

**THE IMPACT OF INSTITUTIONAL REFORMS ON STOCK
PERFORMANCE ON THE MALAWI STOCK EXCHANGE: LESSONS
FROM PRIVATIZATION PROGRAMS**

MASTER OF ARTS (ECONOMICS) THESIS

By

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DECLARATION

I, the undersigned, declare that this thesis is my own work and that it has never been submitted for an academic award before. Acknowledgements have been made where work of other people have been used. All errors found in this thesis are therefore mine.

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CERTIFICATE OF APPROVAL

The undersigned certify that this thesis represents the student's own work and, acknowledgements have been made where it has been indebted to the work of other scholars and or people. We also declare that this thesis has been submitted with our approval.

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DEDICATION

I hereby dedicate this thesis to my late parents for they are still my pride!

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ABSTRACT

This study was undertaken to assess the impact of institutional reforms and subsequent privatization in the development of Malawi Stock Exchange (MSE) and stock performance. The study split the MSE listings into privatization and normal categories. It thereafter reviews the development of the MSE by the number of listings, growth in market capitalization and stock performance since inception. The empirical findings show conclusive evidences that reforms helped to increase the number of listings and growth in market capitalizations. However, there were mixed outcomes in the analysis of stock performances using Capital Asset Pricing Model (CAPM). The initial CAPM analysis shows that normal listings are more risky than privatization counterparty though this outcome seems to be influenced by FMB beta which is an outlier in the normal listings category. With the control placed on FMB and then banking sector peers, the results are reversed with normal listings being less risky than privatization listed stocks. This finding tends to conclude that normally listed stocks are better stocks than privatized listed stocks in terms of risk profile. However, there is supporting evidence under the market indices that the privatized stocks give better than the counterparty on the MSE.

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LIST OF ACRONYMS AND ABBREVIATIONS

ASEA	African Stock Exchange Association
BHL	Blantyre Hotels Limited
CMDA	Capital Market Development Act,1990
DSI	Domestic Share Index
FMB	First Merchant Bank
ILV	Illovo Sugar Malawi Limited
IMF	International Monetary Fund
IPOs	Initial Public Offerings
LSE	London Stock Exchange
MASI	Malawi All Share Index
MPICO	Malawi Property Investment Company
MSE	Malawi Stock Exchange
NBM	National Bank of Malawi
NBS	NBS Bank Malawi Limited
NICO	NICO Holdings Limited
NITL	National Investment Trust Limited
OML	Old Mutual Plc
PC	Privatization Commission
PCL	Press Corporation Limited
PWHC	PriceWaterHouseCoopers
RBM	Reserve Bank of Malawi
REAL	Real Insurance Company of Malawi
SAP	Structural Adjustment Programs

SBM	Standard Bank Malawi Limited
SOEs	State Owned Enterprises
SUNBIRD	Sunbird Tourism Limited
TNM	Telekom Networks Malawi
WB	World Bank
WFE	World Federation of Exchanges

CHAPTER ONE

THESIS OVERVIEW

1.0 Introduction

This chapter provides a brief description of the study. It starts with the background of reforms in Malawi and then proceeds by giving the statement of the problem, objectives and the hypotheses of the study, the significance of the research study and then closing with the organisation of the study.

1.1 Background

Prior to the late 1980s, international donors and governments in developing countries held the notion that entrepreneurial functions could be served better by the state through state ownership of the means of production, control and authority of resources, taxation, licensing and regulation. The individual entrepreneurs were perceived to be few and with limited financial ability while local subsidiaries of multinational corporations formed a large part of the local private sector. However, poor performance of the public sector, resources misallocation, market distortions and negative economic growth influenced a review of the state led development strategy (Kibuthu, 2005). It therefore came as no surprise that between 1990 and 2005, liberalization and privatization became the dominant themes in development strategies in Africa.

There were changing attitudes in favour of the private sector to lead the development of economies. This rethink in approach facilitated financial reforms and the development of the capital markets in Africa. Consequently, most countries in Africa set up stock exchanges in the 1990s as part of preconditions for the divestiture of State Owned Enterprises (SOEs) and the introduction of market orientated economies as propagated by international financial institutions. The overarching objective was to facilitate the privatization of SOEs. Currently, there are twenty four stock exchanges in Africa and eleven of which began operations in the 1990s including the Malawi Stock Exchange (MSE). (African Stock Exchange Association, (ASEA), 2014). The dominant impetus for the recent creation of stock exchanges has been the privatisation programs of public enterprises that have swept across African continent.

Privatisation offerings attract a variety of investors; including domestic and foreign investors, individuals and institutions, employee share ownership plans (ESOPs), and collective investment schemes such as unit trusts and mutual funds. None of such investors would be attracted to an offering without some assurance that there is a secondary market in which to dispose off of their shareholdings at a later date in order to cash in on capital appreciation or for just portfolio rebalancing through investment switch strategies. Thus tradability and liquidity of the individual stocks becomes a requisite element of participation in equity investments.

The equity holders have to have an entry and exit mechanism for their investment which is usually through an established secondary marketplace. The stock exchanges therefore provide the resale marketplace, commonly known as a secondary market. (ASEA, 2010).

Market developments in Malawi mirrored those that occurred across the African continent. In the year 1990, Malawi enacted the Capital Market Development Act (CMDA), 1990 with the objective of establishing a secondary market, the MSE. The initial rationale was to allow government to offload its shareholdings either part or whole in SOEs to the public.

The CMDA, 1990 also stipulated the regulatory framework through which to develop, transact and deepen the capital market in Malawi. In pursuit of this objective, the government of Malawi enacted the Privatization Act (PA) in 1994. The Act provides the legal guidelines and mandate to setup the Privatization Commission (PC), a legal entity whose sole authority is to facilitate privatization of SOEs in Malawi.

During the initial five years of its implementation, the privatization program transacted some fifty eight state owned enterprises (SOEs) of the hundred companies that were targeted and sixty five companies were concluded as of March, 2007. Of the sixty five privatised SOEs, nine of SOEs were listed on the MSE as of November 07 which are as shown in Table 1 below. (PWHC, 2007).

Table 1: MSE listigs by category types and their inception date

#	Name of company	MSE code	Inception	Listing type
1	Blantyre Hotels Ltd	BHL	25-Mar-97	Normal
2	First Merchant Bank	FMB	19-Jun-06	Normal
3	Malawi Property Investment	MPICO	12-Nov-07	Normal
4	Real Insurance Company	REAL	29-Sep-08	Normal
1	Sunbird Hotels & Resorts	SUNBIRD	8-Dec-02	Privatization
2	Illovo Sugar Malawi	ILV	10-Nov-97	Privatisation
3	National Bank of Malawi	NBM	21-Aug-00	Privatisation
4	NBS Bank Malawi Limited	NBS	27-Jun-07	Privatisation
5	NICO Holdings Limited	NICO	11-Nov-96	Privatisation
6	National Investment Trust	NITL	21-Mar-05	Privatisation
7	Press Corporation Limited	PCL	9-Nov-07	Privatisation
8	Standard Bank Malawi	SBM	29-Jun-98	Privatisation
9	Telekom Network Malawi	TNM	3-Nov-08	Privatisation
1	Old Mutual PLC*	OML	12-Jul-99	Normal/Foreign

Source: PWHC, 2007 and www.mse.co.mw

A note on privatization listings on the MSE:

All stocks that were listed through privatization were highly successful during their Initial Public Offerings (IPOs) as shown by subscription rates in Table 2 below. The counters were highly popular amongst investors who showed confidence in the newly privatized SOEs.

However, Sunbird was listed by Malawi Development Corporation (MDC) as quasi government entity which was a principal shareholder at the time of its listing. The rest of the SOEs were executed by the Privatization Commission on behalf of the Government of Malawi. (PWHC, 2005).

Table 2: Subscription rates for the privatization listings on MSE

Item #	Name of Privatized SOE	Subscription rate
1	National Bank of Malawi	337%
2	Press Corporation Limited	150%
3	National Investment Trust	>100%
4	NICO Holdings Limited	140%
5	NBS Bank	189%
6	Standard Bank	170%
7	Sunbird Tourism	70%
8	Illovo Sugar Malawi	216%
9	Malawi Property Investment Company	167%

Source: (PWHC, Malawi Privatization Commission; Privatization Impact Assessment Study, Final Report, Volume 1, March 2007)

1.2 Statement of the problem

The thesis wishes to acknowledge that many studies have been conducted on privatization in Malawi. One of the earliest studies was conducted by Kaluwa, 2001 which probed the impact of privatization programs. While the research revealed some significant effects of the program but its major shortfall was that it was conducted within the short time ist inception. Another study was sanctioned by Kanyoma, 2006 which tried to assess the financial performance and operating efficiencies of the privatized banks in Malawi.

The results of the study revealed that there were significant evidence that there are increased profitability, efficiencies and product innovations amongst banks after privatization. It also revealed that the sector attracted new investments and entrants after privatization. And the last to mention is a study by Mwala, 2006 which analysed the “Net financial benefits of the privatization program to the Government of Malawi”. The research findings concluded that government and the citizenry were net gainers from privatization programs. It further revealed that there were reduced subventions by government to previously distressed but now privatised SOEs, hence the fescues improved. Besides, there were improved exports revenue through increased productivity of sugar by Illovo Sugar Malawi where excess were exported. There were improved tax revenue not only from increased corporate profitability but also from “pay as you earn” due to increased outputs and employment of previously SOEs.

However, there have been no studies with special attention on the impact of institutions reforms and subsequent privatization of SOEs in the development of the MSE and stock performance. It is with this absence in focus that this study topic was chosen so that Malawians, policy makers, scholars and academicians understand the role of institutional reforms to the development of the MSE and stock performance.

The approach of the study will therefore draw comparisons between stocks listed through privatization program and those through normal listings by the private owners. In other words, the study wishes to ascertain how the two types of listings have grown in total number of listings, market capitalization and individual performances on the Malawi Stock Exchange.

1.3 Research Objective

The overall objective of the study is to analyse the impacts of institutional reforms and privatization in the development and performance of the MSE: Lessons learnt from privatization of SOEs.

1.3.1 Specific objective

More specifically, the study seeks to achieve the following:

- a) Analyse the impact of privatization in the development of the MSE:
Number of listings on MSE by privatization versus normal listings;
- b) Analyse growth in market capitalization and index between firms floated through the privatization program and normal listings;
- c) Analyze difference in stock performance between listings by the privatization program and under normal listings by private owners;

1.3.2 Research hypotheses

The following are testable null hypotheses:

- a) Reforms have had no impact in the development of the MSE.
- b) Market capitalization and index have shown no growth since inception
- c) No difference in stock performance between privatized and normal listings

1.4 Significance of study

This research will contribute to the literature of study on the role that privatizations have played in the development and performance of the MSE. It will give a comparative analysis between listings under the privatization initiatives and normal executions by private owners. Intuitively, it will provide us with an understanding and knowledge on the impacts that reforms have played on the MSE by using the controlled case of the privatization initiated listings and those of normal listings by private owners.

A well functioning MSE can be used as a channel for local and foreign investments alike which may in turn propel the growth of the local economy. It usually acts as an indicator of the financial health of the economy, well balanced and attractive to investors. One of the main objectives of institution reforms in Malawi was to transfer ownership and financially promote welfare of Malawians and promote broader participation in the economy by allowing the citizenry to acquire stakes in previously SOEs.

