ASSESSMENT OFTHE IMPACT OF FINANCIAL DEVELOPMENT ON INTERNATIONAL TRADE COMPETITIVENESS OF MALAWI SUGAR: AN ARDL APPROACH

MASTER OF ARTS (ECONOMICS) THESIS

PHILLIP MWALE

UNIVERSITY OF MALAWI

CHANCELLOR COLLEGE

MAY, 2013

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Master of Arts (Economics) Thesis

By

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Thesis submitted to the Department of Economics, Faculty of Social Science, in partial fulfillment of the requirements for the degree of Master of Arts in Economics

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DECLARATION

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

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Full Legal Name

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Signature

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Date

CERTIFICATE OF APPROVAL

The undersigned certify that this thesis represents the student's own work and effort. Where he has used other sources of information, it has been duly acknowledged. This thesis has been submitted with our approval.

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DEDICATION

I dedicate this work to Lord God Almighty who has been with me ever since from time immemorial. He knew me even before I was born. You have done it again and again Lord. I forever remain strong because of You.

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To my lovely and beautiful wife, Mercy and my daughter Christabel, you are the reason why I work hard. You are my motivation to succeed in everything I do. I could not ask for any other family. I love you dearly.

ABSTRACT

This study investigates the impact of financial sector development on the international competitiveness of Malawi sugar using the ARDL bounds testing approach to co-integration. The study uses annual data for the period 1980 to 2010 and the co-integration test results indicate a long-run negative relationship between financial sector development and international trade competitiveness of Malawi Sugar. The study established that in the short-run, the competitiveness of sugar was sensitive to the financial sector development and real effective exchange rate, while in the long-run, it was sensitive to the financial sector development, real effective exchange rate and sugarcane production.

These results suggest that besides financial liberalization, there is need for policy to focus on other financially intensive trades with the aim of maximizing the positive effects that come along with financial development. On the other hand, the long-run statistical significance of sugarcane production entails that efforts to increase its production may be effective in increasing the competitiveness of Malawi sugar.

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LIST OF ABBREVIATIONS AND ACRONYMS

AIC	-	Akaike Information Criteria
ARDL	-	Autoregressive Distributed Lag
B-G LM	-	Breusch-Godfrey Lagrange Multiplier
CDH	-	Continental Discount House
DF-GLS	-	Dickey Fuller Generalized Least Squares
EDF	-	Export Development Fund
EU	-	European Union
FAO	-	Food and Agriculture Organization
FDH	-	First Discount House
FOC	-	First Order Condition
Forex	-	Foreign Exchange
FPE	-	Factor Price Equalization Theorem
FSDI	-	Financial Sector Development Index
GDP	-	Gross Domestic Product
GOM	-	Government of Malawi
HO	-	Hecksher – Ohlin Thoery
IMF	-	International Monetary Fund
MGDS	-	Malawi Growth and Development Strategy
NGO	-	Non-Governmental Organization
NSO	-	National Statistics Office

RBM	-	Reserve Bank of Malawi
RCA	-	Revealed Coparative Advantage
REER	-	Real Effective Exchange Rate
SACCO	-	Savings and Credit Cooperative
SFM	-	Specific Factors Model
SSA	-	Sub Saharan Africa
SST	-	Stolper Samuelson Theorem
SUCOMA	-	Sugar Corporation of Malawi
TCC	-	Tobacco Control Commission
TOT	-	Terms of Trade
VAR	-	Vector Autoregression

CHAPTER ONE

INTRODUCTION

1.1 Background

International trade theory suggests that differences across countries in factor endowments, technology, and economies of scale are the sources of comparative advantage. However, it has been argued that, besides the traditional factors affecting comparative advantage, financial development is also a potential source of countries comparative advantage (Susanto *et al*. 2011). This specifically implies that differences between domestic financial systems can lead to international trade. The relationship between financial development and trade has been theoretically developed (Beck, 2002). The financial development - trade theory posits that countries that are well financially developed are expected to experience greater volumes of international trade due to the large causal impact exerted by financial development on the level of exports. Also studies by Kletzer and Bardhan (1987) and Baldwin (1989) show that countries with a well-established financial sector have comparative advantage in industries and sectors that rely more on external finance. Various studies including those of Beck (2003), Svaleryd and Vlachos (2005), Hur *et al*. (2006) and Manova (2008), have all empirically probed this notion. These studies vindicate the finding that financial development exerts a large causal impact on the level of trade.

A country's financial system consists of a central bank, commercial banks, financial markets, and non-bank financial institutions like pension funds, and insurance companies. Financial system utilizes country's productive resources to facilitate capital formation through

the provision of a wide range of financial services to meet the different requirements of savers and savings users (Hanif and Jafri., 2008). Thus, financial system plays a crucial role in mobilizing and intermediating savings, and ensuring efficient allocation of these resources to productive sectors (Ang, 2008). King and Levine (1993) confirm the Schumpeterian idea that financial institutions are important because they finance entrepreneurs for their introduction of innovative activities. That is, the financial development, as revealed by the level of credit and the size of the capital market, encourages innovative activities. Another important feature is that stock markets enable individuals to diversify away idiosyncratic risk of individual projects (Blanchard and Peltrault, 2010). Saint-Paul (1992) reports that capital markets make possible the spreading of risk through financial diversification and he further states that financial markets allow riskier technologies. Therefore, without banks or with imperfect financial markets, choices of individuals are affected by their degree of risk aversion. It is therefore evident that in most developing countries, the level of financial sector development poses international trade challenges, among others. Greenwood and Javanovic (1990) model explains how income levels can affect the structure of the financial system. Financial intermediaries appear only in the rise of national income. As a result, less developed countries can be trapped in the production of traditional commodities while developed countries can produce innovative commodities (Blanchard and Peltrault, 2010).

Until the 1980s, the financial sector was one of the sectors where state intervention was most visible both in developing and developed countries where, among others, banks were owned or controlled by the government; interest rates were subject to ceilings; allocation of credits was constrained; there were entry restrictions and barriers to foreign capital flows were imposed (Abiad et al., 2010). Trends show that financial markets in developing economies have

gone through change owing to the adoption of financial liberalization, innovation and information technology, on one hand, and globalization on the other. In Malawi, reforms in the financial sector date back to late 1980s and focused on expansion and competition in the financial sector. A market-oriented legal framework was adopted through the enactment of the Banking and the Reserve Bank of Malawi Acts in 1989. These Acts allow, among other things, easy entry of new banking institutions into the financial sector and give the Reserve Bank greater independence in the formulation of monetary policy (RBM, 2008).

Sugar is one of Malawi's agricultural products meant for final consumption. Its processing requires imported physical capital (machinery, equipment, etc.) which in turn requires finance for its accumulation. In general, as reported by World Bank (2011) there is over-dependence on imported industrial inputs and capital goods in Malawi which requires external financing. There is therefore a link between financial development and trade in sugar (compared to trade in raw materials) through the factor accumulation channel. McKinnon (1973) also states that the development of capital markets is "necessary and sufficient" to foster the "adoption of best-practice technologies and learning by doing". In other words, limited access to credit markets restricts entrepreneurial development. More generally, financial development is a determinant of many factors of production. Thus, financial development may influence trade competitiveness indirectly by boosting the accumulation of other factors of production or by boosting the productivity of these factors of production.

1.2 Statement of the Problem

During the 2011/2012 financial year, Malawi started implementing the Malawi Growth and Development Strategy II (*MGDS II*) as an overarching operational medium term national development strategy for the period 2011-2016. MGDS II represents the intent of the

Government of Malawi to follow a detailed articulation of strategy for the achievement of specified goals (GOM, 2011). The overall goal of MGDS is to transform Malawi from a predominantly importing and consuming country to being a predominantly producing and exporting one. The MGDS II highlights sugar as one of three core sub-sectors in terms of revenue, GDP, employment and forex earnings. It also looks to maximize the performance of the sugar sector in the short to medium term. Since 2003, sugar has become Malawi's second largest export commodity which accounts for 8 per cent of GDP and 9 per cent of national exports (NSO, 2011). This increase has in part been as a result of opening up of the SADC market as a new and modest destination of refined sugar. Also the major growth in Malawi's sugar exports over recent years has been to countries like Kenya – one of Malawi's partners in COMESA (GOM, 2005).The Government of Malawi regards sugar as one of the commodities that will facilitate its efforts to diversify away from tobacco as the key export commodity (MGDS II). This is in regard to the fact that tobacco is Malawi's main foreign exchange (forex) earner accounting for about 70 per cent of export revenues. This heavy reliance on tobacco has placed a heavy burden on the economy as world tobacco prices decline and the international community increases pressure to limit its production. This has affected Malawi's tobacco forex earning potential. In 2011, low tobacco revenues contributed to forex shortages leading to Malawi borrowing $156 million from the IMF in order to boost forex reserves. Forex reserves had fallen to precariously low levels by early 2012 with only less than half a month of imports cover by April 2012 from a required minimum of three months (RMB, 2012).

Chirwa (2002) argues that financial development is one of the strategic trade policy adjustments necessary to the success of the Malawi's export orientation growth strategy and development of the manufacturing industry. He asserts that this will enable the manufacturing

sector to be on a competitive footing in the domestic as well as the export markets The role of financial development (which leads to easy accessibility of external finance) in the international trade competitiveness is also demonstrated in the efforts of the Reserve Bank of Malawi (RMB), which in 2012, involved various stakeholders to incorporate a private company in the name of Export Development Fund Limited (EDF). Through the provision of finance, EDF will work with various stakeholders including the financial industry, to promote and develop the production and value addition of targeted export crop products in order to contribute to the generation of forex for the country

However, despite this demonstrated importance, the relationship between international competitiveness of sugar (being one of Malawi's strategic export crop products as highlighted in the MGDS II) and financial development remains under-researched. Hanif *et al.* (2008) explored the relationship between financial development and international trade competitiveness in the case of Pakistan. They reported an external finance elasticity of international trade competitiveness of textile of 0.26. However, conventional theories of international trade focus on comparative advantage based on factor endowments. The investigation of the association between financial sector and international trade competitiveness is a recent phenomenon in international trade literature. Only a few studies have concentrated on financial development and trade competitiveness of countries and of sectors in particular. Kletzer and Bardhan (1987), for instance, brought to light the contribution of some aspects of credit market imperfections to inter-country differences in patterns of specialization and trade even when technology, endowments and economies of scale are identical between the countries. Fanelli and Medhora (2002) vindicate the findings of Kletzer and Bardhan (1987) by reporting that international competitiveness is positively affected by the financial sector development.

In a global environment where trading rules might become less stable and predictable and considering that each country negotiates trade agreements that are in her favor, policymakers will have to depend even more on high-quality inputs from analysts and researchers. In these circumstances, home grown research becomes as important as the ability to draw from the experiences of, and lessons learnt by other countries. To the knowledge of this researcher, there has not been any attempt so far to explore the relationship between financial development and international trade competitiveness in the case of Malawi sugar.

1.3 Objectives of the Study

The broad objective of the study is to examine the relationship between financial development and international trade competitiveness of Malawi sugar. The specific objectives of the study are:

- To empirically establish whether there exists a stable long-run relationship between competitiveness of Malawi sugar and financial development;
- To find out if financial development leads to growth in international trade competitiveness of Malawi sugar.

1.4 Hypotheses

With regard to the specific objectives, the study will test the following hypothesis:

- There does not exist a stable long-run relationship between financial development and international trade competitiveness of sugar;
- Financial development has no significant long-run impact on the international trade competitiveness of sugar.

