

**INFLUENCE OF HETEROGENEITY OF INVESTORS'
BEHAVIOUR ON CORPORATE EXTERNAL FINANCING
DECISION BY LISTED COMPANIES IN KENYA**

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**Influence of Heterogeneity of Investors' Behaviour on Corporate
External Financing Decision by Listed Companies in Kenya**

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DECLARATION

This thesis is my original work and has not been presented for a degree in any other university.

Signature Date

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This thesis has been submitted for examination with our approval as the university supervisors.

Signature Date

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DEDICATION

To my wife Kwamboka and children: Nicole, Bianca and Raymond.

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ACRONYMS AND ABBREVIATION

BFMI	Behavioural Finance Micro
BFMA	Behavioural Finance Macro
BV	Book Value
BPT	Behavioural Portfolio Theory
CAPM	Capital Asset Pricing Model
CBK	Central Bank of Kenya
CDS	Central Deposit System
CLRM	Classical Linear Regression Model
CMA	Capital Market Authority
CLMX	Campbell, Lettau, Malkiel and Xu
DW	Durbin Watson
EAC	Eastern Africa Community
EXP	Exponential
HM	Hausman McFadden
HT	Harris - Tzavalis
GDP	Gross Domestic Product
GSE	Government-Sponsored Enterprises
IIA	Independent of Irrelevant Alternatives
IPO	Initial Public Offer
IRA	Insurance Regulatory Authority
IVol.	Idiosyncratic Volatility
LIAB	Book value of total liabilities,
LLC	Levin, Lin and Chu
LTDEBT	Long Term Debt
LR	Likelihood Ratio
MC	Market Capitalization
MNLR	Multinomial Logistic Regression
MV	Market Value
NASI	Nairobi All Share Index
NBFI	Non-Bank Financial Institution
NSE	Nairobi Security Exchange

NSE ASI	Nairobi Security Exchange All Share Index
OLS	Ordinary Least Squares
Pr.	Probability
ROE	Return on Equity
ROA	Return on Assets
REIT	Real Estate Investment Trust
SEOs	Seasoned Equity Offerings
SFAS	Statement of Financial Accounting Standards
TRWA	Total Risk Weighted Assets
TA	Total Assets

OPERATIONAL DEFINITION OF KEY TERMS

- A Bond:** This is an external financing instrument issued to the lenders requiring the issuer (borrower) to pay the lender interest on the amount borrowed over a specified period of time and the principal at maturity; this could be long term debt or medium term debt (Bancel & Mittoo, 2004).
- Common Stock:** This is an ordinary share representing the ownership position in a company. The holder of the common stock is the owners of the company and they provide permanent capital. They have voting rights and receives dividends at the discretion of the board of directors (Prevost, Devos, & Rao, 2013).
- Convertible bond:** A bond that can be exchanged for a predetermined fixed number of “new” shares of the issuing company within a predetermined period of time. It is a package consisting of a straight bond and warrants written by the issuing company on its stock. This bond has features of both equity as well as bond (Batten, Khaw, & Young, 2013).
- Covered bond:** Are debt securities backed by cash flows from mortgages or public sector loan. They are similar in many ways to asset backed securities created in securitization, but covered bond assets remains on the issuer’s consolidated balance sheet. It continues as an obligation of the issuer (Schwarcz, 2014).
- Equity:** This is a share of ownership of a company or an entity, sometimes called common stock. The holders have a residual share of the company’s earnings (Deloitte, 2006).

- Financial Innovation:** Financial innovation is defined in terms of creating and then marketing new financial instruments, technologies, institutions and markets. This includes both the products and the process variants (Ngumi, 2013).
- Heterogeneity:** This is the nature of opposition or contrariety of qualities, it is the diversity in kind and or nature of behaviours, in general a heterogeneous entity is composed of dissimilar parts, hence the constituents are of a different kind that can be distinguished from one another (He, Dieci, & Chiarella, 2007).
- Heuristic:** This is a strategy that can be applied to a variety of problems and that usually but not always yields a correct solution (Shikuku, 2012).
- Idiosyncratic Volatility:** This is referred to as idiosyncratic risk. It is the risk that is specific to an asset or a small group of assets. Idiosyncratic risk has little or no correlation with market risk, and can therefore be substantially mitigated or eliminated from a portfolio by using adequate diversification. Idiosyncratic risk, rather than market risk, accounts for most of the variation in the risk of an individual stock over time (Thiagarajan & Li, 2010).
- Preferred Stock:** This is a special kind of equity where the holder has a preference over the common stock in the event of liquidation of the company. Preference stock, dividend rate are known in advance, fixed and payable before paying dividend on ordinary stock (Bancel & Mittoo, 2004).
- Straight Bond:** Is a financial debt instrument requiring the issuer (borrower) to repay to the lender the amount borrowed plus

interest over a specified period of time (Bancel & Mittoo, 2004).

The factor loading:

This is a measure of risk that is proportional to the returns' covariance with the market and the market standard deviation (Milionis, 2011).

ABSTRACT

There is evidence of irrationality and repeated errors in judgement by individual investors, corporate investors and corporate agents in their quest to invest and access external financing respectively. This study was conducted with a purpose of determining the influence of heterogeneity of investors' behaviour on corporate external financing decision by listed companies in Kenya for a period of ten years from 2007 to 2016. To achieve this, secondary data was collected from the institutions published financial reports and Nairobi Security Exchange trading reports. The target population was 67 companies however the study excluded 14 companies that had been suspended, delisted and those listed for less than five (5) years during the study period. The study utilised a descriptive research design while adopting a parametric approach and a multinomial logistic regression model to analyse data on influence of heterogeneity of investors' behaviour on corporate external financing decision, while controlling for institutional leverage. The study employed content analysis of audited group annual reports, NSE share prices, 20 share indexes and Nairobi all share index (NASI) to establish the influence of heterogeneity of investors' behaviour on corporate external financing decision over the period 2007-2016. Data was analysed aided by SPSS software version 21 and Stata Software version 12.0. The parameter findings indicate that corporate external financing decision is significantly influenced by heterogeneity of investors' behaviour. The study established that equity financing is influenced negatively by investors risk perception. Similarly the study established that straight debt financing is influenced negatively by one unit increase in behavioural bias, investors' preference and analysts' dispersion. However investors risk preference and corporate size dispersion influence positively straight debt financing decision relative to covered debt financing, such that one unit increase in these variables influences positively straight debt financing decision. The study experienced a number of limitation including dependency on secondary data, limited studies in Africa on behavioural finance and missing data as some institutions had less than 5 years of listing. To minimize these all companies listed for less than 5 years were eliminated from the study. The findings of this study indicate that besides external and internal factors, investors' heterogeneous behaviours have significant influence on corporate external financing decision. Agents of companies wishing to source for external finances need to consider investors' behaviour while making external financing decisions. From the findings of this study, there is need to enhance investment knowledge of both corporate investors and investment trusts in Kenya in order to minimise behavioural biases, investors' preferences and unwarranted risk perceptions that might lead to investors heterogeneous behavioural influences. Therefore availability of all market information and elimination of information prejudice will encourage both corporate and individual investors to invest in the market therefore enhancing corporate access to external funds and ultimately growth of the market. The study recommends that organizations seeking external financing should understand, when it is optimal to issue debt and or equity by considering investors behaviour. The study also recommends that the government as policy formulator and enforcer through various enforcement agencies should come up with legislation that discourages behavioural bias and preferences that may affect external financing decisions made by corporates and also influencing financing small and medium enterprises and ultimately limiting availability of investment opportunities to both external and internal investors.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

This study sought to establish the influence of heterogeneity of investors' behaviour on corporate external financing decision by listed companies in Kenya. Conventional traditional financial theory postulates that, individual and corporate investors are perfectly rational and wealth maximizers in financial decisions making. However the idea of fully rational investors having perfect control on their decisions to maximize their utility is becoming less popular. In efficient markets, investors are considered to be rational, unbiased and consistently make optimal investment decisions without the effects of psyche and emotion (Kumar & Goyal, 2016).

