

**THE EFFECT OF DOMESTIC DEBT ON FINANCIAL MARKET
DEVELOPMENT IN MALAWI**

MASTER OF ARTS (ECONOMICS) THESIS

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**THE EFFECT OF DOMESTIC DEBT ON FINANCIAL MARKET
DEVELOPMENT IN MALAWI**

MA (Economics) Thesis

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fulfilment of the requirements for the degree of Master of Arts (Economics)

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DECLARATION

I the undersigned hereby declare that this thesis/dissertation is my own original work which has not been submitted to any other institution for similar purposes. Where other people's work has been used acknowledgements have been made.

Full Legal Name

Signature

4th FEBRUARY, 2025

Date

CERTIFICATE OF APPROVAL

The undersigned certify that this thesis represents the student's own work and effort and has been submitted with our approval.

Signature: _____ Date: _____

Spy Munthali, PhD, (Associate Professor)

Supervisor

DEDICATION

To God almighty for his grace,to my parents, Mr. and Mrs. Kasamba, my aunt Charity Chakalamba, my siblings Angel and Emmanuel Kasamba and my cousins,Ethan and Eden Saile for the unwavering support financially,spiritually and physically.To Yamikani Khuoge my immediate supervisor at NICO Pensions,who kept pushing me to do better and always encouraged me to push past my limits.To Mr Mike Mwale,my station manager at Mzuzu DTD who helped this become reality,Mr Nkata,Mr Baxton Kalimbakatha who were my supervisors at Mzuzu DTD,To Mr Joseph Njoka and Mr.Chikumbutso Kachigamba who has been with me throughout my journey ,to Mrs Jane Maele ,station manager at Zomba DTD.

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ABSTRACT

This research investigates the effects of domestic debt on financial market development in Malawi over the period 1981-2021. The study employed the autoregressive distributed lag (ARDL) model by Pesaran and Shin (1999) to account for short and long-term effects. The results show evidence of a negative impact of domestic debt on financial market development though statistically insignificant. In this light the study recommends a reduction in domestic indebtedness by the government of Malawi, for further accumulation of debt will lead to increased interest rates therefore leading to crowding out of private investment. The study further recommends additional efforts from the government and the Reserve Bank of Malawi in developing financial markets in Malawi by adopting new and improved reforms for financial institutions, evident through positive relationship found between foreign direct investment and financial market development in the short-run. Developed financial markets will not only encourage capital inflow into the country from private investors, it will also lead to economic development through availability of foreign exchange allowing Malawi to be able to trade with other countries on the international market, in the end increasing the GDP which will consequently lead to economic growth. In the long-run foreign direct investment might cause inflation in the country leading to the reserve bank of Malawi (RBM) to increase interest rates in response to high inflation, however this increase in interest will cause the rate of borrowing to be expensive therefore cause crowding out of private investment. Hence, the negative relationship between foreign direct investment and financial market development in the long-run. In this case the paper also recommends foreign direct investment only to a threshold of 0.421% in the short-run where it does not crowd out domestic private investment.

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ABBREVIATIONS

ARDL	Auto Regressive Distributive Lag
BUDD	Budget Deficit
DDR	Domestic Debt Ratio
FD	Financial Development Index
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
IMF	International Monetary Fund
INTR	Interest rate Spread
INFL	Inflation
HIPC	Highly Indebted Poor Country
MHC	Malawi Housing Corporation
MPICO	Malawi Property Investment Company
RBM	Reserve Bank of Malawi

CHAPTER ONE

INTRODUCTION

1.1 Background

The study examines the implications of financing government fiscal deficits from domestic sources on the development of the financial markets here in Malawi. In its report of the Malawi Economic Monitor, the World Bank (2019, 9th Edition) reported that Malawi's public debt has sharply increased since the time the country benefited from the Highly Indebted Poor Country relief (HIPC, 2006, p.15). The report noted that high fiscal deficits have mostly been financed through high-cost domestic borrowing (World Bank, 2019). This domestic debt accumulation is indicative of the increasing significance of domestic debt in Malawi.

The share of domestic debt in total public debt increased to 57% in 2022, up from 53% in 2021. Within this subsector the composition by holder is shifting towards the RBM, exerting pressure on already high levels of money supply and thereby increasing risks of further inflation (World Bank,2023).

It is further noted that Malawi's external and public debt are both at high risk of debt distress and the debt is unsustainable (IMF and Worldbank,2021). Financing government fiscal deficits using high-cost domestic borrowing continues to drive domestic debt on an upward trajectory. Consequently, this has also been driving domestic debt service upward, increasing the fiscal burden from payments on both interest and principal (World Bank,2022).

Government has resorted to balancing its budget by borrowing from the private sector in the form of issuing government bonds and treasury bills (World Bank, 2019). This has meant that banks and major private sector players have been competing to place their funds

with the central bank by investing in treasury bills. Which stands as a crucial tool for governments to meet short-term funding needs, manage liquidity and stimulate economic growth.

The use of domestic markets as the source of financing budget deficit largely depends on the size and depth of the country's financial markets. The level of development of the country's financial markets may determine the amount of funds that a government can generate internally to fund an existing fiscal deficit situation (Saibu, Alenoghena,2017).

1.1.1 Malawian Financial System

The role of the financial system in economic development cannot be underestimated. Banks as financial intermediaries play a key a role in transforming deposits into financial assets. They channel funds from entities with surplus liquidity to those lacking, thereby facilitating capital formation and trade. (IMF Working paper,2002). Figure 1 below shows the circular flow of funds in the economy focusing on the financial system in Malawi.

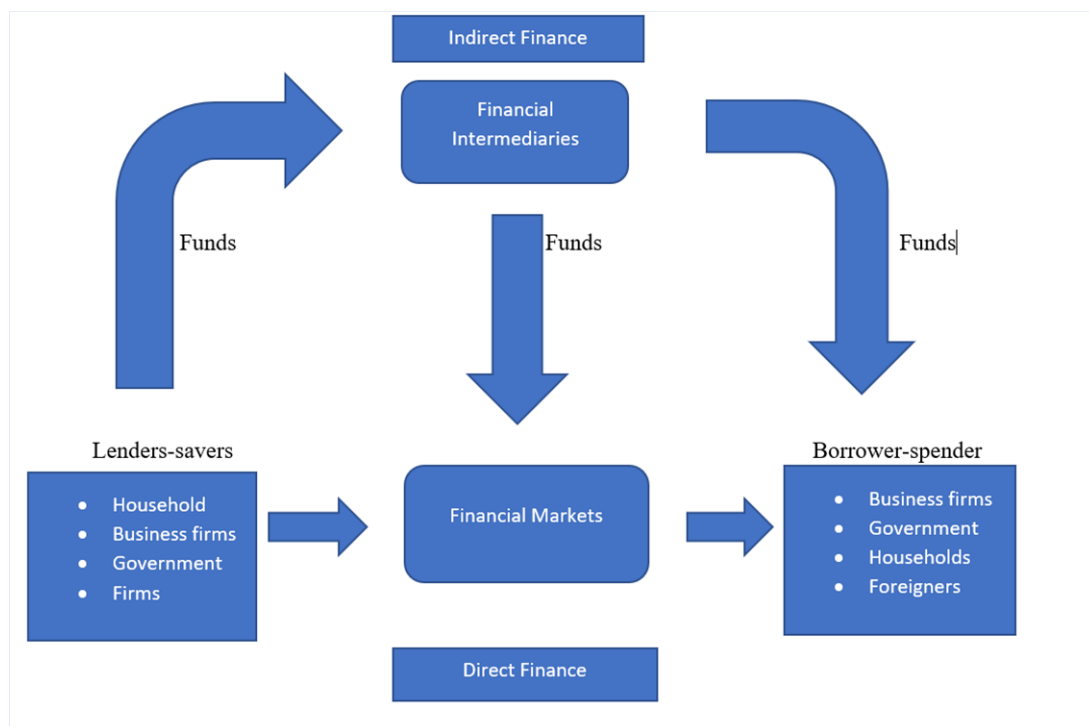


FIGURE 1: THE CIRCULAR FLOW OF FUNDS IN AN ECONOMY

Source: Adapted from Mishkin F.S Economics of Money, Banking and Financial Markets 7th Edition

Lenders and savers are those with a surplus money and on the other hand we have borrowers these are those that have ideas and need money to finance them. The savers and borrowers in financial markets trade with each other in what is called direct financing. In the financial markets we also have financial intermediaries, these get funds from savers and get them to the borrowers. In a process where financial intermediaries are involved and this is called indirect financing.

Initially the financial system in Malawi only had two commercial banks, two leasing finance institutions, one savings bank and one building society (Chirwa et. al 2001). Changes in the legal framework allowed entry of new institutions in commercial banking activities. Three existing non-bank institutions, two leasing and one in trade finance which were granted corporate banking licenses and two new institutions, one in leasing and corporate banking by 1991(IMF Working paper, 2002). Since 1994, new commercial banks in the financial system have emerged, with the first incorporated in 1994, the second in 1995 and the third in 1998. Malawi Savings Bank which was incorporated and called a merchant bank in 1995. Gelbard and Leite (1999) after computing a survey based comprehensive index of financial development in Africa based on six aspects of financial development. Found that overall Malawi's financial system had improved from underdeveloped with an index of 24(72.7 percent of the index for sub-Saharan Africa), in 1987 to being minimally developed with an index of 47(83.9 percent of the index for sub-Saharan Africa) in 1997, representing 95.8 percent improvement.