1.5 Significance of the Study

The Government of Malawi recognizes the role of trade in driving economic growth. Export oriented growth strategies outlined in the MGDS II aim at transforming the country from a predominantly importing and consuming country to being a predominantly producing and exporting country. The findings of this study establish the role of financial development as a determinant of competitiveness in the trade in sugar. Exploring the link between financial development and trade competitiveness in sugar is significant for several reasons. First, if we find that financial development does have an effect on the competitiveness of sugar, this will underline the importance of financial sector development for economic development beyond its positive impact on economic growth as shown by Beck (2002). This is the case because sugar is an important source of forex for Malawi, and therefore increases the priority that financial sector reforms should have on policy makers' agendas. Second, exploring the links between financial development and international trade competitiveness in sugar also has implications for the theory of international trade. The Ohlin model predicts trade flows based on an economy's endowments of labor, land and physical capital. In the Ricardian model technological differences across countries explain international trade flows. This paper explores empirically whether financial development helps predict trade flows (measured by competitiveness) where financial services as a result of financial development can be interpreted either as boosting the productivity of factors of production or as determining the accumulation of physical capital. Third, a possible link between financial development and international trade has policy implications. On the one hand, reforming the financial sector might have implications for the trade balance if the level of financial development is a determinant of countries' competitiveness. On the other hand, the

effect of trade reforms on the level and structure of the trade balance might depend on the level of financial development.

Finally, convincing localized evidence that financial development influences international trade competitiveness will underscore the need for similar research in other sectors of the economy. This could serve as a project appraisal tool for the analysis of the levels of competitiveness of different national trades as diversified sources of forex for the country. A study particularly on the competitiveness of sugar is worthwhile during this phase of the Malawi economy in which there are calls from different stakeholders for Malawi to quickly identify a strategic export product to replace tobacco as a lead forex earner. This call follows the growing concern as to whether Malawi tobacco revenues can continue to finance import demand, investment and increase Malawians standards of living in the near future.

1.6 Organization of the Study

The rest of the paper is organized as follows. Chapter 2 gives a general overview of the financial sector in Malawi and the profile of the international trade in sugar. Chapter 3 presents the underpinning theoretical literature on trade, and financial development. The chapter also provides a review of empirical literature based on selected studies done on this subject. Chapter 4 contains a presentation of the methods of estimation to be employed in this study. Chapter 5 presents estimation results and their empirical interpretation while Chapter 6 gives conclusion, policy implications and areas for further research.

CHAPTER TWO

AN OVERVIEW OF THE MALAWI FINANCIAL SECTOR AND THE TRADE IN SUGAR

2.0 Introduction

The major aim of this chapter is to provide a brief overview of the Malawi's financial sector and the sugar industry's profile. This is necessary to the understanding of the evolution of these two major variables under study in Malawi.

2.1 The Malawi Financial Sector

The financial system in any country serves as the engine of development by pooling financial resources from surplus economic units and channels them to deficit economic units. The main financial sector players in Malawi include the Reserve Bank of Malawi, twelve commercial banks, one leasing company and two discount houses. Compared to countries within the region, Malawi's financial industry is small, relatively underdeveloped and has excess capacity for more development. While 70 per cent of the total assets and liabilities of the financial industry is made up of the banking sector alone, this sector is in turn dominated by three large banks that own about 70.0 per cent of the total banking assets and deposits (RBM, 2010). The financial system also includes a range of informal mechanisms and formal institutions that are not licensed or supervised by the Central Bank. These institutions primarily provide various forms of credit and include pawnshops, money lenders, input suppliers, savings and credit cooperatives (SACCOS), companies, and NGOs. None of these is licensed to provide

savings services to the public, though some may collect savings deposits from clients and deposit them in commercial banks on their behalf. SACCOs may intermediate savings for members, though may not provide savings services to the general public. Development projects, family members, and informal savings and loans clubs may also provide credit, and or provide a safe haven for savings.

2.1.2 The Reserve Bank of Malawi

Malawi's Central Bank was established in 1965 under an Act of Parliament. It is responsible for ensuring monetary stability, maintaining a sound financial system and managing foreign exchange. The Reserve Bank is the regulatory and supervisory authority of all banks and other financial institutions licensed under the Banking Act, 1989.

2.2 Financial Sector Reforms

Until the late 1980's Malawi experienced a high degree of financial repression, with administered interest rates, pre-determined direction of credit allocation and ceilings, segmented capital markets and excessive intermediation costs (RBM, 2008). As part of structural adjustment programs supported by the World Bank and International Monetary Fund (IMF), Malawi has been implementing structural reforms in the financial system for close to two decades now. The main objective of these reforms has been more efficient mobilization of resources and their optimal allocation (World Bank, 1989). Private sector involvement in the financial sector, including the entry of new players, has increased with financial liberalization measures. Among these financial liberalization measures include the reduction of entry barriers, privatization of institutions, changes in the bank rate, reductions in the commercial bank's liquidity reserve ratio, and reduction in disincentives for lending to the private sector. However, the post liberalization

period, (after 1987) has been characterized by limited financial products and innovation, wide interest spreads, weak legal systems and pronounced market fragmentation which have accounted for failure of financial reforms to bring about financial deepening, (Mlachila and Chirwa, 2002). Some of the notable and detailed developments in the financial sector in Malawi are as summarized below:

2.2.1 Commercial Banks

Currently, there are twelve (12) licensed commercial banks which provide a wide range of commercial banking services including acceptance of deposits in the form of demand, savings and time; foreign exchange services, provision of short and medium term credit facilities and financing of international trade (RBM, 2010). The Table below summarizes the list of commercial banks in Malawi.

Table 1. List of Commercial Banks In Malawi

NAME	DETAILS
National Bank	The National Bank of Malawi was incorporated in 1971, but licensed under the Banking Act (1989) in September 1990.
The Standard Bank of Malawi	The Standard Bank of Malawi is a subsidiary of Standard Bank Group, South Africa. Previously known as Commercial Bank of Malawi, was licensed under the Banking Act (1989) in September 1990, although it had been in existence prior to 1990.
INDEbank Malawi Limited	INDEbank Malawi Limited was licensed as a commercial bank in May 2001 following merger of Investment and Development Bank of Malawi and Indefinance.
First Merchant Bank Limited	First Merchant Bank Limited was granted a banking license in July 1994.
Ecobank Malawi Limited	Ecobank Malawi Limited (previously known as Loita Bank) was granted a banking license in March 2008 following acquisition of majority shareholding by Ecobank Transnational Incorporated (ETI).
Nedbank Malawi Limited	Nedbank Malawi Ltd, a subsidiary of the Nedbank Group, South Africa, was granted a banking license on January 2001.

Opportunity International Bank	Opportunity International Bank Malawi Ltd (OIBM) was granted a banking license in March 2002.
NBS Bank	NBS Bank, formerly New Building Society, was granted a banking license in June 2004.
Malawi Savings Bank	Malawi Savings Bank, a wholly owned government bank was licensed in March 2005.
FDH Bank	FDH Bank was granted a banking license in January 2008.
International Commercial Bank	International Commercial Bank (ICB) was granted a banking license in June 2008
CDH Investment Bank (CDHI Bank)	A subsidiary of CDH Group which in turn is a subsidiary of TransAfrica Holdings Limited, a financial services group headquartered in Mauritius. It was founded in 1998 as Continental Discount House (CDH) and was granted a banking license in May 2011.

Source: The Reserve Bank of Malawi.

The table above shows that it was only after 2000 that the banking sector in Malawi has seen the emergence of more players in the sector.

2.2.2 Leasing Companies

Leasing and Finance is the only leasing company in Malawi. It provides asset financing services to companies and households wishing to purchase motor vehicles, machinery and equipment or other capital goods. It also provides invoice factoring and insurance premium financing. It obtained its license under the Banking Act (1989) in September, 1990 (RBM, 2008). It is a wholly owned subsidiary of First Merchant Bank.

2.2.3 Discount Houses

There are two discount houses in Malawi namely Continental Discount House (CDH) Limited and First Discount House (FDH) Limited. These help provide liquidity to the secondary market for government bills and registered stocks by accepting to purchase (sell) these financial

instruments from (to) the general public (RBM, 2012). CDH was licensed under the Banking Act (1989) in March 1998 while FDH was licensed in July 2001 (RBM, 2008).

2.2.4 The Money Market

Malawi's money market includes all the 12 commercial banks, 2 discount houses, and 1 leasing company. Other players include financial firms dealing in specialist services and a few privately managed pension funds. Currently there are two major pension funds management companies namely, NICO Life and Old Mutual and a new entrant, Smile Life. The major products traded on the money market are government papers i.e. Treasury and RBM Bills (RBM, 2012). Primary trades are carried out on behalf of clients by Stockbrokers Malawi Ltd, discount houses, Trust Securities Ltd, CDH Stockbrokers, FDH Stockbrokers and African Alliance Limited. Table 2 below lists the financial instruments being traded on the Malawi money market.

Table 2: Major Financial Instruments Traded On The Malawi Market

Financial Instrument	**Features**
Callable Deposits	Funds deposited at an agreed interest rate but can be withdrawn at any point in time.
Fixed Deposits/Certificate of Deposit	Funds deposited for an agreed period of time at an agreed interest rate.
Treasury Bills	Short dated paper issued by the Reserve Bank of Malawi on behalf of Malawi Government currently in maturities of 91, 182 and 273 days issued for deficit financing.
RBM Bills	Short dated paper issued by the Reserve Bank of Malawi currently in maturities of 63 and 91 days issued for monetary policy purposes.
Repurchase Agreements (Repo)	Basically a collateralized loan, the collateral usually being high quality liquid security e.g. bills. The transaction is set up so that the security is sold and then repurchased. The key is that the lender is in possession of the collateral in the event of the default on behalf of the borrower.

Source: The Reserve Bank of Malawi.

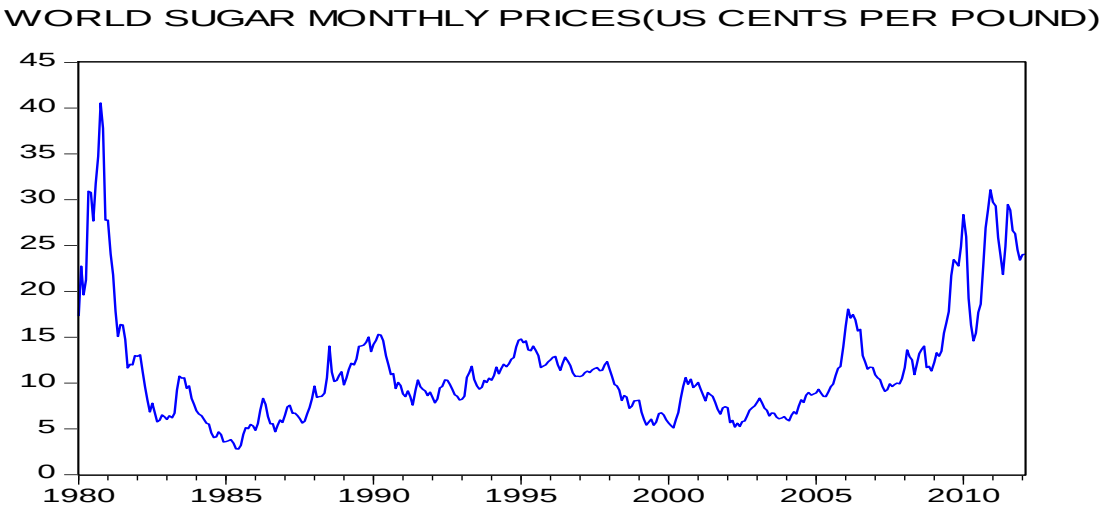
The financial sector in Malawi still falls short of services like merchant or wholesale banking, mortgage banking, export-import trade financing, and leasing and financing. Malawian financial sector players are faced with the challenge of competing for the same business to the same customers. The formal financial sector is still small, concentrated and serves only 26 per cent of the adult population (World Bank, 2011).

