EFFECT OF INFORMATION ASYMMETRY ON STOCK PERFORMANCE OF FIRMS LISTED AT THE NAIROBI SECURITIES EXCHANGE

BY

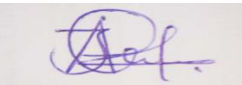
JANET AWINO OGWEL OKWIRI

A RESEARCH PROJECT PRESENTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTER OF BUSINESS ADMINISTRATION DEGREE, FACULTY OF BUSINESS AND MANAGEMENT SCIENCES, UNIVERSITY OF NAIROBI

2023

DECLARATION

I affirm this work is entirely original and was solely presented for examination purposes at the University of Nairobi. It has not been shared with any other universities or institutions of higher education.

Signature  …… Date …11/09/2023……

Name: Janet Awino Ogwel Okwiri

Reg No: D61/37919/2020

This research proposal was presented for examination with my approval as the University supervisor

Signature  …… Date ……27/11/2023…….. ……..

Dr. Zipporah Onsomu

Department of Finance and Accounting
Faculty of Business and Management sciences,
University of Nairobi

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ACKNOWLEDGMENT

I extend my deepest thanks to the Almighty God for bestowing upon me good health, a keen intellect and spiritual guidance throughout my study journey. Additionally, I am grateful for the provision of the necessary financial resources that enabled me to successfully bring this project to completion.

A special and heartfelt gratitude goes to my supervisor, Dr. Zipporah Onsomu. Her wealth of knowledge, unwavering commitment, dedicated efforts, patience, invaluable corrections, and generosity has been instrumental in guiding me at every step of crafting this research project. Without her steadfast support, this project would not have reached its timely completion. Her presence, even when the finish line felt distant, ensured the meticulous refinement of this research paper.

Finding words that adequately convey my gratitude for the continuous encouragement and unwavering support I received from my family is challenging. My parents, siblings, and extended family members endured my prolonged absence and dedication throughout the entirety of my studies. Their enduring presence served as a wellspring of inspiration throughout every step of this journey, even during the most difficult moments.

Lastly my heartfelt appreciation also extends to the University of Nairobi, as well as to my colleagues, lecturers, and friends, for fostering a strong sense of unity and teamwork. Our collaborative efforts in brainstorming and benchmarking have resulted in the creation of exceptional work of high quality.

DEDICATION

This research project is dedicate to my parents, Patrick and Caren, and my siblings; Rosebelle, Christabelle, Martinah, Dickens, and Lemuel. Their unwavering support throughout this journey and their encouragement during challenging times, when circumstances appeared overwhelming, has been invaluable. I also extend my heartfelt gratitude to my supervisor and friends for their constant and tireless support. May God blessings abound upon all of you.

LIST OF ABBREVIATIONS AND ACRONYMS

AIV	Abnormal Idiosyncratic Volatility
ANOVA	Analysis of Variance
APT	Arbitrage Pricing Theory
ARDL	Autoregressive distributed Lag
CAPM	Capital Asset Pricing Model
DW	Durbin-Watson
EMH	Efficient Market Hypothesis
ETFs	Exchange-traded funds
FTSE	Financial Times Securities Exchange
GED	Generalized Error Distribution (GED)
NASDAQ	National Association of Securities Dealers Automatic Quotation System
NSE	National Stock Exchange of India
NSE	Nairobi Securities Exchange
NYSE	New York Stock Exchange
PIN	Probability of information-based trading
SME	Small and Medium Enterprises
SPSS	Statistical Package for Social Sciences
VIF	Variance Inflation Factors

ABSTRACT

The fundamental objective underlying stock market investments is to achieve a satisfactory return on investment, a goal that proves to be exceedingly challenging in the absence of substantial information for predicting stock performance. This study delves deeply into the intricate relationship between information asymmetry and stock performance of firms listed on Nairobi Securities Exchange. Employing a descriptive research design, the study utilized secondary daily share price data obtained from the NSE and annual financial reports of NSE-listed companies for the year 2022. Key methodologies included descriptive statistics, correlation analysis, and regression analysis, which were employed to examine connections and pinpoint noteworthy indicators of stock performance. The results indicate that the overall regression model holds statistical significance, given the F-statistic of 5.818, which is associated with a remarkably low p-value (Sig. = 0.000). The regression model further discloses a statistically significant moderating effect of information asymmetry on stock performance, with an R value of 0.654 and an R Square value of 0.427. This suggests that 42.7% of the variability in Stock Performance can be accounted for by Information Asymmetry. Conversely, bid-ask spread and volume traded show no statistically significant associations with stock performance, as evidenced by their coefficients (B = 0.000 and -2.859E-010, respectively) and corresponding p-values (Sig. = 0.297 and 0.427, respectively).In contrast, stock volatility emerges as a noteworthy predictor, with a positively significant relationship (B = 0.103), signifying a 0.103 change in stock returns for a one-unit change in volatility. The low p-value (Sig. = 0.000) confirms its statistical significance. Conversely however, both market capitalization and the P/E ratio do not demonstrate statistically significant relationships with stock performance, as indicated by (B = 5.029E-007 and 1.500E-005, respectively) and associated p-values (Sig. = 0.672 and 0.154, respectively). In conclusion, the study provides empirical evidence of the varied effect of information asymmetry on stock performance at the Nairobi Securities Exchange. The findings emphasize the significance of stock volatility in influencing stock performance, while bid-ask spread, volume traded, market capitalization, and the P/E ratio do not demonstrate statistically significant relationships. Building on these findings, the study offers several recommendations. Firstly, market participants are advised to maintain a keen awareness of the impact of share volatility on stock performance, recognizing that investments in stocks with higher volatility may result in more favourable returns. Secondly, to address challenges stemming from information asymmetry in Nairobi Securities Exchange, it is crucial to enhance market transparency through the real-time dissemination of corporate news and financial disclosures, thereby levelling the playing field for all investors. Lastly, regulatory bodies should strengthen oversight, imposing strict penalties for insider trading and market manipulation to discourage unethical practices. Moreover, maintaining stringent standards for corporate disclosures and governance practices is essential to ensure that listed companies provide comprehensive and accurate information. In addition, prioritizing investor education initiatives is necessary, empowering investors with the skills to critically assess information. Promoting independent research and analysis, encouraging institutional participation, and facilitating whistle-blower protection are vital steps in promoting market integrity.

CHAPTER ONE: INTRODUCTION

1.1Background of the Study

Information asymmetry constitutes a crucial element within financial markets, with the potential to exert a significant influence on stock performance (Akerlof, 1970). In essence, when one side in a transaction has more information than the other party, it is said that there is an information imbalance. (Mishkin & Eakins 2006). This circumstance can lead to differences in the quality and availability of information, potentially distorting investment decisions and harming the general functioning of the stock market. Due to this phenomenon, certain individuals have access to knowledge that others do not. Complete and accurate information is required for fair and informed decision-making. According to Chege (2012) when certain investors are more knowledgeable than others it generates an imbalance that impedes market efficiency. Efficient markets are based on the idea that prices accurately reflect all available information, allowing investors to trade at fair values. However, information asymmetry upsets this equilibrium by resulting in mispriced securities, suboptimal resource allocation, and reduced investor confidence therefore affecting stock market's performance.

The study revolves around three core financial theories, the Efficient Market Hypothesis put forth by Fama (1970), Signaling Theory introduced by Spence (1973), and Arbitrage Pricing Theory proposed by Ross (1976). In efficient market hypothesis it is assumed that stock prices Incorporates all accessible data, implying that Investors cannot consistently outperform the market using insider information. Contrarily, signaling explains how market participants use information communication to sway decision-making. To bridge the gap between those who possess important private knowledge and others looking to make informed choices in the financial markets, carefully crafted signals are used. A signal is the interpretation supplied by the information; it can be positive or negative, and it is accompanied by a market response. If the signal is good, the market reacts by raising the stock price, affecting the company's performance even more. Furthermore, a gain in stock value represents improved corporate performance, as evidenced by higher stock returns and earnings per share. This strategy improves decision-making accuracy and lessens the negative effects of information imbalances. APT is based on the

idea that there are a variety of risk factors that can be diversified, some of which have a macroeconomic aspect and systematic effects on stock returns.

Due to the strong outlook for the Kenyan economy, the Nairobi Securities Exchange (NSE) is drawing the attention of investors who perceive growth and the potential for additional advantages (Muiruri, 2014). Listed businesses on the Nairobi Securities Exchange (NSE) are vulnerable to information asymmetry dynamics, which can have a major impact on stock prices, trading volumes, and overall market performance. Uchumi Supermarkets Limited serves as a prominent case study of insider trading, as it became evident in the early 2000s that the company was encountering financial and operational challenges due to an ineffective growth strategy, inadequate internal controls, and mismanagement. Despite the declining value of their shares, investors persisted in holding onto them, hoping for a turnaround in the company's financial performance. The NSE has seen substantial fluctuations in investor returns. According to Business Insider Africa (2022), the market was placed eighth in terms of performance in 2021. This demonstrates that share prices increased overall in 2021. As of 2022, the Nairobi Securities Exchange has 64 listed companies, making it an emerging market.

1.1.1 Information Asymmetry

According to Lambert, Leuz and Verrecchia (2011), existence of information asymmetry refers to a situation in which a particular set of investors lacks access to information that is available to other players. Inside trading is the term used to describe the use of such knowledge for stock purchases and sales on the stock market, it causes new information to be incorporated into asset values to the extent that prices of shares reflect all publicly and privately available information. Potential investors, in contrast, are wary of entering this market because they believe it is unjust. As a result, investments, asset values, and liquidity are lower, impacting investors who operate in the market without access to privileged information.

Mishkin and Eakins (2006) state that, one-sided information in transactions can bring about adverse selection problem and moral hazard. Adverse selection arises when one side has additional information than the other before the exchange, resulting in potential borrowers with negative credit outcomes seeking loans more effectively. When prospective applicants that pose a credit risk are more likely to have their applications considered, adverse selection will become

an issue. Lenders may opt not to offer any loans as a result of this problem, even though there may be a high credit risk in the market. On the other side, moral hazard is a problem brought on by asymmetric information once the transaction has already been completed. Moral hazard is the risk that the lender faces as a result of the borrower's poor or unwanted use of the funds, according to Mishkin and Eakins (2006). It is the possibility that the borrower may act in a way that the lender would find objectionable or unethical. Repayment will be less likely as a result of the borrowers' negative use of the loan.

Measuring of asymmetric information in financial markets has garnered significant attention in both accounting and finance literature. Because information asymmetry is inherently unobservable, researchers have relied on theoretical proxies for analysis (Glosten and Harris, 1988). Market microstructure metrics like bid-ask spreads, trade volume, firm size, and price volatility have been advocated for assessing information asymmetry (Easley and O'Hara, 1992; Easley and O'Hara, 1987; Glosten and Milgrom, 1985). With increased information asymmetry, bid-ask spreads widen, resulting in higher transaction costs and liquidity difficulties (Handa, Schwartz, and Tiwari, 1998; Ascioglu et al., 2007). Although trade volume suggests liquidity, high quantities can imply adverse selection difficulties (Wang & Huang, 2012; Lin, Sanger, & Booth, 1995).

