THE EFFECT OF FIRM SIZE ON INFORMATION ASYMMETRIES SURROUNDING EARNINGS DISCLOSURE OF FIRMS LISTED AT THE NAIROBI SECURITIES EXCHANGE

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DECLARATION

This Research Project is my original work and has not been submitted for examination in any other university. The work referred has been acknowledged by:

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This Research Project has been submitted for examination with my approval as the University Supervisor.

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God Bless

DEDICATION

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ABSTRACT

Information asymmetry is a situation in which one party in a transaction has more or superior information compared to another. That is, information is held by one, but not all of the parties to a transaction. This could be a harmful situation because one party can take advantage of the other party's lack of knowledge .The study was carried out at the Nairobi Securities Exchange in which trading is done via electronic means commissioned in 2006. As at August 2014 the market had 61 listed firms and it was in the process of self-listing to become the second capital market in Africa to do so. Information asymmetry is a situation in which one party in a transaction has more information compared to another. Existence of information asymmetry can lead to a series of decisions or choices which are not supported by financial fundamentals. The modern concept of information asymmetry was first published in early 1970 by two scholars: Akerlof (1970) who developed a theoretical model of information asymmetry in the capital market and Fama (1970) who developed Efficient Market Hypothesis. The objective of the study was to establish the effect of firm size on information asymmetries surrounding earnings disclosure of firms listed at Nairobi Securities Exchange. Secondary data was collected and a descriptive study done using event study methodology involving 41 listed firms (27 big firms and 14 small firms). Security returns variability, Abnormal volume and effective spread were calculated for 10 days surrounding the event day (5 days before and 5 days after the disclosure date) and a regression was run to establish the relationship among the variables. Firms were partitioned into big or small firms using market capitalisation. The analysis showed significant changes in security returns and effective spread and high abnormal volume in the days surrounding annual earnings disclosure for listed firms. A situation that was interpreted as increased information asymmetries. The information asymmetries for small firms decreased before earnings disclosure and increased after but information asymmetries surrounding annual earnings disclosure of big firms was inconsistent. Therefore, the result of the effect of the firm size on information asymmetries was inconclusive. Presence of information asymmetry means that investors should carefully plan their investment before, on and after earnings disclosure to avoid losses because returns vary depending on the choice made. Capital Market Authority should formulate and implement policies to enhance sharing of information which will reduce private information gathering hence reducing information symmetry.

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LIST OF ABBREVIATIONS

ATS   Automated Trading System

CBK   Central Bank of Kenya

CDS   Central Depository System

CMA   Capital Market Authority

EMH   Efficient Market Hypothesis

IPO   Initial Public Offer

NASI   NSE All Share Index

NSE   Nairobi Securities Exchange

PEAD   Post Earnings Announcement Drift

PIN   Probability of Informed Trading

NYSE   New York Stock Exchange

TSX   Toronto Stock Exchange

SPSS   Statistical Package for the Social Sciences

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CHAPTER ONE
INTRODUCTION

1.1   Background of the Study

Investors require information for purposes of their financial decision making. Zareian (2012) said that decision makers have a framework of what information they need to accomplish set purpose depending on their mental abilities and experience. Garcia, Herrero and Ibanez (2011) argues that earnings disclosure send price relevant information and is routine and public therefore, market participants project their expectations about the coming announcements. The aim of earnings disclosure is to help the users of the information to predict the future returns on their investment.

Concept of information asymmetry was first studied in early 1970's. Two scholars almost at the same time developed two models on information asymmetry. Akerlof (1970) developed a theoretical model of information asymmetry in the capital markets- the mechanism through which informational asymmetries can precipitate a difference in the cost of internal and external finance. His argument is that some sellers with inside information about the quality of an asset will be unwilling to accept the terms offered by a less informed buyer. This may cause the market to break down, or at least force the sale of an asset at a price lower than it would command if all buyers and sellers had full information. Leland and Pyle (1977) supported the model of asymmetric information in capital markets. They observed that the level of internal net worth becomes a critical determinant of the terms under which firms can borrow, holding constant true investment opportunities. This effect would not be present under perfect capital markets.

Fama (1970) developed Efficient Market Hypothesis (hereinafter EMH) to explain how financial information is reflected in the stock market. Fama defines 'efficient market' as the market where prices always fully reflect all available information. 'Fully reflecting' means it is impossible to make higher profits by trading on the basis of the information because prices already incorporate all the information. The EMH is said to hold, if asset prices in the market immediately and completely incorporate relevant information.

Several studies have since been done on information asymmetry; Verreccha (1979) documented a positive relation between the availability of information and the informativeness of market prices, Healy and Palepu, (2001) reported that disclosure requirement and bodies such as regulators, standards setters, auditors, and capital market intermediaries seek to facilitate and enhance the credibility of management disclosures hence playing an important role in mitigating the problem of information asymmetry and agency conflict. Information asymmetry and agency conflict can adversely impede the allocation of resources in capital markets and as a channel for the allocation of financial resources; the capital market plays an important role in the economy.

1.1.3 Firm Size

Firm size is a method of categorising companies for purpose of study. Size of the firm can be determined by market capitalization, output levels, number of employees, sales turnover, market share or asset base. For this study firm size was taken as market capitalization of the firm at the end of each year. Market capitalization is given by the stock price multiplied by the total number of shares outstanding.

Atiase (1985) argues that market participants will generate more private information before earnings announcements when firm size is large, suggesting that investors will benefit more from earnings announcements of larger firms. Several studies have employed firm size as a proxy for quantity or quality of information, for example; Yohn (1998) employed firm size as a proxy for the quantity of previous information and released information. Mohammed and Yadav (2002) used firm size as proxy for the quality of information released.

The listed firms in Nairobi Securities Exchange (NSE) includes indigenous- firms registered and incorporated in Kenya- and companies whose holding firms were incorporated elsewhere. Some indigenous firms have been performing well in the recent years and have been awarded at the international and regional level. Example, during the Annual African Investor Index Awards Held in New York in 2009 Equity Bank was named the best performing bank in Africa. Others have been cross listed e.g. Kenya Commercial Bank which is also listed in Uganda Securities Exchange, Rwanda Stock Exchange and Dar-es-Salaam Stock Exchange. The two banks have been named in the top one thousand banks in the world by Banker Magazine. They also rank top three in Africa by profitability.

1.1.4 Information Asymmetries Surrounding Earnings Disclosure

Information asymmetry is a situation in which one party in a transaction has more or superior information compared to another. That is, information is held by one, but not all of the parties to a transaction. This could be a harmful situation because one party can take advantage of the other party's lack of knowledge. Information asymmetry can lead to two main problems: a) Adverse Selection and b) Moral Hazard. Adverse

selection refers to an event in which one party in a transaction has relevant information about the situation that the other party lacks. On the other hand, Moral hazard is a situation in which one party gets involved in a risky event knowing that it is protected against the risk and the other party will incur the cost. Asymmetry of information leads to a series of bad decisions or choices.

Earnings can be defined as the amount of profit that a company generates during a given period of time normally, in a year as reported in its financial statements. Earnings indicate future dividend payments, company's potential growth and stock price appreciation. Earnings disclosure is an event of publishing the financial performance of an organization. Earnings disclosure provides information not known to many market participants. Kim and Verracchi (1991) suggest that information asymmetry may exist through private information gathering in advance of anticipated public announcements. In a recent study, Kim and Verrecchia (1994) concluded that earnings disclosure provide information that allows certain traders to make informed judgements about a firm's performance that are superior to the judgements of other traders. Therefore, there may be more information asymmetry at the time of an announcement than non-announcement periods.

1.1.4 Effect of Firm Size on Information Asymmetry

Atiese (1985) suggests that firm size may be a more direct and effective proxy of pre-disclosure information asymmetry because incentives for acquiring private pre-disclosure firm's earnings information are an increasing function of firm size. Therefore, there is more public information for a big firm than a small firm. Small firms are not adequately followed by analysts hence there may be more uncertainty

about their earnings information disclosure. The information content is expected to be different for small and the big firms.

Disclosure from a small firm is expected to have a greater impact than the disclosure from a big firm because large firm earnings disclosure may be incorporated into prices before the announcement, Yohn (1998). Demski and Feltman (1994) argues that expectation of imminent earnings news may stimulate some traders to search for information prior to the disclosure which results to information advantage to agents with superior abilities to process earnings information. Since analysts follow big firms, information asymmetry for big firms is expected to increase before earnings disclosure and reduce after disclosure. Small firms' information asymmetry is expected to increase after earnings disclosure due to difference in the ability to process news and differing opinion among investors, Kim and Verrecchia (1994).

1.1.5 Nairobi Securities Exchange

The study was carried out at Kenyan capital market; NSE was established in the 1920's by the British as an informal market for dealing in shares and stocks, with no rules and regulations to oversee stock broking activities. The formal securities market, then named the Nairobi Stock Exchange, was founded in 1954 as a voluntary association of brokers registered under the Societies Act. Trading in the market is done via the Automated Trading System (ATS) commissioned in 2006 to enhance speed execution of orders on a first come first served basis. The ATS system is linked to the Central Bank of Kenya (CBK) and the electronic Central Depository System (CDS) to allow trading of government bonds.

