

The Impact of Foreign Debt on Economic Growth in Malawi

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Abstract: This study analysed the impact of foreign debt on economic growth in Malawi using time series. Data for the period 1975–2003 from the Reserve Bank of Malawi, the IMF and the National Statistical Office was regressed in basic time series analysis. The dependent variable was economic growth and independent variables included level of foreign debt as the main variable. Other variables considered are the inflation rate, exchange rate and the prime lending rate, private and public investment. The results show a statistically insignificant and negative relationship between foreign debt and economic growth for the case of Malawi. The country should strive to provide incentives to local manufacturers who would want to export rather than relying on borrowing for growth inducement. Of interest was the relationship between inflation and economic growth which was positive.

1. Introduction

There has been a considerable interest on the subject of foreign debt and its impact on the economies of developing countries. Proponents of foreign debt argue that it can serve as a means of breaking bottlenecks in the economy, thereby permitting fuller utilization of all resources and a continuation of development in an economy. The opponents of this thinking argue that foreign debt can impede rather than facilitate development in recipient countries (Mosley, 1980). The debt overhang theory and the liquidity constraint hypotheses have been used in the past to provide an understanding of the impact of debt on economic growth. These theories contend that over-reliance on debt crowds out economic growth because interest rates rise due to increases in the government's internal borrowing in order to meet external debt servicing needs. This then raises the cost of borrowing for both investment and consumption.

From an empirical perspective, there has been mixed outcomes on the effectiveness of foreign debt on economic growth. Country specific studies have also failed to produce any conclusive and consistent results. Hameed *et al.* (2008) explored the dynamic effect of external debt servicing, capital stock and labour force on economic growth for Pakistan for the period 1970–2003. They concluded that external debt servicing had an adverse effect on labour and capital productivity, which ultimately hampers economic growth. Thomas (2006) investigated whether debt relief and grants can boost social expenditures in low income countries. He found that declining levels in debt-servicing helped raise social expenditures such as health and education, but no relationship between grants and social expenditures was found. Using cross-country analysis, Panth *et al.* (2006) analysed Jamaica's experience on the relationship between public debt and productivity growth. There was evidence of a significant and negative relationship between total public debt and productivity growth. The study also concluded that public investment had been crowded out by debt servicing, further adversely affecting productivity growth.

A stable macroeconomic environment with low inflation, limited government recourse to funds from the banking system, a competitive exchange rate, and an open trading regime is central for raising economic growth prospects. These factors are found to have the potential to directly and indirectly contribute to poverty reduction (Chirwa, 2004). Iyoha (1996) used a simulation approach to investigate the impact of external debt on economic growth in sub-Saharan African countries. The study found an inverse relationship between debt overhang, crowding out and investment. External debt was found to be depressing investment through both a disincentive effect and a crowding out effect, thus affecting economic growth. Fosu (2010) analysed the impact that debt servicing might have on government expenditure. The study concluded that constraining debt servicing would shift public expenditure away from the social sectors of health and education, and possibly from public investment. It was also

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observed that external aid exhibits positive effects on the expenditure shares of the social and public investment sectors, though the impacts were small, especially in comparison with the debt effects.

A number of studies have used panel data and sophisticated econometric techniques to deal with various data management and empirical issues. Geiger (1990) used the lag distributional model to assess the impact of external debt on economic growth for nine South American countries over a period of 12 years (1974–86). The study found a statistically significant inverse relationship between the debt burden and economic growth. In a comparative study of Nigeria and South Africa, Ayadi and Ayadi (2008) concluded that debt had a significantly strong positive relationship with output growth confirming the beneficial impact of debt in South Africa. As for Nigeria, debt was found to exert a positive, but statistically insignificant, impact on output growth.

The objective of the study reported in this article was to examine whether there is any link between foreign debt and economic growth in Malawi. The study used time series data to investigate the relationship between debt and economic growth rate for the period 1975–2003. The study was conducted within a period of increased debate on Malawi's reliance on foreign sources. It has policy implications not only for the government's foreign borrowing strategy but also for its fiscal policy.

2. Background

In September 1996, the World Bank and the International Monetary Fund launched the Heavily Indebted Poor Countries (HIPC) Initiative, which was endorsed by member states around the world. The aim of the initiative was to help poor, severely indebted countries reduce their debt, thus leading to economic growth and development. Three years later, the initiative was enhanced to provide more debt relief faster. The debt relief initiative was proposed with a belief that most countries which were heavily indebted could not grow significantly so as to reduce poverty by 50 per cent by the year 2015 (GoM, 2007).