As of 2007, Malawi's financial system comprised of nine banks, two discount houses, one leasing company, eight insurance companies, four direct finance institutions. The banking system held two thirds of 1.5 billion USD in total assets, with the remainder in insurance companies and securities firms. Private pension funds, managed by private insurance companies, constituted a significant component with 300million USD in assets (World Bank, 2007). In 2008 Malawi was said to have 11 licensed commercial banks and total assets amounted to 1.28billion USD as of March 2009, of which more than 65% was reported to be concentrated in the country's largest banks (FinScope, 2009).

1.1.2 Malawian Financial Market

The effective start of financial reforms was in 1989 in which the legal framework for the financial sector was overhauled. Both the Reserve Bank of Malawi Act and the Banking Act were significantly revised in order to give more powers to the central bank to supervise and regulate the financial sector, to introduce indirect monetary instruments and to deregulate entry on new banks into the financial system.

The central bank introduced indirect instruments to deal with excess liquidity, namely central bank bills and later treasury bills for open market operations. Open market operations became the most active policy instrument with the introduction of Reserve on Bank of Malawi and treasury bills to mop up excess liquidity in the economy. In addition, the first discount house was established in 1997 and led to the intensification of operations within the inter-bank market. The inter-bank market is now playing an important role in financing the short-term liquidity needs of financial institutions and cheaper source of finance compared to the cost of borrowing from the discount window at the central bank.

1.1.2.1 Capital Markets

The Malawi stock exchange has been in existence since 1994 but only started equity trading from November 1996 when it first listed the National Insurance Company Limited. Before this the Malawi stock exchange was used as a facility to provide secondary market trading in government of Malawi's capital market securities, namely treasury bills and local registered stocks. It was reported that as at 2006 the Malawi stock exchange had 13 domestic companies listed and had a market capitalization of 600million USD, equivalent to 27 percent of GDP, while trading amounted to 14 million USD representing 0.7% of GDP, reflecting a small proportion of shares traded on the exchange (World Bank 2007). The Reserve Bank of Malawi acts as an agent of the government in the issuance of treasury bills with maturities of 91,182 and 273 days. It is evidenced that the 273 day tenor has been preferred most compared to the other tenors ,it has grown from MK4.2 billion from 1999 to MK91.6 billion in 2008.The 273 day tenure in treasury bills has grown in holding from 48 percent in 1999 to 75 percent in 2008.Whilst the 183 day tenure had declined from 30 percent in 1999 to 3% in 2008.The preference of the longer tenure treasury bills showed

lack of alternatives since the bonds issuances were not enough to meet investor portfolio needs (AFRODAD, 2011). Figure 2 below shows the real three-month treasury bill rates trends between 1991 and 2003.

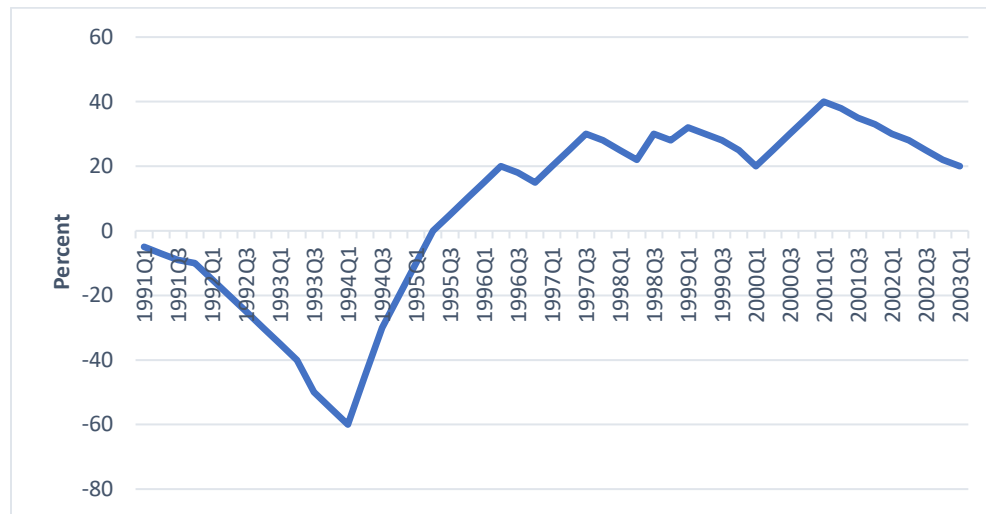


FIGURE 2: REAL TREASURY BILL RATE

Source: Adapted from International Financial Statistics (Country Economic Report 2005:1)

Treasury bill rates are the most relevant interest rates as treasury bill rates are the major source of domestic deficit financing in Malawi. Nominal interest rate was controlled before 1992 but was later very volatile for periods after that. This later led to inflation also being volatile and made the return on treasury bills even more volatile. During the 1990s real interest rates were mostly negative reaching as far as -40%, leading domestic borrowing to lower interest payments. However, after the 1990s the interest reached a positive reaching over 30% in 2003, combined with large deficits financed by domestic borrowing a sharp increase in government's interest bill occurred. It increased from 3% of GDP in 2000/01 to 9.2% in 2003/04 (Whitworth, 2004). In 2004/05 budget domestic interest rate payments were estimated to have been 20% of total expenditure and to curb this fiscal discipline was adopted to avoid debt explosion (Sida, 2005).

Initially the government used to issue local registered stocks which would mature after 25 years. Due to increased budget deficits issuance of stocks was replaced by treasury bills

which were short-term and also offered high rates. The long-term securities became unattractive and presented to be a risk because of macro-economic instability.

1.1.3 Domestic Public Debt Analysis

In Malawi domestic public debt is defined as borrowings in Malawi Kwacha from domestic or foreign sources (AFRODAD,2011). Domestic debt in Malawi therefore constitutes borrowings from the central bank, commercial banks, non-bank financial institutions, corporate sector, foreign investors and the individuals. Domestic debt in Malawi is contracted through the issuance of marketable and nonmarketable instruments. The bulk of the debt however is in marketable instruments, which are mostly treasury bills. Figure shows trends of debt from 2005 to current years, this also showing how Malawi has been fairing with debt over the years.

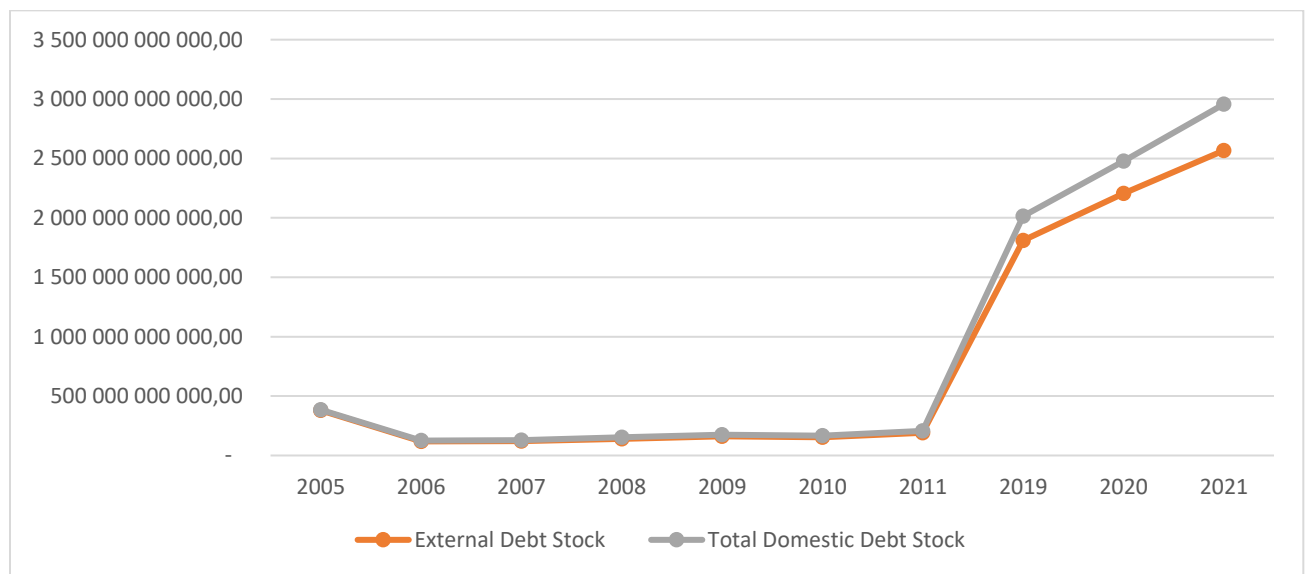


FIGURE 3:DEBT TRENDS FROM 2005- 2021

Source: Author's own compilation from WDI data

In 1980s debt rapidly increased as interest rates rose, whilst prices of exports like tobacco and tea continued to decrease. Hunger caused by severe drought and arrival of refugees from Mozambique fleeing the civil war meant continued accumulation of debt (Debt Justice,2017).A high real interest rate burden during the period 1973-1985 made it more difficult for the country to satisfy its financial obligations both domestically and

internationally. For example, average interest rate on foreign loans increased from 1.9% in 1976 to 8.8% in 1981 (World Bank,22a).