The overall overview of the capital market value is provided by NSE All Share Index (NASI). NASI was introduced in 2008, as an alternative index which incorporates all the traded shares of the day. The Nairobi Securities Exchange is licensed and regulated by the Capital Markets Authority of Kenya (CMA-K). It has the mandate of providing a trading platform for all listed securities and overseeing the member firms. It also approves public initial offers and listings of securities traded at the exchange, NSE (2014). NSE comprises of 61 listed companies with a daily trading volume of over US $5 million and a total Market Capitalisation of approximately US $24 billion. Government and corporate bonds are also traded at NSE with an average of daily bond trading of US $19 million. Automated bond trading commenced in 2009. The capital market is dominated by foreign investors who represent about 52 per cent of total equity traded.

1.2   Research Problem

A growing body of research suggests that information gradually diffuses across asset markets due to the attention constraints of investors. Pashler and Johnston (1998) say since attention is a scarce cognitive resource, attention to one task automatically substitutes the cognitive resources from other tasks. Given the immense amount of information available in financial reports and the inevitability of limited cognitive capacity, investors can only partially process available information leading to information asymmetry. Big and successful firms' release more information and they are closely followed by analysts and media than small firms. Therefore, investors anticipate earnings disclosure of big firms which stimulate informed traders to such for private information. Private information gathering before earnings disclosure of big firms', results to stock price adjustments to incorporate earnings news before they are disclosed and lack of analyst following and media attention for small firms leads

to less anticipation and since investors have limited ability to process information, earnings disclosure increases information asymmetry.

Yohn (1998) analysis of the relationship between information asymmetry and the firm size concludes that information asymmetry around earnings disclosure exist and is driven by the presence of informed agents that either have more information or have superior ability to process it and information asymmetry increases before earnings disclosure for big firms but increases after earnings disclosure in small firms. Kim and Verracchi (1994) also did an analysis of information asymmetry between traders and market participants by analysing the pattern of changes in information asymmetry before during and after earning announcements. In their analysis they found that while all investors have equal access to public information like earnings announcements they acquire private pre-disclosure information of different degrees. Therefore, information asymmetry arises due to informed investors' private information.

Most of the local studies investigate the efficient market anomalies. A study done on the weekend effect at the NSE by Mokua (2003) showed that stock returns were equal over all the days of the week hence did not appear to be a good indicator of the stock returns at the NSE. Nyambogi (2005) tested the hypothesis that weather in Nairobi is correlated to stock returns at the NSE. The data investigated from NSE and meteorological department revealed that the NSE 20 share index was not affected by the prevailing weather conditions in Nairobi at the time.

No study in my knowledge had been done on information asymmetry surrounding earnings disclosure and firm size at NSE. The study therefore, tried to fill the gap by investigating the effect of firm size on information asymmetry surrounding earnings

disclosure. The aim of this study was to answer the question: does firm size affect information symmetry surrounding earnings disclosure?

1.3   Objectives of the Study

The main objective of this study was to establish the effect of firm size on information asymmetries surrounding earnings disclosure of firms listed at NSE.

1.3.1 Specific Objectives

The specific objectives were:

i.   To determine whether there was information asymmetry surrounding earnings disclosure at NSE.

ii.   To establish whether firm size affect information asymmetry surrounding earnings disclosure.

1.4   Value of the Study

The findings of this study will benefit: existing and potential investors in making informed investment decisions, based not only on the risk and return analysis but also on behaviour aspects; the government in developing policies that will rectify any distortions or anomalies which investors encounter while making investment decisions. This will be through regulation by the Capital Market Authority and the Nairobi Securities Exchange; and lay foundation for further studies in this area that is slowly gaining momentum and has little research that has been published in Kenya and the emerging markets. In fact the study will provide a useful base upon which further studies on behavioural factors and investment choices could be conducted in developing markets.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This study draws basis from several research areas. First, it examines theoretical review on the Efficient Market Hypothesis, Signalling Theory, Random Walk Theory, Determinants of Information Asymmetries, prior empirical evidence, conclusion from the literature review and identification of the research gap.

2.2 Theoretical Review

There are various documented theories in the finance literature on information asymmetries, some postulate that financial markets might fail to reflect information fundamentals under a number of conditions. This can result in significant and persistent biases. Subrahmanyam (2007). Therefore, assuming that investors are not always rational and may not correctly process all available information while making investment decisions and, as such, trade could occur as a result of such irrationality. While others assume that investors are always rational.

2.2.1 Random Walk Theory

Random walk theory was developed by Fama (1965) in his journal of Business in the behaviour of stock- market prices. The theory implies that a series of stock price changes has no memory- the past history of the series cannot be used to predict the future in any meaningful way. He provided extensive empirical evidence to support the theory. The Random Walk theory premises that the major Security Exchanges markets are efficient. The theory assumes there is large numbers of rational profit maximizers actively competing, with each trying to predict future market values of

individual securities and where important current information is almost freely available to all participants.

The theory holds that in an uncertain world the intrinsic value of a security can never be determined exactly. Therefore, there is room for disagreement among market participants concerning just what the intrinsic value of an individual security and such disagreement will give rise to discrepancies between actual price and intrinsic values. Although the uncertainty exists concerning intrinsic values, the actual price of the security wanders randomly about their intrinsic values. The random walk theory connects to the belief that markets are efficient, and that it is not possible to beat the market by analysing information because stock prices reflect all available information.

2.2.2 Efficient Market Hypothesis

Efficient Market Hypothesis (EMH) was developed by Fama in (1970). Fama suggest that financial markets are ''informational efficient'' i.e. prices of traded assets e.g. stocks, bonds, derivatives or property, reflect and incorporate all the available, known and relevant information. Therefore, stock prices are unbiased and reflect the aggregate beliefs of all investors about future prospects of firms. In this regard, it's impossible to consistently outdo the market through expert stock selection or market timing by using any information that the market already have except through luck, and that the only way an investor can possibly obtain higher returns is by purchasing riskier investments.

Fama (1970) distinguished EMH into three forms of market efficiency i.e. Weak, Semi-Strong and Strong form. Weak Form market efficiency suggests that the current

price fully incorporates information contained in the past prices only. In Semi-Strong form efficient market, the share price reflects all public information. Public information includes not only past prices, but also data reported in a company's financial statements earnings, dividend announcements, announced merger plans and the financial situation of a company's competitors. The Strong form of market efficiency hypothesis states that the current price fully incorporates all existing information, i.e. Public and private information. Therefore, nobody should systematically generate profits on trading on private information. The Strong-form market efficiency assumes that the markets anticipates, in an unbiased manner, future developments and incorporate such information in stock prices.

EMH has interesting assumption that the market is efficient, that means stock prices fully reflect all information both public and private. If that is the case, disclosure of new information will be immediately reflected in share prices. Then, based on share price behaviour, it is possible to evaluate the importance of that announcement and Price adjustments are only expected to arise from the release of new information (Mabhunu, (2004)).

A highly efficient market is expected to react quickly and completely when new earnings-related information becomes available. Therefore, it is pointless to search for undervalued stocks or to try to predict trends in the market through either fundamental or technical analysis. The advocates of EMH argue that although inefficiencies may exist, they are relatively small and not common; if inefficiencies come to play the over-reactions or under-reactions displayed by individual investors will cancel out and offset each other, so that the net effect is that the market will not provide scope for

systematic exploitation of such behaviours. The theory assumes that information asymmetry does not exist in the capital market.

2.2.3 Signaling Theory

The concept of signalling was first studied in the context of job and product markets by Akerlof and Arrow and was developed into signal equilibrium theory by Spence (1973), which says a good firm can distinguish itself from a bad firm by sending a credible signal about its quality to capital markets. The signal will be credible only if the bad firm is unable to copy the good firm by sending the same signal.

According to signalling theory investors require companies to provide information about their performance, Holden and Subrahmanyan (1992). The management, therefore, is naturally induced to send signals to the market, Healy and Palepu, (2001) suggests that signalling theory goes so far as to posit that the most profitable companies signal their competitive strength by communicating more and better information to the market. Management owns "private" information; which can result in information asymmetry which in turn breeds moral hazards and adverse selection. Healy and Palepu (2001) pointed out that, through financial report and information disclosure, companies can lower information asymmetry between management and external investors. Earning disclosures aim at reducing the expectation gap among investors which decreases the advantage from which informed investors benefit consequently, reducing information asymmetry in the stock market.

Under the asymmetric information between management and investors, signals from firms are crucial in estimating future returns. Ross (1997) assumes that managers know the true distribution of firm returns, but investors do not. Signalling of higher

earnings by managers then suggests an optimistic future. Signalling theory suggests that the increase of publicly available information would reduce the production of private information (adverse selection costs) which decreases information asymmetry between market participants.