2.3 The Sugar Industry

In general, agricultural sector is the back bone of Malawi's economy and supports about 85 per cent of the population (World Bank, 2011). Agricultural activity accounts for about 50 per cent of the Gross Domestic Product (GDP), 80 per cent of the labor force and contributes almost 85 per cent of the total export revenues. Commerce, distribution and manufacturing sectors are mostly involved in handling and processing of agricultural inputs and outputs. Large-scale manufacturing enterprises not connected with agriculture are few, and there is over-dependence on imported industrial inputs and capital goods (World Bank, 2011).

Sugar is one of Malawi's major export crops along with tobacco, tea and cotton. The sugar industry in Malawi is dominated by Illovo Sugar (Malawi) Limited, a subsidiary of the South African based Illovo Sugar Group. Illovo acquired a controlling 60 per cent share in the previously state-owned Sugar Corporation of Malawi (SUCOMA) in 1998 from Lonrho PLC and has increased its stake to 76 per cent in 2005. Illovo/SUCOMA owns two production estates and factory operations (mills and refineries) at Nchalo and Dwangwa. These two operations account for 100 per cent of Malawi's milling and refining capacity. There are also out-grower schemes associated with each of these operations (Dwangwa Cane Growers Limited and Kasinthula Cane Growers Ltd) which account for around 10 per cent of cane supplied to the Dwangwa and

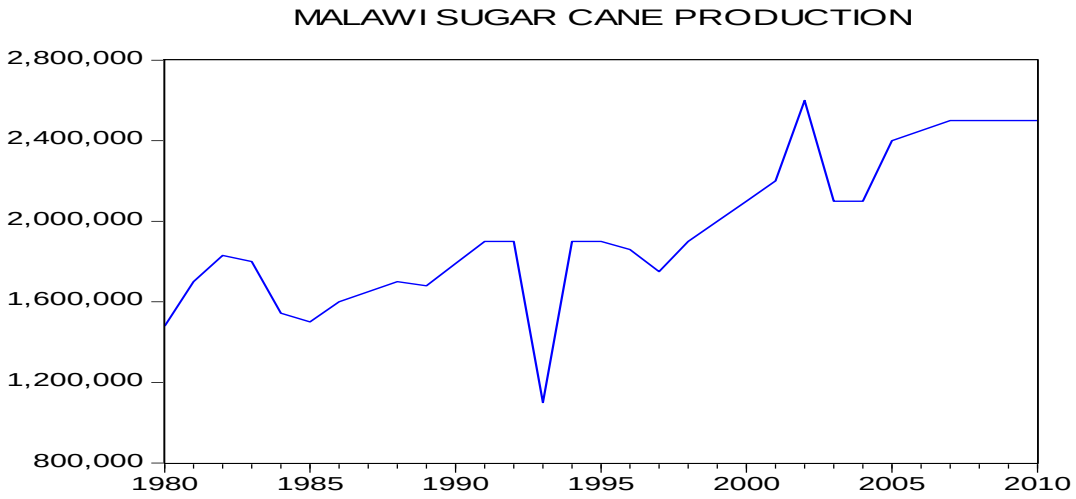
Nchalo mills. Malawi's sugar output is expected to increase by 60.6 per cent by 2015 with the coming in of two more investors in the industry that are expected to start production by 2013 (Ministry of Trade, 2011). These investors are Limphasa Sugar Scheme in Nkhata Bay and Ntalimanja Sugar Scheme in Nkhotakota. The two have invested Mk10 billion with a production capacity of 150,000 metric tons per annum and Mk500 million with a production capacity of 50,000 metric tons per annum respectively. This increased production will automatically increase export quantity of sugar since currently Malawi consumes 60 per cent of the sugar produced and exports the remaining 40 per cent. World sugar prices, as depicted in Figure 1 below, has in recent years been constantly rising which is advantageous to the increased sugar production in Malawi. The prices are, however, still lower than their all times high of 40 cents per pound which it reached in 1981. The lowest price reached is 2.5 cents per pound in 1985 (due in large to the U.S., EC, and Japanese sugar policies) (Marks and Maskus, 1993: p34).



Source: World Bank.

Figure 1: World Sugar Prices

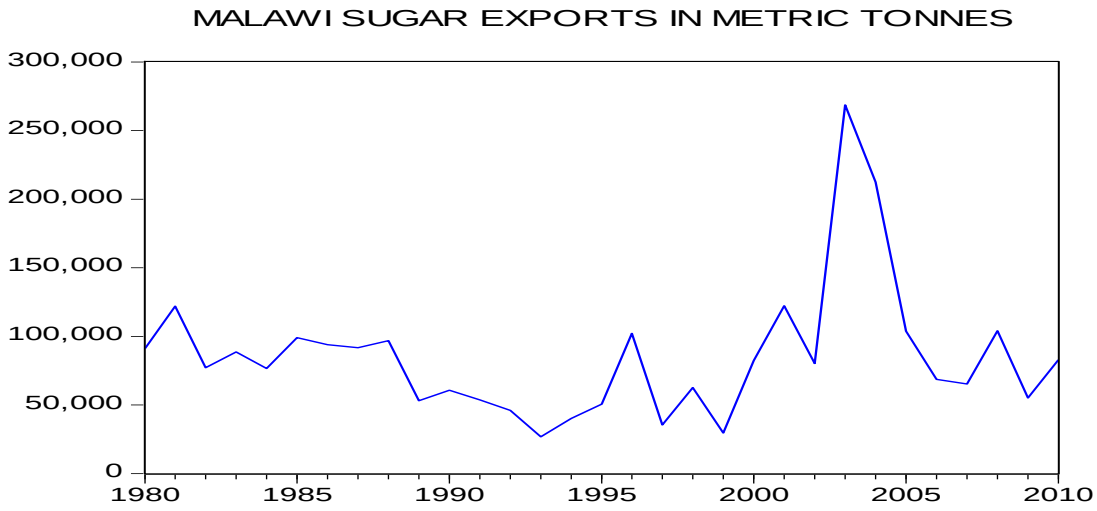
The global sugar industry is one of the world's oldest agriculturally-based industries, which is estimated to produce around 167 million tons of sugar in the 2010/11 international sugar season (Illovo, 2012). Whilst many forces continually impact upon annual global production, a major sustainability feature of this industry is its historic and ongoing sugar consumption growth, which on average, increases by around 1.8 per cent per annum. Of late, the European Union (EU), phased out sugar subsidies and quotas. This has led to the realignment of sugar production worldwide. Malawi is one of the potential few winners in this realignment together with the requisite supply needed to meet the growing demand. This is because of her comparative advantage of low cost production, excellent cane growing conditions, and the presence of adequate water and land resources which will significantly contribute towards the production needed to meet this growing demand. As Figure 2 shows, Malawi's sugar cane production has been growing due to among others, excellent cane growing conditions as explained above. A steep decline was registered between 1992 and 1994 due to a drought that Malawi experienced during this period (FAO, 2010).



Source: FAOSTAT database produced by the Food and Agriculture Organization of the United Nations (FAO).

Figure 2: Malawi Sugar Cane Production (Metric Tonnnes)

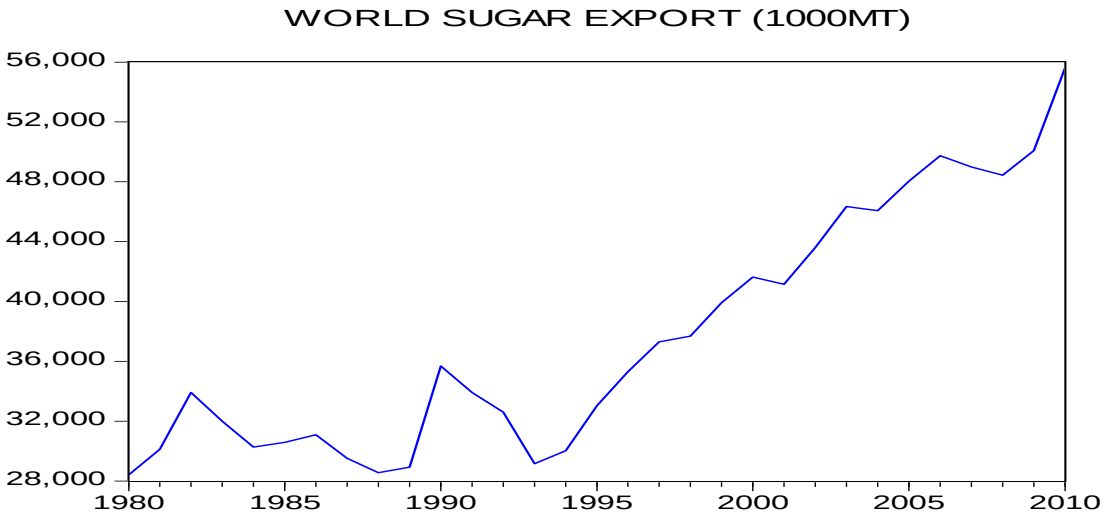
Since 2003, sugar has overtaken tea to become Malawi's second largest merchandise export in value terms, (NSO, 2011). Malawi's sugar export has been generally consistent. However, in 2005 there was an unprecedented increase in exports as shown in Figure 3 below. This increase was in part as a result of opening up of the SADC market as a new and modest destination of refined sugar. Also the major growth in Malawi's sugar exports over recent years has been to countries like Kenya – one of Malawi's partners in COMESA (GOM, 2005).



Source: National Statistics Office (NSO) and International Sugar Organization

Figure 3: Malawi Sugar Exports

Even though Malawi sugar export has generally not been increasing, world sugar exports have been constantly growing due to increase in world sugar demand. Figure 4 below shows the trend in world sugar export.



Source: United States Department of Agriculture

Figure 4: World Sugar Exports

CHAPTER THREE

LITERATURE REVIEW

3.0 Introduction

This chapter reviews the theoretical and empirical literature that helps in explaining the linkages between financial development and trade competitiveness. The chapter starts with a discussion of theories linking the two. It is then followed by a brief discussion of a traditional trade theory. This is aimed at presenting the point of departure of financial development (as a country's potential source of competitiveness) from factor endowments as presented in traditional trade theories. Finally the chapter presents a critical analysis of selected empirical work on financial development and trade competitiveness.

3.1 Theoretical Literature

International competitiveness generally refers to the ability of a country to expand its share in the world markets (Kumar *et. al.* 2003). At a fundamental level, the competitiveness of a country in a particular commodity depends on the price at which it delivers the commodity in a foreign market in comparison with the price offered by competing countries for that commodity in the same market. At an analytical level, the evolution of overall competitiveness of a country over time depends on both macroeconomic and microeconomic factors. The most important macroeconomic variable influencing competitiveness is the real exchange rate. In the standard neo-classical model, given its assumptions of complete wage-price flexibility, any disequilibrium in balance of payments (BOP) in the country in question (possibly arising from differences in the

ability of countries to compete in world markets) can only be resolved by adjustments in the real exchange rate. At a micro level, traditional trade theories (Hecksher-Ohlin, Factor Price Equalisation, The Specific Factors theorems) present competitiveness in terms of factor endowments (labour, physical capital, natural resources, etc) of a country and have argued that unit labour costs are the key determinants of international competitiveness. New trade and technology-based theories, on the other hand, have stressed the importance of non-price factors such as investment, technological capability and quality as being more important than price factors in a country's ability to gain international competitiveness (Dosi *et. al,*. 1990).