The IMF approved a three-year economic program to run from 2000-2003 for the Malawi government called the Poverty Reduction Growth Facility (PGRF). It was introduced to assist the country in gaining macroeconomic stability, through prudent fiscal and monetary management. However due to monetary and fiscal mismanagement the program was discontinued and other donors (UK, Norway, Denmark and Sweden) later followed suit by withholding their donations. This led to fiscal performance weakening till 2004 and almost leading the country to the verge of a financial crisis. In the absence of external budgetary aid, deficits were largely financed by domestic borrowing leading to sharp increases in domestic debt from about 7 percent in 2000 to 10.2 percent in 2001 then to 24 percent of GDP in 2003 (IMF,2004).

After 2004, domestic debt grew though at a declining rate, the increased indebtedness resulted in a high interest burden. This disturbing government's ability to allocate resources for critical poverty alleviating expenditures. Figure 4 below shows the trends in total domestic stock as a percentage of GDP over the years.

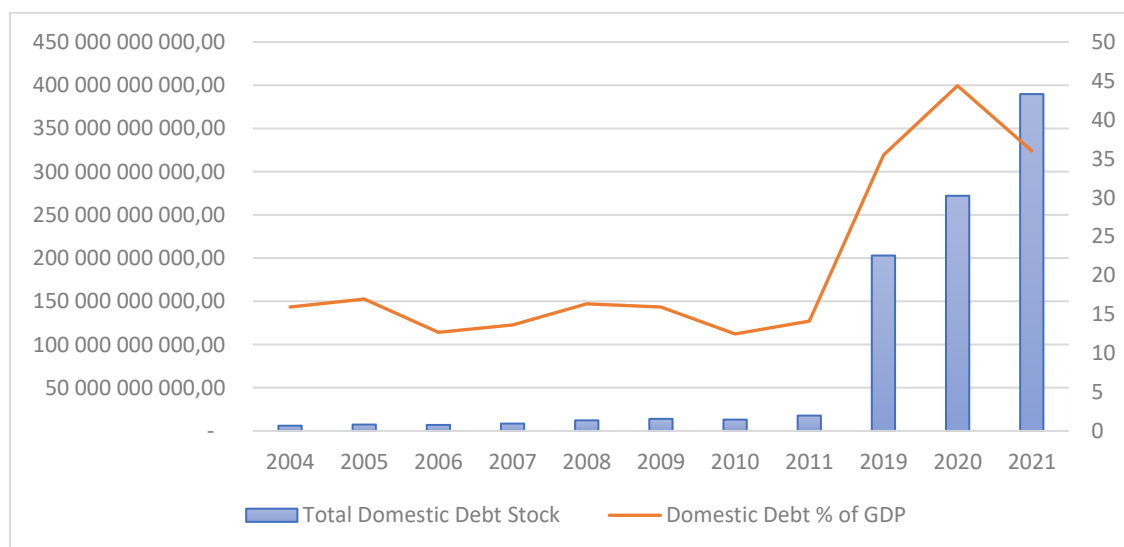


FIGURE 4: TOTAL DOMESTIC DEBT STOCK AND DOMESTIC DEBT % OF GDP TRENDS

Source: Author's own compilation from WDI data

Malawi's fiscal position has been characterized by declining revenue performance and rising expenditure. This has been as a result of poor agricultural performance triggered by climate shocks which caused budget deficit to increase by -3.3 percent of GDP in 2016/17 fiscal years. The COVID-19 pandemic led to an increase in government borrowing, leading to an expansion of the government deficit. Revenue in 2021/22 fiscal year was 12.1 percent of GDP while expenditure was estimated at 20.1 percent of GDP causing a fiscal deficit of 8.0 percent of GDP (AFDGB,2022).

1.1.4 The Nexus Between Public Domestic Debt and Financial Development

Having the evolution of financial markets, we further look into the nexus between financial market development and domestic debt. African forum and network on debt and development defines public domestic debt as borrowings in local currency from domestic or foreign sources (AFRODAD,2011). Most governments have been engaging in acquiring domestic debt to service fiscal deficits as well as to finance development projects. Debates have been there on whether public domestic debt can lead to development of financial markets or the economy as a whole.

A study by O.Chiwira (2023) who was investigating the relationship between financial market development and economic growth in the SADC. Using panel data from 1980 to 2020 employing the Autoregressive distributed lag model and the Toda and Yamamoto and Dolado and Lutkepohl (TYDL) techniques found that in the short-run financial development through credit to the private sector spurs economic growth and that in the long-run financial market development should focus on promoting bank deposits. Causality tests were found to generate different results depending on which variables were used.

Gambatula C.M,2023 after testing to find the effects of domestic debt on private investment in Malawi for 1991-2020 period and using the Auto-regressive distributed Lag model found that a positive relationship existed and was both in the short and long-run. Further employing the granger causality test in Malawi, it showed that the relationship was not

causal but rather a co-movement. This meaning that in Malawi as domestic borrowing grows, private investment also grows. Not one action influencing occurrence of the other but both happening simultaneously.

Chikafa (2022) investigated the relationship between financial system development and economic growth in Malawi from 1980 to 2019 using the autoregressive distributed lag model and found a long-run negative relationship. The relationship running from financial system development to economic development.

In a study by (Nguluwe and Dunga,2024) where they were investigating the relationship between budget deficits and Economic growth in Malawi using time series data from 1980 to 2018 and employing the autoregressive distributed (ARDL) bounds and the Toda-Yamamoto Granger causality test. They found a positive relationship which suggested a positive influence of budget deficits and economic growth in Malawi, this supporting the Keynesian theory which states that budget deficits lead to economic growth. With the granger causality test showing a unidirectional relationship between budget deficit and economic growth in Malawi, further supporting the initial finding of the autoregressive distributed lag (ARDL) bounds model.

From previous literature we see that most studies found evidence of a positive relationship between financial development and economic growth in the SADC region. However, the same could not be said for financial system development and economic growth in Malawi. Further we also note that a positive relationship is found between domestic debt and private sector investment as well as economic growth both in the long-run and short-run. Showing in hindsight the expected relationship between financial development and domestic debt.

1.2 Problem Statement

Public debt is increasingly becoming a feature of financing the recurrent and non-current expenditure budget of the government of Malawi (World Bank 2019).

High fiscal deficits in Malawi have mostly been financed through high-cost domestic borrowing. Public debt is, therefore a direct consequence of a deficit in the government budget due to insufficient revenue collected internally which fails to meet the immediate

needs to finance the national budget. Financing budget deficit through domestic financial market has implications on both the financial intermediation and stock market development. Therefore, this paper intends to assess the impact of domestic debt on financial market development in Malawi.

1.3 Objectives

As stated above from the problem statement the paper sets out to examine the implications of financing the government's fiscal deficit from domestic sources on the development of Malawi's financial market. It specifically seeks to:

- To assess the impact of domestic debt on financial market development.
- To assess whether domestic debt crowds out or in private sector investment in Malawi.

1.4 Justification of the Study

It is well known that public deficits can have negative effects on economic and also through crowding out of private investments. In Malawi this effect has been strongly experienced recently, with government borrowing at real interest rates as high as 30%, this resulting to most companies preferring to buy treasury bills as compared to investing in fixed capital formation (Siba,2005). Figure 5 below shows that private sector investments have been extremely low in Malawi for several years and it only declined to 0.6% of GDP during 2003, the year when return in treasury bills peaked.

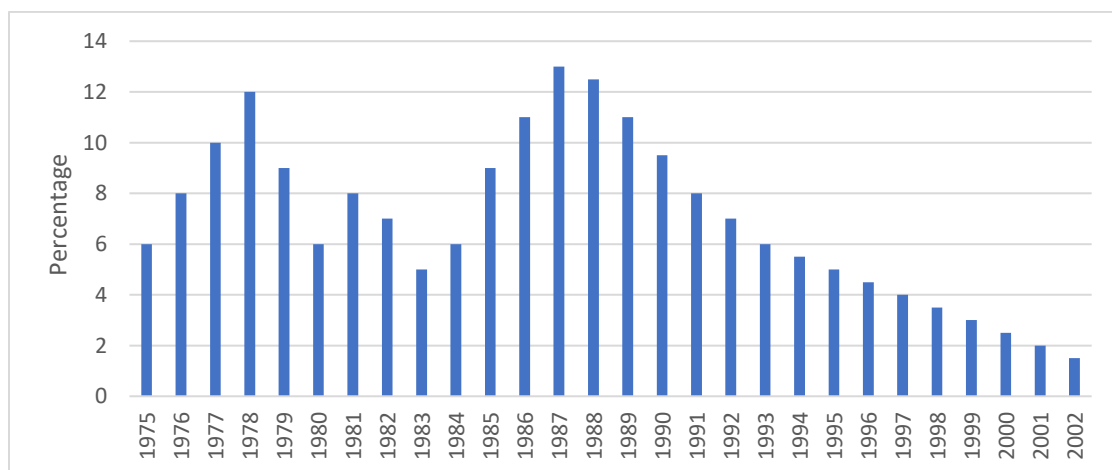


FIGURE 5: PRIVATE SECTOR INVESTMENT AS A PERCENT OF GDP

Source: World Bank Africa Data Base, 2004 and the IMF, 2004c

The World Bank states that the uptake of domestic debt by the RBM has increased, but bank and non-bank private financial institutions remain the largest holders of domestic debt, and were owed 75 percent of the total domestic debt stock as of December 2021 (World Bank 2022).