The financial welfare and livelihood of the population can only be achieved if the privatized MSE listed companies have had a growth in the market value which will imply that Malawians have benefited and improved financially. The principal rationale is such that if the person was to sell a stock such as NICO which was bought at the inception in 1996, the individual should earn more than what was actually paid for,

then. This implies that the MSE stock has recorded capital growth as the market capitalization of that stock is more, now. By definition, market capitalization is equal to share price multiplied by shares in issue. (Ingram,2009)

Stock market investments can provide profitable opportunities for both traders and investors whether experienced and beginners. Any profit made on stock investments is desirable, but knowing how to evaluate the performance of stock investments can help you to ascertain which investment performance stands above the rest (Ingram, 2009)

To show the importance of this study, other stakeholders in the economy have also taken the initiative to educate the general public about the MSE. From the Financial Review Report of the RBM, it is stated that the consumer financial education initiatives being implemented by the RBM and other stakeholders may be one of the critical tools that will help demystify the stock market information and give investors the right information and technical guidance to make informed decisions.

In addition, it is imperative to speed up the establishment of the stabilization fund as it will go a long way in building investors' confidence in the capital market. Further, the removal of the capital gains tax on stocks should make investments on the exchange more lucrative than elsewhere.

On other note, the problem of an illiquid market will only be resolved by the increase of investment opportunities on the market (Financial Stability Report, June 2012). This is to show that, there is need to educate the general public in Malawi on the MSE, the performance of the listed companies, to give light to prospect investors on what the reforms have done to the development and performance of MSE.

1.5 Organization of the Study

As indicated from the introduction above, the remainder of the Thesis is organised as follows: Chapter Two provides the background of privatizations in Malawi and then the establishment of the MSE. Chapter Three gives theoretical and empirical literature and research review in line with the study objectives. Chapter Four describes the research methodologies and other applicable techniques of analysis. These include the analysis of data to assess the development of the MSE and its growth in market capitalization and indices and the employment of the Capital Asset Pricing Model (CAPM) in the analysis of stock performances on the MSE. The Chapter will examine the sources and appropriateness of the data, collection and analytical methodologies. . Thereafter, Chapter Five will provide a detailed review of the findings of the study. The study conclusion shall be under Chapter Six where a review of the findings implications and the policy recommendations shall be considered.

CHAPTER TWO

BACKGROUND TO INSTITUTIONAL REFORMS

2.0 Introduction

The structural adjustment programs (SAPs) were introduced in the early 1980s in Malawi by the International Monetary Fund (IMF) and World Bank (WB) in order to facilitate reforms in the financial, agricultural and other institutional structures of the economy. As part of the implementation processes, Malawi initiated the transfer of ownership in part or whole and or directly or indirectly of the SOEs to Malawians. For the orderly execution of these institutional reforms, Malawi set up the privatization commission in 1996 to facilitate and execute reform programs (Kaluwa, 2001)

Malawi enacted the Privatization Act, 1996 through the National Assembly to set up the Privatization Commission to spearhead reform programs of SOEs. The PC had the sole mandate and authority in Malawi to implement the privatization program by way of disposal or transfer in part or whole and or indirect or direct of the SOEs. This function includes planning and managing the implementation procedures, and controlling actual execution of the disposal or transfer of the public enterprises in Malawi. It is also the duty of the Privatization Commission to report to National Assembly of the details of the sale of each public entity.

As already eluded to above, privatisation became a common trend in African countries around 1980s to 1990s as part of the SAPs which were initiated and funded by the WB and IMF. The SAPs were meant to “assist” countries that were going through some economic hardship. In their primary initiatives, the WB and IMF offered soft loans to these countries, and then these countries were compiled to implement neoliberal institutional and economic policy reforms through the privatization programs. (PriceWaterHouseCoopers, Malawi Privatization Commission; Privatization Impact Assessment Study, Final Report, Volume 1, March 2007).

2.1 Privatization program in Malawi

The Malawi’s privatization program started in 1996. The program had initially faced significant challenges, but overall it has had credible successes. One of the early criticisms that were directed at the Privatization Commission was that there was initially too little information dissemination concerning the impact of the programs and its performance against the objectives set out in the Privatization Act; (PriceWaterHouseCoopers, Malawi Privatization Commission, Privatization Impact Assessment Study, Final Report, Volume 1, March 2007).

2.1.1 The legal framework of Privatization

The Privatisation Act, 1996 sets out the legal framework for the privatization program and its implementing authority, the privatization commission (PC). It defines the role of the PC as a body established under the Act of Parliament with the sole authority to implement the privatization of enterprises and assets which were originally owned directly or indirectly, partly or wholly, by the Government of Malawi. It also specifies the methods and procedures of implementation for privatization and commercialisation.

According to the Malawi Privatization Policy and Privatization Act, 1996, the principal objectives under the mandate of the PC are as follows:

- To foster increased efficiency in the economy;
- To increase competition and reduce monopoly;
- To promote participation by the Malawi public in enterprises; and
- To raising revenue for government.

In fulfilling these mandated objectives, the Government of Malawi was expected to create an economic environment conducive for the private sector participation and thereby lead in economic development of the country. It was further expected that such an environment will also free up financial resources and relocate the same to other areas of need or to the general public for investments in infrastructure and social program (Magalasi, 2008).

2.2 The Malawi Stock Exchange (MSE)

The MSE has been in existence since 1994 but started equity trading activities in November, 1996 when it first listed NICO Holdings Limited (NICO). Prior to its first listing, the major activity at the MSE was the facilitation of secondary trading in government bonds which included Treasury Bills (TB), Treasury Notes (TN) and Local Registered Stocks (LRSs). (www.mse.co.mw).

The MSE is a registered and incorporated company under the Companies Act, 1984. Initially, it was authorised and regulated to operate as a Stock Exchange in Malawi under the CMDA, 1990 which has since been replaced by the Securities Act, 2010. The study noted that the establishment of the MSE was one of the prerequisites of the SAPs by the WB and IMF in Malawi in order to facilitate financial and economic reforms that would bring about efficiency. The primary purpose of the MSE was to offer a channel of disposal and transfer of SOEs shares to Malawians by the PC.

This led to the opening up of the financial market to the general public. Malawians were now able to have the opportunity to buy shares and thereby own a stake in previously state owned companies. They are able to acquire ownership in the privatized SOEs. As shown in Table 1 above, the MSE listed nine companies from the privatization program as of November 2007 in which many Malawians acquired stakes and are now proud stakeholders. The principal objective of the MSE is to run a

Stock Exchange in Malawi with due regard to the public interest and to maintain a fair and efficient dealing in securities for the protection of investors and to regulate the affairs of its members. (www.mse.co.mw).

2.2.1 The legal framework of the Malawi Stock Exchange

The MSE was set up to serve a critical role of offering an alternative avenue of raising new capital for companies for growth and also provide a link between capital borrowers for their businesses and lenders who are seeking profitable investment.

The Exchange was also established as a vessel through which the government would successfully transfer companies or assets of SOEs into broader Malawian hands. (PriceWaterHouseCoopers, Malawi Privatization Commission; Privatization Impact Assessment Study, Final Report, Volume 1, March 2007)

In the Act, the MSE would pursue the following objectives: Promoting development of the capital markets; Promoting just and equitable principles of securities trading; Preventing fraudulent and manipulative acts and practices by securities issuers, brokers, dealers, market makers, underwriters, and all participants in the market; Preventing and/or removing impediments to, and promote a free and open market; and protecting both investors and public interest in the market. (PHWC, Malawi Privatization Commission; Privatization Impact Assessment Study, Final Report, Volume 1, March 2007).

2.3 Stock Exchange Market Capitalization

Market capitalization (Market Cap) is defined as a measurement of the economic size which is equal to the individual stock's market price times the number of shares outstanding of a public company, providing a total value for the company's shares and thus for the company as a whole at a specific date. Market capitalization represents the public opinion of a company's net worth and is a determining factor in stock valuation. (Note: market capitalization is an estimate of a company's value, based on perceived future prospects and economic conditions). (Wikipedia Online Dictionary, 2015)

2.3.1 MSE market capitalization of normal versus privatization listings

Normal listing is a type of listing by private owners who hold 100% shareholding of the company and the company has no government link. The first of these companies to list on the MSE was Blantyre Hotels Limited (BHL) on March 25, 1997. Since then four similar firms have listed on MSE. On the other hand, privatization listing is a type of listing of state owned companies by the government via the privatization. The first SOE to list on the MSE was NICO on 11th Nov 1996. Since 1996, eight similar firms have listed on the MSE.

Finally, foreign listing is a type of listing of privately owned company on the MSE with primary listing on a foreign stock exchange. The stock price is hardly affected by local economy. One such example on the MSE is Old Mutual Plc whose primary listing is on the London Stock Exchange.

Table 3: Annual MSE market capitalization by the listings types

#	Year	Normal cap	Privatized	Foreign cap	MSE Total	Index
1	1996	-	2,347	-	2,347	0%
2	1997	187	4,369	-	4,556	94%
3	1998	297	8,956	-	9,253	103%
4	1999	565	9,370	538,599	548,534	5828%
5	2000	565	11,712	832,380	844,657	54%
6	2001	568	12,194	734,453	747,215	-12%
7	2002	1,059	11,341	499,428	511,828	-32%
8	2003	831	8,778	734,453	744,062	45%
9	2004	1,001	20,261	930,307	951,569	28%
10	2005	949	28,006	1,395,461	1,424,416	50%
11	2006	11,316	71,275	2,031,988	2,114,579	48%
12	2007	27,540	151,696	2,031,988	2,211,224	5%
13	2008	35,463	216,227	2,031,988	2,283,678	3%
14	2009	30,048	186,637	1,224,089	1,440,774	-37%
15	2010	22,153	184,683	1,370,979	1,577,815	10%
16	2011	22,836	201,294	2,031,988	2,256,118	43%
17	2012	19,680	224,800	3,329,522	3,574,002	58%
18	2013	40,456	480,431	6,659,045	7,179,932	101%
19	2014	52,616	579,125	6,869,197	7,500,938	4%

Source: PWHC, 2007 and MSE Annual Report, 2014

Table 3 above shows the development of the MSE by market capitalization per listings categories and performance as measured by changes in market indices for the whole market on an annual basis. The index is determined by annual index changes as calculated by the opening and closing market cap of all the listed companies from inception to December 2014.

By measurement, the market capitalization for the normal listings has grown from MK187m in 1997 for the first listing of its type to MK52,616m as of December 2014. While the market cap for the privatization listings have grown exceptionally well from MK2,347m for the first listing of its type in 1996 to MK579,125m as of December 2014. Similarly, the normally listed but foreign stock has shown the highest market capitalization growth from MK538,599m in 1999 to MK6,869,197m as of December 2014. (MSE Annual Report, 2014)

2.4 Summary

This chapter has reflected on the background of institutional reforms which were initiated by the WB and IMF. It further gives a background on the establishment of the privatization commission under the privatization act whose mandate was to facilitate the privatization programs of SOEs in Malawi. It has also provided the study with the development of the MSE in terms of market cap based on the three listings categories though the focus is only on two of them namely, privatization listings of SOEs and normal listings by private owners while ignoring the normally listed that is also a foreign counter due to its dominance effects to the sample of study.

CHAPTER THREE

LITERATURE REVIEW

3.0 Introduction

This Chapter provides both the theoretical and empirical reviews on the impact of institutional reforms to the development of the MSE and stock performance. It aims at drawing theoretical lessons on the topic and then assesses the empirical evidence on similar studies. It will initially review the theoretical literature from the various sources before concluding the chapter with the empirical reviews from other scholars on the same or similar studies.