The competitiveness-finance relationship is linked through the finance-investment theory which shows important links between the latter two. Keynes developed conditions under which "money", broadly conceived, mattered for the real performance of the macro-economy. This general approach is evident in the theory of investment, in which financial and monetary conditions affect firms' capital spending. Besides what has come to be known as the neoclassical model of investment, proposed by Jorgenson (1963), the "post Keynesians" maintained that the original insights of Keynes remained valid: instability in financial relations could cause volatility in investment and macro-economy. Under the theory of investment, there are two approaches to its modelling namely: (1) the market for capital equipment or productive assets as used in the neoclassical approach and (2) the financial capital approach by which funds are raised in the capital market in order to finance the acquisition of productive assets. In this study it is the financial capital approach to investment only that has been discussed. This is because it is under this channel through which financial development and competitiveness are linked.

3.1.1 The Financial Approach to Investment Theory

Modern views on finance, originating from the asymmetric information and agency costs framework argue that the financial environment could impose constraints on firms to obtain investible funds and thus constrain their ability to under-take costly investments required to compete in international markets (Akerlof, 1970). For example, credit may be rationed so that interest rates do not equate the supply and demand for loans, and agents' access to funds may depend on their financial circumstances (Fazzari, 1989). The Modigliani-Miller (1958) hypothesis is a modern finance theory that demonstrates the impact of financial systems on investment decisions. This theorem is specifically built on a set of assumptions. Among these assumptions is the one that states that there are no capital market frictions (i.e. no transaction costs, no asset trade restrictions or bankruptcy costs). The other assumption is of symmetric access to credit markets (i.e. firms and investors can borrow or lend at the same rate). These assumptions attempt to present a 'developed' financial system in which there are little or negligible intermediation costs (i.e. complete financial markets with non-existent information and transaction costs). Minsky's (1975) Financial Instability Hypothesis also presents the link between financial system and investment. The theoretical argument of the financial instability hypothesis starts from the characterisation of the economy as a capitalist economy with expensive capital assets and a complex, sophisticated financial system (Minsky, 1992). The economic problem is identified following Keynes as the 'capital development of the economy' rather than the Knightian 'allocation of given resources among alternative employments'. The capital development of a capitalist economy is accompanied by exchanges of finances that are facilitated by the financial system. Keynes (1972) has also stated this funding structure: 'There is a multitude of real assets in the world which constitutes our capital wealth (buildings, stocks of

commodities, goods in the course of manufacture and of transport and so forth). The nominal owners of these assets, however, have not infrequently borrowed money (Keynes' emphasis) in order to become possessed of them. To a corresponding extent, the actual owners of wealth have claims, not on real assets, but on money. A considerable part of this financing takes place through the banking system, which interposes its guarantee between its depositors who lend it money, and its borrowing customers to who it loans money wherewith to finance the purchase of real assets. The interposition of this veil of money between the real asset and the wealth owner is an especially marked characteristic of the modern world', (p.151). The money flows are first from depositors (savers) to banks (financial institutions) and from banks to firms (investors): then at some later dates, from firms to banks and from banks to depositors. Thus financial systems play a pivotal role in financial intermediation: that is efficient transfer of funds from surplus units or potential lenders (creditors) to deficit units or potential borrowers (debtors) that intend to invest those funds in productive and profitable use. Such are the foundations for links between financial systems and real activity (investment).

3.1.2 Investment and Finance

The development of a theory of investment and finance has revolved around the arguments of McKinnon (1973) and Shaw (1973) who postulated a strong complimentarity between the accumulation of financial assets and physical capital. Recent developments in the theories of asymmetric information and contract enforcement as applied to financial markets provide further support for the view that the availability of loanable funds has a strong positive relationship with investment expenditures of firms, independent of other determinants of the latter (Kumar *et. al.* 2003). According to this literature, external finance may be more costly than internal finance because of transaction costs, agency/contract enforcement costs and asymmetric

information. The argument is founded on the distinction between insiders (managers/owners) who have full information about a particular firm's investment prospects and outsiders who may correctly perceive the prospects for an industry but cannot distinguish the quality of individual firms within an industry. In particular, there may exist certain firms that face high information costs in financial markets, and there would be others who face negligible information costs. As discussed in the previous section, the level of development of a financial system determines the level of intermediation costs investors face. In one hand, countries with financial sectors/markets that are not well developed, face problems of asymmetric information and contract enforcement so that the finance constraint hampers the investment decisions of firms in these countries. On the other hand, investors in countries with well developed financial markets face negligible intermediation costs thereby they are less likely to be constrained by the availability of finance in their investment decisions (Aivazian, 1998). A well developed financial system minimises transaction costs and enables firms to be as close as possible to their desired/optimal capital stock and vice versa. The key insight springs from asymmetric information between borrowers and lenders. This circumstance prevents external funds from perfectly substituting for internal funds. Where external funds are available, it will be more costly than internal funds. Therefore, to under-take a profitable investment project, firms' insiders may have to commit more of their own capital either as a direct means to finance the project or as collateral to obtain outside funds (Fazzari 1989). This requirement forces entrepreneurs to forego diversification opportunities, a limitation that is inherently financial.

3.1.3 Investment and Competitiveness

Sectoral competitiveness analysis distinguishes between price and non-price factors. Sectoral unit labour cost is the most critical price determinant of international competitiveness.

Among non-price determinants, the most widely discussed in literature are investment and technology (Kumar *et. al.* 2003). Dosi *et. al.* (1990), Grossman and Helpman (1991) and Lall (1998) are among the researchers who have explored the role of technology in determining international competitiveness. Kumar *et. al.* (2003) emphasised capital accumulation as the crucial non-price determinant of international competitiveness. This follows Fagerberg (1988) who had originally put forward the thesis that 'the growth in market shares for a country both at home and abroad does not only depend on technology and prices, but also on its ability to deliver'. He argues that this ability to deliver is in turn determined by the country's investment rate. On their part Kumar *et. al.* (2003) argue that to the extent that investment in new plant and machinery embodies new technology, this variable in fact could partly capture some of the technology-related determinants of international competitiveness.

3.1.4 Financial Development and International Competitiveness

The links explored in the previous sections show that in the presence of asymmetric information/agency costs in financial markets, a country's level of financial development may have a significant impact on its ability to compete on international markets. Due to asymmetric information/agency costs, financial intermediaries will incur transaction costs when channelling savings to entrepreneurs. A more efficient financial system leads to a decrease in these transaction costs and consequently, an easier access to external finance. Literature on investment and finance show that a firm's decision to invest does not only depend on the firm's perception of the future returns that the investment would yield but also on the availability and cost of funds. The latter in turn depends on the institutional setting in the financial sector and the efficiency of this sector in making funds available at the right cost to those sectors and firms where the potential for growth is the highest. A weak institutional setting in the financial sector

can raise the cost of investible funds for a firm. This leads to a reduction in the amount of funds that a firm actually invests, which in turn would restrict its ability to compete in international markets. Kletzer and Bardhan (1987) and Beck (2002) show that economies with strong or well developed financial sectors will be able to channelize savings to firms that produce finance intensive products. This provides a robust positive link between the level of financial development in a particular country and its competitiveness in world markets.

3.2 International Trade Theory

3.2.1 Factor Proportions Theory of Comparative Advantage

Proposed by Hecksher (1919) and elaborated by Ohlin (1933), the factor endowment theory, otherwise known as the Hecksher-Ohlin (HO) theorem, details an explanation for the commodity composition for international trade. The HO theory proposes that the pre-trade relative factor cost differences between two countries results from differences in relative resource endowment. HO theory states that a country has comparative advantage in a commodity that in its production, utilizes most intensively a factor that is in relative abundance in that country compared to other countries. This proposition means that a country's direction of trade will be that it exports commodities which are intensive in the relatively abundant factors and imports commodities which are more intensive in the relatively scarce factors. There are three sets of restrictive assumptions on which HO theorem is build which make the theory differ from any other possible alternative international trade theories. These set of assumptions are (1) market and general economic environment, (2) demand side assumptions about consumption of welfare patterns, (3) supply side assumptions which are about technology and factor or production conditions. HO theorem is a two factor (labor, L, and capital, K), two product (Maize,

Z and textile, T) and two country (home, H and foreign, F) otherwise called 2 by 2 by 2 trade model.

The model is mathematical build as follows:

$$\frac{K_F}{L_F} > \frac{K_H}{K_H} \tag{1}$$

Equation (1) presents the dissimilarities in relative factor abundance between countries with foreign country being capital abundant than home country which is in turn labor abundant. This is the autarky factor proportions of fixed resource endowments and is measured in absolute physical units. This pre-trade difference in factor endowments forms the basis for comparative advantage and therefore trade is established. With the assumptions that maize production is capital intensive (and less intensive in labor) while textile production is labor intensive (and less intensive in capital), and that home country is labor abundant (capital scarce) while foreign country is capital intensive (labor scarce), the autarky relative facto costs can be presented as:

$$\left(\frac{w}{r}\right)_f = \left(\frac{MPL}{MPK}\right)_f > \left(\frac{MPL}{MPK}\right)_h = \left(\frac{w}{r}\right)_h \tag{2}$$

Difference in product prices originate from this factor cost relationship. With the home country facing a relatively cheaper wage for labor since labor is in abundance, and textile is labor intensive, textiles will be cheaper in the home than in the foreign economy. The relative product prices will be:

$$p_f = \left(\frac{p_t}{p_z}\right)_f > \left(\frac{p_t}{p_z}\right)_h = p_h \tag{3}$$

Where p_t and p_z are prices for textile and maize respectively. This means that the home country has a comparative advantage in the production of textiles. Following the same modeling, foreign country will have comparative advantage in the production of maize which is capital intensive, a

factor which is in relative abundance in that country. All this stems from the proportion factor endowments as presented in equation (1). This is what distinguishes factor endowments from financial development as a source of a country's competitiveness.

3.3 Empirical Literature

Financial development has been found to be a potential source of competitiveness and its relationship with trade has been theoretically developed as discussed in the previous section. This theory posits that countries that are well financially developed should experience greater volumes of international trade. In regard to this, this section critically analyses some of the empirical studies that have been undertaken on this subject.

Yap (1999) analyzed the interaction of the outward orientation as a necessary ingredient for increasing the competitiveness of an economy and a sound financial structure that is required for efficient resource allocation and macroeconomic stability. Of concern was the trade sector response of Philippines to the level of financial development. It was reported that economic protection resulted into resources flowing into sectors where Philippines did not possess comparative advantage. The study further reports that the malfunctioning of the financial system has been a source of macroeconomic problems. These structural problems include the segmented nature of financial markets, the lack of competition among financial institutions, wide-ranging interlocking directorates and ownership patterns across the banking industry and other economic sectors, the shallowness of financial markets and the unresolved external debt overhang (Vos and Yap, 1996).

Pramesti and Resiandini (2010), examines the relationship between financial development and trade based on panel data of bilateral trade between the world's three largest economies (United States, Japan, and Germany) and 47 partner countries over the period 2003 to

2007. The study finds that access to loans for businesses has a strong positive relationship with bilateral trade while access to the local equity market raises trade with less developed countries, but lowers trade with developed countries. The study also finds that international financial indicators are significant determinants of trade.

Hanif *et al.* (2008), explore the relationship between financial development and international trade competitiveness in the case of Pakistan. They employed the ARDL model by Pesaran *et al.* (1999) and also applied Johansen test for co-integration and checked the robustness of results established by the ARDL model. They estimated the co-integration vector using Stock and Watson (1993) dynamic OLS method. They reported a stable long run positive relationship between international trade competitiveness of Pakistan and its financial sector development. The estimated external finance elasticity of international trade competitiveness of textile sector in Pakistan was found to be 0.26.

