

The impact of stock market performance on economic growth in Malawi

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ABSTRACT

This study investigated the causal relationship between the performance of the Malawi Stock Exchange (MSE) and economic growth in Malawi using quarterly data for the period 2003 to 2017. Stock market performance was measured using four indicators: the all share price index, total stock market capitalisation, stock market liquidity, and the number of shares traded. Economic growth was measured by real Gross Domestic Product (GDP). The Autoregressive Distributed Lag (ARDL) model was used to test for the existence of a long- run co-integrating relationship between the variables, while Granger causality tests, impulse response functions and variance decomposition analyses were employed to examine the short- run dynamics.

The co-integration tests found no evidence of a long-run relationship between real GDP and all measures of stock market performance. However, there was evidence of the existence of short-run relationships, with a positive and significant contemporaneous relationship noted between real GDP and stock market capitalisation and a negative and significant relationship between real GDP and market liquidity. The Granger causality tests revealed the following intertemporal relationships: bidirectional causality between real GDP and stock market liquidity and unidirectional causality from stock market capitalisation to real GDP and changes in the all share price index to real GDP. The impulse response functions and variance decompositions further revealed real GDP reacts highly to a shock in market capitalisation than to other variables and a shock in real GDP causes a higher fluctuation in liquidity than in any other variables. The findings of this study thus show that there is short-term causality between the performance of the MSE and economic growth in Malawi albeit that no long-run relationship exists. In light of these results, specific policy recommendations are provided for various stakeholders so as to enhance economic growth in Malawi. Suggestions for future research are also given.

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LIST OF ACRONYMS

ADF – Augmented Dickey Fuller

ARDL – Auto-regressive Distributed Lag

GDP - Gross Domestic Product

HDI - Human Development Index

IMF - International Monetary Fund

KPSS – Kwiatkowski-Phillips-Schmidt-Shin

LM - Lagrange multiplier

MSE - Malawi Stock Exchange

OLS - Ordinary Least Squares

PP – Phillips-Perron

SIC – Schwarz Information Criteria

SME – Small and Medium Enterprises

UNCTAD – United Nations Conference on Trade and Development

UNDP - United Nations Development Program

VAR - Vector Autoregressive

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1 INTRODUCTION

1.0 Research Area

Stock markets are securities' markets where entities or individuals buy or sell their shares and bonds. This explains why stock markets are an example of a financial institution and form part of the financial system. Finances provided by such institutions facilitate entrepreneurship, innovation, improvement of economic productivity and thus contribute to economic growth, Rao (2013). In the process, the emergence, formation, evolution and functioning of the financial system constitute major determinants of economic growth and development, Rao (2013).

Stock markets have several functions. Huebner (1910) describes stock markets to have the following functions: a) providing means to transfer shares and bonds from hand to hand; b) direct the flow of capital from where it is least needed to where it can be most beneficially and profitably employed; c) "discounting the future" and thus affording a register of prospective values for property other than that listed on the exchanges; d) exert a powerful and wholesome influence upon the money market; and, e) as a strong safeguard against financial panic in a country. Levine (1997) asserts to the same financial functions of stock markets and highlights the importance of these roles in an economy.

Evidence confirms that stock markets influence the productive economic activities in a country. For example, Osamwonyi and Kasimu (2013) concluded that stock markets enhance the economic performance of a country. They alluded to the fact that stock markets provide capital for short- and long-term investments. Businesses in need of extra capital to boost productivity can always turn to the stock markets to access equity or debt. This leads to increased productivity in any business hence this has an after effect of increasing the Gross Domestic Product (GDP) of a country.

Investors look at several indicators of stock market performance such as liquidity, total market capitalisation, trading activities, and the share price index. For example, stock markets also play a role in improving liquidity in an economy so as to ensure there are adequate resources for investment. Masoud (2013) asserts to this role of improving liquidity. Levine

(1998) defines liquidity as the ease and speed with which capital market agents can convert assets into purchasing power at agreed prices. The liquidity of a stock market provides the ease through which investments can be made and withdrawn, within a short lead time. Abdul- Khaliq (2013), also concluded that there is a strong relationship between stock market liquidity and economic growth. Hence, liquid stock markets provide resources for investments in the economy. Rana (2014) looked at the linkage between stock market development, using stock market size and liquidity as stock market performance measures, and economic growth and concluded that these are interrelated with each other in the long-run.

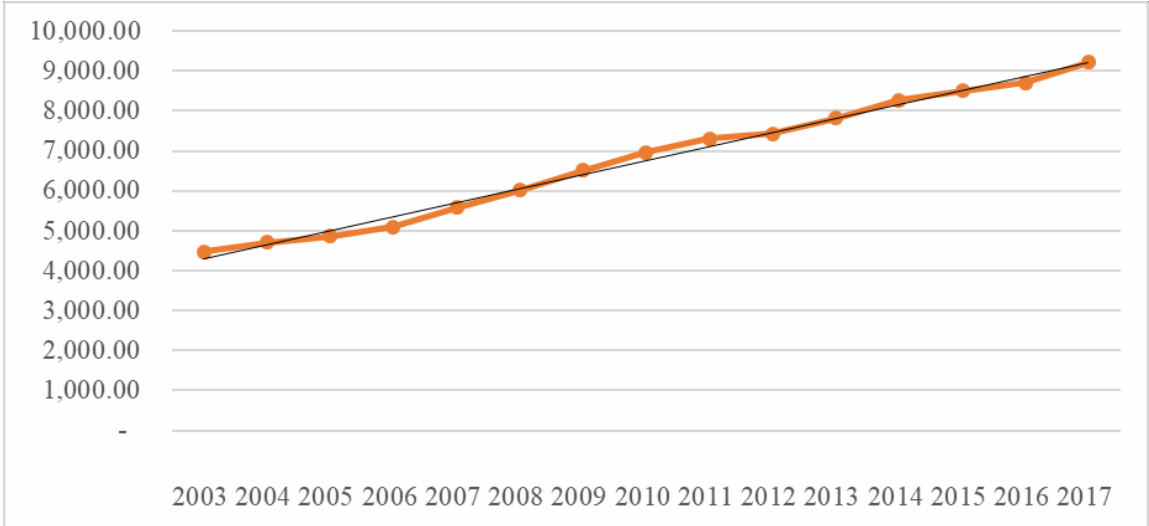
The relationship between stock market performance and economic growth, however, may be more complex, as several scholars have argued that economic performance may also affect the performance of the stock market. This argument rests on the idea that for stock markets to effectively and efficiently operate and positively contribute to the productivity of businesses, they ought to operate under a favorable economic environment. Pilinkus (2010), in his study of the impact of macroeconomic indicators on stock market performance in the short- and long-run in the Baltic States, revealed that Granger causality exists between some macroeconomic indicators and stock market performance. The macro-economic indicators identified included the harmonised consumer price index, money supply and short-term interest rates. Pilinkus (2010) concludes that the performance of stock markets is a consequence of economic performance both in the short and long run as in the case of Baltic States. Similarly, Montes and Tiberto (2012), in their study on the Brazilian stock market, concluded that the macroeconomic environment has an impact on the performance of stock market. With such debates, the relationship between stock market performance and economic growth can be compared to a chicken and egg relationship, as argued by Pillay (2013). That is, it is difficult to determine which is the cause and which is the effect; alternatively, there may be a bi-directional relationship.

1.1 The Macroeconomy and Stock Market of Malawi

Malawi is considered a poor country with high poverty levels and is largely dependent on agricultural products such as tobacco, tea and sugar. The agricultural sector contributes more than a third of GDP and generates more than 90% of total export earnings Malawi (2017). Malawi's current inflation rate is 7.7% Malawi Inflation Rates (2017), with real GDP reported at USD5.442 billion (current) in 2016 World Bank (2017). Figure 1 below shows

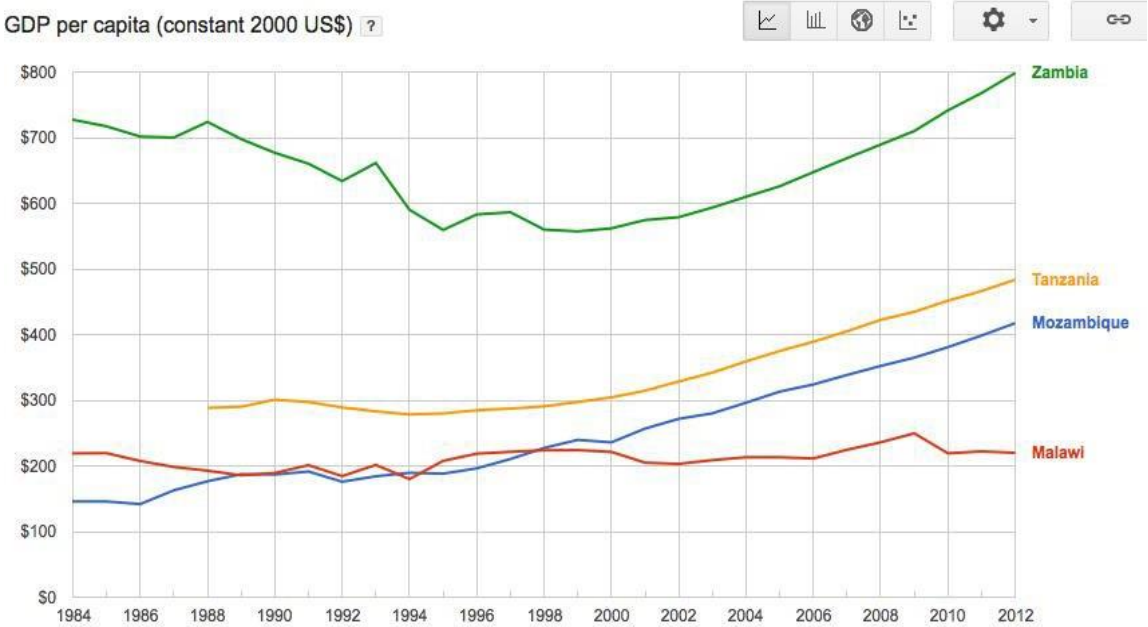
Malawi’s real GDP from 2003 to 2017. As is clear from the trend line, it has been steadily rising over the period; however, growth has been low. Moreover, below average growth was witnessed from 2005 to 2006 and from 2011 to 2012. Figure 2 shows Malawi’s GDP per capita compared to its neighbouring countries. Over the study period, not only was the country’s GDP the lowest compared to its neighbours, but it also experienced the lowest levels of growth.

Figure 1: Malawi Real GDP (Constant 2010 US\$) 2003 – 2017



(Source: Graph developed using data from World Bank, 2017)

Figure 2: Malawi GDP per capita compared with neighbouring countries



(Source: Strohm, 2014)

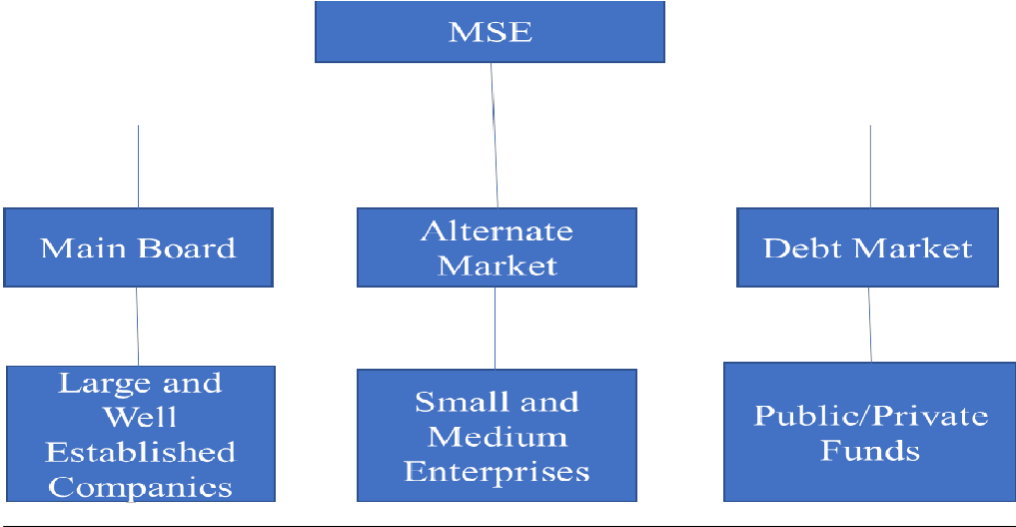
Malawi has adopted various exchange rate regimes over the past two decades. A free-floating exchange policy with partial deregulated exchange controls was implemented from 2003 to 2007. Thereafter, a de-facto partially fixed exchange rate policy with administrative controls over current account transactions was followed from 2008 to 2012; while the current regime is free-float with liberalised current account transactions Chuka (2012). The change in the exchange rate policy in 2012 caused a devaluation of the local currency by 49% against major currencies with the aim of reducing imbalances in international trade Kwalingana et al. (2012); Reserve Bank of Malawi (2017). This had a negative effect on the balance sheets of most businesses operating in the local currency but with financial statements presented in the foreign currency. Kwalingana et al. (2012) forecasted that the devaluation is likely not to have a significant impact on the trade balance or result in changes in trade patterns in the long run.

