

**EFFECTS OF INITIAL PUBLIC OFFERING (IPO) ON SHARE
PRICE: THE CASE OF COMPANIES LISTED AT DSE**

**EFFECTS OF INITIAL PUBLIC OFFERING (IPO) ON SHARE PRICE:
THE CASE OF COMPANIES LISTED AT DSE**

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**A Research Report submitted in Partial Fulfilment of the Requirements for Award
of the Degree of Master of Science (Accounting & Finance) of Mzumbe University.**

2014

CERTIFICATION

We, the undersigned, certify that we have read and hereby recommend for acceptance by the Mzumbe University, a dissertation entitled **The Effects of Initial Public Offering (IPO) on Share Price: The Case of Companies Listed at DSE**, in partial fulfilment of the requirements for award of the degree of Master of Accounting and Finance of Mzumbe University.

Signature

Major Supervisor

Signature

Internal Examiner

DECLARATION

I, Pulkeria Pascoe, declare that this thesis is my own original work and that it has not been presented and will not be presented to any other university for a similar or any other degree award.

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ACKNOWLEDGEMENT

I am very grateful and genuinely thankful to all who helped me during my education journey. I would like to appreciate the support from everyone without whom the workload could have been unbearable.

First and foremost, I would like to thank the Almighty God for giving me the strength and health in pursuing my studies for the two years. Also special thanks go to my employer, **Mzumbe University**, for the scholarship and the financial support they granted to me throughout the study period.

I express my profound gratitude my supervisor, Dr. Benedicto Lukanima, for his exemplary guidance, valuable feedback and constant encouragement throughout the duration of the research. His constant feedback on technical aspects helped me in honing my knowledge. Working under him was an extremely knowledgeable experience for me.

I sincerely acknowledge with much appreciation the crucial role of Mr. Emmanuel .F. Nyalali and Ms. Sara Mrema of DSE who gave the permission to use all required data and the necessary information to complete this research report.

I am really grateful to my lovely husband, Godfrey and our beloved son, Kyle for being patient and understanding during the years of study.

I thank all the friends and colleagues who provided valuable advices. The product of this research paper would not be possible without their encouragement and advice.

Last but not the least, I would like to thank my dear mother, my lovely mother in-law, my brothers and sisters, who have been with me throughout my life and whose love and sacrifices brought me where I am today. Thank you all.

DEDICATION

To my husband Godfrey Peter and son Kyle Godfrey, you are the team that inspired me through the journey to success. I love you team.

ABBREVIATIONS

BI	Banking, Finance and Investment Index
CDS	Central Depository System
CMSA	Capital Markets and Securities Authority
CRDB	CRDB Bank Plc
CS	Commercial Services Index
DCB	Dar es Salaam Community Bank Plc
DSE	Dar es Salaam Stock Exchange
DSEI	Dar es Salaam Stock Exchange All Share Index
EGMS	Enterprise Growth Market Segment
EMH	Efficient Market Hypothesis
GDP	Gross Domestic Product
IA	Industrial and Allied Index
IFRS	International Financial Reporting Standards
IPO	Initial Public Offering
JSE	Johannesburg Stock Exchange
LDMs	Licensed Dealing Members
MIMS	Main Investment Market Segment
NEDS	Non-Executive Directors
NMB	National Microfinance Bank Plc
NSE	Nairobi Stock Exchange
NYSE	New York Stock Exchange
OLS	Ordinary Least Square Method
PAL	Precision Air Services Limited
SEC	Securities and Exchange Commission
TBL	Tanzania Breweries Limited
TCC	Tanzania Cigarette Company

TSI	Tanzania Share Index
UK	United Kingdom
USA	United States of America

ABSTRACT

When the company needs to raise more capital or to provide liquidity to the existing shareholders, it may decide to issue shares or go to public with an initial public offering (IPO). IPOs appear to be a good investment opportunity but risks do exist. In active markets, the information on IPO announcement and selling can be used as a reliable indicator to predict the trading trend in the subsequent week. Since going public is believed to improve share market performance then, there is a need to establish the relationship between IPO and share price. The research is based on assessing the effects of IPO on share price of companies listed at Dar es Salaam Stock Exchange (DSE) using DSE All Share Index (DSEI). The theoretical and empirical research was performed in order to widen researcher's knowledge on the study. The research assessed the effects of IPO (announcement and selling) on five listed companies that went public between 2008 and 2013 through the dependent variable; share price.

The research based on secondary data and the main source of data was the DSE. The population of the study comprised all companies listed at DSE under MMIS category. DSEI details were extracted from the detailed daily market reports issued by DSE. The websites of the judgmentally sampled companies were visited and available annual reports and prospectuses were downloaded from them. Using the Linear and ARIMA regression models in STATA 11.2; a researcher was able to find out that IPO announcement and IPO selling have no significant effects to the share price based on the sample used. The results also revealed interesting results that previous share prices do affect the current share price of a company. Since DSE is a small and inactive market; the results suggest that policies to grow stock markets are important through encouragement of new listings and the need for establishing a regional stock market is inevitable in order to allow member states to benefit from economies of scale. Also responsible authorities are advised to consider policies to increase the amount of shares available for sale in the exchange without affecting the demand for the same shares.

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CHAPTER ONE

BACKGROUND INFORMATION

1.0 Introduction

This chapter intends to give a short and clear picture on the background of the problem, the statement of the problem in relation to its objectives, research questions, significant of the study, limitations and the scope of the study. The study concentrates on the effects of initial public offering on share price of companies listed at the DSE which was the case study of the research.

1.1 Background

When the company has reached a certain stage in its growth and need to raise more capital or to provide liquidity to the existing shareholders, it may decide to issue share or go to public with an initial public offering.

Firm's big decision to go public always follow from the longer-term strategic objectives aiming at seeking opportunities for growth, value creation, or an exit strategy. Growing companies constantly search for new capital. Going public is one way to obtain that capital however, it takes time and money.

Going public provides opportunity for growth and expansion of the business by offering a wider range of sources to raise capital, that is, easy access to capital. It also increases the company's equity base and creates more leverage for financing growth.

It can also improve the debt to equity ratio, which can help the company borrow additional funds as needed, and may allow renegotiation of the existing debt on more favourable term. Moreover, IPO and distribution of shares to a wider, more diverse investor base can create greater public awareness of the firm's products and services. Other advantages of going public are enhanced wealth and liquidity for the owner; and

increased employee motivation and retention (Kpmg, 2008). Moreover, going public provides access to public equity capital and so may lower the cost of funding the company's operations and investments (Motley, 2006).

However, going public is associated with increased reporting disclosures and accountability resulting to loss of privacy in matters related to the company's business operations, competition, executive officers' compensation, material contracts, and customers. Extensive public disclosure rules require details in public offerings and continuous disclosure documents (Kpmg, 2008) since the company becomes accountable to a larger group of relatively anonymous shareholders who will tend to vote with their feet (by selling the shares) rather than assist the company's decision-makers in the way a venture capitalist might (Loughran and Ritter, 2002).

By going public, there must be periodic financial reporting, sound corporate governance practices becomes mandatory and insider dealings are restricted.

To accomplish the IPO process, the companies usually incur costs such as underwriting fees, auditors' and lawyers' fees for consultancy, and publication cost as well as management's time and effort devoted to conducting the offering (Wabwire, Owuor, Onyuma and Njuguna, 2013).

Various industries in the economy usually undergo several changes aiming at improving efficiency, introducing transparency and ensuring a sound financial footing of the respective sector. One of the major reforms in improving efficiency, transparency and sound financial reports was allowing the private sector companies to go for IPOs. Going public dilutes the private ownership and brings the respective companies under market discipline (Kumbhakar and Sarkar, 2003).

After the IPO shares start to float into the hands of public shareholders who can sell and purchase the shares at the stock exchange. Fluctuations in share prices at the first trading day usually show how the share is underpriced however other factors may contribute too. Rational investors normally use all available information to make decisions based on rationality and efficiency. Irrational investors normally show biased behavior basing on psychological influences. In situations of psychological explosives, the share prices may fall or rise greatly (Schulz and Schollin, 2006).

The securities market in Tanzania emerged in the 1990s as a result of the government policy to liberalize the Tanzania financial sector, which included a 1990 study on monetary issues. Within such framework, the Capital Markets and Securities Authority (CMSA) was established in Tanzania in 1994 under the Capital Markets and Securities Act 1994 [Act No. 5 of 1994 as amended by Act No. 4 of 1997]. Currently, the Dar es Salaam Stock Exchange is the only formal trading place for securities in Tanzania (www.tanzaniainvest.com and www.dse.co.tz).

The Dar es Salaam Stock Exchange (DSE) was incorporated in 1996 as a company limited by guarantee without a share capital. It became operational in April, 1998. The DSE is a non-profit making body created to facilitate the Government implementation of the reforms that including to encourage wider share ownership of privatized and all the companies in Tanzania. Among the functions of the DSE includes providing a market for listed securities, facilitating price discovery, enhancing transparency through the disclosure requirements envisaged in the DSE rules, facilitating privatization and wider ownership of resources, facilitating raising of capital for enterprises, and providing a room for wealth creation of through investing in listed securities. Currently there are eighteen (18) listed companies at the DSE, out of which out of which seven (07) are actively traded (www.dse.co.tz).

The securities currently being traded are Ordinary Shares of eighteen (18) listed companies, 5 company bonds and 8 Government of Tanzania bonds as per 31 December 2013. The DSE membership consists of Licensed Dealing Members (LDMs) and Associate Members. Both the Capital Markets and Securities Authority (CMSA) and DSE monitor the market trading activities to detect possible market malpractices such as false trading, market manipulation, insider dealing, short selling, and others. The Government has deliberately provided several incentives in order to encourage active participation in capital markets by Issuers and investors. (www.dse.co.tz).

The establishment of the DSE has provided the opportunity for investors to transform their stock holdings into liquidity form when it is needed. In addition, the return on investments provides sufficient signals for investors to participate in raising long-term capital for expansion and growth. The stock exchange also provides adequate mechanism for efficient assignment of prices of the share values of underlying companies and thus closely evaluates managerial competence and good corporate governance (Ziorklui, 2001).

As a capital market institution, the stock exchange plays an important role in the process of economic development. It helps mobilize domestic savings thereby bringing about the reallocation of financial resources from dormant to active agents. Long-term investments are made liquid, as the transfer of securities between shareholders is facilitated. The stock market consists of both the primary and secondary markets. In the primary or new issue market, shares of a company or firm are first brought to the market and sold to investors. In the secondary market, existing shares are traded among investors. Many researchers have documented a long-run decline in companies' post-IPO operating performance (Kinyua, Nyanumba, Gathaiya and Kithitu, 2013).

Many studies have concentrated on developed countries, mainly the USA (Kim .J. and Lee .J, 2004) and it has been cautioned that evidence from other developed countries are

not transferable to developing countries due to absence of a well-defined market for corporate control, and weak property rights (De, 2003). These comments stimulate the need for empirical evidence in the area and particularly developing countries, Tanzania being the area of study, where the economies are on transition from private to public companies.

This study assessed the effects of IPO on share price of the companies quoted at the Dar es Salaam Stock Exchange, by studying the movement of the share prices during IPO announcement and selling for the period from 2008 to 2013.

1.2 Statement of the problem

When a privately held corporation needs to raise additional capital, it can either take on debt or sell partial ownership. If the corporation chooses to sell ownership to the public, it engages in an IPO. When a company registers securities so that it can offer and sell them, the company's status shifts from privately held to public. Corporations choose to “go public” instead of issuing debt securities because capital raised through an IPO does not have to be repaid, whereas debt securities such as bonds must be repaid with interest. Going Public through the IPO process, increases **access to Capital** through selling shares as a company's debt-to-equity ratio will usually improve after going public hence this will result into a more favorable financing arrangements, public companies can **utilize equity** by offering share as an incentive, bonus, or as part of an employment contract in order to retain key people before the Going Public process. Moreover, if public company performs well, the **value** its share tends to **appreciate** and the company becomes more **liquid** with equity since the shares can be used as or turned into cash, for paying debts, acquiring another business, etc. (Keown, 2004) .

Since a publicly traded company conveys a positive image and attracts interested shareholders who continually demand increased profitability, then, there are

expectations that share prices will continue to rise however; they can be followed by sharp and widespread price falls (Wabwire, et al, 2013).

Interested investors usually shift their focus to the stocks of major companies that are going public by assess how the share price behaves after the day of its offering on the secondary market as the post IPO prices normally predict the future performance of a share following its offering. The change in demand for shares results into IPO share price variations with time and market conditions. Consequently, IPOs can experience high volatility once they become available on the open market (Savor, 2012).

Moreover, there are no well documented empirical evidences that IPO affects the share prices of companies listed in the DSE hence there is a need to establish the relationship between IPO and share price as it is believed that IPOs improve share market performance.

Therefore, the researcher analyzed the effects of IPO on share prices of actively trading companies listed at the Dar es Salaam Stock Exchange from 2008 to 2013 by assessing the daily all share price index (DSEI) movements of the IPOs beyond the announcement and selling days.

1.3 Research question

1.3.1 General question

When new information arrives or happen to the market we expect share prices to change to reflect the new variable information. If an IPO has an effect to the market, then the main question in this research is to find whether information on IPO has effects on share price of companies listed at DSE. Therefore the question which guided the researcher was: *Whether Initial Public Offering affects the share price of companies listed at DSE.*

1.3.1.1 Specific questions

In order to meet the specific purpose of the study the researcher curiously assessed:

Whether IPO announcement affects the share price of companies listed at DSE and

Whether IPO selling affects the share price of companies listed at DSE.

1.4 Research objectives

1.4.1 General Objective

To assess the effects of IPO on share prices of companies listed at DSE

1.4.2 Specific objectives

1. To assess the effects of IPO announcement on share price of companies listed at DSE.
2. To assess the effects of IPO selling on share price of companies listed at DSE.

1.5 Significance of the study

Since there is scant literature on the effects of IPO on share price, the findings from the study would have a significant contribution to the area by providing evidences on the relative share price of IPO companies in Tanzania for the period from 2008 to 2013.

The daily share price movements and market indices are the central concern since a single large IPO can have a significant effect in a less developed market as the transactions attracts the attention of all big investors, locally and internationally.

The findings would also assist the government policy makers, Capital Markets Authority, Dar Es Salaam Stock Exchange, investors and all who are interested with the effects of IPO on share prices. Finally, the findings resulting from the study would provide a starting point for academicians and other interested parties to conduct further research on the effects of IPO on the share price of a company.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

The purpose of this chapter is to review both theoretical and empirical facts about the subject matter under the study by reviewing literatures from various scholars and authors. The information obtained from the review provides an insight into the research design and methodologies that is appropriate to the research questions and objectives. It also provides a gap that researcher need to fill.

2.1 Theoretical Review

2.1.1 Initial Public Offering

An initial public offering (IPO) occurs when a security is sold to the general public for the first time, with the expectation that a liquid market will develop (Ritter, 1998).

IPO is first sale of share by a private company to go to public. IPOs are often issued by smaller, younger companies seeking for capital expansion; however, it can also be done by larger privately owned companies aiming at becoming publicly traded (Simon, 2011).

In an IPO process, the issuer usually obtains assistance of an underwriting firm which plays a key role in considering the type of security to issue, timing and preliminary pricing for the offering (Kpmg, 2008).

2.1.2 Financial Markets

Howells and Bain (2007), describes the financial markets as channels through which financial assets are exchanged in a process also known as funds intermediation. It is an organizational framework within which financial instruments can be bought and sold. Financial markets comprise of money and capital markets.

2.1.2.1 Capital Market

According to Kuhlemeyer (2004), the capital market refers to the market for relatively long-term (greater than one year original maturity) financial instruments. This is where financial instruments for raising capital are traded. Instruments like shares and bonds are traded in this market. Thus, this type of market is composed of both the primary and secondary markets. The main instruments which are traded in these markets are bonds and equities or company shares.