3.1 Theoretical literature review

There are several theoretical models that are used to evaluate stock performance and the market as a whole. Many times, investors would review the financial fundamentals through technical models in order to establish the intrinsic value of the stock. This could be from the balance sheets or comprehensive income statement basis or valuation of trend analysis on balance sheet, cash flows or comprehensive income statements over time. Besides, these valuations could be on a historical or forward looking basis so long as the investors get insights into the potential value and performance of a stock before an investment decision is made.

While the study applies the CAPM to establish the performance of individual stocks and listing portfolio categories as shall be discussed further below, herein under are the brief reviews of some of the methodologies that would also accomplish the examination of the study's specific objectives:

a) Earnings per share (EPS)

This technique serves as a measure of how much of company's net income can be attributed to each outstanding ordinary share of the company. The higher the EPS, the more efficient and profitable the company is in the eyes of shareholders and potential investors. Investors watch changes in EPS closely and respond quickly on either way. If the stock's EPS is significantly higher than its stock price, then the company is considered a solid investment with upside potential for further capital appreciation and income growth. The EPS as investment indicator could be evaluated on a historical or expectation basis provided the requisite company's information such as financial forecasts is made available (Ingram, 2009).

Related to the EPS is the price / earnings ratio ($P/E(x)$) which is the ratio of the stock market price divided by the earnings per share. For an investment decision, it is always used relative to P/E ratio of the stock's peers or market averages. The thumb rule is that the lower $P/E(x)$ the better the stock as it implies that investors pay less per unit of earnings.

The stock has huge upside potential once all investors demand for it. The excess demand will eventually push the stock price upwards thereby giving a higher return by capital appreciation (Ingram, 2009).

b) The dividend growth model (Gordon's model)

Under this valuation model, one would calculate the dividend payout ratio to gain insight into a stock's future plan. The dividend payout ratio would compare dividend per share to earnings per share so that you assess the retention rate. The higher the payout ratio, the more money the company currently distributes to its shareholders than investing for future expansion thereby denying potential growth in profitability. It is assumed that companies with lower payout ratios shall experience higher growth and investment returns in dividend income and capital appreciation. Investors will target such entities as growth companies and bid its stock prices upwards in anticipation of higher future earnings and incomes. We could therefore employ this technique to predict investment returns for privatization and normal listed stocks on the MSE, (Gordon, 1962)

c) Stock charts

Globally, investors use stock charting tools to get a glance at a stock's performance over any period of time. Investors use technical indicators, such as 20- and 50-day moving averages, to predict price shifts in the near future. Charts can give insights into a stock's daily trading volume in addition to showing a history of its market prices.

Stocks with long trends of gradual price increases can be better suited to long – term investments, while those with quick, dramatic fluctuations can be better plays for day trading, (Ingram, 2009).

d) Stock market capitalization:

Most investors would assess the performance of the stock exchange by the trend analysis of its market capitalization. A stock exchange with high volatility in market capitalization shows that the majority of its trading stocks run on very volatile daily prices, a trend that describes either the phase of the stock exchange or the age and size of the listed companies. Besides, market capitalization would intuitively demonstrate the growth and development of the individual stock exchange. For instance, an upward trend analysis in market capitalizations may imply that there has been steady growth in capitalization value either by upward price movements or additional share issues. It could also mean that there have gradual increases in the number of new listings on the stock exchange over time.

e) Exchange index

Market index is the metric that tracks the change in performance of a group of stocks / shares. (Investopedia Online Dictionary, 2015). The exchange index is used to assess the attractiveness for entry into a new stock exchange. It is globally acknowledged by investors that an exchange with an upward index trend is a show of constant growth in capital value of investors while the opposite speaks of declining

attractiveness of the stocks in such a market. It may mean unfriendly economic environment or legal frameworks that scare investors away. In other words, stock index with steady growth is good for investors.

f) Capital Asset Pricing Model (CAPM)

The performance of a listed company could be determined by applying the CAPM where the cost of capital is the implied required rate of return by its capital providers. In other words, the cost of capital is assumed as the expected return demanded by the investors. However, the actual return is affected by each company's specific risk profile and stock volatility over time (Sharpe, 1964). Same is true; the aggregate return of the various stocks in a portfolio is affected by the net effect of individual stock's risk profiles that make up the portfolio.

To this end, the model is centred on the following assumptions:

All investors will have same access to market information

The risk free rate of return (R_f) is the benchmark for all investors

Any deviation from R_f is explained by stock volatility or its beta

From the forgoing, the basic CAPM is formulated as follows:

$C = R_f + \beta (R_m - R_f)$ where:

C = required rate of return by investors

R_f = risk free rate of return

R_m = assumed market portfolio
 β = beta coefficient of individual stock
 $R_m - R_f$ = expected risk premium over risk free rate

From the above model, the variables relate as follows:

Company beta can be viewed as a standardised measure of systematic risk. In this study analysis, it is assumed as the explanatory variable that relates to the volatility of each individual stock under investigation. It measures the volatility of the stock or the movements in the price of individual stocks over time. For instance, the output of the economy as a whole is assumed to have a beta of 1. Therefore, if the β of an asset is equal to 1, then it implies a unitary change in economic output will have similar effect on the stock's return over a similar period. If the beta of an asset is above 1, then the asset has higher normalised systematic risk than the economy which means that the asset is more volatile than the overall economy portfolio. The vice versa is true for an asset with a beta of less than 1. In summary, the beta of plus or minus 1 implies that any unitary change in economic activity will have a much higher plus or minus effects on the company's return, respectively. For instance, if the company's $\beta = 1.5$ it means that any unitary change in the economy will have an effect of more than 1.5 on the performance of the individual company and the visa verse, (Markowitz, 1952; Sharpe, 1964)

3.1.1 Some theories about privatization

There are several theories but the highly competing ones that provide perhaps an adequate rationale as to why privatized SOEs would perform better than public enterprises in terms of efficiency, profitability, productivity and sales resulting from the productivity and economic efficiencies and these include:

a) The property rights theory

The property right theory centres on differences in performance of public and private enterprises. It looks at the individual incentives and motivations that are created by property rights as to how each individual utilizes the scarce resources at disposal. The theory defines the property rights in the form of a right of ownership which comprises several rights such as the right to use the asset, to change its form or substance and transfer all or part of these accruing rights. As far as the state controls these rights, then they become attenuated with the emphasis of the theory being to whom are those property rights are assigned and attenuated (Starr, 1988). The asset then belongs to the whole citizenry of the country. However, the theory attests that in the case of private ownership, the rights are concentrated into the hands of private owners while under the public ownership; the rights are diffused and diluted amongst the citizenry. As a result, the cost and rewards under public ownership don't accrue to individuals directly or each citizen **as per se** whereas under private ownership, the individual owners receive the rewards directly (Starr, 1988).

Therefore, the property right theory postulates that there shall be marked difference in performance between the two set of enterprises due to their differences in their shareholders' structures.

The public ownership makes it difficult to measure and monitor the performance conduct of the SOE managers while there are adequate control and evaluation mechanisms for managers under the private ownership. In the end, the theory concludes that privatized SOEs are likely to perform better after privatization than before. Owing to the advantages from the reform programs, companies listed under privatization are expected to compete favourably with those under normal listings on the MSE. They are likely to attract higher demand and investment returns are likely to have upward potential. And this assumption is what this study wishes to investigate if the privatized listed stocks offer higher returns than normal listed stocks.

b) The public choice theory

Proponents of the public choice theory hold the views that government departments pursue objectives that do not maximize profits but usually goals such as maximizing social welfare, political votes, high employment amongst the citizenry and investment. Boycko et al. 1996 proposes a model of privatization within the framework of public choice theory. The model states that privatization will lead to effective restructuring of SOEs that are currently producing at inefficient output levels to maximize employment, only if both cash flow and control

rights pass on from public into private managers. This would make it difficult for the state to bribe managers to produce at inefficient levels by offering them operating subsidies.

Therefore, the cutting off of the 'soft budget constraint' is vital to improving performance. The theory envisages that high profitability and outputs would show up in company earnings and stock prices if SOEs are privatized and that ownership is transferred into the hands of private managers who will have nothing to do with the soft budget constraints of the government.

In the finale, the theory also asserts that stocks of privatized SOEs will perform better than before on the MSE as their prices shall be driven up by the efficiencies emanating from profitability orientation of their private managers after privatization (Boycko et al. (1996). It is therefore assumed that privatised SOEs listed on the MSE would compete favourably on the MSE against normally listed by their private owners. The rationale of the assumption is due to operating efficiencies accruing to privatized SOEs after privatization; hence this investigative research to look into the performance of stocks listed on the MSE through privatization and normal IPO.

c) The principal – agency theory

This theory is focused on the incentives and evaluation mechanism of managers from both the public and private enterprises. It assumes that the main objective of the SOEs is to maximise social welfare of the citizenry by the government. The assumption is that governments across the world run SOEs in order to maximise social welfare and not necessarily to achieve efficiencies and profitability. On the other hand, private ownership runs enterprises as investors with the two edged overarching objectives of cost minimization and then profit maximization.

The issue of social welfare and maximum of employment of the citizenry are only secondary goals by the private managers after privatization. According to Shirley and Walsh (2000) most arguments on principal agent problems within a hierarchy are drawn heavily from Alchian (1965). Alchian argues that the key difference is the ability of the owners of the enterprises to assess and monitor their managers. While ownership is concentrated under private ownership and that shareholders can track the performances of their individual managers, the opposition is true for public ownership. In the SOEs, ownership is widely scattered as all the citizenry are deemed as shareholders (Shirley and Walsh, 2000).

It becomes clear therefore that owners of SOEs not only have no control and incentive to monitor managers but even if there were such

incentives, they would ride freely without any recourse on any evaluation efforts and mechanisms.

On the contrary, owners of private enterprises have direct incentives and control in the operation of their enterprises with twin – tying objectives of containment of costs while driving all efforts at the maximization of economic benefits through the employment of highly efficient and profitable operational mechanisms. It is therefore the expectation of the proponents of privatization of SOEs that all public enterprises that are privatised will operate efficiently and profitably (Shirley and Walsh, 2000) and that there shall be no difference in stock performance against those listed on the MSE normally by private owners. An assumption that this study wishes to investigate and evaluate its findings in line with the study objectives as stated in Chapter 1 above.

3.1.2 Privatization and capital markets in Africa

In the years from 1990 to 2005, liberalization and privatization became the dominant themes in the development strategies in Africa. The changing attitude towards the role of the private sector in the development of African economies facilitated the development of the capital markets. In the 1990s, many countries in Africa set up stock exchanges as precondition for the introduction of market orientated economies as propagated by the international monetary institutions to facilitate privatization of SOEs. Note that Africa had eighteen stock

exchanges as of 2005 and eleven of them began operations in the genesis of privatization in the 1990s (Kibuthu, 2005).

The growth in market capitalization in Africa has been described as remarkable as more countries outside of the more advanced economies of the Maghreb region (Northern Africa) and South Africa venture into the establishment of their own capital markets (Sheehan and Zavala, 2005).

3.2 Empirical literature review

This section will review the literature of other scholars who have undertaken research on the same or similar studies. It will take an extended review on studies that link the activities of the privatization programs to the development of stock exchanges and stock performance. The performance of individual stocks shall be included as part of the reviews under the section.