Kletzer and Bardhan (1987) highlight the contribution of some aspects of credit market imperfections to inter-country difference in patterns of specialization and trade, even when technology and endowments are identical between countries and economies of scale are alike. They show that these are the differences between countries in the domestic institutions of credit contract enforcement (under incomplete market information) which may lead to one country facing a higher interest rate or rationed credit compared to other countries and these differences may lead to differences in comparative advantages in processed goods which require more finance. Kletzer and Bardhan (1987), based their argument on an inference that more sophisticated manufactured finished products require more credit to cover selling and distribution costs than primary or intermediate products. They show that countries with relatively

better developed financial sectors are competitive in industries and sectors that rely more on external finance.

Fanelli and Medhora (2002) vindicate the argument of Kletzer and Bardhan (1987) by finding that competitiveness is positively affected by the financial sector development. Bell *et al.* (1999), considered the relationship between competitiveness, international trade and financial factors in the South African economy. Their findings on the effect of trade-orientation suggest that the financial system is at least not unfavorable to export-oriented firms, in accordance with what might be expected, and may thus have been conducive to export and GDP growth.

Do and Levchenko (2004) point out that to the extent a country's financial development is endogenous, it will in turn be influenced by trade. They build a model in which a country's financial development is an equilibrium outcome of the economy's productive structure: in countries with large financially intensive sectors financial systems tend to be more developed. Using data on financial development for a sample of 77 countries, they estimate the model and find that trade openness is associated with faster financial development in wealthier countries, and with slower financial development in poorer ones.

Beck (2002) explores a possible link between financial development and trade in manufactures. While focusing on the role of financial intermediaries in facilitating large-scale, high-return projects, he shows that economies with better-developed financial sectors are competitive in manufacturing industries. The study empirically tested this hypothesis, first proposed by Kletzer and Bardhan (1987), using a 30-year panel for 65 countries. Controlling for country-specific effects and possible reverse causality, the study reports that financial development exerts a large causal impact on the level of both exports and the trade balance of manufactured goods.

Kim *et al.* (2011) empirically investigate the interaction between financial development and trade openness through simultaneous-equation systems. The identification and estimation of the systems relied on the methodology of identification through heteroskedasticity proposed by Rigobon (2003). Using a panel consisting of 70 countries over the period 1960–2007, they find a two-way causal relationship between financial development and trade openness. A better-developed financial sector was reported to induce higher openness to trade, while higher openness in commodities market stymies financial development. Such findings were said to hold well for low-income, high-inflation, or low-governance countries.

Samba and Yan (2009), analyzes the relationship between the level of financial development of a country and its competitiveness in international trade while considering a number of researchers who have stressed the key role a country's financial development is likely to play in its specialization in international trade, thus leading to competitiveness in the financially intensive goods, alongside capital and human resources. In their study, they intended to empirically check the existence of the argument that countries with competitiveness in financially intensive goods experience a higher demand for external finance, and therefore financial development and the sense of the relation between these two variables within East Asian countries. They employed a time-series approach using the VAR Model in order to provide long run relationships between financial development and international trade in manufactured goods. Their main result suggests that for most of the countries considered, international trade in manufactured goods enhances financial development.

Susanto *et al*. (2011) empirically investigate the effects of financial development on trade of both agricultural and manufactured products. Their results show a positive impact of financial development on bilateral trade flows for the manufacturing sector, which enjoys a greater impact

than the agricultural sector. The impacts differed across regions. It was shown that in most cases, developing countries (Asia, Latin America, MENA and SSA) experience greater impacts of financial development on exports in both agriculture and manufacturing sectors than do advanced countries.

Further empirical studies on the finance-trade link have emerged in both firm-level and country or sectoral level. Muuls (2008) and Berman and Hericourt (2008) are among those who focus on firm-level data. Using a dataset on export transactions at the firm level for the Belgian manufacturing sector, Muuls (2008) analyzes the interaction between credit constraints and exporting behavior. He found that firms are more likely to be exporting if they enjoy higher productivity levels and lower credit constraints. He concludes that credit constraints really do matter for export patterns. Berman and Hericourt (2008) show that the financial factor affects both the firms' export decisions and the amount exported by firms. Using a large cross-country firm level database in developing and emerging economies, they found that financial constraints create a disconnection between a firm's productivity and its export status. According to their results, an increase in a country's financial development increases the number of exporters and affects the exporters' selection process through dampening such a disconnection. These two studies agree that financial development does really matter for export patterns and economies with a higher level of financial development should have greater comparative advantage.

Examples of empirical work that study the sectoral level are given by Hur et al. (2006) and Manova (2008). Hur *et al*. (2006) investigate the impact of a country's financial development and a firm's asset structure on the trade flow of different industries. Using data for 27 industries in 42 countries they found that economies with higher levels of financial development have higher export shares and trade balance in industries with more intangible

assets. Manova (2008) developed a model with credit-constrained heterogeneous firms, countries at different levels of financial development, and sectors of varying financial vulnerability. She shows that financially developed countries are more likely to export bilaterally and ship greater volumes when they become exporters. She empirically found robust, systematic variations in export participation, volumes, product variety, product turnover, and trade partners across countries at different levels of financial development and across sectors at different levels of financial vulnerability.

According to Susanto *et al*. (2011), there are a variety of channels through which financial development can translate into competitiveness. One of them is said to be based on the liquidity constraints that most firms face. According to this argument, when a domestic financial institution is weak and inefficient, firms in export-oriented sectors are burdened by significant liquidity constraints that prevent a subset of productive firms to enter the foreign market (Chaney, 2005). On the other hand, if firms face less restrictive credit constraints as, for example, a result of financial sector reforms, then investment can increase more in response to a lowering of variable export costs and all firms with productivity above a certain level become exporters (Melitz, 2003).

From the analysis of theoretical papers, the main prediction is that financial development should promote production and trade which in turn boosts a country's level of competitiveness. Empirical studies on this relationship also show a strong bias towards a positive relationship between financial development and trade competitivenesss. Berthou (2007), however, suggests that the relationships of financial development and trade may vary with the initial level of financial development as a higher level of financial development makes the firm closer to the cut-off level and thus makes entry more probable especially if the conditions on the local

financial market are favorable. Beck (2002) also suggests that financial development and trade relationships may also be subject to economies of scale. A sector with scale economies profits more from a higher level of financial development than a sector without economies of scale. He asserts that countries with better developed financial sectors have a comparative advantage in sectors with high scale economies and are therefore net exporters. Finally financial development and trade hypothesis is also said to be highly conditional on a country's pre-existing circumstance such as economic, historic, cultural or geographic specificities (Apoteker and Crozet, 2003).

CHAPTER FOUR

RESEARCH METHODOLOGY

4.0 Introduction

This section presents the model specification adopted for analysis in the study. It also describes the data sources and methods used for analyzing them.

4.1 The Model

Following Hanif *et al.* (2008), the study adopts the modeling of Balassa (1965) for an index of revealed comparative advantage (RCA) as a measure of competitiveness in sugar which is mathematically represented as;

$$RCAS_M = X_{MS} / X_M \Big/ X_{WS} / X_W \quad (4)$$

Where X_{MS} is Malawi's sugar exports, while X_M is Malawi's total exports. X_{WS} is World sugar exports, while X_W is World's total exports. In case where $RCAS_M > 1$, it means that Malawi is competitive in sugar sector.

The study employs the principal components method to construct a financial sector development index (FSDI) as a proxy measure for financial sector development. Similar measures have been used by Kargbo and Adamu (2009). In this study this measure is presented as $FSDI_t$ where subscript t is for time. Assuming a bi-variate relationship between competitiveness of sugar sector and financial development and that all other determinants of

competitiveness are captured in an error term, the following model, where lower case letters signify natural log form, can represent this association:

$$rcas_t = \beta_0 + \beta_1 fsdi_t + \mu_t \quad (5)$$

The null hypothesis in this modeling would be $H_0 : \beta_1 = 0$ where we would test that Malawi's international trade competitiveness in sugar does not depend on financial sector development. There are however many other determinants of competitiveness in sugar which this study includes as control variables. These variables include the Real Effective Exchange Rate (REER), the Terms of Trade (TOT) and Sugar cane production (SUGCAN). The motivation for inclusion of these variables is detailed in the next section. An econometric model capturing the relationship among these variable, in log transformation, is presented as:

$$rcas_t = \beta_0 + \beta_1 fsdi_t + \beta_2 reer_t + \beta_3 sugcan_t + \beta_4 tot_t + \varepsilon_t \quad (6)$$

Equation (6) states that competitiveness of sugars, $rcas_t$ is a function of financial development $fsdi_t$ real effective exchange rate $reer_t$, sugar cane production, $sugcan_t$ and terms of trade, tot_t. ε_t is the white noise error term and t is subscript for time.

The study employs Autoregressive Distributed Lag model (ARDL) popularized by Pesaran (1997), Pesaran and Smith (1998), Pesaran and Shin (1999) and Pesaran *et al* (2001). This is aimed at avoiding several flaws in the conventional time series cointegration techniques which include Engel and Granger (1987) test, maximum likelihood based Johansen (1988, 1991) and Johansen and Juselius (1990) test. Researchers such as Kremers *et al* (1992) find some drawbacks in the above techniques e.g. problem of endogeneity, inappropriate lag selection for small sample size etc. ARDL provides unbiased estimates of the long run model and valid t-statistics even in the case of endogenous regressors. This is of particular importance to this study since there is a reverse causality debate on whether financial development results into trade

competitiveness or trade competitiveness leads financial development (Kumar *et al., 2003)*. Furthermore, this procedure can be applied to models irrespective of whether they are purely $I(0)$, purely $I(1)$ or mutually co-integrated unlike other popular co-integration techniques which require pretesting the variables to determine their order of integration such as Engle and Granger (1987), Johansen and Juselius (1990) (Pesaran and Pasaran, 1997). Engle and Granger (1987) two steps procedure on multiple variables regression exhibits biased parameter estimates in finite samples and too low power of the test if applied to multi-variate regressions despite having attractive asymptotic properties. Thus the ARDL approach has better statistical properties than the Engle-Granger co-integration test because it draws upon the Unrestricted Error Correction Model (Banerjee et al., 1998). In other words, this approach provides joint estimates of the short-run and long-run effects of the regressors (Mangani, 2012). The evaluation of the joint significance of each exogenous variables lagged difference terms is in the spirit of Granger Causality. This procedure is also more appropriate for estimation in small sample studies whereas the Engle–Granger and Johansen's cointegration procedures are not reliable for relatively small samples (Pesaran & Shin, 1999). This study therefore, considers these reasons as a justifiable basis for the adoption of this co-integration technique. Researchers such as Hanif *et al.* (2008) and Kargbo and Adamu (2009) has also used the ARDL model in the finance – trade studies. The ARDL framework for equation (6) is:

$$\Delta rcas_t = \alpha_0 + \sum_{i=1}^{k} \rho_i \Delta rcas_{t-i} + \sum_{i=1}^{k} \delta_i \Delta fsdi_{t-i} + \sum_{i=1}^{k} \pi_i \Delta reer_{t-i} + \sum_{i=1}^{k} \varphi_i \Delta sugcan_{t-i} + \sum_{i=1}^{k} \eta_i \Delta tot_{t-i} + \beta_1 rcas_{t-i} + \beta_2 fsdi_{t-1} + \beta_3 reer_{t-i} + \beta_4 sugcan_{t-i} + \beta_5 tot_{t-i} + \varepsilon_t \quad (7)$$

Where ε_t is a white noise error term, Δ is the first difference operator, k is the optimal lag length, α_0 is the intercept and the rest of the variables are as defined in Equation 6.