2.1.2.2 Primary Market

A primary market issues new securities on an exchange. It is a new issues market where new securities are bought and sold for the first time (Kuhlemeyer, 2004).

Companies, governments and other groups obtain financing through debt or equity based securities. Primary markets are facilitated by underwriting groups, which consist of investment banks that set a beginning price range for a given security and then oversee its sale directly to investors (www.investopedia.com).

The primary markets are where investors have their first chance to participate in a new security issuance. The issuing company or group receives cash proceeds from the sale, which is then used to fund operations or expand the business.

2.1.2.3 Secondary Market

This refers to a market for already issued securities rather than new issues.

As written by Choudhry (2012), the secondary market refers to “where investors purchase securities or assets from other investors, rather than from issuing companies themselves”.

Stock exchange market is secondary market which facilitates the selling and buying of securities where by transactions take place between holders of financial claims and other

investors (participants) in the market. The price of securities are always determined in the stock market since the fluctuation of price indexes provide useful information for investors to speculate on Return on Investment (ROI) and Return on Equity (ROE) (Massele, 2013).

Stock Exchange involves an act of trading officially the shares held by investors by converting securities into cash through formalized institutions. Shares of the listed companies are quoted and traded on a recognized major market and the listed companies have to provide a substantial amount of information on a regular basis about their trading and financial position. Normally, a company selling shares in an IPO will also seek a listing on an exchange or exchanges (Benning, 2007, Norman 2011).

For the case of Tanzania, DSE is a secondary market institution where investors through their brokers usually sell and purchase listed securities.

2.1.3 Offering price

The company and the underwriters usually make the decision on where to set the offering price. The factors they consider in setting the price, as well as the terms of the underwriting agreement between the company and the underwriters, are usually discussed in the prospectus. The offering price is determined by a mix of market conditions, analysis and negotiation. Competing interests usually affect the determination of the offering price (Drobetz, Kammermann and Walchli, 2005).

The offering price may bear little relationship to the trading price of the securities, and it is not uncommon for the closing price of the shares shortly after the IPO to be well above or below the offering price.

2.1.4 Share price

A share price refers to the price of a single share of a company's share. Share prices in a publicly traded company are determined by the forces of market supply and demand. Volatility in share price is usually caused by the expectations of buyers and sellers. Since investing is all about taking a risk then investors are usually concerned with the movements in share prices (Menaje, 2012).

The share price after an IPO may decline over time as shares that were previously restricted become available for sale. In addition, when lock-up agreements expire the share price may decline significantly if a large number of shares become available for sale all at once. Early investors and shareholders in a company often view an IPO as a way to realize a profit on their investment by being able to sell shares to the public. The lock-up expirations give these early investors the opportunity to sell their shares to the extent they weren't able to do so as selling shareholders in the IPO. (United States Securities and Exchange Commission, 2013).

2.1.5 Setting share price

Folger (2012) explains that when a company undergoes an IPO, the company's current and projected performance and health are usually evaluated by an investment bank in order to determine the value of the IPO for the business. The bank may compare the company with the IPO of another similar company, or calculate the net present value of the firm. The company and the investment bank then meet with investors to help determine the best IPO price through a series of road shows. Finally, after the valuation and road shows, the firm must meet with the exchange, which will determine if the IPO price is fair.

When trading starts, share prices are usually determined by the forces of supply and demand. A company that demonstrates **long-term earnings potential** may attract more buyers, thereby enjoying an **increase** in share prices. A company with a **poor outlook**,

on the other hand, may attract more sellers than buyers, which can result in **lower** prices. In general, prices rise during periods of increased demand - when there are more buyers than sellers. Prices fall during periods of increased supply - when there are more sellers than buyers. A continuous rise in prices is known as an uptrend, and a continuous drop in prices is called a downtrend. Sustained up trends form a "**bull**" market and sustained downtrends are called "**bear**" markets.

Under behavioral finance, it is believed that sometimes as more and more people buy a share, pushing the price higher and higher, other people will jump on board, assuming that all the other investors must be right (or that they know something not everyone else knows). There may be no fundamental or technical support for the price increase, yet investors continue to buy because others are doing so and they are afraid of missing out. Other factors like earnings reports, political events, financial reports and economic news may affect prices and cause sudden or temporary changes in price, however, not all news or reports affect all securities.

2.1.6 IPO stakeholders

Feldman (2006) mention the followings as interested parties in the IPO process:

- **Company:** It aims at maximizing proceeds, keeping investors happy with immediate modest share price increase, raising company profile as well as facilitating future pricing.
- **Vendors:** These are the selling shareholders who want to maximize proceeds, maximize value of retained interest or share price performance and be seen to be involved with successful deal.
- **Investors:** They strive to maximize share price return (short-term and long-term), acquire shares in attractive company and finally to broaden their investment portfolio.

2.1.7 IPO Price Setting Process

In determining the offer price, the IPO process is usually performed under two stages. The first stage is determining the value of the company which is done by the issuer and its advisors. The second stage is setting the offer price after obtaining the company value. Business valuation methods commonly used are Relative valuation and Discounted Cash Flow methods while the share pricing can be based on fixed price, auctions or book building mechanisms (Dietrich, 2012).

Since IPO process is a repeated process for buy-side clients and investment banks, and then both parties develop long-term relationships. Investment bankers usually know which buy-side analysts provide the most accurate indications of interest, and reward them with higher allocations.

2.1.8 Signaling Hypothesis versus Market Feedback

Faugeron, Ginglinger and Vijayraghavan (2003), explain that in the signaling hypothesis, the managers know the true value of the firm better than the market, and transmit their information through an initial under pricing, whereas, in the market feedback hypothesis, the market participants are better informed than managers are and their aggregate demand would reveal their information to the firm.

2.1.8.1 Signaling Hypothesis

Managers normally use the offering price as a signal given a situation of asymmetric information. The initial owners of the issuing firm are supposed to be better informed than other investors. They signal positive information through the under pricing of the share in the IPO. Signaling is costly because it results in a wealth transfer from initial owners to new investors. The signaling cost is compensated for by the fact that the subsequent capital issue would be made at a higher share price. The companies could issue an IPO by proposing to investors a smaller fraction of their capital initially, with a

subsequent issue completely satisfying their total capital needs. In this context lesser quality firms will not be able to compete with higher quality firms. The former firms, given that there would be the risk that their lower quality would be revealed before the capital issue, would prefer to issue the share initially at their true price for the exact amount of capital desired. The signaling models explicitly take the future equity offerings into account in the IPO's pricing decision (Faugeron et al, 2003).

2.1.8.2 Market feedback hypothesis

As suggested by Jegadeesh, Weinstein and Welch (1993), and modeled by Van Bommel (2002), market participants are better informed about the true value of the firm than the initial shareholders as the information would be revealed to them by the evolution of the shares' price after the IPO. It is believed that positive information would encourage the managers to invest in the firm and issue more shares subsequently (Faugeron et al, 2003).

2.1.9 Benefits of Issuing and Listing Securities at the DSE

According to www.dse.co.tz, issuers wishing to issue and list securities at the stock exchange usually stand to obtain the following benefits:

- The issuer can raise capital relatively cheaply from the public since the listed securities are traded daily hence there is a possibility of the company to raise the needed capital due to the existing ready market.
- The issuer is likely to perform better to meet the expectation of the public as its performance is monitored. The public believes that listed companies are credible and good performers since the management of listed companies work hard towards meeting investors' needs.
- Listing is a marketing tool for a company, as on a daily basis during the release of market information to the public - listed companies' are referred to in the daily market report released by the DSE to the public.

- Listed securities are easily transferable hence the company can easily raise funds from the public due to the existence of a ready market for the investors who wish to sell their securities of the issuer.
- Listed companies are generally considered to be efficient and reliable due to the fact that before being admitted to the stock exchange, the company is subjected to rigorous tests and scrutiny.
- Issuing and listing widens the range of financing choices for a company as there is flexibility in financing companies created by listing the company on the DSE. This flexibility does not exist for unlisted companies.
- Public issuance and listing facilitates ownership change and privatization - capital markets facilitates the implementation of privatization programme to Tanzanians. Government owned shares can be sold to Tanzanians through the DSE
- Listing attracts foreign portfolio investors. The listed companies are attractive to foreign investors as the investors know the value of the companies to invest in and listing facilitates an exit mechanism.
- Listing adds to the status and public image of a company listed companies have a higher status than unlisted ones. This status has value in the sense that listed companies can borrow from banks at a cheaper rate due to marketability of their shares as well as being subjected to other regulators over and above own regulators.

2.1.10 Other Incentives for Issuing and Listing Securities at the DSE

The DSE hand book (2007) provides additional incentives for the companies that list shares with it. Incentives are mainly fiscal policy measures like tax waivers, tax exemptions and tax differentials. These privileges include:

2.1.10.1 Incentives to Issuers

According to the DSE (2008) the incentives to issuers include:

- Reduced corporate tax from 30% to 25% for the period of three years where the Issuer has issued at least 35% of the issued shares to the public. The reduced rate is applicable for five years starting from listing date.
- Tax deductibility of all Initial Public Offering (IPO) costs for the purposes of income tax determination. All IPO costs are accepted by the Tanzania Revenue Authority (TRA) as acceptable expenses used in the generation of income and profits, and therefore are taken into consideration when determining profit for tax purposes; and
- Withholding tax on investment income made by Collective Investment Schemes (CIS) is final tax. Investors in CIS are not charged with tax on the income.

2.1.10.2 Incentives to Investors

The incentives to investors as discussed in the DSE handbook (2008) are as follows:

- Zero capital gain tax as opposed to 10% for unlisted companies;
- Zero stamp duty on transactions executed at the DSE compared to 6% for unlisted companies;
- Withholding tax of 5% on dividend income as opposed to 10% for unlisted companies;
- Zero withholding tax on interest income from listed bonds whose maturities are three years and above;
- Exemption of withholding tax on income accruing to fidelity fund maintained by DSE for investor protection; and
- Income received by the Collective Investment Scheme (CIS) investors is tax-exempt

2.1.11 IPOs and Market Segmentation

The shares issued by the issuer company to the public in an IPO can be through a Main Investment Market Segment (**MIMS**) that caters for big companies or an Enterprise Growth Market Segment (**EGMS**). Share capital requirement to the Main Investment Market (MIM) is a minimum of TZS 500 million while in the EGM is TZS 200 million. A minimum of 1,000 shareholders and 25% public shareholding is required under MIM while it is 200 shareholders and 20% public shareholding for EGM (www.dse.co.tz, Kibuuka Law Chambers, 2013).

2.1.12 Legal Requirements for undergoing an IPO

IPOs under the Tanzanian regime are regulated under the Capital Markets and Securities (“CMSA”) Act, the CMSA’s various rules and regulations (“Regulations”) and the Rules of the Dar es Salaam Stock Exchange (“DSE Rules”). MIMS and EGMS segments have specific entry requirements such as track record of existence, issued and paid-up share capital, net tangible assets and public shareholding spread. However, the issuer company undergoing an IPO via both market segments must meet the following requirements: Public issuance of securities, Comfort letters from relevant regulators, IFRS compliance, Disclosure of clear dividend policy, Issuance of a bridged prospectus approved by the CMSA and published in the press; and finally one third of Board members must be Non-Executive Directors (NEDS). (www.dse.co.tz, Kibuuka Law Chambers, 2013).

2.1.13 Listing requirements for shares

Norman (2010) identifies that the DSE has set a number of requirements for listing and procedures that govern the companies in order to be listed are as follows:

- The company has to release initial and periodic information to the public so as to inform the investors regarding the company’s position and progress over the

period of time. Listed companies are required to publish interim reports covering six months and the annual report.

- The company has to have a track record of adequate duration to allow for the possible investors to appraise its present and possibly future performance.
- The company is of the size which makes the participation of the public in investing therein possible.
- The minimum requirement of the capital of the company is TZS 400 million as of the year 2008 December.
- The company must be a public company as required by the companies Act. 2002 that it has at least two shareholders and that the articles and memorandum of association should indicate that the company in question is a public company.
- The public must hold at least 25% of the issued shares. Shares held by the employees are not considered in determining the 25% threshold.
- The company must prepare and obtain approval of the Prospectus from the Capital Markets and Security Authority (CMSA). The requirement governing the conditions and contents of the prospectus are provided by the capital markets and securities (prospectus requirements) regulations, 1997.
- The company must undertake to comply with the set of undergoing listing obligation.

2.1.14 Listed companies at DSE

According to the Dar es Salaam Stock Exchange market report of 31st Dec, 2013, eighteen (18) companies have listed shares with the DSE under **MIMS**.

An analysis of the most profitable companies indicates that on average foreign investors own 66.87 percent while local investors in the profitable companies own only 33.12 percent of shares on average, which indicate that although most of the share exchange business brings together firms looking for finance with huge amounts of capital from

investors, most of the shares belong to foreign investors. However, the case is different to the Tanzania Oxygen LTD (TOL) because up to 31st December, 2013, local investors owned 97.37 percent of the shares. TOL is the only company that, has not been fairing well if compared with the rest. The dominance of local investors in the TOL is a result of information asymmetry which was in favor of the local investors since no efforts were made to advertise the launching beyond the borders of Tanzania and the philosophy that investors are generally risk averse (Norman, 2010).

2.1.15 Participation in Primary markets

The DSE Investors guide manual (2007) explain that issuers issue securities to the public after the approval by CMSA of the issuance document, referred to as “prospectus” for issuance of shares, “information memorandum” for issuance of bonds and “offering document” for the issuance of CIS units, which gives details of the issuer to the investing public. Normally, the issuance of a specific security on the primary market has a limited duration (usually about one month) and securities are sold through securities brokers/dealers and other appointed agents. Upon the expiry of that time, securities are traded on the secondary market. Moreover, when participating on primary markets, prospectus/information memorandum/offering document is the main source of information.

2.1.16 Trading System at DSE

All trading at the DSE Trading Floor is conducted under an Automated Trading Electronic System which matches bids and offers using an electronic matching engine. Brokers post their orders in the system, and matching orders are displayed on computer terminals in the trading room.

An electronic Central Depository System (CDS) is used to conduct clearing and settlement. The CDS is the share registration system which facilitates registration of

changes of ownership of securities electronically. The CDS facilitates the delivery of securities in time for the settlement of trades to be implemented within five working days (www.dse.co.tz, Shivji, 2010)

2.1.17 Daily Price Variation in Shares

The daily price variation of a share is the difference between its highest and lowest values on a given trading day or the difference between one day's opening price and the next day's opening price. Daily price variation is a measure of volatility showing how much a share's value changes. Moreover, the average daily variations can be calculated by adding up individual daily price variations and dividing the total by the number of days to establish a more long-term trend. Investors' perceptions can also explain the movements in share price movements such that in a bull market share prices are expected to rise and in a bear market they are expected to fall. (www.finance.zacks.com, Sunde and Sanderson, 2009).

2.1.18 Stock Market Performance

Stock Market Performance gives signal to the investors about their future moves. The movement in the price of a share and the indexes gives the idea of the near future trend of the share, sector or the economy as a whole. The performance of equity markets is apparently important not only to investors but also to policymakers because share indices are recognized as leading indicators of economic activity (Ikoku and Hosseini, 2008).

Mugabi (2011) discussed the following four factors as determinants of market performance:

- **Availability of Information:** The prevailing share price should reflect all available information regarding the asset as investors usually buy or sell shares at a price determined by the forces of demand and supply. Demand and supply conditions can be determined only when there is availability of information on

past transactions in terms of volume and price and on the current outstanding bids or offers.

- **Liquidity:** Selling quickly means marketability of an asset as the security has the known price which is believed to be an indication of price continuity. Usually share prices do not change much from one transaction to the next unless substantial new information comes in.
- **Transaction costs** (Internal efficiency): For a market to be attractive all aspects of transaction costs (costs of reading the market, brokerage cost, commission and the asset transfer costs) need to be low.
- **Depth:** This refers to the number of buyers and sellers. To ensure that the market is continuous, there must be many buyers and sellers who also help to ensure market liquidity.