3.2.1 Evidence on theories about stock markets

In most advanced countries of the world, capital and financial markets have played pivotal roles in their economic development. Rousseau and Silla (1990), Wachtel (1998), Clark (1998), Greenwood (1990), Levine (1996), Harris (1997), Obstfeld (1994), Ergungor (2006) and Cuyvers (2006) among others obtained quantitative evidence to justify the proposition that financial and capital markets positively influence the

growth of American economy and their evidence was overwhelming in favour of such propositions (Njimanted, 2012).

Similar studies were conducted in Japan, Australia, Belgium, Berlin, Budapest, Denmark, Finland, Luxembourg, Moscow, New York, Ottawa, Poland and Wellington where concluding evidences were of mixed bag. While some studies have focused solely on capital markets in terms of growth in market capitalisation and capital appreciation, others have focused on the development of the financial markets, economic growth and development. They conclude that as most enterprises operate at their maximum efficiencies, there emanates high profitability and that the stock exchange performs well as it adds to the economic growth and development of the domicile countries (Njimanted, 2012).

Furthermore, it is stated that the interaction between stock returns and market performance is strongly related to the efficient market hypothesis put up by Fama (1965). Haven provide the most popular explanation of the dynamics of equity returns; the efficiency market hypothesis (EMH) harbours useful information on how current stock return is already contained in the most recent stock data. Thus, attempts by stock brokers, chartists and fundamentalists to develop trading functions to consistently beat the market are exercised in futility (Nyong, 2005). One of the implications of the EMH is that equity prices or returns in less developed countries would eventually

exhibit long range dependence due to the shallowness of markets arising from institutional arrangement and immature regulatory framework. (Njimanted, 2012), (Nagasyasu, 2003).

3.2.2 Evidence on theories about privatizations

The study by Jones, Jammal and Gokgur (1998), analyzed eighty one privatizations in Côte d'Ivoire which were drawn from the various sectors of the economy. The study found that most of the privatised companies performed better after privatization than they would have done had they remained under public ownership. I noted that the study further revealed that the privatization program contributed positively to economic and social welfare as they had estimated that annual net welfare and benefits improved by 25% over the pre – divestiture sales. These significant benefits stemmed from increased output, investment, labour and productivity efficiencies.

Njimanted, 2012, in his paper states that, the fundamental role of stock market is to provide adequate guarantee to shareholders for the existence of the market for their second hand securities. Adequate knowledge about the volatility, performance and efficiency of stock returns remains vital and essential information to investors. These will guide not only investment decisions but also planning for economic growth and development.

Given that Africa harbours up to twenty nine stock markets which were all born out of the privatisation programs across the continent will

facilitate the tradability of the secondary markets on offloading securities from the shareholders and its growth and development remains unquestionable, it means the confidence they are expected to instil in investors to invest is still not commensurable (Njimanted, 2012).

3.2.3 Effects of privatization on the fiscal accounts over time

To assess the effects of privatization requires an analysis of the impact on the income flows and on government net worth. The financial relationship between the government and the public enterprise includes taxes and dividends and other transfers including subsidies. After privatization, the change in government net worth would equal the sum of the privatization proceeds and the net present value of the subsidies to or from the state owned company and the net present value of the lost taxes of the state owned company. Assuming that the private sector runs the company more efficiently than would the state do, government net worth is expected to increase. This would be true if the government could privatize and collect taxes efficiently.

Provided that they can, the state's intertemporal budget restraint would be loosened and privatization would have permanent positive effects on public finances (Beddari, 2011)

3.2.4 African exchanges market capitalization

As at December 2009, the World Federation of Exchanges (WFE) total market capitalization was US\$46.5 trillion. African stock market capitalization accounted for a meager 2% during the period under review. In 2008, only Ghana, Malawi, Tanzania and Tunisia registered an increase in market capitalization.

However, market performance improved in 2009 with a majority of stock markets posting a positive capital appreciation with the exception of a few including Kenya, Nigeria and Ghana. In 2008, the Malawi stock exchange registered the best performance while South Africa and Tunisia took the honors in 2009. Market concentration of the five largest exchanges in Africa is 95%. Data indicates that the Nairobi Stock Exchange, as at December 2009, was ranked 5th in Africa in terms of market capitalization behind South Africa, Egypt, Nigeria and Morocco. Ghana ranks in at a close 6th. It will suffice to note that the market capitalization figures of Namibia and Botswana only include the domestic listed companies. This is because the two exchanges both have domestic and foreign boards. In this regard, inclusion of the market capitalization of the foreign board will make them rank 2nd and 3rd respectively in Africa (Capital Markets Authority, 2010).

3.2.5 Some limitations on the evidence

It is noted that existing comparative studies on the effect of privatization on economic efficiency and profitability have been undermined by the relatively short time between pre and post privatization. Besides, there have been practical difficulties of separating other factors that affect firms' performance apart from institutional rigidities and the heavy hand of government as the sole shareholder. In a comprehensive review of privatization studies, Megginson and Netter (2000) however, concluded that the overall evidence support the hypothesis that privatization of the SOEs increases the sales, profitability and efficiency of privatised firms.

Furthermore, many studies of privatization have applied statistical analyses based on comparisons between the mean and sometimes the median before and after privatization, which tend to attribute all changes in performance to privatization alone. This may be an inappropriate assumption especially in economies that are implementing broad based economic reforms in the transitional economies and developing countries.

There has also been limited use of econometric methods of principal components to isolate the impact of the many other factors on enterprise performance.

Secondly, most empirical studies with the exception of Eckel et al. (1997) do not consider the competitive nature of markets within which privatized firms operate and assume away the industry effects of privatization.

The empirical support for the impact of privatization on enterprise performance, on one hand, has mainly been motivated by a wide body of empirical evidence on the comparative performance of public and private ownership. Nonetheless, the empirical evidence to substantiate claims of the improved efficiency due to the privatization of SOEs is very scanty and is still developing.

However, the empirical results from comparative studies of private and public enterprises are mixed although largely supporting the propositions that emerge from the property rights and public choice theories that private enterprises are more efficient than SOEs in achieving lower costs and higher productivity and profitability where firms operate in competitive environments (Chirwa, 2001).

3.3 Summary

Despite the above limitations, most of the studies conducted to examine post privatization effects reveal significant increases in efficiencies, innovations profitability, and capital formation though declining costs. The studies show there are several competing factors that matter in order to bring about these improvements in operations of privatized SOEs as evidenced by the results obtained in empirical findings by the post privatization studies. Some of the variables that matter include ownership structure which favours private ownership control, organisational structure and attenuation of the property rights and regulatory frameworks, all of which ideally give assurance to investors about the profitability of individual companies and exchanges to allow not only capital appreciation but also investment switches between portfolios at minimum costs and in a fairly easy manner. However, there has been mixed results on the impact of privatization in Malawi such that it is difficult to draw firm conclusions from such studies so far.

CHAPTER FOUR

RESEARCH METHODOLOGIES

4.0 Introduction

This chapter of the study is designed to present the research methodologies that have been used to test that institutional reforms play a critical role in the development of the capital market and performance of stocks on the MSE. Chapter three above has reviewed several empirical evidences, all of which largely support the theoretical propositions that privatization of the SOEs result into improved production, sales, profitability and investment returns. These results emanate from resultant efficiencies and leverages after reforms. These reforms may include changes in ownership structure, better ways of performance management of capital and resources at hand. There is also a paradigm shift in objectives from social welfare maximization by the state to profit maximization by the new private owners. The study methodologies are therefore designed to investigate the study objectives as per section 1.3 of Chapter 1 above before findings are presented in Chapter 5 below.

4.1 Conceptual framework

Since the study assumes that privatized SOEs perform competitively better in their post privatization era as institutional reforms would have taken place and that they would be in private owners under new operational orders, the research wishes to draw lessons in terms of growth in market capitalization, indices and market performance of individual stocks using a comparative analysis between categories of privatization and normal listings on the MSE.

Challenged by the specific objectives of the study, the paper has reviewed several theories that relate to the effects of privatization on the capital market and performance of the individual SOEs after implementation of reforms through the privatization programs.

However, this study has applied the Capital Asset Pricing Model for the analysis of individual stock performance as described above in Chapter three due to the appropriateness of its key assumptions and valuation approach for performance of individual stock whose result could be easily compared to individual peers and to market portfolio of stocks on the MSE. Besides, the research has followed a descriptive analysis to assess the growth in number of listings and also the trends in market indices and capitalization of MSE stocks listed by way of the privatization programs and those under normal listings by the private owners.

4.2 Empirical CAPM model to the study

The CAPM has been applied as described from the preceding chapters of this thesis and herein is recast for further analysis as follows:

$C = R_f + \beta (R_m - R_f)$ where;

C = the required rate of return demanded by investors

R_f = is the risk – free rate of return derived from LRS

R_m = is the market portfolio rate of return as described below

$R_m - R_f$ = is the country & market risk premium

β = is the beta coefficient or volatility of stock prices since inception

a) Assumed risk free rate

Malawi as an economy has in issue Local Registered Stocks (LRS) which are in their maturity phases at the moment though not trading at all. However, the most tradable instruments in the local financial market are the treasury bills (TB) which are issued in 91, 182, and 364 day tenors. And as they are issued by the government of Malawi, they have the sovereign status and generally assumed to be risk free. In other words, the yields obtainable in these treasury bills do, to an extent, reflect the macroeconomic fundamentals inherited or embedded in the Malawi economy. Based on 2012 – 2015 yield analysis as in Table 5 below, the study has adopted 25% which is the average yield of the longest tenor of the Treasury bills as its implied risk free rate.

Table 4: Annual average yields of the 3 T – bill tenors in Malawi

TB tenors	2012	2013	2014	2015	Mean
91	14.99	29.56	20.04	25.63	22.56
182	16.56	30.65	22.09	25.83	23.78
364	18.31	32.28	23.05	26.05	24.92
Mean	16.62	30.83	21.73	25.84	

Source: RBM Annual report, 2014

b) The expected market rate of return

The model has adopted a market portfolio rate of return of 35.5% which has been developed based on long run assumptions for inflation, risk premium and illiquidity. The market portfolio return has hence been derived as below:

i) Long – run inflation

Malawi has generally experienced high inflation rate over the last two to three now. It has consistently hovered around 25% mark with fluctuation boundaries of plus or minus 5% on a long horizon analysis. It would be appropriate to assume a long run average inflation of 25% for this study.

ii) Country and Market risk premium

A market risk premium is the premium over and above the risk free rate appropriate for investing in an average listed company in an economy such as Malawi.(MSE Annual Report, 2005).

The assumed premium is based on empirical studies, which compares to the return on the country's relevant equity index to yields on its long term market risk premium of 6% and this has widely been considered as appropriate by valuation practitioners. However, Malawi being a developing economy, it means that potential equity investors into the local market would typically demand a much higher return to compensate for potentially higher risks.

Some of the risk factors that would be included into their stock pricing model include; information scarcity, narrowness and shallowness of the market, limited listings, weak institutions such as legal frameworks, regulatory oversights and also the investor risk aversion for smaller and immature markets and not forgetting economic and other investment – related risks, amongst others. Basing our arguments on the foregoing, the study has adopted an equity risk premium of 7.5% for Malawi.

iii) Illiquidity risk

As is the case in most developing economies, the first entrants will certainly find it uneasy to switch investments between portfolios either due to scarcity of the stocks or lack of tradability.