The volatility of stock prices reflects market information and can disrupt market stability (Ilaboya & Aggreh, 2013). Company size is frequently utilized as a substitute for information asymmetry, with smaller organizations and corporations with lower market capitalization having higher degrees of information asymmetry (Chae, 2005). The study will utilize market microstructure indicators for the measurement of information asymmetry. Utilizing market microstructure variables is essential for a comprehensive analysis of stock performance as they offer granular insights into trading dynamics, order flow, and liquidity.

1.1.2 Stock Performance

Stock performance is a crucial component of the financial markets and economy (Kitati, Evusa, & Maithya, 2015). This is due to the stock’s crucial contribution to the provision of alternative investment choices for both domestic and foreign players in any economy. Without necessarily increasing their risk to bigger magnitudes, Investors make stock market investments with the goal of boosting their prosperity or generating good returns. According to Wasseja et al. (2015),

performance of the stock market describes how stocks perform inside their own markets given the risks and rewards present. Stock markets offer liquidity and make it possible to accomplish projects that are long-term and short-term, promoting economic expansion. In addition to that, luring foreign investment also generates sufficient cash flows.

Dimitrova (2005) argues that the performance of the stock is a key measure of how well a firm is doing Progressive increases in stock prices and active trading volumes at the nation's stock exchange often indicate good corporate and economic practices (Clare & Thomas, 1994). Consequently all forward-thinking governments keep a careful eye on the stock market's performance as well as make sure that the variables influencing it are being closely watched. Dobbs & Koller (2005), claim that assessment of stock market effectiveness involves adding up the stock performances of all the companies. This is accomplished by totaling the returns. Typically, the market index is used to gauge how the stock market performed during a certain time period. Based on Shaharudin, Samad, and Bhat (2009) study the index measures a certain market segment that is thought to represent the overall market.

In light of this research, stock performance is primarily measured by stock return, which acts as a key indication for investors assessing the financial health and profitability of enterprises listed on the Nairobi Securities Exchange. A stock return is regarded as one of the most pivotal factors in making stock market investment selections. Investors, particularly those in the stock market, expect a certain return that includes capital gains and dividend payments, motivating their wealth maximization behavior (Hatem, 2017). Stock return not only represents a stock's price appreciation or depreciation, but also includes dividend income. Understanding stock returns is critical for analysts and investors since it provides significant insights into the effectiveness of a company's plans, management decisions, and overall market perception therefore it acts as a critical yardstick for assessing the success and attractiveness of investments, directing investors in their decision-making processes, and defining the stock market's dynamics.

1.1.3 Information Asymmetry and Stock Performance

The presence information asymmetry significantly alters stock market dynamics, affecting pricing, investor behavior, and overall market efficiency. There would be no information asymmetry in an ideal, completely efficient market since all market players would have equal

access to all relevant information. However, information asymmetry does occur to some extent in reality, and it can impede market efficiency. When insiders have superior information, they might take advantage of it by trading on it before it becomes public thereby creating unfair market environment where certain investors beat the market by earning bigger returns than the market as a whole. This can cause market distortions since stock prices may not adequately reflect the company's genuine value. Trading based on insider information is forbidden in most jurisdictions because it undermines market fairness and integrity (Fishman & Hagerty, 1992).

A market is called efficient when there isn't opportunity to generate unusual gains with trading based on this knowledge. Information asymmetry can result in adverse selection, whereby better-informed investors make more deliberate trading decisions, placing less-informed investors at a disadvantage. As a result, the misinformed investors may demand a greater risk premium, which would cause securities to be mispriced and market inefficiencies. Information asymmetry effect not just corporate market performance but also market stability, because of the great asymmetry of information, outsiders refuse to deal with insiders, resulting in market failure (Bhattacharya & Spiegel, 1991).

Grossman (1988) emphasizes that if there is insufficient information, the stock price will fall. Investors will be more risk adverse in this circumstance, and will avoid risky stocks. They will sell their shares, causing prices to fall. Because of price decrease, market will lack capacity to supply cash for placing new orders, resulting in a market collapse. In an efficient market, pressures assure optimal resource allocation, market equilibrium, and, ultimately, price equilibrium. In a market of this nature, pricing serves as a gauge of product quality, and in the long term, this attribute pushes the economy to an ideal position. This demonstrates the significance of Information disparity challenge and its clear influence on decision making of the economy. This highlights how important knowledge asymmetry is when a market is inefficient (Dehghan, Khavari and Mirjalili, 2020).

The market may fully collapse if information is sufficiently unequal. Information asymmetry may reduce market efficiency, increases transaction costs, market fragility, poor liquidity, and reduces overall transaction profits, therefore Efforts to decrease information asymmetry, such as legal requirements for publicly listed corporations to disclose significant information on a timely basis, ought to be prioritized for the purpose of increasing market efficiency. The impact of

information asymmetry may be mitigated by ensuring that information is quickly conveyed to all market participants, resulting in more accurate and efficient securities pricing (Akerlof, 1970).

1.1.4 Nairobi Securities Exchange

Nairobi Securities market is Kenya's principal securities market, playing a vital role in the country's financial well-being since its inception in 1954. The NSE plays a significant role in stimulating economic activity by serving as a platform for trading a diverse array of financial instruments, encompassing stocks, bonds, and exchange-traded funds (ETFs). It acts as a hub for both domestic and international investors, allowing them to buy and sell assets produced by Kenyan firms and the government. The NSE is home to a number of indices that carefully track the performance of various parts of the Kenyan stock market. Of these indices, NSE All-Share Index (NASI), comprising all companies listed on the NSE, represents the entire market.

The NSE 20 Share Index (NSE 20), in contrast, meticulously monitors the top 20 firms in terms of market capitalization and liquidity. These companies represent the most frequently traded securities and provide a sizable financial contribution to the market as a whole, making the index a commonly used benchmark. The NSE 25 Share Index (NSE 25), which is comparable to the NSE 20, tracks the performance of the top 25 firms by market capitalization and provides a wider view than its counterpart. Also available on the exchange are indices including FTSE NSE Kenya 25 Index, FTSE NSE Kenya Small and Medium Enterprises (SME) Index, and FTSE NSE Bond Index Series (NSE 2022).

According to Adjei (2015), the NSE 20 Share Index increased by 28% in 2012 with a corresponding 46.5% increase in market value totaling 1.27 trillion shillings, this highlights the NSE's importance as a market for understanding the connection between returns and price fluctuations within emerging markets. The Nairobi Securities Exchange lists 66 businesses as of 2021. Furthermore, as evidence of its strong success, the NSE-20 index received recognition from International Finance Corporation in 2014, emerging with the highest performance, delivering a remarkable 17.9% return. This achievement was emphasized by the index's record-breaking ascension to 5030 points, establishing a new high since its inception.

1.2 Research Problem

The presence of information asymmetry can significantly impact stock performance. When certain market participants possess more information than others, it creates an unequal playing field, fostering mispricing and market inefficiencies. This imbalance can deter uninformed investors from participating, potentially hindering market performance and adversely affecting the overall economy. Additionally, trading volumes may experience significant fluctuations as investors react to asymmetric information, leading to reduced activity in assets perceived as opaque. Conversely, securities with transparent and balanced information flow, as highlighted by Zareian (2012), are more likely to attract long-term investments, fostering consistent trade volumes and a more vibrant stock market. This highlights the critical role of information symmetry in shaping stock performance and market dynamics.

Despite various advances, such as the adoption of new technologies and trading systems, instances of information asymmetry persist in the NSE. Certain market participants may possess privileged information that is not readily available to the broader investing community. Such disparities in information availability can impede the efficient integration of fresh data into stock prices, potentially leading to market inefficiencies and suboptimal investment decisions. The Kenyan stock market stems from the consequences for the country's economic progress and financial stability. Being one of East Africa's main economies relies significantly on its stock market to raise funds for businesses and infrastructure projects. When there is information asymmetry, there is a danger of resource misallocation because investors may make judgments based on inadequate or biased information. Furthermore, such inefficiencies might deter foreign investment, reduce market liquidity, and impede the general development of the financial industry (Ndung'o, 2014).

Previous research has explored information asymmetry in various financial contexts. For instance, Mustaruddin et al. (2017) discovered consistent impact of asymmetric information on capital structure pre- and post-inclusion of control variables. They employed illiquidity ratio and firm size as proxies for information asymmetry. The evidence is not robust when the illiquidity ratio is included, although company size is important in explaining capital structure. Dewi et al. (2020) discovered that information asymmetry negatively impacts investment efficiency and positively affects the cost of capital. Darabi (2013) results demonstrate that operating income and

cash flow operating both has informational value and is capable of explaining stock return. The findings additionally demonstrated that information asymmetry affects the informational quality of income and cash flow activities, with a higher information asymmetry resulting in higher information content for cash flow operations. Another study by Moerman (2006) found that information asymmetry increases borrowing costs and shortens debt maturity. No researches have focused on its specific effect on stock performance, particularly regarding the specific variables in this study rendering the notion underexplored. Therefore, this study's primary focus is to tackle the central question: "How does information asymmetry affect stock performance?"

1.3 Study Objective

The objective of this study is to investigate the effect information asymmetry on stock performance of firms listed at the Nairobi Securities Exchange.

1.4 Value of Study

This comprehensive research will serves as a pivotal foundation upon which policymakers can craft innovative regulations for effectively assessing and managing liquidity thresholds within enterprises. Moreover, it will empower them to devise more robust mechanisms for overseeing and influencing a firm's liquidity dynamics. Additionally, this research undertaking will provide insight into the imperative role of disseminating information and fostering capital market growth, as pivotal tools in mitigating market imperfections. By understanding the intricate interplay between information flow and market development, policymakers can enhance their strategies for promoting transparency, reducing information asymmetry, and ultimately fortifying the overall resilience and efficiency of financial markets. This knowledge, derived from the study's findings, will undoubtedly contribute to a more informed and effective regulatory landscape, benefitting businesses, investors, and the economy at large.

The study's outcomes will furnish investors with insights into the market's limitations as well as its future opportunities. Detecting signals of a faltering market will serve as a warning signal, steering investors away from rash investment selections and guiding their buying and selling decisions. Furthermore, increasing the automation of NSE operations and boosting information accessibility and flow can lessen the scope of market failure caused by defects and inefficiencies.

This study aims to significantly enhance the existing knowledge base and literature related to our capital market's performance, offering valuable insights into its inherent limitations and dynamics. By delving deep into the complexities of information asymmetry and its effects on stock performance, this research will not only fill critical gaps in our understanding but also provide a robust foundation for future studies in the realm of capital markets. The findings and analyses conducted in this study will contribute nuanced perspectives, shedding light on the intricacies of market behavior and investor decision-making processes. As a cornerstone for future research endeavors, the comprehensive exploration of information asymmetry in this study will serve as a guiding framework, shaping the direction of subsequent inquiries and empowering researchers to delve into more specific aspects of capital markets, thus advancing the field significantly.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter primarily centres on the assessment of empirical and theoretical research on how information asymmetry affects the stock performance. From theoretical point of view the study evaluates the relevant market efficiency and information asymmetries. In terms of empirical evidence, the study investigates a detailed review of the relevant research in emerging markets and developed markets in order to justify the choice of variables and the methodology.

