The Behaviour of the Malawi Kwacha in a Liberalized Environment

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Abstract

The paper investigates some of the key factors that have influenced exchange rate movements since the foreign exchange market was liberalized in 1994. The paper adopts a general empirical specification of the exchange rate equation involving the interest rate and price differentials, as well as current account balance and net external flows to explain the exchange rate movements.

In general, the empirical results indicate that increases in interest rates differential, has tended to attract, though insignificantly, private capital flows, leading to exchange rate appreciation. Deteriorations in current account, and reductions in net capital flows, on the other hand, are associated with depreciation of exchange rate. A rise in the price differential (widening gap between domestic and foreign prices) leads to exchange rate depreciation.

Subject to the usual limitations of any econometric enquiry, the above results offer the following tentative conclusions. The insignificant impact of interest rate differential on attracting capital flows points to the need for government to address some structural bottlenecks. For instance, infrastructure services such road network and utilities (electricity and water supply) require improvement. Hence the current policy of lowering interest rates is therefore in line with maintaining a relatively depreciated currency. This implies that a demand for low interest rate regime must lead to a relatively weak Malawi kwacha internationally.

On the other hand, changes in the current account balance have a bearing on the exchange rate market. Thus policies that influence exports and imports of goods and services also determine exchange rate movements. Likewise, prospects concerning donor funding influence the direction of market forces in determining the exchange rate movements. Therefore, government's credibility regarding the use of external public funds and implementation of related reforms is important in as far as stability of the foreign exchange market and overall macroeconomic stability are concerned.

1. Introduction

The exchange rate regime determines the ability of the economy to effectively respond and adjust to exogenous shocks. Besides, the exchange rate movements influence exports and imports of goods and services, which are key macroeconomic variables. For these reasons, it is necessary to have an appropriate model of the exchange rate that reflects the underlying economic factors as well as a feasible model that can be used in policy analysis and forecasting (Were 2001).

Since February, 1994, the Malawi kwacha has been market determined, with limited smoothening intervention by the Reserve Bank of Malawi related primarily to the agricultural cycle. While the dirty float has provided the economy with some insulation against the effects of real shocks, it has also meant that monetary and exchange rate policies have been accommodative of fiscal slippages. In the absence of sufficient discipline, however, alternative exchange rate regimes would likely not have been viable without extensive controls on current and capital transactions.

The Reserve Bank has stressed that exchange rate would continue to be market determined. Its intervention in the foreign exchange market would be limited to meeting the net international reserve target and moderating seasonal fluctuations, without attempting to influence underlying trends (IMF Country Report No. 04/380).

Despite the policy shift, empirical studies in explaining exchange rate movements in the floating period are still scant. The study diagnoses factors that have influenced exchange rate movements since the foreign exchange market was liberalised in 1993. Using quarterly data, it spans the period 1993 to 2003. This is a period characterized by financial and foreign exchange market reforms and political liberalisation. The period is also characterised by high volatility in such nominal variables as interest rates, exchange rate and domestic prices. Thus, it is time to take stock of what happened to the exchange rate market.

The rest of the paper is organised as follows: Section 2 looks at the historical trends of the variables of interest. Section 3 specifies the empirical model to be estimated. The estimated results will be discussed in Section 4. Conclusions and policy implications are given in section 5.

2. Historical trends of variables of major interest

2.1 Exchange rate

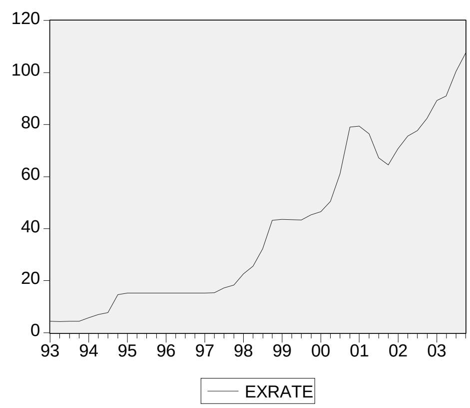
Developments in the Malawi kwacha exchange rate during 1994 were influenced by the floatation of the currency in February 1994, and the scarcity of the foreign exchange rate during the year. Foreign exchange scarcity had worsened since the suspension of non-humanitarian assistance in 1992 and the intensification of the drought. The foreign exchange situation deteriorated further due to delays following donor aid resumption in December 1993. As a consequence to the adverse developments, the Malawi kwacha depreciated sharply throughout the year. Between January and end December 1994, the kwacha depreciated against the United States dollar, the British pound, the German mark and the South Africa rand. In 1995, the Malawi kwacha remained fairly stable but cumulatively depreciated against all currencies of its major trading partners, partly reflecting the spill over effects of the floatation of the currency in February 1994. In nominal terms, the kwacha depreciated against the US dollar by 221.1 percent since the floatation of the kwacha.