As a result, most investors employ passive investment strategies of the “buy and hold” as they await late entrants at their opportune time. This strategy is common in narrow and upcoming markets since the assumption is that the market is still in its infant stage and will only open up to global trotting investors whose equity demand will drive stock prices upwards. Due to illiquidity of these infant markets, the providers of initial capital for any business setup as in working capital or expansion will demand such a risk premium. The study has therefore assumed illiquidity risk of 3%.

iv) Risk index or stock's beta coefficient

The beta coefficient is a measure of the volatility of the company's share price over time. A high beta coefficient indicates a more volatile share price and perceived to have a higher investment risk and probably higher return. The beta coefficient of a company is a function of its business risk index, determined by operating risk, strategic risk, size of the firm, and diversity with its financial risk or index which is determined by the level of gearing.

For purposes of valuation, the beta coefficient of the listed company is usually derived from the company's historical share price movements but also relative to the market. Table 6 below in Chapter 5 gives the derivations of the betas for all the 13 companies listed on the MSE.

Diagnosis of the study:

Based on the specific objectives of the study, the theoretical propositions shall be diagnosed on each testable hypothesis as below:

4.2.1 Hypothesis a: Reforms have had no impact in MSE development:

In order to analyze this specific objective of the study, the research work has assessed the growth and development of the MSE in terms of the total number of listings and then split the same between those listed through institutional reforms as facilitated by the privatization programs against those under normal listings by the private owners. The research has used readily available data from both the privatization commission and the MSE from inception of the MSE in 1996 to December 2014 as an exit date.

4.2.2 Hypothesis b: MSE market cap have shown no growth since inception:

The research work has looked at how the index has performed from inception to December 2014 and also analysed the growth in market capitalization of the outstanding shares from inception to December 2014. Thereafter, the same market information has been categorized between companies which are listed through privatization and normal initial public offerings (IPOs).

4.2.3 Hypothesis c: No differences in stock performance on the MSE:

Finally, the research aims at investigating if there are any differences in performance between companies listed through the privatization initiative and those by the normal IPO listing. In order to evaluate this specific objective, the study will apply the Capital Asset Pricing Model (CAPM) and then use the betas of each stock as an explanatory variable to determine the performance of that stock under the CAPM analysis. The model is as specified in Chapter 3 under section 3.1.1.

As explained above, the CAPM takes the risk free rate and the market rate as given for the market portfolio. The only difference in performances amongst stocks is explained by the volatility of stock's price over time. The price swings over time generate the beta of a particular stock. Intuitively, the study will evaluate the performance of each stock listed on the MSE to find its required rate of return as demanded by the investors. The analysis will again categorize MSE counters into privatization and normal listings and see whether there are any differences in performance between the two set of portfolios.

4.3 Methodological caveats

The study analyses the role of reforms in the development of the MSE and stock performance; a case of normal versus privatization listings. One of the major impediments to obtaining good results is due to lack of access to data on the performance of the MSE from primary and secondary sources which has been difficult as there is lack of written

literature. As a result, the study has largely relied on statistics from the MSE, WFE, ASEA and publications of IFC, IMF and WB though some are not directly linked to the MSE.

Besides, access to international databases was restricted due to lack of rights. Data from a sizable African Stock Markets is highly fragmented and somewhat inaccurate when available. Secondly, the selection of evaluation methods is hampered by the narrowness and none tradability on the MSE.

4.4 Data collection

a) Sampling

The study proposed to use a population of all MSE listed companies. While all the 14 counters were accessible population, the study has largely focused on thirteen counters due to the exclusion of Old Mutual Plc. The rationale for the exclusion of OML is for fear of its dominance and outlier effects to the whole population since its listing in 1999 as shown from Table 5 below.

From Table 3 above for MSE market capitalization as at end of December, 2014, it is apparently clear that the inclusion of Old Mutual PLC in the sample would have dominance and outlier effects to the analysis and results of the research. Table 5 below further demonstrates Old Mutual Plc's dominance and outlier position in the MSE population as follows:

Table 5: Effects of OML's market capitalization as at Dec 2014

% of the	Normal	Privatized	Domestic	OML	MSE Cap
	53,000	579,000	632,000	6,869,000	7,501,000
MSE Cap	0.71	7.72	8.43	91.57	100
Domestic cap	8.39	91.61	100		

Source: (MSE Annual Report, 2014)

From Table 5 above, OML accounts for 91.6% of MSE market capitalization whilst the remaining thirteen counters which constitute MSE domestic market capitalization only attribute for 8.4% of the MSE market capitalization as at end of December 2014. The MSE domestic board only includes counters whose primary listing is on the MSE while OML has its primary listing is on the LSE.

Besides, the OML stock is hardly affected by local macroeconomic environment due to the size of the local operation relative to Old Mutual PLC's geographical magnitude and presence globally in the insurance industry. Note also that privatization account for 91.6% of the MSE domestic capitalization while normal listings only for 8.4%.

b) Statistical measurements

The measurements of the objectives as performance indicators have included stock prices, market indices and market capitalizations since MSE inception and CAPM itself. All have been defined within their context in this report.

c) Data collection and preparation

The study, to a significant extent, relied on data collected from primary and secondary sources, specifically the PC, RBM, MSE and internet research. Other sources included, but not limited to, the use of journals and other scholarly or media publications. The thesis has used quarterly data from quarter 4 of 1996 to quarter 4 of 2014, which is the study sample period.

d) Findings

Findings are presented in tabular and graphical presentations with the inclusion of analytical and narrative interpretations given.

e) Validity

As this was not a causal study, internal and conclusion validity were not considered. The measurements applied to assess the performance of MSE listed companies hence constructs are valid. In addition, proposals made based on the analysis of findings are similar to those made in other studies, hence recommendations are externally valid.

4.5 Summary

This chapter has discussed the methodologies which will be used to test the three testable hypotheses of the study. The descriptive analysis is found as most appropriate for the analysis of growth in market indices and market capitalization from inception to the exit date; December 2014. However, the CAPM analysis has been selected to evaluate the performance of individual stocks using the betas of each specific company as the explanatory variables which is based on the volatility of prices for each stock over time and these are unique to each firm.

CHAPTER FIVE

RESULTS AND DISCUSSION OF FINDINGS

5.0 Introduction

This chapter presents the discussion and findings of the study based on the analytical reviews and empirical CAPM analysis. The study has employed the beta of the individual companies as the only explanatory variable. The study has also analysed the development of the MSE on the basis of the number of listings, market indices, market capitalization and stock performance since its inception in line with the three specific objectives as stated in Chapter one of this thesis. As usual, the listings have been split into two, namely: the privatization-initiated and normal listings.

5.1 Impact of privatization in the development of the MSE:

One of the specific objectives of this study is to analyse whether institutional reforms, especially privatisation, have played a role in the development of the MSE. In order to assess this hypothesis, the research analyzed the number of listings on the MSE based on the two categories of privatization and normal listings from inception to December 2014.

Figure 1: Cumulative MSE listings by types since inception:

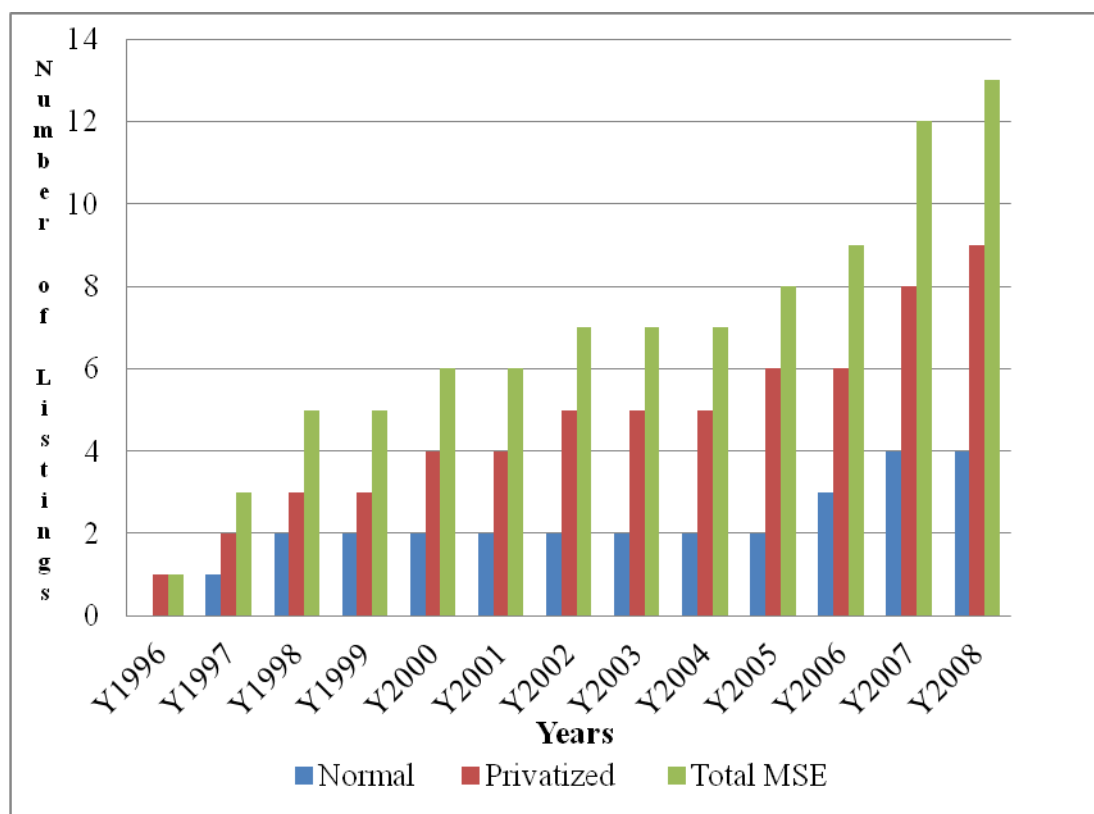


Figure 1 above shows the total number of MSE listings split between privatization and normal listings types since inception of the Exchange.

The evidence shows that privatisation listings increased steadily over the review period. On inception, there was only one counter listed under the a privatization program in NICO and none of normal listings. By 2000, there were four privatization listings against only two of the normal types. The number had increased to six of the privatization listed counters by 2005 against a stagnant number of two counters for the normal type. Finally, the privatization listings had increased to nine by 2008 while the normal listings board only recorded four counters, making a total number of 13 counters on the MSE.

The listings have since remained stagnant as there has been no new issues listed on either board of the MSE. These findings clearly tend to reject the null hypothesis that reforms have had no effect in the development of the MSE as reforms have contributed nine out of the thirteen counters, representing 69% of MSE domestic listings.

5.2 The impact of privatization on market capitalization and index:

The second objective of this research work is to ascertain if reforms have had any impact in the MSE market capitalization and index.

