050832
Adjusted R-squared	0.143689	S.D. dependent var		0.035464
S.E. of regression	0.032818	Akaike info criterion		-3.823716
Sum squared resid	0.026925	Schwarz criterion		-3.546170
Log likelihood	65.26760	Hannan-Quinn criter.		-3.733243
Durbin-Watson stat	2.111322			



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Nairobi 00200, Kenya
Tel: +254 (0) 20 273 4150
communications@ercafrica.org