The financial sector has been stable, helped by revenues from lending to the Government. Non-performing loans (NPLs) stood at 4.5 percent in December 2021. An RBM stress test done in 2022 showed that the banking sector remained mostly resilient to shocks. This was supported by large shares of commercial bank lending going to the Government (World Bank 2022). It is recommended that the government should employ domestic borrowing in modernization as long as it positively impacts economic growth (Chitera, 2020).

This paper then intends to find out why despite statistics stated above on large credits being owed to the banking and non-banking service by the government they still choose to extend credit.

CHAPTER TWO

LITERATURE REVIEW

The review will focus on concepts of financial markets as well domestic debt and their contributions to economic growth. Also, we will look at theories backing up the two concepts both, specifically in developing countries.

2.1 Theoretical Literature Review

2.1.1 Theories on Financial Market Development

Financial markets are key in economic growth for they contribute to economic efficiency by diverting financial funds from unproductive to productive uses. The main role of financial markets could be traced back from 1911 by Schumpeter who first prompted the idea. In his study he points out the key role of the banking system due to its ability to allocate savings, encourage innovation as well as fund productive investments.

The role of financial development has received much attention since the emergence of the endogenous growth model. Which argues that a persistent rate of prosperity is influenced by internal processes such as human capital, innovation and investment capital rather than external uncontrollable factors, challenging the former notion by classical economists (D. Liberto and E. Estevez, 2023).

2.1.1.1 Neoclassical Growth Theory

Neo-classical growth theory argues that a steady growth rate occurs when three economic forces come into play namely: labor, capital and technology. It claims that the relationship between capital and labor determines its total output. The theory states that technology strengthens labor, increasing the total output through increased efficiency of labor.

Therefore, the production of the neoclassical growth theory is used to measure the economic growth and equilibrium in an economy (CFI,2023).

$$Y = AF(K, L) \quad (1)$$

Where:

Y = Income or Gross Domestic Product

K = Capital

L= amount of unskilled labor in the economy

A= Determinant of level of technology

2.1.1.2 Endogenous Growth Theory

The endogenous growth model is used to capture the effect of financial development on growth. Consider the simplest endogenous model where aggregate output is a linear function of aggregate capital stock.

$$Y_t = AK_t \quad (1)$$

The production form above can be seen as a reduced function of one of two underlying frameworks. The first being a competitive economy with external economies as stated by Romer (1989) ,where each firm faces a technology with constant returns to scale but productivity is an increasing function of the aggregate capital stock K_t . For instance, considering an economy with N identical firms ,each producing output $y_t = Bk_t^\alpha$ with capital stock of k_t . Suppose B is regarded as a parameter by individual firms but actually responds to the average capital stock according to $B = AK^{1-\alpha}_t$. Then aggregate output , $Y_t = Ny_t$ is given by (1).

Alternatively, the AK model can be derived assuming that K_t is a composite of physical and human capital as in Lucas (1988), the two types of capita being reproducible with identical technologies. In simple form, assuming that the population is stationary and the economy produces a single good that can be invested or consumed, and if invested, depreciated at the rate δ per period. Gross investment will the equal:

$$I_t = K_{t+1} - (1 - \delta)K_t \quad (2)$$

In a closed economy with no government, capital market equilibrium requires that gross saving S_t equals gross investment I_t . For reasons that will be made clear below, it is convenient to assume that a proportion $1-\phi$ of the flow of saving is “lost” in the process of financial intermediation:

$$\phi S_t = I_t \quad (3)$$

From (1), the growth rate at time $t+1$ is $g_{t+1} = Y_{t+1}/Y_t - 1 = K_{t+1}/K_t - 1$. Using equation 2 and dropping the time indices, the steady-state growth rate can be written as

$$g = A \frac{I}{Y} - \delta = A\phi s - \delta \quad (4)$$

Where in the second step we have used the capital market equilibrium condition (3) and denoted the gross savings rate S/Y as s .

Equation (4) reveals succinctly how financial development can affect growth: it can raise ϕ , which is the proportion of saving funneled into investment; it may increase A , which is the social marginal productivity of capital; and it can be influenced by s , which is the private savings rate.

The model further describes how endogenous growth helps in the functions of financial intermediaries in achieving development growth;

Funneling savings to firms, in the process of transforming saving into investment, financial intermediaries absorb resources, so that a dollar today saved by households generates less than 1 dollar worth of investment this is represented by the fraction ϕ in equation (3). The remaining fraction of $1-\phi$ goes to banks as the spread between lending and borrowing rates, and to securities brokers and dealers as commission and fees.

The absorption of resources by the financial sector is a reward of services provided but may also represent inefficiencies of intermediaries and their market power. As noted by Roubini and Salai-Martin (1991,1992), their activities are often burdened by taxation as well as restrictive regulations, translating into higher unit margins. If financial development reduces this leakage such that it raises ϕ in equation 4, it also increases the growth rate g . *Improving the allocation of capital* financial intermediation helps in allocating funds where the marginal product of capital is the highest. In the growth model intermediaries increase

the productivity of capital A thereby promoting, in two ways: (i) collecting information to evaluate alternative investment projects; and (ii) inducing individuals to invest in riskier but more productive technologies by providing risk sharing.

The information role of financial intermediaries relates to the productivity growth by Greenwood and Jovanovic (1990). Who in their model stated that capital may be invested in a safe, low-yield technology or a risky, high-yield one. Unlike individuals financial with their large portfolios can perfectly unscramble the aggregate productivity shock, and thus choose the technology that is most appropriate for the current realization of the shock. Thus, savings channeled through financial intermediaries are allocated efficiently and the higher productivity in capital results in higher growth.

Financial intermediaries also enable investors and to share risks, this affects their investment choices and their saving behavior. This risk sharing role is not performed only by insurance markets but also by banks and securities markets, which allow individuals to share the uninsurable risk of idiosyncratic shocks, such as unobservable taste or liquidity shocks and the diversifiable risk deriving from the volatility of asset returns.

Interest rate effects financial repression and lack of competition widen the margins charged by financial intermediaries. Aside from the direct resource cost ϕ , margins affect capital accumulation via their incentive effect on saving. Financial repression and imperfect competition keep the interest paid to savers below that prevailing under perfect capital markets such as the marginal product of capital net of depreciation, $A - \delta$. If the savings rate rises with the interest rate, then capital market imperfections lower growth by depressing saving. The studies by McKinnon (1973) and Shaw (1973) argued that this is an important way in which financial repression depresses growth; conversely, financial development is expected to raise saving and growth.

The endogenous growth theory outlines how financial intermediaries assist in financial development and how in turn that leads to growth. In trying to better understand financial

development another theory was introduced which was the Mankiw-Romer-Weil growth model.

2.1.1.3 Mankiw- Romer-Weil Growth Model

Mankiw-Romer-Weil growth model, is an extension of the neo classical Solow-Swan model mentioned above. Originally the neoclassical states that long-run economic growth is a function of nation's stock and of labor and physical capital (Solow 1956 Swan 1956). The standard Solow -Swan model of growth is based on the aggregate production function of Cobb-Douglas involving two production inputs (Neycheva,2018):

$$Y_t = A * K(t)^\alpha * L(t)^{1-\alpha} \quad (2)$$

It assumes a constant state of technology denoted by A, labor supply (L) growing at rate n, an exogenous savings rate (s) as well as a constant depreciation rate (δ). Mankiw, Romer and Weil et al.(1992) extend the model by adding human capital (H) as a third separate production input.

$$Y_t = A * K(t)^\alpha * H^\beta * L(t)^{1-\alpha-\beta} \quad (3)$$

Where:

Y=Output

K=stock of physical capital

H= Stock of human capital

L=supply of labour

A= level of technology

β and α = measure the output of elasticity with respect to physical and human capital

L and A are expected to grow exogenously at rates n and g :

$$L(t) = L(O) * e^{nt} \quad 4(a)$$

$$A(t) = A(O) * e^{gt} \quad 4(b)$$

Therefore, can be derived as that physical and human capital expressed in effective units of labor evolves as follows:

$$K_t = S_k * y_k - (n + g + \delta) * K_t \quad 5(a)$$

$$h_t = S_h * y_h - (n + g + \delta) * h_t \quad 5(b)$$

The small letters denote:

$$k = K/AL$$

$$h = H/AL$$

$$y = Y/AL$$

The above denote quantities per an active labor unit

sk and sh present the rate of accumulation of physical and human capital respectively. Additionally, both types of capital depreciate at the same rate (δ). The existence of diminishing returns to capital implies that $\alpha + \beta < 1$.

Under these initial conditions the capital follows a convergence path to the steady state (k^*, h^*), given by the system of equations below:

$$k^* = \left(S_k^{1-\beta} * s_h^\beta / (n + g + \delta) \right)^{1/1-\alpha-\beta} \quad 6(a)$$

$$h^* = \left(S_k^\alpha * s^{1-\alpha} / (n + g + \delta) \right)^{1/1-\alpha-\beta} \quad 6(b)$$

Substituting equations above in the production and taking we could express the equilibrium as below:

$$\ln(yt) = \ln A(0) + gt - \frac{\alpha+\beta}{1-\alpha-\beta} \ln(n + g + \delta) + \frac{\alpha}{1-\alpha-\beta} \ln(S_k) + \frac{\beta}{1-\alpha-\beta} \ln(S_h) \quad 7(a)$$

$$\ln(yt) = \ln A(0) + gt - \frac{\alpha}{1-\alpha} \ln(n + g + \delta) + \frac{\alpha}{1-\alpha} \ln(S_k) + \frac{\beta}{1-\alpha} \ln(h^*) \quad 7(b)$$

Hence the Mankiw-Romer-Weil (MRW) growth model derived above.