2.3 Market Anomalies of Listed Firms

Hirshleifer (2001) reports that investors are not always rational and may not correctly process all available information while forming their expectations of an asset's future performance therefore trade could occur as a result of such irrationality. There are various market anomalies that affect information content of listed firms as discussed below.

2.3.1 Firm Size

Previous studies have found size to be associated with the level of information asymmetry. Atiase (1985) find that stock prices incorporate information about larger firms earlier than smaller firms. Diamond and Verrecchia (1991) suggest that Large firms may face less information asymmetry because they tend to be more mature, have established and time-tested disclosure policies and practices, and receive more attention from the market and regulators.

King, Pownall and Waymire (1990) predict that disclosure will increase with firm size as the incentives for disclosure are greater for larger firms. Large firms disclose more information than small firms. More public information lead to generation of less private information a situation which decrease information symmetry surrounding disclosure of earnings for big firms.

2.3.2 Analyst Following

Financial analysts are professionals who seek firm information. The typical investor does not have the time or the resources for performing detailed firm evaluation. Therefore, there is a demand for stock analysts who produce information for small investors. Stock analysts impact capital markets by providing firm-specific information, including foremost earnings forecasts. Their activities increase information asymmetry because information is only available at a cost.

The more the analysts follow the firm, the more the information is discovered and revealed to the public before earnings disclosure and the more asymmetric information the firm suffers. It is believed that analyst follow closely large firms, this firms are also given media attention. Their analysis provide private information which their trade on. Therefore, stock prices of firms closely followed by the analyst incorporate earnings news before disclosure.

2.3.3 Stock Price

Stock price is the price of a single share of a number of saleable stocks of a company, derivative or other financial asset. Stock prices change every day as a result of market forces. Market forces means supply and demand. If more people want to buy a stock (demand) than sell it (supply), then the price moves up. Conversely, if more people wanted to sell a stock than buy it, there would be greater supply than demand, and the price would fall.

Several studies have shown that the share price explains a significant part of the information asymmetry. Comerton-Forde and Rydge (2006) argue that the share price is positively associated with information asymmetry. Attig et al., (2006) note that the

share price is a vector of information, so it negatively affects the information asymmetry. Stoll (1978) argue that the trading volume and the incurred risk affect the cost of detention of market makers. He also notes that the stock price is a proxy for the unobservable minimum cost. It is believed that bid-ask spread negatively affects the trading volume while the stock price positively influences the variability of returns.

2.3.4 Insider Trading

Insider trading is a situation where a party who has access to private information use it to his advantage and make high returns. An insider would be a majority stockholder, the directors of a corporation, management, the company's lawyers and accountants. Additionally, an insider is anyone who has a relationship of trust with the organization. Also if anyone is privy to information that is not available to the general public, he or she is an insider.

Insider trading create uneven playing field for all investors. The situation gives a person more access to information than the general public. The fact is that such trading erodes economic foundation because only certain "special" people on this trading field possess valuable information about specific securities. Such information has the effect of oversized gains for a certain few and losses to the masses. Trading on inside information brings about information asymmetries.

2.3.5 Trading Volume

In capital markets, trading volume is the number of shares or contracts traded in a security or in an entire market during a given period of time. In the context of stock trading on a stock exchange, the volume is commonly reported as the number of shares that changed hands

during the day. Volume tells investors about the market's liquidity. Higher volume means higher liquidity and better order execution. When investors feel hesitant about the direction of the stock market, futures trading volume tends to increase.

The interplay of supply and demand allows determine the transaction price of each stock. In fact, securities are traded for cash, as buyers must have available money and sellers must have stocks. Indeed, the outcome, i. e the payment and delivery of securities, takes place immediately after negotiation. Chae (2005) points out that the trading volume is closely linked with various measures of asymmetric information and this volume decreases when the earnings are announced. Additionally, Bharath, Pasquariello and Wu (2009) argue that the inverse of the average daily trading volume positively influences the asymmetry of information.

2.4   Empirical Review

In this section various documented empirical studies on information asymmetry are discussed. Some studies suggest information asymmetry increases before earnings disclosure due to the action of financial analysts while others suggest that the disclosure of earnings information increases information asymmetry because individuals have different abilities to process information. The studies are categorized into two i.e international evidence and local evidence.

2.4.1 International Evidence

Lee, Kim and Krinsky (1993) examine the behavior of spreads and depth to observe the intraday effects of earnings announcements using intraday data. He concentrated on both depth and spreads because market liquidity consists of a price dimension, as

measured by bid-ask spreads and a quantity dimension, as measured by depth. The study is conducted using evidence from the New York Stock Exchange (NYSE). According to Lee et al., liquidity falls prior to earnings announcements, after controlling for trading activity, because spreads increase and depth decreases. Atiase and Bamber (1994) demonstrate the importance of controlling for trading activity surrounding earnings announcements because trading activity prior to announcements increases as the pre-disclosure information asymmetry in the market increases.

Krinsky and Lee (1996) investigate the behaviour of the components of the bid-ask spread around earnings announcements using data from the New York Stock Exchange. They find that adverse selection costs increase significantly in the pre-and post-earnings announcement periods, a fact that they interpret as evidence of increased information asymmetry. Bamber (1986) has found empirical results consistent with the positive relationship between volume and the level of earnings surprise induced by annual and quarterly earnings announcement, while Krassas (2006) confirmed empirically the same relationship by using profit warnings instead of annual/quarterly earnings announcements.

Yohn (1998) too examined the behavior of spreads and depth to observe the effects of earnings announcements using intraday data. He Finds bid-ask spreads increase, showing that the bid-ask spreads gradually increase up to four days prior to earnings announcements. On the day prior to announcements there is a sharp increase in spreads. Spreads, according to Yohn, are negatively related to analyst following, suggesting that information asymmetry as measured by spreads, is greater in firms with less public information. Yohn demonstrates that analyst activity has a significant influence on market behaviour prior to earnings announcements.

Affleck-Graves, Callahan and Chipalkatti (2002) examine changes in information asymmetry measured by the adverse selection component of the bid-ask spread using data from the NASDAQ. They used analyst information to partition their sample into anticipated and unanticipated earnings announcements. Their results indicate that there is no significant change in information asymmetry following anticipated earnings announcements, whereas unanticipated announcements are followed by an increase in information asymmetry. However, Brooks (1996) shows a fall in information asymmetry following earnings announcements. Brooks study is partitioned according to firm size but never distinguish between anticipated and unanticipated announcements as Affleck-Graves et al. do. Affleck et al. results indicate that the level of anticipation of announcements has a significant effect on information asymmetry following announcements, providing a possible explanation for the differing results between Brooks (1996) and Affleck-Graves et al.

Venkatesh and Chiang (2006) monitors the effects of dividend and earnings announcements' timing in relation to each other, and how the timing of the announcements affects information asymmetry in the market for stocks listed on the Italian Bourse. The study used order-driven methodology. Announcements are partitioned into three sub-samples in the paper: earnings and dividend announcements made simultaneously, earnings or dividend announcements made separately and prior to the other announcement, and earnings or dividend announcements made separately following the first announcement. Spreads prior to the second announcement increase significantly, regardless of whether the announcement relates to earnings or dividends. However spreads prior to first announcements or simultaneous announcements do not increase. Venkatesh and Chiang demonstrate that it is not the

type of announcement that causes the market reaction, but rather the order in which announcements are released to the market. The basis behind this finding is that if announcements are released separately then the market anticipates the second announcement to be a non-routine announcement. Specialists widen their bid ask spread to account for the increase in information asymmetry prior to a non-routine announcement and therefore spreads increase prior to the second announcement, regardless of whether the announcement is an earnings or dividend announcement.

Garcia, Herrero and Ibenez (2011) examine information asymmetry surrounding earnings announcement in the Spanish Stock Market using event study methodology for the period 2001 to 2008. Order flow data and usual transaction data for 620 earnings announcement were used in the analysis. The study was partitioned into anticipated and unanticipated and also investors type i.e sophisticated and unsophisticated investors. Their results indicate that unsophisticated investors have less ability to find and interpret information resources and decisions are made based on historical sequence but sophisticated investors have the capacity to predict the earnings release. It was also noted that PIN increases before earnings announcement and decreases after the earnings disclosure. Suggesting information asymmetry increases in the pre-announcement period and decreases in the post- announcement period.

2.4.2 Local Evidence

Waweru (2010) examines the reaction of share prices to issue of IPOs at NSE, Using event study methodology for all listed firms in NSE between 2006 and 2009. The results shows that issue of IPO's has both positive and negative effects on daily mean

returns; negative effects are on the day nearing the IPO's event day which are as a result of buyers and sellers expectation while positive effects are in the days far from the IPO's event day which are as result of buyers and sellers initiated trading.