In July 1997, the Malawi kwacha began to depreciate after almost three years of relative stability. The slide of the kwacha was in the wake of mounting pressures on the balance of payments, emanating from increased import demand, declining capital inflows and low foreign exchange earnings from exports. The situation was further exacerbated by speculation in the foreign exchange market which saw hoardings of foreign exchange balances by major exporters grow rapidly.

During the latter part of 1998, however, the external value of the Malawi kwacha declined substantially. Factors contributing to this development included first, excessive demand for foreign exchange against limited supply that exerted pressure on the currency. Second, delayed receipt of donor capital inflows and expected shortfalls in tobacco export proceeds owing to both low production volumes and prices made it difficult to maintain the then value of the Malawi kwacha. In addition, the depreciation of the currencies of major trading partners (namely, the South African rand and the Zimbabwean dollar) also added pressure to the Malawi kwacha. Because of these and other factors, authorities undertook to re-align the value of the kwacha in accordance with the prevailing environment by carrying out two devaluation episodes: first 25 percent on August 21, and another 25 percent on August 24, 1998. Thus by end-December 1998, the external nominal value of the kwacha had depreciated by over 100 percent against the US dollar from the value observed at the end of 1997.

Developments in the Malawi kwacha exchange rate in 1999 mirrored several factors, including first, ample supply of foreign exchange made possible by a healthy tobacco season, which contributed to the relative stability of the currency. Second, mid-way into the year, speculation about another possible devaluation of the kwacha died down, enabling the currency to remain relatively stable. Third, the donor inflows, though lower than expected, also contributed much to the stability of the kwacha as these supported the foreign exchange reserve position. Finally, the recovery in the countries affected by the Asian crisis also helped achieve stability in the exchange rate as currencies of Malawi's major trading partners increased. Notwithstanding these positive developments, the kwacha also came under pressure as the inflation differential between Malawi and her trading partners increased.

Figure 1. Exchange rate



In 2000, the external value of the Kwacha weakened substantially, particularly starting the second quarter of the year. Several factors accounted for this development, both external and domestic. On the international scene, the growth in the US economy resulted into the strengthening of the US dollar against all major currencies, including the South African rand. In addition, political developments in Zimbabwe and low gold prices in South Africa also played a significant role in the weakening of the rand. Subsequently, the Malawi kwacha weakened in attempt to maintain its competitiveness. On the domestic front, the collapse of the tobacco prices at the auction floors had an adverse impact on the country's reserve position. This together with the hoarding of foreign currency by some exporters and non-receipt of pledged donor support led to scarcity of foreign exchange on the market putting pressure on the kwacha.

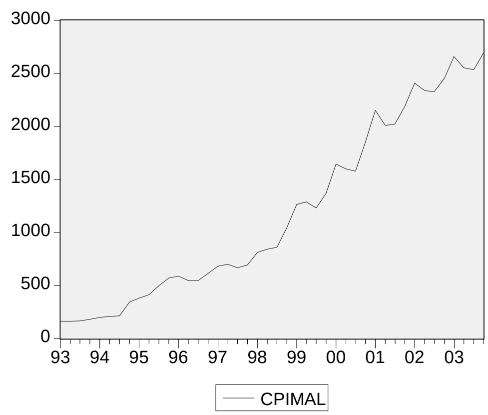
There were large donor inflows in 2001, which resulted into an appreciation of the kwacha and also drop in the ways and means. In 2002, despite improved receipts from tobacco sales as compared to 2001, low donor inflows impacted negatively on the country's reserve position. By the end of December 2002, the Malawi kwacha shed 29.5 percent against the US dollar to close the year at K87.14 per dollar.

In 2003, the continued depreciation of the US dollar on international market helped sustain the kwacha at moderate levels. Consequently, the nominal value of the kwacha depreciated by 29.5 percent recorded in 2002. The local currency thus closed the year at K108.57 per US dollar.

2.2 Inflation:

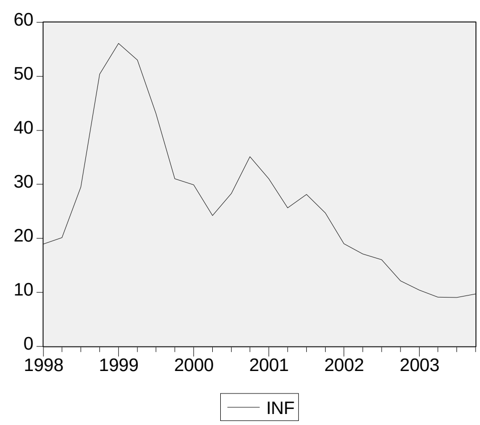
The consumer price index is used for calculating inflation. Its trend reflects the general trend of prices on the market. Graphical display of the CPI figures indicate that prices have been trending upwards over time, although there have been cyclic oscillations, reflecting seasonal (agricultural) activities.