Evidence as presented in figure 2 below shows trends in market capitalization between privatization and normal listed counters on the MSE since inception:

Figure 2: Trend of MSE market cap by listings type since inception

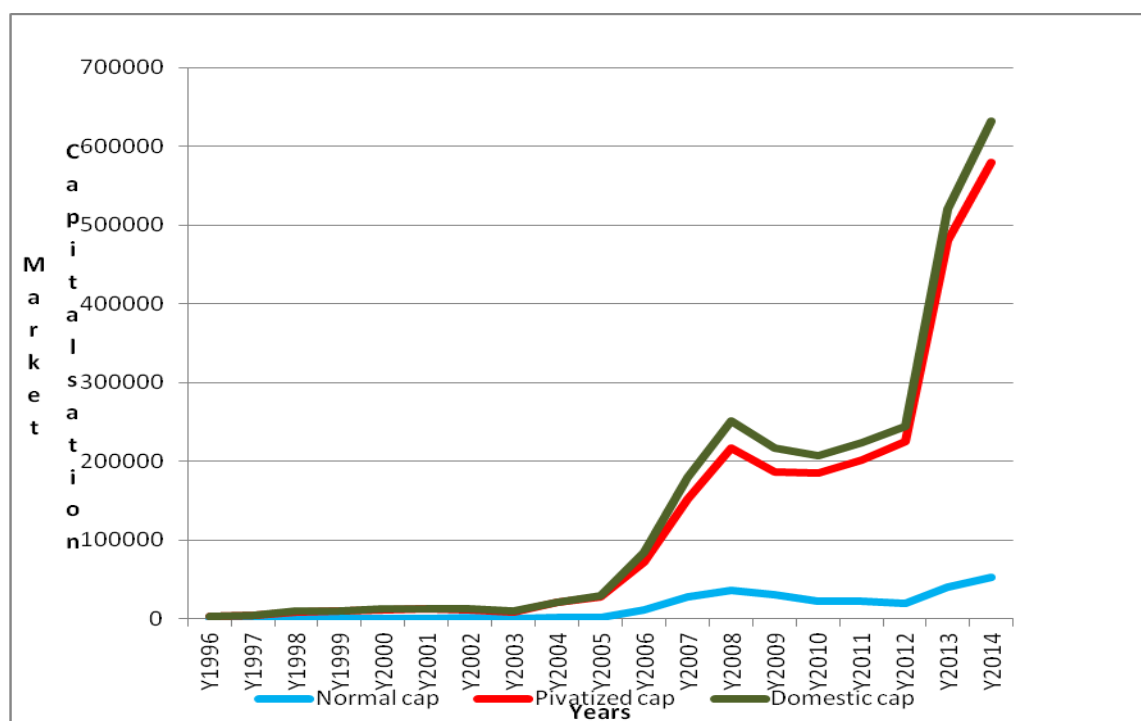
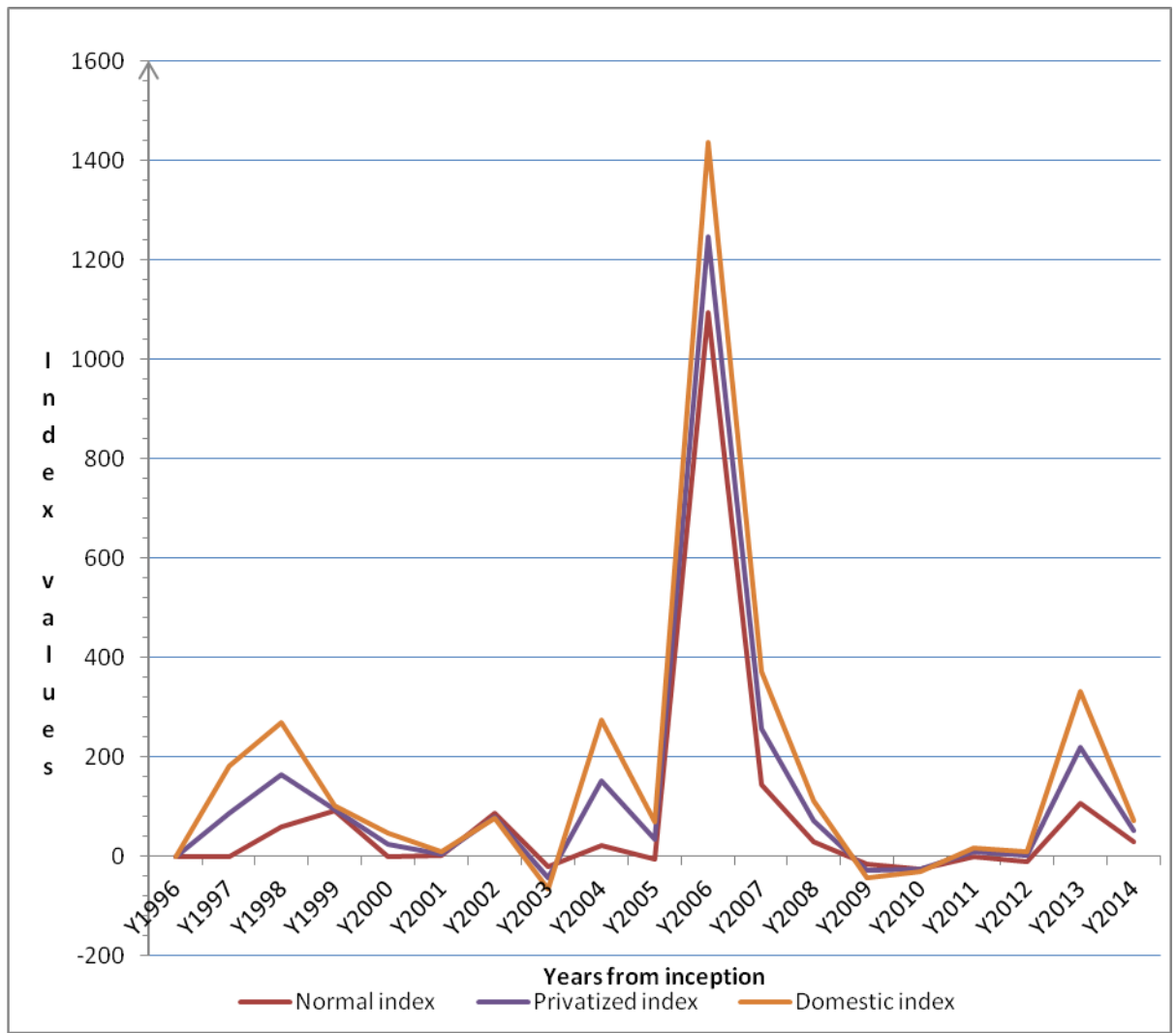


Figure 2 above shows an upward trend in MSE market cap over the years. From 2002 onwards, the market capitalization for privatized listings started to depart from the stagnant line of the market capitalization attributed to normal listings. In 2005, the market cap for privatized listings shows a sharp upward trend while that of the normal listings remained relatively flat. As the market cap for the privatized counters became dominant in the composition of the domestic market capitalization, the two lines show a closer upward relationship in trend from 2006 up to the review exit date of December 2014.

It is apparently clear that the highest contribution to the growth of the domestic market capitalization seems to have come through the privatization programs on the MSE. The study therefore suggests to reject the null hypothesis as the overall evidence supports the proposition that institutional reforms have had major influence in the development of the MSE in terms of market capitalization growth on the MSE since inception.

However, the composite domestic share index together with the individual indices for the privatization and normal listings portfolios display volatile trends with a spike in 2006 which implies that the market caps of the two sets of listings types have not been stable over the period as below in Figure 3.

Figure 3: Trend for privatization and normal listings' indices



Source: www.mse.co.mw

The indices do not portray a one – sided trend but rather upward and downward swings over the research review period from inception.

5.3 The impact of reforms on stock performance on the MSE:

CAPM results of the initial full sample under Scenerio 1:

The study also sought to analyse if the privatization programs played a role in stock performance on the MSE. It uses a comparative analysis between privatization initiated and normally listed stocks.

Again, the testable hypothesis postulates that there is no difference in stock performance between the two sets of MSE listings types.

In pursuit to assess this proposition, the initial task of the research was to derive the beta coefficients of each company in our two groups of analysis. The beta reflects the risk profiles of any business or stock over time. It generally incorporates business risk index which comprises operating risk, strategic risk, size, diversity while the financial index is well described by the level of gearing of a company. Below is summary of betas of the 13 MSE counters under review.

Table 6: Summary of stock betas and CAPM results under scenerio 1:

ITEM	MSE code	Stock beta	% Weight	CAPM Results
Normal listings				
1	BHL	0.01	0.50	25.11
2	FMB	1.78	88.12	43.69
3	MPICO	0.03	1.49	25.32
4	REAL	0.20	9.90	27.10
Total		2.02	100.00	121.21
Mean		0.51		30.30
Privatization listings				
5	SUNBIRD	0.07	4.24	25.74
6	ILV	0.23	13.94	27.42
7	NBM	0.39	23.64	29.10
8	NBS	0.34	20.61	28.57
9	NICO	0.04	2.42	25.42
10	NITL	0.07	4.24	25.74
11	PCL	0.21	12.73	27.21
12	SBM	0.08	4.85	25.84
13	TNM	0.22	13.33	27.31
Total		1.65	100.00	242.33
Mean		0.18		26.93

Typically, beta coefficients of listed companies are derived from historical share price movements relative to the whole market. According to theory Markowitz (1952) a higher beta indicates a more volatile share price and perceived a higher risk profile.

Table 6 above presents the betas for all the 13 counters listed on the MSE. The normal listings show a maximum beta of 1.78 for FMB and a minimum beta of 0.01 for BHL which gives a range of 1.77 and an average of 0.51.

On the other hand, the privatized stocks have a maximum beta of 0.39 for NBM and a minimum of 0.04 for NICO which gives a range of 0.35 and an average beta of 0.18. Comparatively, the wide range being observed under the normal listings suggests there is an outlier effects by FMB beta in the sample. The range in privatization is narrow and showing there is a better correlation in terms of risk and reward profiles amongst the peers in that sample. Further analysis shows that the mean beta of normally listed counters of 0.51 is much higher than the mean for privatized types of 0.18.

The result therefore suggests that normal listings are more volatile and risky than their privatization counterparties. In principle, investors look to invest in stocks with lesser risk profile and not highly risky stocks unless they are adequately compensanted. High risky stocks require a higher return.

For normal listings, investors will demand more return as they perceive them as more riskier. From CAPM results, the study also shows that privatized listings have a lower average return of about 27% than the retruns for normal listings of 30.30%.

However, the wider range and higher mean in the normally listed stocks seems to be influnced by FMB's beta of 1.78 which attributes 88.12% of the total beta for its subset. In order to intuitively analyse the outlier effects of FMB, the research carried out further investigations as shown below;

CAPM results after excluding FMB beta as scenerio 2:

The CAMP results in table 6 above show an outlier in FMB beta of 1.78 which accounts for 88% of the subset total beta. Consequently, the study carried out further investigations by excluding FMB as recast in Table 7.

Table 7: MSE company betas excluding FMB stock as scenerio 2:

ITEM	MSE code	Stock beta	% Weight	CAPM Results
Normal listings				
1	BHL	0.01	4.17	25.11
2	MPICO	0.03	12.50	25.32
3	REAL	0.20	83.33	27.10
Total		0.24	100.00	77.52
Mean		0.08		25.84
Privatization listings				
4	SUNBIRD	0.07	4.24	25.74
5	ILV	0.23	13.94	27.42
6	NBM	0.39	23.64	29.10
7	NBS	0.34	20.61	28.57
8	NICO	0.04	2.42	25.42
9	NITL	0.07	4.24	25.74
10	PCL	0.21	12.73	27.21
11	SBM	0.08	4.85	25.84
12	TNM	0.22	13.33	27.31
Total		1.65	100.00	242.33
Mean		0.18		26.93

The CAPM results from Table 7 above is a complete reversal of those in Table 6. Normal listings now have a maximum beta of 0.2 and a minimum of 0.01 which gives a range of 0.19 which has significantly narrowed from as wide as 1.77. The normal subset now has a mean beta of 0.08 from 0.51 and a required rate of return of about 26%.

The resultant mean of normal listings is now much lower than before and also lower than the mean of the privatized listings. Similarly, the average return of the normal listings has declined to 25.8% from from 30.3% and is lower than the privatized listings mean of 26.9%. These results are consistent with the compensatory principle of risk and

return as investors demand higher return from stocks deemed to have higher risk profiles.