Malawi was a member of the HIPC for a number of years before 1996. This was a result of debt accumulation over a number of years due to the need to grow and develop after independence (GoM, 2007). By the end of 1999, Malawi's stock of external debt was estimated at \$2,608 million in nominal terms, including \$17.4 million in arrears. In net present value terms, total debt before the application of traditional debt relief mechanisms was estimated at \$1,482 million, equivalent to around 82 per cent of GDP, 269 per cent of exports of goods and non-factor services, and 516 per cent of government revenues. Malawi's main creditors have been multilateral institutions, which were owed 74 per cent of the total debt in NPV terms. Moreover, about 51 per cent of the debt was owed to the World Bank, 11 per cent to the African Development Bank and 5 per cent to the IMF. Bilateral debt was owed mostly to Japan (IMF, 2000).

The government of Malawi has identified the need to reduce reliance on debt for developmental purposes. The government's Poverty Reduction Strategy cites macroeconomic stability as essential to raising levels of private saving and capital formation and to thereby foster private sector-led development (GoM, 2002). For this reason, and others listed above, it was important to understand from a historical perspective, the impact external debt had on economic growth in Malawi.

3. Research Methodology

This study used secondary time series data from the Reserve Bank of Malawi and IMF for various years beginning 1975. Such information included foreign debt and interest payments, inflation, investments and interest rates. The regression equation below was estimated using Ordinary Least Squares (OLS) method. The regression was evaluated using *t*-ratios and *R*-squared techniques. *T*-ratios were used to evaluate whether there has been an impact of the level of foreign debt and other variables which were brought into the model as control variables on economic growth in Malawi. In the language of mathematics, *t*-ratio analysis is a partial evaluation on the impact of each variable on the dependent variable. The *R*-squared is used to evaluate the efficacy of the whole model in explaining deviations in economic growth levels in Malawi. Note that the model as explained is not exhaustive in terms of how many variables are required to explain deviations in economic growth in Malawi. The error term was included to capture other variables other than the ones shown in the model.

The empirical analysis was based on a regression model following Fosu (1999) and Iyoha (1996):

$$Y_t = \beta_1 + \beta_2 LENDRATE_t + \beta_3 EXRATE_t + \beta_4 GDP_t + \beta_5 OPEN_t + \beta_6 PINV_t + \beta_7 PUBINV_t + \beta_8 PDGDP_t + e_t \quad (1)$$

where y_t is GDP growth rate for Malawi at period t ; $PINV_t$ is Malawi's private investment land at time period t ; $PUBINV_t$ is public investment stock at time period t ; e_t is the error term that is taking care of any deviation from the mean. It is assumed to be normally distributed. However, this assumption was tested to ascertain its normality using the normality test.

4. Results of the Study

4.1 Descriptive Statistics of Economic Variables for the Study

The data was analysed using ordinary least squares method (OLS) and secondary data was collected for all the variables of concern for the period 1975 to 2003. Data for this period was readily available and balanced. For the periods beyond 2003, some of the variables indicated gaps. Since 1971 to 2003 offered over 30 values for all the variables, this enabled the study to proceed without worrying about serious losses of degrees of freedom. Table 1 provides descriptive statistics of the variables in the study.

Over the period under study, the economy of Malawi grew by an average of 2.2 per cent. The maximum growth was 17 per cent with a minimum growth of rate of minus 15.7 per cent. The growth rate varied at 7 per cent, as shown by the standard deviation. The growth rate was skewed towards the left; meaning that mostly the economy of Malawi did not grow as much. The country's external debt stock averaged \$100.2 million reaching a maximum and minimum level of \$177.5 million and \$43.4 million respectively. The standard deviation was about 37 per cent, implying that over the years government international borrowing varied and depended on the need and availability of the facility from the providers.

The exchange rate was at an average of MK16.13 to one US dollar. The maximum exchange rate during the period was MK90.43 to one US dollar with a minimum of MK0.81 to one US dollar. However, there was a lot of variation in the exchange rates over the years as the standard deviation was at 16.13. Inflation averaged 17.8 per cent per annum with the highest level being 60.6 per cent and the lowest 0.74 per cent. Inflation levels were not stable as the standard deviation was at 12 per cent. Real GDP averaged \$784.51 million over the period with a maximum and minimum level of \$1068.76 million and \$589.73 million, respectively. The GDP had the most variation as represented by the standard deviation of up to 160 per cent. Government investment had a higher average of 78.05 per cent than private sector investment which was 70.15 per cent over the years. The maximum level of government investment was \$124.3 million which was lower compared to private investment of \$143.7 million. The minimum level of government and public investment was 50.8 per cent and 14.7 per cent, respectively. Finally, lending rates have been relatively higher averaging 8 per cent per annum with maximum and minimum levels of 29.5 and minus 13.3 per cent per annum respectively.