Figure 2 Consumer price index



Domestic prices in 1994 were mostly influenced by the widespread food scarcity caused by the drought coupled with short-term effects of the depreciation of the kwacha. The rate of inflation accelerated to 34.6 percent against the 22.8 percent recorded in 1993. Price developments during the early part of 1995 reflected spillover effects of heavy depreciation of the Malawi Kwacha following the floatation of the Malawi Kwacha in February 1994. However, in the latter part of the year, authorities implemented stringent fiscal and monetary policies, which ranged from the control of government expenditures through the cash budget system to the intensification of open market operations. In 1995, inflationary pressures, on annual basis continued unabated throughout the first half of the year when the rate of inflation rose from 72.1 percent in January and reached the highest peak of 98.1 percent in July. Such high inflation rates reflected among other factors persistent drought conditions, which necessitated upward revisions in most food items. Furthermore, the liberalization of agricultural inputs as well as the liberalization of maize price coupled with increases in wages and salaries and finally increases in import unit values exacerbated the situation. To curb the situation, authorities further intensified open market operations, coupled with strict adherence to the cash budget system. Consequently, the rate of inflation decelerated in August as it stood at 94.7 percent. This trend continued to December when the inflation rate was recorded at 74.9 percent. For the whole year, inflation rate averaged 83.3 percent, from 34.6 percent in 1994.

Figure 3. Inflation rate



In 1997, the annual inflation rate at 9.2 percent was a further deceleration on 37.6 percent registered in 1996. Price decelerations were experienced in all categories of the consumer basket notably food, transport, housing and clothing/footwear. Price stability was experienced in the first half of the year but price surges began in August due to a couple of factors. Effects of low smallholder production of maize began to emerge and food shortages led to price hikes. Depletion of foreign reserves and increasing government deficit led to a depreciation of the Malawi kwacha in July. This led to decreased prices of both imported finished products and raw materials later in the year. These inflationary pressures aside, persistent tighter monetary policy played an important role in subduing inflation. At the same time, proliferation of assorted imported products on the market increased seller competition and contributed in checking price increases. This resulted in inflation rate slowing down to 9.32 percent in 1997.

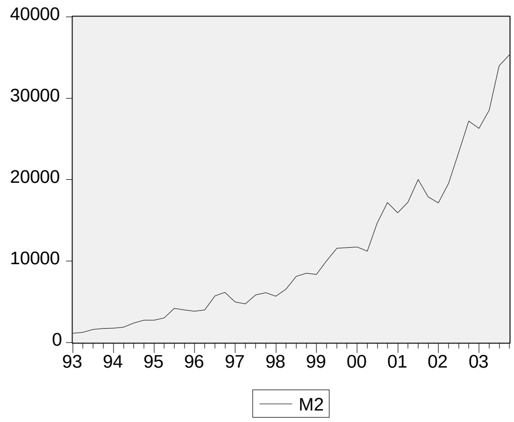
In 1998, however, inflation accelerated to 29.8 percent. This was largely attributed to scarcity of the country's staple food – maize, which necessitated importation and upward adjustment of the price. Pressures also emanated from the adjustment of controlled prices of electricity, water and petroleum products. The adjustments mirrored effects of the Kwacha depreciation which was effected in August, 1998. In 2000, inflation decelerated to 29.5 percent from 44.9 percent in 1999. The deceleration was largely due to the slowdown in food inflation following a good cereal crop during the year. In 2001, the country produced 1.5 million metric tones of maize, down from 1.7 million metric tones in 2000. Since maize has a big weight in the food index, its scarcity and importation from neighbouring countries led to a very big rise in maize prices and the consequent acceleration in food inflation. Inflation averaged 14.8 in 2002 compared to 22.7 percent in 2001. The deceleration in inflation was mainly attributed to decline in food costs.

For the year 2003, inflation averaged 9.6 percent, which was a notable slowdown when compared to an average of 14.8 percent for 2002. The slowdown was largely attributable to the availability of maize grain because of higher maize production in 2003 vis a vis in 2002, as well as continued tight monetary stance taken by monetary authorities through intensive monetary policy operations.

2.3 Money supply

The peaks and dips in money supply growth are trailing seasonal rise and drops in agricultural economic activity. The seasonal rise in money supply is attributable to increased demand for transactions money balances as a result of increased agricultural incomes from post harvest marketing. But the trend has been upwards reflecting growth in economic activity over time.