Emotions and psyche have been seen to influence investors' decision making causing them to behave in an irrational way. Empirical literatures show that psychological factors have a substantial effect on people's decision making. Behavioral finance therefore is an emerging field that combines the behavioral or psychological aspects with conventional economic and financial theories to provide explanation of why people and institutions make irrational financial decisions (Dolreen, 2014). Behavioral finance explains the irrational behavior of corporate and individual investors that can affect the security market prices. It examines how cognitive and emotional errors influence investor's decision making process by coalescing psychology and economics to explain how individual and corporations make seemingly irrational or illogical financial decisions disputing the assumptions of traditional finance paradigm. It therefore provides the explanation for irrational phenomenon which could influence corporate external financing decision (Ahmad, Ibrahim, & Tuyon, 2017).

Tversky and Kahneman (1974) as cited in (DeBondt, Forbes, Hamalainen, & Muradoglu, 2015) postulate that people rely on a limited number of heuristic principles which in general are quite useful, but sometimes lead to severe and systematic biases. Behavioral finance explains the irrational behavior of investors that can affect the security market prices and ultimately agents' external financing decision making (Durand, Newby, Tant, & Trepongkaruna, 2013). The last financial crises were linked

to many behavioural biases identified in behavioural finance models. Irrational choices lead to herding and groupthink, known as convergence bias, as investors and corporate managers copy the behaviour of people around them rather than making rational choices. In a bull market, these agents also tend to ignore clear evidence against their current belief, known as confirmation bias, and forecast future prices using past rising trends, known as extrapolation bias (Grosse, 2012).

These biases drive momentum and overconfidence in financial markets as agents overestimate their ability and self-control, thinking they will sell before prices peak. Irrational choice also leads agents to overvalue current benefits and undervalue future costs in financial decisions. This present bias leads them to take on too much risky debt in a boom (Kumar & Goyal, 2015). Another important bias is loss aversion, where agents give greater weight to a given loss than to an equivalent gain. This could explain why traders and bankers took over greater risks as potential losses loomed in the recent financial crisis (Daniel & Hirshleifer, 2015).

Market participants each of whom have limited wealth, have heterogeneous beliefs about the firm's long-run value (Chemmanur & Krishnan, 2012). Abnormal market behavior can occur, such as the January effect, Monday effect, indicating that human behaviour influence security prices and thereby market performance. The contribution of behavioural finance field does not mean that it has completely neglected or lessens the importance of the fundamental work and proponents of efficient market hypothesis (Jarrett, 2010).

Two key assumptions that frame traditional finance paradigm are the notion that when making investment decisions, individuals and corporations collect and use all available information concerning the specific investment and the market reactions in order to obtain maximum utility. The second key assumption is that information is readily and freely available and markets price assets by incorporating all available information. These assumptions are the main drivers of efficiency market hypothesis (Ekeland & Taflin, 2005). Several theories have been put forth focussing on efficient market hypothesis empirically stating that an efficient financial sector helps investors to allocate their savings through financial markets and institutions rather than buying non-productive or low return assets as store of value (Shikuku, 2012). Given the Keynesian

human nature and the uncertainty about the future market performance, different empirical studies have revealed that investors are willing to hold on to financial assets as long as they believe that if anything changes, a fast exit strategy is provided by a well-organized stable financial market (Nowman & Sorwar, 2011).

1.1.1 Corporate External Financing Decision

Corporate external financing decision is a crucial component of corporate strategies that firms adopt to access funds from external capital market to undertake new investment, dividend payments, maintain capital structure, acquisition purposes, cash savings as precaution, among others (Siganos, Veld, Gyimah, & Dong, 2012). Traditional finance proponents consider corporate financing decisions based on information problems seen resulting from the complexity of saving and investment decisions. Axelson (2007) states that in order for a corporation to make financing decisions, agents must be able to predict several unknown variables that includes future interest rates, the availability of a growing variety of financial instruments, the likely risk, performance of investments, the future state of wages, individual taxes, inflation, and individuals' retirement plans. These predictions take place within increasingly intricate and uncertain financial and economic circumstances (Sehgal & Vasisht, 2015).

Therefore financing decision making by agents of corporations is often made in an environment of uncertainty about the future of the firms' performance, perception of risks as influenced by factors such as the degree of trust towards information sources, level of individual knowledge, market volatility and the regulatory provisions (Nga & Yien, 2013). Empirical research has shown that lack of effective long-range financial planning is a commonly cited reason for financial distress and failure among corporations. Financial planning therefore establishes guidelines for change and growth in a firm (Grosse, 2012). Evidence on the issuer motivations and organizations financing decisions especially the use of debt or bond offerings, consists mainly of managerial surveys. These surveys mostly considers the agent point of view about the corporate financial modelling (Feldman & Lepori, 2016).

Loncarski, Ter-Horst, and Veld (2008) considering external financing by corporations in Canada, posit that convertible debt issuing firms motivate their issue with a security

choice model by incorporating straight debt, convertible debt, and equity to enhance uptake by external investors. The debt-like convertibles serve as sweetened debt instruments, whereas equity-like convertibles are used as delayed equity financing when corporations are sourcing for external financing to enhance their liquidity. This practice is always influenced by the investors attitude towards the firm (Almeida & Campello, 2010).

Martín-oliver (2007) focusing on why corporations securitize assets in Spain, established that external financing is a fundamental source of funds for corporations globally. Institutions could issue common stock, covered bond, straight bond, or a convertible bond referenced to straight bond. Alternatively institutions could also issue common stock portfolio to a special purpose vehicle (SPV) that at the same time funds the transaction, selling mortgage-based bonds to institutional or retail investors, therefore enhancing the institutional liquidity (Roy, 2011).

Generally optimum corporate capital structure enables the organization to operate profitably because of lower weighted average cost of capital, therefore companies must make sound corporate financing decisions based on optimum information availability during external financing decision making (Hasan, Mutairi, & Risik, 2011). Studies focusing on both developed and developing economies have alluded that sub-optimal external financing decisions can lead to corporate failure (Fan, Foo Sing, Eng Ong, & Sirmans, 2004).