2.2 Theoretical Framework

The theories covered within this segment help to explain how information asymmetry affects stock performance. Theoretically, literature on Asymmetry of the information and stock performance concentrate on models and theories that connect certain information asymmetry problems with capital market efficiency, mainly equity. Additionally, it clarified previous academics' theoretical writings on reaction of the stock market at NSE.

2.2.1 Efficient Market Hypothesis

In line with Fama's (1976) efficient market theory, new information regarding a company is rapidly and effectively integrated into the prices of shares, whether the price change is positive or negative. Stock prices fluctuate rapidly around their intrinsic values and accurately reflect the most recent market data. Since no one has access to information that isn't previously available to everyone else, no investor has an edge in anticipating a stock price return, and hence no consistent anomalous returns may be achieved. Fama (1970) classified market efficiency within EMH into three forms: weak, semi-strong and strong form. Weak form market efficiency implies that the present stock price already includes data exclusively derived from historical prices. Consequently, past performance and other historical market data should not be a determining factor in shaping future returns. Therefore, this theory contends that employing a trading strategy that relies on past rates of return or any historical data from the stock market for making buy or sell decisions would be futile (Reilly, 2006).

Semi-strong form asserts that current market price completely covers all publicly available information. It asserts that security prices promptly adapt in reaction to the dissemination of publicly accessible data, leading to the current security prices accurately representing such information. Notably, semi-strong hypothesis includes weak-form hypothesis since it includes all publicly available market data investigated at by the weak-form hypothesis, such as historical rates of return, stock prices, and trading volume (Mishkin, 2007). Strong form of Market Efficiency, on the other hand, goes even farther, claiming that the current price includes not just publicly available information but also any private information that may exist. This means that no investor, regardless of insider information, can achieve abnormal profits on a consistent basis by developing trading strategies based on such privileged information. In essence, Strong Market Efficiency raises the threshold, implying that markets are exceptionally efficient at incorporating all information, both public and private, into security pricing.

This study primarily relies on EMH because it aids in clarifying the significant role of information asymmetry in performance of stock. Markets, according to EMH, swiftly absorb all available information into stock prices, making it extremely difficult for investors to continuously outperform the market, even with informational advantages such as information asymmetry. New information influences stock prices quickly in this context, and the magnitude of its significance is reflected in price fluctuations. As a result, attempts to uncover inexpensive stocks or predict market movements through analysis are worthless. Proponents of EMH claim that any current market inefficiencies are largely minor and rare. When these inefficiencies emerge, individual investors' inclinations to overreact or underreact tend to offset each other, making it difficult to consistently exploit such patterns (Mabhunu, 2004). EMH rests on the premise that there is no information asymmetry in capital markets, which supports its use in this study. This approach assists us in understanding how markets function in the presence of varied levels of information transparency, with a special emphasis regarding influence of information asymmetry on stock performance.

2.2.2 Signalling Theory

Spence (1973) established signal theory to explain the information asymmetry in the labour market. It's been used to demonstrate how voluntary disclosure and reporting are linked. Signalling is any activity carried out by one party with the goal of influencing the perception

and, as a result, the actions of others. This assumes that one market player has confidential information that cannot be verified for some reason, and that the other market participants are aware of it. The signalling theory clarifies why firms are enticed to voluntarily provide information to capital market. In order for companies to effectively participate in the risk capital market, they must make voluntary disclosures.

The use of signal theory in this research stems from the notion that every company has meaning for outsiders. A signal is the interpretation supplied by the information; it can be positive or negative, and it is accompanied by a market response. If the signal is good, the market reacts by raising the stock price, affecting the company's performance even more. Furthermore, a gain in stock value represents improved corporate performance, as indicated by higher stock returns, profitability based on shareholders' equity, and earnings per share. The quality of information offered by the firm is one variable that affects the signal (Manurung, 2012).

According to Thorne, Mahoney and Manetti (2014) claims that insiders have a better understanding of a firm's future prospects than investors, and that as a result, investors will guard themselves by providing a lower price for the company. The performance of the stock can be boosted if firms willingly reports confidential information about itself that is reputable and decreases outsider uncertainty (Connelly, Certo, Ireland & Reutzel, 2011).

2.2.3 Arbitrage Pricing Theory

In 1976, Ross expanded upon Capital Asset Pricing Model (CAPM) by introducing Arbitrage Pricing Theory (APT) in contrast to CAPM, which proposes that asset values are influenced by a single factor. APT argues that stock prices are influenced by a multitude of variables (Sang, 2018).As a result, this theory has proved extremely useful in assets pricing. The APT theory was introduced as an alternative to asset pricing mostly as a result of CAPM's shortcomings. CAPM was taken from the fundamental ideas of anticipated utility theory. According to Ross (1976), common variability was not included in the basic assumptions of anticipated utility theory. APT is a factor model that consists of multiple sets of variables that describe the core risk in asset returns.

The APT assumes that financial markets are efficient, meaning that prices of securities quickly and accurately incorporate all available data. In a highly effective market, any deviations from

expected price (or mispricing) are quickly exploited by investors through arbitrage. Arbitrage involves taking advantage of price discrepancies between related securities to generate risk-free profits. This process of arbitrage should eventually lead to the correction of any mispricing. The APT contends that a security's returns can be explained by various factors that affect its performance. These variables describe systematic sources of risk that have a similar impact on a set of securities. When a security's returns depart from what would be expected based on these characteristics, it indicates that the security is vulnerable to idiosyncratic risks that the model's factors do not capture. APT assumes that market-wide and sector-specific characteristics can be used to categorize factors that affect stock returns. Sector variables have an impact on securities within a specific industry or sector, whereas market factors have an impact on all securities on the market. Collectively, these elements affect how stocks perform (Wafula, 2016).

Arbitrage Pricing Theory (APT) is extremely useful in assessing the influence of information asymmetry on stock performance. According to Tripathi and Seth (2014), the APT model expands on the standard CAPM framework by recognizing that, in addition to market beta, a variety of factors specific to the industry and more extensive macroeconomic elements influence assets profitability. Market beta, which supports CAPM, includes factors like GDP, levels of inflation, and rate of interest composition, all of which can have a variety of implications on organizations. APT, known for its sophistication, provides a methodical approach to understanding the interplay of these multiple elements with stock prices. By accounting for a broader range of effects, the study's findings will be more robust and indicative of the complicated real-world dynamics, particularly the effect of information asymmetry on stock performance.

2.3 Determinants of Stock Performance

Stock price fluctuations can be caused by changes in fundamental economic variables and expectations for the future. As noted by Hirshleifer (2001), Investor decisions are not invariably based on rationality and may not carefully consider every piece of information that is obtainable when formulating their estimates regarding the performance of an asset in the future. As a result, irrational behaviour may spur trade activity. The informational value of publicly traded enterprises is also influenced by a number of peculiarities in the market environment, as discussed below.

2.3.1 Information Asymmetry

Unequal access to information among market participants can result in unfair benefits and mispriced assets. Efficient markets require equal information access for everybody; if investors perceive others have informational superiority, it can diminish trust in market fairness, thus limiting participation and trading volumes (Verrecchia, 2001). Mispricing caused by information asymmetry can lead to capital misallocation since investments may be based on insufficient or wrong data. The dynamics of demand as well as supply affect the price of each stock transaction, as both buyers and sellers of stocks exchange shares for cash. Transactions involving payment and the transfer of securities occur in real time. According to Chae (2005), trading volume corresponds with several asymmetric information indicators and decreases as earnings are released. The inverse of the daily average trade volume has a favourable effect on information asymmetry (Bharath et al. 2009).

Volatility is caused by a variety of causes, which have implications for investors and the larger market. As an alternative measure of information asymmetry, Blackwell et al. (1990) propose utilizing daily stock return volatility. According to Kyle (1985), a positive association is observed between informed trading actions, insiders' expected trading gains, and generic estimations of a company's worth. The uncertainty in corporate value, as indicated by residual stock return volatility, exacerbates information asymmetry. Fee and Thomas (1999) explore several business concerns, such as how Federal Reserve rates affect both insiders and outsiders. Excessive information sharing does not completely weaken insiders' informational edge when their activities exceed anomalies.

The spread between bid and ask prices serves as an indicator for gauging information asymmetry. Bagehot (1971) was the first to explore the connection between levels of informed trading and bid-ask spreads. According to Bagehot market participants deal with two types of investors, educated and uneducated. While the market maker loses to educated investors, they make up for these losses by widening bid-ask spread. As a result, higher bid-ask spreads result from informed trading. Firm Size on the other hand has been linked to the degree of information asymmetry, according to earlier studies. According to Diamond and Verrecchia (1991), large organizations may have lower level of information asymmetry because they are more developed, have put in place reliable disclosure policies and processes, and they attract greater attention

from the market and authorities whereas Small firms face a significant level of information asymmetry. Furthermore, research conducted by Atiase (1985) reveal that big corporations' information is factored into stock prices before small businesses.

2.3.2 Price Earnings Ratio

The determination of a company's stock market share value is shaped by interaction of supply and demand, with both factors closely tied to the company's financial performance. Variations in a firm's share price are caused by a variety of internal and external causes. According to Kumar (2017), when a company produces a strong earnings report, investors tend to feel more confident and optimistic about the possible returns on their investments. This spike in confidence increases demand for the stock, driving up its price. In contrast, if a firm produces negative earnings or confronts unfavourable circumstances that harm its reputation, its stock price might fall quickly. Earnings per share have a substantial impact on value, investor attitude, investment decisions, and market movements. These earnings provide vital insights into a company's fiscal health and growth potential, influencing the trajectory of its stock price over time.

2.4 Empirical Review

In this segment, the research examines empirical research on market efficiency, with a particular emphasize the stock market. Although the main emphasis lies within stock exchange market, it’s crucial to highlight that some of the studies discussed in relation to the Efficient Market Hypothesis extend beyond stock markets, offering valuable insights that underpin the understanding of overall market performance. Numerous researches conducted in developed and emerging Asian markets reveal considerable evidence for connection between information asymmetry and market Performance.

In research carried out by Chogii et al. (2022) on shares listed at Nairobi Securities Exchange, the researchers aimed to assess the impact of market information risk on price discovery. Utilizing regression and correlation analysis, the study tested the hypothesis and discovered a robust relationship between market information risk and price discovery. These findings provide strong support for hypothesis, indicating that market information risk significantly influences the process of price discovery for shares traded on the NSE.