CAPM results after excluding all bank stocks as scenerio 3:

The study went further by analysing the CAPM results after excluding all banking stocks from the sample. Table 8 below depicts the findings:

Table 8: MSE company betas excluding banking stocks as scenerio 3:

ITEM	MSE code	Stock beta	% Weight	CAPM Results
Normal listings				
1	BHL	0.01	4.17	25.11
2	MPICO	0.03	12.50	25.32
3	REAL	0.20	83.33	27.10
Total		0.24	100.00	77.52
Mean		0.08		25.84
Privatization listings				
4	SUNBIRD	0.07	8.33	25.74
5	ILV	0.23	27.38	27.42
6	NICO	0.04	4.76	25.42
7	NITL	0.07	8.33	25.74
8	PCL	0.21	25.00	27.21
9	TNM	0.22	26.19	27.31
Total		0.84	100.00	158.82
Mean		0.14		26.47

A further analysis was carried out by excluding FMB together with its peers of the banking sector namely; NBM, SBM and NBS. The findings of such an exclusion from the sample have achieved nothing much different from that of Scenerio 2 above where only FMB beta was removed. Table 8 above displays the findings which show that normal

listings are less riskier with a beta of 0.08 against a beta of 0.14 for privatized listings.

Finally, the research wishes to demonstrate the dominance effects of FMB beta amongst its banking peers as per Table 9 below:

Table 9: Comparative analysis of FMB beta against its bank peers:

Item #	MSE Codes	Beta	% Weight
1	FMB	1.78	68.73
2	NBM	0.39	15.06
3	SBM	0.08	3.09
4	NBS	0.34	13.13
	Total	2.59	100.00
	Mean	0.65	
	Max	1.78	
	Min	0.08	
	Range	1.70	

As seen from Table 9 above, there are 4 banking stocks listed on the MSE as shown above. The maximum beta amongst them is 1.78 for FMB and minimum is 0.08 for SBM. The range and mean of the banking betas are 1.70 and 0.65. With the mean of 0.65, then FMB at 1.78 is grossly an outlier in the banking stock subset. Besides, FMB accounts for 69% of the banking subset total beta and is likely the potential source of influence in the value of both the range and mean in peers' subset.

Further observations reveal that FMB as a company has huge equity portfolio on its balance sheet. When the MSE performed exceptionally well in 2006 as seen in the index Figure 3 above, FMB stock price went up by 160% from MK2.50 to MK6.50 on 26th June 2006. Further investigations on the historical prices, FMB stock price also went up by 42% from MK6.00 to MK8.50 on 11th January 2013 and another upsurge of 52% on 30th August 2013 from MK10.50 to MK16.00. These price shocks are attributed to the outlier of FMB beta in its subset and amongst the sample peers.

The CAPM results in Table 6 above tend to support the proposition that institutional reforms have had influence on stock performance on the MSE. However, the study noted an outlier influence on the results, hence further research was carried out. The CAPM outcomes from subsequent analyses as per Tables 7 and 8, tend to reject the proposition that reforms have had influence on stock performance on the MSE. The two investigations removed FMB and then its peers. The elimination of FMB influence in the sample seems the ideal way to conclude the analysis on the comparative performance of the two composite portfolios of the privatization and normal listed assets on the MSE.

5.4 Summary

Chapter Five has reviewed the results from the various methodologies that were appropriate to deal with each specific objective of the study work. The analysis seems to have obtained straightforward outcomes for the first two specific objectives. The findings suggest that institutional reforms have played a major role in terms of the development of the MSE as evidenced by the increase in the number of listings through the privatization program. Besides, the findings have also rejected the null hypothesis that there have been no growth in market capitalization and index as a result of reform policies and instead it attests to the fact that listings by the privatization have greatly contributed to the growth of the market capitalization on the MSE. However, the trace on market index shows a volatile response perhaps due to changes in macroeconomic environments. The findings on the last and final objective have given mixed conclusions. Initially, the total sample gives the conclusion that normal listed portfolio is more riskier than privatization with FMB exerting a huge influence on the results. The research then controlled for FMB and the initial findings were reversed as normally listed stocks were found to be less riskier than privatized counterparty. Furthermore, the research removed all stocks that trade as peers with FMB from both sets of the portfolios, and the conclusion concurs with the second scenario of results as it also reverses the initial conclusion that privatization listed portfolio is less riskier than the normal listed portfolio.

CHAPTER SIX

CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

6.0 Introduction

This chapter presents the concluding observations on the findings of the study over its overarching objectives and their hypotheses. It then draws lessons from the research work before opening up the debate for future undertakings in similar fields. It will further assess the policy implications and recommendations as privatization program continues in malawi.

6.1 Conclusion

The overall objective of the study was to ascertain the impact of institutional reforms in the development of the MSE and stock performance by drawing comparative analysis from stocks listed under the normal and privatization categories on the MSE.

The first specific objective of the research work was to analyse the impact of reforms in the development of the MSE. The research reviewed this objective through descriptive assessment of the number of listings on the MSE that were facilitated through privatization program against those under the normal listings by the private owners. There was overwhelming evidence to conclude that reforms have had major impact in the development of the MSE.

There is a total of nine out of 13 MSE listed stocks that were listed via privatization and this represents 69% of MSE domestic listings.

The second specific objective that the study set to research on was to ascertain if reforms have had impacts in the growth of the market capitalization and index on the MSE. Again, the methodology was to analyse the effects from the contribution perspective of the privatization and normal listings on the MSE to the growth of the MSE market capitalization. The study findings were overwhelming to draw a conclusion that institutional reforms and subsequent privatized listed SOEs attributed to 92% of the MSE market capitalization as of end December 2014. Besides, there is also conclusive evidence to support that privatization has positively contributed to the growth of the MSE market index.

The third and final specific objective was to analyse if there were any difference in stock performance between counters listed through the privatization program and those of normal listings on the MSE. The study applied the CAPM methodology in order to assess both the individual stocks as well as categorized portfolios of normal and privatized listings. The CAPM analysis revealed a mixture of the outcomes due to an outlier effect of FMB beta in the subset of normal listings. As a result of the adversely dominance effects of the FMB beta and the findings of subsequent analysis after the exclusion of FMB and banking stocks from the subsets, the study concludes that normally

listed stocks and their portfolio have the confidence and trust of investors as they seem to be less risker with a mean beta of 0.08 after excluding FMB than the privatized listed stocks whose mean beta remains at 0.18 and retreats to mean beta of 0.14 after the removal of all banking stock betas from the research sample of the MSE.

From the above research conclusions, it is evident that institutional reforms and subsequent privatization and listing of SOEs have greatly contributed to the development of the MSE. Their contributions to the MSE paint a picture that Malawi would not have established the MSE without the privatization programs. The equity trading market and the growth of the market capitalization and index owe to institutional reforms. It is therefore undisputable that the development and performance of the various individual stocks on the MSE are attributed to the accruing synergies, operating efficiencies and leverages of structural reforms and privatization.

6.2 Role implications and recommendations

The findings from the study would have great importance to policy makers and investors in decision making. The research findings have highlighted the role of institutional reforms and their impacts in the development, growth and performance of the MSE. From the study the stock market has not attracted much of the normal listings by private owners. This is evident from the low number of listings of five by private owners on the MSE since inception.

From the study, it is noted that the privatization has achieved their initial objectives though not to full expectations by the public. However, the market capitalization of the privatized and listed SOEs has grown tremendously. Both investors and the market have shown great confidence in the privatized listings as evidenced by oversubscription at their initial public offerings (IPOs). Besides, there have been great growth in market capitalization as a result of both increase in number of listings and growth in share prices which have been exponential.

In order to achieve further development of the MSE, the market must attract more of listings from the privately owned companies and some of the residential SOEs which were already privatized but not yet listed on the exchange. The government of Malawi should also consider offloading some of the SOEs earmarked for privatisation through the MSE. It seems a sure way of attracting broader citizenry participation in the economy as people become direct owners of once public enterprises. This will make the market more vibrant, liquid, cost effective and attractive in the eyes of investors.

6.3 Areas for further study

This study has highlighted a number of areas that could be explored by further research and these include:

- a) Further study may be undertaken to analyse the underlying macroeconomic fundamentals and variables other than institutional reforms that would also affect the development of the MSE and stock performance over time.
- b) Research work could be undertaken to analyse performance of privatized and MSE listed stocks before and after listings on the stock exchange.
- c) Research could be undertaken in order to analyse how macroeconomic variables also affected different stock performances on the MSE.

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APPENDICES

APPENDIX 1: SUMMARIES OF MSE STOCK BETAS

SUMMARY OUTPUT FOR FMB BETA

<i>Regression Statistics</i>	
Multiple R	0.4152429
R Square	0.1724267
Adjusted R Square	0.170647
Standard Error	0.0815939
Observations	467

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	0.64501	0.64501	96.88376	6.84430
Residual	465	3.09577	0.00666		
Total	466	3.74077			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	-0.0019872	0.00388	0.51191	0.60895	-0.00962	0.00564	-0.00962	0.00564
X Variable 1	1.7868072	0.18153	9.84295	0.00000	1.43008	2.14353	1.43008	2.14353

SUMMARY OUTPUT FOR SBM BETA

<i>Regression Statistics</i>	
Multiple R	0.0490296
R Square	0.0024039
Adjusted R Square	0.0012716
Standard Error	0.0311383
Observations	883

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	0.00206	0.00206	2.12294	0.14546
Residual	881	0.85421	0.00097		
Total	882	0.85627			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	0.005513	0.00108	5.10655	0.00000	0.00339	0.00763	0.00339	0.00763
X Variable 1	0.0764311	0.05246	1.45703	0.14546	-0.02652	0.17939	-0.02652	0.17939

SUMMARY OUTPUT FOR NBM BETA

<i>Regression Statistics</i>	
Multiple R	0.2456843
R Square	0.0603608
Adjusted R Square	0.0591653
Standard Error	0.0316536
Observations	788

ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	0.05059	0.05059	50.49127	0.00000
Residual	786	0.78753	0.00100		
Total	787	0.83812			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	0.0033384	0.00116	2.87643	0.00413	0.00106	0.00562	0.00106	0.00562
X Variable 1	0.3893803	0.05480	7.10572	0.00000	0.28181	0.49695	0.28181	0.49695

SUMMARY OUTPUT FOR NBS BETA

<i>Regression Statistics</i>	
Multiple R	0.1813191
R Square	0.0328766
Adjusted R Square	0.0305574
Standard Error	0.0331367
Observations	419

ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	0.01557	0.01557	14.17559	0.00019
Residual	417	0.45788	0.00110		
Total	418	0.47345			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	0.0033571	0.00165	2.03880	0.04210	0.00012	0.00659	0.00012	0.00659
X Variable 1	0.3384446	0.08989	3.76505	0.00019	0.16175	0.51514	0.16175	0.51514

SUMMARY OUTPUT FOR REAL BETA

<i>Regression Statistics</i>	
Multiple R	0.0749387
R Square	0.0056158
Adjusted R Square	0.0027666
Standard Error	0.0508397
Observations	351

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	0.00509	0.00509	1.97099	0.16123
Residual	349	0.90205	0.00258		
Total	350	0.90715			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	-0.0001934	0.00274	0.07053	0.94381	-0.00559	0.00520	-0.00559	0.00520
X Variable 1	0.1985673	0.14144	1.40392	0.16123	-0.07961	0.47675	-0.07961	0.47675