2.1.2 Theories on Domestic Debt

In Malawi domestic public debt is defined as borrowings in Malawi Kwacha from domestic or foreign sources (AFRODAD, 2011). To better understand the theory behind domestic debt and economic growth we are going to bring up two main theories, namely the traditional and Ricardian theory.

2.1.2.1 Traditional View

In the traditional view, an increase in government debt is considered a burden in the economy. In the short-run, in view of an increase in domestic debt the consumer would consider himself to be wealthier and therefore would resort to higher spending. The increased demand for goods and services with sticky prices in the short-run will raise output which and employment. As marginal to consume is higher than marginal propensity to save, the increase in private savings falls short of the government dissaving. The real interest rate in the economy would increase thereby increasing capital inflow from abroad. In the long-run, the higher interest rate would discourage investment and thus crowd out private investment. The lower domestic savings mean a smaller capital stock, the inflow from abroad would result in greater foreign debt. The higher aggregate demand results in a higher price level which adjusts over time and the economy adjusts to a natural rate of output. Therefore, the overall impact when considering the long-run would be smaller total output and eventually lower consumption and reduced economic welfare. This is referred to as the burden of public debt, as each generation burdens the next, by leaving behind a smaller aggregate stock of capital (Meltzer 1951; Modigliani, 1961; Ferguson, 1964; Patinkin 1965).

2.1.2.2 The Ricardian View

In the Ricardian view, government debt is considered equivalent to future taxes (Barro, 1974). Considering that consumers are rational and forward-looking, the discounted sum of future taxes is equivalent to the current deficit. This to mean, the shift between taxes and deficits does not generate aggregate wealth effects. The increase in government debt does not affect consumption. The rational consumer facing current deficits, saves for future rise in taxes and therefore total savings in the economy are not affected. A decrease in government dissaving is matched by increase in private savings. In view of unchanged savings, investment and interest rates are unaffected as well as the national income. Buchanan (1958) suggests that the incurrence of domestic debt results in the postponement of tax liability from current to future generations. This shift from current to future taxation could imply a shifting in tax burden from current to future generations. Barro (1978a; 570-71) argues that the shift from current to future taxation implied by debt issue does not

involve a burden on later generations due to the phenomenon of operative intergenerational transfers (Singh, 1999;1445-53).

Other new approaches can be best summarized into three that is: the borrower-based approach, the lender-based approach and the present value budget constraint approach (Cuddington,1999).

2.1.2.3 Borrower Based Approach

The Borrower based approach is the basic approach to the domestic debt sustainability analysis. Based on the accounting approach which postulates that fiscal deficit is sustainable if it generates a constant debt-to-GDP ratio (Johnson and Li,2010). It argues that the government should have the capacity to raise revenues that could balance the expansion of the stock of domestic debt. The borrower-based approach measures to meet current and future debt service obligations, thus, there is a level of the primary surplus or deficit which stabilizes the debt to GDP ratio. It also follows that if the economy grows at a rate higher than the interest rate, it is possible to run a sustainable primary deficit.

2.1.2.4 Lender Based Approach

The lender-based approach also known as the present value constraint approach argues that a government is solvent if the flow of expected value of future resources is at a minimum equal to the face value of the stock of domestic debt. Cuddington, (1999) Points out that the lender-based approach is different from the borrower-based approach in that the approach requires that the real growth rate of domestic debt be lower than the real interest rate. If the debt growth rate is between the real interest and GDP growth rate, then the budget is satisfied, even though the debt-to-GDP ratio can grow over time. It is important to note that the lender-based approach does not entail that the debt to be fully repaid (Cuddington,1999).

2.1.2.5 Present Value Budget Constraint Approach

Borrower- based approach and lender-based approach are mostly used in the literature involving developing countries primarily approach because of the non-availability of long spanning reliable data as regards to interest rates (Drummond, Daal, Srivastava, Edgard

and Oliveira, 2012). The present value budget constraint approach evaluates debt sustainability through econometric testing of the validity of the present value of the budget constraint conditions (Mahmood and Rauf, 2012).

2.2 Empirical Literature Review

This section will focus on research studies on topics relating to the same and their respective results, we are going to look at studies from a global point down to our point of focus.

The share of domestic public debt over total public debt has increased in most developing economies during the past years, these periods also characterized by expansion and liberalization of the financial markets. Financial development requires the existence of appropriate institutional infrastructure and economic stability.

İlgün (2016) conducted a study investigating the long-run relationship between financial market development and public domestic debt in 18 emerging economies from 1973-2018. Using the second-generation panel unit root test and panel cointegration analysis which allows both cross section dependence and heterogeneity. The study found that there was a negative relationship between domestic public debt and financial market development in the long-run. The findings also indicated that while trade openness enhanced financial development, economic instability exerts a negative impact in emerging countries.

Abbas, Christensen (2007) investigated the role of domestic debts in economic growth, focusing on low-income countries as well as emerging countries, covering 93 low-income countries and emerging markets for a period over 1945- 2004. Moderate levels of non-inflationary domestic debt, as a share of GDP and bank deposits were found to have positive relationship to economic growth. The Granger causality regressions suggested support for various channels such as monetary policy, broader financial markets development as well as enhanced private savings and financial intermediation. Some evidence within the study showed that a ratio above 35 percent of bank deposits, domestic

debt begins to undermine growth and leading to crowding out and banks efficiency concerns. The study also points out that the growth contribution of economic growth is higher if held in markets where it bears positive real interest rates and is held outside the banking system.

Altaylıgil and Akkay (2013) the study investigated the relationship between domestic debt and financial development in the Turkish economy between 2002Q1-2012Q2 using time series and basic ECM model. The results showed a negative relationship between domestic debt and financial development. The study also notes that each country may have different responses against changes in domestic public debt due to own specific economic and financial conditions.

In another study conducted by Ahmed et.al (2024) they investigate domestic debt and financial development nexus the case of Pakistan. Data from 1972 to 2022 was used also employing the Autoregressive Distribution Lag model (ARDL) and using three dimensions of financial development: depth, stability and efficiency. It was found that domestic debt positively and significantly impacts financial development depth and stability dimension. However, it harms the efficiency dimension of financial development.

Mogaka (2017) conducted a similar study but the focus was on countries in the Eastern African community. Using descriptive survey study design which was used explain a characteristic behavior of one variable to another variable and data for 15 years from 2007-2016. It was found that domestic debt had a positive relationship to financial market development in the East African Countries Community. Interest rates were also found to have a strong positive relationship financial market development. Only inflation was found to have a negative relationship to financial market development.

Atje and Jovanovic (1993) extend the Mankiw-Romer-Weil (MRW) growth model with stock market and cross-country evidence showing that stock market development may be leading indicator of economic growth. Cooray (2010) further extends the Mankiw-Romer-

Weil growth model by decomposing capital into two components, stock market and non-stock capital.

Using cross-sectional, large country samples and cross-sectional and panel methodologies number of studies came to the conclusion that stock market development is positively related to economic growth. Such studies include Tarp and Anderson (2003), Atje and Jovanovic (1993), Bencivenga, Smith and Starr (1996), Cooray (2006) just to mention a few. However, Levine and Zervos (1996), Levine and Beck (2004) found that both stock markets and banks positively influence economic growth. Arestis et al. (2001) concluded that both credit and stock markets promote economic growth, but the positive effect from banks is much greater.

Much as we are highlighting studies that showed a positive impact of financial market development in economies, there also exists studies that found little or no impact of financial market development to economic growth, specifically in developing countries. Rioja and Valev 2014 found that stock markets have not contributed to economic growth in low-income countries, while banks have an allowable positive impact on capital accumulation. Other set of authors, Federici and Caprioli (2009) and Rioja and Valev (2004) argue that such an impact of financial markets may be dependent on the level of financial development in the respective countries. Rioja and Valev (2009) show that in countries with high and intermediate the impact differs, countries with high financial development experienced the impact at a positive rate and it was experienced at very high levels in countries with intermediate financial development.

Evidence on non-linearity between financial market development and economic growth has also been found. Beck, Georgiadis and Straub (2014), Chen, Wu and Wen (2013), Samargandi, Fidrmuc and Ghosh (2015). Beck et al. (2014) finds that finance countries to continue to display a positive effect on growth only up a critical threshold, beyond which the positive impact on economic growth disappears.

Above theories as well as papers on similar studies, it is important to note how independently financial market development and domestic debt influence economic

growth. The studies point out the aspect of domestic debt crowding out private investment through accumulation of domestic debt using the banking sector. As already noted, each country would have different results considering development of its financial market and level of its domestic debt. This addresses our research where the paper will look at the financial market evolution and development and also the levels of domestic in the stated period of 1980-2021 to see the effects of domestic debt on financial market development.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter presents the research methodology employed in the study. It will include the model employed, methods of estimation, variable description, sources of data and the diagnostic test to be employed.

3.2 Conceptual Framework

Figure 6 shows the conceptual framework used in the study; the dependent variable included the financial markets in the economy.