Kamuti (2013) investigates the dynamic relationship between stock price volatility and trading volume at the NSE using root tests, Garch techniques and causality tests. She used monthly stock prices and volume for firms listed at NSE between 2008 and 2012. The study finds significant positive relationship between price and volume at NSE, indicating that rising market goes with rising volume and previous information content of stock prices influence volume and not vice versa. This means that changes in volume does not lead to stock price changes in the market.

Rono (2013) examines the stock price reaction to earnings announcement- a comparative test of market efficiency between NSE and Johannesburg Stock Exchange –by analyzing stock prices of 261 listed firms in the two capital markets between 2005 and 2011. She employed event study methodology. The results of NSE indicate insignificant returns on the month of announcement but negative and significant returns on the second month after announcement. The study concludes that NSE is informally efficient.

2.5   Summary of the Literature Review

According to Fama (1965) stock prices reflect the day's news. That idea was later supported by his further publication of 1970 'Efficient Market Hypothesis', which suggests that stock prices should respond instantly to the earnings disclosure. However, Signalling theory by Spence (1973) suggests that information asymmetry

exist because management possess information not known to the outsiders or investors. Information asymmetry is therefore minimised through regular communication i.e. earnings disclosure. Signalling theory suggests that earnings disclosure reduces information asymmetry.

This chapter also highlights findings that have emerged as a result of the empirical work on the study of information asymmetry. From the studies it was established that there were varying conclusions about information asymmetry around earnings. (Lee et al., (1993), Yohn (1998), and Garcia et al., (2011)) suggest that information asymmetry increases before earnings disclosure and decreases after earnings disclosure while Afflecks-Graves et al., (2002) concludes that unanticipated earnings announcement increases information asymmetry. Krinsky and Lee (1996) suggest that adverse selection costs increases significantly in the pre- and post- earnings announcement periods indicating increase in information asymmetry. Finally, no local study has been carried out on information asymmetry surrounding earnings disclosure. Therefore, this study seeks to fill that gap by investigating the effect of firm size on information asymmetries surrounding earnings disclosure.

CHAPTER THREE
RESEARCH METHODOLOGY

3.1   Introduction

This chapter outlines the method used for the research. The chapter therefore outlines: the population, data collection instruments and data collection procedures as well as data analysis. Additionally, the chapter explains how the research was carried out to achieve the study objectives. It consist of five sections, section 3.1 introduction, section 3.2 research design, section 3.3 population, section 3.4 data collection and section 3.5 data analysis.

3.2   Research Design

Descriptive study was conducted in which quantitative data was collected and analysed into two groups of small and big listed firms. Event study methodology was used to estimate spreads surrounding the annual earnings disclosure. Beaver (1968) argues that event study design allows one to observe the behaviour of the proxy of information asymmetry surrounding annual earnings disclosure date. The study examined the annual earnings announcement for 2013-2014. The widow period was five days surrounding annual earnings disclosure. $(t= -5,\ldots-1)$ represented the first section of the event window, the actual date that a firm announced its annual earnings represented the event day $(t=0)$, and the five days post event date $(t= 1\ldots5)$ was the last section of the widow period.

3.3   Population

The research population represents the elements that will be studied in the research. The study population comprised all the listed firms at NSE between 2013 and 2014 subject to the following conditions: annual earnings disclosure dates were available; since most companies announce their earnings and dividends simultaneously, companies which had earnings and dividend changes in the same direction were selected to control for the effect of dividend announcement and; The firm was continually listed in NSE during the period and declared annual earnings every year. The firms which met the selection criteria were 41.

3.4   Data Collection

Secondary data, quantitative in nature was used in this study Mugenda and Mugenda (2003) i.e. The stock market data for all the firms listed at NSE. Specifically, stock prices, trading volume, low and high daily prices, market capitalization, bid-ask and announcement dates for the period 2013 to 2014. The study used the end of the day Bid-Ask data obtained from stock brokers.

3.5   Data Analysis

Market capitalization on the last day of trading in the previous year was used to arrange firms in descending order according to size. The arranged firms were then split into two groups i.e. firms in the first half were referred to as big firms and those in the other half as small firms.

Market Capitalization   =   stock price X   total number of shares outstanding

Leuz and Verracchia (2000) argue that information asymmetry could be measured by bid-ask spreads. Bid–ask spread addresses the adverse selection problem that arises

from transacting in firm shares in the presence of asymmetrically informed investors. Less information asymmetry implies less adverse selection which implies in turn a smaller bid-ask spread. Increased spreads increases information asymmetry among informed and uninformed market participants. In this study abnormal volume and effective spread was calculated to check changes in volume and spread surrounding earnings disclosure. Then Yohn and Coller (1997) log- transformed variables model was used to check the significant of coefficients.

3.5.1 Analytical Models

$$SRV_{it} = \frac{AR^2_{it}}{V(AR)}$$

SRV_{it} = Security Returns Variability of security i in time t.

AR^2_{it} = Abnormal Return on security i at time t.

V (AR)=Variance of Abnormal Return during the announcement period

Abnormal return $=R_{it} - ER_{it}$, where R_{it} = actual return i at time t; ER_{it}= Expected Return on security i at time t.

$$AV_{it} = \frac{TV_{it} - u^{TV}}{\sigma^{TV}}$$

AV_{it} is the abnormal volume, $TV_{i,t}$ is the trading volume (Computed as the natural logarithm of volume + 1) for stock *i* on day *t*; μ and σ are, the mean and the standard deviation of trading volume respectively (for stock *i* on day *t*) calculated on a window of the previous 100 days.

$$\text{Effective Spread} = \frac{2\,|\,price - midpoint\,|}{Midpoint}, \text{ midpoint} = Ask + Bid/2.$$

Ask -Bid price is taken as the respective end-of-day ask and bid prices.

Regression

Multiple-regressions for market liquidity proxies on various determinants were run. Theoretical and empirical studies suggest there are numerous determinants of bid-ask spreads than firm size. As stated earlier, spreads are affected by order processing costs (proxied by trading volumes), inventory control costs (trading volumes and volatility) and asymmetric information (price and trading volumes). Stoll (1978) suggests that spreads are negatively associated with trading volume and positively associated to volatility and share price. However, they are positively associated to price and return volatility. The model checks whether there are any changes in spreads in the event window, which was not caused by spread determinants. Significant coefficients on the dummies would suggest that the spread during the event period (11 days) reflects changes in market liquidity and information asymmetry.

$$\text{Ln (spread}_{it}) = \alpha_0 + \alpha_1 \text{Ln(volume}_{it}) + \alpha_2 \text{Ln(price}_{it}) + \alpha_3 \text{Ln(volatility}_{it}) + \alpha_4 \text{per}_t$$

$$\text{Ln (spread}_{it}) = \alpha_0 + \alpha_1 \text{Ln(volume}_{it}) + \alpha_2 \text{Ln(price}_{it}) + \alpha_3 \text{Ln(volatility}_{it}) + \alpha_4 \text{day}_t$$

Where:

t=day

i=firm

$\alpha_{0,1,2,3,4}$ coefficients of regression

per_t is a dummy equal to 1 if the period goes from -5 to -1 and 0 otherwise.

day_t is a dummy equal to 1 if the period goes from 0 to +5 and 0 otherwise.

Spread is daily effective bid-ask spread.

Volume is the number of stock shares traded per day.

Price is the daily closing share price.

Volatility is the daily price variance measured by the difference between high and low price scaled by the low price.

3.5.2 Test of Significance

To examine whether information asymmetry was significantly different surrounding earnings disclosure and the effect of firm size on information asymmetries surrounding earnings disclosure t-test was used, at 5% level of significance.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1   Introduction

This chapter provides an analysis of data collected from the NSE and Stock Brokers. The results are presented in tables to highlight the major findings. The study involved 27 big firms and 14 small firms that annual earnings disclosure dates for 2013 and 2014 were available. This chapter has the following Sections: 4.2 Results and 4.3 interpretations.

4.2   Results

This section presents the results for various analyses done: 4.2.1 represents security returns variability, 4.2.2 abnormal volume surrounding earnings disclosure, clearly indicating the changes in abnormal volume in the five days surrounding the event day in form of a table and a graph; 4.2.3 presents the results of effective spread for the five days surrounding the event day for big and small firms; 4.2.3 shows the results in form of tables for regression equation.