A great dilemma faced by management and investors alike in financial market is whether there exists an optimal financing policy, and how various financing decisions influence business performance (Albring, Banyl, Dhaliwal, & Pereira, 2016). The perceptions of a firm being undervalued cause distortions of managerial financial decisions in two ways. First, it induces distortions in the choice of security type. Studies have shown empirically that managers who overestimate their profitability always find equity issuance a more expensive method of external financing than debt financing and therefore prefer debt to equity because they feel severe undervaluation in equity (Ishikawa & Takahashi, 2012).

Perception of being undervaluation also causes a second distortion seemed to occur in the choices of the type of external financing model adopted by the corporations' agents. Managers who feel that their firm is undervalued, have an incentive to place equity in the private market, because they expect investors in the private market or private placement to convey information that they are undervalued, thereby enhancing full subscription towards the offered equity (Campbell, 2014). Despite the overwhelming empirical studies on financing decisions there is scant research exploring interactions between the factors influencing security issuance decisions specifically investors' behaviour.

Andani and Al-hassan (2007) studying the determinants of financing decision in Ghana, considered 19 listed companies in comparison with 16 non-listed companies, a consistent finding across the two categories of firms was ascertained indicating that the more profitable a firm is, the lower the debt ratio regardless of the firm type. Accordingly firm profitability influences external financing decision. Their study confirms the findings of earlier empirical studies, done in Ghana by Abor and Biekpe (2005) and in Zimbabwe by Mutenheri and Green (2002) as cited in (Andani & Al-hassan, 2007) indicating that both external and internal firm factors influence financing decision.

According to Mwangi (2014) corporate failures among companies in Kenya have often been associated with the financing behaviour of the firm coupled with corporate agents not considering factors influencing external financing decision. Momentous efforts to revive the ailing and liquidating companies in Kenya have focused on financial restructuring. Mostly corporate managers have critical responsibility of understanding how alternative financing decisions could influence performance. This will enable corporate agents to work towards securing successful performance while at the same time mitigating against corporate failures (Grosse, 2012).

Kirui, Wawire, and Onono (2014) while considering the Kenyan market posit that more integrated financial markets are increasingly exposed to macroeconomic shocks which affect markets on a global scale. These shocks have been felt across all sectors of the economy through contagion effect. The vulnerability of markets lead to increased uncertainty and unpredictability within the economy, therefore market conditions cannot

always be judged with the help of standard financial measurement models and tools that often assume rationality (Gambacorta & Marques-Ibanez, 2011).

1.1.2 Investors Rational Expectation and Herd Behaviour

Empirical evidences indicate that psychological factors have a substantial effect on people's decision making in several fields including finance. In their classic study, Tversky and Kahneman (1974) as cited in (Seppälä, 2009) postulate that people rely on limited number of heuristic principles in complex tasks involving uncertainty. Generally these heuristics are quite useful, but sometimes they lead to severe and systematic bias.

The models within the traditional financial paradigm assume that investors act rationally and consider all available information in the decision-making process, hence markets are efficient and security prices reflect the true 'intrinsic values' of the assets (Robert & Shiller, 2003). These models also assume that investors act promptly to new information and update prices correctly within a normatively acceptable process, whereas investment market returns are believed to follow a random walk pattern, this is considered not predictable hence discrediting the perfect market assumptions (Rohit, 2005).

Traditional finance assumes that individuals and corporations have an unlimited capacity for processing available information; this attribute allows them to continually update their investment and financing ability based on newly acquired information from the market. These assumptions are based on the views that individuals and corporations have rational expectations, such that they use all relevant available information when forming their decisions regarding economic variables (Chen, Kim, Nofsinger, & Rui, 2007).

Psychologists across different disciplines and varied cultures, have established that people employ social comparisons to inform their behaviour and decisions even when this contradicts facts or better judgment. Individuals are influenced by their social environment and often feel pressured to conform (Jiao & Yan, 2015). When individual make decisions especially when they feel unsure or threatened, they watch what others do and try to simulate the behaviour of individuals within their environment or situation (Nyamute, Lishenga, & Oloko, 2015).

Studies have shown that for investors to imitate others, they must be aware of and be influenced by others' actions. Intuitively, an individual can be said to herd if the individual would have made an investment without knowing other investors' decisions, but does not make that investment when they find that others have decided otherwise (Bikhchandai & Sharma, 2001). Alternatively, the investor herds when knowledge that others are investing changes the investor's investment decision from not investing to investment (Lin, Tsai, & Lung, 2013).

The assumptions of investor rationality have been the predominant view within financial economics for decades, however behavioural finance studies suggest that information plays little or no role at all in most financial decisions making both at individual and corporate level (García, 2013). Scholars have asserted that standard finance body of knowledge is built on the main pillars of the arbitrage principles, Portfolio Principles, Capital Asset Pricing theory and the Option-Pricing theory. These traditional finance approaches consider markets to be efficient, highly analytical and normative contrary to the reality as revealed by proponents of behavioural finance (Shefrin & Statman, 2011).

Economist and finance theorists assume that individuals are rational and optimal utility seekers and that when they receive new information, they update their behaviour correctly and immediately in accordance to Bayes law (Nga & Ken Yien, 2013). Similarly investors' return experiences drives update in behaviour, and to some extent also drives updates in preferences. Considering the investors view of organizations' future prospects, the past organization returns positively influence investors return expectations and negatively impact investors risk perceptions (Hoffmann & Post, 2015).

Theory of bounded rationality posits that within an environment where cognitive capacity and time are limited, agents make decisions that are only partially rational (Olsen, 2015). According to Barber and Odean (2011) bulk of research in modern economics has been built on the notion that human beings are rational agents attempting to maximize wealth while minimizing risk inherent in investment decision. These rational agents carefully assess the risk and return of all possible investment options to arrive at an investment portfolio that suits their level of risk aversion.

Rational investments happen when correct and right information is availed to market players promptly (Gregoriou & Rhodes, 2017). Individuals tend to adopt a satisfying rather than optimizing behaviour in deriving their utility and related search costs while making financial decision. Therefore heuristics are used to simplify the task at hand and in coping with uncertainty inherent in an investment decision, therefore driving cognitive bias (Ahmad *et al.*, 2017). The basic question facing both corporate and individual investors is about which securities to invest in, most investors have eight common needs from their investments decision which include, security of capital invested, wealth accumulation, comfort factor, tax efficiency, life cover income, simplicity of the investment, ease of withdrawal and communication. These needs shape their investment decision making (Schwarcz, 2014).

De Franco, Vasvari, and Wittenberg-Moerman (2009) considered the informational role of debt analyst in USA and UK markets and postulate that all investors must consider investment objectives, asset classes to include in the portfolio, weights assigned to various asset classes, the selection strategies to use with each asset class and lastly the evaluation of the above four considerations. According to Williams and Tang (2009) rational efficient market is not consistent with empirical findings on abnormal stock returns at the exchange. Stocks with high current earning yield, high book-to-price ratios, short-term price momentum, long-term reversal and excessive price volatility, for such stock the efficient market hypothesis does not hold (Carbonell & Rottke, 2009). When risk and uncertainty or incomplete information about an alternative or high degree of complexity is introduced, people and organization agents behave somewhat different from rationality (De Franco, Vasvari, & Wittenberg-Moerman, 2009).