2.1.19 Stock Market Performance Indicators

The stock markets may be a bull market when general price level increase, bear market when the general price level decrease or at crash when stagnant prices or sudden big prices move downwards. The common measures of stock market performance include; stock market indexing, market capitalization and stock turnover (Kithinji and Ngugi, 2010).

An index is a number calculated by weighting a number of prices or rates according to a set of predetermined rules and measures the change in some economic variable over time in order to provide a single number whose behavior is representative of the movements of a variety of prices or rates and indicative of behavior in a market (Wabwire, et al 2013),. Gough (2001) continues to explain that a stock index is “a mathematical measurement of the performance of a number of shares as a group and indicates the market movement”. The indices are the barometers of the stock market and provide a measuring point for portfolio comparisons useful for large funds and private investors. Since tracing the upward or downward market movements of every share in

the market is not possible, then the indices are used to give a broad outline of the market movement and represent the market as they are regarded. The indices are the mirrors of the stock market's behavior because when the share price rises then it is perceived that it has certain positive news or signals, but, when it decreases then there must be some news regarding its performance, which is generating negative signals to the market.

Market capitalization/ market value refers to the share price times the number of shares outstanding (www.data.worldbank.org). The ratio measures market movements by measuring the total value of share in a particular stock market by aggregating the market value of the quoted shares. Fluctuations in share prices or issuance of new shares, bonus issue or new share price results into changes in the Market capitalization. Frequency of activities at the share market may signal more investments in the stock markets resulting to inflows and outflows in the stock market basing on the actively traded shares. Market capitalization is Also a measurement of corporate or economic size equal to the share 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. It represents the public opinion of a company's net worth and is a determining factor in stock valuation. (Kithinji and Ngugi, 2010).

2.1.19.1 DSE market indicators

Currently, DSE has three (03) categories of Indexes namely All Share Index (DSEI); Domestic Index (TSI) and Sectorial Indexes (Banking, Finance and Investment Index (BI); Industrial and Allied Index (IA); and Commercial Services Index (CS). (www.dse.co.tz).

The market indexes are used for calculating benchmark returns to judge portfolio performance, examining factors that influence aggregate security price movement and for technical analysis to predict future movements.

DSE all shares Index (DSEI) is the index that tracks all listed companies (including cross listings).

Market capitalization is calculated by multiplying the share price by number of shares of the share the company has issued, whereas, total market capitalization refers to the summation of all listed shares of the companies multiplied by their respective share prices. Market capitalization is used by investors for quick valuation of a company. Investors use share prices to determine value of the company and how it is likely to grow as share prices are an indicative of investors' expectations of a company's earnings. As earnings rise, share traders bid more for the share price (DSE & ACCA, 2014).

Over years DSE has witnessed an increase in market capitalization from TZS 161.0 billion in December 1998 to TZS 3,278.9 billion in 2008. The increase in the market is usually linked to the appreciation domestic share prices (DSE, 2008).

The following table summarizes the total market capitalization trend of five years post the DSE ten years anniversary:

Table 2.1: DSE Market Indicators

	31 Dec, 13	31 Dec,12	29 Dec, 11	31 Dec,10	31 Dec, 09
Total Market Capitalisation (TZS bln)	16,464.30	13,197.34	11,577.05	4,895.47	5,030.34
Domestic Market Capitalisation (TZS bln)	5,979.79	3,005.05	2,395.42	1,836.80	1,925.50
All Shares Index (DSEI)	1,866.57	1,485.63	1,303.23	1,163.89	1,192.37
Tanzania Share Index (TSI)	2,843.50	1430.46	1,140.26	902.16	938.32
TZS/USD (BOT Mean Rate)	1,574.01	1571.62	1,571.90	1,453.54	1,313.29

Source: DSE market reports as at 31st Dec, 2013, 2012, 2010, 2009 and 29th Dec, 2011

2.1.20 Comparison of DSE with other East African Stock Markets

2.1.20.1 In terms of total value of share traded as a percentage of GDP

Shares traded refer to the total value of shares traded during the period. This indicator complements the market capitalization ratio by showing whether market size is matched by trading. (www.data.worldbank.org).

For the case of contribution to the nations' GDP, Kenyan stock market is the leading market in the area followed by Tanzania and Uganda.

The table below shows the average of total value of share traded in each East African Country as a percentage of GDP:

Table 2.2: Total value of share traded as a percentage of GDP

	1994 -1998	1999 - 2003	2004 -2008	2009 - 2013
Kenya	1.6	3.4	2.6	2.5
Tanzania	0.2	0.1	0.1	0.1
Uganda	0.1	0.1	0.1	0.1
Rwanda	0	0	0	0
Burundi	0	0	0	0

Source: www.data.worldbank.org -stocks traded, total value (% of GDP), 2014

2.1.20.2 In terms of listed domestic companies

As at the end of 2013, Kenyan Stock Exchange Market is again the leading stock exchange in the area with 57 listed domestic companies out of which 51 are actively traded (Wabwire, et al, 2013) followed by Tanzania which has a total of eighteen (18) listed companies with six firms cross listed in Nairobi, Kenya and Kampala, Uganda stock markets (DSE, 2013). Ugandan Stock exchange is third in the list with 10 listed companies. Rwanda and Burundi are last in the area with no listed companies.

The table below summarizes the results by showing the trend of listing domestic companies from 1994 to 2013:

Table 2.3: Trend of listed domestic companies

	1994 -1998	1999 - 2003	2004 -2008	2009 - 2013
Kenya	55	55	58	57
Tanzania	15	11	17	18
Uganda	8	8	8	10
Rwanda	0	0	0	0
Burundi	0	0	0	0

Source: www.data.worldbank-listed domestic companies, 2014, researcher, 2014

2.2 Empirical Literature Review

A study conducted by Wilson (2012) concluded that Microsoft Corp.'s stock-market performance during its first eight years as a public company far surpassed Google. Initial valuation when going public was noted to be the key success factor to long term IPO performance as Microsoft soared about 30-fold in the same period after its March 1986 IPO and its market capitalization peaked at more than \$600 billion in December 1999. The gap in share performance between the two companies resulted from initial valuation as Google was valued at \$23 billion in its IPO while Microsoft, was valued at a \$519 million when it went to public. Between 1995 and 2001 for example, IPOs in the United States (U.S.A) cumulatively raised more than \$300 billion (in 2001 dollars) in gross proceeds or about \$115 million per IPO (Ritter and Welch, 2002).

IPOs tend to come in waves, characterized by periods of hot and cold markets. (James and Stanley, 2006). However, Fama and French (2012) observe that there are common patterns in average returns in developed markets. The study found the value premiums in average returns in North America, Europe, Japan, and Asia Pacific, and there are strong

momentum returns in all regions except Japan and international value and momentum returns vary with firm size.

Competitive effects of IPOs have important implications for various agents including investors, industry competitors, and issuing firm (Hsu, 2010). Moreover, IPO performance primarily depends on the perceptions of potential investors since IPO represents a critical transition point which advances a privately held firm to the public arena. The IPO companies are unknown to potential investors and hence suffer from a liability of market newness. (Certo, 2003).

Investors tend to overreact to negative returns, immediately liquidating their positions in index funds. Goetzmann and Massa (1999) use high-frequency (daily) data on index fund trading, coupled with separate analyses of inflows and outflows, to investigate the relationship between investor demand and the movement of the S&P 500. Their analysis suggests that investor demand influences share returns, but that the causality goes in the opposite direction only when the market drops. The authors also show that investors react to expert recommendations that appear in market timing newsletters. When the experts are generally bullish, investors react with greater inflows into these index funds and smaller outflows. However, investors react even more strongly to uncertainty among these experts. As dispersion of opinion about the market widens, investors react with reduced inflows and increased outflows.

Some investors overreact to price movements and trade more than they should. The variance of share returns is larger when the market is open than when it is closed, even when similar amounts of information are released. Empirical evidence suggests that at sometimes investors under react to information contained in share returns and at other times overreacts. This implies that the act of trading increases volatility (Savor, 2012). Other investors become overconfident as they overestimate their knowledge, abilities

and precision of their information. The overweighing of private signals leads to positive or negative sentiment shocks (Ogunmuyiwa, 2010). On the other hand, when the irrational investors are well informed they usually make the market more liquid through trading (Deaves, 2006).

Some investors react strongly to good news when it is announced, but others sell after run-ups (implying some sort of overreaction). Shares tend to go up when there is news, and go down when there is none (Chan, 2001).

The study performed by Tease (1993) emphasized that under the efficient markets hypothesis the security prices should fully reflect all available, relevant information and deviations of actual returns from expected returns should be random. To test efficiency is to assume that the expected rate of return is constant. The study continued to argue that changes in share prices should not be serially correlated since the past history of share prices is the most readily available piece of information in the market and any information in this history should already be embedded in the current price. Price changes should only reflect new information becoming available. The study then concluded that when other determinants are controlled for, share prices do not seem to explain much of the variation in investment in any of the G7 countries as share prices simply summarize information already available.

Other researchers have found that markets usually respond to new information since the participants believe that the share prices accurately and quickly reflect all available information. However, there are arguments and supporting empirical evidences that share prices sometimes deviate from their equilibrium value due to psychological factors, fads and noise trading (Wabwire et al, 2013).

Massele (2013) continues to argue that information efficiency may influence the market to be efficient and sustainable. In order for a stock exchange market to mobilize saving through investments, an investor must take part of its fund and decide to invest in securities by buying shares as a rational allocation of resources. Buying shares (securities) provide fund to business entities and companies for expansion of business activities and projects. An investor also will benefit by either receiving dividends (return) at the agreed period normally one year or benefit by selling shares and gain profit.

The study performed by Dierkens (1991) concluded that information asymmetry is a very significant variable for equity issues. This conclusion was reached after comparing information asymmetry before and after equity issue announcements and analyzing the behaviour of equity issues process.

Shares of an IPO may change hands several times as buyers and sellers adjust their positions. Every IPO differs in size and has different owners, insiders, history and prospects. Investor sentiment may change with market conditions and incoming information, including company earnings. Insiders usually cannot sell their shares for the first six months which is a "lockup" period but after the lockup expires, a flood of insider selling may push the share price down. Many IPO shares trade erratically during the basing period starting from the first six to nine months until when the shares are stable and permanent resulting from the demand and sell of shares. When a balance is established, a share then moves out of its initial base. (Fedorov, 2009).

Benveniste and Spindt (1989) found that the aftermarket price of IPO shares depends on private information about the intrinsic value of the company and on noise trader sentiment, which is publicly observable at the time of the offering. More precisely, noise traders are assumed to be bullish at the time of the offering. The traders are ready to pay

high prices (with respect to the intrinsic value of IPO shares) to acquire the shares sold in the offering.

Many studies concentrating on a long-run decline in companies' post-IPO operating performance have been performed in developed countries. For example, In USA authors like Jain and Kini (1994) performed a study on The post-issue operating performance of IPO firms in 1995 and in 1995 they wrote on Venture capitalist participation and the post-issue operating performance of IPO firms., Mikkelsen, Partch and Shah (1997) provide evidence on the Ownership and operating performance of companies that go public while the paper by Teoh, Welch, and Wong (1998) discussed the Earnings management and the long-run market performance of initial public offerings for the USA, Pagano, Panetta and Zingales (1998) for Italy, Khurshed, Paleari and Vismara (2003) for the UK, and Cai and Wei (1997) and Kutsuna, Okamura, and Cowling (2002) for Japan. All of these studies find that IPO firms exhibit a decrease in operating return on assets and operating cash flows deflated by assets relative to their pre-IPO levels.

The study performed by in France by Derrien and Womack (2003) show that with the use of market returns, the initial returns on IPOs in from 1992 to 1998 were predictable for the period of three-months prior the offerings. Moreover, Loughran and Ritter (2002) and Lowry and Schwert (2003) used the USA data and obtain similar results.

2.3 Conceptual framework

2.3.1 Theoretical Concept

An efficient market refers to a market in which prices always 'fully reflect' available information and investors possess all available information. For a market to be efficient there must be no transaction costs in trading securities, free availability of all information to all market participants and investors use the available information to make economic decisions. Also most events that have a major impact on stock prices are random and unpredictable events and investors react quickly to any new information

(Fama, 1970). In an efficient market all information is assimilated immediately and therefore the market efficiency articulates how effectively the expectations of investors are transformed into the stock prices by explaining the relationship between information and share prices in the capital market literature (Bhunia, 2012).

Market Efficiency emphasizes that security prices are rationally connected to many logical and psychological realities and always incorporate all the information available to the market. Therefore, security markets are seen as efficient in reflecting information about individual stocks or about the stock market as a whole. However, Market efficiency is in essence an extension of the zero profit competitive equilibrium condition from the certainty world of classical price theory to the dynamic behavior of prices in speculative markets under conditions of uncertainty. Risk and return is the core part in investment decision making process (Bhunia, 2012).

2.3.1.1 Efficient Market Hypothesis (EMH)

The Efficient Market Hypothesis was first brought to the attention in 1965 by Eugene Fama in his PHD thesis. Under the efficient market hypothesis, Fama explains that financial markets are efficient and that prices already reflect all known information concerning a stock or other security and those prices rapidly adjust to any new information. Information includes not only what is currently known about a stock, but also any future expectations. EMH seeks to explain the random walk hypothesis by positing that only new information will move stock prices significantly and since new information is presently unknown and occurs at random, future movements in stock prices are also unknown and, thus, move randomly. The hypothesis extends that it is impossible to outperform the market by picking undervalued stocks, since there are no undervalued or even overvalued stocks (Spaulding, 2014).

The Efficient Market Hypothesis developed by Fama takes three forms namely weak, semi-strong and strong as discussed by Spaulding (2014) and Kong (2011):

The **weak form** occurs when only past market trading information, such as stock prices, trading volume, and short interest are considered. The current price of the securities has already reflected any news that is available either on the company's website, financial publication, newspaper and magazine. Nobody will have any advantage over others in trading the markets by using the available information because it has already been available and easily accessible to the public. The asset prices follow a random walk and that any information that could be used to predict future prices is independent of past prices. The weak form of the efficient market hypothesis claims that prices fully reflect the information implicit in the sequence of past prices.

The **semi-strong form** extends the information to public information other than market data, such as news, financial statements, company management, patents, and products of the company, announcement and other information related to the company. The form indicates that even knowledgeable investors will not be able to predict the future price movements as stock prices react almost immediately to any new public information about an asset.

The **strong form** extends the information further to include not only public information, but also material information which is not generally available to the public, typically held by corporate insiders, such as officers and executives of the corporation. Since corporate insiders can make abnormal profits by trading their company's stock before a major corporate change is communicated to the public, then insider trading is banned by the Dar es Salaam Stock Exchange. The strong form assumes that even those armed with insider information will not be able to beat the speed in which the information is

reflected into the price as asset prices adjust almost instantaneously not only to new public information but also to new private information.

The semi-strong form of the hypothesis asserts that prices reflect all relevant information that is publicly available, while the strong form of market efficiency asserts information that is known to *any* participant is reflected in market prices (Dimson and Mussavian, 2000).

Fama (1991) continue to argue that the distinctions among three forms of efficient market hypothesis are determined by the level of information being considered.

Bhunia (2012) highlighted that the share prices may not necessarily reflect the true value of stocks and excess volatility of share prices caused in short-run may be because of more reactionary pressure to new information. In a position of market inefficiency, opportunities for supernormal profit exist because the future prices can be predicted following the strategies contained in past price movements. In an efficient market, security prices reacts instantaneously unbiased manner to impound new information in such a way that leaves no opportunity to market participants to consistently earn abnormal return.

2.3.1.2 The Random Walk Model

As discussed under the EMH that stock prices reflect all available information and only new information causes stock prices to change, then, future changes in stock prices follows a random walk as future changes in prices are unpredictable. In order to reduce the significance of technical analysis, academics and critics employed the Random Walk Hypothesis which involves the non- predictability of stock prices as the stock prices are perceived as taking a random walk (Lo & Hasanhodzic, 2010).