Goel, Tripathi, and Agarwal (2020) investigate the link on the Indian National Stock Exchange (NSE) between information asymmetry and anticipated stock returns, using sample of NIFTY five hundred stocks from 1 April 2000 to 31 March 2018, they employed a traditional performance evaluation measures, regression models, and autoregressive distributed lag (ARDL) model. Their findings showed there is a substantial positive correlation between information asymmetry and predicted stock returns at National Stock Exchange. With returns expanding as information asymmetry associated with a portfolio rises to compensate stakeholders for bearing information risk.

In their study, Yang et al. (2020) employed abnormal idiosyncratic volatility (AIV) as a metric to represent the information asymmetry faced with Less-knowledgeable dealers when engaging with knowledgeable traders. The research provided empirical evidence supporting pricing of information risk by demonstrating that stocks exhibiting higher abnormal idiosyncratic volatility tend to yield significantly higher future stock returns, both in economic and statistical terms, compared to stocks with low abnormal idiosyncratic volatility, especially among commonly traded shares on NASDAQ, Amex, and NYSE.

Omokehinde et al. (2017) through their study investigated effect of asymmetric information on the volatility of stock returns in Nigeria from 3 January 2000 to 29 November 2016 using best-fit Asymmetric Power Autoregressive Conditional Heteroscedasticity, APARCH model under the Generalized Error Distribution (GED) at 1% significance level. The findings revealed that returns were not distributed normally or linearly, indicating a high heteroscedasticity effect. The study's findings also validated the impact of asymmetric information on the volatility of stock returns in Nigeria.

Safdar and Yan (2016) carried out an investigation on the link between information risk, capital cost, and potential classification of information risk as a pricing risk factor on Chinese stock market, focusing on share listed at the Shenzhen and Shanghai stock exchanges. To gauge information risk, they utilized accruals quality as a measure. They employed both multiple regression analysis and Fama-Macbeth regressions to assess if accruals quality correlated with cost of capital and prospective actual stock returns. Study’s findings indicated a connection between low accruals quality and elevated equity costs, although this association did not reach statistical significance for state-owned firms. Notably, no significant correlation was identified

between accrual quality and debt costs. However, the research did reveal a linkage between low accruals quality and lower future stock returns realized.

Choi et al. (2016) used data on portfolio holdings from the Shanghai Stock Exchange to investigate the connection between knowledge asymmetry among active traders and anticipated stock returns. They demonstrated that equities with a large informational advantage have more volatile institutional ownership; thus they used the aggressiveness of institutional trading (% change in institutional holding) as a representative for information asymmetry. They discovered that top quintile stock portfolio generated an average return that was 10.8% p.a. more than the lowest quintile stock portfolio, indicating that information risk raises projected stock returns.

Noor Afkan (2011) conducted a study that explored the relationship between information asymmetry and the cash reserves held by businesses listed on Tehran Stock Exchange. The study aimed to ascertain if firms with high levels of information imbalance tended to maintain larger cash holdings and whether information asymmetry fluctuated before and after profit declarations. The research encompassed 130 businesses surveyed over the years 2003 to 2009.Various statistical techniques, including Kolmogorov-Smirnov, Mann Whitney, and Wilcoxon tests, were employed to examine the hypotheses. The study's findings revealed that companies characterized by greater information asymmetry indeed held more cash compared to those with lower information asymmetry. Moreover, the research indicated there was no significant change in information asymmetry levels before and after profit announcements.

Aslan et al. (2011) explored the relationship between a firm's PIN derived from trade information while firm characteristics derived from financial and market-related data. The study discovered that organizations with significant insider ownership and substantial institutional ownership, minimal analyst following, lower turnover, and high anomalous accruals have higher Risk related to data. Subsequently, to examine the impact of risk related data on stocks pricing at NYSE and Amex, they created a measure for PIN by regressing PIN on the characteristics of these businesses, referred to as the PPIN. They found a strong correlation between stock prices at both exchanges and PPINs, which represented the information risk assessed from firm-specific data.

Duarte and Young (2009) used Fama-MacBeth's (1973) regression to investigate whether probability of informed trading (PIN) is priced because of information asymmetry or because of other liquidity factors unrelated to information asymmetry in NYSE-listed companies. Their premise was that connection between PIN and predicted share performance was due to liquidity effects rather than information asymmetry. As a result, PIN was divided to two sections, one due to asymmetric information and the other due to the illiquidity of NYSE-listed equities. Their findings indicated that a segment of the PIN attributed to information imbalance did not impact pricing as it had no bearing on standard stock returns. Conversely, a portion of the PIN attributed to illiquidity did affect pricing, as it held significant relevance in predicting stock returns.

A study by Easley and O'Hara (2004) examined the link between risks associated with information and stock returns using an asset-pricing model they analytically develop, that includes information asymmetry. This is an expansion of previous models (such as Capital Asset Pricing Model, CAPM), which assume no information asymmetry. They discovered that a portfolio of shares obtained with higher information asymmetry generates anomalous profits. In their study, they identified that information asymmetry and stock returns have a favourable relationship, whereby favourable news reduced volatility and boosted returns.

In their study, Easley et al. (2002) investigated the effect of information-based trading on stock returns for NYSE-listed shares by applying a structural market microstructure model to determine a probability of information-based trading (PIN) using high-frequency data. They incorporated these private information-based trading approximations into Fama and French's (1993) asset pricing model and discovered that information imbalance affects prices of share, since stocks with higher PIN levels outperformed those with lower PIN levels, resulting in greater returns. They discovered that a 10% difference in the PIN between two stocks results in a 2.5% difference in their predicted returns each year.

Bhattacharya, Daouk, Jorgenson, and Kehr (2000) conducted a study to test if shares trading on the Mexican stock exchange didn't appear to respond to business news. They conducted event study to examine degree of effectiveness of the Mexican stock market over a two-year period, utilizing daily data on bid, ask, and transaction prices including the volume traded of 49 securities from July 1994 through June 1996. They discovered no anomalous market reactions to the public publication of company-specific data and concluded that firm-specific information

pricing in Mexican stock market was inefficient. This was due to information leaks, in which prices fully integrated the information prior to its public distribution, effectively rendering it a non-event.

Amihud and Mendelson (1986) used the Fama and MacBeth (1973) method to examine the link between bids-ask spreads and stock returns. The researchers calculated bid-ask spreads using historical stock data and examined their relationship with subsequent market performance. Their research discovered that stocks with greater bid-ask spreads have poorer subsequent returns, implying that information asymmetry is linked to lower market efficiency and potentially mispriced securities.

2.5 Summary of Literature Review and Research Gaps

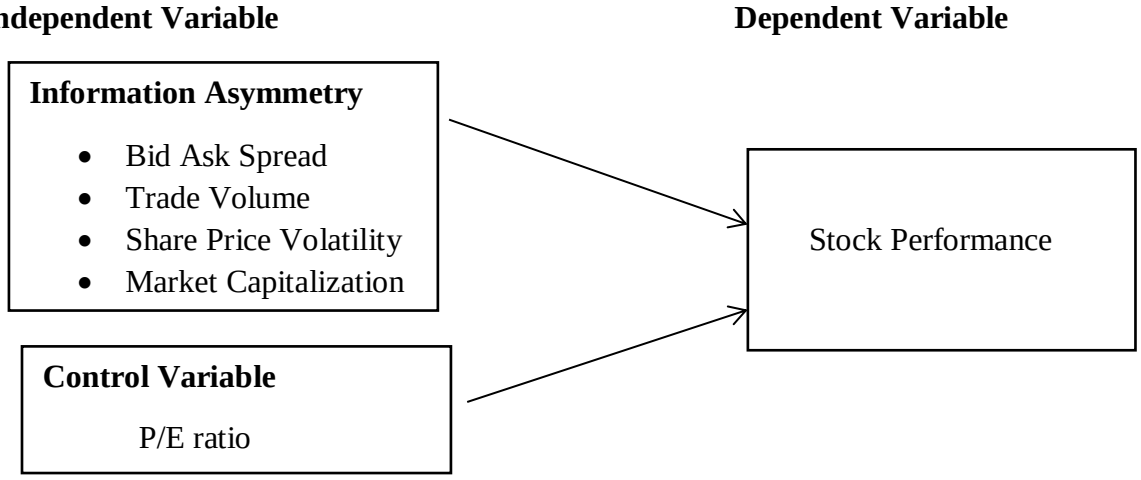
The effect of information asymmetry on profitability, firm performance, pre-announcement earnings, and stock returns has received substantial research during the previous three decades, especially highly developed economies such USA, UK, Europe, and Asian markets. An examination of these numerous empirical studies highlights that information asymmetry indeed exerts a substantial influence on stock performance. In the research conducted by Easley and O'Hara (2004), they identified favourable connection between information asymmetry and stock returns, wherein positive news reduced volatility and amplified returns. Additionally, in another study by Wang et al. (2005), they explored the interplay between share return patterns, trading volume and volatility risk as an indicator of information accessibility. Their findings revealed a beneficial influence of trading volume on stock returns.

Nevertheless, the empirical literature has not yielded substantial evidence regarding the influence of information asymmetry on stock performance, especially within the framework of developing markets. This gap in knowledge is noteworthy due to its significant implications for regulators, investors, stock exchanges, and businesses. Evidently, there has been minimal attention directed toward this particular subject, as underscored by the preceding examination. Notably, there has been no prior research conducted on this pertinent topic within Kenyan market. Therefore, the aims of study is to fill the void in microstructure literature by investigating how information asymmetry affects the performance of stocks traded on Kenya's securities exchange, the NSE.

2.6 Conceptual Framework

Conceptual framework illuminates connection between independent and dependent variables offering a visual representation of how information asymmetry intertwines with various factors to shape stock prices and consequently influence market performance. The illustration depicted underneath portrays conceptual model of this research, showcasing the interconnectedness of its variables. The dependent variable in focus is stock performance, while the independent variable is information asymmetry, which is characterized by bid-ask spread, volume of trading, share price volatility and market capitalization.

Figure 2. 1: Conceptual Framework



CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter provides a general description of research procedures to be utilized including study population, data gathering strategy and data processing methods. It also explores different methods and resources for presenting data for evaluation.

3.2 Research Design

Research employed descriptive cross sectional research design. According Cooper& Schindler (2008), descriptive study is concerned with describing characteristics of a phenomenon and comprehending the interactions between variables. It aids in the identification of patterns, trends, and correlations for the purpose of making specific predictions regarding a phenomenon. This design offers flexibility in collecting data from different sources and presenting it comprehensively. Through the implementation of this design, the research aims to impartially assess influence of information asymmetry on stock performance of NSE-listed companies within a defined period of time.

3.3 Population of Study

The study conducted a comprehensive census of the market by encompassing all 65 companies listed on the NSE throughout the year 2022, aligning with the objective of examining influence of information asymmetry on stock performance of NSE-listed companies during this specific time frame (NSE, 2022).

3.4 Data Collection

The research used secondary data that was gathered through a systematic data collection sheet. Utilizing historical quantitative data, the research focused on stock market metrics, including daily share prices, trading volume, market capitalization, and bid-ask spread, concerning the year 2022. This information covered all 65 businesses listed on the NSE. The data collection process sourced data from reputable institutions such as, NSE, and Companies websites ensuring the reliability and accuracy of the dataset used for the study.