Figure 4. Money supply



2.4 Treasury bill rates and other interest rates

On November 7, 1994 the Reserve Bank of Malawi introduced into the market Treasury bills of various maturities (182, 91, 61 and 30 days). Weighted interest rates on these bills also moved up on all categories, raging from 39.39 percent to 42.78 percent at the end of December 1994. Yields on the 182-day had the highest rates at 54.38 percent in December followed by the 91-day bill at 42.68 percent. The introduction of Treasury bills of smaller denominations encouraged participation in the auctions from the private sector. The Liquidity Reserve Requirement was raised from 20 percent to 35 percent effective 30 September.

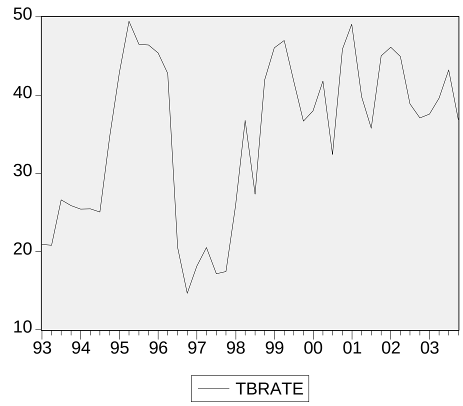
At the end of December 1997, the average yield for 91- day Treasury bill stood at 18.17 percent compared to 14.68 percent for Treasury bill for the same tenor at the end of December 1996.

In 1998, the average yield for the 91-day Treasury bill stood at 42.20 percent. The rise in the yield partly reflected efforts by monetary authorities to stem inflationary pressures emanating from the devaluation of the Malawi kwacha which took place in the third quarter of the year.

In 2002, the average T-bill yield dropped by 381 basis points and stood at 42.97 percent. This was attributed to the downward adjustment of the bank rate from 43.8 percent in 2001 to 43 percent effective June 2002 and further to 40 percent effective October 2002.

During 2003, Treasury bill yields registered significant year-on-year drops. This was largely the result of a 10 percentage point downward adjustment of the Bank rate, which took place between mid December and early December. The Bank rate dropped from 45 to 40 percent on 11th November and 35 percent on 5th December 2003. Consequently, the all-type T-bill yield closed 2003 at 33.58 percent, a 9.39 percentage point decline on the preceding year. Reflecting the 10 percentage point downward adjustment in the bank rate during the period between Mid-November and early December 2003, the inter-bank rate dropped from 36.92 percent at end of 2002 to 26.00 percent at end December 2003.

Figure 5. Treasury bill rates



3. The model

We use a blended version of the monetary and portfolio models. The model, a departure from the traditional sticky price monetary model (SPMM), is premised on a specification form pioneered by Frankel (1979). He argued that in the short run, as in the SPMM model, prices are sticky and thus PPP does not hold continuously. Frankel reworked the basic assumptions of the original Dornbusch model to account for differences in secular rates of inflation. That is,

$$EX(\Delta e) = \delta(e^* - e) + (p - p^*) \qquad [1]$$

Where

$EX(\Delta e)$ = expected rate of depreciation of the domestic currency

δ = coefficient of adjustment

e^* = equilibrium value of nominal exchange rate (e)

(p - p^*) = expected inflation differential

m and m^* = domestic and foreign money supply

y and y^* = levels of domestic and foreign real income

Letters in lower case indicate that the variables are in logarithm from.

We usher in the uncovered interest parity (UIP) condition, given as

$$i = i^* + E(\Delta e) \qquad [2]$$

where i and i* are domestic and foreign interest rates, respectively.

Substituting equation 1 into equation 2 and solving for (أ – e) results in

$(e^* - e) = 1/\delta[(i - i^*) - (p - p^*)]$ [3]

Equation 3 states that where PPP does not hold in the short run, the current exchange rate differs from long-run equilibrium value in proportion to the real interest differential (MacDonald 1988; Isard 1995). The relevant monetary equilibrium equation.