Empirical studies done in Kenya focusing on investors' behaviour have concluded that investors' irrational behaviours have influence on investment choices they make, this could ultimately have effect on financing decision made by agents of corporations (Ahmad *et al.*, 2017). Dolreen (2014) targeting a population of individual investors in the 22 licensed brokerage firms operating in Kenya, considered the effect of anchoring on investors' decision making by individual investors in Kenya. The study established that individual investors' investment decision is affected by anchoring behaviour and that their decision is influenced by experience of their past performance ultimately discrediting the rational assumptions.

1.1.3 Heterogeneity of Investors Behaviour and Corporate External Financing

Behavioural finance challenges the efficient market perspective and helps to understand why investors behave in a particular manner while investing in financial assets. He *et al.* (2007) state that investors have diverse behaviour on firm's value and the future operations of the firm. These behaviours are shaped by the diversity in investors' beliefs towards the firm future returns especially when short selling is constrained. This could influence financing decision making by corporate agents (Albring *et al.*, 2016).

There are four common behavioural biases that can creep into the investment decision-making process that could influence corporate external financing decision making. They include, overconfidence, disposition effect, herding bias, and home or familiarity bias. Unlike investors in traditional finance models, real investors tend to sell winning investments while holding on to their losing investments (Chen *et al.*, 2007). Investors rely on a limited number of heuristic principles which in general are quite useful but sometimes lead to severe and systematic biases (Seppälä, 2009).

Decision makers especially corporate agents are often influenced by multiple psychological biases that distort their decision making and economic outcome (Daniel & Hirshleifer, 2015). The illusion of control (people believe that they can influence the outcome of chance events), the illusion of knowledge (when people have far more data, they believe that they are more knowledgeable than they really are), and self-attribution bias (people tend to attribute their success to their own abilities while attributing their failure to external issues) these drive investors to be overconfident (Trehan & Sinha, 2015).

Overconfidence refers to the habit of overestimating own ability to perform in a given task, it is unwarranted faith in ones' intuitive reasoning, judgements and cognitive abilities. It's a tendency of people to overestimate their abilities of predicting precision of information and knowledge. Overconfidence investors assume that they have accurate information and are smarter. When investors are too certain about their decision it is known as certainty overconfidence (Durand *et al.*, 2013). When investors assign narrow confidence interval to their investment predictions it is known as

prediction overconfidence. Both certainty and prediction overconfidence can lead to investment mistakes that can cause harm to investor's portfolio (Durand *et al.*, 2013).

Overconfident investors are known to trade more frequently and have negative abnormal returns amongst stock market traders especially when they are less experienced yet successful, therefore overconfidence causes excess trading which can be risky to financing decision making (Barber & Odean, 2011). Psychological research has discovered many ways on how overconfidence affects human behaviour in several fields. The effect of overconfidence is strongly present in difficult decisions that include uncertainty, therefore since financing decision making is always done under uncertainty, it is very likely affected by overconfidence bias by the decision maker (Nga & Yien, 2013).

Individual investors consider taxes to clearly affect their trading, and therefore disposition effect tends to increase, rather than decrease tax bill. Markets selling winning investment, generates a tax liability that might be deferred simply by selling a losing, rather than winning investment (Nyamute *et al.*, 2015). When investors are subjected to short-sale constraints, Share prices would reflect the opinion of optimistic investors and sell at a premium over fundamental firm and market values (Bayar, Chemmanur, & Liu, 2010).

The general explanation as to why investors have mixed reactions to security offerings, originates from the information asymmetry between management, stakeholders and market in respect to the value of assets in place and future growth opportunities of the issuing firm (De Franco *et al.*, 2009). Traditional finance models, argues that when a company issues risky securities, investors demand a discount on the security price as compensation for potential overvaluation of the firm's stock. Therefore announcement of debt issues is predicted to have a negative impact on the issuer's share price (Loncarski, Horst, & Veld, 2008). There are two types of potential investors who could invest in the firm's offered external financing options. The first type overestimates the upside of the firm's future cash flows and assigns a high probability to the possibility of high future cash flows. The second type of investors underestimates the downside of the firm's future cash flows and assigns a low probability to the possibility of low cash flows. Consequently these investors value the same security differently therefore they

have different preferences for the firm's external financing options and investment choices (Jiao & Yan, 2013).

According to Xiong and Scheinkman (2004), when traders with diverse behaviour interact with each other in an asset market, some traders are known to have incorrect attitudes which are generated from incorrect prior information or from incorrect information processing rules. Some investors are smarter and have behaviours that are closer to the objective ones (Ray & Chakravart, 2010). Corporations have strived to source for external financing by becoming innovative leading to financial crises the world has been fighting for decades. Financial crisis that peaked in 2008 as a result of homeowners' aspirations and poor corporate external financing decision propelled many into houses they could not afford; this was fuelled by securitization process led by individual ambition and greed. Moreover, these aspirations evoked emotions and cognitive errors, blinding homeowners to risk that led to collapse of many institutions globally due to contagion effect (Shefrin & Statman, 2011).

Consequently the world economy is still roiling in recession, where economy is barely growing and the unemployment rate is frighteningly high (Dyer and Blair Investment Bank, 2016). Behavioural finance offers some answers to these problems rooted in the psychology that move market players in the baffling uncertainty in which they live. This includes their aspirations, cognition, emotions, culture, and perceptions of fairness (Grosse, 2012). Traditional way to justify market rationality is to state that even though some investors are irrational, markets in total are rational as the individual irrationalities are random and thus on average cancel each other out. Error-correcting power of markets derives not from the feedback they provide, but from the disproportionate activity of more rational traders (Lin *et al.*, 2013).

Investors' bias affect performance evaluation in principle agent relation, this prevents the principal from correctly evaluating the performance of the agents especially financing decisions made (Ferson & Lin, 2014). Khisa (2015) investigated behavioural factors influencing investment decisions in Kenya and postulates that stock market investment decisions are influenced by behavioural biases of individual stock market investors. The existence of certain-return bias, loss aversion, regret aversion and random walk framing affects the decisions made by investors at the Nairobi Security Exchange.

The behavioural biases have varied degrees of influence on the decisions of stock market investors in the anticipation of better returns. Certain-return bias has a negative relationship with stock investment decisions. Therefore loss aversion, regret aversion, and random walk framing have a positive correlation with stock investment decisions at the Nairobi Security Exchange (Khisa, 2015). These investors' behaviour could have a significant influence on corporate external financing decision by listed companies in Kenya, this study therefore sought to fill this gap.

1.1.4 Listed Companies at Nairobi Security Exchange

Nairobi Securities exchange (NSE), was constituted in 1954 as a voluntary association of stockbrokers, and has had remarkable development in terms of growth and trading activities. The market capitalization of NSE has seen tremendous improvement to stand above Ksh.2.8 Trillion (over US\$ 28 billion). The exchange has continued to play an important role in economic development, especially concerning its role in financial intermediation in Kenya and generally in Africa (Capital Market Authority, 2017).