The Malawian financial sector is principally comprised of banks, which constitute 61% of the financial sector, with monetary policy supportive of the introduction of new commercial banks over the past two decades Chuka (2012). Loans are contracted by a small number of large borrowers, with the Malawian government being the largest borrower International Monetary Fund (IMF) (2015). Further to this, the banks mostly provide short- and medium- term loans to firms in the wholesale and retail, agriculture, and manufacturing sectors.

Along with low levels of GDP per capita, Malawi is also characterised by extreme poverty, with the poverty level at 50.7%, which measures the poverty headcount at the national poverty line (% of population) Malawi Statistics (2017). Further evidence of the dire situation of the population is evidence by Malawi's Human Development Index (HDI) of 0.418 which ranks the country at 170 out of 187 countries Malawi Statistics (2017). The HDI captures the country's income per capita, life expectancy and education to give an overall perspective on human development. This criterion is seen as a more holistic measure by which to judge a country rather than solely on GDP per capita. It is clear, therefore, that Malawi is performing poorly when considering its HDI ranking, and that the people of the country face substantial difficulties because of the lack of development. Economic growth is thus a national priority as it represents the means by which the country can develop and, in so doing, reduce poverty and unemployment and improve education and opportunities for the people of the country.

Malawi does have a stock market, known as the Malawi Stock Exchange (MSE). Prior to 1996, the MSE used to provide secondary market services only for treasury notes and local registered stock (where securities already issued were sold); however, in 1996 first company was listed and the exchange now provides both primary and secondary markets MSE (2017). The market currently has three members: Africa Alliance Securities Limited, Continental Capital Limited and Stockbrokers Malawi. As of July 2018, fourteen companies are listed on the MSE from different sectors such as agriculture, finance, hospitality, real estate and telecommunications. The exchange has three platforms namely: the main board, which provides services principally to large and well-established companies; the alternate market, which provides services to small and medium enterprises; and the debt market which assists companies in borrowing funds. This structure is depicted in Figure 3 below. However, currently, there are no companies listed on the alternate market platform.

Figure 3: MSE Platforms



(Source: Organogram developed from information from MSE, 2017)

A limited number of studies have been conducted on the MSE, although few are publicly available. One of these studies, conducted by the International Monetary Fund (2015) noted that the MSE has a number of shortcomings. The particular concerns raised include:

- underdeveloped with a limited number of trading instruments,
- few listed companies,
- low participation by retail investors due to low consumer confidence, and

- limited liquidity.

1.2 Problem Statement

Researchers such as Pilinkus (2010), Masoud (2013), Abdul-Khaliq (2013), Levine (1998) and Rana (2014) have examined the causality of the performance of the stock market and economic growth. The findings of these studies show varied results, with some showing evidence of a bidirectional relationship between stock market performance and economic growth, some a unidirectional relationship from stock market performance to growth and others from growth to stock market performance. However, the question is, is such interlinkage applicable in other countries like Malawi?

Given these substantial limitations of the MSE, and drawing from the literature presented, it is questionable whether the MSE influences economic growth in Malawi or whether the poor performance of the Malawian economy is a contributing factor to the poor performance of the MSE. No study has yet to consider this issue in the small, developing country of Malawi. Yet, it is clear that Malawi needs to seek measures to boost its economy as well as improve its stock market and the relationship between the two is thus critical.

1.3 Research Questions and Objectives

In light of the above discussions, the research question which is thus the focus of this study is ‘what impact has the performance of the MSE had on the economic growth of Malawi and what effect has economic growth had on the performance of the stock market?’

This question can be broken down into the following research questions:

- Does a positive or negative long-run and/or a short-run relationship exist between the performance of the MSE and economic growth in Malawi?
- Does a unidirectional or bidirectional causal relationship exist between the performance of the MSE and economic growth in Malawi?

The main objective of the study is to examine the impact of the performance of the MSE on the economic growth and effect of economic growth on the performance of the MSE in Malawi.

The specific objectives of the study can thus be summarised as follows:

- to determine whether a long-run and/or short-run relationship exists between the performance of the stock market and economic growth in Malawi;
- to determine if the relationships between stock market performance and economic growth, if they exist, are positive or negative;
- to determine whether a unidirectional or bidirectional relationship exists between stock market performance and economic growth in Malawi.

The measures of performance for the stock market include market liquidity, market capitalisation, the share price index and number of shares traded while economic growth is measured by real GDP.

1.4 Purpose and Significance of the Research

The main purpose of the study is to examine the relationship between the performance of the stock market and economic growth in Malawi. Knowledge of this relationship has important consequences for numerous stakeholders. In particular, given Malawi's high poverty levels and low economic growth, the government needs to identify ways to spur growth. As such, the results of this study, have important implications for monetary and macroeconomic policies. A study conducted by Osamwonyi and Kasimu (2013) recommends that policy makers and regulatory bodies should formulate and implement policies that will attract investors and avail the real sector of the economy the much-needed funds for production and encourage the listing of companies that contribute substantially to the GDP of the nation. This study will use the same approach and ensure proper recommendations are made to policy makers and regulatory bodies.

Various additional stakeholders will benefit from the results of this study. These include: finance institutions in the mobilisation of funds to be invested on the stock market; listed firms in better ways to have access to more capital for their business activities; savers and investors in ways to increase returns on their investments as a result of improved performance of listed firms; other researchers will have an update of the impact of MSE on economic growth and identify gaps for further studies; policy makers will understand which areas need to be intervened through new policy development or policy revisions; and finally, the MSE and its brokers will be able to better support listed firms to support economic growth in the country.

1.5 Research Assumptions

This study rests on the assumption that improved stock market performance, captured by growth in the price index, increased stock market capitalisation, increased trading volumes and increased liquidity, positively affect economic growth. Moreover, it also assumes that a reverse positive relationship holds such that improved economic growth will also contribute positively to the performance of the stock market.

1.6 Research Report Structure

The remainder of this study is structured as follows: Chapter 2 contains the literature review, which highlights the theoretical and empirical literature on economic growth and stock market performance. The research methodology is presented in Chapter 3 and details the research approach and strategy, the data set used in the study and the data analysis methods. In Chapter 4, the research findings are presented and analysed and finally in Chapter 5, the research conclusions, policy implications and recommendations for future research are detailed.

2 LITERATURE REVIEW

2.0 Introduction

This chapter presents a review of the literature relevant to the study of the relationship between the performance of the MSE and economic growth in Malawi. A brief description of stock markets and their roles within the financial system is presented followed by the theoretical framework for the study of the relationship between stock market performance and economic growth. Thereafter, a survey of empirical studies conducted on this relationship is presented, highlighting similarities and differences between the findings of these such studies.

2.1 Conceptual Literature

2.1.1 Stock Markets

Stock markets are an example of financial markets, where arrangements in the financial system are made to allow individuals to buy and sell financial claims or instruments. Financial markets operate as primary and secondary markets with the former describing activities that involve the first issue of securities, while the latter refers to activities that facilitate the trading of securities already in issue Madura (2015). They are further described as either money or capital markets. Stock markets fall under the category of capital markets as they involve the trading of long-term securities whereas money markets facilitate the trading of short-term securities such as treasury bills.

A stock market is a key component of the financial system and thus impacts the economy of a country. According to United Nations Conference on Trade and Development (UNCTAD), stock markets have two major roles which impact the economic activities of a country. The roles include firstly, the mobilisation of resources is a central function of stock markets as they provide a means to avail resources to Small- and Medium-sized Enterprises (SMEs) as well as large companies for carrying out productive economic activities in a country for increased GDP; and, secondly, the promotion of good governance in an economy by encouraging disclosure of environmental, social and governance information for sustainable economic growth UNCTAD (2017).

For stock markets to adequately impact economic activities, they require investors that are motivated enough to invest. Investors look at stock market performance indicators such as: the number of shares traded, stock market capitalisation, stock market liquidity, performance indices, number of listed companies, market turnover etc. Stock market performance indexes provide a measure of the overall performance of the stock market or specific stocks. Stock prices indicate the law of supply and demand, whereby where there are many traders on the market leading to demand being high and supply of securities is constant, the price is pushed high and vice versa. A well performing stock market has large number of companies listed, highly liquid securities and high stock turnover and capitalisation. However, stock market capitalisation and turnover depend on each other. As concluded by Oluwatoyin and Gbadebo (2009), there is a positive relationship between market capitalisation and turnover and then the performance of company. Better performance of a company leads to better performance of a stock market. In their study, company performance was used as a proxy for stock market performance.

As much as stock markets as financial institutions support potential contribution to efficient allocation of capital across sectors and economic activities, they are limited by factors such as: a) rule of law; b) regulatory infrastructure; c) institutional frameworks that govern rule of law; and, d) role of state to provide institutional and regulatory frameworks, Rao (2013).

2.1.2 Economic Growth

Various economists have had different schools of thoughts on economic growth which has resulted in numerous determinants of economic growth being proposed. Some of these determinants include trade, financial development, financial markets, foreign direct investment (FDI) etc. Other economists, however, hold opposing views. This section reviews these various theories of economic growth applicable to Malawi context.

2.1.2.1 Walter Bagehot's Model

Bagehot (1873) highlighted the importance of occasional loans to new enterprises. He argued that a new trader has an immense advantage in the struggle of trade using borrowed funds such that he can pay high interest rates, sell at low prices and still make more profits than a trader employing his own capital. His theory therefore assumes that better savings mobilisation can improve resource allocation and technology innovation.

His hypothesis also recognised that economics needs to incorporate more factors such as cultural and social, to be more accurate in theorising about economic processes, Bagehot (1998). He advocated for economics not just as a matter of the external, material aspects of financial transactions, but also involving the internal aspects of people's desires, motivations and personality.

This theory is important in explaining the qualitative attributes of stock market performance which drive people in stock selection which eventually influences economic growth and company performance. This theory applies to Malawi in the sense that Malawi's social and cultural factors are critical in determining the appropriate mindset for enhancing social capital. Such behavioral economics do help in explaining stock market performance and tracking investment behaviors.

2.1.2.2 Joseph Schumpeter's Theory

Drawing on Bagehot's work, Schumpeter's theory recognises that the main player in economic development is the entrepreneur, where he argues that for economic development to take place, it requires an entrepreneur to be innovative by replacing old technologies, through the process which he termed as "creative destruction", Schumpeter (1934). For this to take place, the entrepreneur requires technical knowledge and banking credit to purchase goods for carrying out experiments which eventually lead to innovations and new products and hence increased productivity and economic growth.

Schumpeter (1934) argues that bank credit is very critical in economic development. He highlights that for an entrepreneur to finance his innovations and create new products, he requires resources to fund his production. One way of obtaining such resources is through bank credit. In this process, the entrepreneur disturbs the usual business cycles and its equilibrium for new ways of production which may increase production and economic growth. Malawi recognizes the need for credit for entrepreneurs to support new business, Chuka (2012). Malawian financial institutions have been providing credit for businesses.

2.1.2.3 Financial Repression Hypothesis

This theory was introduced by Shaw (1973) and McKinnon (1973). They argue that the

government will deliberately introduce policies and regulations that can eventually lead to economic growth. These include caps on interest rates, restriction of entry into the financial industry, high reserve requirements, regulation of capital movement between countries, a tighter association between government and banks, just to mention a few. The government policies and regulations are meant to suppress competition in the financial system and lead to lower levels of savings and investments. Such measures lead to increased production and industrialisation for economic growth.

This hypothesis applies to Malawi where the country is noted major challenge due to repressive government policies and actions e.g. government borrowing which crowd out private investments, IMF (2015). Such repressive policies lead to lower levels of savings by businesses and as a result, the resources are employed in production activities which eventually lead to economic growth.

2.1.2.4 Neo-classical Economic Growth Model

This theory was first developed by Solow (1956) and criticised the Harrod-Domar model that even in the long run, the economic system is at best balanced on a knife-edge of equilibrium growth, by using the key parameters: the savings ratio, the capital-output ratio, the rate of increase of the labour force. His theory is devoted to a model of long-run growth which accepts all the Harrod-Domar assumptions except that of fixed proportions, Solow (1956). This model points out that in a closed economy output is a function of varying shares of labour and capital, given assumptions for population growth, savings and technology. It assumes that a key component of economic growth is saving and investment, such that an increase in saving and investment raises the capital stock and thus raises the full-employment national income and product, which in turn increases the rate of growth of national income and productivity, Solow (1956). It further indicates that in the short run, higher saving and investment does increase the rate of growth of national income and product, but has no effect in the long run, Solow (1956).

Campus (1987) studied the neo-classical growth model and argued that it is an approach to economics focusing on the determination of goods, outputs, and income distribution in markets through supply and demand. This is often mediated through a hypothesised maximisation of utility seeking by income-constrained individuals and of profits by firms facing production costs and employing available information and factors of production, in accordance with rational choice theory. According to Campus (1987), three assumptions were made, namely: a)

people have rational preferences between outcomes that can be identified and associated with values; b) individuals maximise utility and firms maximise profits; and, c) people act independently on the basis of full and relevant information. Applying this theory, Malawi can utilize the gaps IMF (2015) noted in the financial institutions to provide resources to income constrained individuals and firms facing production costs.