$\{m - m^* = (p - p^*) + \varphi(y - y^*) - \alpha(i - i^*)\}$

and the PPP assumption imply that

$e^* = p - P^* = (m - m^*) - \varphi(y - y^*) + \alpha(i - i^*)$ [4]

Instead of substituting equation 4 back to 3, we assume that in the long run p* is known, and thus equation 4 is captured in equation 3 in the form of price differential:

$e = p - P^*$

Therefore

$E = (p - p) - 1/\delta(I - I^*) + 1/\delta(p - p^*)$ [5]

By incorporating the cumulative trade balance in equation 5, based on Meese and Rogoff’s (1983a, b) interpretation that the cumulative trade and current account balance terms are variables that allow for changes in the long-run exchange rate, and by incorporating stochastic elements in the model, we obtain the estimable version as

$Et = \beta_0 + \beta_1(p - p^*) + \beta_2(i - i^*) + \beta_3(p - p^*) + \beta_4\int CA + \mu t$ [6]

Where

$(p_t - p_t^*)$ = price differential

$(i - i^*)$ = interest rate differential

$(p - p^*)$ = expected inflation differential

$\int CA$ = cumulative current account balance

Notice that equation 6 is a monetary –and –portfolio hybrid model. β_2 is negative (appreciation) in the case of SPMM and positive (depreciation) under the flexible price monetary approach.

In the estimable model, expectations are captured by changes in money supply, which is used as a proxy of inflationary expectations. Normally, a rise in money supply results in expectations of an acceleration in inflations, leading to a depreciation of the exchange rate. Experience has shown that announcements regarding IMF and World Bank missions tend to have far reaching effects on the economy. Besides, funding by IMF and World Bank tend to affect decisions taken by bilateral agencies. Because of the complexity of capturing this variable, net external inflows as a proportion of GDP have been used as a proxy; Using $e_t = LNE$, $p_t - p_t^* = PD$ and $i - i^* = IRD$, equation 6 is rewritten as an autoregressive distributed lag (ADL) model with *n* lags

$$LNE_t = \Sigma\theta_{1i} LRD_{t-i} \Sigma\theta_{2i} LPD_{t-i} + \Sigma\theta_{3i} CAB_{t-i} + \Sigma\theta_{4i} LM2_{t-i} + \Sigma\theta_{5i} NEI_{t-i} + \varepsilon_i \quad [7]$$

Where: LNE= logarithm of nominal exchange rate; LRD is logarithm of interest rate differential, computed using the 91-day Treasury bill rate and short term London Interbank Offer (LIBOR); LPF is logarithm of price differential, computed as the difference between the domestic price index and the US wholesale price index; LM2 is the logarithm of money supply; CAB is current account balance as a proportion of nominal (quarterly)) GDP; and NI is net external public inflows (official inflows and outflows) as a proportion of nominal GDP. Variables that are not in logs contain negative values that cannot be logged.

Apriori, we expect

$\Theta_{1i} < 0$ $\theta_{2i} > 0$ $\theta_{3i} < 0$ $\theta_{4i} > 0$ $\theta_{5i} < 0$

Assuming variables in the above equation are non-stationary as is the nature of time series data, then there will be need to difference the variables to attain stationarity. Differencing the variables, however, will result in loss of long run information about the data. To get back the long-run information, we will enter the parameters in the above equation into an error correction model (ECM), assuming of course, that the non-stationary variables are integrated of the first order.

Therefore, equation 7 parameters are reset into equation 8 with the error correction terms in brackets.

$\Delta LNE_t = \Sigma\theta_{1i}\ \Delta RD_{\ t-i} + \Sigma\theta_{2i}\Delta LPD_{\ t-i} + \Sigma\theta_{3i}CAB_{\ t-i} + \Sigma\theta_{4i}\Delta LM2_{\ t-i} + \Sigma\theta_{5i}\Delta NEI_{\ t-i} + \Sigma\theta_{6i}LNE_{\ t-1} + \theta_7[LNE - \alpha_1 LRD - \alpha_2 LPD - \alpha_3 LM2] + \mu_i$ [8]

4. Data and Estimation Results

4.1 Time series properties of the data

We will first conduct a descriptive analysis of the data for the first part of the study. Table 1 shows that the variables do not follow a normal distribution.

Table 1. Data Description

Variable	Mean	SD	Skewedness	Kurtosis	Normality
IRD	3.3430	0.4295	-0.9896	2.8742	7.2110
PD	6.2996	1.4628	-1.1057	3.2808	9.1114
CAB	-6.1526	6.7409	-0.9704	2.9850	6.9065
M2	8.8960	0.9557	-0.1852	2.0187	2.0169
NI	6.8897	8.5624	0.5131	2.6777	2.1221
EX	3.2948	0.9824	-0.3704	1.9999	2.8399

The second step is to test for unit root tests as shown in table 2. Two unit root tests are used because we are dealing with high-frequency data that are extremely noisy due to shocks, and some tests like those in the Dickey-Fuller (DF) class have low power. Tests used are the Augmented Dickey-Fuller and the Phillips-Perron.