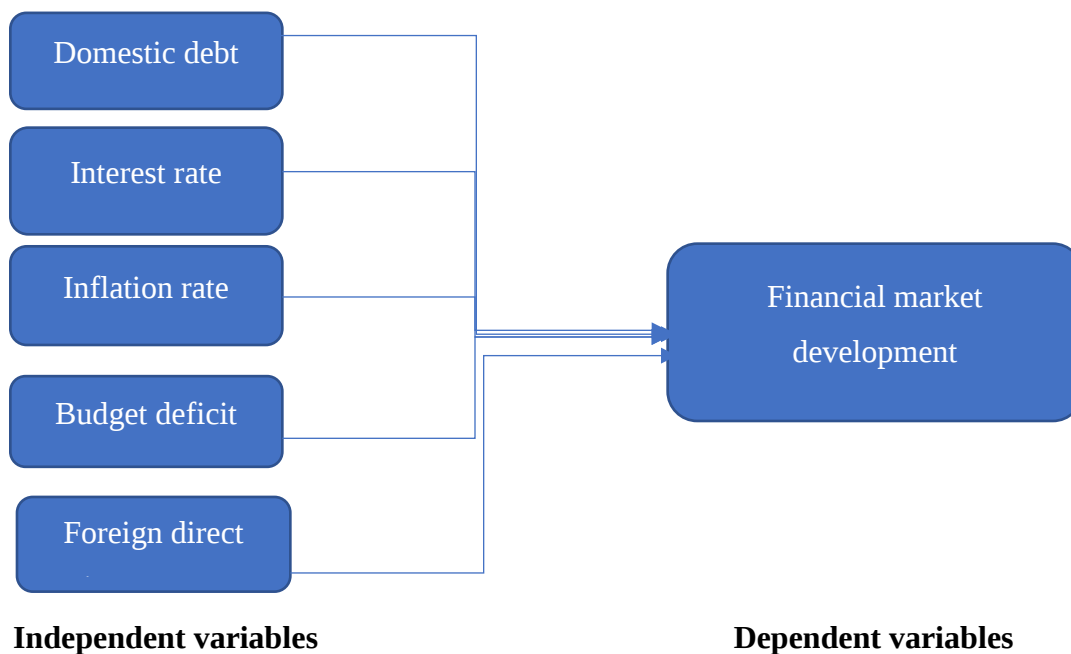


FIGURE 6: CONCEPTUAL FRAMEWORK

Performance of the financial markets is affected by the shift in the dependent variables. When the domestic public debt is high, they influence factors that cause distress in the financial markets.

3.3 Model Specification

To assess the effects of domestic debt on financial market development the study will adopt the methodology by Chiwira (2023). The model was modified to suit purposes of this study, while Chiwira (2023) used panel data analysis, this study will use time series analysis with a combination of all variables.

$$FD_t = \alpha + \beta_1 DDR_t + \beta_2 INTR_t + \beta_3 INFL_t + \beta_4 BUDD_t + \beta_5 FDI_t + \varepsilon_t$$

Where FD_t is the indicator of financial development, DDR_t is an indicator of domestic debt, $INTR_t$ is an indicator of interest rates and are part of control variables: $BUDD_t$ as an indicator of budget deficits over the years, FDI_t an indicator of foreign direct investment and $INFL_t$ as an indicator of inflation.

Different indicators have been used to capture financial market development and for this study we adopted the financial development index. In 2015 the IMF came up with one indicator called the financial development index which captures development of financial institutions and markets by efficiency, depth as well as access (Sahay et al., 2015). Therefore, the financial development index is the one to be adopted in this study instead of the one variable indicator proxy which was termed to have shortcomings.

To capture composition of domestic debt the study used borrowings from the banking system because the banking sector which is considered as part of financial market in developing countries. It is measured as credits given by domestic banks to government and state-owned enterprises as a percentage of GDP, termed as domestic debt ratio for purposes of this study. Moreover, higher banks credit to public sector is significantly negatively related to growth and such nations tend to have more government intervention in the economy, a larger public sector and more trade restrictions (Hauner, 2009).

3.4 Distribution and Measurement of Variables in the Study

Financial development (FDI_i) is represented by financial development index, to overcome the shortcomings of single indicators as proxies for financial development. A number of indices were developed that summarize how developed financial institutions and financial markets are in terms of their depth, access and efficiency. Sahay et al. (2015).

Domestic debt (DDR_i) is represented by domestic debt ratio which is a financial metric that measures the proportion of a country's domestic debt relative to its Gross Domestic Product (GDP). It provides an indication of the country's reliance on domestic borrowing to finance its activities and obligations.

Foreign direct investment (FDI_i) is represented by foreign direct investment a form of investment where a firm or individual based in one country makes a long-term investment in and has a significant degree of influence over the management of a business located in another country.

Interest rate ($INTR_i$) is represented by interest spread which is the interest rate charged by banks on loans to private sector customers minus the interest rate paid by commercial or similar banks for demand, time, or savings deposits.

Budget deficit ($BUDD_i$) is represented by fiscal budget deficit, where government's fiscal deficit is the difference between its spending and income from taxes and other revenues.

Inflation rate ($INFL_i$) is represented inflation which refers to the sustained increase in the general price level of goods and services in an economy over a period of time.

3.5 Sources of Data

The study utilized secondary annual time series data from 1980-2021, choice of study period was dependent on availability of data for variables captured in the model. Annual data for financial development index was obtained from the IMF, interest rate data was obtained from the reserve bank of Malawi, domestic debt ratio was calculated from data from the world bank as percentage of GDP, budget deficit data was obtained from the

ministry of finance and inflation and foreign direct investment was obtained from world bank.

3.6 Methods of Analysis

This study utilized the autoregressive distributed lag model (ARDL) model to analyze the short run and long run relationship between domestic debt and financial market development. The autoregressive distributed lag model (ARDL) by Pesaran and Shin (1999) and expanded by Pesaran et al (2001). The ARDL model was selected due to the small sample size and variables being stationary at levels and integrated at order one I(1). Nkoro and Uko (2016) also state that the ARDL method is best when dealing with a combination of variables that are integrated of I(O) and I(1). The ARDL is considered to have better statistical properties compared to the Engle-Granger co-integration test because it draws upon the Unrestricted Error Correction Model (Barnejee et al., 1998). According to Mangani (2012), this approach provides joint estimates of the long-run and short-run effects of the regressors. The major advantage of this approach lies in its identification of the cointegrating where there are multiple cointegrating vectors (Nkoro, 2016). The generalized ARDL (p, q) model is specified as:

$$Y_t = \alpha + \sum_{i=1}^p \beta_i Y_{t-i} + \sum_{j=0}^{q1} \gamma_j X_{1,t-j} + \sum_{k=0}^{q2} \delta_k X_{2,t-k} + \sum_{l=0}^{q3} \varphi_l X_{3,t-l} + \sum_{m=0}^{q4} \eta_m X_{4,t-m} + \sum_{n=0}^{q5} \lambda_n X_{5,t-n} + \epsilon_t \quad (9)$$

Where Y_t is the dependent variable, X_t , X_{5t} are independent variables, p and q are optimal lags, α is a constant and ϵ_t is the vector of the error terms.

To arrive at the autoregressive distribution lag model (ARDL) analysis the study employed the augmented dickey fuller unit root test to test for stationarity. The optimal lag for each variable was selected using the Akaike Information Criteria (AIC). The ARDL model for the equation was then transformed into equation (10) below and used to estimate the long-run ARDL coefficients.

$$FD_t = \alpha + \sum_{i=1}^p \beta_i FD_{t-i} + \sum_{j=0}^{q1} \gamma_j DDR_{t-j} + \sum_{k=0}^{q2} \delta_k INTR_{t-k} + \sum_{l=0}^{q3} \varpi_l INFL_{t-l} + \sum_{m=0}^{q4} \eta_m BUDD_{t-m} + \sum_{n=0}^{q5} \lambda_n FDI_{t-n} + \varepsilon_t \quad (10)$$

The short-run dynamic parameters were obtained by estimating the error correction model specified as;

$$\Delta FD_t = \alpha + \sum_{i=1}^p \beta_i \Delta FD_{t-i} + \sum_{j=0}^{q1} \gamma_j \Delta DDR_{t-j} + \sum_{k=0}^{q2} \delta_k \Delta INTR_{t-k} + \sum_{l=0}^{q3} \varpi_l \Delta INFL_{t-l} + \sum_{m=0}^{q4} \eta_m \Delta BUDD_{t-m} + \sum_{n=0}^{q5} \lambda_n \Delta FDI_{t-n} + \partial ECM_{t-1} + \varepsilon_t \quad (11)$$

The coefficients highlighted in equation (11) above are short-run dynamic coefficients of the model and ∂ is associated with error correction terms lagged once (ECM_{t-1}) for financial development model.

Under the ARDL model the bounds test determines the long-run relationship between the variables, β_i are jointly significant. Thus, the bounds test for the cointegration is based on the null hypothesis, that no long-run relationship between the variables.

$$H_0: \beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = 0 \quad (12)$$

The alternative hypothesis is that there is a long-run relationship and is expressed as

$$H_1: \beta_1 \neq \beta_2 \neq \beta_3 \neq \beta_4 \neq \beta_5 \neq 0 \quad (13)$$

The critical upper and lower bounds values for testing the hypothesis are based on the standard F-statistic Pesaran et.al (2001). The lower bound assumes that all the independent variables are I (0) while the upper bound assumes that they are I (1). If the t-statistic exceed their respective upper critical values, the null hypothesis is rejected and we can conclude that a long run relationship exists. If the test statistic falls below the lower critical value, we cannot reject the null hypothesis of no cointegration. However, the test is inconclusive if the t-statistic falls between the critical values (Pesaran et.al 2001).