2.1.2.5 Endogenous Growth Theory

In this theory, Romer (1994) argues that macroeconomists must not be satisfied with neo-classical models in which market incentives and government policies have no effect on discovery, diffusion, and technological advance, rather, they need to make use of all the available evidence, to understand the determinants of long-run economic success. He argues that investments in internal factors such as human capital, innovation and knowledge lead to economic growth, other than external factors. His theory also indicates that there are positive externalities and knowledge spill-overs from capital investment and these lead to economic development. To support the capital investments, Malawi has been investing in internal factors such as human capital, innovation and knowledge through technical education and tertiary education.

2.2 Empirical Literature

Researchers have attempted to assess the veracity of these various theories by testing them empirically. In particular, these studies have focused on identifying the determinants of economic growth that are consistent with the various theoretical frameworks. As mentioned previously, these include the effects of trade, financial development, financial markets and FDI and also include stock market performance.

2.2.1 Effects of Stock Market performance on Economic Growth

Abdul-Khaliq and Noy (2007) studied the impact of FDI on economic growth in Indonesia where they observed that FDI has a positive effect on economic growth, except for investments in the mining sector where the effect was negative. Busse and Koniger (2012) studied the impact of trade on economic growth and they concluded a positive and highly significant impact of trade (measured using the volume of exports and imports as a share of lagged total GDP) on economic growth. Saqib (2013) in a study on the impact of development and efficiency of the financial sector on economic growth, using a sample of 50 developing countries, identified a

positive and highly significant effect on economic growth for all these 50 developing countries. With all these conclusions made on economic growth, one would argue whether stock market performance would have such effects on economic growth as well.

Stock markets have been noted to affect economic growth of a country. Performance of stock market and specific stock have been regarded as a barometer for economic growth in a country. Rao (2003) states that the unavailability of and limitations to accessing credit, forms a major constraint in the optimal capital use for enhancing economic growth and development of a country. Stock markets provide a platform where capital is made available to businesses and individuals in the form of shares and bonds. From Arnold (2004), we also get similar views on this concept that stock markets, where investors can buy and sell equity and bond securities, are where governments and businesses obtain capital for their long-term needs.

The way stock markets affect economic status of countries varies from one country to another. Studies have been conducted on several developing countries to examine the effect of stock markets on economic growth. Stock market for most developing countries like Malawi and emerging markets face challenges in performing well. These challenges are due to small market size, weak institutions, small number of traders, weak regulatory system, illiquidity and weak financial infrastructure. How can elimination of these challenges and development of capital markets like stock markets lead to economic growth? Laeven (2014) studied this and his study revealed that improved micro-economic policies and strong legal system can resolve the challenges faced, result in the efficient allocation of capital and hence contribute to economic growth.

Studies on two developing countries, India and Zimbabwe, documented evidence of the existence of causality between stock market performance and economic growth. However, the direction differed in that for India the direction was unidirectional from stock market performance to economic growth while for Zimbabwe there was bidirectional causality. Paramati and Gupta (2011) investigated whether stock market performance leads to economic growth in India or vice versa for the period 1996 to 2009, using the Granger Causality test, Engle-Granger Cointegration test and Error Correction Model. They concluded that a long-run unidirectional relationship exists between stock market performance and economic growth. Ishioro (2013) investigated the causal linkage between stock market performance and economic growth for Zimbabwe for the period 1990 to 2010. He applied the long-run Granger non-causality estimation technique and concluded that bi-directional causality exists between

economic growth and stock market development.

Duca (2007) investigated the relationship between stock market performance and economic growth from international financial markets of developed countries, namely the United States, Japan, France, the United Kingdom and Germany for the period covering 1957 to 2005. He applied the Granger Causality test and noted unidirectional causality between stock market performance and economic growth and implied that the level of economic activity in a country, can potentially depend on the stock market performance amongst other variables.

Various factors affect performance of stock markets for them to effectively and efficiently impact economic growth. Such factors include legal, regulatory, accounting, tax and supervisory systems, political and macro-economic environment, Chipaumire and Ngirande (2014). These factors influence liquidity of stock markets. Liquidity is one of the performance measurement indicators for stock markets. It is imperative that this indicator be assessed on how its attributes can determine performance of stock markets which may influence economic growth. Liquid stock markets are known to perform better and lead to economic growth. Chipaumire and Ngirande (2014) studied how stock market liquidity impacts economic growth of South Africa using time series quarterly data from 1995- 2010 and applied Ordinary Least Squares (OLS). Their study concluded that stock market liquidity (measured as the ratio of market capitalisation to GDP and the ratio of total value traded to GDP) has had a positive impact on South Africa economic growth.

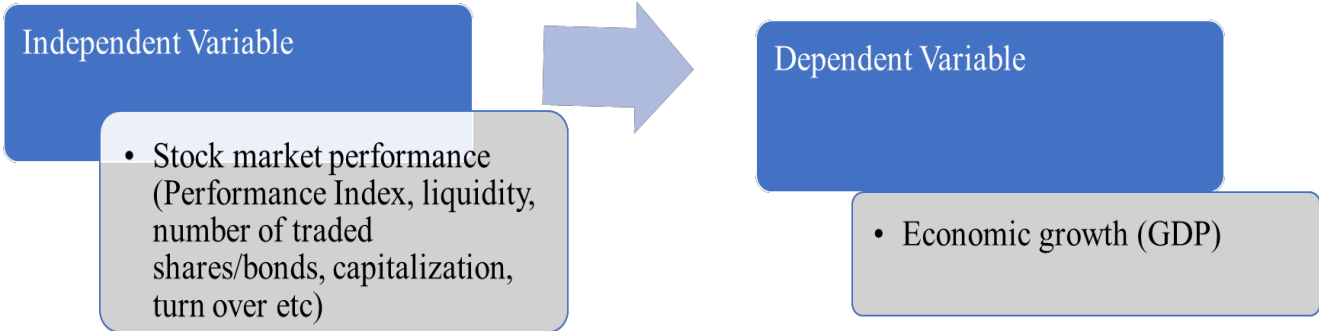
Likewise, Abdul-Khaliq (2013) studied the relationship between stock market performance indicators and economic growth in Jordan for the period 1991 to 2011 using unit root testing methods and an OLS regression. Stock market capitalisation and stock market turnover were used as proxies for liquidity as the independent variables and GDP growth as the dependent variable. The results showed that the market turnover ratio has a stronger influence on economic growth compared to the influence of market capitalisation on economic growth.

The level of savings and investments in financial markets such as stock markets has been noted by researchers to affect economic performance. Hundie (2014) studies the causal relationships among savings, investments and economic growth for Ethiopia for the period 1969 to 2011. He applied unit root test and the ARDL bounds testing procedure. He noted that co-integration exists among these variables. Using the Granger causality test, it was found that bidirectional causality exists between gross domestic investment and economic growth as well as between

gross domestic savings and gross domestic investment. One of the recommendations he makes is that the for a country to attain high and sustainable growth, there should be increased savings and investments.

From the literature reviewed above, it can be concluded that improved stock market performance can lead to economic growth. This gives rise to the conceptual framework to be applied in this study on the effect of the performance of the MSE on economic growth in Malawi as follows:

Figure 4: Conceptual Framework on the effect of stock market performance on economic growth



2.2.2 Effect of Economic Growth on Stock Market Performance

Economic growth can also be seen to influence the performance of a stock market. Macroeconomic indicators such as GDP reflect the status of an economy - whether it is growing or not. Where these indicators are positive, investments are perceived to perform well, as asserted by Chipaumire and Ngirande (2014). That is, when GDP is high, it indicates good productivity of companies, hence better returns from investments. As investors acquire more resources from investment returns, their capacity to invest in stock markets is increased. Therefore, macroeconomic indicators tend to affect decision making of investors. This influences availability of resources on the stock markets and hence higher liquidity on investments.

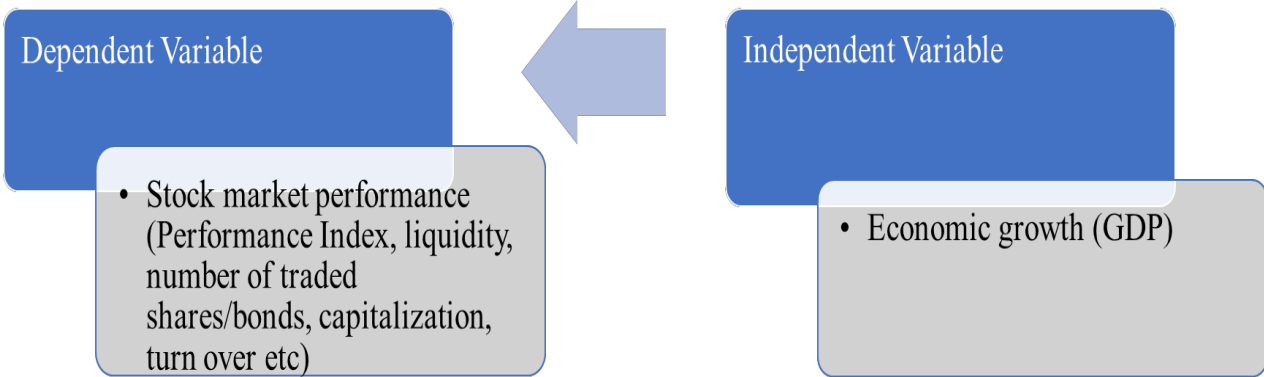
Pilinkus (2010), in his study of the impact of macroeconomic indicators on stock market performance in the short-run and long-run in the Baltic States, revealed that causality exists between some macroeconomic indicators and stock market performance. The macro- economic indicators such as the harmonised consumer price index, money supply and short- term interest

rates showed an impact on stock market performance. However, GDP was noted not to influence stock market performance. The results further revealed that the relationship between macroeconomic indicators and stock market indices is much more reliable in the long-run than in short-run such that an investor should pay attention to the different impacts of macroeconomic indicators on stock market performance.

Studies have been done on the relationship between stock market performance and economic growth in countries with different levels of development. In a study on a developing country, Nepal by Shrestha and Subedi (2014) investigated determinants of stock market performance for the period 2000 to 2014. They studied various macroeconomic factors such as interest rates, inflation and money growth using OLS regressions. They documented a positive response of stock market performance to inflation and broad money growth and a negative response to interest rate. Hsieh and Hsing (2011) studied the impact of macroeconomic variables on the stock market index of Poland, a socially and economically developed country. Hsieh and Hsing (2011) discovered that Poland’s stock market performance is positively related to real GDP.

From the literature reviewed above, it is evident that different conclusions have been reached across the various studies. However, there is evidence to suggest that in a number of countries, both developed and developing, economic performance affects the performance of stock markets. As such, this can be utilised to build the conceptual framework to be applied in this study on relationship between the performance of the MSE and economic growth in Malawi as follows:

Figure 5: Conceptual Framework on the effect of economic growth on stock market performance



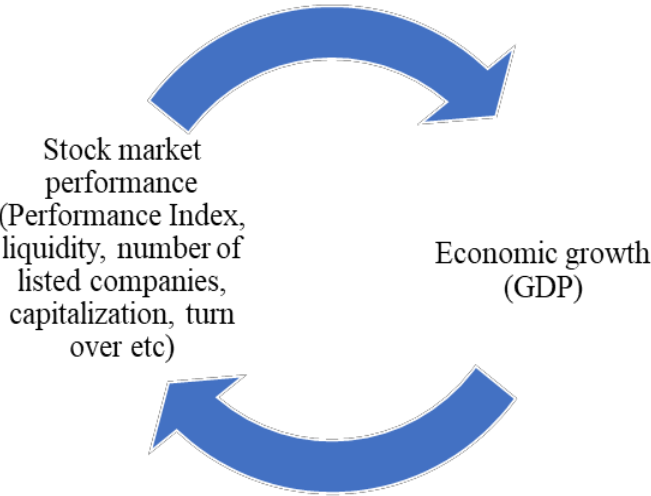
2.2.3 Bidirectional relationship of stock market performance and economic growth

The performance of the stock market and economic growth have been identified in some studies to have a feedback effect on each other. The relationship has been compared by various researchers to a chicken and egg relationship, as argued by Pillay (2013). (Pillay (2013) studied the relationship between financial market development and economic growth in the Southern Africa Development Community, using data from 1993 to 2011 and applied the Granger causality test. His conclusion showed mixed results depending on the proxy used for financial development - the size of the banking sector showed no causality, the level of development of the banking sector showed economic growth Granger causes financial development; and the depth of the banking sector showed two-way causality. Since stock market development forms part of financial development, feedback effect between depth of financial development and economic growth can be applied even on stock markets.

As indicated earlier on, the direction of causality is what causes the argument among researchers. Other researchers such as Hassan et al. (2011) investigated the role of financial development in economic growth in low, medium and high-income countries using quarterly data for the period 1980 to 2007 using vector autoregressive (VAR) models and the Granger causality test. Hassan et al. (2011), explains that early economic growth theory which has been explained above and he argued that economic development is a process of innovations whereby the interactions of innovations in both the financial and real sectors provide the driving force for dynamic economic growth. In the same study, Hassan et al. (2011), explains that the new growth theory argues that financial intermediaries and markets appear endogenously in response to market incompleteness and, hence, contribute to long-term growth. One of their findings during the study was that the direction of causality for the poorest countries is from economic growth to financial development. This is contrary to the finding for other regions where they concluded a two-way causality between financial development and economic growth.