Table 1. Unit root tests: Philips-Perron and Augmented Dickey-Fuller tests

Variable	PP Value (Intercept)	ADF Value (Intercept)	PP Value (Intercept & Trend)	ADF Value (Intercept & Trend)	Order of Integration
EX	-1.246974 (-2.9303)	-1.533784 (-2.9320)	-2.160073 (-3.5162)	-2.609958 (-3.5189)	
ΔE	-5.030934	-3.608720	-5.080513	-3.743311	I(1)
IRD	-2.313162 (-2.9303)	-2.568050 (-2.9320)	-2.524452 (-2.9320)	-2.776547 (-3.5189)	

ΔIRD	-5.680410	-5.447708	-5.608682	-5.374622	I(1)
PD ΔPD	-.246974 (-2.9303) -5.030934	3.951245 (-2.9320)	-1.862771 (-3.5162) -6.374077	-2.856991 (-3.5189) -6.211325	 I(1)
CAB ΔCAB	-.246974 (-2.9303 -5.030934	-1.650039 (-2.9320) -8.273713	-5.348617 (-3.5162)	-3.875493 (-3.5189)	 I(1)
M2 ΔM2	-.246974 (-2.9303 -5.030934	-1.077192 (-2.9320) -10.18504	-3.614962 (-3.5162)	-4.64843 (-3.5189*)*	 I(1)
NEF	-5.006141 (-2.9303)	-3.835961 (-2.9320)	-6.120700 (-3.5162)	-5.245342 (-3.5189)	 I(0)

The figures in brackets are McKinnon critical values for rejection of unit root at conventional 5 percent level of significance. The variables are tested at significant at 5 percent level of significance. The results indicate that variables such as exchange rate, money supply, interest rate differential, price differential and trade balance are non-stationary (integrated of order one) and thus become stationary after first difference. On the other hand, only net external inflows are stationary (integrated of order zero). The results, especially for money supply and current account, are conflicting for the two tests. To get a firm picture on the characteristics of the data, we first plot and examine the graphs of all variables. In levels and in their first differences as shown in figure 9 and 10.

Figure 9. Movements in the trade account, money supply, and price and interest rate differential

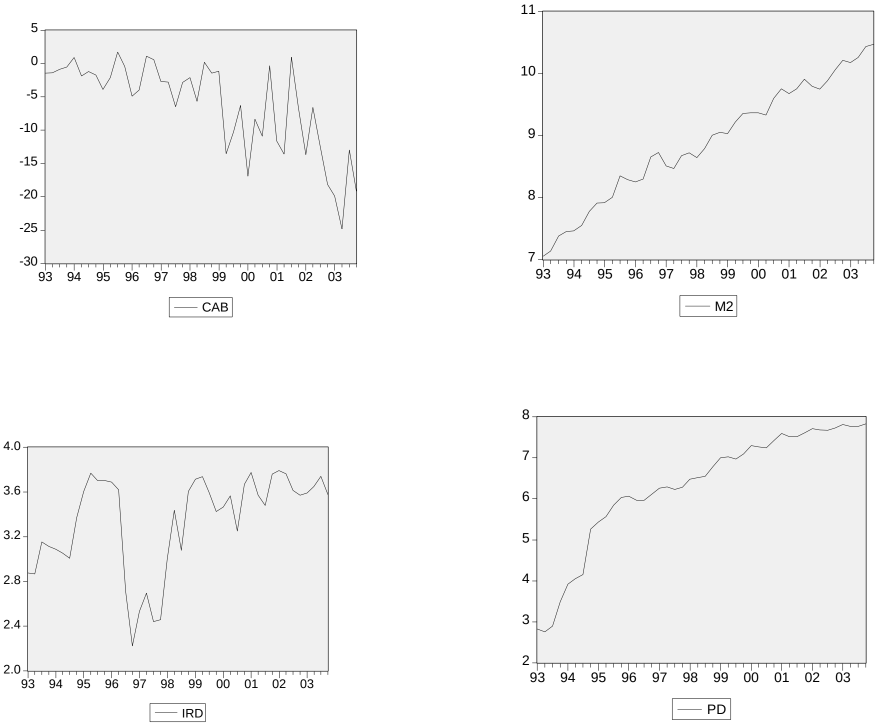
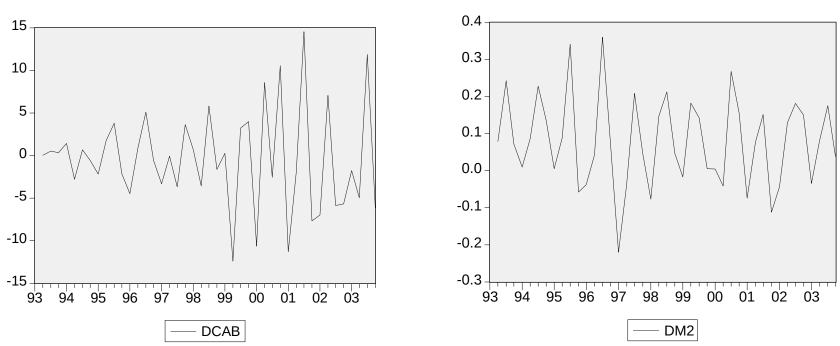
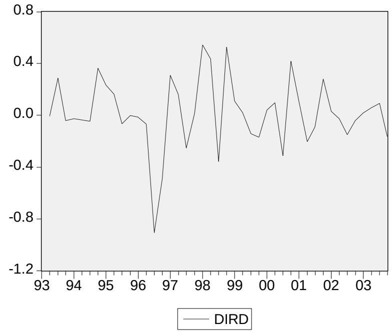
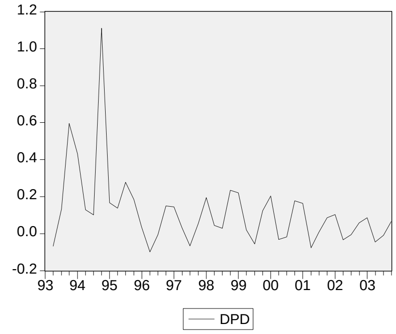