Nairobi security exchange currently has 67 listed companies, under two segments, the main investment market and alternative investment market segment. These two segments are divided into 14 sectors consisting of banking, manufacturing and Allied, Insurance, Commercial and Services, Energy and Petroleum, Construction and Allied, Agriculture, Investment, Automobile and Accessories, Telecommunication and Technology, Real Estate Investment Trust, Investment services and Exchange Traded Funds. Traders and investors at NSE trade commonly in bonds and stocks (CMA, 2017). Nairobi Security Exchange is a model emerging market in view of its high returns, vibrancy and a well-developed market structure (Wambui & Muturi, 2014).

Having been listed in the same market NSE has developed into a market leader in Sub-Saharan Africa. NSE is of particular interest to the region with a size of at least sixty seven listed companies, and an established fixed income securities segment. NSE is among the most vibrant African bourse and the most developed capital market in East Africa with sixty seven listed companies (CMA, 2017; Wafula, 2015). A firm must fulfil a number of important considerations before listing, these involves appointment of

transaction advisors or a nominated advisors and corporate governance considerations in addition to other eligibility requirements (NSE, 2010).

1.2 Statement of the Problem

The interplay between investors' behaviour and various financing decisions has been of significant interest in the corporate circles. Behavioural biases and investors preferences have been identified to be creeping into investment decision making process (Kumar & Goyal, 2015). Since the primary corporate financial objective is to maximise shareholder wealth, therefore companies always seek to minimise their weighted average cost of capital (WACC). Recently, there has been steady recognition that managers tend to display irrational characteristics such as optimism and overconfidence when they undertake operating decisions, and their irrationality has had significant negative impacts on investment and financing decisions (Kamoto, 2014).

Maintenance of an optimal external financing ratio is considered as one area where decision makers can influence the company's value and risk. If not well managed the firm could be exposed to increased financial distress and ultimately financial failure (Muradoglu, 2012). In order to maintain optimum levels of debt and equity, decision makers must constantly be in control of external financing influences (Kariuki & Kamau, 2014). However, even after decades of active theoretical and empirical research, influence of investors' behaviour on corporations' external financing decision remains an elusive empirical question in corporate and behavioural finance.

Different companies in Kenya have been experiencing financing and liquidity challenges. The banking sector is among Kenyan sectors facing financing and investment difficulties, commercial banks overreliance on customer deposits to finance their operations led to increased trend of high interest rate spread, leading to high cost of debt. Ultimately this resulted into enactment of a legislation to cap interest rate by Kenyan legislature; this action has led to reduced profitability (Mbua, 2017). Reduced bank rates has a negative effect on bank profitability leading to a decline in financial performance by the banking industry (Baholli, Dika, & Xhabija, 2015).

Momentous efforts to revive ailing corporations in the Kenyan economy have focused mostly on financial restructuring. However studies have shown that managers and

practitioners lack adequate guidance on attaining optimal financing decisions (Wambui & Muturi, 2014). The agency costs of risky debt includes asset substitution problem to the borrowers and under-investment problem (Loncarski *et al.*, 2008). These two issues are enhanced when corporations are not acquainted with the investors' unmet demands and therefore having adverse effects on both the interest rate spread and corporations' investment opportunities (Landsman & Peasnell, 2008).

Behavioural finance and external financing issues have received substantial attention in developed economies. Most of the behavioural finance empirical work however focuses on data derived from firms in developed economies. These economies have many institutional similarities with developing economies however the studies' applicability in developing economies such as Kenya is not clear. Studies done in Kenya have focussed on the role of behavioural finance on investment decision making (Shikuku, 2012).

Little has been done in terms of behavioural financing and financing decision in developing market context such as Kenya as Magara (2012) as cited in (Kariuki & Kamau, 2014) decry the dearth of studies in Kenya that examined the firm's choice of external financing. Nyamute, Lishenga, and Oloko (2015) considered investors' behaviour by looking at the effect of investor behaviour, demographic characteristic and investment style on portfolio performance. They however failed to consider whether these behaviours affect corporate external financing decision. Therefore to the best knowledge of the researcher, there are limited studies addressing the heterogeneity of investors' behaviour and influence on corporate external financing decision by listed companies in Kenya, this study therefore sought to fill the existing gap.

1.3 Study Objectives

This section outlines the objectives that the study sought to address.

1.3.1 General Objective

The main objective of the study was to determine the influence of heterogeneity of investors' behaviour on corporate external financing decisions by listed companies in Kenya.

1.3.2 Specific Objectives

1. To establish the influence of investors' behavioural bias on corporate external financing decision by listed companies in Kenya.
2. To determine the influence of investors' preference on corporate external financing decision by listed companies in Kenya.
3. To evaluate the influence of analyst dispersion on corporate external financing decision by listed companies in Kenya.
4. To ascertain the influence of investors' risk perception on corporate external financing decision by listed companies in Kenya.
5. To assess the influence of investors' corporate size dispersion on corporate external financing decisions by listed companies in Kenya

1.4 Statistical Hypotheses

The study sought to address the following pertinent statistical hypotheses

1. **H₀**: Investors' behavioural bias does not significantly influence the corporate external financing decision by listed companies in Kenya.
2. **H₀**: Investors' preference does not significantly influence corporate external financing decision by listed companies in Kenya.
3. **H₀**: Analyst dispersion does not significantly influence corporate external financing decision by listed companies in Kenya.
4. **H₀**: Investors' risk perception does not significantly influence corporate external financing decision by listed companies in Kenya.
5. **H₀**: Investors' corporate size dispersion does not significantly influence corporate external financing decision by listed companies in Kenya.

1.5 Significance of the Study

There have been a number of studies done in developed markets particularly in America, Europe and Asian markets on investors' behaviour. Although the Kenyan financial economic set up borrows a lot of its design and features from the developed and developing markets, closer scrutiny reveals some differences, making the analysis of the Kenyan market and investors' behaviour particularly interesting. This study is

therefore of significant importance to the following players in Kenyan financial market and the globe. They include Investment trusts, Corporate and Individual Investors, Government of Kenya, Companies, Scholars and learning Institutions.

1.5.1 Investment Trusts and Corporate investors

Investment trusts and corporate investors have become very popular investment channels in Kenya since the year 2004. This study sought to enhance investment knowledge of both corporate investors and investment trusts allowing them to invest wisely while at the same time avoiding adverse selection. The findings of this study provide insight to the current and potential corporate investors as the key players in security markets. These players are able to make informed investment decision without relying on incorrect information or investors herd behaviour. Therefore this study is an eye opener providing essential information on the influence of investors' behaviour on the external financing decisions.

1.5.2 Corporations

Kenyan economy is growing exponentially, the growth of different economic sectors comes with a myriad of challenges, and therefore a number of questions need some answers. Corporations need to first ask themselves if heterogeneity of investor behaviour about the future prospects could affect their security choice when sourcing for external financing. By answering this question by the study enable companies to make optimal external financing choices. The second question that needs answer is, whether increased investor optimism about a firm's future prospects result in it being more likely to issue equity over debt, or a combination of the two.