From the literature explained, it can be concluded that there is evidence of a feedback effect of the stock market performance and economic performance. Including this relationship into the conceptual framework to be applied in this study on the performance of the MSE and economic growth in Malawi can be done as follows:

Figure 6: Conceptual Framework on feedback effect of economic performance and stock market performance



2.3 Conclusion

This chapter has looked at relevant literature for the study of the relationship between the performance of the MSE and economic growth in Malawi. It has looked at stock markets and their roles within the financial system is presented followed by the theoretical framework for the study of the relationship between stock market performance and economic growth. Finally, it has looked at the empirical studies conducted on stock markets and economic growth, highlighting the effects of stock market performance on economic growth, the effects of economic growth on stock markets and the feedback effect of the stock market performance and economic growth. It has also highlighted similarities and differences between the findings of these such studies.

3 RESEARCH METHODOLOGY

3.0 Research Methodology Introduction

This chapter outlines the research methodology applied in this study. This research is a quantitative empirical study such that this chapter outlines the research approach and strategy that will be used to answer the research questions. Thereafter, the data collection methods, frequency and choice of data are described. The data analysis methods employed are outlined and finally, the reliability and validity of the research and limitations met during the study are reviewed in the chapter.

3.1 Research Approach and Strategy

This research utilises a quantitative approach, drawing on secondary data, to answer the research question of what impact the performance of the MSE has had on the economic growth of Malawi. The study seeks to ascertain whether there is a long-run relationship between economic growth and the performance of the stock market and whether there is a short-run unidirectional or bidirectional relationship between the performance of the MSE and economic growth in the country.

3.2 Data Collection, Frequency and Choice of Data

3.2.1 Key Variables

This study measures the impact of the performance of the MSE on the economic growth of Malawi and the effect of economic growth on the performance of the MSE. Thus, the two main variables employed in the study are the performance construct of the MSE and the country's economic growth. The performance construct of the MSE is defined as the independent variable and economic growth as the dependent variable.

Economic growth is measured by real GDP expressed in the local currency, Malawi Kwacha. This variable will be measured by the total revenue from goods produced and services provided from Malawi per quarter during the period under study. Nominal data was obtained and converted to real data using the Consumer Price Index (CPI) for the country. The use of

real GDP as the measure of economic growth is consistent with the international literature that examines the relationship between economic growth and the performance of the stock market such as that of Olweny and Kimani (2011) for Kenya and Okonkwo et al (2014) for Nigeria.

Numerous measures of stock market performance have been used in the literature. For example, Olweny and Kimani (2011) measure performance by examining the stock market index, Jalloh (2015) uses the number of shares traded and stock market capitalisation, while Chipaumire and Ngirande (2014) use stock market capitalisation and stock market liquidity to capture stock market performance. Okonkwo et al. (2014) used the number of firms listed, market capitalisation, total value traded and the turnover ratio in their study. Drawing from these studies, the performance of the MSE is measured in this study by the following indicators: the All Share Price index, the number of shares traded per quarter on the MSE, the market capitalisation of the MSE-listed shares and the liquidity of the MSE. The All Share Price index is a value-weighted price index of all MSE-listed shares and captures improved performance based on share price increases. The number of shares traded indicates the level of activity on the market with more activity reflecting higher performance. Market capitalisation measures the number of shares outstanding multiplied by their share price and thus reflects greater performance when either the share prices rise or more shares are issued by the firms, holding the other factors constant. Finally, market liquidity assesses how liquid the shares are. While the number of firms listed on the market has also been used as a measure of performance, given that there was no change in the number of listed firms in Malawi during the period of study, this measure was not considered.

As applied in Olweny and Kimani (2011) for Kenya and Osamwonyi and Kasimu (2013) for Ghana, Kenya and Nigeria, the study will not include any control variables for the economic growth i.e. population, investment capital etc. A time series analysis has been conducted and it was deemed not necessary to include control variables.

The theoretical model which forms the basis of this study can thus be expressed as follows:

$$\begin{aligned}
 GDP &= f(INDEX, MCAP, MLIQ, TRAD) \\
 GDP_t &= \beta_0 + \beta_1 INDEX_t + \beta_2 MCAP_t + \beta_3 MLIQ_t + \beta_4 TRAD_t + \varepsilon_t
 \end{aligned}
 \tag{1}$$

where: *GDP* is the real rate of economic growth, *INDEX* is the MSE All Share Price index, *MCAP* is the market capitalisation of the MSE, *MLIQ* refers to the liquidity of the MSE, *TRAD* refers to the number of shares traded on the MSE and ε is the regression error term.

3.2.2 Data Sources

Quarterly data for the period January 2003 to December 2017 is used in this study. Quarterly data is not available for the years prior to 2003. All the data for both Malawi economic growth, real GDP and stock market performance indicators – the MSE index, market capitalisation, stock market liquidity and number of shares traded will be obtained from Malawi Stock Exchange. This data is secondary data and is publicly available.

3.3 Sampling

The unit of analysis for this study is all companies listed on the MSE and thus no sampling was conducted. Moreover, as mentioned, this study uses time series data, which means that all quarterly data applicable to every variable during the period under study will be used and as such, again, no sampling was done.

3.4 Data Analysis Methods

Quantitative methods will be applied to analyse the data which include: descriptive statistics, unit root and stationarity tests, co-integration tests, and Granger Causality tests. The details of these are presented in the sections below. However, prior to the data analysis, all variables were converted to natural logs as it helps to reduce the problem of non-constant variance (heteroscedasticity) and also enables the coefficients of the model to be interpreted as elasticities. However, the one exception to this was stock market liquidity as this was measured already measured as a percentage.

3.4.1 Descriptive Statistics

An analysis of the descriptive statistics of the variables will be done. This will include the mean, standard deviation, variance, minimum, maximum, skewness, kurtosis and the Jarque- Bera test for normality. This analysis will assist to understand the data better over the period under study for comparison with other reports.

3.4.2 Tests for Unit Roots and Stationarity

The study uses time series data and due to time factors, unit roots may exist Brooks (2014). Stationarity tests will be conducted to ensure that the parameters such as the probability distribution, mean, variance etc. of the population remained constant regardless of the time factor. The study applied the unit root tests, the Augmented Dickey-Fuller (ADF) and the Phillips-Perron (PP) test procedures and the KPSS test for stationarity. Using all three tests, as was done by Paramati and Gupta (2011) ensures the conclusions drawn regarding the characteristics of the data are robust.

The ADF test formula is given as follows:

$$Y_t = \rho Y_{t-1} + \alpha + \delta t + \varepsilon_t \quad (2)$$

where: Y_t is the variable, t is a trend term and α , ρ and δ are parameters to be estimated. ε is the white noise error term meaning that it has zero mean and constant variance Paramati and Gupta (2011). If $|\rho| \geq 1$, Y is a non-stationary series and the variance of Y increases with time and approaches infinity, on the other hand if $|\rho| < 1$, then Y is a stationary series. Subtracting 1 both sides with Y_{t-1} , the following equation is obtained.

$$\Delta Y_t = \varphi Y_{t-1} + \alpha + \delta t + \varepsilon_t \quad (3)$$

where: Δ is the first difference operator, $\Delta Y_t = Y_t - Y_{t-1}$ and $\varphi = \rho - 1$. This equation is used as the testing formula with the null and alternate hypotheses are as follows;

$$H_0 : \varphi = 0 \text{ (} Y_t \text{ is non-stationary/unit root)}$$

$$H_1 : \varphi < 0 \text{ (} Y_t \text{ is stationary).}$$

The hypotheses can be evaluated using t – ratio for φ

$$t_\alpha = \hat{\varphi} / \text{se}(\hat{\varphi}) \quad (4)$$

where: $\hat{\varphi}$ is the estimate of φ and $\hat{\varphi}$ is the standard error of the coefficient.

The ADF test regression in eq. (3) is supplemented with lags of the dependent variable so as to soak up the effects of autocorrelation, Brooks (2014) as follows:

$$\Delta y_t = \varphi y_{t-1} + \delta t + \alpha + \beta_1 \Delta y_{t-1} + \dots + \beta_p \Delta y_{t-p} + \varepsilon_t \quad (5)$$

As in Paramati and Gupta (2011), critical values for the ADF test have been based on MacKinnon (1996) and the Schwarz Information Criteria (SIC) was used to determine the appropriate lag length. If the test statistic is less negative than the critical value, then the null hypothesis cannot be rejected and the series is non-stationary. However, if the test statistic is more negative than the critical value then the null hypothesis can be rejected and the series is said to be stationary Brooks (2014). Variables which are stationary in levels are said to be integrated of order zero, I(0), while those that are non-stationary in levels are said to be integrated of order one, I(1) Brooks (2014). For those variables which are found to be non-stationary, it is necessary to determine whether they could be integrated of higher orders, e.g. I(2), meaning that they contain two unit roots. To assess this, the first differences of the variables are tested for stationarity using the same testing procedure. If they are found to be stationary, then it is confirmed that the series is I(1) meaning that it is non-stationary in levels, but stationary in first differences Brooks (2014).

The PP test procedure was also applied to test for a unit root. This test can be seen as a non-augmented Dickey Fuller test that modifies the t-ratio of φ so that serial correlation does not affect the asymptotic distribution of the test statistic Brooks (2014). The test has the identical null and alternative hypotheses as the ADF test. The test statistic is computed as follows:

$$t_{\alpha} = t_{\alpha} \left[\frac{\gamma_0}{f_0} \right]^{1/2} - \left[\frac{T (f_0 - \gamma_0) (se(\hat{\alpha}))}{2 f_0^{1/2} s} \right] \quad (6)$$

where: s refers to the standard error of the test regression, t_{φ} is the t – ratio of φ , γ_0 -is the consistent estimate of the error variance and f_0 is the estimator of the residual spectrum at zero frequency Paramati and Gupta (2011). As in Paramati and Gupta (2011) lower tail critical and p-values for the PP test have been based on MacKinnon (1996). The Bartlett Kernel estimation model was used for this test, with the automatic bandwidth selection done using the Newey-West approach.

As applied by Paramati and Gupta (2011), the KPSS test procedure was used in this study. Contrary to the ADF and PP unit root tests, the KPSS test reverses the null and alternative hypothesis as follows:

H_0 : Y_t is stationary

H_1 : Y_t is non-stationary/unit root.

This is tested using eq. (7) and the LM statistic specified in eq. (8).

$$y_t = x_t \delta + u_t \quad (7)$$

$$LM = \sum_t s(t)^2 / (T^2 f_0) \quad (8)$$

where: f_0 is the estimator of the residual spectrum at zero frequency and $S(t) = \sum_{r=1}^t u_r$, based on the residual of $u_t = y_t - x_t \delta$ (0) Paramati and Gupta (2011). As in Paramati and Gupta (2011), critical values for the LM test have been based on the Kwiatkowski et al. (1992). As with the PP test, the test was performed using the Bartlett Kernel estimation model with automatic bandwidth selection based on the Newey-West method.

3.4.3 Testing for Co-integration

Ozturk and Acaravci (2009) included a test for co-integration in their study based on the Autoregressive Distributed Lag (ARDL) test procedure to test for the possibility of a long-run equilibrium relationship among the variables. The ARDL approach will be used rather than any other co-integration method such as Johansen Cointegration tests because it is a co-integration method generally applied regardless of whether variables are stationary at different levels i.e. i.e. the variables are I(0) or I(1), Nkoro and Uko (2016). However, the series cannot be integrated of any higher order meaning that the variables cannot be I(2). Applying the ARDL test to the theoretical relationship presented in eq. (1) yields the following equation:

$$\Delta GDP_t = \alpha + \sum_{i=1}^k \theta_i \Delta GDP_{t-i} + \sum_{j=0}^j \beta_j \Delta X_{t-j} + \delta_1 GDP_{t-1} + \sum_{n=2}^5 \delta_n X_{t-1} + v_t \quad (9)$$

where: X is a vector comprising the stock market performance indicators (the MSE index, market capitalisation, market liquidity and shares traded) and v_t is a white noise error term, Ozturk and Acaravci (2009). The optimal number of lags of the first differenced variables in eq. (9) were determined using the SIC.

From this equation output, the bounds cointegration test is applied to determine if there is a long run relationship among the variables, Pesaran and Shin (1998) and Pesaran et al. (2001). This test is based on an F-test with the joint hypothesis as follows:

$$H_0: \delta_1 = \delta_2 = \delta_3 = \delta_4 = \delta_5 = 0$$

$$H_1: \delta_1 \neq 0 \text{ and/or } \delta_2 \neq 0 \dots \text{ and/or } \delta_5 \neq 0$$

The null hypothesis is that there is no long-run cointegrating relationship between the variables while the alternative hypothesis is that there is a cointegrating relationship. The critical values for this test are obtained from Pesaran et al. (2001). There are two sets of critical values for a given significance level. If the F-statistic is greater than the upper critical value, then the null hypothesis of no cointegration is rejected meaning that a long-run relationship does exist between the variables. If the test statistic is below the lower critical value, then the null hypothesis of no cointegration cannot be rejected. Finally, if the test statistic lies between the two critical values, then the bounds test is inconclusive.