Kendall (1953) study on 22 UK stock and commodity price series discovered that stock price fluctuations are independent of each other and have the same probability distribution. Stock prices are commonly perceived as random and unpredictable. Kendall

ended concluding that in series of prices which are observed at fairly close intervals the random changes from one term to the next are so large as to swamp any systematic effect which may be present. The data behave almost like wandering series.

Despite the emerging evidence on the randomness of stock price changes, there were occasional instances of abnormal price behaviour, where certain series appeared to follow predictable paths (Dimson and Mussavian, 2000).

Shiller (2000) supports the random walk theory by explaining that stock prices approximately describe random walks through time. The price changes are unpredictable since they occur only in response to genuinely new information is unpredictable.

2.3.1.3 Rational Expectation Theory

The price of a stock depends partly on what prospective buyers and sellers believe it will be in the future. A rational expectation is a building block for the "random walk" or "efficient markets" theory of securities prices (Sargent, 2002).

Expectations will be identical to optimal forecasts using all available information. However, under behavioural finance for investors as individuals; emotions, biases, and illusions cannot be rationalized and information is inefficient. Also stock prices are not random; they are rather unpredictable as people's reaction to new information is unpredictable, as well. (Konstantinidis, Katarachi, Borovas and Voutsas, 2013).

Studies on random walks and the EMH are important, as they can give us some information on the relative efficiency of markets. The EMH can be used as a benchmark for measuring the efficiency of markets. Using the random walk model Stock market participants usually have a much more practical criterion for judging an investment basing on successive price changes as long as the knowledge of the past behaviour of the

series of price changes cannot be used to increase the expected gains (Lo and MacKinley, 1999). However, a random walk of stock prices does not imply that the stock market is efficient with rational investors (Brealey et al, 2005).

The efficient markets theory of stock prices uses the concept of rational expectations to reach the conclusion that stock prices follow a random walk. Investors scrutinize all sources of information in order to forecast prices. If stock prices reflect all available information, then there is nothing to use to predict future stock prices. That is, if markets are efficient, stock prices are unpredictable or a random walk in statistical terms. Looking for past price patterns to predict future prices should be a worthless exercise (Sargent, 2002). However, sometimes investors may believe that a security has been mispriced when the total proceeds from a sale and the total cost of a purchase are different from the value of the stock. Investors who feel the share has been underpriced/overpriced believe that they have information which is not known to the market in general (Mugabi, 2011).

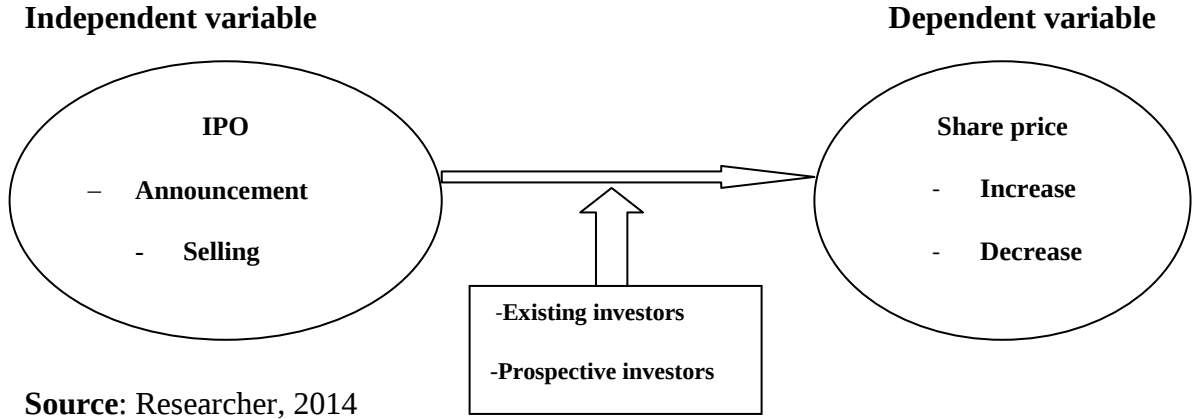
2.3.2 Practical Operationalization

In order to assess the effects of IPO on share price of companies listed at DSE, the researcher concentrated on the effects of IPO announcement and selling to the share price.

2.3.3 Variable Clarification

The figure below shows the relationship between the independent variable and dependent variable. The assumption is that, the change in the independent variable (IPO announcement or IPO selling) affects the dependent variable (share price) by either an increase or decrease. The relationship between independent and dependent variables is summarized in figure 2.1:

Figure 2.1: Conceptual Framework



Source: Researcher, 2014

2.3.4 Variable measurements

The study used dummies to represent IPO announcement and selling. The DSEI was assessed based on the sequence of IPO announcement and IPO selling. When a new IPO announcement / selling happen the dummy variable carried the value of one (01) and zero (0) otherwise.

For the case of IPO announcement, dummy variable carried the value of one (01) during the announcement period until another new IPO announcement occurs. Then, the previous IPO carried a value of zero (0) while the latest carried the value of one (01). On the other side, the dummies for the IPO selling period carried the value of one (01) when the selling took place and zero otherwise.

Originally, the regression models employed in this research were as follows;

$$P_t = \alpha + \beta_1 P_{(t-i)} + \beta_2 A_t^{dcb} + \beta_3 A_t^{nmb} + \beta_4 A_t^{crdb} + B_5 A_t^{pal} + \beta_6 A_t^{tbl} + \varepsilon_t$$

$$P_t = \alpha + \beta_1 P_{(t-i)} + \beta_2 S_t^{dcb} + \beta_3 S_t^{nmb} + \beta_4 S + B_5 S_t^{pal} + \beta_6 S_t^{tbl} + \varepsilon_t$$

After the test for the unit root was conducted, the natural logarithm (log) difference was used and the regression model equation became:

$$\ln \Delta P_t = \alpha + \ln \Delta \beta_1 P_{(t-i)} + \beta_2 A_t^{dcb} + \beta_3 A_t^{nmb} + \beta_4 A_t^{crdb} + \beta_5 A_t^{pal} + \beta_6 A_t^{tbl} + \varepsilon_t$$

$$\ln \Delta P_t = \alpha + \ln \Delta \beta_1 P_{(t-i)} + \beta_2 S_t^{dcb} + \beta_3 S_t^{nmb} + \beta_4 S_t^{crdb} + \beta_5 S_t^{pal} + \beta_6 S_t^{tbl} + \varepsilon_t$$

Where:-

P_t is the current DSE All share price index (DSEI)

$P_{(t-i)}$ is the previous DSE All share price index (DSEI)

i is the number of lags

A_t is the dummy variable that takes a value of 1 when the firm has an IPO announcement otherwise 0.

S_t is the dummy variable that takes a value of 1 when the firm has an IPO selling otherwise 0.

2.4 Hypotheses

In order to establish the effects of IPO on share price of companies listed at DSE, the study propositions were presented in the following hypotheses:

Hypothesis one

H_0 : There are no significant effects on share price of a company on IPOs announcement.

H_1 : There are significant effects on share price of a company on IPOs announcement.

The hypothesis was tested by the following equation:

$$\ln \Delta P_t = \alpha + \ln \Delta \beta_1 P_{(t-i)} + \beta_2 A_t^{dcb} + \beta_3 A_t^{nmb} + \beta_4 A_t^{crdb} + \beta_5 A_t^{pal} + \beta_6 A_t^{tbl} + \varepsilon_t$$

Where:

P_t is the current DSE All share price index (DSEI)

$P_{(t-i)}$ is the previous DSE All share price index (DSEI)

i is the number of lags

A_t is the dummy variable that takes a value of 1 when the firm has an IPO announcement otherwise 0.

The effect of IPO announcement on share price is measured by the statistical significance of the dummy variable (A_t). A positive coefficient of the dummy would suggest an increase of share price following IPO announcement while a negative coefficient of the dummy would suggest a decrease of share price following IPO announcement.

Hypothesis two

H_0 : There are no significant effects on share price of a company on IPOs selling.

H_1 : There are significant effects on share price of a company on IPOs selling.

The hypothesis was tested by the following equation:

$$\ln \Delta P_t = \alpha + \ln \Delta \beta_1 P_{(t-i)} + \beta_2 S_t^{dcb} + \beta_3 S_t^{nmb} + \beta_4 S_t^{crdb} + \beta_5 S_t^{pal} + \beta_6 S_t^{tbl} + \varepsilon_t$$

Where:

P_t is the current DSE All share price index (DSEI)

$P_{(t-i)}$ is the previous DSE All share price index (DSEI)

i is the number of lags

S_t is the dummy variable that takes a value of 1 when the firm has an IPO selling otherwise 0.

The effect of IPO selling on share price is measured by the statistical significance of the dummy variable (S_t). A positive coefficient of the dummy would suggest an increase of share price following IPO selling while a negative coefficient of the dummy would suggest a decrease of share price following IPO selling.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter explains the research process. The section covers the type of study, study area, study population, unit of analysis, variables and their measurements, sample size and sampling techniques, types and sources of data, data collection methods, validity issues and data analysis methods.

3.2 Type of study

In assessing the effects of Initial Public Offering on share price, the case study design was adopted. A case study involves an intensive description and analysis of single individual, organization or event, based on information obtained from a variety of sources. The research based only on the successfully IPO companies listed at the DSE during the period between 2008 and 2013.

3.3 Description of the study area

The study assessed the effects of IPO on share price by assessing the share price movements of companies which have already issued their shares to the public at the DSE. The study covered the following companies which are actively trading and have undergone IPO between 2008 and 2013; Dar Es Salaam Community Bank Ltd (DCB), National Microfinance Bank Plc (NMB), CRDB Bank Plc (CRDB), Precision Air Services (PAL) and Tanzania Breweries Limited (TBL). The study was conducted in Dar es Salaam since the City is the head quarter of the DSE.

3.4 Population and Sample

3.4.1 Study population

The population for this study was all the listed companies at the DSE as presented in the following table

Table 3.1: Listed Companies at DSE as at 31st December, 2013

COMPANY	DATE LISTED	NUMBER OF ISSUED SHARES	MARKET CAPITALIZATION (TZS BILLIONS)	FOREIGN CONTROL (%)
TOL Gases Limited (TOL)	15 th April, 1998	37,223,686	11.54	2.63
Tanzania Breweries Limited (TBL)	9 th September, 1998	294,928,463	2,359.43	64.71
Tanzania Tea Packers Limited (TTP)	17 th December, 1999	17,857,165	11.61	47.60
Tanzania Cigarette Company Limited (TCC)	16 th November, 2000	100,000,000	860.00	75
Tanga Cement Company Limited (SIMBA)	26 th September, 2002	63,671,045	128.62	62.50
Swissport Tanzania Limited (SWISSPORT)	26 th September, 2003	36,000,000	96.48	60.00
Tanzania Portland Cement Company Limited (TWIGA)	26 th September, 2006	179,923,100	478.60	69.25
Dar Es Salaam Community Bank (DCB)	16 th September, 2008	32,393,236	33.24	0.07
National Microfinance Bank Plc (NMB)	6 th November, 2008	500,000,000	1,310.00	38.64
CRDB Bank Plc (CRDB)	17 th June, 2009	2,176,532,160	609.43	15.90
Precision Air Services (PAL)	21 st December, 2011	193,856,750	75.42	34.13
**Kenya Airways Limited (KA)	1 st October, 2004	461,615,484	344.19	NA
**East African Breweries Limited (EABL)	29 th June, 2005	658,978,630	4,175.29	NA
**Jubilee Holdings Limited (JHL)	20 th December, 2006	36,000,000	316.25	NA
**Kenya Commercial Bank Limited (KCB)	17 th December, 2008	2,217,777,777	2,584.20	NA
**National Media Group (NMG)	21 st February, 2011	157,118,572	1,063.38	NA

**African Barrick Gold Plc (ABG)	07 th November, 2011	410,085,499	2,001.22	NA
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Source: Researcher based on data from DSE, 2014

Key: * Listed under Enterprise Growth Market Segment (**EGMS**)

** Cross-listed foreign Companies

3.4.2 Sample

Purposive sampling was used by the researcher. **Purposive** or **judgmental sampling** enables the researcher to apply her/ his judgment when selecting cases that would answer the study research question(s) and to meet the intended research objectives. Purposive sampling is commonly used when working with very small samples such as in case study research and when the researcher wish to select cases that are particularly informative (Saunders, Lewis and Thornhill, 2007). IPO announcement and selling of common stock by actively trading companies which have sufficient data on pre and post IPO share price information under Main Investment Market Segment (**MIMS**) during the period from 2008 to 2013 was made by DCB , NMB ,CRDB , PAL and TBL. A total of 1455 observations on the Dar es Salaam Stock Exchange All Shares Index (DSEI) were extracted from the daily market reports issued by DSE. Companies that went public in 2014 have been excluded since the study cut-off year is 2013.

3.5 Types and sources of data

The research used secondary data based on publicly available share price data. The main source of data was the Dar es Salaam Stock Exchange (DSE). First, information and data on the daily market reports data of six years from 2008 to 2013 were requested from the responsible officials at DSE and date of each market report was the event date. Secondly, available data from annual reports and prospectus were downloaded from the listed companies' websites. Thirdly, individual company was communicated to request the financial data not available on-line. Permission to use the data for the research purpose was obtained from relevant authorities of the DSE.

DSEI details were solely extracted from the detailed daily market reports issued by DSE. IPO announcement dates were obtained from the listed companies IPO prospectuses. IPO selling dates were also obtained from the listed companies IPO prospectuses, websites and the DSE daily market reports.

3.6 Data collection instruments

The research used document analysis technique to collect data. Documents such as DSE daily market reports and companies' annual reports and prospectus and were used. Also individual companies' official websites were used to collect data.

3.7 Validity of the study

Validity is when the research has relevance to the problem statement and is defined as the degree of agreement between the theoretical and the empirical conceptual framework. (Saunders et al, 2007). Since validity is concerned with whether the findings are really about what they appear to be about, then the study used secondary data which is believed to be more reliable since the data was obtained from the trusted sites and publications. The data for the study were obtained from credible source namely Dar es Salaam Stock Exchange. Statistical analysis procedures were applied to strengthen the validity and quality of data analysis and research findings.

3.8 Data Analysis

Multiple Regression analysis was used to explore the relationships between the independent variable (IPO announcement and IPO selling) and the dependent variable (share price) and to test the research propositions.

The ordinary least square method (OLS) of the linear regression model was used to carry out the analysis as the equation was specified in a linear form. OLS was fairly easy to compute because its mechanism is simple to comprehend and interpret and its parameters estimated are best, linear and unbiased estimator.

As the DSEI is reported in thousand shillings, the researcher applied the natural logarithm on all daily indexes in order to transform the positive data because when the actual values were used, the residuals got bigger for bigger values of the dependent variable. The transformation enabled comparison and interpretation of the results to be meaningful since the range of the dummy variables lies between one (01) and zero (0). Natural logarithms also helped to make moderately skewed data more normally distributed and also allowed data that fall in a curved pattern to be modeled using a straight line.

The data in natural logarithm was then checked to verify that assumptions of linearity, constant error variance, independence, and normality have not been violated. Normal probability and time series line plots were generated for these analyses using STATA 11.2 software. The Dickey Fuller test showed that the index has a unit root while Phillip Peron test showed that the data has no unit root. In order to remove the observed contradiction, the log difference was then used instead of the natural logarithm data.

The DSEI data in natural logarithm difference was then tested in STATA 11.2 using Linear and ARIMA regression models.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND DISCUSSION

4.0 Introduction

This chapter presents analysis and interprets the findings of the effects of Initial Public Offering on share price. The findings were drawn basing on the research questions raised or formulated in the chapter one. Part of the data collected basing on research questions were the DSE daily all shares index value, IPO announcement dates and IPO selling dates for the Listed Companies at DSE. The data has been presented and analyzed basing on IPO announcement and selling dates.