There is need for corporations to understand, under what circumstance it's optimal to issue debt and or equity. This helps the institutions in their quest for external financing to improve on their liquidity. The final, question that corporations ought to ask themselves is how does the level of outside investor optimism about a firm's future prospects and the dispersion in outsider's behaviour affect the long-term financing decision in terms of issuing equity or debt. Therefore this study answers these questions benefiting corporations and financial markets hence enhancing investments and economic growth in the country.

1.5.3 Individual Investors

The findings of this study provide insights into current and potential investors, enabling them to make viable investment decision without relying on incorrect information or herd behaviour. Individual investors play an important role in the national economic growth, empowering these people by offering them the right investment vehicle will enhance optimism, confidence and transparency in the market. A market that can be able to attract more individual investors will enhances liquidity capacity of the organizations thereby inspiring economic growth. Therefore understanding the significance of the influence of investors' heterogeneous behaviour on corporate external financing decision making enlightens and encourages individual investors to invest wisely.

1.5.4 Government

The government as the policy formulator and enforcer through various constitutional institutions has a moral obligation to understand its citizens' investment needs. This study therefore enhances formulation of policies that positively impact economic growth, consequently reducing the overreliance on short term investment vehicles and on customer deposits to fund long term investment activities by financial institution. When markets are doing well government expects increased income through taxation and consequently growth of GDP. Therefore this study is of much benefit to the Kenyan government.

1.5.5 Scholars and Institutions of Higher Learning

This study contributes to the general body of knowledge by enriching the existing literature in the field of behavioural finance. Researchers and institutions of higher learning will find this study beneficial, especially by encouraging them to consider other factors like governance and behavioural finance and also macroeconomic factors that may affect organization external financing decision making. Therefore the study provides areas that require further investigation. This study henceforth forms the foundation for future researchers to formulate their research problems and hypotheses, thereby enriching the field of behavioural finance. The findings of this study provide a

review of theories and empirical evidence on behavioural finance to the learning institutions and researchers thereby opening up further areas of study.

1.6 Scope of the Study

The study considered all listed companies at the NSE from the 2007 financial year to 2016, and covered these institutions by utilising secondary data obtained from published financial statements. The study however eliminated institutions that had been delisted, suspended and those that had been listed for less than five years mostly companies listed from year 2012. The secondary data was collected from these companies' published financial statement obtained from the corporations' data banks and also from CMA, IRA, CBK and NSE data banks. The target population was sixty seven (67) listed companies at NSE however the study considered firms that had been listed for more than five years.

1.7 Limitations of the study

The results of this study depended mainly on secondary data analysis, therefore the study results are subjected to the limitations of the institutions' financial statements reporting and availability as availed to the general public. This limitation was however mitigated by obtaining the audited financial reports from both the regulator and the company's portal. These statements were compared and cross checked for similarities and differences in terms of entries. Companies always compare financial reports between current financial year and previous financial year this comparison was also used to check for consistence and irregularities in reporting. There is limited studies done in Kenya on influence of heterogeneity of investors' behaviour on corporate external financing decision, therefore the study relied mostly on empirical studies done in developed and developing economies whose macro and micro-economic factors are different and the exposure of investors to opportunities is also different.

To mitigate this limitation studies done in developing economies like Asia were relied on in comparison with the developed market studies. Kenya is considered a developing economy therefore considering empirical studies done in Asian markets was appropriate. Nairobi Security Exchange listing records shows that 14 companies were

listed within the last five years during the study period, therefore availability of their share prices and trading volume was a limitation to the study.

To mitigate missing data problem the study eliminated firms listed for less than five years from the census. Eliminated corporations have minimal effect on the final data collected because of their minimal market share and activities at the bourse. The above limitations were therefore managed effectively and therefore did not have significant effect on the outcome of this study. The study therefore focused on heterogeneity of investor behaviour and its influence on external financing decision by listed companies in Kenya.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews theoretical models and literature advanced in the area of heterogeneity of investors' behaviours, and corporate external financing options available to the firm. The chapter begins by reviewing the key theories underlying external financing and heterogeneity of investor behaviours. Recent empirical studies have been reviewed; a figurative conceptual framework was developed as a conceptual map for the study. This chapter finally expounded on the research gaps relating to the study objectives and then ends with a summary of the chapter.

2.2 Theoretical Review

A theory is a statement which has been proven and supported by evidence, it is meant to explain some phenomenon, and generally it is a systematic explanation of the relationship among phenomena. Theories provide a generalized explanation to an occurrence thereby assisting the researcher in Operationalization of the variables thus enhancing the study analysis (Ngumi, 2013). Theoretical framework guides research in determining which variables to measure, and what statistical relationships to look for in the context of the problems under study (Okioga, 2013). Theories reviewed in this study informed the source of the variables of the study and the interactions between the dependent and independent variables. This study was therefore informed by the following theories:

2.2.1 Myopic Market Theory

Myopic market theory was originally proposed by Theodore Levitt in 1960 as cited in (Sewell, 2010). Proponents of this theory believe that the excessive concern for short term gains is the consequences of capital failure of institution or individual investor. Myopic market theory suggest that maximization of shareholders welfare is not the same as share price maximization because the market system tends to undervalue long term expenditures and overvalue short term investments (Rohit, 2005).

Long term investments may lead to the increase of the shareholders welfare therefore managers are forced to take short term decision in pumping up shares price or risk the company to hostile takeover bid. Myopic nature in corporate structure put manager's private interest at stake and this act always influence stock turnover at the exchange and external financing decision made by corporate management (Figueroa & Skreta, 2011). Considering the managers' perspective, their fitness and managerial efficiency is judged upon short term performance due to myopic nature of investors.

Investors are forced to take projects with high net present value, high internal rate of return and or short term payback period in order to survive in the highly competitive managerial labour market, this ultimately influences the shares volume traded due to investors bias towards the firm (Ahmad *et al.*, 2017). Institutional investors are major traders in the financial markets, however they are evaluated against short term performance. Like company managers institutional investors are forced to overlook long term benefits for short term investment benefits this bias ultimately stock trading volumes, due to corporate managers excessive concern for short term gains this in short run influences the external financing decision made by corporate agents (Shiller, 2003).

Myopic market school of thoughts argues that excessive attention put on short term performance distorts external financing decision and share prices, stock return and trading volumes at the exchange (De Franco *et al.*, 2009). Corporate takeover will not be a natural extension of market efficiency since mispriced share prices fail to reflect company's fundamentals. As a result corporate governance problem arise from the excessive attention put to short term gains that compromises long term wealth maximization.

These behaviours ultimately influence corporate external financing decisions made by the agents of corporations seeking to maximize shareholders wealth (Abor & Bokpin, 2010). Excessive attention put on short term performance is reflected in investors' overconfidence bias leading to distortion on firm values as reflected by changes in earnings per share and stock trading turnover (De Franco *et al.*, 2009). As a result corporate governance problem arise from the excessive attention paid to short term gains that compromises long term wealth maximization hence affecting the Stock turnover.