3.5 Data Analysis

To explore relationship involving information asymmetry and performance of companies quoted on the NSE, the study utilized both multiple regression analysis and correlation analysis. Additionally, descriptive statistics was applied to provide a concise summary data. To establish the level of association among variables, correlation analysis was carried out and multiple regression models were used to investigate how information asymmetry indicators affected stock price movements while adjusting for other market variables such as trade volume, market volatility, and macroeconomic indicators. Finally, the SPSS was be used for analysis of data.

3.5.1 Diagnostic Tests

The parameters are presumed to be linear in the study, which means that they are not multiplied, split by two, squared, or rounded. Using the appropriate replacement, models was converted to linear form. Normality test was performed to see if the data is distributed properly. A test to determine normality was conducted using Shapiro-Wilk Test used for small samples less than 50. According to Schmidt & Finan (2018) null hypothesis is accepted if $P > 0.05$, and the data is said to be regularly distributed.

When two or more predictor variables in a regression analysis have a significant correlation with one another, multicollinearity arises. The research utilized Variance of Inflation Factors (VIF) values to check for multicollinearity. VIF is a commonly used diagnostic method for determining the degree of multicollinearity. According to Daoud (2017) VIF values larger than 5 or 10 are frequently regarded as indicating high multicollinearity.

To determine whether there is a relationship between a variable and its prior values in a time series of data, the auto correlation test was employed. To determine whether autocorrelation exists in residuals of a regression analysis, Durbin-Watson statistic (d) test was utilized .Based on Vatcheva, Lee, McCormick, and Rahbar (2016) study, Durbin-Watson statistic has a range of 0 to 4. If the value is near to 2, there is no substantial autocorrelation in the residuals (null hypothesis). Values below 2 point to positive autocorrelation, while those above 2 point to negative autocorrelation.

To find out whether Heteroscedasticity, a deviation from one of the core assumptions of traditional linear regression, implies that variability of residuals in a regression model is not consistent across different levels of independent variables. Various methods are available to test for this phenomenon. Graphical methods, such as scatterplots or residuals vs. fitted values plots, visually display how the spread of residuals changes concerning the predicted values. Detecting heteroscedasticity is crucial for ensuring the validity of regression results. If the plotted graph is cone-shaped, heteroscedasticity presence is assumed (Jochmans, 2022).

3.5.2 Analytical Models

Empirical analysis indicates the presence of a sustained relationship among the variables in question, as shown by (Easley and O'Hara, 2004). The empirical connection can be established through the utilization of subsequent estimation model;

$$Y=\beta_0+\beta_1X_1+\beta_2X_2+\beta_3X_3+\beta_4X_4+ e$$

Where:

Y represents Stock return, serving as an indicator of stock performance.

β_0: Indicates value of Y when all the values of explanatory variables are zero

X_1 = Bid-ask spread

X_2 = Trade volume

X_3 = share price volatility

X_4 =Market capitalization.

β_1, β_2, β_3, β_4 are the coefficients to be approximated, which represent the impact of each independent variable on stock performance.

e is error term, representing the random variation or unexplained factors affecting the dependent variable.

3.5.3 Operationalization of Variables

Variables	Measures	Scale	Supporting Literatures
Information Asymmetry			
Bid-Ask Spread	Ask Price – Bid Price	Interval	Glosten & Harris (1988)
Trading Volume	Represents Shares traded during a specific time period	Ratio	Easley & O'Hara(2004), Glosten and Milgrom (1985)
share Volatility	$\sqrt{\frac{1}{n-1}\sum_{i-n}^{n}(Ri - R^{-})2}$	Ratio	Glosten and Milgrom (1985)
Market Capitalization	Stock price * Number of shares outstanding	Interval	Amihud & Mendelson (1986)
Control Variable			
P/E Ratio	Stock Price Per Share / Earnings Per Share	Ratio	Fisher & statman (2000)
Stock Market Performance			
Stock Returns	[(Current Price - previous Price) / previous Price] * 100	Ratio	Campbell & Shiller (1988)

3.5.4 Test of Significance

Statistical significance testing was conducted using T and F-tests, with a significance level set at 5%. T-tests assessed the statistical significance of each individual coefficient, when the corresponding p-value fell below 0.05, the null hypothesis was rejected. Conversely, F-test determined whether any of the independent variables significantly contribute to dispersion of dependent variable. A significant F-test suggests that the overall model offers a superior fit compared to the null model.

CHAPTER FOUR: DATA ANALYSIS AND FINDINGS

4.1 Introduction

This chapter covers data analysis, interpretation, conclusions and presentation. Each variable's data was examined using correlation and results of regression analysis was tallied and presented for a comprehensive understanding of the relationships between the variables.

4.2 Firms Analysed

An extensive analysis was conducted upon all of the 65 companies that are listed on Nairobi Securities Exchange (NSE), employing historical share prices and published financial statements as the primary data source. Among these 65 firms, 45 were pinpointed as having complete data for the study period, making up 69.2% of the total companies. This particular set of enterprises contributed to a total of 11,295 observations for the study duration. The valuable insights garnered from this examination assumed a crucial role in shaping the research findings, establishing a comprehensive framework for the study.

4.3 Descriptive Statistics

The descriptive statistics provide a comprehensive overview of the dataset, emphasizing the diverse nature of NSE-listed firms concerning stock returns, bid-ask spreads, trading volumes, stock volatility, market capitalization and P/E ratios. Descriptive statistics in table 4.1 include maximum, minimum, and average values of variables used and also their related standard deviations.

Table 4. 1: Descriptive Analysis Results

	N	Minimum	Maximum	Mean	Std. Deviation	Skewnes	Kurtosis
Stock Returns	45	-0.0021	0.0111	0.000608	0.0022797	2.908	11.035
Bid Ask Spread	45	0.0357	4.5695	0.753022	0.9212271	2.372	6.524
Volume Traded	45	1351.52	6362043.74	268758.3289	967792.62848	5.966	37.765

Stock Volatility	45	0.0119	0.0795	0.030731	0.0134270	1.039	2.396
Market Capitalizatior	45	1.1561	1207.4352	147.183273	299.1377288	2.447	4.924
P/E Ratio	45	-136.3750	97.2191	7.801504	28.2716324	-2.176	17.373
Valid N (list wise)	45						

Based on the findings, the mean stock return, which is approximately 0.0006, represents the average return rate for listed companies on the NSE. Divergence of these returns from the mean is clear with a standard deviation of 0.0023. Extremely positive returns are more common in a positively skewed distribution (skewness = 2.908), and outliers are more likely to exist, as indicated by the substantial kurtosis value of 11.035, which denotes the probable occurrence of big market events that could affect stock returns. Bid-ask spread, which measures difference between buying and selling prices, exhibits a mean value of about 0.753. A sizable standard deviation of 0.921 emphasizes the variation in spreads among enterprises. The spread distribution's asymmetry and heavy tails are highlighted by its positively skewed distribution, which has a skewness of 2.372 and a kurtosis of 6.524. This suggests that higher spreads occasionally occur, maybe due to market volatility or liquidity issues.

The number of shares moved is shown by the volume traded, which displays an average of approximately 268,758.33. The significant 967,792.63 standard deviation reflects the huge variation in volumes across enterprises. A considerable concentration of firms with smaller trading volumes, but occasionally extraordinarily high volumes, possibly representing big market actions, are indicated by the distribution's highly positive skewness (skewness = 5.966). The distribution's heavy tails are highlighted by a kurtosis of 37.765, which denotes the existence of extreme values. In contrast, stock volatility, which measures degree of variation in stock prices, has a mean value of approximately 0.0307. The standard deviation of 0.0134 illustrates the magnitude of volatility swings around the mean. The slightly positively skewed distribution (skewness = 1.039) indicates a tendency for more extreme positive volatility values. The kurtosis score of 2.396 indicates the distribution's heavier tails, indicating the possibility of outliers in stock volatility.

Market capitalization which signifies total market value of the outstanding shares of a firm is about 147.18. Standard deviation of 299.14 demonstrates the wide range of market capitalization values among NSE-listed enterprises. The positively skewed distribution (skewness = 2.447) indicates the presence of enterprises with relatively high market capitalization, which could indicate industry leaders or huge organizations. A kurtosis of 4.924 accentuates the distribution's heavy tails, showing the presence of outliers in market capitalization numbers. Price-to-earnings (P/E) ratio, which shows the worth of a firm's shares, is 7.8015 on average. The significant standard deviation of 28.2716 highlights the vast range of P/E ratios among NSE-listed firms. A negatively skewed distribution (skewness = -2.176) indicates a high occurrence of extreme negative P/E ratios, which may be connected with financial difficulties or market scepticism. The kurtosis value of 17.373 indicates the heavy tails of the distribution, showing the existence of outliers in P/E ratio values.

4.4 Correlation Analysis

The study looked into the connection between information asymmetry factors and stock performance of companies that are listed on the NSE. The link, which may have a significant negative correlation or a perfect positive correlation, was investigated using correlation analysis. The strength of the correlation between information asymmetry characteristics and stock performance was evaluated using Pearson correlation.

Table 4. 2: Predictor Variables Correlation Matrix

		STOCK RETURNS	BID ASK SPREAD	VOLUME TRADED	STOCK VOLATITILY	MARKET CAP	P/E RATIO
STOCK RETURNS	Correlation Sig	1					
BID ASK SPREAD	Correlation Sig	-0.019 0.899	1				
VOLUME TRADED	Correlation Sig	-0.176 0.247	0.035 0.821	1			
STOCK VOLATITILY	Correlation Sig	0.607** 0.000	-0.237 0.117	-0.220 0.147	1		
MARKET CAP	Correlation Sig	0.160 0.293	-0.105 0.492	0.503** 0.000	0.187 0.219	1	
P/E RATIO	Correlation Sig	0.160 0.293	0.017 0.910	0.217 0.152	-0.036 0.816	0.301* 0.045	1

The findings displayed above in table 4.2 observed that stock returns have a significant positive relationship with stock volatility (r = 0.607, p-value < 0.001), implying that stocks with more price fluctuations likely to give higher returns. Furthermore, there are weak positive correlations between stock returns and both market capitalization (r = 0.160, p-value = 0.293) and P/E ratio (r = 0.160, p-value = 0.293), implying that stocks with greater market capitalizations and higher price-to-earnings ratios have higher returns. However, the bid-ask spread displays a negligible negative relationship with stock returns (r = -0.019, p-value = 0.899), indicating that the spread between buying and selling prices has a small effect on stock returns. Notably, trading volume demonstrates a weak negative correlation with stock returns (r = -0.176, p-value = 0.035), implying that increased trading volume is associated with slightly lower returns.

4.5 Diagnostic Test

The study used a diagnostic test on data gathered with a 95% confidence level to determine if the data was true or false. The research identified multicollinearity utilizing Variance of Inflation (VIF), normality applying Shapiro-Wilk Test, and autocorrelation employing Durbin Watson.