4.2.1   Security Returns Variability

The study sought to establish the variability of the stock return before, on and after disclosure of earnings thus determine the market reaction using the formula;

$$SRV = \frac{AR^2_{it}}{V(AR)}$$

**Table 4.1:   Average Security Returns Variability**

Big firms				
Day	**Mean (ASRV)**	**STDEV**	**T-stat**	**Sig**
-5	0.0006	0.5234	2.047	0.096
-4	0.1056	0.8582	1.837	0.126
-3	0.1680	0.6349	2.267	0.043
-2	0.0010	0.5702	0.051	0.128
-1	0.0418	0.1117	2.320	0.068
0	**0.0426**	**0.4850**	**1.939**	**0.110**
1	0.0164	0.2629	2.975	0.038
2	0.0802	0.4699	2.488	0.045
3	0.0189	0.3010	3.009	0.030
4	0.0323	0.5874	1.603	0.170
5	0.4849	0.7380	4.057	0.001
Small firms				
Day	**Mean (ASRV)**	**STDEV**	**T-stat**	**Sig**
-5	0.1626	0.3457	2.473	0.056
-4	0.2434	0.4164	1.586	0.174
-3	0.2609	0.7799	2.605	0.048
-2	0.2039	0.8281	3.222	0.023
-1	0.0322	0.7111	2.108	0.089
0	**0.4954**	**0.9164**	**2.825**	**0.037**
1	0.0944	0.1131	2.925	0.002
2	0.283	0.5396	3.886	0.012
3	0.0406	0.1820	2.012	0.111
4	0.0242	0.2760	1.997	0.102
5	0.1579	0.2029	1.747	0.141

Source: Research Findings

Table 4.1 above shows average security returns variability. The security returns of small firm were high compared to the returns of big firms. This means that investors could make high returns or losses if they invest in small firms in the days surrounding earnings disclosure. The variability in security returns of big firms increased before

earnings disclosure; remain stable on the disclosure day before a significant drop a day after disclosure. For small firms' variability of security return increases from day -5 to -3 then a significant drop is recorded two days before the disclosure date. On the disclosure day there is a sharp increase in security return which decreased after disclosure. T-statistics are significant at the 0.05 level. Moreover, it can be observed that the market reaction still persists 5 days after the disclosure. Investors may interpret the news differently because they may have varying abilities to understand the information released. Increased security return before disclosure could be due to informed investors who react by trading on the basis of their private information. The t-student test shows that there are no significant returns on the date of announcement for the big firms; as compared to that of small firms which is significant. These findings indicate that earning disclosure of big firms might be expected.

**Figure 4.1:   Returns around the Disclosure Date (Big Firms)**
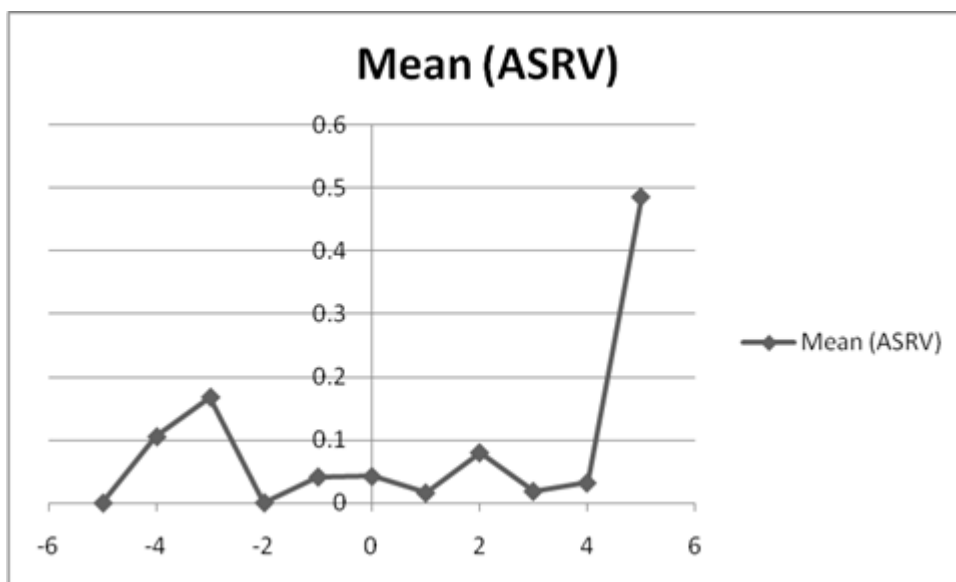
Source: Research Findings

Figure 4.1 illustrates average returns within 10 days surrounding the event day (5 days before and 5 day after disclosure). The findings indicate a sharp and significant

increase in security returns on the 5 day after disclosure.

Figure 4.2:   Returns around the Disclosure Date (Small Firms)
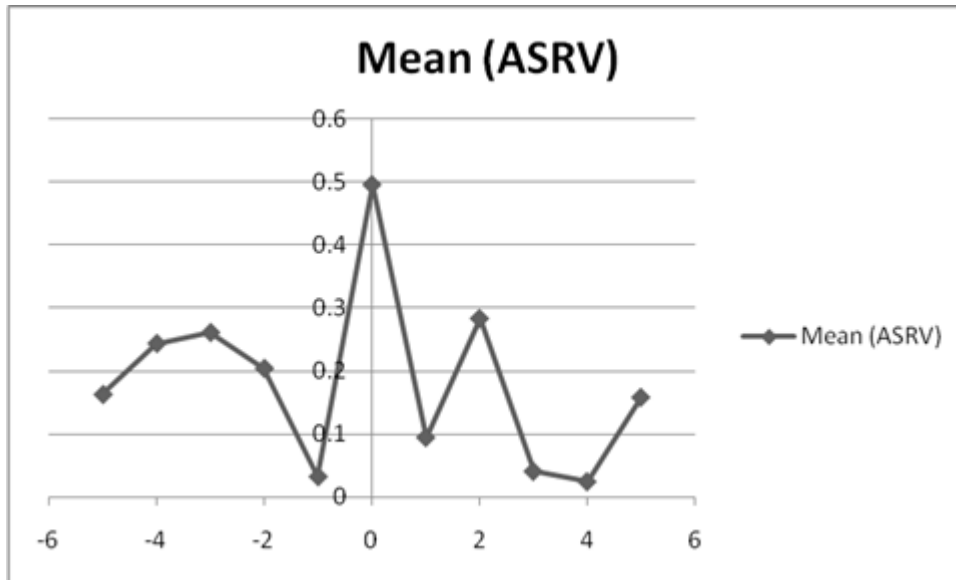
Source: Research Findings

Figure 4.2 shows the average returns within 10 days event period surrounding the day of disclosure (5 days before and 5 day after disclosure). The figure indicates a variation in return after the disclosure for the small firms. The highest return is reported on the disclosure day.

4.2.2 Abnormal Volume Surrounding Earnings Disclosure

The study made use of volume for 41 stocks for the event window consisting of 5 days before and 5 days after the event date. The event study methodology was used to assess if earnings disclosure brings about abnormal reaction and if the reaction depend on the size of the firm. To analyze the market reaction to annual earnings disclosure, the study computed abnormal volume using the formula

$$AV_{it} = \frac{TV_{it} - u^{TV}}{\sigma^{TV}}$$

Table 4.2:   Abnormal Volumes

Big firms		
Day	**Abnormal Volume**	**T**
-5	0.6954	0.9164
-4	0.944	0.1131
-3	0.2830*	5.396
-2	0.406	0.1820
-1	0.242*	2.760
0	**0.279**	**0.2029**
1	0.426	0.0271
2	0.2303*	2.0981
3	0.2105*	2.0397
4	0.4351	0.1027
5	0.518*	4.1639
Small firms		
Day	**Abnormal Volume**	**T**
-5	0.1149	0.3342
-4	0.0286	0.1066
-3	0.1269*	3.3888
-2	0.188*	2.5994
-1	0.1727	0.4154
0	**0.125***	**2.6696**
1	0.2568*	2.3248
2	0.1745	0.2181
3	0.1160	0.5638
4	0.1125	0.0673
5	0.0825	0.0715

Source: Research Findings

The findings in table 4.2 presents average abnormal volumes around the date of annual earnings disclosure for the big firms and small listed firms. The findings are an indicator that information asymmetries exist in the days surrounding annual earnings disclosure. Pre-disclosures period of small firms exhibit low abnormal volume but abnormal volume is high a day after disclosure day. Increase in abnormal volume a day after announcement date could be interpreted as the differing abilities of investors to process the released information increasing information asymmetry. Abnormal volumes in the days surrounding disclosure by big firms is high compared to abnormal volume surrounding disclosure by small firms indicating that investors react more to

earnings disclosure of big firms than small firms. Abnormal volume in the pre-disclosure days of big firms showed mixed reaction. In the post disclosure days significant low volume was noted on day 2 and 3 but there was a sharp increase in abnormal volume on day 5.