3.4.4 The Long-Run Model and Error Correction Model

If cointegration is found between the variables, then eq. (1) represents the long-run relationship between real GDP and stock market performance, with the coefficients examined to assess the signs and magnitude of the relationships. However, short-run deviations in the long-run relationship will occur and these can be examined by estimating the Error Correction Model (ECM). This is presented in the ARDL framework as

$$\Delta GDP_t = \alpha + \sum_{i=1}^K \phi_i \Delta GDP_{t-i} + \sum_{j=0}^j \beta_j \Delta X_{t-j} + \varphi ECT_{t-1} + v_t \quad (10)$$

where: ECT_{t-1} is the error correction term which is obtained from the long-run relationship shown by eq. (1). The coefficient on this term, φ , should be negative as when the long-run relationship is above equilibrium meaning ECT_{t-1} is positive, GDP will adjust downwards in the following period while if the long-run relationship is below equilibrium meaning ECT_{t-1} is negative, GDP will adjust upwards in the following period to correct for the disequilibrium Brooks (2014).

3.4.5 The Granger Causality Test

The Granger causality test will be used to measure the short-run causality between the performance of the MSE and economic growth in Malawi, Granger (1969). More specifically, it will test what proportion of current economic growth can be explained by past stock market performance and what proportion of the current stock market performance can be explained by past economic growth. To run the Granger causality test, a Vector Autoregressive (VAR) model is

estimated which comprises of a system of equations. In the context of this study the equations are as follows:

$$GDP_t = \beta_0 + \sum_{i=1}^N \beta_{1i} GDP_{t-i} + \sum_{i=1}^N \alpha_{1i} X_{t-i} + \varepsilon_{1t} \quad (11)$$

$$X_t = \alpha_0 + \sum_{i=1}^N \beta_{2i} GDP_{t-i} + \sum_{i=1}^N \alpha_{2i} X_{t-i} + \varepsilon_{2t} \quad (12)$$

where: X_t is the vector of the stock market performance indicators, as defined previously. The optimal number of lags for the VAR was determined using the SIC. From these equations, the hypotheses can be expressed mathematically as follows

$$H_0: \alpha_{1i} = \alpha_{1j} = \alpha_{1k} \dots = \alpha_N = 0$$

$$H_1: \alpha_{1i} \neq \alpha_{1j} \neq \alpha_{1k} \dots \neq \alpha_N \neq 0.$$

The null hypothesis states that the performance of the MSE does not Granger cause economic growth in Malawi against the alternative that the performance of the MSE does Granger cause economic growth in the country. If the computed F-statistic from this test exceeds the critical value at the chosen significance level, then the null hypothesis that the coefficients are jointly equal to zero can be rejected in favour of the alternative that they are jointly significant meaning that lags of X_t do Granger cause economic growth in Malawi, Brooks (2014). The same set of equations can be used to test whether lags of economic growth Granger cause stock market performance by examining the joint significance of β_{2i} . If the null hypothesis of these two tests are rejected, then it can be concluded that there is bidirectional causality between economic growth and stock market performance in Malawi while if the hypothesis is only rejected for one of the tests, then it can be concluded that there is only unidirectional causality between the variables in question.

Results of the Granger causality tests have been supplemented with impulse response functions and variance decompositions Koop et al. (1996); Pesaran and Shin (1998). Impulse responses will show how the stock exchange performance/ economic growth responds to a shock in economic growth/ MSE performance respectively initially and whether the effect of the shock persists or dies out quickly. Forecast error variance decompositions will point out what proportion of the variation in the performance of the MSE/ economic growth can be

explained by shocks to economic growth / MSE performance respectively in the same VAR system Soytaş et al. (2007).

3.5 Research Reliability and Validity

The secondary data used in this study is obtained from reputable sources, most notably the Malawi Stock Market Exchange for both Malawi GDP and the stock market performance measures including the number of shares traded, stock market capitalisation, stock market liquidity and the market index.

The data analysis methods used in this study have been used by previous researchers in the analysis of the relationship between economic growth and stock market performance. The ADF test procedure has been applied by Olweny and Kimani (2011), Paramati and Gupta (2011) and Okonkwo et al. (2014) to test for stationarity. Moreover, the PP and KPSS test procedures have been used by Paramati and Gupta (2011). The ARDL procedure was employed by Olweny and Kimani (2011) to test for co-integration. The Granger causality tests to test causality of stock market performance and economic growth has been applied in numerous studies such as Pilinkus (2010), Olweny and Kimani (2011) and Okonkwo et al. (2014).

3.6 Limitations

The only limitation in this study is the small sample size which arose due to the non-availability of data. As indicated previously, the first firm was listed on the MSE in November 1996 thus meaning the study could have been run using data from 1997 onwards. However, quarterly data on the stock market performance indicators used in this study was not available and hence the starting point of 2003 was used.

3.7 Conclusion

This chapter has outlined the quantitative research methodology planned for this study. The key variables to be used in the study are the MSE performance indicators as independent variables, represented by the number of shares traded, stock market capitalisation, stock market liquidity and the share price index and Malawi's economic growth as the dependent variable, represented by real GDP. Secondary data will be used and will be obtained from the

MSE. Finally, the data analysis methods to be used in the study are described and include, descriptive statistics; ADF, PP and KPSS tests for unit roots; tests for cointegration using ARDL model; and, Granger causality tests, supplemented with impulse response functions and variance decompositions. The results from the empirical analysis are presented in the following chapter.

4 RESEARCH FINDINGS, ANALYSIS AND DISCUSSION

4.0 Research findings, analysis and discussion introduction

The data analysis methods have been applied using EViews. As mentioned in the preceding chapter, these include the descriptive statistics; ADF, PP and KPSS tests for unit roots/stationarity; tests for cointegration using the ARDL model; and, Granger causality tests supplemented by impulse response and variance decomposition tests. The results of these tests are presented and discussed in this chapter.

4.1 Descriptive Statistics Results

Table 1 below shows descriptive statistics of the variables during the period of observation. The standard deviation of the variables is relatively low, with the exception of market liquidity, suggesting that, after logging the series, there was not substantial variability in the series over the sample period. The deviations observed for market liquidity are further reflected by the notable differences between the minimum and maximum observations, with market liquidity reaching a high of 703% and a low of only 128% over the period 2003 to 2017. Market capitalisation, market liquidity and number of shares traded are positively skewed meaning that the right tail of the distribution is drawn out and the majority of the observations are on the left; with market liquidity the most skewed. In contrast, real GDP and the stock market index price level were both negatively skewed. The kurtosis measure for market liquidity exceeded three (the measure of kurtosis of a normal distribution) suggesting that this series has more observations around the mean. The opposite is true for the other series suggesting their means are less peaked than that of a normal distribution; that is, the observations are more dispersed. For the test of normality using the Jarque-Bera test, the probability values show that the null hypothesis that the series is normally distributed was rejected for market liquidity at 1%; evidence which is consistent with the skewness and kurtosis measures presented which did not closely resemble the characteristics of a normal distribution. The null hypothesis was also rejected for the MASI at 5% which could be due to the notable negative skewness observed as a result of the notable growth in the price index over time. The other series were all found to be normally distributed as the p-values in the Table demonstrate.

To supplement the descriptive statistics tabulated above, Figure 7 below shows graphs of the variables with a trendline from 2003 to 2017. The graphs show that for the period under study, real GDP, market capitalisation and the MSE stock index (the MASI) have been steadily

growing. In particular, the MASI, witnessed exponential growth in the 2003 to 2008 period, levelling off thereafter before growing again from 2014 onwards. This growth is consistent with the findings from the descriptive statistics of a negatively skewed distribution. The number of shares traded has been very volatile but has gradually increased over time. Market liquidity initially grew notably but declined dramatically from 2006 to 2009. Although it improved thereafter, it has remained relatively low and been on a downward trajectory since 2014.

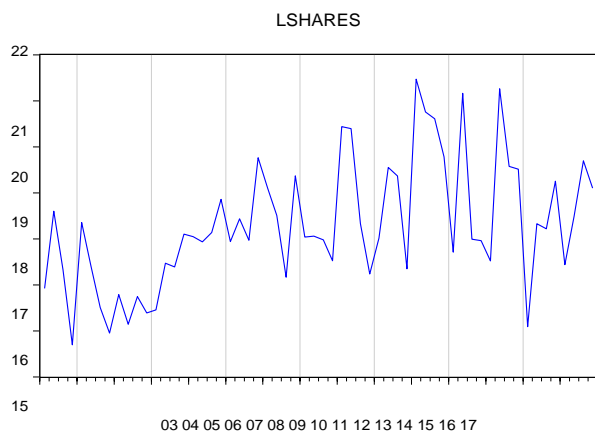
Table 1: Descriptive Statistics

	LMarket Capitalisation	Market Liquidity %	LMASI	LShares traded	LReal GDP
Mean	28.46	319	8.33	18.29	27.49
Median	28.21	291	8.54	18.05	27.51
Maximum	29.99	703	9.98	21.47	28.26
Minimum	26.64	128	5.33	15.70	26.60
Std. Dev.	0.97	138	1.23	1.38	0.51
Skewness	0.09	1.26	-0.83	0.39	-0.11
Kurtosis	1.76	4.09	2.64	2.66	1.71
Jarque-Bera	3.95	18.95	7.20	1.82	4.27
Probability	0.1384	0.0000	0.0274	0.4031	0.1181
Observations	60	60	60	60	60

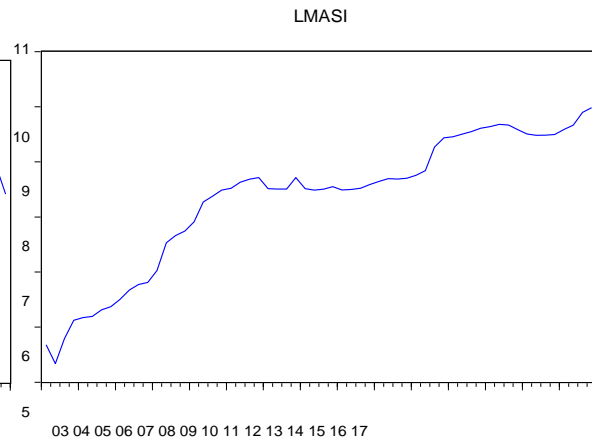
(Note: The variables have been expressed in logged form. LMarket Capitalisation and LReal GDP have been measured in local currency, Malawi Kwacha (MWK). Market Liquidity has been measured as a percentage of market capitalisation over GDP. Values have been rounded off to either two decimal places or four decimal places for probability values.)

Figure 7: Graphs for the variables for the period 2003 to 2017

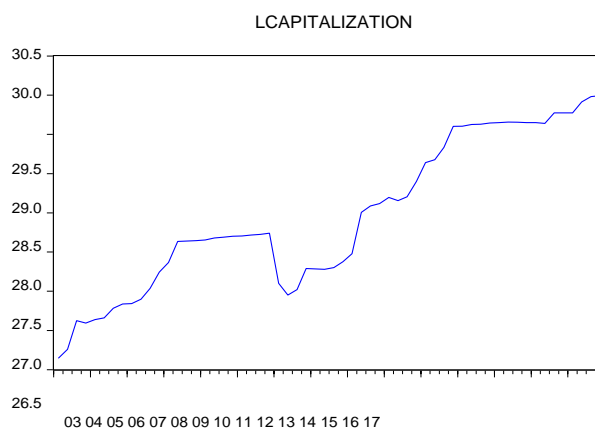
Graph 1: Number of shares traded



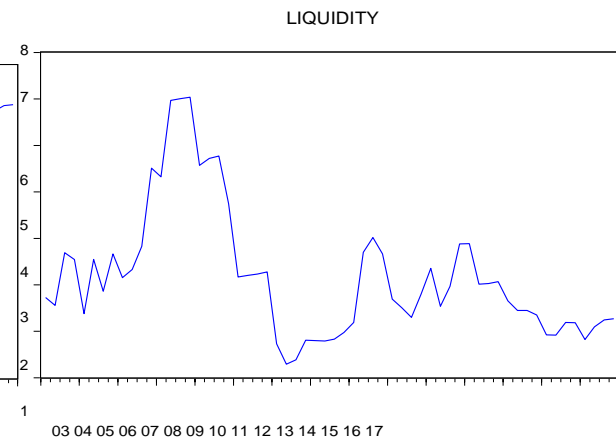
Graph 2: MASI



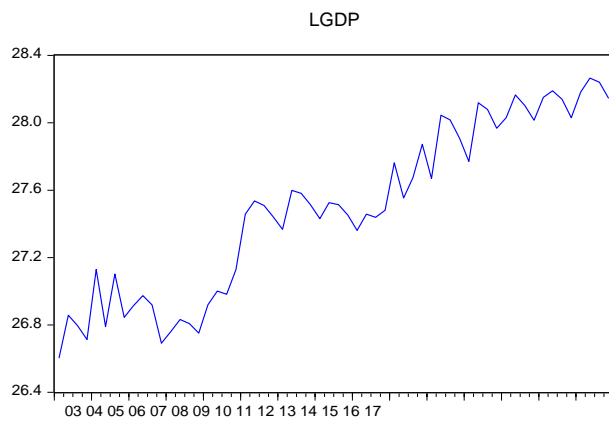
Graph 3: Market Capitalisation (MWK)



Graph 4: Market Liquidity (%)



Graph 5: Real GDP in local currency Malawi Kwacha



(Source: Graphs have been prepared with data employed in this research using Eviews)

4.2 Unit Root Test Results

Table 2 below shows the results of the ADF and PP unit root tests, conducted at both levels and first differences, with and without a trend in each test. As highlighted in chapter 3, the null hypothesis of these tests is that the series contains a unit root against the alternate hypothesis that there is no unit root, that is, the series is stationary. From the results in Table 2 below, the null hypothesis of the existence of a unit root at levels cannot be rejected at the 5% significance level for the following tests:

- real GDP without a trend for both tests,
- MASI with a trend for both tests and without a trend for the PP test only,
- market liquidity with and without a trend for both tests,
- market capitalisation with and without a trend for both tests.