4.5.1 Test for Multicollinearity

The presence of significant correlation between predictor variables in a regression model is referred to as multicollinearity. It may generate problems with model interpretation and decrease the dependability of the regression coefficients. By studying the correlation matrix of the predictor variables, the study attempted to detect multicollinearity. High correlations (close to +1 or -1) between pairs of variables indicate the possibility of multicollinearity.

Table 4. 3: Multicollinearity Test

Variables	Collinearity Statistics	
	Tolerance	VIF
Bid Ask Spread	0.939	1.065
Volume Traded	0.643	1.555
Stock Volatility	0.796	1.256
Market Capitalization	0.613	1.630
P/E Ratio	0.898	1.114

The multicollinearity test results shows the study's independent variables have low to moderate levels of correlation. As evidenced by its high tolerance (0.939) and low VIF (1.065), the Bid-Ask Spread has little collinearity with other variables. Volume Traded has a moderate association, as evidenced by its lower tolerance (0.643) and VIF (1.555). Stock volatility has minimal collinearity, a high tolerance (0.796), and a VIF close to 1 (1.256). Market capitalization exhibits minimal collinearity, with a high tolerance (0.613) and a VIF of 1.630. Similarly, the P/E Ratio has low collinearity, with a high tolerance (0.898) and a VIF close to 1 (1.114). The findings indicate that the variables have limited common variance, allowing for reasonable interpretation of regression coefficients in subsequent analyses.

4.5.2 Test for Autocorrelation

Autocorrelation happens when errors within a time series regression model are associated across time. In other words, the residual errors from the model have a pattern or correlation structure. Autocorrelation can have an impact on the efficiency and reliability of regression estimations, especially in time series data where observations are dependent on preceding observations. The research employed Durbin-Watson statistic for autocorrelation analysis. Durbin-Watson (DW) statistic ranges from 0 to 4, with DW < 2: Indicates positive autocorrelation, DW > 2: Indicates negative autocorrelation and DW ≈ 2: Indicates no autocorrelation.

Table 4. 4: Autocorrelation Test, Durbin-Watson Statistic.

Model	Durbin-Watson
1	2.344

Autocorrelation test results, indicated by the Durbin-Watson statistic of 2.344, are crucial for evaluating the presence of serial correlation in the regression model. A Durbin-Watson value close to 2 suggests the absence of significant first-order serial correlation in the residuals, indicating that errors in regression model are not correlated with each other. In this instance, the Durbin-Watson statistic of 2.344 falls inside the permissible range, confirming the absence of substantial autocorrelation in the model's residuals.

4.5.3 Test for Normality

The normality test was employed in the study to assess the adherence of the dataset to a normal distribution. The Shapiro-Wilk test was selected for this purpose, serving as the method to assess the normality of the data. If the computed p-value exceeded the predetermined alpha level, typically set at 0.05, the study refrained from rejecting the null hypothesis, thus outcome implied that the data might conform to a normal distribution pattern.

Table 4. 5: Tests of Normality

	Shapiro-Wilk		
	Statistic	df	Sig.
Stock Returns	0.719	45	0.000
Bid Ask Spread	0.724	45	0.000
Volume Traded	0.279	45	0.000
Stock Volatility	0.925	45	0.006
Market Capitalization	0.538	45	0.000
P/E Ratio	0.542	45	0.000

The results of the Shapiro-Wilk normality test displayed above show the distribution properties of the variables under examination. Stock returns, bid-ask spread, volume traded, market capitalization, and P/E ratio all deviate from normalcy statistically significantly, as evidenced by low p-values (Sig. = 0.000). These findings imply that these variables do not have a normal distribution. The only exception is Stock Volatility, which, despite deviating from normality, has a higher p-value (Sig. = 0.006) than the other variables.

4.6 Regression Analysis

The research utilized multiple linear regressions to look at the relationships between the variables under investigation. The outcomes of regression analysis include a model summary, an Analysis of Variance (ANOVA), and a description of regression coefficients.

4.6.1 Model Summary of Regression

Table 4. 6: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.654[a]	0.427	0.354	0.0018326

a. Predictors: (Constant), P/E Ratio, Bid Ask Spread, Volume Traded, Stock Volatility, Market Capitalization b. Dependent Variable: Stock Returns.

Table 4.6 shows correlation coefficient R of 0.654 indicating a moderate positive relationship between variables of study, while R-Squared value of 0.427 shows that 42.7% of the variability of stock performance is explained by information asymmetry and P/E ratio. The adjusted R-Squared value of 0.354 considers the model's complexity and suggests that 35.4% of the variability of the stock performance is explained by information asymmetry and P/E ratio.

4.6.2 Analysis of Variance

Table 4. 7: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0.000	5	0.000	5.818	0.000[b]
	Residual	0.000	39	0.000		
	Total	0.000	44			

a. Dependent Variable: Daily Stock Returns
b. Predictors: (Constant), P/E ratio, bid ask spread, Volume Traded, Stock Volatility, Market Capitalization.

As per the table 4.7 the F-statistic of 5.818 with an associated p-value of close to zero, (P-value < 0.001) indicates that variation in stock returns can be partially explained by predictors in regression model is significant, implying that at least one of the predictors (P/E ratio, bid-ask spread, volume traded, stock volatility, or market capitalization) has a significant influence on stock returns.

4.6.3 Regression Coefficients

Table 4. 8: Coefficient of Determination

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-0.003	0.001		-3.502	0.001
Bid Ask Spread	0.000	0.000	0.132	1.056	0.297
Volume Traded	-2.859E-010	.000	-0.121	-0.803	0.427
Stock Volatility	0.103	0.023	.606	4.463	0.000
Market Capitalization	5.029E-007	0.000	0.066	0.426	0.672
P/E RATIO	1.500E-005	0.000	0.186	1.454	0.154

a. Dependent Variable: Stock Returns

Table 4.8 shows that Stock returns equal -0.003 units when all predictor variables are zero. This constant has a considerable baseline effect on stock returns and is statistically significant (t = -3.502, p-value = 0.001). Only stock volatility has a statistically meaningful effect on daily stock performance. Stock return improves by 0.103 units for every unit increase in stock volatility. The relationship is substantial (t = 4.463, p-value =0.001), as seen by the standardized coefficient (Beta = 0.606), indicating stock volatility has a considerable effect on stock returns. The bid-asks spread, volume traded, market cap, and P/E ratio, on the other hand, show no statistically significant relationships with stock returns. Their p-values are higher than standard significance level of 0.05, indicating that changes in these factors do not consistently predict changes in stock returns.

4.7 Discussion of Findings

The regression analysis results provide important insights into the relationship between information asymmetry proxies and stock performance. The variable bid-ask spread coefficient is not statistically significant at the 0.05 level, indicating that it has no effect on stock returns. Similarly, non-significant coefficients for market capitalization and volume traded indicate that these factors do not play a major role in explaining stock performance in the context of this research. The coefficient for stock volatility, on the other hand, is statistically significant at the 0.05 level, with a positive value of 0.103. This finding suggests that greater market volatility is

correlated with higher daily stock returns, showing that investors are rewarded for accepting the added risk associated with volatile stocks. The variable P/E ratio, on the other hand, similarly exhibits a non-significant coefficient, indicating that this metric does not significantly affect stock returns in the study.

The overall model's explanatory power is moderate, with an R-squared value of 0.427, meaning that information asymmetry and the P/E ratio can explain 42.7% of the variation in stock performance. The F-statistic is statistically significant (P-value (F-statistic) = 0.000), indicating that Information Asymmetry has a significant effect on stock performance. This result is consistent with that of Goel, Tripathi and Agarwal (2020) which showed that there is substantial positive relationship between information asymmetry and stock return at National Stock exchange of India. It is important to note that only stock volatility emerges as a meaningful predictor of stock performance. This means that, within the scope of this study, stock price volatility is a major driver of stock returns which also conforms to the result of Omokehinde, Abata, Somoye and Migiro (2017) which revealed there was a significant effect of information symmetry on the volatility of stock returns in Nigeria Stock Exchange. Other indicators of information asymmetry, such as bid-ask spread, market size, and trading volume, have little effect on stock returns.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This section provides an overview of the research findings, conclusions and recommendations. The chapter also enumerates the limitations of the study and offers suggestions for future research areas.

5.2 Summary of Findings

The research examined how information asymmetry affects stock performance on the NSE. The analysis covered six different variables and concentrated on all 65 publicly traded firms that were listed on the NSE during the year 2022. Stock performance was the primary variable of interest, and it was measured by stock returns. Various proxies were used to study the influence of information asymmetry on stock performance. Stock performance was regressed against multiple information asymmetry proxies, including bid-ask spread, market size, volume traded, stock volatility, and P/E ratio. With an average stock return of 0.000608 and a standard deviation of 0.0022797, the analysis revealed that average stock returns were quite low. The bid-ask spread, which indicates how readily stocks may be purchased and traded, exhibited a wide range, ranging from 0.0357 to 4.5695. The volume of stocks traded ranged from 1351.52 to 6362043.74, demonstrating that trading activity can vary greatly amongst stocks. Stock volatility was moderate, with an average of 0.030731. The samples market capitalization ranged from 1.1561 to 1207.4352, indicating a wide range of firm sizes. The P/E ratio ranged from -136.3750 to 97.2191.

The regression results provided intriguing insights into the relationship between these proxies and stock returns. F-statistic, a key indicator of overall model significance, was determined to be 5.818 with a p-value of 0.000, suggesting that the model effectively fits to explain the relationship between information asymmetry and stock performance. Among the proxies, stock volatility emerged as a crucial component, displaying a statistically significant positive association with stock returns. This shows that higher levels of stock price volatility, indicating increased information asymmetry, are related with more pronounced fluctuations in daily stock

returns. Bid-ask spread and volume traded exhibit no statistically significant relationships with stock returns, as indicated by their unstandardized coefficients (B = 0.000 and -2.859E-010, respectively) and associated p-values (Sig. = 0.297 and 0.427, respectively). Conversely, market capitalization and the P/E ratio also lack statistically significant relationships with stock returns, as evidenced by their unstandardized coefficients (B = 5.029E-007 and 1.500E-005, respectively) and associated p-values (Sig. = 0.672 and 0.154, respectively). Moreover, R-squared value of 0.427 suggests that the variation in information asymmetry and P/E ratio (controlled variable) explained approximately 42.72% of the variance in Stock Performance. While some factors, such as bid-ask spread and market capitalization, did not have a substantial impact on their own, the collective influence of the model underscores the importance of considering multiple facets of information asymmetry.

5.3 Conclusion

The study revealed that information asymmetry has a significant influence on stock performance at the firms listed in the Nairobi Securities Exchange, with a specific focus on various proxies such as bid-ask spread, market capitalization, volume traded, stock volatility, and price-to-earnings ratio. The analysis demonstrated that, among these factors, stock volatility plays a pivotal role in shaping stock returns. The positive and statistically significant relationship between stock volatility and stock performance implies that investors are inclined to seek higher returns when faced with more significant fluctuations in stock prices, emphasizing the vital role of risk perception in investment decisions, highlighting that investors are willing to embrace volatility for the potential of increased profits. On the other hand despite its lack of statistical significance, the bid-ask spread, which measures market liquidity and transaction costs, maintain a positive relationship with stock returns, indicating the potential for somewhat better stock performance. This shows that traders may be willing to pay a premium for stocks with more liquidity, though the effect is minor.