Figure 10. Movements in the in the growth of money supply, trade account, and price and interest rate differential







The graphs of the variables in levels depict some presence of a trend in the data, implying that the variables, including trade balance, are unlikely to be stationary. Figure 10 shows that these variables become stationary when differenced once. The results lead us to the conclusion that trade balance, money supply, price and interest differential are non-stationary and integrated of the first order.

Having found that the exchange rate, trade balance, money supply, price and interest differential are integrated of the first order, we tested for cointegration. The results of Johansen cointegration are reported in table 2.

Table 2. The Johansen Co-integration Test

Eigen values	Likelihood ratio	5% Critical value	1% Critical	Hypothesized No. of CE(s)
0.626006	88.59678	68.52	76.07	None**
04.38565	47.28915	47.21	54.46	At most 1*
0.283958	23.04429	29.68	35.65	At most 2
0.193177	9.015319	15.41	20.04	At most 3
6.56E-06	0.000276	3.76	6.65	At most 4

*(**) denotes rejection of the hypothesis at 5 percent (1 percent) significance level.

Results from cointegration test in table 2 indicate that there is one cointegrating vector at 5 percent significance level. This allows us to proceed with the determination of the longrun relationships between cointegrated variables through an ECM formulation. Based on the PPP condition, domestic and foreign prices are incorporated individually in the ECM instead of using price differential as a variable. This is in tandem with theoretical debate that PPP is likely to hold only in the very long run (Ndung'u 2000). Thus ECM is formulated using the interest differential, money supply, domestic and foreign prices and exchange rate. This enables us to obtain a cointegrating vector of the form:

$$ECM = EX - 0.107826RD - 4.4394M2 + 1.359217PM + 20.62258PUSA - 0.071040CAB - 78.3160 \quad [9]$$

The regression results of the error correction model specified in equation 8 incorporate the error correction term in equation 9. The regression results are reported in subsection 4.2

4.2 Estimation results

Before we present the final regression results, it is worthy noting that we made exhaustive analysis of the models, based on different measurements of variables – specifically in regard to current account deficit and net capital inflows. These variables were measured both as a proportion of GDP and in logarithm form (levels and differences). We obtain better results when these variables are captured as a proportion of GDP.

The estimation procedure starts with a general model encompassing four lags of each variable and a lagged ECT. The estimation data range from 1993:1 to 2003:4. Table 3 shows the preferred model after eliminating the various lags to obtain a parsimonious model.

Table 3. The exchange rate regression results

Variable	Coefficient	Standard error	t-ratio
Constant	-0.043611	0.027383	-1.592617
ΔEX(-1)	0.297962	0.133125	2.238214
ΔIRD(-4)	-0.062952	0.052293	-1.203816
ΔPD	0.517846	0.078851	6.567364
ΔCAB(-4)	-0.002141	0.002788	-0.768049
ΔM2	0.229865	0.118745	1.935784
ΔNEF(-5)	-0.004360	0.002161	2.017592
ECT_1	-0.250027	0.141039	-1.772753

R2 = 0.628; s.e. = 0.0871; F(7, 39) =7.4839[0.00], n = 39

ARCH F(2,39) = 1.7034; RESET F(2,39) = 0.003561[0.9527]

The regression results show that deterioration in current account (at fourth lag) is associated with the depreciation the exchange rate. The key components that are likely to improve the current account balance are goods such as tobacco, tea and sugar.