4.1 Descriptive Statistics

The research intended to assess the effects of IPO on share price of companies listed at DSE. The five listed companies were included in the study. Before assessing the effects of IPO, data descriptive statistics on the DSEI were computed. The interested statistical measures were means, range (minimum and maximum value), standard deviation, variance, and skewness and kurtosis of the DSEI.

The table 4.1 below shows descriptive statistics for the DSEI in natural logarithm and in log difference:

Table 4.1: Descriptive Statistics.

	DSEI (in natural logarithm)	DSEI (in Log difference)
Mean	7.155	0.0004
Maximum	9.553	2.186
Minimum	6.908	-2.182
Std. Dev.	0.157	0.104
Variance	0.025	0.011
Skewness	3.659	0.029
Kurtosis	45.428	329.548
Observations	1455	1454

Source: Researcher, 2014

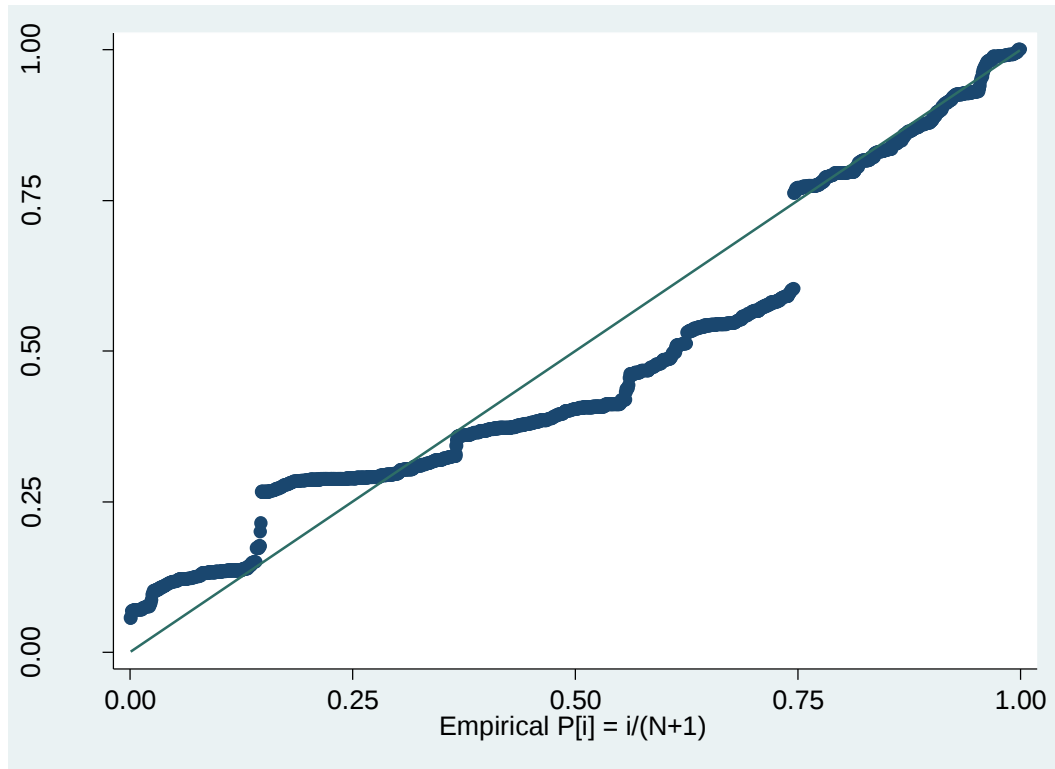
During the period from 2008 to 2013, the lowest value was log 6.908 while the largest value was log 9.553. The mean for the index (average index) was log 7.155 while the standard deviation which measures the amount of variation or dispersion from the mean was 0.157. The standard deviation squared (variance) which measure of spread of the distribution was 0.025. (See appendix I).

The natural logarithms difference was then used which resulted to a total of 1454 observations. The log difference measures return of the DSEI for the period from 2008 to 2013. Therefore, from the table above, the maximum return to an investor at DSE was 2.186% per day while the maximum loss during the period was 2.182%. The average return (mean) for the covered period was 0.0004% indicating that Earning per Share is less/ lower. Lower EPS reflects how inactive the stock exchange market is. A low standard deviation of 0.104 indicates that the data points tend to be very close to the mean. Moreover, the analysis indicates that the average investor's distribution is highly peaked (positive kurtosis) than the normal distribution and it is skewed slightly to the right. (See appendix II)

The reported model was also tested for the assumptions of multiple regressions that are not robust to violation, specifically, the assumptions of normality and linearity.

The regression line (the line of best fit) was then plotted. The regression lines portray the extent on how IPO affects the share price.

Figure 4.1: Normality graph

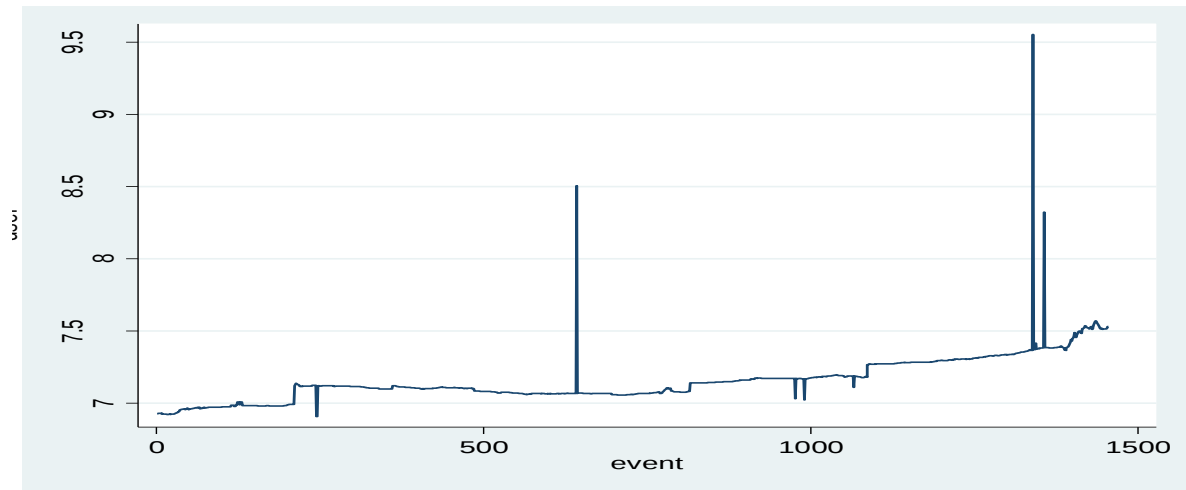


Source: Researcher, 2014

The graph above shows the relationship between IPO and share price. The plot indicates that the DSEI is scattered along the best fit line indicating that the index is not normally distributed. The graph is a skewed right distribution and it has a lightly right tail meaning that the distribution produces more outliers on the right side.

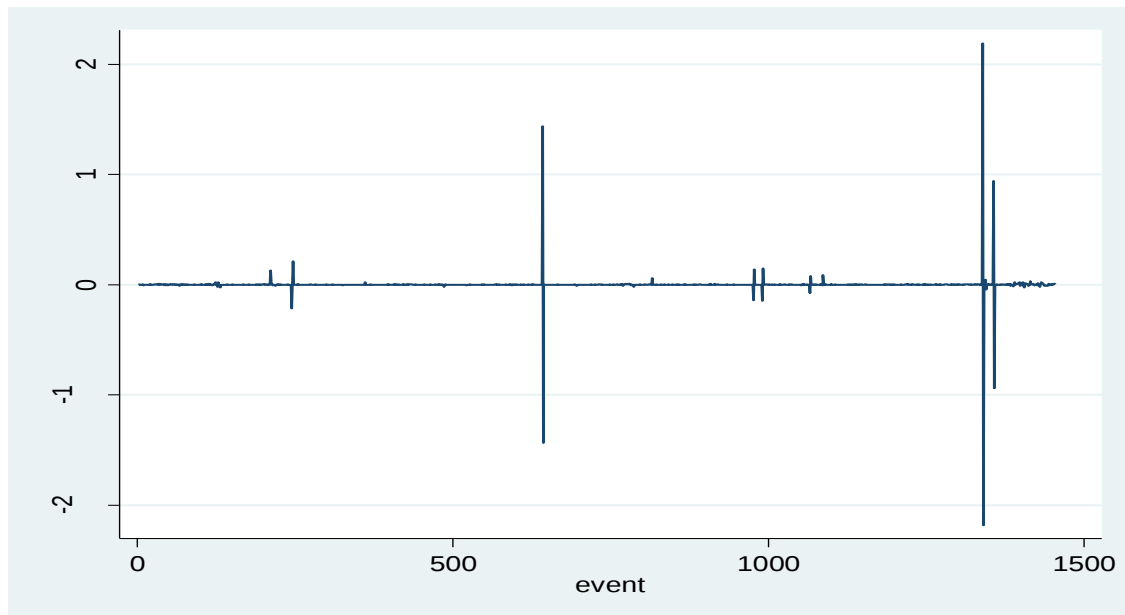
A time series line plot (in natural log and in log difference) was then extracted from STATA 11.2 in order to study the pattern of the DSEI for the period under study.

Figure 4.2: A time series line plot in natural logarithm level



Source: Researcher, 2014

Figure 4.3: A time series line plot in natural logarithm difference level



Source: Researcher, 2014

The two figures above indicate that the residuals are not evenly scattered around the zero line. The range of DSEI increase from January 2008 to July 2008 was between 2% and 1%. In August 2008 there was a decrease of 1% followed by a nearly steady index of TZS 1077.24 in September and October 2008 as there were no major changes in prices for most of the shares that were being traded at the exchange even though DCB bank was listed to the exchange on September 16, 2008. IPO selling of NMB which took place between August 18, 2008 to September 8, 2008 and DCB which happened from July 28, 2008 to August 15, 2008 had no significant effect to the share price. In November 2008 the index increased by 13% to a monthly average of 1217.82 following NMB shares were successfully listed at the Dar es Salaam Stock Exchange (DSE) on November 06, 2008. At the first day of trading, NMB shares that were sold for TZS 600 per share during the IPO closed at TZS 1,020 per share. Following NMB listing, DSEI change ranged between 2 and 0 up to March 2009. In May 2009 the index dropped by 6% due to IPO selling of CRDB bank which took place between April 17, 2009 to May 08, 2009. In June 2009, the index improved again by 6% following the listing of CRDB at DSE on June 17, 2009. From July 2009 to March 2010 there were no major changes in prices for most of the shares that were being traded at and the range stood between -1% and 1%. In April 2010, DSEI dropped by 10% following the impact of the global financial crisis. The worst of the global financial crisis began to recede in May 2010. The improvements in May 2010, proved encouraging news for the country in general and investors. Statistics recorded at the Exchange improved significantly during the second quarter that ended on June 30, 2010, compared with the position in the preceding January to March quarter. The condition continued to improve up to November 2010.

The rates were then steady with variations not more than 4% up to November 2011 when the IPO announcement of Precision Air Services was made on September 12, 2011 followed by the IPO selling October 7, 2011 to November 4, 2011. The IPO

announcement of TBL occurred on October 17, 2011 while its selling started on November 6, 2011 to November 25, 2011. The two IPO processes had no significant impact to the DSEI. DSEI then decreased by 3.2% from November 2011 to TZS 1,262.82 in May 2012, then it increased by 53.7% from May 2012 to TZS 1,940.37, then it decreased by 3.8% from November 2013 to TZS 1,866.57 in December 2013. The increase of 53.7% is a result of listing of Kenya Airways rights issue and price gains in local securities. Also from July 2012, Tanzania removed restrictions and complies with the East African Community (EAC) Common Market regulations stipulating free movement of capital and labour across the region and foreigners started to be allowed to own more than 60 per cent shareholding in companies listed on the DSE. Moreover, CRDB and NMB announced their dividend payout as their annual reports posted impressive performance and there was appreciation of both domestic and cross listed share prices. The increase of 53.7% in share price is supported by Uwuigbe, Olusegun & Godswill (2012) paper which modeled the effects of financial performance, dividend payout and financial leverage on share price of listed firms and concluded that financial performance and dividend payout had a significant positive relation with share prices. During the last quarter of 2013, foreign investors' participation in equity trading at the DSE stood at 7.84%, a significant decline compared to the previous quarter of 60.44% although there was one listing of Maendeleo Bank Plc under the EGMS on November 5, 2013 (Haji and Jianguo, 2014, www.dse.co.tz, DSE quarterly reports: 2008 - 2013).

4.2 Unit root Tests

The researcher performed the unit root test on the variable under consideration; DSEI in order to test whether series are stationary before estimation and forecasting. The results of the Augmented Dickey Fuller and the Philips-Perron stationarity tests are presented below:

Table 4.2: Unit root test results

	With constant	
	Log	Δ Log
Augmented Dickey Fuller (ADF)	-1.006	-17.410***
Phillips-Perron (PP)	-12.975***	-113.260***

Notes: *** Statistically significant at 1% level.

ADF and PP MacKinnon Critical values (with constant): 1% = -3.430; 5% = -2.860; 10% = -2.570

The test of unit root using natural logarithm of DSEI produced contradicting results as ADF showed that the data has unit root as t-statistics (-1.006) was greater than critical values (1% = -3.430; 5% = -2.860; 10% = -2.570) while PP results indicated that the data has no unit root. In order to eliminate the contradiction on results, the researcher decided to use the log difference and performed the same tests to test for the unit root because finding a unit-root suggests analyzing the difference Pt instead.

The second test produced the same results for both tests. Therefore, since the results from ADF and PP tests are the same, then the data has no unit root as p value is greater than critical values and zero. (See appendix III).

4.3 Empirical Estimation

4.3.1 IPO announcement and share price

4.3.1.1 Hypothesis test one

H₀: There are no significant effects on share price of a company on IPOs announcement.

H₁: There are significant effects on share price of a company on IPOs announcement.

4.3.1.2 Regression of IPOs announcement on share price

In this subsection the results of the regression models were presented. The following table shows the results of the coefficients and p-values of the parameters in model:

Table 4.3: IPO Announcement Regression Output

	Linear Regression		ARIMA Regression	
	Coefficient	p-value	Coefficient	p-value
Changedsei(t-1)	0.6998***	0.000	0.6998***	0.000
Changedsei(t-2)	0.3002***	0.000	0.3002***	0.000
d1	-0.0004	0.970	-0.0004	1.000
d2	0.0004	0.920	0.0004	0.992
d3	-0.0004	0.914	-0.0004	0.993
d4	0.0001	0.986	0.0001	1.000
d5	0.0002	0.941	0.0002	0.995
Cons	0.0004	0.886	0.0004	0.992

Source: Researcher's calculations based on data from DSE, 2014

Note: *** Statistically significant at 1% level

- d1 is the dummy variable representing IPO announcement of DCB
- d2 is the dummy variable representing IPO announcement of NMB
- d3 is the dummy variable representing IPO announcement of CRDB
- d4 is the dummy variable representing IPO announcement of PAL
- d5 is the dummy variable representing IPO announcement of TBL

The estimation started from lag level 5 but lags 3 up to 5 were dropped from the study because of multicollinearity revealed through low *t*-statistics and high *p*-values. Lags 1 and 2 were the best lag structure for the study.

The results obtained in table 4.3 above shows that at 95% confidence interval (that is; 0.05 level of significance); previous share prices have significant effects to the current share price while initial public offering announcement does not affect the share price of companies listed at DSE. The effects noted are statistically significant since the *p*-values are less than 0.05 (0.00).

The Linear regression output shows that the coefficient on previous share price is positive indicating that a current share price tends to be affected by the previous share prices. The coefficient 0.6998 means that a previous share price affects positively the current share price by 69.98%. The two days before share prices also results into a 30.02% increase in the share price. These are interesting results but seem quite normal considering the liquidity position and number of listed companies. The researcher expected that the share price should be significantly affected by the IPO announcement as hypothesized in hypothesis one. (See Appendix IV).