Thus, the evidence suggests that market liquidity and market capitalisation are non-stationary in levels. The same largely appears to be true for MASI, with only the ADF test without a trend suggesting that this variable is stationary. The evidence for real GDP is mixed and dependent upon the inclusion of the trend term; thus, making it difficult to draw a definitive conclusion. The number of shares traded is identified to be stationary according to both tests and under both specifications as the null hypothesis of a unit root was rejected at the 1% significance level. This variable is thus integrated of order zero.

For those variables where the null hypothesis could not be rejected, the tests for the existence of a unit root at first differences were performed. As is evident from the table, at first difference the p-values of real GDP, MASI, market liquidity and market capitalisation are below the 1% significance level meaning that the null hypothesis of a unit root in first differences can be rejected. Hence, it can be concluded that the variables, real GDP, MASI, market liquidity and market capitalisation are stationary at first differences.

Table 2: ADF Test Results

Variables	Level		1 st Difference		Order of Integration I(0) or I(1)
	Intercept & no trend	Intercept & Trend	Intercept & no trend	Intercept & trend	
LReal GDP	-0.65 (0.85)	-4.40 (0.00)*	-8.18 (0.00)*		I(1)
LShares traded	-5.19 (0.00)*	-6.34 (0.00)*			I(0)
LMASI	-3.37 (0.02)**	-2.67 (0.25)	-6.79 (0.00)*	-7.38 (0.00)*	I(1)
Market Liquidity	-1.86 (0.34)	-3.46 (0.05)	-7.51 (0.00)*	-7.48 (0.00)*	I(1)
LMarket Capitalisation	-1.03 (0.74)	-2.18 (0.49)	-5.92 (0.00)*	-5.88 (0.00)*	I(1)

(Note: P-values are presented in brackets. * and ** denote significance at the 1% and 5% levels respectively)

Table 3: PP Test Results

	Level		1 st Difference		Order of Integration I(0) or I(1)
	Intercept & no trend	Intercept & trend	Intercept & no trend	Intercept & Trend	
LReal GDP	-1.29 (0.62)	-4.63 (0.00)*	-12.69 (0.00)*		I(1)
LShares traded	-5.19 (0.00)*	-6.35 (0.00)*			I(0)
LMASI	-2.15 (0.23)	-1.70 (0.74)	-6.85 (0.00)*	-7.38 (0.00)*	I(1)
Market Liquidity	-1.87 (0.35)	-2.33 (0.41)	-7.51 (0.00)*	-7.48 (0.00)*	I(1)
LMarket Capitalisation	-1.05 (0.73)	-2.01 (0.58)	-5.87 (0.00)*	-5.83 (0.00)*	I(1)

(Note: P-values are presented in brackets. * and ** denote significance at the 1% and 5% levels respectively)

Table 4 below shows the results of the KPSS test conducted at levels and first differences, with and without a trend in each test. The KPSS tested the null hypothesis of stationarity

against the alternate hypothesis of non-stationarity using Kwiatkowski et al. (1992) table of critical values, as shown in Table 5 below. From these results it can be observed that at levels the null hypothesis of stationarity was rejected for the number of shares traded and the stock market index, MASI, with and without trend, and real GDP and market capitalisation without a trend. The null hypothesis of stationarity cannot be rejected for market liquidity with or without a trend and for real GDP and market capitalisation with a trend. Further KPSS tests were done at first differences for variables noted to be non-stationary at levels. The null hypothesis of stationarity cannot be rejected at first difference suggesting that these variables are stationary at first differences. Preference has been given to models with trend because as this approach helps to deal with any non-stationarity problems still existing. Such approach of using models with trends has also been used by Olweny and Kimani (2011) in their causality study between stock market performance and economic growth in Kenya.

Studies conducted by Jafari et al. (2012) and Katircioglu et al. (2014) highlighted that KPSS stationarity results have higher power compared to ADF and PP unit root results. Based on this conclusion, it can therefore be concluded that market liquidity, real GDP and market capitalisation are stationary at levels; while the number of shares traded and the stock market index, MASI are stationary at first difference.

Table 4: KPSS Test Results

Variables	KPSS				Or Order of Integration I(0) or I(1)
	Level		1 st Difference		
	Intercept & no Trend	Intercept & Trend	Intercept & no Trend	Intercept & Trend	
LReal GDP	0.925*	0.051	0.073		I(0)
LShares traded	0.779*	0.181**	0.132	0.124	I(1)
LMASI	0.864*	0.174**	0.326	0.110	I(1)
Market Liquidity	0.347	0.069			I(0)
LMarket Capitalisation	0.885*	0.097	0.115		I(0)

(Note: * and ** denote significance at the 1% and 5% levels respectively)

Table 5: KPSS Test of Critical Values

	Critical Values	
	5%	1%
Test A: Intercept only	0.463	0.739
Test B: Linear trend	0.146	0.216

(Source: Kwiatkowski et al., 1992)

4.3 ARDL Test Results

This ARDL bound testing procedure was employed as all the variables satisfied the condition of being stationary in levels or stationary in first differences. The test has been conducted with all the measures of stock market performance to examine whether a long-run relationship exists with real GDP. Table 6 presents the F-statistics from the bounds test as well the critical values at the 5% and 1% significance levels. The F-statistic falls below the lower bounds critical values and therefore the null hypothesis of no-cointegration between real GDP and all measures of stock market performance cannot be rejected. There is therefore no long-run relationship between economic growth and stock market performance in Malawi.

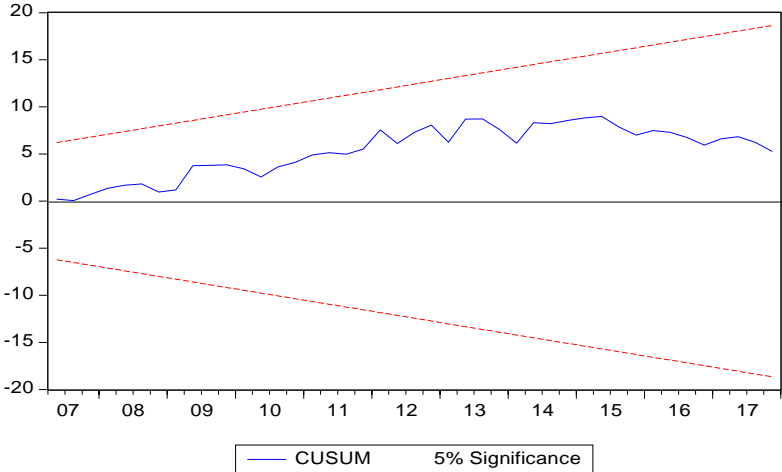
Table 6: ARDL Test Results

F-statistic		1.7611	
		I(0)	I(1)
Bounds Critical Values	5%	2.74	3.79
	1%	3.71	4.97

(Note: Critical values obtained from Narayan (2004), using 4 exogenous variables with 60 observations.)

Although no cointegration was found and therefore the long-run model coefficients were not examined, it was still considered important to ensure the robustness of the model. For this purpose, the stability of the model coefficients were verified using the Cumulative Sum and Cumulative Sum of Squares tests. Figure 8 shows the plot of the Cumulative Sums of Recursive Residuals with critical bounds at 5% significance level. It has been noted that the test line falls within the critical bounds. This signifies a stable model, such that the coefficient estimates did not change notably over the period of the study. Thus, the conclusion of no cointegration cannot be explained by instability in the model parameters over time.

Figure 8: Plot of Cumulative Sums of Recursive Residuals with critical bounds at significance level at 5%



(Source: Prepared using Eviews during Auto-Regressive Distributed Lags)

As no cointegration was found, the short-run model (with no error correction term) was estimated to examine the relationships between the stock market performance measures and real GDP in the short-run, with emphasis on the significance, the signs and the size of the coefficients. The results from this model are shown in Table 7.

Table 7: Short-Run Model

Variable	Coefficient	t-statistic	Probability
Constant	-0.02	-1.02	0.3105
Market Capitalisation	0.73	5.30	0.0000*
Market Liquidity	-0.24	-8.63	0.0000*
MASI	0.01	0.06	0.9546
Shares traded	-0.003	-0.28	0.7776

*(Note: * and ** denote significance at the 5% and 1% levels respectively.)*

As can be seen, only the coefficients on market capitalisation and market liquidity are significant suggesting that there is no contemporaneous relationship between the number of shares traded and the stock index and real GDP. A short-run positive relationship between real GDP and market capitalisation was documented such that a 1% increase in market capitalisation results in a 0.73% increase in real GDP. On the contrary, the relationship between market liquidity and real GDP was negative with a 1% increase in market liquidity resulting in a 0.24% decline in real GDP in the same quarter. Such finding is usually contrary

to findings by researchers such as Chipaumire and Ngirande (2014), who identified a positive relationship between market liquidity and economic growth.

4.4 Granger Causality Test Results

To further understand the short-run dynamics of the relationship between real GDP and stock market performance in Malawi, Granger causality tests were performed. As mentioned in chapter 3, these enable the intertemporal links between the variables to be investigated. Thus, Granger Causality test has been carried out to test the short-run causality on the stationary variables at either levels or first difference. The estimations have been done at 5 lags based on the VAR Lag Order Selection Criteria. The results are presented in Table 8 below. From these results, the following null hypotheses can be rejected:

- Market capitalisation does not Granger cause real GDP at the 5% significance level
- Real GDP does not Granger cause market liquidity at the 1% significance level
- Market Liquidity does not Granger cause real GDP at the 1% significance level
- MASI does not Granger cause real GDP at the 1% significance level.

From these results, it can therefore be concluded that there is unidirectional causality in the short-run with market capitalisation Granger causing real GDP and changes in the stock market index, MASI, Granger causing real GDP. Further to this, there is evidence of bidirectional causality between real GDP and market liquidity. Thus, real GDP Granger causes market liquidity and likewise, market liquidity Granger causes real GDP.

From those hypotheses which could not be rejected, it is thus clear that there is no causality from real GDP to market capitalisation and from real GDP to the performance of the stock market index. In addition, there is no causality between real GDP and the number of shares traded from either direction.