In contrast, market capitalization, which represents a company's overall market worth, shows an almost insignificant association, demonstrating that larger corporations in terms of market capitalization may not necessarily promise higher stock returns. Therefore investors must not believe that investing in larger companies would result in higher market performance. Similarly,

the negative association with trading volume means that larger trading volumes may not have a meaningful impact on stock returns, implying that trading activity alone may not be a reliable predictor of stock performance for the company. It's not wise to rely simply on trade volume as a sign of profitable investments. Furthermore, P/E ratio shows a weak, but substantial, positive link with stock returns. This minor bias for firms with higher P/E ratios should be viewed with caution, since investors should not rely exclusively on P/E ratios for investment decisions, given that this element does not have a major influence on stock performance.

5.4 Recommendations

Given the different nature of the companies under consideration and the complexities of market dynamics, investors are recommended to pursue a well-balanced and diverse investment plan. To limit the risks associated with individual stock performance, it is critical to diversify investments over a range of stocks, sectors, and firm size. Furthermore, investors should closely watch market liquidity, particularly bid-ask spreads, to ensure that trades are performed efficiently and at the lowest possible cost. Stock volatility is also important to monitor because it indicates the level of risk. Additionally, investors may want to explore incorporating qualitative elements, such as company fundamentals and industry trends, into their analysis to acquire a more comprehensive view of specific stocks. Finally, keeping up to date on larger economic statistics and geopolitical happenings is critical, as these factors can have a considerable impact on market sentiment and stock prices. Investors can make better educated decisions in the ever-changing stock market landscape by diversifying their portfolios, monitoring liquidity and volatility, and using a mix of quantitative and qualitative variables.

In addition to individual investment strategies, policymakers may play a crucial part in creating a stable and hospitable environment for investors. One suggestion for policymakers is to focus on policies that improve market transparency. Transparent markets instil confidence in investors, making them more eager to engage. Moreover, initiatives that promote investor education and financial literacy can provide individuals with the knowledge they need to make sound investment decisions, minimizing the possibility of risky conduct motivated by misinformation. Additionally regulatory organizations could regularly evaluate and change legislation to ensure

they are in line with the changing dynamics of the financial markets, particularly regarding high-frequency trading and algorithmic trading techniques.

Furthermore, regulations that encourage financial technology research and development can improve market efficiency and accessibility, benefiting both investors and businesses. Finally, encouraging international collaboration and regulatory standard alignment might help to establish a more cohesive global market, decreasing concerns for investors making cross-border investments. Governments may build a more stable, transparent, and investor-friendly financial ecosystem by enacting these rules, encouraging ethical investment practices and contributing to overall market stability.

5.5 Limitation of the Study

The research, while providing useful insights into the relationship between information asymmetry and stock performance is not without flaws. To begin, the study mainly relies on past market data, and any omissions or mistakes in these databases can jeopardize the study's conclusions. Secondly, the study's scope is limited to particular variables such as bid-ask spread, stock volatility, and market capitalization, which used quantitative data while ignoring other relevant elements such as corporate governance practices, media influence, or other considerations. Qualitative factors, such as investor feelings and views, are generally overlooked, potentially missing important insights. Finally the study's emphasis on the Kenyan stock market makes its conclusions unique to the Nairobi Securities Exchange, making them less likely to be generally applicable to other markets with different dynamics and less likely to take into consideration regional or global market variables that might have an impact on stock performance.

5.6 Suggestion for Further Studies

Building on the existing findings, numerous areas for future research can be pursued to better our understanding of effect of information asymmetry on stock performance. To begin, a wider and diverse study covering larger stock markets from numerous sectors and countries might provide a more comprehensive understanding of market dynamics. A larger market would allow for a more complete investigation of sector-specific trends and geographical imbalances, providing useful insights for investors and policymakers. Second, future research might concentrate on the

qualitative factors that influence stock performance, such as company-specific strategies, corporate governance standards, and market sentiment. Integrating qualitative and quantitative data could provide a more holistic view of the factors influencing stock returns, allowing for a more nuanced assessment of market patterns.

Researchers could also investigate the temporal component by undertaking longitudinal studies that track stock market activity over time. Analysing trends and variations in stock performance over economic cycles and market situations may reveal significant patterns, allowing investors to better adapt their tactics to market volatility. Furthermore, researching the influence of specific regulatory measures on market liquidity and investor behaviour could be helpful. Investigating how regulatory changes affect bid-ask spreads and trade volumes could provide significant insights into the effectiveness of various policy measures, aiding policymakers in developing more investor-friendly settings. Finally, using new analytical tools, such as machine learning algorithms, may improve the prediction potential of stock market models. These approaches can detect complicated patterns in large datasets, perhaps revealing previously unknown correlations and trends.

REFERENCES

Adjei, B. (2015). *Return and Volatility Spill overs among Stock and Foreign Exchange Markets: Empirical Evidence from selected African Markets.* (Master's Thesis). Lappeenranta University of Technology.

Akerlof, G. A. (1970). The market for "lemons": Quality uncertainty and market mechanism. *The Quarterly Journal of Economics, 84*(3), 488-500.

Amihud, Y., & Mendelson, H. (1986). Asset pricing and the bid-ask spread. *Journal of Financial Economics, 17*(2), 223–249.

Aroni, J. M. (2011). Factors Influencing Stock Prices for Firms Listed in the Nairobi Stock Exchange. *International Journal of Business and Social Science, 2*(20), 303-311.

Ascioglu, A., Hegde, S. P., Krishnan, G. V., & McDermott, J. B. (2012). Review of Quantitative Finance and Accounting, *38*, 257-274.

Aslan, H., Easley, D., Hvidkjaer, S., & O'Hara, M. (2011). The characteristics of informed trading: Implications for asset pricing. *Journal of Empirical Finance, 18*(5), 782-801.

Aurangzeb, D. (2012). Factors Affecting Performance of Stock Market: Evidence from South Asian Countries. *International Journal of Academic Research in Business and Social Sciences, 2*(9), 1-15.

Bagehot, W. (1971). The only game in town. *Financial Analysts Journal, 27*, 12-14.

Bhagat, S. W., Marr, M. W., & Thompson, R. (1985). The Rule 415 Experiment: Equity Markets. *Journal of Finance, 40*(5), 1385—1401.

Bhattacharya, U., & Spiegel, M. (1991). Insiders, Outsiders, and Market Breakdowns. *Review of Financial Studies, 4*(2), 255-282.

Bhattacharya, U., Daouk, H., Jorgenson, B., & Kehr, C-H. (2000). When an Event is not an Event: The Curious Case of an Emerging Market. *Journal of Financial Economics, 55*, 69-101.

Bharath, S. T., Pasquariello, P., & Wu, G. (2009). Does Asymmetric Information Drive Capital Structure Decisions? *Review of Financial Studies, 22*(12), 3211-3243.

Campbell, J. Y., & Shiller, R. J. (1988). Stock prices, earnings, and expected dividends. *The Journal of Finance, 43*(3), 661-676.

Chae, J. (2005). Trading Volume, Information Asymmetry, and Timing Information. *The Journal of Finance, 61*(1), 413-442.

Chen, J. (2005). Pervasive liquidity risk and asset pricing (Working Paper). *Columbia University.*

Chogii, R., Aduda, J. O., Kaijage, E. S., & Magutu, P. O. (2022). Does Market Information Risk Influence Price Discovery for Stocks Listed at the Nairobi Securities Exchange? *African Journal of Business and Management, Special Issue: Volume 7, Issue 1, March 2022*, 90-108.

Clare, A. D., & Thomas, S. H. (1994). Macroeconomic Factors, the APT and the UK Stock Market. *Journal of Business Finance and Accounting, 21*(3), 309-330.

Daoud, J. I. (2017). Multicollinearity and Regression Analysis. *Journal of Physics: Conference Series, 949.*

Diamond, D., & Verrecchia, R. (1991). Disclosure, liquidity, and the cost of capital. *The Journal of Finance, 66*(1), 1325–1355.

Dimitrova, D. (2005). The Relationship between Exchange Rates and Stock Prices: Studied in a Multivariate Model. *Issues in Political Economy, 14.*

Easley, D., & O'Hara, M. (2002). Price, trade size, and information in securities markets. *Journal of Financial Economics, 49*(3), 69–90.

Easley, D., & Hara, O. (1987). Price, Trade Size, and Information in Securities Markets. *Journal of Financial Economics, 19*(1), 69–90.

Easley, D., Hvidkjaer, S., & O'Hara, M. (2002). Is information risk a determinant of asset returns? *Journal of Finance, 57*(5), 2185-2221.

Easley, D., & O'Hara, M. (2004). Information and the cost of capital. *Journal of Finance, 59*(4), 1553-1583.

Fisher, K. L., & Statman, M. (2000). Investor Sentiment and Stock Returns. *Financial Analysts Journal, 56*, 16-23.

Glosten, L., & Milgrom, P. (1985). Bid, ask and transaction prices in a specialist market with heterogeneously informed traders. *Journal of Financial Economics, 13*(1), 71-100.

Haji, T., & Sharifi, F. (2020). Investigating the relationship between information asymmetry and dividend policy in companies listed on the Tehran Stock Exchange. *Journal of New Research Approaches in Management and Accounting, 4*(45), 121-138.

Handa, P., Schwartz, R. A., & Tiwari, A. (1998). The ecology of an order-driven market. *The Journal of Portfolio Management, 24*(2), 47-55.

Hasbrouck, J. (1991). The Summary Informativeness of Stock Trades: An Econometric Analysis. *The Review of Financial Studies, 4*(3), 571-595.

Hatem, B. S. (2017). How Can We Measure Stock Market Returns? An International Comparison. *International Business Research*, *10*(5), 121.

Hirshleifer, D. (2001). Limited Attention, Information Disclosure, and Financial Reporting. *Journal of Accounting & Economics*, *32*(1-3), 337-386.

Huang, J., & Wang, J. (2009). Liquidity and market crashes. *Review of Financial Studies*, *22*(7), 2607-2643.

Ilaboya, O.J., Aggreh, M. (2013). Dividend policy and share price volatility. *Journal of Asian Development, 2*(2), 109-122.

Jochmans, K. (2022). Heteroscedasticity-Robust Inference in Linear Regression Models with Many Covariates. *Journal of the American Statistical Association, 117*(538), 887-896.

Lambert, R. A., Leuz, C., & Verrecchia, R. E. (2011). Information Asymmetry, Information Precision, and the Cost of Capital. *Review of Finance*, *16*(1), 1-29.