4.2 Empirical Results of Foreign Debt and Economic Growth in Malawi

Regression analysis was used to analyse the effect of debt stock in Malawi on economic growth rate. In general, regression models are normally used to assess impacts and elasticities of certain independent variables on a dependent variable. Table 2 is a summary of results of the regression model. It should be observed that the model is a good explanation of economic growth in Malawi as measured by goodness of fit variables of R -squared and the F -statistic. The adjusted R -squared, which is the coefficient of determination, is positive and it is about 98 per cent. This means that the model can be relied upon as an explanation of

Table 1: Descriptive statistics

	<i>ECOGROWTH</i>	<i>EXCRATE</i>	<i>INFL</i>	<i>OPEN</i>	<i>DEBTSTOCK</i>
Mean	2.23	16.13	17.77	0.99	100.15
Median	1.73	2.73	13.79	0.99	91.54
Maximum	17.07	90.43	60.60	1.02	177.50
Minimum	-15.63	0.81	0.74	0.97	43.36
Std. dev.	6.98	26.50	11.89	0.01	36.62
Skewness	-0.40	1.76	1.74	0.29	0.61
Kurtosis	3.59	4.69	6.87	2.83	2.38

Table 2: Results of regression model

Variable	Coefficient	Std. error	t-statistic	Probability
C	-309.7229	129.4298	-2.392979	0.0302**
DEBTSTOCK(-2)	-0.010702	0.011380	-0.940449	0.3619
EXCRATE(-1)	-0.171787	0.095928	-1.790790	0.0935*
INFL(-1)	0.006049	0.038699	0.156311	0.8779
OPEN(-2)	-33.56064	24.32916	-1.379441	0.1880
RGDP(-2)	-0.005287	0.003964	-1.333729	0.2022
RGDP	0.140987	0.005446	25.88617	0.0000***
RGDP(-1)	-0.139935	0.004969	-28.16121	0.0000***
RGINVEST(-2)	0.005781	0.010542	0.548442	0.5915
RENDRATE(-1)	0.508157	0.210751	2.411175	0.0292**
RPINVEST(-2)	-0.000729	0.007508	-0.097149	0.9239
OPEN(-1)	346.5772	130.4361	2.657066	0.0179**

*, **, *** means significant at the 10%, 5% and 1% respectively.

determinants of economic growth in Malawi *ceteris paribus*. Furthermore, the *F*-statistic is also positive and statistically significant even at the 1 per cent level of significance. In other words, the type 1 error is so small that the probability of rejecting the results generated by this model is almost negligible. To conform to the objectives of the study, the model with lags was adopted in levels as it was used in similar studies (Fosu, 1999; Iyoha, 2000). A model with lags exhibits a robust explanation of macroeconomic factors that affect economic growth in Malawi.

As it can be observed from the table, the stock of debt was not a significant factor in influencing economic growth in Malawi. The results show a negative relationship between economic growth and stock of external debt in Malawi. Even at the 20 per cent level of significance, external debt is still not statistically significant to reject the null hypotheses that it does not lead to economic growth. The alternative hypotheses which states that external debt leads to economic growth can be rejected. The explanation could be that when the level of external debt is rising, government is expected to pay back in foreign currency that is sought from either the private sector using export returns or from donations, remittances from Malawians abroad and more borrowing. This could be analysed as digging a trench to fill another trench. All the options above, given the lower export base of the country, worsens the balance of payments position, thereby crowding out the necessary private sector activities that would bring in more machinery to add value for higher levels of investment.

Government investment is found to be positively related to the economic growth rate while statistically insignificant at the same time. This then accepts the null hypothesis that public investment did not affect private investment during the period under study. The positive relationship, however, should be regarded with some caution. Theory has it that public investment crowds out private investment there by leading to lower economic growth rates. In the case of the results being reported here, the opposite is happening: with increasing public investment there is increasing economic growth. This result is also in tandem with findings by Ngalawa (1999) who used a similar data set and concluded that the assertion that economic growth is negatively affected by high levels of public investment is not as true.