Similarly, increases in net external inflows as a proportion of GDP (at fifth lag) lead to appreciation of the exchange rate. The main components of public capital inflows likely to be captured are multilateral and bilateral donor funding. This is an important finding and confirms what tends to be observed in practice.

In line with theoretical expectations, another finding, though insignificant, is that a positive change in interest rate differential (with fourth lag) is associated with an appreciation of the exchange rate. This scenario works to attract private capital inflows, thus appreciating the exchange rate. These results are consistent with the argument that with the liberalisation of the market, high interest rates, and therefore the widening interest differential, tend to attract private capital flows, leading to exchange rate appreciation (Ndung'u 2000). On the other hand, increases in current money supply results in depreciation of the exchange rate. Likewise, a current rise in the price differential (that is a rise in domestic prices relative to foreign prices) is found to have a positive effect on exchange rate movements.

Finally, the cointegrating vector captured through the lagged ECT shows that the exchange rate disequilibrium from its long-run path will appreciate the current exchange rate. The speed of adjustment indicates that 25 percent of the disequilibrium from the previous period is being transmitted to the current period. Apparently, this is perplexing because exchange rates usually adjust quickly. However, this result is consistent with the macroeconomic policies in Malawi. The exchange rate is a passive variable and most likely influenced by the outcome of the Reserve Bank policies – mostly through the interest rates (mainly treasury bill rate).

5. Conclusions and Policy Recommendations

The study analyses key factors behind exchange rate movements following liberalisation of the foreign exchange market in 1994. The paper adopts a general empirical specification of the exchange rate equation encompassing the interest rate and price differentials, as well as current account balance and net external flows to explain the exchange rate movements.

In general, the empirical results indicate that deteriorations in current account balance and decreases in net external flows are strongly associated with the depreciation of exchange rates. This is consistent with what tends to be observed in practice.

On the other hand, the widening of interest rate differential has tended to attract private capital flows, though significantly, leading to exchange rate appreciation. This is consistent with the argument (Ndung'2000) that with the liberalisation of the market, high interest rates and therefore a rise in interest rate differential tend to attract private capital flows, leading to exchange rate appreciation. A rise in the price differential (widening gap between domestic and foreign prices) leads to exchange rate depreciation. Lastly, consistent with theoretical expectations, another significant finding is that an easing in monetary policy (increase in money supply growth) is associated with a depreciation of the exchange rate.

In the light of these findings, clear pointers in terms of policy surface. Changes in the current account balance have a bearing on the exchange rate market. Measures aimed at improving the current account position, for example through exports, are also instrumental in stabilising the exchange rate – through appreciation. Considering that Malawi has been traditionally depending on tobacco as its chief foreign exchange earner, and taking into account the anti-smoking campaign militating against the crop amidst low prices, it is imperative that Malawi should diversify into other foreign exchange earner (for instance tourism) in order to ensure macroeconomic stability, which itself is a pre-requisite for economic growth and therefore poverty reduction. Thus, policies that influence exports and imports of goods and services also determine exchange rate movements. Likewise, prospects concerning funding for a donor aid dependent economy like ours may influence the direction of market forces in determining the exchange rate movements. Big swings in external funding could cause instability Therefore, government's credibility regarding the use of external public funds and implementation of related reforms is important in as far as stability of the foreign exchange market and overall macroeconomic stability are concerned. Private capital inflows, on the other hand, are likely to respond to interest rate differential. The insignificant impact of interest rate differential on attracting capital flows, however, points to the need for government to address some structural bottlenecks. For instance, infrastructure services such road network and utilities (electricity and water supply) require improvement. Hence the current policy of lowering interest rates is therefore in line with maintaining a relatively depreciated currency. This implies that a demand for low interest rate regime must translate into a relatively weak Malawi kwacha internationally.

From the foregoing, it seems developments in the external sector of the economy, which are not under the ambit of domestic authorities, probably contributed more to fluctuations of the Malawi kwacha. If indeed the above diagnosis is accurate, the policy implications of government's ability in influencing the behaviour of the exchange rate is limited. This is because the ability of a small economy like that of Malawi to fully insulate itself from external shocks is constrained. It will mainly be confined to limiting the contributions of inconsistencies in domestic policy and administering some confidence building measures, at least in the short-term-to medium term The Reserve Bank has stressed that exchange rate would continue to be market determined. Its intervention in the foreign exchange market would be limited to meeting the net international reserve target and moderating seasonal fluctuations, without attempting to influence underlying trends. In the long run, however, appropriate structural changes and conducive competitive policy could be designed and implemented. This may include export diversification and implementing measures to limit market imperfections.

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