Investors might base their analysis on short term earnings rather than on intrinsic value of the firm, leading to distorted expectations of the investors the net effect is the fluctuations in the stock trading turnover (Kamoto, 2014). This stock movement is brought about not by the corporation free cash flow but by investors' behavioural biases towards the firm. The later leads to an increase in trading volume of firm's stocks and volatility in share price ultimately affects external financing decisions by corporate agents (Chen *et al.*, 2007). This theory therefore informed the influence of investors' behavioural bias and investors' preference on corporate external financing decision by agents of a corporation.

2.2.2 Herd Behaviour theory

Empirical study on behavioural finance identifies herding as the collective irrationality of investors this was particularly postulated by the Nobel laureates Vernon L. Smith, Amos Tversky, Daniel Kahneman and Robert Shiller (Kumar & Goyal, 2015). Herding refers to the situation wherein rational people start behaving irrationally by imitating the judgements of others while making decisions. There can be numerous reasons for herding behaviour being exhibited among different types of investors.

Individual investors tend towards demonstrating herding behaviour because they follow the decisions of a large group or noise traders. Analysts may herd their past experiences, decisions or imitate others to protect their reputational or compensation concern. Lee *et al.* (2004) as cited in (Kumar & Goyal, 2015) reported that individual investors are more inclined to adopting herding behaviour than are institutional investors.

According to Lin *et al.* (2013), large stock market tends often to begin and end with periods of frenzied buying (bubbles) or selling (crashes), this takes place as a result of investors' overconfidence bias on company stock as reflected in the stock trading volume and share price volatility. Many observers cite these episodes as clear examples of herding behaviour that is irrational and driven by emotion, greed in the bubbles, and fear in the crashes thereby affecting the stock turnover. Companies whose stock is under frenzied buying experiences high share price and ultimately this could influence corporate agents' external financing decision through seasoned equity offering and share splits (Deangelo, Deangelo, & Stulz, 2010). Individual investors due to

overconfidence bias join the crowd in a rush to get in or out of market thereby influencing stock turnover and share price. High share price and increased stock turnover is believed to influence corporate external financing decision through seasoned equity offerings (Ghosh, Petrova, Feng, & Pattanapanchai, 2012).

Psychologists across varied cultures have found that people employ social comparisons to inform their behaviour and decisions even when this contradicts facts or their better judgment. They are influenced by their social environment and they often feel pressured to conform (Jiao & Yan, 2015). When individual make decisions especially when they feel unsure or threatened, they watch what others do and try to simulate the behaviour of individuals within their environment or situation believed to influence the stock turnover and share price of respective stock due to overconfidence bias (Nyamute *et al.*, 2015).

Bikhchandani and Sharma (2001) posit that in order for investors to imitate others, they must be aware of and be influenced by their actions. Intuitively an individual is said to herd if the individual would have made an investment without knowing other investors' decisions, but does not make that investment when the investor finds that others have decided otherwise. Alternatively investor herds when knowledge that others are investing changes the investor's decision from not investing to making the investment (Lin *et al.*, 2013).

Individuals may have intrinsic preference for conformity while making investment decision and most of the time this is influenced by investors overconfidence bias towards the firm fundamentals (Daniel & Hirshleifer, 2015). Sometimes when investors are influenced by others' decision, they may herd on an investment decision that is wrong for all of them (Muradoglu, 2012). Every investor knows only her own estimate of the profitability of the investment they engage in since investors do not know the assessments of others' or which way majority of them are leaning while investing this behaviour influences stock turnover and share price at the exchange, increased activities at the exchange ultimately influences external financing choices made by corporate agents (Chen *et al.*, 2007).

Risk capacity is linked to an individuals' level of income, family background and age. On the other hand, risk tolerance is related to the attitudes and beliefs about money. Furnham in 1996 developed a taxonomy of monetary orientations ranging from conservative types (misers), impulsive (spendthrifts), value seekers (bargainers), speculators (gamblers) and wealth endowed (tycoons) reflecting a spectrum of risk tolerance/aversion of individuals (Mayfield, Perdue, & Wooten, 2008). Therefore investors do not share their information and assessments with each other but watch each other's actions (Papaioannou, 2006).

Lin, Tsai and Lung (2013) classified herding into rational herding and irrational herding; this classification is based on availability of information in the market. When the herding of investors is rational in response to new information, herding moves prices toward the fundamental value of assets, price movement is not likely to reverse. By contrast, irrational herding occurs when investors with insufficient information and inadequate risk evaluation disregard their prior beliefs and blindly follow other investors' actions. Non-information based herding might lead to market inefficiencies, drive asset prices away from fundamental values, and cause asset mispricing (Kumar & Goyal, 2016).

Lin *et al.* (2013) state that intuition for the negative herding result is quite simple when sticking to standard financial models that have informational efficient prices, these prices will at least partially reveal the information contained in people's trading behaviour. Investor with favourable market information would downgrade his expectation, but at the same time prices may fall, just enough to stop him from joining the herd and selling the stock. Informational herding arises in situations where people observe the actions of others, derive information from them and then, seemingly disregarding their own information, and follow the majority action by either buying or selling their stock holdings.

This ultimately affects the trading volume and Share price at the stock exchange (Lin *et al.*, 2013). Applying this idea to financial markets, a few early, perhaps incorrect movements by visible traders induce others to follow, causing discontinuous trade volume jumps in one direction with volume deviating far from the normal asset's trading volume fundamentals (Abdallah, Abdallah, & Saad, 2011). Therefore herd

theory informed investors' behavioural bias, investors' preference and analysts' dispersion, influence on external financing decision.

2.2.3 Prospect Theory

Prospect theory was developed by psychologist Daniel Kahneman and Amos Tversky in 1979 as cited in (Rohit, 2005) illustrated how investors systematically violate the utility theory. Kahneman and Tversky found that most investors are averse to loss, therefore investment losses must be compensated through the presence of investment opportunities giving higher returns to investors, these returns must be at least twice as high as the potential loss (Francis, Lafond, Olsson, & Schipper, 2007). Investors usually make a decision on which outcomes they see economically identical and then establish a reference point most commonly the earnings per share of the stock (Rohit, 2005).

Investment outcomes below the reference point are viewed as losses, those above the reference point are viewed as gains therefore personality traits towards corporate earning is likely to influence external financing decisions by corporate agents (Jagongo & Mutswenje, 2014). Prospect utility theory draws the characteristic of declining marginal utility of gains from the expected utility theory. The expected utility theory posits a declining marginal demand for losses demonstrated by the fact that prospect utility maximizers would risk their investment for a break-even opportunity rather than face a definite loss based on the investment alternative (Dörner, 2005). Therefore investors would prefer a random pay out to the expected utility if it is negative.

Assuming that markets are efficient as per Fama's theory, then all investment returns would have normal distribution and the application of the mean-variance, criterion would still be justified for prospect theory investors, however that is not the case in the current economy (Rohit, 2005). The loss aversion under the prospect theory is essential to optimal portfolio. Barber and Odean (2011), highlighted two common mistakes investors make, these mistakes include excessive trading and the tendency to disproportionately hold on to losing investments while selling winners.