Figure 4.3:   Abnormal Trading Volumes (Big Firms)
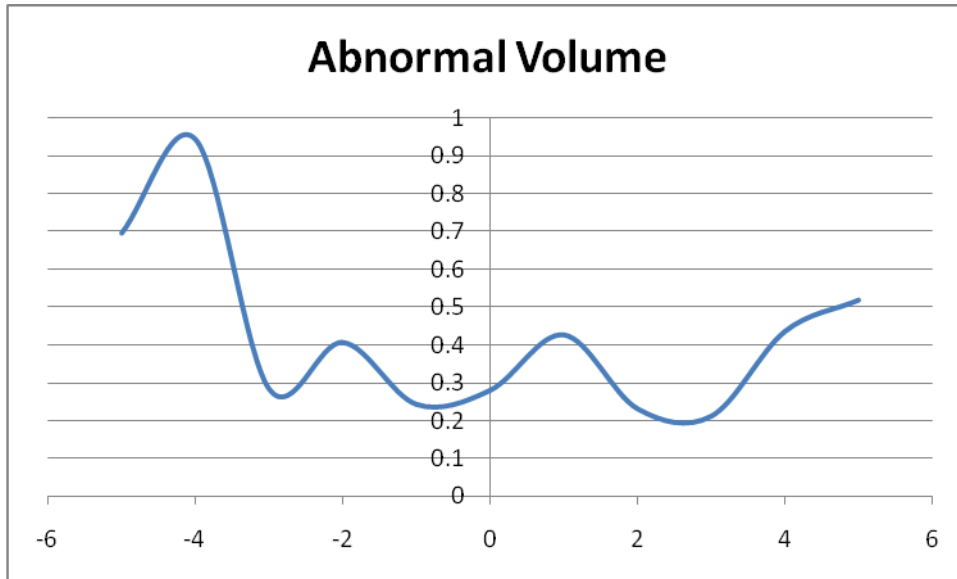
Source: Research Findings

From the findings, the abnormal volume increased insignificantly on the disclosure date. It can be noted that there are significant changes in abnormal volume, before earning disclosure by big firms, with   a significant change in abnormal volume on day 2 and 3 after the disclosure. In this respect, it can be assumed that earnings disclose causes changes in abnormal volume suggesting presence of information asymmetry surrounding earnings disclosure by big firms.

Figure 4.4:   Abnormal Trading Volumes (Small Firms)
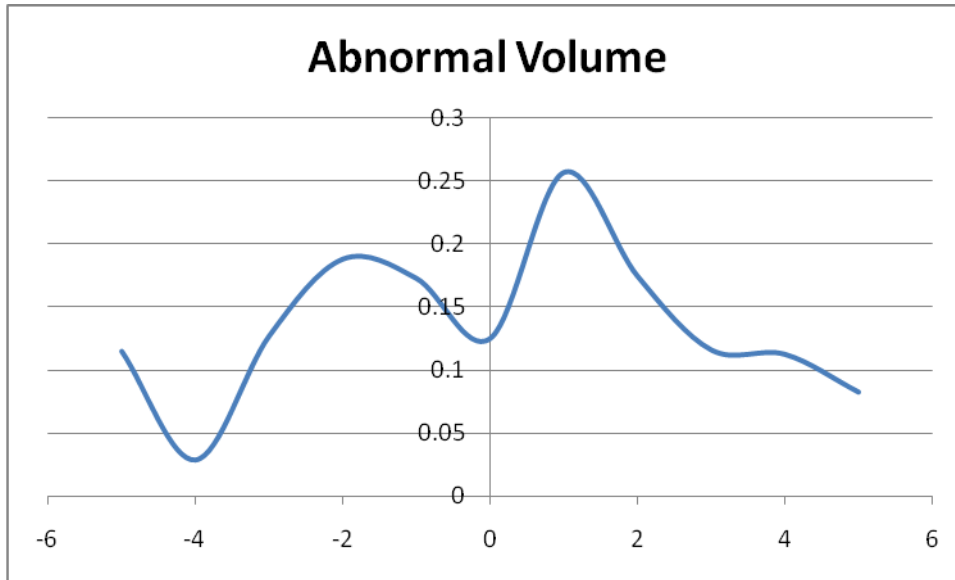
Source: Research Findings

From the findings, contrary to the big firms, the abnormal volumes rose significantly before earnings disclosure. It is also clear that there is a significant rise in trading volume, after earning disclosure for small firms which sharply rose on the first day after the announcement. This suggests that disclosure from small firms increases information asymmetry.

4.2.3 Effective Spread Surrounding Earnings Disclosure

The following table presents the effective spread for the 10 days surrounding earnings disclosure. First the effective spread of big firms is presented followed by the effective spread for small firms. The column headed T shows the significant test. Effective spread was calculated using the formula

Effective spread $= \dfrac{2 \left| \text{price} - \text{midpoint} \right|}{\text{Midpoint}}$

Table 4.3: **Effective Spread**

Big firms		
Day	**Effective Spread**	**T**
-5	0.0054	0.9156
-4	0.0041	0.1111
-3	0.0080*	5.145
-2	0.00412	0.1411
-1	0.0012*	2.745
0	**0.0019**	**0.2015**
1	0.0041	0.0215
2	0.0013*	2.0925
3	0.0045*	2.0355
4	0.0043	0.1117
5	0.052*	4.0569
Small firms		
Day	**Effective Spread**	**T**
-5	0.0015	0.3582
-4	0.0086	0.2123
-3	0.0064*	3.0585
-2	0.0015*	2.8958
-1	0.00217	0.1554
0	**0.0058***	**2.6512**
1	0.0064*	2.3529
2	0.0048	0.2550
3	0.0064	0.5891
4	0.0015	0.0878
5	0.00824	0.0518

Source: Research Findings

From the findings effective spread went down significantly two days before the disclosure for the big firms, remained low on the disclosure day with a slight increase a day after, but decreased on the second day after disclosure. Decrease in effective spread before disclosure date suggested a decrease in information asymmetry. On the other hand, effective spreads decreased days before annual earnings disclosure by small firms but went up significantly on the day of disclosure and a day after. The findings confirm the findings of significant abnormal volumes which showed reduction in information asymmetry before annual earnings disclosure and an increase in information asymmetry following disclosure by the small firms. The results

indicated presence of information asymmetry surrounding annual earnings disclosure of both categories of firms.

4.2.4 Regression

The study conducted regression analysis to test the change in information asymmetry using panel data by focusing on effective spreads for both the big as well as small listed firms. Significant coefficient on the dummies during the event period (10 days) suggests changes in information asymmetry.

The study adopted the following models;

$Ln (spread_{it}) = \alpha_0 + \alpha_1 Ln(volume_{it}) + \alpha_2 Ln(price_{it}) + \alpha_3 Ln(volatility_{it}) + \alpha_4 per_t$

$Ln (spread_{it}) = \alpha_0 + \alpha_1 Ln(volume_{it}) + \alpha_2 Ln(price_{it}) + \alpha_3 Ln(volatility_{it}) + \alpha_4 day_t$

Table 4.4:   Spread Coefficients for Big Listed Firms

$Ln(spread_{it}) = \alpha_0 + \alpha_1 Ln(volume_{it}) + \alpha_2 Ln(price_{it}) + \alpha_3 Ln(volatility_{it}) + \alpha_4 per_t \text{ or } day_t$

Time period		α_0	α_1	α_2	α_3	α_4	R^2
Per = 1 for:	Coefficient	-1.498	-0.158	-0.316	0.489	-0.071	0.402
$-5 \leq t \leq -1$	T-value	-5.53***	-8.85***	-5.41***	11.23***	-1.37	
Day = 1 for t = -1	Coefficient	-1.469	-0.163	-0.823	0.524	0.044	0.418
	T-value	-5.21	-8.58***	-12.53***	11.45***	0.36	
Day = 1 for t = 0	Coefficient	-1.535	-0.158	-0.854	0.523	0.189	0.418
	T-value	-5.53***	-8.62***	-12.58***	11.39***	1.53*	
Day = 1 for t =1	Coefficient	-1.498	-0.166	-0.863	0.565	0.258	0.401
	T-value	-5.43***	-8.92***	-12.65***	11.42***	2.16**	
$5 \leq t > 1$	Coefficient	-1.487	-0.169	-0.871	0.567	0.261	0.378
	T-value	-5.26***	-8.95***	-12.73***	11.53***	0.275***	

Source: Research Findings

Per is dummy coded as 1 for t = -5 to t = -1 and 0 for t = 0 to t = +5, Day = 1 for t = -1 and 0 otherwise, Day = 1 for t = 0 and 0 otherwise, Day = 1 for t = +1 and 0 otherwise. Spread is daily effective bid-ask spread, Volume is the number of stock shares traded per day, Price is the daily closing share price, and Volatility is the price variance measured by the difference between high and low prices scaled by the low price.