Of interest though is the relationship between economic growth and private investment. Apart from being statistically insignificant even at the 20 per cent level, there is a negative relationship between the two variables. This is totally outside the long believed theory that there is a positive relationship between economic growth and private investment. This result, however, coupled with the result on public investment above, should make us believe that for the case of Malawi, there is a positive relationship between economic growth and public investment and a negative relationship between economic growth and private investment. For the period under study, Chirwa (2004) found that the economy of Malawi was induced by the public sector as opposed to the private sector.

According to Table 3, the series were found to be stationary only after first differencing using the Dickey–Fuller unit root test. This necessitated the adoption of a vector error correction (VEC) method which, according to Hill *et al.* (2008), fits a model of long-run effects between or among time series. The results of the VEC model are reported in Table 4.

According to the results in Table 4, debt stock was statistically significant together with real private investment, real public investment, real lending rate and real gross domestic product in contributing to economic growth over the period under study. The

Table 3: Dickey-Fuller unit root test

Variable	Level form		First difference	
	Constant and no trend	Constant and trend	Constant and no trend	Constant and trend
<i>DEBTSTOCK</i>	-2.215256	-5.492626	-5.402092***	-5.273651
<i>ECOGROWTH</i>	-3.697132	-3.623448	-5.062848***	-4.963114
<i>RGDP</i>	-0.497199	-2.130760	-3.415166*	-3.364689
<i>RENDRATE</i>	-1.978055	-3.231340	-6.742675***	-7.023824
<i>EXCRATE</i>	0.788996	0.278422	-1.527236	-2.601935
<i>OPEN</i>	-3.181746	-3.179689	-6.021930***	-5.903755
<i>RPINV</i>	-2.041430	-2.718298	-5.050236***	-5.127928
<i>RPUBINV</i>	-2.377806	-2.311984	-4.387205***	-4.296126

Note: In this table, ***, ** and * denote statistical significance of rejecting the null hypothesis of a unit root at the 1%, 5% and 10% level. The rejection/critical points were supplied by Fuller (1976).

Table 4: Vector error correction model

beta	Coef.	Std. err.	z	$P > z $
<i>ECOGROWTH</i>	1	.	.	.
<i>EXCRATE</i>	-0.02727	0.021919	-1.24	0.213
<i>RGDP</i>	-0.01938	0.002041	-9.49	0
<i>RENDRATE</i>	0.127804	0.036762	3.48	0.001
<i>OPEN</i>	-0.17327	0.22187	-0.78	0.435
<i>RPINVEST</i>	0.020388	0.007068	2.88	0.004
<i>RGINVEST</i>	0.0272	0.009473	2.87	0.004
<i>DEBTSTOCK</i>	0.099393	0.006462	15.38	0
<i>_CONS</i>	0.764765	.	.	.

Table 5: Cointegration test

Equation	Parms	chi ²	$P > \chi^2$
<i>_ce1</i>	7	407.2365	0

results of the cointegration test shown in Table 5 indicate that the null hypothesis of no long-run relationship among the variables was rejected even at the 1 per cent level. Debtstock therefore was found to have a positive long-run relation with economic growth in Malawi. Higher levels of external debt were associated with higher levels of economic growth. However, openness was statistically insignificant and negative implying that opening up to trade negatively affected economic growth. Being a small country, vulnerability increased, thereby turning the nation into a trading place rather than the location for much-needed foreign direct investment.

5. Conclusion

The main objective of this study was to analyse the impact of external debt on economic growth in Malawi. Other macroeconomic variables such as exchange rate, lending rate, inflation and openness were also analysed as control variables. External debt is sometimes seen as a source of loanable funds and foreign exchange, which are important variables in stimulating both investment and consumption. Malawi's national budget relies on external funding for development budget and most of it comes in the form of

debts. The major justification for the use of external sources to fund economic activity has been that Malawi is a net importer, and therefore requires a lot of foreign currency. Another explanation is that external debt is normally used on more pro-poor activities such as building of clinics, school blocks and water and sanitary facilities.

The study reported here found that there is a negative relationship between economic growth and external debt. The relationship was also found to be statistically insignificant. This implies that heavy reliance on external resources for budgetary support is not justifiable as a policy to follow. The possible solution is for Malawi to strive to be a net producer and therefore have a surplus to export in order to obtain foreign exchange to meet demands for imports.

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