



ECONOMIC POLICY RESEARCH DEPARTMENT

POLICY BRIEF

THE ROLE OF PRICE STABILITY ON ECONOMIC GROWTH IN MALAWI

1. Introduction

Sustainable output growth and low inflation are the most common objectives of macroeconomic policy. The Reserve Bank of Malawi's (RBM) monetary policy, just like most central banks, is aimed at ensuring low and stable inflation over time, which is price stability. By working towards keeping domestic inflation low and stable, the Bank contributes towards sustainable economic growth and higher standards of living. Empirical evidence suggests that persistently high inflation has negative effect on economic growth (Boyd et al., 2001). This policy brief therefore examines the impact of inflation on economic growth in Malawi. An autoregressive distributive lag (ARDL) model was used and results confirm that persistently high inflation adversely affects economic growth in Malawi. This result justifies authorities' aversion to entrenched inflation and points to the need for central bank vigilance.

2. Historical Developments¹

The macroeconomic environment in Malawi has been relatively unstable. Rain fed agriculture continues to be the main driver of economic activity and it contributes approximately 28.0 percent to Gross Domestic Product (GDP). Malawi's real GDP growth has averaged 4.0 percent in 4 decades from 1980 to 2020 with the pick being real growth rate of 10.0 percent in 1996 and the lowest growth rate was registered in 1994 at minus 10.3 percent (Fig. 1). From 2007-09 the economy grew to levels above 6.0 percent due to the introduction of farm input subsidy program and favorable weather conditions. Between 2011

and 2018 economic growth averaged about 4.1 percent. A slowdown in real GDP growth to 0.9 percent was witnessed in 2020, the lowest in about two decades due to impact of the COVID-19 pandemic.

Figure 1: Trends Real GDP Growth and Inflation

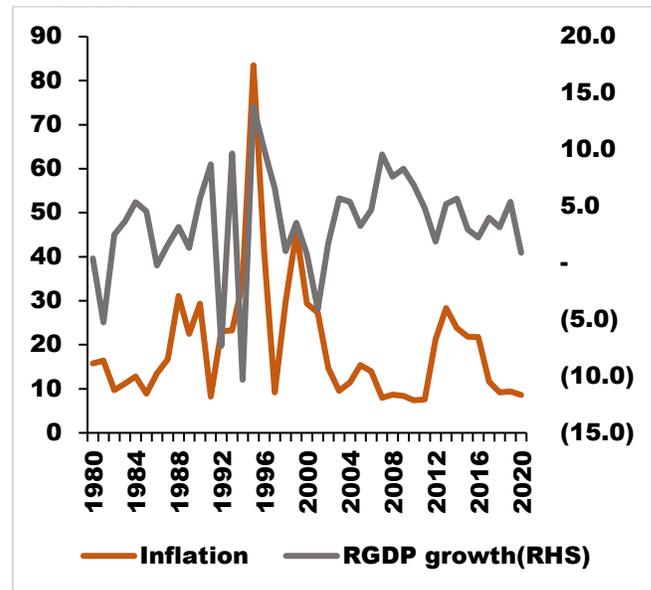


Figure 1 also shows that inflation has been fairly high, peaking at 83.5 percent in 1995 during the political transformation. The lowest annual average inflation rate recorded was 7.4 percent in 2010. Inflation in the past 4 decades has averaged 19.7 percent. From Figure 1, some co-movement can be observed between real GDP growth and inflation rate. Specifically, periods of high inflation rate are associated with lower GDP growth. For example, in 1994 inflation was 34.0 percent and rising while real GDP growth fell to

¹Data used in this policy brief was sourced from RBM, Ministry of Finance and World Bank Development Indicators databases.

minus 10.3 percent. Similarly, inflation rose from 7.6 percent in 2011 to 21.3 percent in 2012 and real GDP growth rate declined from 4.9 percent in 2011 to 1.9 percent in 2012. The correlation coefficient between GDP and inflation is estimated at 0.8 suggesting possibility of a causal relationship between the two which this study seeks to exploit.

3.0 Literature Review

3.1 Theoretical Review

Solow (1956) stated that the determinants of economic growth in an economy can be explained by changes in the amount of labour. Following Solow's growth theory, different point of views have emerged such as endogenous growth theorists who emphasize the importance of knowledge capital (Romer, 1986), human capital (Lucas, 1988), learning by doing (Stokey, 1988) and research and development (Romer, 1990; Grossman & Helpman, 1991; Aghion & Howitt, 1992) in the long-term growth of an economy. North & Thomas (1973) highlighted that other schools of thought have emphasized on the role played by non-economic factors such as institutional structures, legal and political systems as well as socio – cultural factors in economic growth.