Table 4.5:   Spread Coefficient for Small Listed Firms

$$Ln(spread_{it}) = \alpha_0 + \alpha_1 Ln(volume_{it}) + \alpha_2 Ln(price_{it}) + \alpha_3 Ln(volatility_{it}) + \alpha_4 day_t \text{ or } Per_{it}$$

Time period		α_0	α_1	α_2	α_3	α_4	R^2
Per = 1 for:	Coefficient	-1.523	-0.175	-0.412	0.412	-0.095	0.318
$-5 \leq t \leq -1$	T-value	-5.87***	-8.98***	-5.79***	10.85***	-1.98	
Day = 1 for t = -1	Coefficient	-1.512	-0.201	-0.875	0.496	0.021	0.315
	T-value	-5.76	-8.98***	-12.78***	10.45***	0.28	
Day = 1 for t = 0	Coefficient	-1.612	-0.272	-0.973	0.421	0.121	0.315
	T-value	-5.79***	-9.93***	-13.02***	10.37***	1.15*	
Day = 1 for t =1	Coefficient	-1.568	-0.266	-0.967	0.471	0.185	0.317
	T-value	-6.21***	-9.45***	-12.87***	10.73***	1.98**	
$5 \leq t > 1$	Coefficient	-1.587	-0.201	-0.876	0.463	0.175	0.285
	T-value	-5.46	-9.25***	-12.76***	10.53***	0.275***	

Source: Research Findings

Per is dummy coded as 1 for t = -5 to t = -1 and 0 for t = 0 to t = +5, Day = 1 for t = -1 and 0 otherwise, Day = 1 for t = 0 and 0 otherwise, Day = 1 for t = +1 and 0 otherwise. Spread is daily effective spread, Volume is the number of stock shares traded per day, Price is the daily closing share price, and Volatility is the price variance measured by the difference between high and low prices scaled by the low price.

The coefficients on volume are significantly negative. Price also has a significant negative coefficients showing that lower-price stocks have higher spreads. The coefficient on volatility is significant and positive. Significant coefficients suggest changes in information asymmetry surrounding earnings disclosure. This result is in line with prior literature evidence suggesting that the more volatile the stock price, the more the market maker is exposed to the risk of adverse price movements and consequently the wider is the bid-ask spread.

4.3 Interpretation of the Findings

The study depicts that earnings disclosure exhibit abnormal and high trading volumes before, on and after the disclosure day. Beaver (1968) argue that information content of public disclosures could be observed through stock market reactions and trading volume changes around the date of announcement. The abnormal volume for the big firms a day before disclosure was 24.2% which rose to 27.9% on the disclosure date and to 42.6% a day after disclosure but the increase is not significant. On the other hand, the abnormal volume for the small firms was 17.27% a day before disclosure date which dropped to a significant of 12.5% on the announcement day and rose to a significant 25.6% a day after the disclosure date, significant at 0.05; indicating that investors trade less on the disclosure date but react to earnings news a day after. This observation suggests that the disclosure by small firms communicate information not known in the market. Abnormal volume of big firms dropped significantly a day before disclosure but rose insignificantly on the disclosure date and a day after. Security returns variability for big firms were high compared to the security returns variability of small firms. This means that big firms security was more liquid than small firms stock in the days surrounding earnings disclosure. The security returns for small firms are more volatile after earnings disclosure suggesting increase in

information asymmetry.

Spread to changes in the days surrounding earnings disclosure date. For big firms the spread decreases to a significant of 0.12% a day before disclosure date but increases to 0.19% on the disclosure date and 0.41% a day after but the increase is insignificant. For small firms, the effective spread increases was 0.22% a day before disclosure but of interest is the increase in spread to significant of 0.58% on the disclosure date and 0.64% a day after. The increase in effective spread on and after annual earnings disclosure by small firms indicated increase in information asymmetry. Ball and Brown (1968) and Bamber and Cheon (1995) argue that earnings announcements accompanied by high trading volumes and abnormal returns around the announcement window convey more information to investors than announcements which generate low trading volumes and insignificant stock returns. This means that disclosure form small firms convey more information since its accompanied by increased trading volume and high variability of returns.

Increase in information asymmetry surrounding earnings disclosure of small firms mean investors may interpret the news differently because they may have varying abilities to understand the information released. This observation is similar to the conclusion of Kim and Verrecchia (1994) who says information asymmetry increases after earnings disclosure due to different ability to process news and differing opinion among investors. Acker, Stalker and Tonks (2002) link volatility with the content of the earnings announcement. If an announcement is easy to interpret or contains good news, an increase in volatility is usually observed on the day of the announcement, while bad news or difficult-to-interpret news has a delayed price and volatility reaction until the following day.

The t-student test shows that there are no significant change in security returns, abnormal volumes and spread on the announcement date and a day after for the big firms; as compared to that of small firms which is significant. These findings indicate that disclosure from big firms may be difficult-to-interpret hence the delayed response. These findings were similar to Atiase, (1985) findings who argued that due to the additional information and faster dissemination involved at larger firms the stock price reaction is less pronounced on the announcement day than for smaller firms. This explains why stock price reaction for small firms is more pronounced than in bigger firms on the day of the announcement. However, not all studies underwrite this conclusion. Chan, Faff and Ramsay (2005) show that in the Australian market, using a twenty days period and daily security returns, large firms have a more positive reaction to earnings announcements than smaller firms. They attributed the outcome to the fact that in Australia larger firms release earnings news together with dividend news as opposed to small and medium size firms. Therefore, the information content of the financial reports was different. The observation of the study is best explained by the conclusion of Atiase as mentioned earlier because just as in his study no distinction was made to establish to what extent dividends news determine investors' reaction.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1   Introduction

This chapter presents the summary, the highlights of the study findings and the recommendations thereof. The conclusions were in quest to addressing research objective of establishing the effect of firm size on information asymmetries surrounding earnings disclosure of firms listed at Nairobi Securities Exchange. Recommendation aimed at giving suggestions for mitigation and further research that was deemed fit in this field of study.

5.2   Summary

Using event study methodology, the study aimed at establishing whether information asymmetries surrounding annual earnings disclosure of listed firms exist at NSE and whether information asymmetry was dependent on firm size. The study involved 41 listed firms (27 big firms and 14 small firms). These were firms which announcements dates were available. The study period was 10 days surrounding the event day (5 days before and 5 days after disclosure date).

Market capitalisation was used to categorise listed firms into big and small firms. Abnormal volume was calculated to check the movement of volume surrounding earnings disclosure using the following formula.

$$AV_{it} = \frac{TV_{it} - u^{TV}}{\sigma^{TV}}$$

Security return variability was calculated using the formula: $SRV = \dfrac{AR^2_{it}}{V(AR)}$

Effective spread was also calculated using the formula:

Effective spread $= \dfrac{2 \left| \text{price} - \text{midpoint} \right|}{\text{Midpoint}}$

The multi- regression equation below was run using Statistical Package for the Social Sciences (SPSS) to establish the relationship among the variables.

$$\text{Ln}(\text{spread}_{it}) = \alpha_0 + \alpha_1 \text{Ln}(\text{volume}_{it}) + \alpha_2 \text{Ln}(\text{price}_{it}) + \alpha_3 \text{Ln}(\text{volatility}_{it}) + \alpha_4 \text{per}_t \text{ or day}_t$$

The analysis showed that security returns of small firms are more volatile than returns of big firms after disclosure. This could be explained in terms of differing ability to process information released increasing information asymmetry. The disclosure from big firms could be anticipated hence less reaction. Abnormal volume for big firms remained high than abnormal volume for small firms which can be interpreted as more trading taking places in the days surrounding earnings disclosure by big firms compared to small firms. Abnormal volume for big firms showed mixed reaction before and after the disclosure date. The effective spread decreases before the disclosure date but showed no significant increase on and a day after disclosure date. Abnormal volume and effective spread indicated delayed response on earnings disclosure by investors for big firms. A situation which can be attributed to the quantity of information released Mohammed and Yadav (2002). Increase in security returns and decrease in abnormal volume and effective spread before earnings disclosure suggested existence of informed investors who trade on private information therefore, a decrease in information asymmetry.

For small firms abnormal volume decreased before and on the announcement date but significant increases is recorded after announcement. Spread decreased before disclosure but increased on and a day after disclosure. Security returns increased before and on the disclosure date but decreased after disclosure. The decrease in abnormal volume and effective spread and increase in security returns indicated that information asymmetry reduced before earnings disclosure of small firms and increase of the same on and after the event day indicated information asymmetry increased after the disclosure.

5.3   Conclusion

The study aimed at establishing whether information asymmetry surrounding earnings disclosure exist at NSE. The analysis for big firms indicated that abnormal volume is high in the event window. The effective spread of the big firms also showed significant change during the event window and security returns variability was significant in the days surrounding earnings disclosure. The security returns variability, abnormal volume and effective spread for the two categories of firms indicated a change in information asymmetry. These findings are similar to the findings of Krinsky and Lee (1996) who found that adverse selection costs increase significantly in the pre-and post-earnings announcement periods, a fact that they interpret as evidence of increased information asymmetry. Yohn (1998) also concludes that information asymmetry around earnings disclosure exist and is driven by the presence of informed agents that either have more information or have superior ability to process it. The study therefore, concludes that information asymmetry exist in the days surrounding annual earnings disclosure in NSE.

The study also aimed at establishing whether firm size has any effect on information asymmetry surrounding earnings disclosure. The abnormal volume for big firms showed no consistency. Though effective spread before disclosure showed a bit of consistency no trend was noted after the disclosure and security returns remained almost stable in the days very close to the event day. However, the security returns, abnormal volume and effective spread for small firms showed that information asymmetry decreases before annual earnings disclosure and increases after earnings disclosure. This could be interpreted based on Affleck et al., (2002) study which concluded that there is no significant change in information asymmetry following anticipated earnings announcements, whereas unanticipated announcements are followed by an increase in information asymmetry. Disclosure by big firms can be assumed to be anticipated due to the media attention given and disclosure from small firms unanticipated but more research need to be done to support this position. Therefore, due to lack of consistency on the analysis of big firms the study was inconclusive on this objective.