Under ARDL, co-integration is confirmed if the lagged-level terms of the , β_i coefficients, are jointly significant. Thus the cointegration test was based on the null hypothesis, $H_0 : \beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = 0$ and it is based on the F-statistics. Pesaran *et al*. (2001) provides the upper and lower bound critical values for resolving this hypothesis, based on the standard *F*-statistics. The lower bound assumes that all the independent variables are $I(0)$ while the upper bound assumes that they are $I(1)$. If the test statistics exceed their respective upper critical values, the null hypothesis is rejected and we can conclude that a long-run relationship exists. If the test statistics fall below the lower critical value, we cannot reject the null hypothesis of no co-integration. However, the test is inconclusive if the statistic falls in between the critical values (Pesaran *et al*., 2001).

4.2 Variable Justification and Expected Signs

4.2.1 Financial Sector Development Index (FSDI)

Choosing an appropriate measure of financial development is crucial in analyzing the relationship between financial development and trade competitiveness. This study therefore, employs the principal components method for construction of a financial sector development index (FSDI) used to proxy financial development as proposed by Ang and Mckibbon (2005) and Khan and Qayyum (2006). This approach also addresses the concern of the underdeveloped nature and consequent lack of data on financial markets in Malawi. The indicators of financial development used in the study only reflect developments in the banking sector. The following three financial development indicators are used, (i) ratio of banking deposit liabilities to GDP, (ii) ratio of private sector credit to GDP, and (iii) the ratio of private sector credit to domestic credit. This considers that even though the ratio of broad money (M2) to GDP is considered to be

a standard measure of financial development (World Bank, 1989), Khan and Qayyum (2006) argue that this ratio measures the extent of monetization rather than financial development. In most developing countries like Malawi, a higher ratio of money to GDP may not necessarily reflect increased financial deepening as money is used as a store of value in the absence of other more attractive alternatives (Khan and Senhadji, 2003). Hence, the ratio of banking deposit liabilities to GDP is used as the first proxy for financial development. The second measure of financial development is the ratio of domestic private sector credit to GDP. This ratio excludes the public sector and therefore reflects more efficient resource allocation in the economy since the private sector is able to utilize funds in more efficient and productive manner as compared to the public sector (Kargbo and Adamu, 2009). The third ratio, private sector credit to domestic credit shows the share of credit to the private sector in total domestic credit and also measures the extent to which the banking system channels funds to the private sector to facilitate investment and growth.

4.2.1.1 Construction of Financial Sector Development Index

Following the expositions of Ang and McKibbon (2005) and Khan and Qayyum (2006), the principal component analysis (PCA) is used to construct a financial sector development index from three proxies of financial development measures described above. According to Sricharoena and Buchenriederb (2005: p2) "PCA is an indicator reduction procedure to analyze observed variables that would result in a relatively small number of interpretable components (group of variables), which account for most of the variance in a set of observed variables". The eigenvalues are calculated for each component. The size of an eigenvalue indicates the amount of variance in the principal component explained by each component. The first principal

component reflects the largest proportion of the total variability in the set of indicators used. The second component accounts for the next largest amount of variability not accounted by the first component, and so on.

Earlier studies on the finance – trade link including those of Kletzer and Bardhan (1987), Balwin (1989) show that countries with well-developed financial sector are competitive in finance oriented export sectors. More recent studies on this relationship like those of Rajan and Zingales (1998), Fanelli and Medhora (2002), Beck (2002) and Hanif *et al.* (2008) all vindicate the findings reported by the earlier studies. *FSDI* is therefore expected to positively affect trade competitiveness of sugar. The expected sign for $\beta_1 > 0$.

4.2.2 Real Effective Exchange Rate (REER)

Real effective exchange rate is calculated by dividing the nominal effective exchange rate (a measure of the value of a currency against a weighted average of several foreign currencies) by a price deflator or index of costs (IMF;2012). The real effective exchange rate is the most important macroeconomic variable influencing international competitiveness. In the standard neo-classical model, given it assumptions of complete wage-price flexibility, any disequilibrium in balance of payment (BOP) in the country in question (possibly arising from differences in the ability of countries to compete in world markets) can only be resolved by adjustments in the real effective exchange rate. Under the Purchasing Power Parity (PPP) theorem, commodity prices between countries are said to be essentially the same when expressed in the same currency. The exchange rate is but a price translation tool. The movements of prices of the goods between the countries would only reflect the exchange rate movements. Appreciation of the exchange rate is

expected to result into low costs of exports which eventually increases a country's competitiveness on the world market and vice-versa. Therefore, the expected sign for $\beta_2 > 0$.

4.2.3 Sugar Cane Production (SUGCAN)

Since sugar cane is a principle factor in the production of sugar in Malawi, therefore this study includes sugar cane production as an explanatory variable in the model. This being the principal production factor, the expected sign for $\beta_3 > 0$.

4.2.4 Terms of Trade (TOT)

Terms of Trade, (TOT), is a strong theoretical determinant of trade competitiveness. It measures a country's imports in terms of its exports. This is expressed as a ratio of (price of exportable goods)/(price of importable goods). An improvement in a country's TOT tends to potentially create a benefit in terms of how many goods need to be exported to buy a given amount of imports. However, countries may suffer in terms of falling export volumes and a worsening balance of payments. On the other hand, a worsening TOT indicates that a country has to export more to purchase a given quantity of imports. Based on the above arguments, this study includes TOT as a variable in the modeling of competitiveness – finance development relationship. In general, the expected sign for $\beta_4 > 0$.

The time series plots of the five variables included in the model are given in **Appendix 1**.

4.3 Data Sources

The study uses annual time series data ranging from 1980 to 2010. Data on world sugar exports and total world exports is sourced from the United Nations Statistics Division Data base while Malawi sugar and total exports is from Malawi National Statistics Office (NSO). Sugar

cane production data is sourced from the FAOSTAT database produced by the Food and Agriculture Organization of the United Nations (FAO, 2010). The data on REER is from The World Bank, while data on deposit liabilities, Gross Domestic Product, and private sector credit is from the International Monetary Fund, (IMF), International Financial Statistics and data files. The data on TOT is from World Trade Organization (WTO).

Estimation is done using E-views 6 software. One of the advantages of E-views is that it has a range of diagnostic (misspecification) tests that are automatically computed, making it possible to test whether the model is econometrically valid or not (Brooks, 2008).

4.4 Time Series Properties

Firstly, in order to determine the appropriate order of the lag length in the co-integrating equation, the study will use the Akaike Information Criterion (AIC) and Schwarz Information Criterion (SIC). The decision rule is that the smaller the information criterion, the better the model.

4.4.1 Stationarity Test

The estimation and hypothesis testing using time series data assumes that the variables are stationary or independent of time. A series is said to be stationery if its mean and variance are constant over time and the value of the covariance between the two time periods depends only on the distance or gap or lag between the two time periods and not the actual time at which the covariance is computed (Gujarati, 2003). As Yule (1926) showed that if time series are non-stationary, it leads to problems of unit root and the standard OLS approach produces a spurious regression thereby rendering standard testing techniques invalid.

4.4.1.1 Unit Root Test

The study avoids the problem created by the unit root by testing for stationarity of the variables and to determine their order of integration by employing the Dickey Fuller Generalized Least Squares (DF-GLS) method (Elliot *et al.* (1996)) to test for unit root. This is a modification test of the traditional Augmented Dickey-Fuller (ADF) (Dickey and Fuller, 1979), Phillips - Perron (1988) *t*-test as it applies generalized least squares (GLS) detrending prior to running the ADF test regression. The DF-GLS test is advantageous in relation to the ADF test since it performs better in terms of sample size and power especially when an unknown mean or trend is present (Mangani, 2012).

4.4.2 Diagnostic Tests

The following tests are necessary to be conducted in order to ensure that all the assumptions of OLS are met and the estimates are unbiased, efficient and consistent.

4.4.2.1 Autoregression (AR) or Serial Correlation (LM) Test

In time series regressions, a common problem arises in that the estimated residuals tend to be correlated across time. Serial correlation leads to OLS estimates having small standard errors that yield inefficient, biased and inconsistent estimates especially when lagged values of dependent variable are included in the equation as regressors. The Breusch-Godfrey serial correlation Lagrange multiplier (B-G LM) tests is used to test for higher order autocorrelation among the errors and is applicable whether or not there are lagged dependent variables. This general test of serial correlation is more efficient than other tests in that it allows for non-stochastic regressors (such as the lagged values of the dependent variable), higher order autoregressive schemes and simple or higher order moving averages of white noise error terms

(Gujarati, 2003). The null hypothesis is that there is no serial correlation up to a pre-specified lag order against the alternative of the presence of serial correlation.

4.4.2.2 Autoregressive Conditional Heteroskedasticity (ARCH) Test

The ARCH test is a Lagrange Multiplier test used to test for conditional heteroskedasticity in the residuals. The test assesses whether the magnitude of past residuals are related to the magnitude of recent residuals. Even though ARCH in itself does not invalidate standard OLS inference but ignoring ARCH effects may result in loss of efficiency (IHS Global Inc. (2011)). Conditional heteroskedasticity is said to exist if at least one of the coefficients of the lagged values of the squared residuals is statistically significant. The null hypothesis is that there are no ARCH effects up to some order q.

4.4.2.3 Ramsey Reset Test

Ramsey's RESET test (regression specification error test) was also applied to test for specification error and establish model adequacy.

4.4.2.4 Stability of the Estimated Parameters

Model stability is necessary for prediction and econometric inference. The study tested for stability of estimated parameters by the cumulative sum of recursive residuals (CUSUM) and CUSUM of square (CUSUMSQ) tests. The CUSUM test detects the systematic changes in the regression coefficients whereas CUSUMSQ test is useful for capturing the sudden departures from the constancy of regression coefficients.

CHAPTER FIVE

PRESENTATION AND INTERPRETATION OF THE RESULTS

5.0 Introduction

This chapter presents and interprets the estimation results of the study. These estimations were done for the purpose of analyzing two specific objectives namely; (1) to empirically establish whether there exists a stable long-run relationship between competitiveness of Malawi sugar and financial development and (2) to find out if financial development leads to growth in international trade competitiveness of Malawi sugar. The chapter is ordered by first presenting the descriptive statistics then discussing the results of the diagnostic tests and finally those of regression estimations.

5.1 Descriptive Statistics

Table 3 below presents the mean, median, maximum and minimum values, standard deviation, skewness and kurtosis of the five variables used in the study. During the period under study, financial sector development index's highest value was 0.313 and its lowest value was about 0.135. The highest real effective exchange rate value was 221.49 while the lowest value was 95.15. Likewise, the maximum terms of trade value was 123.18 while its lowest value was 79.2.

Table 3: Summary of Descriptive Statistics of Variables Used

	FSDI	RCAS	REER	SUGCAN	TOT
Mean	0.227574	518.3661	157.829	1949484	123.1813
Median	0.233238	415.5657	170.37	1900000	112.38
Maximum	0.313133	2191.729	221.49	2600000	200
Minimum	0.134567	0.398228	95.15	1100000	79.2
Std. Dev.	0.059223	485.2362	42.7899	367955.1	37.12207
Skewness	-0.03236	1.889986	-0.17168	0.117707	0.715295
Kurtosis	1.622167	6.821888	1.530957	2.50309	2.291568

Table 4 presents a cross correlation matrix of the five variables used in the study. The coefficient of correlation of the variables, between competitiveness of Malawi sugar, as measured by revealed comparative advantage (RCAS), and financial sector development index (FSDI) is -0.543. This moderate negative correlation suggests a negative relationship between these two variables.