3.7 Diagnostic Tests

A well specified model needs to satisfy all assumptions of the classical linear regression model. The diagnostic tests are conducted to check if the model has not violated classical linear regression model.

3.7.1 The Breusch-Godfrey LM test

This test was conducted to check the presence of serial autocorrelation which is described as $COV(u_i, u_j) = 0$. This general test for serial correlation is most effective in that it allows for non-stochastic regressors (the lagged values of the dependent variable), higher order autoregressive schemes and simple or higher order moving averages of white noise error terms (Gujarat, 2004). The null hypothesis is that there is no serial correlation up to a pre-specified lag order against the alternative of the presence of serial autocorrelation.

3.7.2 The Breusch-Pagan-Godfrey Test

Also considered to validate homoscedasticity $var(u_i) = 0$. It is suggested that heteroscedasticity may arise from outliers in the model and results in altering the regression results Osborne (2009). The Breusch-pagan-Godfrey test is based on the null hypothesis that there is constant variance and an alternative of no constant variance.

3.7.3 The Ramsey Reset Test

This is used to assess the model's specification bias; the test validates whether variables have been omitted. It was added that the estimators are considered to be best, linear, unbiased and efficient estimators, as such the Ramsey reset test is applied to test for specification error and establish model adequacy (Gujarat, 2004).

3.8 Summary of the chapter

The chapter has outlined the conceptual framework of the study, introduced the model used as well as the sources of data for respective variables used. Last but not least the chapter has also introduced diagnostic test employed.

CHAPTER FOUR

PRESENTATION AND INTERPRETATION OF EMPIRICAL RESULTS

4.1 Introduction

This chapter outlines the summary statistics of the variables that were used in the analysis, as well as the results from the models that were estimated. The chapter is introduced by the summary statistics, the optimal lag test comes next followed by the unit root tests for the variables highlighted presented in table format, using the augmented dickey fuller test. The chapter proceeds with the bounds test for cointegration, the Toda and Yamamoto (1995) granger causality and the ECM model. Lastly, we test the validity of the model generated in the study using stability and diagnostic tests, which is important to confirm the robustness of the results obtained.

4.2 Descriptive Statistics

This section provides summary statistics for all the variables included in the analysis, both dependent and independent variables. Table 1 below provides the descriptive statistics for each variable of the entire time series dataset.

TABLE 1: DESCRIPTIVE STATISTICS

Variable	Observations	Mean	Std. Dev	Min	Max
FD	42	.069	.020	.260	.096
DDR	42	13.010	9.600	.000	44.382
INTR	42	14.005	6.572	4.750	25.100
INFL	42	.131	.205	.000	.676
BUDD	42	-7051.634	12845.59	-64801.9	289.243
FDI	42	-.030	.086	-544	.000
Source: Author's computation using data from, WDI, ministry of finance, RBM and IMF.					

Table 1 shows that almost all variables have 42 observations (n=42). On average financial development is .069 and the values slightly fluctuate, within a range of $\pm .020$ percentage points around the mean. Domestic debt on average is 13.010 and the values fluctuate, within a range of ± 9.600 percentage points around the mean. Interest rate with a mean of 14.005 with a standard deviation of ± 6.572 , showing slightly higher percentage points around the mean. Inflation growth comes with a mean of .131 and a standard deviation of ± 0.205 . Next is budget deficit with an average of -7051.634 and a standard deviation of ± 12845.59 , depicting very high percentage points around the mean and also very high fluctuations over the study period chosen. Lastly is foreign direct investment with an average -0.030 and standard deviation of 0.086. Above is a clear depiction of the descriptive statistics, however we note very high fluctuations in budget deficit and foreign direct investment over the period chosen for the study.

4.2.1 Stationarity test

TABLE 2: UNIT ROOT TEST

Augmented Dickey Fuller Test					
Variable	Model		Level T-statistic	1 st Difference T-statistic	Order of Integration
FD	Trend and intercept		-1.781	-5.160***	I (1)
DDR	Trend and Intercept		-2.811	-6.266***	I (1)
INTR	Trend and Intercept		-1.364	-4.239***	I (1)
INFL	Trend and Intercept		-6.742***		I (0)
BUDD	Trend and Intercept		-4.990	-6.156***	I (1)
FDI	Trend and Intercept		-18.293***		I (1)
Source: Author's compilation. ***At 5% significance level					

The results from the unit root test shows that FD, DDR, INTR, BUDD and FDI were all stationary at first difference. However, within the same model we note that INFL is stationary at level. Hence the combination of the I (0) and I (1) allows us to employ the

Pearson, Shin and Smith Autoregressive Distributed Lag model (ARDL) for cointegration analysis.

4.2.2 Lag Selection Criteria

The optimal lag length selection is important for the estimation of the ARDL model and cointegration. This study adopted the Akaike Information Criteria (AIC) to select the optimal lag length. Table 3 below shows the results.

TABLE 3: LAG MODEL SELECTION

Lag	P-value	FPE	AIC	HQIC	SBIC
0		174.272	22.1878	22.2799	22.449*
1	0.000	79.8914*	21.3802	22.0249*	23.2089
2	0.049	164.817	21.9445	23.1417	25.3405
3	0.001	282.947	22.0248	23.7746	26.9882
4	0.000	302.377	20.9937*	23.2961	27.5244
Source: <i>Author's own compilation</i>					

4.2.3 ARDL Bounds Test for Cointegration

In the ARDL model, the bounds test is conducted for the establishment of cointegration. Cointegration helps to assess the existence of the long-run information between sets of variables within a dynamic specification framework (Nkoro, 2016). Table 4 below shows the results for the cointegration of the ARDL bounds test for the analysis.

TABLE 4: ARDL BOUNDS COINTEGRATION RESULTS

Model specification	F-statistic	Level of significance	Lower Bound	Upper Bound	Status
ARDL (1,0,1,4,0)	9.431**	1%	4.667	6.604	
		5%	3.242	4.738	Cointegration
		10%	2.655	3.963	
Sources: <i>Author's compilation</i>					

The results show that the F-statistic of 9.431 is greater than I (1) values at 5% significant level, which further suggests that at I (1) there is a long run relationship among the variables. The null hypothesis of no levels of relationship is rejected at 5% significant level, this implying there is a long-run relationship.

4.3 Diagnostic Test

Table 5 shows the results of the main diagnostic tests undertaken within the study:

TABLE 5:DIAGNOSTIC TEST RESULTS

Diagnostic Test	F-statistic	Probability
Breusch-Godfrey Serial Correlation LM Test	2.106	0.147
Breusch- Pagan-Godfrey test for heteroscedasticity	0.09	0.763
Ramsey Reset Test	0.154	1.87

Source; Author's compilation ****at 5% significance level****

From the results above we see that there was no autocorrelation, because we failed to reject the null hypothesis of no serial correlation given our p-value is 0. 147 which is greater than 0.05. The same is noted in the heteroscedasticity test, given that the p-value is 0.763 which is greater than 0.05 we level we fail to reject the null hypothesis of homoscedasticity. Lastly the results show that the model has no omitted variables, with a p-value of 1.87 also greater than 0.05.

4.3.1 ARDL Regression Results

Table 6 presents results from the ARDL (1,0,1,4,0) regression and the bounds test error correction model. The Akaike Information Criterion was used for model selection. Hence the table below presents the long-run and short-run results:

TABLE 6:ARDL REGRESSION RESULTS

Variable	Coefficient	Std.Error	t-statistic	Prob.
Long-run				
FD (-1)	-1.247	0.192	-6.49	0.000***
DDR L1	-0.000	0.000	-0.64	0.527
INTR L1	-0.001	0.000	-1.90	0.069*
FDI L1	-0.441	0.157	-2.81	0.009**
INFL L1	-0.010	0.013	-0.79	0.435
Short-run				
INTR D1	0.000	0.000	1.39	0.177
FDI D1	0.421	0.196	2.15	0.041**
cons	0.002	0.001	1.34	0.191
Adjusted R-squared		0.122		
F-statistic		2.12		
Prob(F-statistic)		0.087		
Durbin -Watson stat		1.757		
*** $p < .01$, ** $p < .05$ * $p < .1$. Source: Author's compilation				

4.4 Interpretation of Results and Discussion

4.4.1 In long run

Table 6 shows the results of the dynamic model after meeting the diagnostic requirements. The study noted from the ARDL results that domestic debt has a negative but statistically insignificant relationship to financial market development. With a coefficient of -0.000 and a p-value of 0.527 which is statistically significant at 5% significance level. This result is not consistent with studies by Mogaka (2017) who found a positive effect between domestic debt and financial market development in the Eastern African Community as well as studies by Saeed et.al (1988) that found existence of a positive relationship between domestic debt and financial market development in Pakistan after using time series data and also a similar model. This finding addresses our first objective on finding out the impact of domestic debt on financial market development and according to the respective

results after running the ARDL model we note that domestic debt has a negative impact on financial market development, however this impact is statistically insignificant.