5.4   Recommendations for Policy

The study provides recommendation to the investors who should carefully plan and carry out investments before, on and after the earnings disclosure by firms because the presence of information asymmetry means that returns could vary depending on one's choice. Earnings disclosure can have vital impact to the stock market; therefore investors should carefully select the stock to buy before earnings disclosure and what security to invest in on and after earnings disclosure.

Further recommendations are to government policy makers- Capital Market Authority (CMA) who formulate and implement laws and policies on regulation of capital market and the trade platform provider (Nairobi Securities Exchange). The recommendation to CMA is that they should implement policies to increase information disclosure hence reduce adverse selection problem which may lead to huge losses to investors consequently making the capital market to collapse. To NSE,

more data need to be accumulated like the order executed and placed to allow application of more modern models in analysis. NSE should also encourage many scholars to conduct various researches on the market and provide useful recommendation which will enhance efficient running of the market.

5.5   Limitations of the Study.

The research study concentrated on stock reactions to annual earnings disclosure for two years. In future a longer period should be studied to support the conclusion made. The study targeted all the listed firms at NSE but there was a challenge in accessing the disclosure dates of some companies reducing the elements to be studied to 41 from 61. It was not possible to carry out a study for a longer period because of the unavailability of data (announcement dates) for earlier years. Moreover, a modern model like PIN was more appropriate to use but NSE does not keep record for orders made and executed.

The study also focused on firm size which is not the only factor that affect information asymmetry surrounding earnings disclosure. Other factors that ought to have been considered in the study are surprise sign, sequence of earnings news, investors sophistication, quality and quantity of information and non-financial information disclosed which were not considered when calculating abnormal volume and spread. These factors account for the unexplained element in the regression model.

5.6   Areas for Further Research

The research concludes that the information asymmetry exist surrounding earnings disclosure at NSE. However, the finding for the effect of firm size on information asymmetries was inconclusive. A further research should be done to establish whether information asymmetry depends on firm size using a different model. The same study can be replicated to half year and quarterly earnings disclosure to examine the changes in security returns variability, abnormal volume and spread in the days surrounding the event day. The idea could be extended even to profit warnings. A further study could be done to establish whether information asymmetry surrounding earnings disclosure depends on the surprise sign (good, neutral or bad news). The delayed response to earnings news by investors of the big firms might suggest that the firms release more information. A research can be done to determine whether that is the case using firm size as a proxy for quality and quantity of information released.

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APPENDICES

Appendix 1: List of Quoted Companies in NSE as at August 2014.

AGRICULTURAL

Eaagads Ltd

Kakuzi Ltd

Kapchorua Tea Co. Ltd

The Limuru Tea Co. Ltd

Rea Vipingo Plantations Ltd

Sasini Ltd

Williamson Tea Kenya Ltd

AUTOMOBILES & ACCESSORIES

Car & General (K) Ltd

CMC Holdings Ltd

Marshalls (E.A.) Ltd

Sameer Africa Ltd

BANKING

Barclays Bank of Kenya Ltd

CFC Stanbic of Kenya Holdings Ltd

Diamond Trust Bank Kenya Ltd

Equity Bank Ltd

Housing Finance Co.Kenya Ltd

I&M Holdings Ltd

Kenya Commercial Bank Ltd

National Bank of Kenya Ltd

NIC Bank Ltd

Standard Chartered Bank Kenya Ltd

The Co-operative Bank of Kenya Ltd

COMMERCIAL AND SERVICES

Express Kenya Ltd

Hutchings Biemer Ltd

Kenya Airways Ltd

Longhorn Kenya Ltd

Nation Media Group Ltd

Scangroup Ltd

Standard Group Ltd

TPS Eastern Africa Ltd

Uchumi Supermarket Ltd

CONSTRUCTION & ALLIED

ARM Cement Ltd

Bamburi Cement Ltd

Crown Paints Kenya Ltd

E.A.Cables Ltd

E.A.Portland Cement Co. Ltd

ENERGY & PETROLEUM

KenGen Co. Ltd

KenolKobil Ltd

Kenya Power & Lighting Co Ltd

Total Kenya Ltd

Umeme Ltd

INSURANCE

British-American Investments Co.(Kenya) Ltd

CIC Insurance Group Ltd

Jubilee Holdings Ltd

Kenya Re Insurance Corporation Ltd

Liberty Kenya Holdings Ltd

Pan Africa Insurance Holdings Ltd

INVESTMENT

Centum Investment Co Ltd

Olympia Capital Holdings Ltd

Trans-Century Ltd

MANUFACTURING & ALLIED

A.Baumann & Co Ltd

B.O.C Kenya Ltd

British American Tobacco Kenya Ltd

Carbacid Investments Ltd

East African Breweries Ltd

Eveready East Africa Ltd

Kenya Orchards Ltd

Mumias Sugar Co. Ltd

Unga Group Ltd

TELECOMMUNICATION & TECHNOLOGY

Safaricom Ltd

GROWTH ENTERPRISE MARKET SEGMENT (GEMS)

Home Afrika Ltd

Source: Nairobi Securities Exchange

Appendix 2: Firms Sampled for the Study.

BIG FIRMS
Safaricom Ltd Ord 0.05
East African Breweries Ltd Ord 2.00
Kenya Commercial Bank Ltd Ord 1.00
Equity Bank Ltd Ord 0.50
Barclays Bank Ltd Ord 0.50
Standard Chartered Bank Ltd Ord 5.00
The Co-operative Bank of Kenya Ltd Ord 1.00
Bamburi Cement Ltd Ord 5.00
ARM Cement Ltd Ord 5.00
British American Tobacco Kenya Ltd Ord 10.00
British-American Investments Co(Kenya) Ltd Ord 0.10
Carbacid Investments Ltd Ord 1.00
Centum Investment Co Ltd Ord 0.50
CFC Stanbic Holdings Ltd ord.5.00
CIC Insurance Group Ltd ord.1.00
Diamond Trust Bank Kenya Ltd Ord 4.00
I&M Holdings Ltd Ord 1.00
Jubilee Holdings Ltd Ord 5.00
KenGen Ltd Ord. 2.50
KenolKobil Ltd Ord 0.05
Kenya Airways Ltd Ord 5.00
Kenya Re-Insurance Corporation Ltd Ord 2.50
Nation Media Group Ord. 2.50
NIC Bank Ltd Ord 5.00
Pan Africa Insurance Holdings Ltd Ord 5.00

Scangroup Ltd Ord 1.00
TPS Eastern Africa (Serena) Ltd Ord 1.00
Trans-Century Ltd Ord 0.50 AIM
Umeme Ltd Ord 0.50
SMALL FIRMS
B.O.C Kenya Ltd Ord 5.00
Car & General (K) Ltd Ord 5.00
CMC Holdings Ltd Ord 0.50
Crown Berger Ltd Ord 5.00
E.A.Cables Ltd Ord 0.50
Express Ltd Ord 5.00 AIM
Housing Finance Co Ltd Ord 5.00
Kakuzi Ord.5.00
Kapchorua Tea Co. Ltd Ord Ord 5.00 AIM
Kenya Orchards Ltd Ord 5.00 AIM
Liberty Kenya Holdings Ltd Ord.1.00
Limuru Tea Co. Ltd Ord 20.00 AIM
National Bank of Kenya Ltd Ord 5.00
Olympia Capital Holdings ltd Ord 5.00
Standard Group Ltd Ord 5.00
Total Kenya Ltd Ord 5.00

Source: Field Data

Appendix 3: Introduction Letter

UNIVERSITY OF NAIROBI

SCHOOL OF BUSINESS

MBA PROGRAMME

Telephone: 020-2059162 Telegrams: "Varsity", Nairobi Telex: 22095 Varsity	P.O. Box 30197 Nairobi, Kenya

DATE 21/08/2014

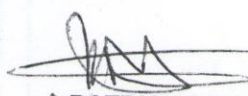## TO WHOM IT MAY CONCERN

The bearer of this letter ....MUIRURI....WILSON....CHEGE.

Registration No.....D.61/79103/2012.......................

is a bona fide continuing student in the Master of Business Administration (MBA) degree program in this University.

He/she is required to submit as part of his/her coursework assessment a research project report on a management problem. We would like the students to do their projects on real problems affecting firms in Kenya. We would, therefore, appreciate your assistance to enable him/her collect data in your organization.

The results of the report will be used solely for academic purposes and a copy of the same will be availed to the interviewed organizations on request.

Thank you.

PATRICK NYABUTO   21 AUG 2014
MBA ADMINISTRATOR
SCHOOL OF BUSINESS   30197 - 00100, NAIROBI