Table 4: Cross Correlation of Variables Used

	RCAS	FSDI	REER	SUGCAN	TOT
RCAS	1				
FSDI	-0.54311	1			
REER	-0.219	0.521742	1		
SUGCAN	0.092907	-0.35823	-0.78043	1	
TOT	-0.26384	0.708685	0.689631	-0.65541	1

5.2 Unit Root Tests Results

Considering the advantages of Elliot *et al.* (1996), (ERS) DF-GLS unit root test as presented in the previous chapter, the study employed this test of unit root on each variable. The results of which are presented in Table 5 below.

Table 5: DF-GLS Unit Root Test on the Variables

Variable in Levels	ERS Statistic(CV)	First Difference	ERS Statistic(CV)	Order of Integration
Lnrcas	-1.181623(-3.19000)	d(lnrcas)	-5.780201(-3.19000)	I(1)
Lnfsdi	-0.725323(-3.19000)	d(lnfsdi)	-5.431098(-3.19000)	I(1)
Lnreer	-4.461176(-3.19000)			I(0)
lnsugcan	-4.829952(-3.19000)			I(0)
Lntot	-2.811245(-3.19000)	d(lntot)	-5.033671(-3.19000)	I(1)

The figures in parenthesis represent the 5% critical values of the DF-GLS test.

The variables RCAS, FSDI and TOT are integrated of order 1, while REER and SUGCAN are integrated of order zero as depicted in Table 5 above.

5.3 The ARDL Model Specification

For a more efficient model, the study first determined an appropriate lag order of the differenced terms by the use of information criteria. Table 6 below details the outcome of the model selection tests. Both the AIC and SIC suggested that the model with a lag order of 3 was the most suitableand also accounted for serial correlation.

Table 6: Model Selection Statistics

Lag	Information Criteria		Breusch-Godfrey Serial Correlation LM Test	
	AIC	SIC	$\chi_1^2(p)$	$\chi_3^2(p)$
1	3.302393	3.821022	7.4844(0.02640)	11.930399(0.0756)
2	2.995788	3.757048	10.1130(0.0298)	11.4712(0.2673)
3	2.362059*	3.369932*	11.6999(0.1079)	24.5551(0.1453)

* represents the lag chosen by the information criterion. χ_1^2 and χ_3^2 are the BG LM test statistics for the null hypothesis of no 1st order and no 3rd order serial correlation respectively and the p in parenthesis represents the corresponding probability of accepting the null hypothesis of no serial correlation.

The results for serial correlation tests of order 2 are not presented in the table for space purposes.

5.4. Diagnostic Tests Results

5.4.1 Ramsey Reset and ARCH Test Results

The results of the Ramsey RESET test and ARCH LM test which were conducted on the selected model are shown in Table 7 below.

Table 7: Diagnostic Tests for the Selected Model

Ramsey's RESET Test	**Engel's ARCH Test**	
$F_2(p)$	$\chi_1^2(p)$	$\chi_4^2(p)$
7.861314(0.0621)	0.9748(0.9760)	0.9339(0.9513)

Notes: F_2 is the test statistic for investigating the appropriateness of a quadratic model while χ_1^2 and χ_4^2 are the test statistics for ARCH (1) and ARCH (4) effects, respectively. p denotes the corresponding probability of accepting the respective null hypotheses of correct specification, normality or no ARCH effects.

The corresponding probability of the F_2 statistic from the Ramsey RESET test indicates that the inclusion of a quadratic term is inappropriate and would not improve the specification of the model. Thus, the model was correctly specified. The results from the ARCH LM test indicate that there was absence of conditional heteroskedasticity in the selected model as the *p* values indicate.

5.4.2 CUSUM and CUSUMSQ Test Results

The CUSUM and CUSUMSQ test results are presented in Figures 5 and 6 respectively. Although the ARDL estimate passed the CUSUM test, the CUSUMSQ test provided some evidence of mild instability. However, this evidence of mild instability is not corroborated by the

results obtained from recursive estimations. An effort was made to include dummy variables in the model to account for perceived structural breaks but still this did not improve the model.

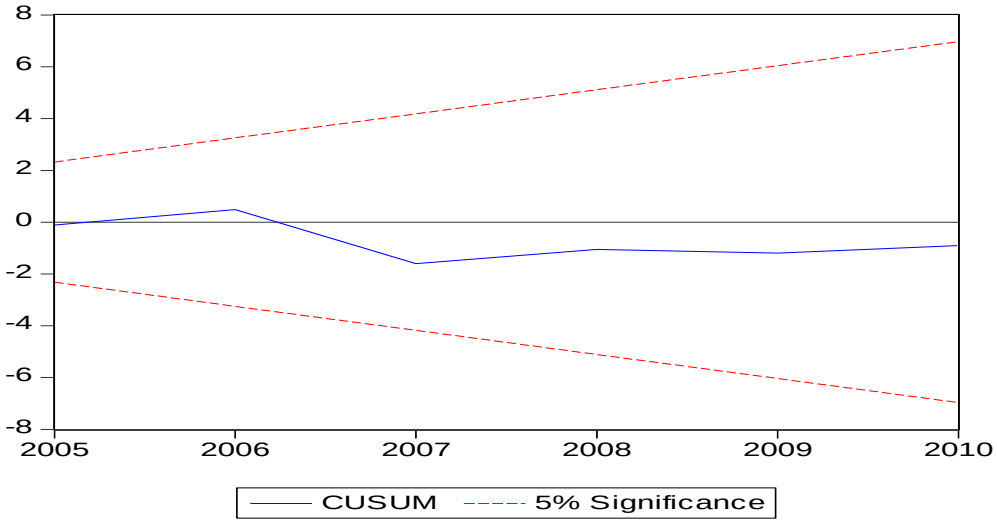


Figure 5: CUSUM Test Results

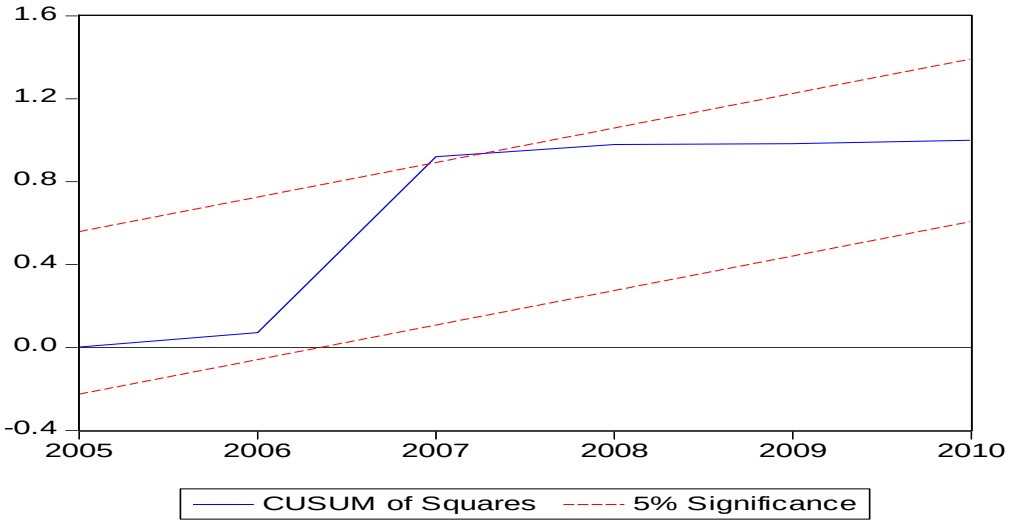


Figure 6: CUSUMSQ Test Results

5.5 Estimation Results

The ARDL model with differenced terms of lag order 3 as determined in the previous section was adopted and run. The co-integration and estimation results are presented in Tables 8 and 9 respectively.

5.5.1 Co-integration Test Results

Table 8: Co-integration Test Results

Model	Null Hypothesis	F-Statistic	5% CV		10% CV	
			CV_L	CV_U	CV_L	CV_U
Drcas	$H_0; \beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = 0$	6.037606	3.23	4.35	2.72	3.77

Note: CV_L and CV_u are lower bound and upper bound critical values respectively as provided by Pesaran et al (2001), Table C1.iii.

Table 8 above presents the co-integration test results. Since the calculated F-statistic is greater than the upper bound critical values, both at 5 and 10 percent significance levels, then the null hypothesis of no co-integration is rejected. This confirms the presence of a levels relationship among the variables in the model. The presence of a co-integrating relationship indicates that the Malawi sugar competitiveness model used in this study is specified correctly and that it is stable over the sample period. The conditional ECM regression associated with this level relationship is given in Table 9 below. These estimates provide further direct evidence on the relationship between sugar competitiveness and its determinants as modeled in the study.

Table 9: Estimation Results of the Selected ARDL Model

	Coefficient	Std. Error	t-Statistic	Prob.
C	-242.3139	59.04437	-4.103930	0.0063
DLNRCAS(-1)	0.383380	0.429164	0.893319	0.4061
DLNRCAS(-2)	0.489435	0.495884	0.986995	0.3618
DLNRCAS(-3)	0.574826	0.556538	1.032862	0.3415
DLNFSDI(-1)	7.580473*	3.785381	2.002565	0.0091
DLNFSDI(-2)	-0.113391	2.401207	-0.047223	0.9639
DLNFSDI(-3)	-0.972350	2.228476	-0.436330	0.6779
DLNREER(-1)	-5.118186	3.834451	-1.334790	0.2304
DLNREER(-2)	-5.864053*	2.495102	-2.350225	0.0507
DLNREER(-3)	-4.081668	2.083959	-1.958612	0.0097
DLNSUGCAN(-1)	-6.467084	3.012853	-2.146498	0.0755
DLNSUGCAN(-2)	-4.534710	2.559168	-1.771947	0.1268
DLNSUGCAN(-3)	-3.899554	2.334811	-1.670180	0.1459
DLNTOT(-1)	-9.882080	6.147261	-1.607558	0.1591
DLNTOT(-2)	-11.58918	5.127696	-2.260115	0.0645
DLNTOT(-3)	-6.062366	4.243684	-1.428562	0.2031
LNRCAS(-1)	-1.717151*	0.473793	-3.624267	0.0110
LNFSDI(-1)	-12.74356*	3.401378	-3.746587	0.0095
LNREER(-1)	9.056379	4.083494	2.217802	0.0684
LNSUGCAN(-1)	9.622677*	3.354823	2.868312	0.0285
LNTOT(-1)	9.810228	4.818681	2.035874	0.0879
R-squared	0.657395	F-statistic		8.494455
Prob(F-statistic)	0.006334	Durbin-Watson stat		2.647389

* represents statistical significance at 5%

As can be seen in Table 9, the explanatory variables were responsible for about 66 percent of the variability in the competitiveness of sugar. This is also supported by the F-statistic which shows overall significance. In the short run, competitiveness of sugar is only affected by shocks emanating from lagged values of itself, financial sector development and sugarcane production. After normalization of variable coefficients, (as summarized in Table 10), financial sector development, and sugarcane production are interpreted to be among long run variables.

5.5.2 Joint Short Run Effects

Table 9 above shows that the 2nd and 3rd differences of the financial sector development index were insignificant at the 5% significance level, (although there were traces of statistical significance at 10%). A key source of the scanty explanatory power in the model was autoregressive terms and non–normalized (spurious) long-run effects. In the spirit of Granger-causality testing (Granger, 1969) the joint significance of each exogenous variables lagged difference terms as specified in equation (12) was evaluated as reported in Table 10.