The ARDL results also show that foreign direct investment is statistically significant at 5% significance level with a p-value of 0.009 and a coefficient of -0.441. This depicting a negative relationship between financial market development and foreign direct investment in the long-run, where a 1% increase in foreign direct investment leads to a 0.441% decrease in financial market development. This finding is consistent with findings from a study conducted by Alfaro, Chanda, Kamleli-Ozcan and Sayek (2010) who state that, most of the positive spillover effects from foreign direct investment are in developed countries. Villegas-Sanchez (2009), using firm data from Mexico proceeds to state that domestic firms only enjoy productivity increases from foreign direct investment (FDI) if they are located in financially developed regions. She further showed that domestic firms located in regions where access to credit is more problematic, a negative spill over from foreign direct investment is expected to be experienced. This is also evident and expected as Malawi was rated a 0.000 by the IMF when it came to financial market access (IMF WP, 2016), showing that individuals have challenges in accessing the credit from financial markets and this is mostly evident in the long-run.

The regression results depicted most of the other variables to be statistically insignificant and had no impact on financial market development. Interest rate was found to have a negative statistically insignificant relationship to financial market development with a coefficient of -0.001. The same was noted for inflation with a coefficient of -0.010.

4.4.2 In short-run

The ARDL results showed that foreign direct investment had a positive statistically significant relationship to financial market development at 5% level of significance and had a coefficient of 0.421. This to mean that a 1% increase in domestic debt will lead to a 0.421% increase in foreign direct investment in the short-run.

The said findings are also consistent with those by Nwosa and Emma-Ebere (2017) who adopted the VECM model to analyze the relationship between financial development and foreign direct investment in Nigeria. They found that a negative relationship existed in the long-run and a positive relationship existed in the short-run.

4.5 Summary of the Results

This chapter has presented results of the empirical analysis, it has highlighted most importantly the two objectives, by firstly showing that domestic debt does have a negative impact on financial market development, however the impact is statistically insignificant. The results did not show evidence of an impact of domestic debt on private investment. However, the study noted a relationship between financial market development and domestic debt both in the long-run and short-run. In the long-run domestic debt had a negative relationship to financial market development and positive relationship in the short-run.

CHAPTER FIVE

CONCLUSION

5.1 Introduction

This chapter will provide a summary of the outcome of the empirical results and policy implications, it proceeds to discuss areas of further research.

5.2 Summary

The study aimed at investigating the effects of domestic debt accumulation on financial market development. The main objectives were; (i) to find out the impact of domestic debt on financial market development (ii) to find out if domestic debt crowds in or out private investment. Using time series analysis from 1981-2021 and the ARDL bounds test approach to cointegration proposed by Pesaran et.al (2001) to investigate the long-run and short-run effects the study found evidence of a negative relationship between domestic debt and financial market development, however this relationship is statistically insignificant. The study also was not able to find any impact of domestic debt on private investment. These results might be this way because Malawi as a country does not have a well-developed financial market system, hence impacts of domestic debt might not necessarily present themselves in the financial market system.

However, the study found a significant relationship between foreign direct investment and financial market development both in the long-run and short-run. In the long-run the results showed a negative relationship between foreign direct investment and financial market development. Whilst a positive relationship was noted in the short-run. This is evidence to say that foreign direct investment leads to development of the financial market till a specified threshold and once that threshold has exceeded it becomes detrimental by crowding out private investment.

5.3 Policy Recommendations

Much as the study found a negative effect of domestic debt on financial market development though statistically insignificant in Malawi it is still important for government to reduce domestic indebtedness. Because this will eventually lead to crowding out of private investments in the long-run as is evidenced in the literature review.

As to the evidenced results of a relationship between domestic debt and foreign direct investment, it is crucial for Malawi to explore financial market reforms that could lead to financial market development in Malawi both in the short-run and long-run. The study also recommends development of the financial market by the monetary authority due to its positive influence on capital inflows on foreign direct investment in the short-run. Well-developed financial markets will lead to more inflow of capital through external investors confidence in investing as a result of well-developed financial systems. This will in turn lead to economic growth because government will be able to get foreign exchange allowing it to participate in the financial market later leading to increase in GDP which translates to increased economic growth.

However due to an increase of foreign direct investment to a threshold beyond 0.421%, the foreign direct investment will lead to inflation and cause the reserve bank of Malawi to increase interest rates to curb inflation. In increasing interest rates, private investors will find the rate of borrowing to be expensive and later reduce the number of private investors borrowing money, leading banks to prefer extending credit to the government that usually offers higher interest rates. This will in the end lead to crowding out of private investment and fleeing capital, hence the negative relationship between foreign direct investment and financial market development. In this case the study recommends, foreign direct investment to a threshold up to 0.421% as evidenced in the paper and that any threshold beyond will lead to crowding out of private investment leading to a decrease in financial market development.

5.4 Limitations of the study

The study noted a challenge in availability of data for the whole time period, some data on financial markets was limited and this led to results being affected. Especially data in the financial market index, some years were blank.

5.5 Areas of Further Study

Due to unavailability of data for some of the indices this made the study limited to only financial market development which might have also affected the results. The study proposes further studies on the same but focusing on the sub-Saharan region, using the financial development index to compare within the countries.

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APPENDICES

APPENDIX 1: Data Used

TIM E	FINANCIAL DEVELOPM ENT INDEX	DOMES TIC DEBT	INTERE ST RATE	FOREIGN DIRECT INVESTM ENT	INFLATI ON	BUDG ET DEFIC IT
1980	.09627721	7.4985657	8.75	-0.54	0	0
1981	.09129706	13.293444	8.75	-0.06	.61470851	- 2.70740 71
1982	.09264524	8.0231481	8.75	0.00	.45468345	- 1.57635 94
1983	.09330583	7.2752809	8.416666 7	-0.10	.54183429	1.10214 71
1984	.06175356	5.7311719	4.75	0.00	.67633581	- 2.14623 07
1985	.03949204	7.2339164	5.875	-0.02	.31185817	- 2.17661 41
1986	.03830478	6.7672527	6.25	0.00	.36858746	- 1.85442 28
1987	.0269592	8.7224471	5.25	-0.00	.56579162	- .002036 82
1988	.02608087	7.5822507	8.75	0.00	.57216408	- 1.123e- 07
1989	.02966999	5.788245	10.25	0.00	.17091956	- 1.50195 33
1990	.0340553	5.1374801	8.895833 3	0.00	.14448904	- 1.95418 93
1991	.03333055	6.3802278	7.5	0.00	.11776807	- 1.66201 77
1992	.04534103	6.3500534	5.5	0.00	.2112358	- 1.66176 63
1993	.06041646	5.9181479	7.75	0.00	.14404902	- 4.76079 45

1994	.08586961	8.2945481	6	-0.14	.19062351	- 6.07524 34
1995	.08046972	2.5941626	10.0625	-0.02	.22497982	- 6.52367 36
1996	.07571839	5.6305324	19	-0.03	.06209877	- 4.13198 57
1997	.069781	5.7846016	18.04166 7	-0.02	.01203186	- 11.2531 77
1998	.0806964	9.122714	18.60416 7	-0.01	.03153846	- 1.10771 27
1999	.07480897	10.117771	20.375	-0.04	.03299956	- 1.19215 3
2000	.07784657	5.9176101	19.875	-0.01	.01643215	- 14442.6 81
2001	.06605406	6.1783199	21.20833 3	-0.01	.01059594	- 9008.88 17
2002	.06602855	13.398566	22.45833 3	-0.00	.00550037	- 2200.95 31
2003	.0668067	17.308596	23.79166 7	-0.02	.00306284	- 20652.2 16
2004	.05860521	15.910916	23.10416 7	-0.03	.00301925	- 27995.1 76
2005	.05463321	16.939459	22.23148 1	-0.03	.00355955	- 31570.2 12
2006	.07817522	12.680931	16.86111 1	-0.01	.00256982	- 5452.80 07
2007	.07882849	13.604176	14.92333 3	-0.02	.00128174	- 17849.8 53
2008	.07153109	16.334424	14.93027 8	-0.02	.00116522	- 23655.1 96

2009	.07534307	15.941913	14.91666 7	-0.01	.00096364	- 5773.61 92
2010	.07605817	12.466968	14.12613 6	-0.01	.00070766	- 5223.76 06
2011	.07208973	14.134344	13.02272 7	-0.06	.00060849	- 64801.9 67
2012	.09054345	10.323735	14.43013 9	0.00	.00141645	289.242 82
2013	.08492315	23.121564	19.68708 3	-0.02	.00135662	- 22652.1 81
2014	.08057646	15.780311	24.66840 3	-0.02	.00092587	- 23458.9 51
2015	.08564964	18.941311	25.09951 1	-0.01	.00068366	- 9155.76 34
2016	.07828291	30.270234	24.44521 9	-0.00	.00055059	- 3041.05 43
2017	.07169443	29.8114	20.86521	-0.00	.00025387	- 2130.20 79
2018	.07459052	34.245989	16.65277 8	-0.00	.00024489	- 3534.33 23
2019	.07628556	35.488835	8.254166 7	-0.00	.00016386	- 559.077 26
2020	.09329173	44.382424	7.663368 1	-0.00	.0001407	- 3248.38 57
2021	.09524117	0	7.48125	0.00	7.404e-08	.603244 77