All dummy variables had no significant effects on the share price, meaning that companies IPO announcements do not affect the current share price of companies listed at Dar es Salaam stock exchange.

The researcher then applied the ARIMA model in order to perform advanced test on the data in order to confirm the results obtained from the linear regression output. The results obtained were as follows:

The ARIMA model produced similar results of the test as in the linear regression model. At 95% confidence interval (that is 0.05 level of significance), the previous share price affects the current share price. The coefficient 0.6998 means that a previous share price positively affects the current share price by 69.98%. Also the two days before share prices also results into a 30.02% increase in share price. Whereas, IPO announcement does not affect the share price as hypothesized in hypothesis one. (See Appendix V).

Generally, the p-value tests the null hypothesis and a low p-value (< 0.05) indicates the null hypothesis should be rejected since a predictor with a low p-value is meaningful addition the research model as changes in the predictor's value are related to changes in the response variable. On the other hand; a larger (not significant) p-value (>0.05) suggested that changes in the predictor are not associated with changes in the response.

Therefore the study did not reject the null hypothesis as the results obtained are supporting the null hypothesis that statistically there are no significant effects on share price of a company on IPOs announcement. Moreover, the alternative hypothesis was not accepted since the findings revealed larger (not statistically significant) p-values (>0.05) for all dummy variables suggesting that changes in the share price are not associated with IPO announcement for the companies listed at DSE.

4.3.2 IPO selling and share price

4.3.2.1 Hypothesis test two

H_0 : There are no significant effects on share price of a company on IPOs selling.

H_1 : There are significant effects on share price of a company on IPOs selling.

4.3.2.2 Regression of IPOs selling on share price

In this subsection the results of the regression models were presented. The table below shows the results of the coefficient and p-values of the parameters in model:

Table 4.4: IPO Selling Regression Output

	Linear Regression		ARIMA Regression	
	Coefficient	p-value	Coefficient	p-value
changedsei(t-1)	0.6998***	0.000	0.6998***	0.000
changedsei(t-2)	0.3002***	0.000	0.3002***	0.000
s1	-0.0004	0.961	-0.0004	1.000
s2	-0.0005	0.955	-0.0005	0.999
s3	-0.0009	0.907	-0.0009	0.999
s4	-0.0001	0.993	-0.0001	1.000
s5	-0.0005	0.956	-0.0005	1.000
Cons	0.0004	0.624	0.0004	0.745

Source: Researcher's calculations based on data from DSE, 2014

Note: *** Statistically significant at 1% level

- s1 is the dummy variable representing IPO selling of DCB
- s2 is the dummy variable representing IPO selling of NMB
- s3 is the dummy variable representing IPO selling of CRDB
- s4 is the dummy variable representing IPO selling of PAL
- s5 is the dummy variable representing IPO selling of TBL

The estimation also started from lag level 5 but lags 3 up to 5 were dropped from the study because of multicollinearity revealed through low *t*-statistics and high *p*-values. Lags 1 and 2 were the best lag structure for the study.

From the results obtained in table 4.4, at 95% confidence interval (that is, 0.05 level of significance); previous share prices have significant effects to the current share price while IPO selling does not affect the share price of companies listed at DSE. The effects noted are statistically significant since the *p*- values are less than 0.05 (0.00).

The Linear regression output shows that the coefficient on previous share price (changedsei(*t*-1)) is positive 0.6998 meaning that a previous share price affects the current share price by 69.98%. The two days before share price (changedsei(*t*-2)) also results into a 30.02% increase in current share price. These results are also quite interesting because in hypothesis two, the researcher expected that the share price should be significantly affected by the IPO selling. However, the results seem to be normal considering the liquidity position and number of listed companies at DSE. (See Appendix VI).

All dummy variables had no significant effects on the share price, meaning that companies IPO selling do not affect the current share price of companies listed at Dar es Salaam stock exchange.

The researcher then applied the ARIMA model in order to perform advanced test on the data in order to confirm the results obtained from the linear regression model.

The ARIMA model produced the similar results as those obtained in the linear regression model. At 95% confidence interval (that is 0.05 level of significance), the previous share price affects the current share price. The coefficient 0.6998 means that a previous share price affects the current share price by 69.98 %. The two days before share price ($\text{changedsei}(t-2)$) also results into a 30.02% increase in current share price. Whereas, IPO selling does not affect the share price as hypothesized in hypothesis two. (See Appendix VII).

Therefore the study did not reject the null hypothesis as the results obtained are supporting the null hypothesis that there are no significant effects on share price of a company on IPOs selling. Likewise, the alternative hypothesis was not accepted since the findings revealed larger (not statistically significant) p-values (>0.05) for all dummy variables suggesting that changes in the share price are not associated with IPO selling for the companies listed at DSE.

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CHAPTER FIVE

DISCUSSION

5.0 Introduction

This chapter discusses results of the study objectives. The analysis was done using statistical software STATA 11.2. First the researcher discusses the results of the regression outputs for the IPO announcement and selling of companies that undergone Initial Public Offering during the period from 2008 to 2013 at the Dar es Salaam Stock Exchange.

5.1 Initial Public Offering announcement and Share price

The research results have revealed that at 95% confidence interval (that is 0.05 level of significance), the previous share price affects the current share price. The previous share price has a coefficient 0.6998 meaning that a previous share price affects the current share price by 69.98 %. The two days before share price ($\text{changedsei}(t-2)$) also results into a 30.02% increase in current share price. Whereas, IPO announcement does not affect the share price as hypothesized in hypothesis one, therefore, the study did not reject the null hypothesis.

The results are interesting because they support the null hypothesis of this study that there are no significant effects on share price of a company on IPOs announcement for the companies listed at the Dar es Salaam Stock Exchange. The researcher expected that the Initial Public offering announcement could have a significant effect as evidenced in developed markets. The study results contradicts with Lee, Bach and Biak (2010) whose study at the New York Stock Exchange revealed that when Google announced an IPO, its stock price and competitors went up as well since the Google IPO signaled better future. Google raised USD 1.67 billion through the offering, and its stock price has more than doubled (Choo, 2005).

Also the study conducted by Waweru (2010) which sought to establish if there exists a relationship between stock prices and news of an IPO at NSE using secondary data from 2004 to 2009 found that issuing of IPOs at NSE had both positive and negative effects on daily mean returns. Negative effects were on the days nearing the IPOs events which were the result of buyer and seller expectation in the market so as to capitalize on the new issue while positive effects were in the days after the IPOs event which were the result of buyer-seller initiated trading.

5.2 Initial Public Offering selling and Share price

The statistical research results have shown that at 95% confidence interval (that is 0.05 level of significance), an IPO selling does not affect the share price of companies listed at Dar es Salaam Stock exchange. The study has discovered that the previous share price and the two days before share price affects the current share price by 69.98 % and 30.02% respectively.

These results contradict with the study by Hertz et al (2002) which found that there exists a significant positive mean share price effects for the issuing firms over the long run.

The study performed by Pinelli et al (2014) concluded that strong global equity markets, solid investor demand and attractive post-IPO performance driven the healthy issuance in 2013 and the IPOs pricing trends were positive in 2013. The authors continue to explain that 83% of Private Equity backed deals were priced within or above their expected ranges.

Moreover, the findings by Kryzanowski, Lazrak and Rakita (2005) for the 359 companies listed at Toronto Stock Exchange for the period from 1984 to 2002 found that based on first day returns; earning positive mean returns was very difficult even when most IPO's were purchased at the offer price. Mean daily trade volume for the first five

days of IPO trading were large relative to the means for the first thirty days and for longer periods. The dollar volume of selling was significantly larger than that of buying suggesting that institutional investors were active on the sell side in the aftermarket.

5.3 General discussion

The performance of a company's stock on the stock exchanges in the period following its IPO largely determines the acceptance of any IPO share issues in the marketplace. If the IPO stock performance provides a strong track-record in the equity markets, investors are likely to view IPO stock issue favourably, however, if the stock has performed poorly in the IPO period, it will be difficult to generate much support hence it will make it difficult to sell a IPO issue. Therefore, the stock price established for a post-IPO issue normally reflect the price level established in the equity markets just prior to the issue. (Government of Canada: Industry Canada, 2012).

The research findings on DSE on the effects of Initial Public Offer announcement and selling for the period from 2008 to 2013 have shown that new information flow to the stock market has no effect to the market. Many of the African Stock markets including Dar es Salaam Stock exchange face the challenges of thinness, illiquidity and shortage of domestic resource mobilization. These challenges may be among the possible reasons for the inactive stock exchange markets as discussed below:

Sharma and Roca (2011) argued that the effectiveness of markets in accomplishing their functions depend on their size and level of liquidity. Smaller and less liquid markets may find it difficult to discharge their functions adequately. Size reflects the number of companies listed on an exchange, liquidity measures the ease and speed at which agents can buy and sell their stakes in companies. Usually initial investors sell more easily, quickly and cheaply their stake in a company as market liquidity increases. Since savers are now less likely to be stuck with an undesirable investment, liquidity encourages them to invest in higher-risk projects. Also, the easier to exit from ownership, the more

attractive the ownership is. Inadequate liquidity makes a stock market trading less attractive as an investment option, with adverse consequences particularly for long-term project. Therefore, persistently illiquid stock markets are likely to gradually stagnate.

The study performed by Tafirenyika (2012) concluded that except for the Johannesburg Stock Exchange which is the continent's biggest in terms of the number of listed companies and market value, the growth of other many stock markets in Africa is inhibited by many obstacles as African stock markets are still too small and often dominated by a handful of large corporations. Moreover, trading in shares is less frequent, and when it happens, it is usually limited to a few firms. Also majority of stakeholders do not have access to reliable and up-to-date information. The author highlighted the lack of liquidity to be a major weakness, and in many cases, the general public does not have confidence in the integrity of stock exchanges.

The report by Douglas (2014) explained that African stock exchanges really need to develop and improve in terms of the number of company listed as well as the liquidity. The study found that liquidity is a real problem and institutions in each particular market often take up most of what is available to invest in. However, he added that certain exchanges across the continent are seeing improvements, with increased liquidity in the more popular sectors. In 2012, market capitalisation across African exchanges grew by around 15%, ahead of the Eurozone's growth of 14% but behind the US's 17%. Despite the noted growth, the total market capitalisation of all African exchanges reviewed still only makes up approximately 80% of what the NYSE trades in a single day.

The study conducted by Hearn (2009) in assessing the efficacy and robustness of four liquidity measures in measuring firm level liquidity within and between six emerging African markets: Egypt, Tunisia, Morocco, West Africa Stock Exchange, Kenya and South Africa and the two European markets of London and Paris concluded that African

emerging equity market returns are characterized by volatile, but substantial returns, which are affected considerably by varying degrees of liquidity costs. The study also found that many of the African markets are dominated by a smaller group of blue chip stocks and intra-market liquidity differences can be extreme with differences greater than 100% in South Africa between the market aggregate and the constituents of the prestigious JSE Top 40 index.

Masetti and Mihr (2013) discovered that capital markets in Sub Saharan Africa lack size and liquidity. Portfolio investment in equity and debt markets in Sub-Saharan Africa is small mainly due to the low depth and liquidity of local markets. Portfolio equity investment in Sub Saharan African was focused on the most active and liquid stock markets of South Africa, Nigeria, Kenya, Mauritius and Zimbabwe. The Johannesburg Stock Exchange (JSE) continues to dominate the region, representing 38% of all listed companies and 83% of total market capitalisation in Sub Saharan African in 2012. 68 of Sub-Saharan Africa's 100 largest companies in terms of market capitalisation are listed on the JSE, however, large multinational companies that are listed on several stock exchanges world-wide. The study also found that, with the exception of South Africa, Sub-Saharan African stock markets are also characterized by a high degree of illiquidity. Shares are rarely traded and turnover ratios are low by international standards. Activity is impeded by outdated trading, clearing and settlement systems, which can take months to complete a single transaction. Trading is often limited to a few stocks which represent the majority of market capitalisation.

Ntim (2012) discussed that despite experiencing rapid growth in their number and size, existing evidence suggests that African stock markets remain highly fragmented, small, illiquid and technologically weak, severely affecting their informational efficiency. The study highlighted that, despite the rapid development in the establishment of stock markets in Africa, with the exception of South Africa, stock markets in Africa not only

remain comparatively different from their developed counterparts, but also, pale into insignificance in comparison to other emerging markets as they are small in size and also the stock markets are also small compared with the size of their own economies.

Many African stock markets, excluding Johannesburg Stock Exchange, lack liquidity hence they remain mostly small and illiquid even though the number of functioning stock markets have risen, still the majority of markets list only a handful of companies and post very low turnovers. Therefore, equity financing does not play a significant role in financing Africa's investment activity (Jefferis and Smith,2005).

The study by Sullivan and Unit (1998) concluded that differences in IPO effects across markets may be due to differences in stage the of economic development, market liquidity, differences in time period analyzed, differences in rules and regulations governing the new issue market, differences in the respective economies, differences in domestic and foreign interest in equity markets, and differences in the type of firms that raise capital through IPOs.

Generally when new information arrives or happen to the market we expect share prices to change to reflect the new variable information. However, the research findings on the effects of Initial Public Offer announcement and selling on share price for the companies listed at DSE for the period from 2008 to 2013 have shown that new information flow to the stock market has no effect to the market. The regression outputs show that the IPO announcement and IPO selling do not significantly affect the share prices while the previous share prices affect the current share prices positively. These are interesting results, but seem quite normal considering the liquidity position and number of listed companies at DSE as many of the African Stock markets including DSE face the challenges of thinness, illiquidity and shortage of domestic resource mobilization.

These research findings call for the DSE to formulate policies to encourage new listings and establish mechanisms to encourage companies to engage in dual listings in order to enlarge the securities segment of capital markets and to make that market more efficient. Also the Exchange needs to establish more advanced and reliable electronic trading systems, improving the dissemination of information relating to listed companies as well as changing the legal framework where necessary to ensure adherence to the best international standards. Also the need for a regional stock market is inevitable in order to allow member states to benefit from economies of scale and to improve pricing efficiency. Moreover, these findings provide a starting point for academicians and other interested parties to conduct further research on the effects of IPO on the share price of a company.

Despite the fact that the statistical test results have shown that IPO announcement and IPO selling do not affect the share prices of companies listed at the DSE, it is likely that the study could not evaluate all possible factors that contribute to the effects of Initial Public Offering on the share price. Moreover, the study used a DSEI to assess the effects of IPOs on the share prices for the period of six years from 2008 to 2013. Further research needs to be done covering longer time periods, more firms, more endogenous and exogenous factors as well as using other indices like domestic index and industrial indices in order to assess the effects of IPO on share prices.

Therefore, since the stock exchanges are used as a means by which investors' judge the profitability and viability of the investment before deciding whether to participate in an initial public offering or not, then immediate efforts to ensure that the DSE is active and liquid are inevitable. In active markets the information on IPO announcement and selling is usually used as a reliable indicator to predict the trading trend in the subsequent weeks.

CHAPTER SIX

CONCLUSIONS AND RECOMMENDATIONS

6.0 Summary

The study has assessed the effects of Initial Public Offering on share price of companies listed at Dar es Salaam Stock Exchange for the period from 2008 to 2013. The study adopted the case study research design as the purpose was to analyse the effects of IPO announcement and IPO selling on share price using the DSE All Share Index for the companies listed at Dar es Salaam Stock Exchange. The study gathered data from five (05), actively trading, listed companies which went public between 2008 and 2013. The time series data has been analyzed using the linear regression model and ARIMA model in STATA 11.2.

The effects on share price were measured by the change (increase or decrease) in share prices following the announcement or selling of an IPO.