Table 10: Joint Short Run Test Results

Variable	**Null Hypothesis**	**F-statistic** (p)
Lnrcas	$\rho_1 = \rho_2 = \rho_3 = 0$	0.362169(0.7830)
Fsdi	$\delta_1 = \delta_2 = \delta_3 = 0$	1.605004(0.0284)
Reer	$\pi_1 = \pi_2 = \pi_3 = 0$	2.478221(0.0506)
Sugcan	$\varphi_1 = \varphi_2 = \varphi_3 = 0$	1.644242(0.2763)
Tot	$\eta_1 = \eta_2 = \eta_3 = 0$	1.743717(0.2573)

(p) is the probability of accepting the null hypothesis of joint insignificance.

Clearly, the own, sugar cane production, and terms of trade terms were completely unimportant in explaining the competitiveness of Malawi sugar. This means that in the short run, financial sector development and real effective exchange rate are the only variables affecting sugar competitiveness.

5.5.3 Long Run Effects

As stated in the previous Chapter, the ARDL model has the ability of capturing long run effects through the process of normalization. After carrying out the normalization process, the

long run sensitivities of the competitiveness of Malawi sugar to its covariates were established and they are presented in Table 11 below.

Table 11: Normalized Long Run Effects

Variable	LR Effect	Null Hypothesis	$\chi_1^2(p)$
Lnfsdi	-7.421337**	$-\beta_2/\beta_1=0$	8.127384(0.0291)
Lnreer	5.274072**	$-\beta_3/\beta_1=0$	4.318708(0.0377)
Lnsugcan	5.603861**	$-\beta_4/\beta_1=0$	8.922731(0.0028)
Lntot	5.713083***	$-\beta_5/\beta_1=0$	3.311072(0.0688)

** and *** indicate statistical significance at 5% and 10% respectively, χ_1^2 is the Wald test statistic while the p in parenthesis represents the probability of accepting the null hypothesis of no long run effect.

Table 11 shows that financial sector development, real effective exchange rate, and sugarcane production, have significant long run effects on the competitiveness of Malawi sugar. This vindicates the finding that there is co-integration among the variables as presented in Table 8 above since three variables have been found to be significant after the normalization process.

The results obtained after the process of normalization indicate that financial development is a single most important factor influencing competitiveness of Malawi sugar in the long run with a unit increase resulting into a decrease of about 7.42%. However, this empirical finding differs from its expected positive relationship. This result can be explained by empirical findings by Samba and Yan (2009) who finds that financial development leads to growth in competitiveness of the financially intensive goods. Susanto *et al.* (2011) also (in their investigation of the effect of financial development on trade of both agricultural and manufactured products) showed a positive impact of financial development on trade of manufacturing sector which enjoys a greater impact than the agricultural sector. Theoretically, in

the event of financial development as a production factor, the Factor Price Equalization Theorem would predict greater increased competitiveness of financially intensive products and a decrease in competitiveness of less financially intensive products. Sugar, being an agricultural product, would therefore be expected to experience reduced competitiveness as a result of financial development.

A unit increase in real effective exchange rate leads to about 5.27% increase in competitiveness of Malawi sugar. Increase in the exchange rate means a depreciation of the local currency which results into reduced price of exports. This phenomenon eventually leads to increased competitiveness.

CHAPTER SIX

CONCLUSION

6.0 Introduction

This chapter presents a summary of the outcome of the Estimation Results and Discussions chapter. It then presents policy implications and finally it discusses areas of further research.

6.1 Summary

The broad objective of the study was to examine the relationship between financial sector development and the competitiveness of Malawi sugar. The study aimed at looking at two specific objectives. The first was to empirically establish whether there exists a stable long-run relationship between competitiveness of Malawi sugar and financial sector development (in the presence of control variables). The second was to assess whether financial development leads to growth in the competitiveness of sugar. In order to achieve this, the study applied the ARDL-bounds testing approach to cointegration proposed by Pesaran *et al.* (2001). Taking cognizance of the fact that sugar in Malawi is produced from sugarcane alone, the study included a sugarcane production variable. The real effective exchange rate and terms of trade variables were included on the basis of their strong theoretical formulations in international trade theories.

The ARDL model revealed that there is an equilibrium long-run relationship between the competitiveness of Malawi sugar and its determinants as modeled in the study. Through the process of normalization, it was discovered that in the short run, the competitiveness of sugar

was sensitive to the financial sector development and real effective exchange rate, while in the long-run, it was sensitive to the financial sector development, real effective exchange rate and sugarcane production. However, this equilibrium long-run relationship between financial development and competitiveness of Malawi sugar was found to be non-positive with a unit increase in the former resulting into a decrease of about 7.42% in the later. This result implies that financial development has not boosted the competitiveness of Malawi sugar. This finding is not consistent with the hypothesis that financial development has no significant long-run impact on the international trade competitiveness of sugar.

6.2 Policy Recommendations

The findings of this study suggest that financial development in Malawi was negatively affecting the competitiveness of sugar in the long-run. As established in the study, the normalized financial development elasticity was found to be non-positive. These results suggest that besides financial liberalization, there is need for policy to focus on other financially intensive trades with the aim of maximizing the positive effects that come along with financial development. Policy on financial development is also supposed to encompass the trade in Sugar as this is one of Malawi's three core sub-sectors in terms of revenue, GDP, employment and forex earnings as out MGDS II. On the other hand, the long-run statistical significance of sugarcane production entails that efforts to increase its production may be effective in increasing the competitiveness of Malawi sugar.

6.3 Limitations of the Study

A major limitation of the study was the lack of data on credit extended to the sugar sector for the period under study. This resulted into the study utilizing an aggregated form of financial sector development index. It may be possible that the results reported in this study are a construct of aggregation bias, implying that a study that utilizes specific credit data to the sugar industry might yield different results.

6.4 Areas of Further Study

In as much as this study has revealed important findings, there is still more that needs to be explored in future studies. This includes consideration of using sector specific data on credit extended in order to ascertain the impact this factor has on specific sectors. Another area that future studies may explore is the specific channel through which financial development impacts on trade competitiveness, for instance, increase in productivity and efficiency resulting from technological advancement.

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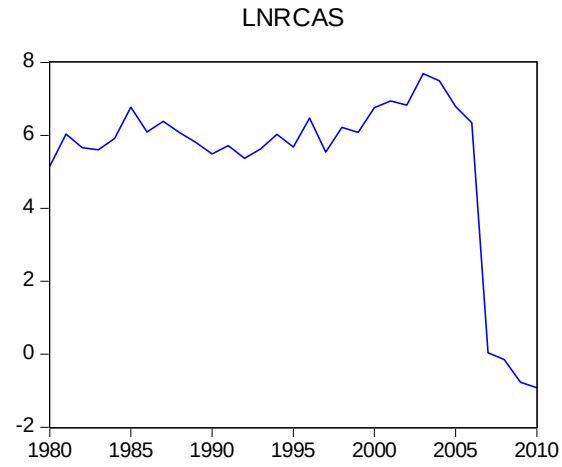
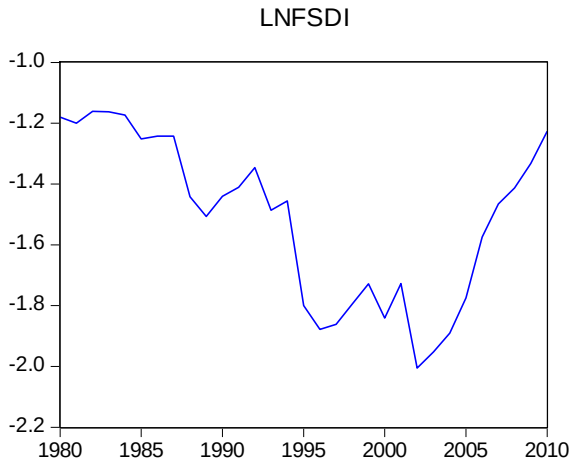
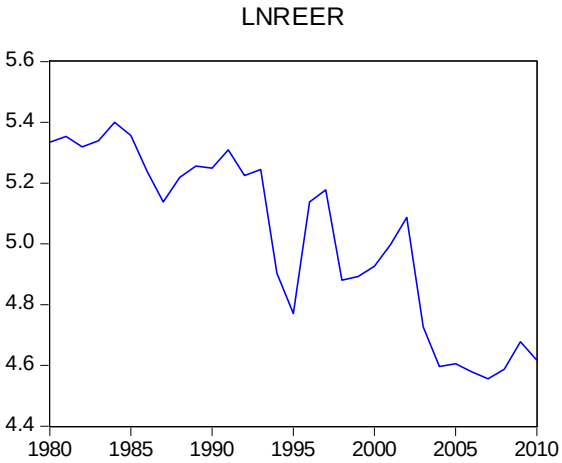
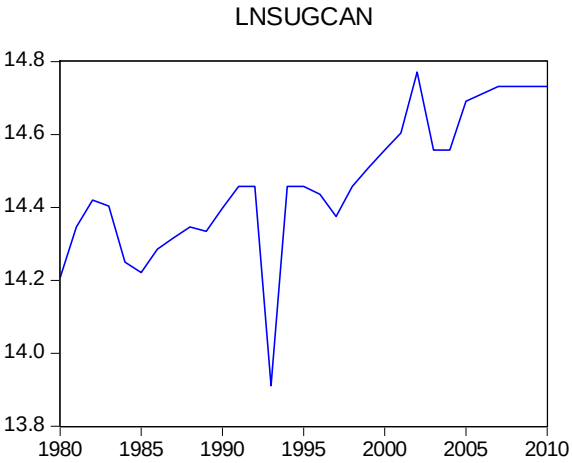
APPENDICES

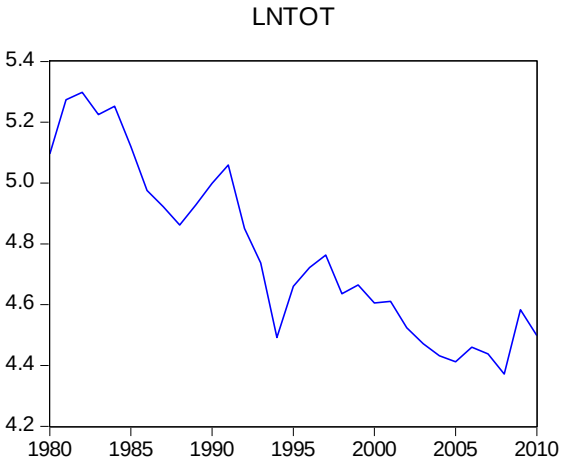
APPENDIX 1: GRAPHS OF VARIABLES USED IN THE STUDY











APPENDIX 2: EINGEN VALUES FOR PRINCIPAL COMPONENT ANALYSIS

Eigenvalues: (Sum = 3, Average = 1)

Number	Value	Difference	Proportion	Cumulative Value	Cumulative Proportion
1	2.025147	1.149222	0.6750	2.025147	0.6750
2	0.875925	0.776997	0.2920	2.901072	0.9670
3	0.098928	---	0.0330	3.000000	1.0000

Eigenvectors (loadings):

Variable	PC 1	PC 2	PC 3
DEPLIGDP	0.680283	0.111421	0.724431
PVTSECCRGDP	0.632219	0.410857	-0.656883
PVTSECCRTDOMCRE	-0.370828	0.904866	0.209057

Ordinary correlations:

	DEPLIGDP	PVTSECCRGDP	PVTSECCRTDOMCRE
DEPLIGDP	1.000000		
PVTSECCRGDP	0.864013	1.000000	
PVTSECCRTDOMCRE	-0.407586	-0.162727	1.000000