The neoclassical growth theory as stated by Mundell (1963) and Tobin (1965) argued that an increase in the nominal interest rate caused by inflation, makes an investment more preferable than consumption. This, in turn, will cause an increase in the accumulation of capital, which will lead to economic growth. This is the well-known Mundell-Tobin Effect.

In relating inflation to economic growth, Stockman (1981) developed a long-term equilibrium growth model with the assumption of "cash-in-advance constraint". This theory is contrary to the conclusion of the Mundell Tobin Effect. In the model of Stockman (1981), investment and real money balances are complements, but in the model of Mundell (1963) and Tobin (1965), those two variables are substitutes. According to this theory, the

individuals in the future will receive the return on investment in the form of money. Thus, investment and real money balances will be reduced by inflation. Consequently, inflation will negatively affect economic growth.

3.2 Empirical Review

The International Monetary Fund (1982), conducted research on 112 "non-oil" developing countries over the period 1969 to 1981 and concluded that, for the most part, "relatively low inflation rates have been associated with relatively high growth rates and that reductions, or at least relative reductions, in inflation have been associated with an improvement, or relative improvement, in growth rates."

Quartey (2011) found that GDP growth in Ghana is negatively affected by high inflation rates with a one year lag. Similarly, Phiri (2013) found that persistently high levels of inflation rates in Zambia are associated with low GDP growth rates and vice versa.

Buerdekin et al. (2000) examined the effects of inflation on real sector growth in some selected developed and developing countries. The study found that inflation levels above 8.0 percent and 3.0 percent have a negative impact on the performance of the real sector in the developing and developed countries, respectively. However, Khan and Senhadji (2000), found contrary results. Their study found lower inflation threshold for developing countries (3.0 percent) and a higher inflation threshold (8.0 percent) for developed countries.

Mubarik (2005) found that higher levels of inflation rate affect economic growth in Pakistan. The study also found evidence of a one-way direction relationship from inflation rate to growth by Granger Causality method.

4.0 Methodology

We use Autoregressive distributive lag (ARDL) Bounds test approach to cointegration to analyze the relationship between economic growth and inflation. ARDL is more appropriate than other cointegration approaches when variables are not integrated of the same order. ARDL methodology

is also advantageous in that it allows flexibility to incorporate required number of lags that are needed to describe dynamic behavior of the dependent variable. This addresses the issues of serial correlation and endogeneity problems (Pesaran and Shin, 1999).

The empirical model is specified as follows:

$$\Delta \ln RGDP_t = \beta_0 + \sum_{i=1}^n \beta_{1i} \Delta \ln RGDP_{t-1} + \sum_{i=0}^n \beta_{2i} \Delta \ln CPI_{t-1} + \sum_{i=0}^n \beta_{3i} \Delta FD_{t-1} + \sum_{i=0}^n \beta_{4i} \Delta \ln EX_{t-1} + \sum_{i=0}^n \beta_{5i} \Delta \ln MS_{t-1} + \beta_6 \ln RGDP_{t-1} + \beta_7 \ln CPI_{t-1} + \beta_8 FD_{t-1} + \beta_9 \ln EX_{t-1} + \beta_{10} \ln MS_{t-1} + \mu_t \dots \quad (1)$$

Where: RGDP= real domestic product; CPI= consumer price index; FD= fiscal deficit as a percentage of GDP; EX= Total exports; and MS= Money Supply.

β_0 is the constant, β_1 to β_5 are respective short run coefficients while β_6 to β_{10} are the respective long run coefficients and μ is the mutually independent white-noise residuals, \ln is natural logarithm, Δ is the difference operator, n is the lag length while t is the time period.

The ARDL bounds testing methodology involves establishing existence of cointegration between variables. If a long-run cointegrating relationship is found, the second step involves estimating both the long and short-run coefficients.

We use annual data from 1980 to 2020 and the data was sourced from RBM database. Table 1 below indicates how each of the data was measured and the theoretical expectation of the coefficient for each variable. All diagnostic tests were conducted and show that the model is stable using the CUSUM squares test; the residuals are normally distributed, exhibit no serially correlated and are homoscedastic. The optimum lag lengths for differenced terms were selected using the Akaike Information Criteria (AIC).