SUMMARY OUTPUT FOR SUNBIRD BETA

<i>Regression Statistics</i>	
Multiple R	0.0453206
R Square	0.002054
Adjusted R Square	0.0005928
Standard Error	0.0351923
Observations	685

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	0.00174	0.00174	1.40574	0.23618
Residual	683	0.84589	0.00124		
Total	684	0.84764			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	0.0022602	0.00139	1.62477	0.10467	-0.00047	0.00499	-0.00047	0.00499
X Variable 1	0.0742644	0.06264	1.18564	0.23618	-0.04872	0.19725	-0.04872	0.19725

SUMMARY OUTPUT FOR NITL BETA

<i>Regression Statistics</i>	
Multiple R	0.0383131
R Square	0.0014679
Adjusted R Square	-0.0003847
Standard Error	0.0408082
Observations	541

ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	0.00132	0.00132	0.79236	0.37379
Residual	539	0.89760	0.00167		
Total	540	0.89892			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	0.0052558	0.00182	2.88964	0.00401	0.00168	0.00883	0.00168	0.00883
X Variable 1	0.071942	0.08082	0.89014	0.37379	-0.08682	0.23070	-0.08682	0.23070

SUMMARY OUTPUT FOR TNM BETA

<i>Regression Statistics</i>	
Multiple R	0.0613913
R Square	0.0037689
Adjusted R Square	0.0008729
Standard Error	0.0676516
Observations	346

ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	0.00596	0.00596	1.30140	0.25475
Residual	344	1.57440	0.00458		
Total	345	1.58035			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	0.001367	0.00367	0.37248	0.70977	-0.00585	0.00859	-0.00585	0.00859
X Variable 1	0.2236333	0.19603	1.14079	0.25475	-0.16194	0.60921	-0.16194	0.60921

SUMMARY OUTPUT FOR MPICO BETA

<i>Regression Statistics</i>	
Multiple R	0.0128702
R Square	0.0001656
Adjusted R Square	-0.0023528
Standard Error	0.0488509
Observations	399

<i>ANOVA</i>					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	0.00016	0.00016	0.06577	0.79773
Residual	397	0.94740	0.00239		
Total	398	0.94756			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	0.0001088	0.00248	0.04386	0.96504	-0.00477	0.00499	-0.00477	0.00499
X Variable 1	0.034349	0.13394	0.25646	0.79773	-0.22896	0.29766	-0.22896	0.29766

SUMMARY OUTPUT FOR ILV BETA

<i>Regression Statistics</i>	
Multiple R	0.0140993
R Square	0.0001988
Adjusted R Square	-0.001022
Standard Error	0.0527882
Observations	821

<i>ANOVA</i>					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	0.00045	0.00045	0.16284	0.68666
Residual	819	2.28222	0.00279		
Total	820	2.28268			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	0.0059554	0.00189	3.14291	0.00173	0.00224	0.00967	0.00224	0.00967
X Variable 1	0.0363593	0.09010	0.40354	0.68666	-0.14050	0.21322	-0.14050	0.21322

SUMMARY OUTPUT FOR BHL BETA

<i>Regression Statistics</i>	
Multiple R	0.0083575
R Square	6.985E-05
Adjusted R Square	-0.0011511
Standard Error	0.0293402
Observations	821

<i>ANOVA</i>					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	0.00005	0.00005	0.05721	0.81102
Residual	819	0.70504	0.00086		
Total	820	0.70509			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	0.0009928	0.00105	0.94268	0.34613	-0.00107	0.00306	-0.00107	0.00306
X Variable 1	0.0119782	0.05008	0.23918	0.81102	-0.08632	0.11028	-0.08632	0.11028

SUMMARY OUTPUT FOR PCL BETA

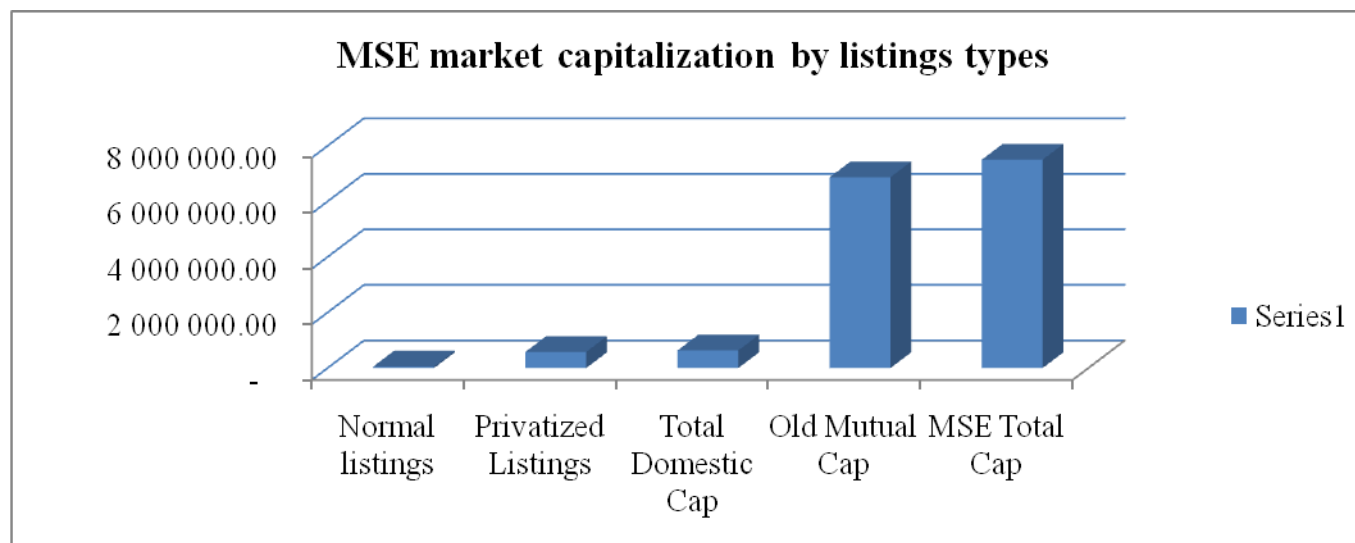
<i>Regression Statistics</i>	
Multiple R	0.09887
R Square	0.0097753
Adjusted R Square	0.0085662
Standard Error	0.0438868
Observations	821

<i>ANOVA</i>					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	0.01557	0.01557	8.08499	0.00457
Residual	819	1.57744	0.00193		
Total	820	1.59301			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	0.0038089	0.00158	2.41781	0.01583	0.00072	0.00690	0.00072	0.00690
X Variable 1	0.2129949	0.07491	2.84341	0.00457	0.06596	0.36003	0.06596	0.36003

Appendix 2:

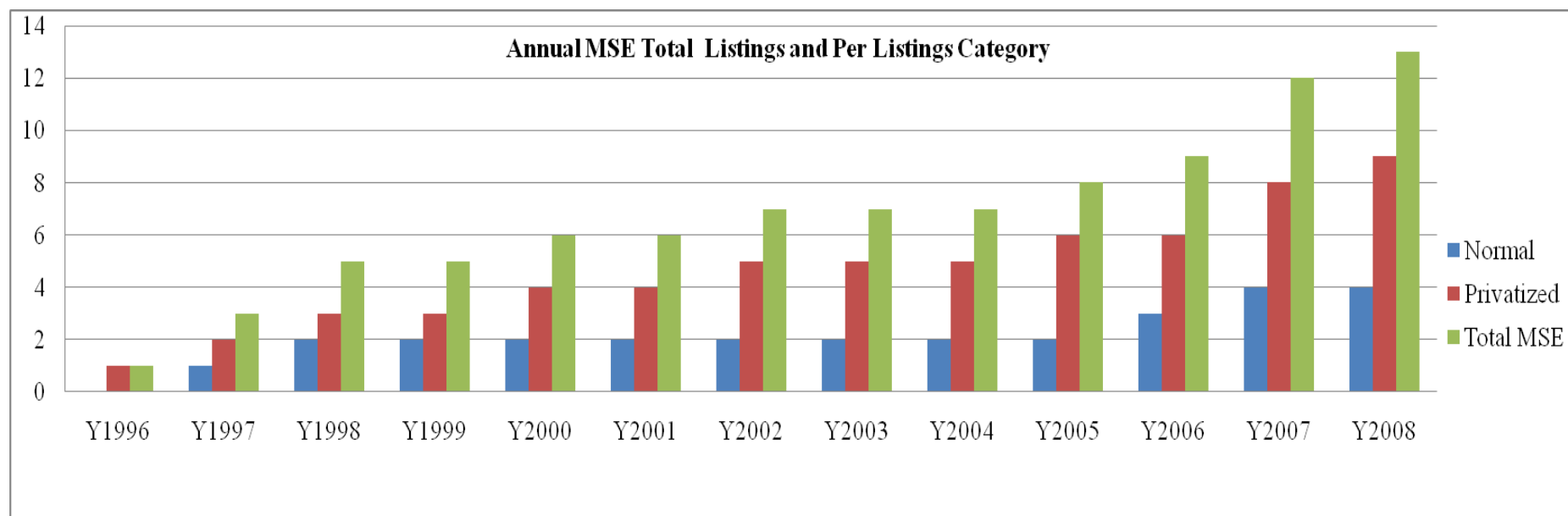
MSE and Old Mutual market capitalization as at December 2014					
	A	B	A + B	C	A + B + C
% of	Normal listings	Privatized Listings	Total Domestic Cap	Old Mutual Cap	MSE Total Cap
	53 000.00	579 000.00	632 000.00	6 869 000.00	7 501 000.00
MSE Total Cap	0.7	7.7	8.4	91.6	100.0
Domestic Cap	8.4	91.6	100.0		



Appendix 3:

MSE TOTAL LISTINGS PER ANNUM PER CATEGORY SINCE INCEPTION

Listings	Y1996	Y1997	Y1998	Y1999	Y2000	Y2001	Y2002	Y2003	Y2004	Y2005	Y2006	Y2007	Y2008	Y2009	Y2010	Y2011	Y2012	Y2013	Y2014
Normal	0	1	2	2	2	2	2	2	2	2	3	4	4	4	4	4	4	4	4
Privatized	1	2	3	3	4	4	5	5	5	6	6	8	9	9	9	9	9	9	9
Total MSE	1	3	5	5	6	6	7	7	7	8	9	12	13	13	13	13	13	13	13



Appendix 4:

MSE MARKET CAPITALIZATION PER LISTINGS CATEGORIES FROM INCEPTION TO DECEMBER 2014 & TREND OF DOMESTIC INDEX

Listings type	Y1996	Y1997	Y1998	Y1999	Y2000	Y2001	Y2002	Y2003	Y2004	Y2005	Y2006	Y2007	Y2008	Y2009	Y2010	Y2011	Y2012	Y2013	Y2014
Normal	0	187	297	565	565	568	1059	831	1001	949	11316	27540	35463	30048	22153	22153	19680	40456	52616
Pivatized	2347	4369	8956	9370	11712	12194	11341	8778	20261	28006	71275	151696	216227	186637	184683	201294	224800	480431	579125
MSE Domestic	2347	4556	9253	9935	12277	12762	12400	9609	21262	28955	82591	179236	251690	216685	206836	223447	244480	520887	631741
DSI Growth (%)		94.12	103.09	7.37	23.57	3.95	(2.84)	(22.51)	121.27	36.18	185.24	117.02	40.42	(13.91)	(4.55)	8.03	9.41	113.06	21.28