The results of the research shows that at 95% confidence interval the IPO announcement does not significantly affect the share price as hypothesized in hypothesis one, therefore, the study did not reject the null hypothesis one. Also, an IPO selling does not significantly affect the share price of companies listed at Dar es Salaam Stock exchange; therefore, the study did not reject the null hypothesis two. The study came up with interesting results that previous share price and the two days before share price affects the current share price by 69.98 % and 30.02% respectively.

Since the stock exchanges are used as a means by which one can judge how profitable and viable the investment is before one decides whether or not to participate in an initial public offering, then, the possibility of high returns tends to create interest among the investors to participate in an IPO. Though IPOs appear to be a good investment opportunity because of the general expectation of earning high initial returns but risks do

exist and there is no guarantee that prices may not fall once the shares start trading in the exchange market.

For active markets, the information on IPO announcement and selling can be used as a reliable indicator to predict the trading trend in the subsequent week. With respect to institutional investors' involvement in the flipping activity, it cannot be verified until and unless the actual information about the flippers is disclosed.

Therefore, from the findings obtained and discussed, the study concludes that Initial Public Offering has no significant effects on share price of companies listed at Dar es Salaam Stock Exchange.

6.1 Recommendations

6.1.1 Need for proper policies to increase the market size

The results show that IPO announcement and selling has no significant effects on share price of companies listed at DSE. These results suggest that the size of the market is an important factor for the IPO success. Since DSE is a small market and inactive, the results suggest that policies to grow stock markets are important. Currently DSE provides education programs that such as public campaigns, road shows, free circulation of educational material and advocacy at various levels in order to enhance market awareness to investors on their rights, the procedures of the securities exchange, the roles played by the exchange, the risks in the market and the opportunities harnessed from investing in the Securities.

Policies to encourage new listings and mechanisms to encourage companies to engage in dual listings should be formulated by the relevant authorities in order to enlarge the securities segment of capital markets and to make that market more efficient. For example; In South Africa, the main driver of new listings has been their active policy of looking for new companies that qualify for listing throughout the whole country whether

large or small and they also arrange many international road shows (Capital Markets Authority (Kenya), 2010).

Also the DSE should continue encouraging the development of Enterprise Growth Market Segment (EGMS) that will cater for the majority of companies that may wish to list but are hindered by the stringent exchange requirements that could serve as an incubator market to the main exchange. Up to the end of 2013, Maendeleo Bank was the first to be listed under EGMS at the DSE.

6.1.2 Need for regional Stock Exchanges

Since many African countries, including Tanzania, fall under small size economies, then the need for establishing a regional stock market is inevitable in order to allow member states to benefit from economies of scale and to improve pricing efficiency. The initiatives for establishing the East African Stock Exchange must be continued. Also there must be aggressive pursuit of establishing Memorandum of Understanding with other regional exchanges to encourage cross-listings. For example, there is already a regional stock exchange in West Africa (based in Abidjan) and there have been discussions in Southern Africa of the Johannesburg Stock Exchange acting as the hub of a regional exchange (Capital Markets Authority (Kenya), 2010).

However, for the regional integrations to succeed, countries must be ready to harmonized trading laws and accounting standards, reliable system automation, easy currency convertibility as well as existence of a liberalized trade regime.

6.1.3 Need for measures to increase liquidity in the stock exchange

The study recommends the responsible authorities to consider policies to increase the amount of shares available for sale in the stock exchange (free float) without affecting

the demand for the same shares. This can be achieved either through cross-listing, dual listing or integration of stock exchanges.

The DSE should also engage actively in programs aimed at achieving greater public confidence by increasing media understanding and reporting on business matters, increasing the enforcement authority of government agencies, continuing committing to public education as a primary goal of the public sector and enlarging the capacity for institutional investing by pension and retirement funds.

6.1.4 Other institutional reforms

In addition to policies aimed at increasing the size of stock markets, other institutional reforms can help to improve efficiency. These include innovations such as more advanced and reliable electronic trading systems, allowing free access to foreign investors, improving the dissemination of information relating to listed companies, improving the speed and efficiency of settlement, and changing the legal framework where necessary to ensure adherence to the best international standards. All of these developments will help to boost confidence in the market and encourage the additional trading activity that will support market efficiency.

Therefore, the study recommends that upon thoroughly scrutiny of the existing risks, investors should participate in the stock markets during announcement and selling of IPOs. The investors should also target other stocks in the market as this may provide opportunity for investment through under pricing of these stocks as investors hurry for the IPO. The announcement of IPO should be used as information in the market that company shares can be traded. Moreover, the management of DSE should formulate measures to reduce the market anomalies in order to give investors confidence of the market (Capital Markets Authority (Kenya), 2008).

6.3 Suggestions for further study

- a) The results of the study support the null hypothesis that there are no significant effects on share prices of companies listed at DSE on IPO announcement and selling. These results call for further research on investigating the reasons why IPOs do not affect the share prices as well as the factors behind IPO success.
- b) The interesting results obtained by the study that previous share prices significantly affect the current share prices provides a further research area to other researchers who wish to assess the effects of previous share price on current share prices for IPO companies listed at the DSE.
- c) Since this study could not evaluate all possible factors that contribute to the effects of initial public offering on the share price, the study therefore, recommends that the present research can be extended to cover longer time periods, more firms and more endogenous and exogenous factors affecting the DSEI.
- d) The study assumed a DSE All Share Index (DSEI) to assess the effects of IPOs on the share prices. Further research needs to be done to assess the effects of IPO on share prices using Domestic Index (TSI) and Sectorial Indexes namely; Banking, Finance and Investment Index (BI); Industrial and Allied Index (IA); and Commercial Services Index (CS).

REFERENCES

- Benveniste, L. M. and Spindt, P.A. (1989). How investment bankers determine the offer price and allocation of new issues. *Journal of Financial Economics*, 24: pp. 343-361.
- Benning, F.J. (2007). *Trading Strategies for Capital Markets*. McGraw-hill, Newyork.
- Bhunja, A. (2012). Stock market efficiency in India: Evidence from NSE. *Universal Journal of Marketing and Business Research*. Vol. 1(2): pp 72 – 78
- Brealey, R. A., Myers, S. C. and Allen, F. (2005). *Corporate Finance*. 8th Edition. New York: McGraw-Hill Irwin.
- Cai, J. and Wei, C.J. (1997). The investment and operating performance of Japanese initial public offerings. *Pacific-Basin Finance Journal*, 5: pp. 389-417.
- Capital Markets Authority (Kenya). (2008). A Comparative Analysis of the Performance of African Stock Markets for the Period 1992 to 2007. Research, Policy Analysis and Planning Department: CMA, Nairobi.
- Capital Markets Authority (Kenya). (2010). A Comparative Analysis of the Performance of African Stock Markets for the Period 2008 & 2009: Volume II. Research, Policy Analysis and Planning Department: CMA, Nairobi.
- Certo, S. T. (2003). Influencing Initial Public Offering Investors with Prestige: Signaling with Board Structures. *The Academy of Management Review* Vol. 28, No. 3: pp. 432 – 446.
- Chan, W. S. (2001). Stock Price Reaction to News and No-News: Drift and Reversal after Headlines.
- Choo, E. (2005). Going Dutch: The Google IPO. *Berkeley Technology Law Journal*, Vol. 20, No. 1: pp 405 – 441.
- Choudhry, M. (2012). *The Principles of Banking*. Solaris South Tower: John Willey & Sons Singapore Pte Ltd.
- Derrien, F. and Womack, L. K. (2003). Auctions vs. Book building and the Control of Underpricing in Hot IPO Markets. *Review of Financial Studies*, 16: pp 31-61.

- Dierkens, N. (1991). Information Asymmetry and Equity issues. *Journal of Financial and Quantitative Analysis*, Vol.26, No.2: pp 181
- Dietrich, J. (2012). Variables Influencing the Severity of IPO under pricing: An Empirical Analysis of the German Market. *Hamburg, Diplomica Verlag GmbH: ISBN: 978-3-8428-7289-9*
- Dar es Salaam Stock Exchange market report as at 31st Dec, 2013*, retrieved from www.dse.co.tz on 02/03/2014
- Dar es Salaam Stock Exchange market report as at 31st Dec, 2012*, retrieved from www.dse.co.tz on 02/03/2014
- Dar es Salaam Stock Exchange market report as at 29th Dec, 2011*, retrieved from www.dse.co.tz on 02/03/2014
- Dar es Salaam Stock Exchange market report as at 31st Dec, 2010*, retrieved from www.dse.co.tz on 02/03/2014
- Dar es Salaam Stock Exchange market report as at 31st Dec, 2009*, retrieved from www.dse.co.tz on 02/03/2014.
- Dar es Salaam Stock Exchange. (2008). *DSE 10th Anniversary*. DSE Journal ISSN No. 0856 8448, Issue No. 35: p 8.
- Dar es Salaam Stock Exchange. (2008). *Dar es Salaam Stock Exchange Hand Book*. DSE, Dar es Salaam
- Dar es Salaam Stock Exchange. (2014). Seminar for Financial Journalists: Meaning of the Key Market Indices & Terminologies and Analysis for Market Data & Information. Unpublished working paper. DSE.Dar es Salaam.
- Dar es Salaam Stock Exchange. (2007). *DSE Investors guide manual* retrieved from www.dse.co.tz on 02/03/2014.
- De, B. (2003). Ownership effect on Bank Performance. Paper presented at the fifth Annual Conference on Money and Finance in the Indian economy, Indira Gandhi Institute of Development Research (IGIDR). Mumbai.
- Deaves, R. (2006). *What Kind of an Investor are You?: A Guide to the Investment Solution that is Right for You*. Insomniac Press.

- Dimson, E. and Mussavian, M. (2000). Market Efficiency. *Journal of the Current State of Business Disciplines*, Vol.3: pp 959-970
- Douglas, K. (2014). Liquidity generally improving, but still a problem retrieved from www.howwemadeitinafrica.com/three...african-stock-markets/41494/ on 16/05/2014
- Drobetz, W., Kammermann, M., Wälchli, U. (2005). Long-run performance of Initial Public Offerings: The Evidence for Switzerland. *Schmalenbach Business Review*, Vol. 57: pp. 253 – 275.
- Fama, E.F. (1970). Efficient capital markets: A review of theory and empirical work. *Journal of Finance* . Vol 25: pp 383-417.
- Fama, E.F. (1991). Efficient Capital Markets II. *Journal of Finance*, 5: pp 1575-1614
- Fama, E. and French, K. (2012). Size, value and momentum in international stock returns. (SSRN Working Paper No. IL 6063). Chicago: University of Chicago, Booth School of Business.
- Faugeron, C.A., Ginglinger, E., Vijayraghavan, V. (2003). French IPO returns and subsequent security offerings: Signaling hypothesis versus market feedback hypothesis. *Journal of Economic Literature*, G32 retrieved from www.hall.archives-ouvertes.fr/docs/00/16/50/26/PDF/FrenchIPO on 15/01/2014
- Fedorov, S. (2009). What happens to a Stock Price when it Goes Public, *Demand Media* retrieved from wiki.fool.com/ on 09/02/2014.
- Feldman, D.N. (2006). Reverse Mergers: Taking a company Public without an IPO, *Bloomberg Press*.
- Folger, J. (2012). How are share price set? retrieved from www.investopedia.com on 13/02/2014
- French, K. R., and Richard, W. R. (1986). Stock return variance: The arrival of information and the reaction of traders, *Journal of Financial Economics*, 19: pp 3 - 30.
- Goetzmann, W. N. and Massa M. (1999). *Index Funds and Stock Market Growth*. (NBER Working Paper No. 7033): Cambridge: National Bureau of Economic Research.

- Gough, L. (2001). *How the Stock Market Really Works*. Great Britain: Pearson Education.
- Government of Canada: Industry Canada. (2012). Issues Surrounding Post-IPO Equity Financing retrieved from www.ic.gc.ca/eic/site/061.nsf/eng/00186.html/ on 05/07/2014
- Hearn, B. (2009). Liquidity estimation in major African equity markets retrieved from <http://ssrn.com/abstract=1345270> on 28 July 2014
- Hertzel, M, Michael L, James S. L, and Lynn R. (2002). Long-run performance following private placements of equity. *The Journal of Finance*, 57:6, pp:2595-2617.
- Howells, P., Bain, K. (2007). *Financial Markets and Institutions*. 5th Edition. Essex: Pearson Education Limited.
- Hsu, H.C. et al. (2010). The New Game in Town: Competitive Effects of IPOs. *The Journal of Finance*, Vol. lxxv, No. 2: pp 495 – 528.
- Ikoku, E.A and Hosseini, A. (2008). The Comparative Performance of African Stock Markets: Nominal, Real and U.S. Dollar Returns. *International Journal Of Business*, Vol.13, No. 3: pp 251 – 269
- Jain, B., Kini, O. (1995). Venture capitalist participation and the post-issue operating performance of IPO firms. *Journal of Managerial and Decision Economics*, 16: pp 593-606.
- Jain, B., Kini, O. (1994). The post-issue operating performance of IPO firms. *Journal of Finance*, 49: pp 1699-1726.
- Jefferis, K and Smith, G. (2005). The Changing efficiency of African Stock Markets. *South African Journal of Economics*, Vol. 73, No.1: pp 54 – 67
- Jegadeesh, N., Weinstein, M., Welch, I. (1993). An empirical investigation of IPO returns and subsequent equity offerings. *Journal of Financial Economics*, 34: pp 153-175.
- James, C. B. and Stanley, E. F. (2006). Initial Public Offerings: An Analysis of Theory and Practice. *The Journal of Finance*, Vol. lxi, No. 1: pp 399 – 436.

- Keown, A.J. (2004). *Financial Management: Principles and application*. 10th edition. India: Prentice hall.
- Kinyua, J., Nyanumba, P.M., Gathaiya, R.N. and Kithitu, J.W. (2013). Effects of Initial Public Offer on Performance of Companies Quoted at the Nairobi Stock Exchange. *International Journal of Research in Management*, Vol. 3, Issue 1: pp 2230-2463
- Kithinji, A. and Ngugi, W. (2010). Stock Market Performance before and after General Elections: A Case study of the Nairobi Stock Exchange. Unpublished MBA Dissertation. University of Nairobi.
- Kibuuka Law Chambers. (2013). *Tanzania Initial Public Offering (IPO) Regime* posted on 26/05/2013, retrieved from www.kibuukalaw.com on 04/09/2013
- Khurshed, A., Paleari, S., Vismara, S. (2003). The operating performance of initial public offerings: The UK experience. Unpublished working paper. Manchester: University of Manchester.
- Kuhlemeyer, G. A. (2004). *Fundamentals of Financial Management*. 12th Edition. Waukesha: Pearson Education Limited.
- Kumbhakar, C.S and Sarkar, S. (2003). Deregulation, ownership and productivity growth in the banking industry; evidences from India. *Journal of Money, Credit and Banking*, Vol. 35, No. 3: pp 403-424.
- Kong S. C. (2011). Will the Efficient market Hypothesis and Random Walk Theory still valid in Today's Market. Downloaded from www.marketoracle.co.uk on 25th June, 2014
- Konstantinidis, A, Katarachi, A, Borovas, G and Voutsas, M.E. (2013). From efficient Market Hypothesis to Behavioural Finance: can Behavioural Finance be the new Dominant Model for Investing? *Journal of Scientific Bulletin – Economic Sciences*, Vol. 11(2) : pp 16 – 26
- KPMG LLP. (2008). *Going Public*. Canada: KPMG.
- Kutsuna, K., Okamura .H., Cowling, M. (2002). Ownership structure pre- and post-IPOS and the operating performance of JASDAQ companies. *Pacific-Basin Finance Journal*, 10: pp 163-181.