Table 1: Variables and Measurement of Variables

Variable	Description	Measurement	Expectation
RGDP	Economic growth	Real GDP (%)	-
CPI	Inflation	Change in Consumer Prices (%)	Negative
FD	Fiscal deficit	Difference between total revenues and total expenditures (% of GDP)	Positive
EX	Exports	Total Exports	Positive
MS	Money Supply	Money Supply	Positive

Discussion of key findings

Results presented in Table 2 indicate that there is a long-run relationship among the variables in the model at all levels of significance since the F statistic, at 12.75 exceed the upper bound critical value.

Table 2: Bounds cointegration test results

	10% critical values		5% critical values		1% critical values	
	I(0)	I(1)	I(0)	I(1)	I(0)	I(1)
F=12.75	1.81	2.93	2.14	3.34	2.82	4.21

H0: no long-run relationship. Accept if $F <$ critical value for I (0) regressors; reject if $F >$ critical value for I (1) regressors.

Long-run and Short-run estimates

Our long-run and short-run estimated coefficients for inflation are negative and statistically significant. If inflation rises by 1 percent, GDP declines by 0.4 percent in the long-run and 0.5

percent in the short-run. This finding implies that high inflation adversely affects growth in Malawi. We also find that exports are significant and indeed, are positively related with economic growth in Malawi both in the long-run and short run. Contrary to apriori expectations, we find that the long-run coefficient of fiscal deficit though significant, is negative.

Meanwhile, we do not find a long run relationship between money supply and economic growth which confirms that in the long-run, money supply has no effect on real economic activities. The findings also indicate that the 28.3 percent of the disequilibria between inflation and GDP is corrected in the following year.

Table 3: Long-run estimates

Dependent variable is RGDP			
<i>Regressor</i>	<i>Coefficient</i>	<i>T-ratio</i>	<i>[p-value]</i>
CPI	-0.3853***	-5.949	[0.0003]
Exports	0.7743***	3.414	[0.0092]
Fiscal Deficit	-0.1451***	-4.444	[0.0022]

Notes: ***, ** and * denote significance at 1%, 5% and 10%, respectively

Table 4: Short estimates

Dependent variable is Δ RGDP			
<i>Regressor</i>	<i>Coefficient</i>	<i>T-ratio</i>	<i>[p-value]</i>
Δ CPI	-0.5025***	-6.1847	[0.0003]
Δ Exports	0.1114***	5.6357	[0.0005]
Δ Money supply	0.2554***	5.1341	[0.0009]
ECM(-1)	-0.2405***	-11.7967	[0.0000]

Notes: ***, ** and * denote significance at 1%, 5% and 10%, respectively

Conclusion and policy implications

The study investigated the impact of inflation on economic growth in Malawi by using annual data from 1980 to 2020. Using ARDL bounds testing

approach to cointegration, the study finds that inflation has a long-run negative impact on economic growth, implying that increased inflation levels are detrimental to economic activity in the country. In other words, very high inflation hurts the economy. Higher levels of inflation rates affect business confidence and also money loses its value as a store of wealth and these negatively affect economic growth.

Low and stable, and most importantly, predictable inflation is good for the economy. Price stability promotes economic growth by providing an environment in which economic decisions can be made, and markets can operate without concerns about unpredictable fluctuations in the purchasing power of money. Price stability boosts investor confidence and macroeconomic stability. The objective of the RBM's monetary policy is to keep inflation within a range of 5%+-2. The target range allows for unanticipated short-term shocks while managing public inflation expectations. The RBM should therefore continue efforts to achieve its objective of price stability, to complement other Government policies aimed at creating a conducive environment for sustained and increased economic activity in the country. The growth problem is mainly structural in nature, beyond the reach of monetary policy alone. Balanced and sustainable growth requires contributions from many other components of government and society. As a country, we need to maintain prudent macroeconomic policies and make further progress on a range of structural issues.

Selected References

- Aghion, P. & Howitt, P.:(1992). A model of growth through creative destruction. *Econometrica* 60, 323-51.
- Burdekin, R., Denzau, A., Keil, M., Sitthiyot, T., Willett, T.. (2000). When dose Inflation Hurt Economic Growth? Different Nonlinearities for Different Economies, Working Papers in Economics, Claremont Colleges.

International Monetary Fund, World Economic Outlook: A Survey by the Staff of the International Monetary Fund, Occasional Paper No. 9 (Washington, June 1982).

Khan and Senhadji (2000), Threshold effects in the Relationship between Inflation and Growth, IMF Working Paper: WP 00/110.

Mubarik, Y. A., (2005). Inflation and Growth: An Estimate of the Threshold Level of Inflation in Pakistan, SBP-Research Bulletin, Volume 1,

Quartey, P. (2010). Price stability and the growth maximizing rate of inflation for Ghana”, Modern Economy, 1: 180-194.