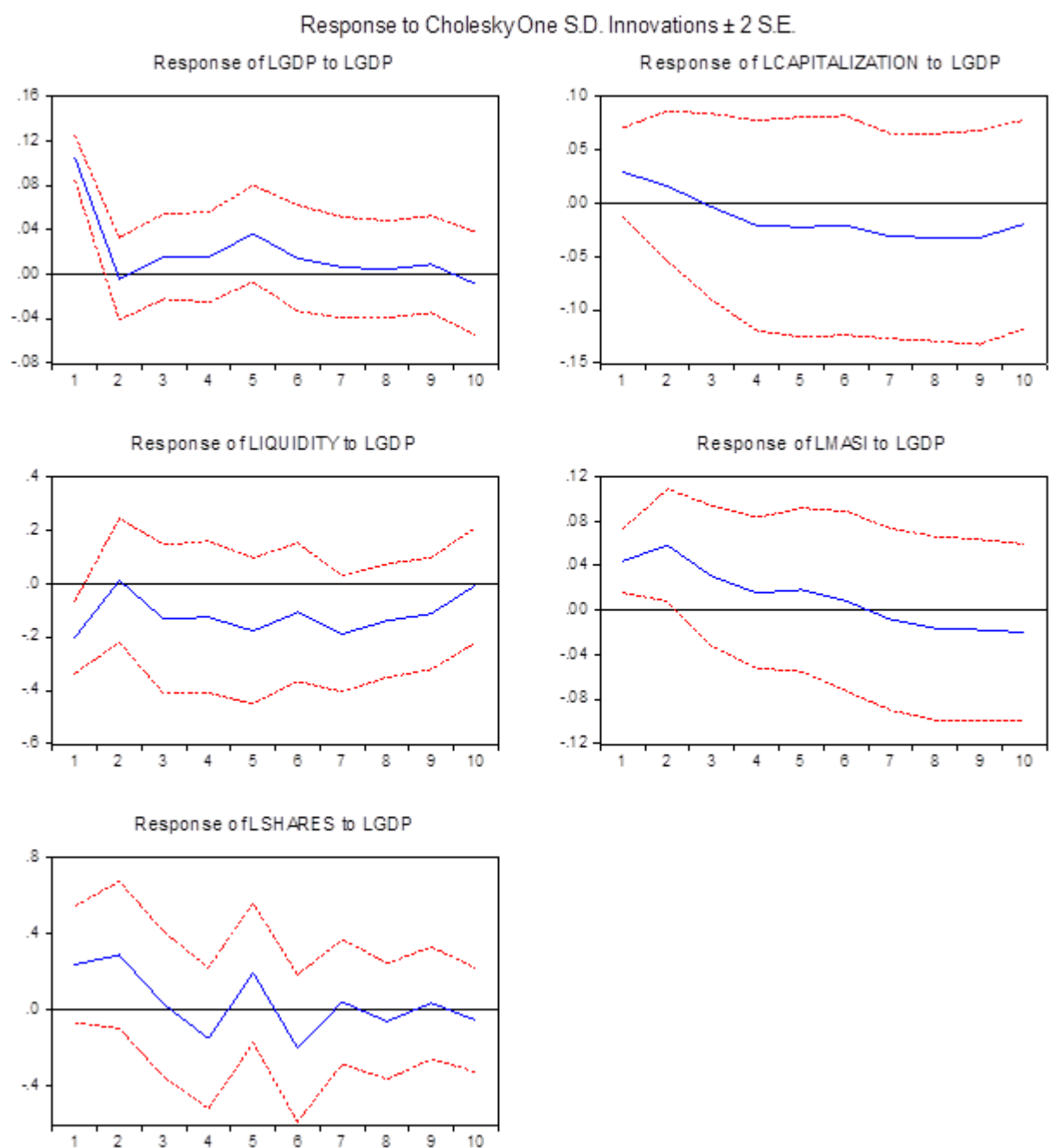
Table 8: Granger Causality Results

Null Hypothesis	F-Statistic	Probability	Test Result
LReal GDP does not Granger cause LMarket Capitalisation	0.69	0.6335	No causality
LMarket Capitalisation does not Granger cause LReal GDP	2.46	0.0473**	Causality
LReal GDP does not Granger cause Market Liquidity	5.13	0.0009*	Causality
Market Liquidity does not Granger cause LReal GDP	3.62	0.0079*	Causality
LReal GDP does not Granger cause DMA SI	0.65	0.6605	No causality
DMA SI does not Granger cause LReal GDP	4.30	0.0029*	Causality
LReal GDP does not Granger cause DShares traded	1.50	0.2085	No causality
DShares traded does not Granger cause LReal GDP	1.07	0.3876	No causality

(Note: * and ** denote significance at the 1% and 5% levels respectively.)

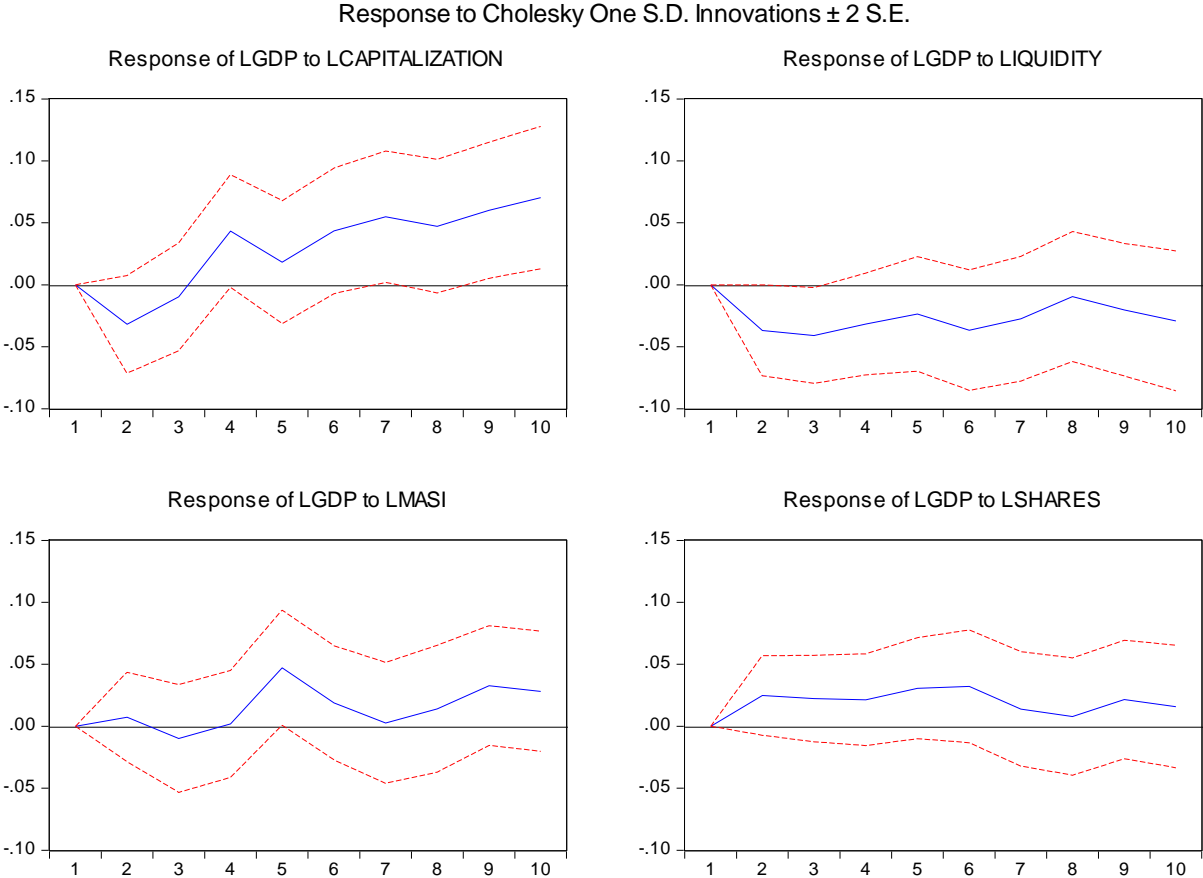
The study went further to analyse the relationship between stock market performance and economic growth over time by estimating the impulse response functions and variance decomposition which show the effect of shocks by one variable on the other variables. The tests have been done for a period of 10 quarters in future. Figure 9 below shows the plots of the impulse response functions of the variables. From the reports, it can be concluded that real GDP responds negatively to a shock in liquidity. The highest response of real GDP is noted in period 1 by 0.1%, due to its own volatility. As a result of volatility of other variables, real GDP is noted to have responded highly to a shock in market capitalisation in period 10 by .06%; and is responding the lowest to a shock in market liquidity in period 3 by -.04%. Due to a shock in real GDP, market capitalisation and liquidity respond negatively in the period; while, stock index responds positively in the first four periods and turns negative from the fifth period. The response of shares traded to a shock in real GDP is inconsistent and cyclical i.e. positive response in periods 1, 2, 5, 7 and 9 and negative response in periods 3, 4, 6 and 8.

Figure 9a: Plots of Impulse Response Functions- Response of variables to shock in GDP



(Source: Prepared using Eviews during Impulse Response Functions Tests)

Figure 9b: Plots of Impulse Response Functions- Response of GDP to shock in variables



(Source: Prepared using Eviews during Impulse Response Functions Tests)

The study went further to test the variance decompositions. Table 9 and 10, shows the output of the variance decomposition. From Table 9 below, we note that of all the variables, it is a shock in market capitalisation that causes a higher fluctuation to real GDP. In first period, a shock in market capitalisation causes a 3.5% fluctuation in real GDP, while shocks in other variables do not cause any fluctuation in real GDP. In the short-run, it is the shock in real GDP that causes a very high fluctuation in real GDP i.e. in the first four periods the shock would cause a fluctuation of 96%, 75%, 65% and 54% respectively. Surprisingly, in period eight and nine, it is a shock in market capitalisation that would cause highest fluctuation in real GDP.

Table 9: Variance Decomposition of Real GDP

Variance Decomposition of LGDP					
Period	LCAPITALISATION	LGDP	LIQUIDITY	LMASI	LSHARES
1	3.549551	96.45045	0.000000	0.000000	0.000000
2	10.09867	75.56396	9.610354	0.383505	4.343518
3	8.758612	65.53200	18.15924	0.913588	6.636561
4	17.37176	54.22992	19.91414	0.769892	7.714284
5	16.11905	46.95669	17.90170	9.259360	9.763196
6	20.33909	39.62369	19.47861	8.954729	11.60389
7	26.76101	35.08095	19.40393	7.937676	10.81644
8	30.89889	32.67714	18.28590	7.915948	10.22212
9	35.42557	28.38465	16.83671	9.391113	9.961955
10	39.64831	25.39894	16.19395	9.681707	9.077096

(Source: Prepared using Eviews during Variance Decomposition Tests)

Table 10: Variance Decomposition of All Other Variables due to shock in Real GDP

Variance Decomposition of All variables by shock in LGDP				
Period	LCAPITALISATION	LIQUIDITY	LMASI	LSHARES
1	0.000000	26.65913	9.825705	2.065539
2	0.603553	12.88863	10.75146	5.329054
3	1.816786	13.87396	7.640893	4.886455
4	3.385717	15.46681	6.092587	5.413289
5	4.447853	17.82658	4.565823	6.661555
6	5.081930	18.18171	3.761669	8.762033
7	5.946228	20.03213	3.938516	8.480656
8	6.483065	20.04361	4.475395	8.584623
9	6.882816	19.36752	4.932703	8.576945
10	6.819511	18.26898	5.411112	8.724638

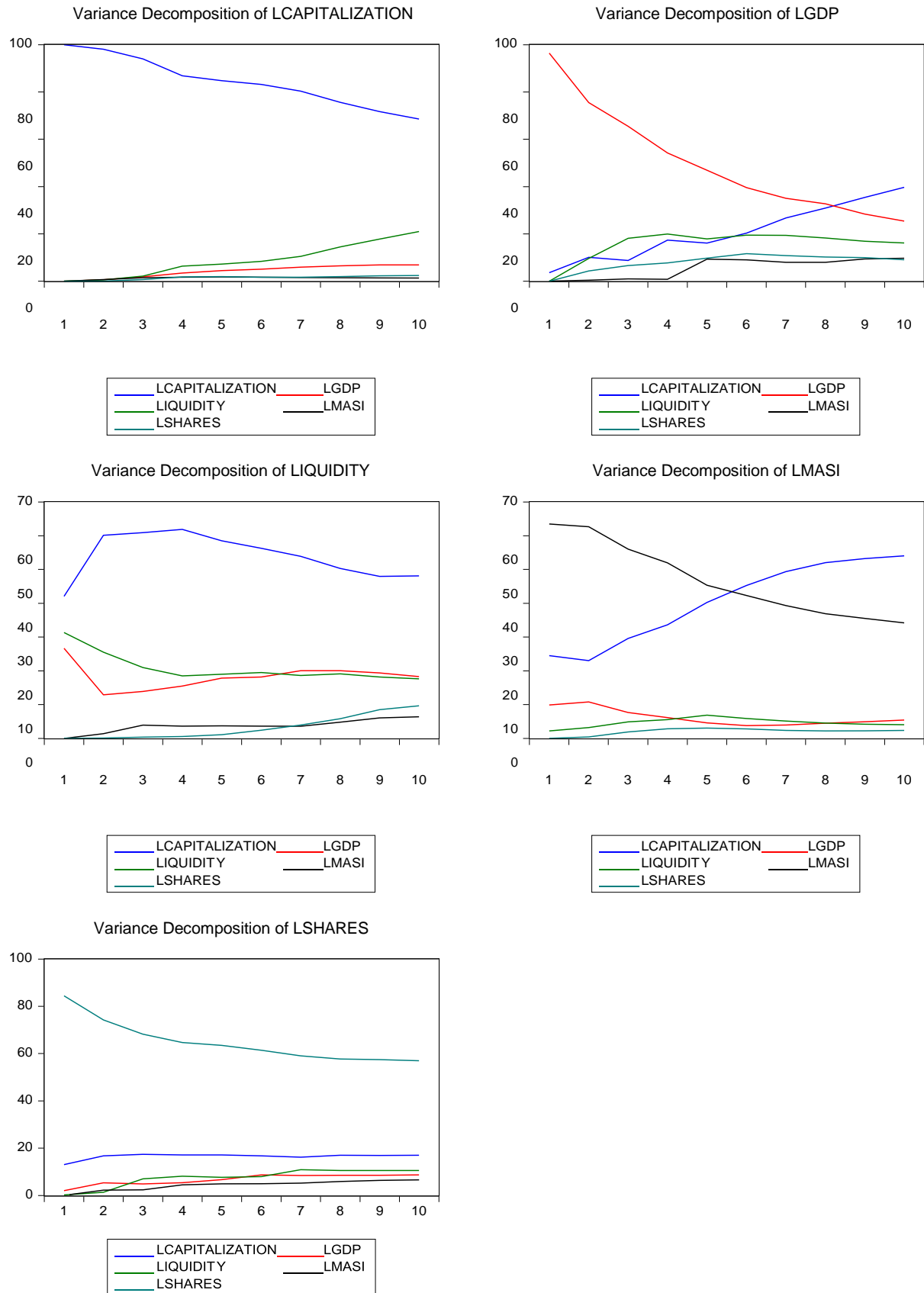
(Source: Prepared using Eviews during Variance Decomposition Tests)

Table 10 above highlights how the other variables fluctuate due to shock in real GDP. We can note that a shock in GDP would cause a higher fluctuation in liquidity than in any other variables such as market capitalisation, shares traded and market index. In the first period, the shock in GDP would cause a 26% in market liquidity, no fluctuation in capitalisation, 9% in stock index, MASI and 2% in shares traded. Figure 10 below are the graphs of the variance decompositions to further highlight how a shock in one variable causes fluctuations in itself and other variables.