Mishkin, F. S., & Eakins, S. G. (2006). Financial markets & Institutions *(5th Ed.). Pearson Addison Wesley.*

O. M. & Mugenda, A. G. (2003). Research Methods: Quantitative and Qualitative Approaches. *Nairobi: African Centre for Technology Studies.*

M. W. Chege (2012). The effect of firm size on information asymmetries surrounding earnings disclosure of businesses listed on the Nairobi securities exchange. *(MBA Thesis). University of Nairobi.*

Ndungo, M. W. (2014). Effects of Corporate Governance on Information Asymmetry between Managers and Investors in Firms listed at the Nairobi Securities Exchange *(MBA Thesis). University of Nairobi.*

Noor afkan, H. (2011). Relationship between information asymmetry and level of cash holding in companies listed on the Tehran Stock Exchange. *Journal of accounting and social interests, 2*(3), 85-106.

Pryymachenko, I. (2003). Stock Price Volatility and its Determinants on the Emerging Financial Market of Ukraine. *(Unpublished Thesis). National University of Kyiv-Mohyla.*

Ross, S. A. (1976). The Arbitrage Pricing Theory of Capital Asset Pricing. *Journal of Economic Theory*, *13*, 341-360.

Roya Darabi. (2013). The effect of Information Asymmetry on Stock Return Predictability. *Journal of Applied Sciences, Engineering and Technology*, *5*(3), 929-936.

Safdar, R., & Yan, Y. (2017). Information risk, stock returns, and asset pricing: Evidence from China. *Accounting Research Journal, 30*(4), 379-394.

Schmidt, A. F., & Finan, C. (2018). Linear regression and the normality assumption. *Journal of Clinical Epidemiology, 98*, 146-151. Advance online publication.

Shaharudin, R. S., Samad, F., & Bhat, S. (2009). Performance and Volatility of Oil and Gas Stocks: A Comparative Study on Selected O&G Companies. *International Business Research, 2*(4), 87-99.

Stoll, H. R. (1978). The Pricing of Security Dealer Services: An Empirical Study of NASDAQ Stocks. *The Journal of Finance, 33*(4), 1153-1173.

Thomas, S., & Fee, C. E. (2000). Corporate Diversification, Asymmetric Information, and Firm Value: Evidence from Stock Market Trading Characteristics. *Working Paper, Michigan State University.*

Tripathi, V., & Seth, R. (2014). Stock Market Performance and Macroeconomic Factors: The Study of Indian Equity Market. *Global Business Review, 15*(2), 291–316.

Vatcheva, K., Lee, M., McCormick, J., & Rahbar, M. (2016). Multicollinearity in Regression Analyses Conducted in Epidemiologic Studies. *Epidemiology Open Access, 6*, 227.

Wang, T., & Huang, Z. (2012). The relationship between volatility and Trading Volume in the Chinese stock market: A volatility decomposing perspective. *Annals of Economic and Finance, 13*(2), 211-236.

Wasseja, M. M., Njoroge, E., & Mwenda, S. N. (2015). Investigation of the Granger Causal Relationship between Macroeconomic Variables and Stock Prices in Kenya. *International Journal of Business and Economics Research, 4*(3), 98-108.

Yang, Y. C., Zhang, B., & Zhang, C. (2020). Is information risk priced? Evidence from abnormal idiosyncratic volatility. *Journal of Financial Economics, 135*(2), 528-554.

Zareian, M. (2012). Voluntary Disclosure of Information and Stock Returns: *Review Of financial studies, International volume, 19*(4), 1531-1565.

APPENDICES

Appendix I: List of Companies Listed at the NSE

1. Eaagads Ltd
2. Kapchorua Tea Co. Ltd
3. Kakuzi
4. Limuru Tea Co. Ltd
5. Rea Vipingo Plantations Ltd
6. Sasini Ltd
7. Williamson Tea Kenya Ltd
8. Car and General (k) Ltd
9. ABSA Bank Kenya Plc
10. Stanbic Holdings Plc
11. I&M Holdings Ltd
12. Diamond Trust Bank Kenya Ltd
13. NCBA Group
14. HF Group
15. KCB Bank
16. Standard Chartered Bank
17. Equity Bank
18. Cooperative Bank
19. Bank of Kigali
20. Express Ltd
21. Sameer Africa Plc
22. Kenya Airways Ltd
23. Nation Media Group
24. Standard Group Ltd
25. TPS Eastern Africa (Serena) Ltd
26. WPP Scangroup Ltd
27. Uchumi Supermarket Ltd
28. Longhorn Publisher Ltd
29. Deacon East Africa Plc
30. Nairobi Business Venture
31. Athi River Mining
32. Bamburi Cement Plc
33. Crown Paints Kenya Plc
34. E.A. Cables Plc
35. E.A. Portland Cement Ltd
36. Total Kenya Ltd
37. Kengen Ltd
38. Kenya Power & Lighting Co Ltd
39. Umeme Ltd
40. Jubilee Holdings Ltd
41. Sanlam Kenya Plc
42. Kenya Re-insurance Corporation Ltd
43. Liberty Kenya Holdings Ltd
44. Britam Holdings Ltd
45. CIC insurance group Ltd
46. Olympia Capital Holdings Ltd
47. Centum Investment Co Ltd
48. Trans-Century Ltd
49. Home Afrika Ltd
50. Kurwitu Ventures
51. Nairobi Securities Exchange Ltd
52. B.O.C Kenya Ltd
53. British American Tobacco Kenya Ltd
54. Carbacid Investments Ltd
55. East African Breweries Ltd
56. Mumias Sugar
57. Unga Group Plc
58. Eveready East African Ltd
59. Flem tree group
60. Safaricom
61. Stanlib fahari i-reit
62. Laptrust imara i-reit
63. New gold issuer (Rp) Ltd
64. Homeboyz Entertainment plc
65. Kenya Orchards Ltd

Appendix II: Data Collection Sheet

	DAILY DATA FOR THE YEAR 2022											
Variable	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sept**	**Oct**	**Nov**	**Dec**
Bid ask spread												
Trade Volume												
Stock volatility												
Market cap												
P/E ratio												

Appendix III: Data Collection

Firms	Stock Returns	Bid Ask Spread	Volume Traded	Stock Volatility	Market Cap	P/E Ratio
Absa Bank	0.0003	0.3551	363,623.8866	0.0149	62,446,139,512.20	4.2736
Bamburi Cement	-0.0006	0.6864	19,622.6337	0.0164	12,812,700,000.00	0.6303
British American Tobacco	0.0003	4.5695	20,557.1429	0.0154	44,643,609,865.47	6.4776
Bank of Kigali	0.0011	0.3832	26,552.0000	0.0337	27,477,768,064.00	0.4602
Centum	-0.0017	0.4167	115,940.8907	0.027	7,134,241,552.68	9.7464
Cooperative Bank	-0.0001	0.3791	328,917.8138	0.0134	71,509,237,540.65	3.2763
Diamond Trust Bank	-0.0006	0.951	41,409.5833	0.0178	14,693,026,605.86	2.4239
East African Breweries Ltd	0.0003	3.1459	205,884.1463	0.0216	119,973,380,406.93	10.1144
Equity	0.0012	1.3703	1,276,504.0486	0.0322	179,270,369,512.20	3.9917
Jubilee	-0.0021	2.4025	3,627.3632	0.0191	18,542,398,232.50	2.9031
KCB	-0.0006	0.8963	1,019,993.5223	0.0133	131,111,950,609.76	3.2106
Kengen	-0.001	0.0831	356,193.9271	0.0126	23,712,401,138.97	0.0499
KPLC	-0.0002	0.0702	867,152.6316	0.0223	3,055,553,156.07	0.8699
Nation Media Group	-0.0002	0.7368	20,515.3846	0.027	35,261,197,560.98	10.8996
NCBA	0.0021	0.9878	294,228.8618	0.0238	45,661,829,655.92	3.3153
Britam	-0.0012	0.2943	64,544.1296	0.0226	15,954,079,782.48	10.0353
Safaricom	-0.0017	0.9236	6,362,043.7409	0.0189	1,207,435,191,141.46	52.4377
Sanlam	-0.0002	0.2083	2,249.6552	0.0471	1,571,040,000.00	6.2701
Umeme	0.0009	0.2112	65,300.9009	0.0315	11,772,975.86	2.0193
Sasini	0.0014	0.5774	4,614.6226	0.0332	4,794,221,447.41	4.1059
Total Kenya	0.0002	0.5065	6,310.8696	0.029	14,878,814,599.13	6.0913
Unga Limited	0.0026	0.3919	1,686.0465	0.0421	2,261,746,625.00	12.0464
Williamson Tea	0.0015	1.481	5,750.2703	0.0263	2,523,366,792.61	4.8466
Stanbic Bank	0.0012	1.3763	98,761.0526	0.0269	38,540,046,052.63	4.2570
Sameer	-0.0007	0.1231	11,672.6027	0.0389	815,275,156.71	8.1362
Kakuzi	0.0009	2.593	6,130.6667	0.0423	7,954,594,666.67	9.4055
Standard Chartered	0.0005	1.9439	58,283.2653	0.0143	50,984,767,996.34	4.2877
TPS eastern Africa Plc	0	0.2958	20,906.5476	0.041	3,153,899,746.43	9.3588
Scan Group	-0.0009	0.1442	38,887.3984	0.0281	1,554,426,483.90	25.6922
Olympia Capital	0.0032	0.0636	6,158.3333	0.0475	92,612,500.00	4.3685

Holding						
Liberty Holding Kenya	-0.0001	0.2044	4,770.5882	0.0439	3,157,838,145.58	9.5076
Longhorn Publisher	-0.0005	0.1232	18,977.8302	0.0418	971,814,041.51	23.7805
Limuru Tea	0.0111	0.0357	2,057.1429	0.0537	933,492,857.14	45.4919
BOC Kenya	0.0011	0.7447	1,756.3830	0.0455	1,494,804,920.21	10.1001
Car & General (Kenya) Plc	0.0076	0.9959	2,385.0000	0.0795	3,089,286,145.83	4.5049
Carbic Investments Plc	0.0006	0.3597	57,281.0924	0.0232	2,983,808,025.21	4.2120
CIC Insurance Group	-0.0002	0.1012	104,666.6667	0.0249	5,349,601,280.16	5.1132
Crown	0.0024	0.6509	8,145.2941	0.0343	5,536,123,210.59	97.2191
Eaagads Ltd	-0.0017	0.1535	1,351.5152	0.0409	404,853,381.82	48.4227
Eveready	-0.0007	0.0492	9,589.5397	0.0401	170,908,368.20	3.3910
Ilam Fahari I-Reit	0.0008	0.2318	19,547.7366	0.0344	1,156,062,968.27	9.2581
Flame Tree Group	0.0000	0.0389	9,323.6607	0.0385	220,261,700.76	2.2908
HF Group	-0.0004	0.1734	35,454.9180	0.029	1,263,362,412.79	4.7605
I&M Holding	-0.0008	0.3376	103,323.5772	0.0119	30,304,621,435.98	2.7070
Kapchorua Tea Kenya	0.0022	1.1179	1,469.9187	0.0411	799,049,853.66	3.7341