- Lee, S., Bach, B.S, Biak, Y. (2010). The Impact of IPOs on the Values of Directly competing Incumbents. University of Texas: School of Management retrieved from www.brocku.ca
- Lo, A. and Hasanhodzic, J. (2010). *The Evolution of Technical Analysis: Financial Prediction from Babylonian Tablets to Bloomberg Terminals*. New York: Bloomberg L.P.
- Loughran, T. and Ritter, J.R. (2002). Why don't issuers get upset about leaving money on the table in IPOs?. *Review of Financial Studies*, 15: pp 413-443.
- Massele, J. (2013). Challenges faced by Dar-es-Salaam Stock Exchange Market in Tanzania. *Research Journal of Finance and Accounting*, Vol.4, No.15: pp 36 -42
- Massetti, O. and Mihr, A. (2013). Capital markets in Sub-Saharan Africa. Deutsche Bank Research Briefing. Deutsche Bank Research, Frankfurt.
- Menaje, P.M. (2012). Impact of Selected Financial Variables on Share Price of Publicly Listed Firms in the Philippine. *American International Journal of Contemporary Research*, Vol. 2 No. 9; pp 98-104.
- Mikkelsen, W., Partch, M., Shah, K. (1997). Ownership and operating performance of companies that go public. *Journal of Financial Economics*, 44: pp 281-307.
- Mugabi, D. (2011). The Influence of Local Investor's Perception of Stock Market Incentives, Stock Market Regulations and Level Of Awareness on the Intention to Participate in Uganda Securities Exchange. Unpublished MBA dissertation report: Makerere University.
- Norman, A.S. (2010). The Role of the Dar es Salaam Stock Exchange in Safeguarding Securities Investors in Tanzania. *International Business Management*, Vol.4, No. 4: pp 222-228.
- Norman, A.S. (2011). The Benefits for Listing Securities with the Dar Es Salaam Stock Exchange in Tanzania. *Journal of Global Business and Economics*, Vol. 3, No.1: pp 24-30
- Ntim, G.C. (2012). Why African Stock Markets Should Formally Harmonise and Integrate their Operations. *African Review of Economics and Finance*, Vol. 4, No.1: pp 53- 72.
- Ogunmuyiwa, M. S. (2010). Investor's Sentiment, Stock Market Liquidity and Economic Growth in Nigeria. *Journal of Social Sciences* 23(1): pp 63-67

- Pagano, M., Panetta, F., Zingales, L. (1998). Why do companies go public?: An empirical analysis. *Journal of Finance*, 53: pp 27 – 64.
- Pinelli, M. et al. (2014) . EY Global IPO Trends: 2013 Analysis. EYGM Limited retrieved from ey.com/ipocenter on 15 July 2014.
- Ritter, J.R. (1998). Initial Public Offerings. *Contemporary Finance Digest* Vol. 2, No. 1: pp 5-30.
- Ritter, J. R. and Welch, I. (2002). A Review of IPO Activity, Pricing and Allocations. *The Journal of Finance*, Vol lvii, No 4: pp 1795-1828.
- Sargent, T. J. (2002). Rational Expectations downloaded from www.econlib.org on 29 June 2014
- Saunders, M., Lewis, P., Thornhill, A. (2007). *Research Methods for Business Students*. 4th Edition. Essex: Pearson Education Limited.
- Savor, P. (2012). Stock Returns after Major Price Shocks: The Impact of Information. *Journal of Economic Literature*, G12; G14.
- Schulz, F. and Schollin, L. (2006). The Media Coverage and its influence on the Share price in an Initial Public Offering. Unpublished Master thesis. Sweden: Gothenburg University.
- Sharma, P. and Roca, E. (2011). It is Time to Re-examine the Role of Stock Markets in Developing Economies. Griffith University: Brisbane- Australia
- Shiller, R. (2000). *Irrational Exuberance*. New Jersey: Princeton University Press.
- Shivji, S. (2010). The Dar-Es-Salaam Stock Exchange: Why it remains stagnant and how it can be improved. Unpublished Master thesis. University of Northern Virginia.
- Simon, L. (2011). Comparative analysis of Commercial Banks performance before and after Initial Public Offerings (IPOs): The case of IPO Banks in Tanzania. Unpublished Master Thesis. Morogoro: Mzumbe University.
- Spaulding W. (2014). The Random Walk and the Efficient Market Hypotheses downloaded from www.thismatter.com on 25th June, 2014
- Sunde, T. and Sanderson, A. (2009). A Review of the Determinants of Share Prices. *Journal of Social Sciences*, 5(3): pp 188-192.

- Sullivan, J.M and Unite, A.A. (1998). Performance of Philippine Initial Public Offerings: Update and Review; Unpublished CBERD Working Paper. De La Salle University, College of Business and Economics.
- Tease, W. (1993). The Stock Market and Investment. *OECD Economic Studies*, No. 20, Spring
- Teoh, S., Welch, I. and Wong, T. (1998). Earnings management and the long-run market performance of initial public offerings. *Journal of Finance*, 53: pp 1935-1974.
- Tafirenyika, M. (2012). Harnessing African stock exchanges to promote growth. Retrieved from www.un.org/africarenewal/magazine/august-2012 on 25 June, 2014
- United States Securities and Exchange Commission. (2013). *Investing in an IPO*. Investor Bulletin, *SEC Pub. No. 133 (2/13)*.
- Uwugbe, U. Olusegun, O. & Godswill, A. (2012). An Assessment of the Determinants of Share Price in Nigeria: A Study of Selected Listed Firms. Unpublished thesis report: Acta Universitatis Danubis.
- Van Bommel, J. (2002). Messages from market to management: the case of IPO's. *Journal of Corporate Finance*, 8(2) : pp 123-138.
- Wabwire, J.M, Owuor,G., Onyuma, S. and Njuguna, A. (2013). The Effect of Initial Public Offer Announcements on Market Returns of Listed Stocks at the Nairobi Stock Exchange. *International Journal of Research in Management*, ISSN 2249-5908, Issue 3, Vol. 2: pp 85 – 119.
- Waweru, J. M. (2010). Reaction of Share Prices to Issue of IPOs from the NSE: Empirical Evidence. Unpublished MBA Project: University of Nairobi.
- Wilson, D. (2012). *Microsoft Gains Ease Sting of Google Valuation*. Bloomberg.
- www.cmsa-tz.org/Information/educat_programm.php:CMSA, (issuers' guide to capital markets
- www.qfinance.com/financing -best -practice / price discovery in IPOs retrieved on 07/02/2014.
- www.finance.zacks.com / investing for beginners retrieved 03/02/2014.
- www.data.worldbank.org/indicator/cm.mkt.lcap.gd.zs retrieved on 02/03/2014.

[www.data.worldbank-listed domestic companies](http://www.data.worldbank-listed-domestic-companies) retrieved on 02/03/2014

www.tanzaniainvest.com/tanzania-capital-markets/2008/ retrieved 17/01/2014.

Ziorklui, Q.S. (2001). Capital Market Development and Growth in Sub-Saharan Africa: The Case of Tanzania. African Economic Policy Discussion Paper Number 79. Howard University.

APPENDICES

Appendix I: Descriptive Statistics in Natural Logarithm

. summarize dsei, detail

dsei				
	Percentiles	Smallest		
1%	6.924042	6.907755		
5%	6.968851	6.907755		
10%	6.981498	6.922033	Obs	1455
25%	7.067951	6.92289	Sum of wgt.	1455
50%	7.116759		Mean	7.155198
		Largest	Std. Dev.	.1567343
75%	7.271321	7.570634		
90%	7.339505	8.323626	Variance	.0245657
95%	7.387134	8.505122	Skewness	3.658712
99%	7.531	9.553089	Kurtosis	45.42795

Appendix II: Descriptive Statistics in Natural Logarithm Difference

. summarize dseichange, detail

dseichange				
	Percentiles	Smallest		
1%	-.0147471	-2.181921		
5%	-.0023254	-1.436542		
10%	-.0011146	-.9389219	Obs	1454
25%	-.0000126	-.2150549	Sum of wgt.	1454
50%	0		Mean	.0004152
		Largest	Std. Dev.	.1038208
75%	.0004826	.2140221		
90%	.0018697	.9389219	Variance	.0107788
95%	.0037216	1.436542	Skewness	.0289644
99%	.0213399	2.186372	Kurtosis	329.5481

Appendix III: Unit Root Test Results

Using Natural logarithm

```
. dfuller dsei, lags(12)
```

Augmented Dickey-Fuller test for unit root Number of obs = 1442

	Test Statistic	1% Critical Value	Interpolated Dickey-Fuller 5% Critical Value	10% Critical Value
Z(t)	-1.006	-3.430	-2.860	-2.570

Mackinnon approximate p-value for Z(t) = 0.7512

```
. tsset event, generic
   time variable:  event, 1 to 1455
      delta: 1 unit
```

```
. pperron dsei
```

Phillips-Perron test for unit root Number of obs = 1454
Newey-West lags = 7

	Test Statistic	1% Critical Value	Interpolated Dickey-Fuller 5% Critical Value	10% Critical Value
Z(rho)	-290.724	-20.700	-14.100	-11.300
Z(t)	-12.795	-3.430	-2.860	-2.570

Mackinnon approximate p-value for Z(t) = 0.0000

.

Using Natural Logarithm difference

```
. tsset event, generic
   time variable:  event, 1 to 1455
      delta: 1 unit
```

```
. dfuller dseichange, lags(12)
```

Augmented Dickey-Fuller test for unit root Number of obs = 1441

	Test Statistic	1% Critical Value	Interpolated Dickey-Fuller 5% Critical Value	10% Critical Value
Z(t)	-17.410	-3.430	-2.860	-2.570

Mackinnon approximate p-value for Z(t) = 0.0000

Philips-Perron

```
. tsset event, generic
   time variable:  event, 1 to 1455
      delta: 1 unit
```

```
. pperron dseichange
```

Phillips-Perron test for unit root Number of obs = 1453
Newey-West lags = 7

	Test Statistic	1% Critical Value	Interpolated Dickey-Fuller 5% Critical Value	10% Critical Value
Z(rho)	-1745.140	-20.700	-14.100	-11.300
Z(t)	-113.260	-3.430	-2.860	-2.570

Mackinnon approximate p-value for Z(t) = 0.0000

Appendix IV: IPO Announcement Linear Regression Output

```
. regress dseichange changedseit_1 changedseit_2 changedseit_3 changedseit_4 changedseit_5 d1 d2 d3 d4 d5
note: changedseit_3 omitted because of collinearity
note: changedseit_4 omitted because of collinearity
note: changedseit_5 omitted because of collinearity
```

Source	SS	df	MS	
Model	14.0724506	7	2.01035008	Number of obs = 1448
Residual	1.58909209	1440	.001103536	F(7, 1440) = 1821.73
Total	15.6615426	1447	.010823457	Prob > F = 0.0000
				R-squared = 0.8985
				Adj R-squared = 0.8980
				Root MSE = .03322

dseichange	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
changedsei~1	.6997574	.0064995	107.66	0.000	.6870078	.712507
changedsei~2	.3002444	.0064995	46.19	0.000	.2874948	.3129939
changedsei~3	(omitted)					
changedsei~4	(omitted)					
changedsei~5	(omitted)					
d1	-.0004119	.0109138	-0.04	0.970	-.0218206	.0209968
d2	.0003957	.0039459	0.10	0.920	-.0073446	.0081361
d3	-.0003537	.0032621	-0.11	0.914	-.0067527	.0060453
d4	.0001339	.0073986	0.02	0.986	-.0143793	.014647
d5	.0002419	.0032866	0.07	0.941	-.0062052	.0066889
_cons	.0004225	.0029594	0.14	0.886	-.0053827	.0062278

Appendix V: IPO Announcement Arima Regression Output

```
. tsset event, generic
      time variable:  event, 1 to 1455
      delta: 1 unit

. arima dseichange changedseit_1 changedseit_2 changedseit_3 changedseit_4 changedseit_5 d1 d2 d3 d4 d5
note: changedseit_3 dropped because of collinearity
note: changedseit_4 dropped because of collinearity
note: changedseit_5 dropped because of collinearity
```

```
(setting optimization to BHHH)
Iteration 0:  log likelihood = 2879.2746
Iteration 1:  log likelihood = 2879.2746
```

ARIMA regression

```
Sample: 8 - 1455
Log likelihood = 2879.275

Number of obs      = 1448
wald chi2(7)       = 674378.76
Prob > chi2         = 0.0000
```

dseichange	OPG		z	P> z	[95% Conf. Interval]	
	Coef.	Std. Err.				
dseichange						
changedsei~1	.6997574	.00087	804.31	0.000	.6980522	.7014626
changedsei~2	.3002444	.0008733	343.79	0.000	.2985327	.3019561
d1	-.0004119	2.370349	-0.00	1.000	-4.64621	4.645386
d2	.0003957	.0409743	0.01	0.992	-.0799124	.0807039
d3	-.0003537	.0405138	-0.01	0.993	-.0797594	.079052
d4	.0001339	.2295258	0.00	1.000	-.4497283	.4499961
d5	.0002419	.0404989	0.01	0.995	-.0791346	.0796183
_cons	.0004225	.0404688	0.01	0.992	-.0788948	.0797399
/sigma	.0331276	.0000696	476.27	0.000	.0329913	.0332639

Appendix VI: IPO Selling Linear Regression Output

```
. regress dseichange changedseit_1 changedseit_2 changedseit_3 changedseit_4 changedseit_5 s1 s2 s3 s4 s5
note: changedseit_3 omitted because of collinearity
note: changedseit_4 omitted because of collinearity
note: changedseit_5 omitted because of collinearity
```

Source	SS	df	MS			
Model	14.0723423	7	2.01033462	Number of obs = 1448		
Residual	1.58920031	1440	.001103611	F(7, 1440) = 1821.60		
Total	15.6615426	1447	.010823457	Prob > F = 0.0000		
				R-squared = 0.8985		
				Adj R-squared = 0.8980		
				Root MSE = .03322		

dseichange	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
changedsei~1	.6997574	.0064997	107.66	0.000	.6870074	.7125074
changedsei~2	.3002444	.0064998	46.19	0.000	.2874944	.3129944
changedsei~3	(omitted)					
changedsei~4	(omitted)					
changedsei~5	(omitted)					
s1	-.0004364	.0089241	-0.05	0.961	-.017942	.0170691
s2	-.0004724	.0083538	-0.06	0.955	-.0168593	.0159144
s3	-.0008767	.0074827	-0.12	0.907	-.0155548	.0138014
s4	-.0000694	.0074827	-0.01	0.993	-.0147475	.0146087
s5	-.0004777	.0086246	-0.06	0.956	-.0173958	.0164404
_cons	.0004407	.0008998	0.49	0.624	-.0013244	.0022058

Appendix VII: IPO Selling Arima Regression Output

```
. arima dseichange changedseit_1 changedseit_2 changedseit_3 changedseit_4 changedseit_5 s1 s2 s3 s3 s4 s5
note: changedseit_3 dropped because of collinearity
note: changedseit_4 dropped because of collinearity
note: changedseit_5 dropped because of collinearity
note: s3 dropped because of collinearity
```

```
(setting optimization to BHHH)
Iteration 0: log likelihood = 2879.2253
Iteration 1: log likelihood = 2879.2253
```

ARIMA regression

```
Sample: 8 - 1455                                Number of obs      =      1448
Log likelihood = 2879.225                        wald chi2(7)       = 674755.04
                                                Prob > chi2        =    0.0000
```

dseichange	Coef.	OPG Std. Err.	z	P> z	[95% Conf. Interval]	
dseichange						
changedsei~1	.6997574	.0008521	821.22	0.000	.6980874	.7014275
changedsei~2	.3002444	.0008563	350.63	0.000	.298566	.3019227
s1	-.0004364	1.071471	-0.00	1.000	-2.100481	2.099608
s2	-.0004724	.6902259	-0.00	0.999	-1.35329	1.352345
s3	-.0008767	.4959684	-0.00	0.999	-.9729569	.9712035
s4	-.0000694	.2246961	-0.00	1.000	-.4404657	.4403268
s5	-.0004777	1.414144	-0.00	1.000	-2.772149	2.771193
_cons	.0004407	.0013573	0.32	0.745	-.0022196	.003101
/sigma	.0331287	.0000696	476.24	0.000	.0329924	.0332651