4.5 Conclusion

This chapter has looked at the research findings, analysis and discussions of the data analysed using EViews through descriptive statistics, ADF and PP for a unit root tests, KPSS for stationarity tests, ARDL model for tests for cointegration, short-term model output and Granger causality tests. Descriptive statistics has explained the behaviors of the variables. Unit roots tests notes that shares traded and real GDP have no unit roots at levels, stock market index, MASI, market liquidity and market capitalisation have no unit roots at first difference. Stationarity tests note that market liquidity, real GDP and market capitalisation are stationary at levels, while stock market index, MASI and shares traded are stationary at first difference. There is no-cointegration noted between real GDP and all the independent variables. Due to no-cointegration, the short-run model noted a positive and significant relationship between real GDP and market capitalisation and a negative significant relationship between real GDP and market liquidity. Finally, Granger Causality Test notes a bidirectional causality between real GDP and market liquidity and a unidirectional causality of market capitalisation to real GDP and changes in stock market index, MASI to real GDP. From the results of impulse response functions and variance decompositions, real GDP reacts highly to a shock in market capitalisation more than to other variables.

Figure 10: Plots of Variance Decompositions



(Source: Prepared using Eviews during Variance Decomposition Tests)

5 RESEARCH CONCLUSIONS

The purpose of this study was to examine the relationship between the performance of the stock market and economic growth in Malawi. The study tested whether there is cointegration between the variables and determined whether a unidirectional or bidirectional relationship exists between stock market performance and economic growth in Malawi in the short-run. The study used quarterly data obtained from the Malawi Stock Exchange, covering the period from 2003 to 2017.

The results of unit root tests and stationarity tests for some variables showed discrepancies. However, conclusion has been made based on the KPSS results. Studies conducted by Jafari et al. (2012) and Katircioglu et al. (2014) highlighted that KPSS stationarity results have higher power compared to ADF and PP unit root results. It can therefore be concluded that market liquidity, real GDP and market capitalisation are stationary at levels; while the number of shares traded and the stock market index, MASI are stationary at first difference.

The ARDL cointegration tests conclude that there is no long-run relationship between real GDP and all the measures of stock market performance. However, there is evidence of the existence of contemporaneous short-run relationships. In particular, a significant positive relationship is noted between real GDP and market capitalisation. There is however a significant negative relationship between real GDP and market liquidity. The finding on the significant relationship between market liquidity and real GDP concurs with the finding in Abdul-Khaliq (2013), where he also concluded that there is a strong relationship between stock market liquidity and economic growth.

The Granger causality tests revealed the presence of causality in the short-run between some variables, as follows:

- I. bidirectional causality between real GDP and market liquidity, such that real GDP Granger causes market liquidity and market liquidity Granger causes real GDP; and
- II. unidirectional causality whereby market capitalisation Granger causes real GDP and changes in MASI Granger causes real GDP.

From the results of impulse response functions and variance decompositions, we can conclude real GDP reacts highly to a shock in market capitalisation than to other variables. Real GDP

responds negatively to any shock in market liquidity, and likewise, market liquidity responds negatively to any shock in real GDP.

From the explanations above, we can conclude that a significant negative relationship exists between real GDP and market liquidity in the short-run. Granger causality noted a bidirectional relationship whereby market liquidity granger causes real GDP and likewise, real GDP Granger causes market liquidity. This indicates that in both directions real GDP and market liquidity are sensitive to the behavior of market liquidity and real GDP respectively. Considering the results of impulse response functions, any increase or decrease in real GDP indicates a likely decrease or increase respectively in market liquidity; and any increase or decrease in market liquidity indicates a likely decrease or increase respectively in real GDP.

With the short-run output model, the relationship between real GDP and market capitalisation was noted to be significant and positive in the short-run. Granger causality noted that market capitalisation granger causes real GDP. Real GDP was noted to react very highly to any shock in market capitalisation. This being a significant relationship, it is likely that any increase or decrease in market capitalisation indicates increase or decrease respectively in real GDP.

Likewise using the short-run output model, the relationship between stock market index, MASI and real GDP was noted to be positive in the short-run, but the relationship is insignificant. Granger causality noted that changes in stock market index, MASI granger cause real GDP. This indicates that real GDP is sensitive to the changes in stock market, MASI.

From the conclusions drawn, it can therefore be concluded that market liquidity, market capitalisation and MASI have been playing an important role in driving growth in the Malawian economy in the short-run

Malawi's economic growth has been playing an important role in performance of Malawi Stock Exchange mostly through its negative effect on the stock market liquidity. When there is economic growth, stock market liquidity is likely to decrease. This negative relationship is contrary to the finding in Masoud (2013) where he asserted that economic growth has an important role in improving market liquidity. Stock market liquidity has also played a major role of influencing economic growth in Malawi. As noted, real GDP reaction is negative to

any shock in market liquidity. The causality of stock market liquidity to economic growth is similar to the conclusion of Levine & Zervos (1998) and Chipaumire and Ngirande (2014). However, in terms of the type of relationship, there are differences in the findings whereby Chipaumire and Ngirande (2014) and Levine & Zervos (1998) concluded that market liquidity has a positive impact on economic growth. The bidirectional causality between stock market liquidity and economic growth is in line with the neo-classical economic growth model, where the key component of economic growth is saving and investment Solow (1956). When the economy is performing better, capital stock is raised and this increases market liquidity. This has an effect of increasing the rate of productivity and hence it leads to the growth of national income.

Stock market capitalisation is another variable that has a causal effect on Malawi's economic growth in the short-run. This means that adequate capital for investments on the MSE impacts positively on Malawi's economic growth. Oluwatoyin and Gbadebo (2009) concluded that there is a positive relationship between market capitalisation and the performance of company, where company performance was used as a proxy for stock market performance. Better performance of companies indicates increased productivity hence economic growth. Jalloh (2015) in his study covering several African countries on how stock market capitalisation influences economic growth concluded similarly to this study on the MSE. He concluded a positive and significant relationship between stock market capitalisation and economic growth. The conclusion on the causality of market capitalisation to economic growth is in line with Walter Bagehot's economic theory. He concluded that better savings mobilisation can improve resource allocation Bagehot (1873).

The MASI, which represents the price performance of the stock market, has been concluded to play a role in economic growth. As in Olweny and Kimani (2011), causality was concluded to be flowing from the direction of price index to economic growth. He also concluded that stock prices reflect the macro-economic conditions in the Kenya and hence they can predict future trends of the economy. Changes in stock market prices guide investors on which stocks are performing better and hence plays a role in increasing the expectation of better yields in such investments. The increase in investments is likely to increase economic productivity and hence economic growth. On the contrary, Paramati and Gupta (2011) concluded a demand following hypothesis whereby economic growth determine stock price

movements, such that it is the economic growth that stimulate and promote the stock market prices. However, that was not found to be true for Malawi.

6 POLICY IMPLICATIONS FROM RESEARCH FINDINGS

The study was conducted to provide recommendations to various stakeholders including policy makers, finance institutions, listed firms, savers and investors, other researchers, the MSE and its brokers. From the conclusions above, much emphasis should be placed on measures to help improve market liquidity, market capitalisation and the stock market price index because performance of these variables will affect economic activities in the short run and lead to economic growth.

It is imperative that deliberate measures be put in place to improve stock market liquidity, market capitalisation and the stock market index. The Reserve Bank of Malawi, which is the central bank of Malawi has been developing fiscal policies and regulations, such as issuing government securities i.e. Treasury Notes and bonds, tradeable at the MSE, Reserve Bank of Malawi (2017). Such types of securities can be issued out to improve capitalisation and liquidity of the market and then provide more resources for investment opportunities in the Malawi. This is therefore an area that policy makers and financial market stakeholders need to employ more resources and provide a conducive environment to ensure that the MSE change is adequately capitalized, has better index and well liquidated to effectively contribute to economic growth.

As much as agriculture provides food security to the majority of Malawians and contributes to 90% of total export earnings Malawi (2017), this is an area that the MSE can tap into and increase agricultural investments on the stock exchange. Sinha (2017) studies the contribution of investment in economic growth of major sectors and focused on agriculture and the allied sector in Bihar, using data for the period 1980 to 2015. One of his conclusions is that there is a strong influence of the agriculture sector on industry and service sectors and hence leads to economic growth. Likewise, Malawi Stock Exchange needs to improve liquidity and capitalisation of both private and public investments in agriculture. This can lead to more resources available for agricultural investments, leading to more productivity in the agriculture sector and also economic growth.

Policy makers need to put in place measures to ensure the environment is conducive to lead to economic growth which will lead to improvement in market liquidity and hence better performance of the MSE. The IMF (2015) documented several shortcomings of the MSE,

most notably that it is underdeveloped with a limited number of trading instruments; few listed companies; low participation by retail investors due to low consumer confidence; and limited liquidity. From the results of the study, it is likely that improvement of the economic environment can lead to better performance of MSE.

In line with Walter Bagehot's economic theory, Malawi policy makers can deliberately develop economic policies to improve savings mobilisation in order to improve resource allocation Bagehot (1873). Policies can include provision of loans for new investments, as advocated by Bagehot. Likewise, Malawi government can deliberately develop fiscal policies and regulations in line with the financial repression hypothesis to stimulate investment on the MSE.

Current statistics indicate better performance of the macro-economic factors such as GDP, inflation, interest rates and exchange rate as of December 2017, compared to the performance as of December, 2016. Inflation rates have declined by 55%; interest rates have gone down by 20%; Malawi Kwacha has depreciated by 6% but is currently stable against major currencies; and, GDP indicate a growth of 2.7%, Reserve Bank of Malawi (2017). This indicates overall macro-economic health of the Malawian economy. Policy makers need to understand the implication of such economic performance and the likely effect on the performance of Malawi Stock Exchange i.e. negative effect on performance indicators such as market liquidity.

Finance institutions, listed firms and other savers and investors should understand what impacts the MSE performance and Malawi economic growth that in the short-run. These stakeholders ought to ensure that there is adequate analysis of investments. The variables such as stock market liquidity, market capitalisation and stock market index need to indicate good performing indicators for them to adequately contribute to economic growth.

7 RECOMMENDATIONS FOR FUTURE RESEARCH

One of the limitations noted during the study was the unavailability of previous studies on the MSE. It was therefore not possible to understand what other researchers had found or consider their recommendations for future studies. This study has however, made recommendations for future research.

Different directions of causality were identified in this study. Firstly, bidirectional causality between economic growth and stock market liquidity was identified along with unidirectional causality from market capitalisation and the stock market price index to economic growth. There is no causality from economic growth to stock market capitalisation, economic growth to the stock market price index or economic growth and the number of shares traded in either direction. Further studies can be conducted on what other factors influence stock market performance variables such as market liquidity, market capitalisation and stock market price index for the listed companies on the MSE. The studies should be conducted in order to guide the MSE on the other factors other than economic growth that can lead to better performance of the market. Policy makers and financial market stakeholders can then accurately understand what measures to employ in order to improve the market capitalisation which is likely to affect economic growth in the short-run. An example of variable to be studied is investors' perceptions as in Jauhari (2015), where he studied the basic psychology of an Investor towards stock market and other parameters and factors related to it and concluded that investors' behaviour is determined by the age of the investor, availability of income and availability of investment alternatives.

Likewise, research can also be conducted on variables such as trade, financial development, other financial markets, foreign direct investments, energy supply etc to assess their impacts on economic growth. As indicated in earlier chapters, factors such as trade, financial development, financial markets, foreign direct investments were noted to have an impact on economic growth.

Individual companies listed on the MSE can be assessed on their performance using measures such as earnings per share, return on equity rate, and return on assets rate and growth opportunities. These can be used as independent variables to assess if they have any influence on the performance of the Malawi Stock Exchange and Malawi economic growth. Researcher

can use the approach applied in Chashmi and Fadaee (2016) where they studied the impact of financial performance and growth opportunities on success or failure of companies listed on Tehran Stock Exchange in Iran. They sampled 115 listed companies for a period of 7 years from 2006 to 2012 and used financial performance measures such as earnings per share, return on equity rate, and return on assets rate and growth opportunities as the independent variables and success or failure as the dependent variable. In the proposed studies, Malawi Stock Exchange or Malawi economic growth can be used as dependent variables.

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