They argue that these systematic biases have their origins in human psychology. The tendency for human beings to be overconfident causes the first bias in investment, and the human desire to avoid regret prompts the second bias in investment, therefore

affecting the share price in any given time (Truong, 2012). The stock earnings fluctuations are therefore associated with an increase in heterogeneity of investor behaviour and this fluctuation could influence external financing choices made by corporate agents. This theory therefore supports investors' behavioural bias, investors' preference and analyst dispersion's influence on corporate external financing decision.

2.2.4 Behavioural Portfolio Theory

Portfolio theory, originally proposed by Harry Markowitz in the 1950s (Duxbury, 2016) was the first formal attempt to quantify the risk of a portfolio and develop a methodology for determining the optimal portfolio while considering the risk associated with the portfolio (Shefrin & Statman, 2010). This theory suggests that only systematic risk should be priced in equity because, at equilibrium investors are expected to hold a portfolio of stocks to diversify away and manage investors risk perception measured by idiosyncratic volatility.

Research has however, shown that investors who do not hold a diversified portfolio are likely to demand a premium for being under-diversified. Merton in his paper in 1987 posits that if an investor is not aware that diversified assets exist, then the investor will require compensation for having incomplete information (He *et al.* 2007). Under-diversification and lack of knowledge of diversified assets may result in idiosyncratic volatility being priced in the market. According to Brandt *et al.* (2009) there are many reasons to expect aggregate volatility to be important when pricing assets or investments, both for individual arbitrageurs who hedge individual stock risk as well as in macro-modelling, where an increase in industry-level volatility has implications on productivity. Given the robustness of the evidence that investors are under-diversified, neither investors nor researchers can ignore the value-relevance of idiosyncratic volatility.

Rising trend in the information content of earnings announcements over time is stronger for firms with high idiosyncratic volatility, firms with high trading volume and firms with high analyst coverage. Therefore idiosyncratic volatility is a measure of risk a firms' stock faces due to heterogeneity of investors risk perception. Different scholars have determined that a firm facing a higher level of heterogeneity in investor risk

perception, experiences greater idiosyncratic volatility (Thiagarajan & Li, 2010). In behavioural portfolio theory, investors construct their portfolios in layers and expectations of returns and attitudes toward risk vary between the layers. The resulting portfolio may appear well-diversified, but diversification is incidental to and not necessarily an objective of the portfolio construction process by the investor (Shiller, 2003).

Portfolio construction in behavioural portfolio theory is primarily a function of five factors that includes the allocation to different layers depending on investor goals and the importance assigned to each goal (Shefrin & Statman, 2010). The allocation of funds within a layer to specific assets depending on the goal set for the layer and the risk perception of the investor. The number of assets chosen for a layer depends on the shape of the investor's utility function. Risk-averse individuals have concave utility functions, meaning that utility increases at a decreasing rate with increases in wealth (Statman & Stupavsky, 2013).

Concentrated positions in some securities may occur if investors believe they have an informational advantage with respect to the securities. Investors reluctant to realize losses may hold higher amounts of cash so that they do not have to meet liquidity needs by selling assets that may be in a loss position and this is influenced by the investors' risk perception. Embedded within behavioural portfolio theory (BPT) is an efficient frontier. BPT efficient frontier when compared with the mean-variance efficient frontier in general, the two frontiers do not coincide. Portfolios on the BPT efficient frontier are generally not on the mean-variance efficient frontier and this influences external financing decision by agents of corporations (Shiller, 2003).

Portfolio Theory investors (Mean-variance investors) choose portfolios by considering mean and variance. In contrast, Behavioural Portfolio Theory (BPT) investors choose portfolios by considering expected wealth, desire for security, potential aspiration levels, and probabilities of achieving aspiration levels (Shefrin & Statman, 2010). The optimal portfolios of BPT investors are different from those of CAPM investors. The optimal portfolios of CAPM investors combine the market portfolio and the risk-free security. In contrast, the optimal portfolios of BPT investors resembles combinations of bonds and lottery tickets (Shefrin & Statman, 2011).

According to Elliott-shircore (2010), BPT is presented in two versions, a single mental account BPT version (BPT-SA) and a multiple mental account version (BPT-MA). BPT-SA investors, like mean-variance investors integrate their portfolios into a single mental account, they do so by considering covariance. In contrast, BPT-MA investors segregate their investment portfolios into mental accounts and overlook covariance among mental accounts.

Neumann and Morgenstern (1944) as cited in (Ekeland & Taflin, 2005) developed expected utility theory on the foundation of Bernoulli's utility theory, a theory consistent with uniform attitude toward risk (Shefrin & Statman, 2010). Therefore the investors' risk perception measured by idiosyncratic risk, as proponents of behavioural portfolio theory stipulates, affects external financing decision made by corporate agents. A firm facing a higher level of investor heterogeneous behaviour towards the firm experiences greater investors risk perception (Thiagarajan & Li, 2010). Therefore this theory informed investors risk perception and analysts' dispersion as variables of this study.

2.2.5 Trade-off Theory

Trade-off theory was suggested by Myers in 1984 as cited in (Shahar *et al.*, 2015) emphasizing a balance between tax saving arising from debt financing, decrease in agent cost and bankruptcy and financial distress costs. This is the oldest theory connected to the theory by Miller and Modigliani on capital structure that emphasize on optimal capital structure, this theory is also called tax based theory. The theory assumes each source of external finance has its own cost and return and is associated with the firm's earning capacity, business operations and insolvency risks enhanced by agent cost, bankruptcy and financial distress costs (Ezeoha, 2009). Firms with more tax advantage will issue more debt to finance their business operation. The cost of financial distress and benefit from tax shield are considered to balance off (Chen, Dai, & Wan, 2013).

Firms choose optimum capital structure that balances the benefits and disadvantages of both debt and equity. This theory predicts that small and weak firms will rely heavily on banks debt; this could be due to investor dispersion and divergence of opinion about the firm. Profitable big and financially stable firms will rely on internally generated funds

for investment but still consider external financing. Therefore investors corporate size dispersion will influence external financing decision taken by the agents of the firm (Ezeoha, 2009). Small firms tend to generate more divergence of opinion and more uncertainty than large firms because small firms have less information available to the public. Trade-off theory asserts that a company should not borrow up to a point where the costs of debt become too expensive for the firm to bear. The attractiveness of debt decreases with the amount of money paid out as interest to financiers (Almeida & Campello, 2010).

A firm experiences financial distress when it is unable to meet its financial obligation and therefore declared insolvent prompting proceeding to recover the debt instituted. The process of recovery can result into firm collapse. Therefore the investors corporate size dispersion influences external financing decision (Chen *et al.*, 2013). Trade-off theory asserts that debt is a cheaper source of financing because of tax deductibility but becomes more expensive through increased financial leverage. Too much debt hurts earnings by creating high interest expense. This may lead to creditors becoming nervous about potential default risks (Bancel & Mittoo, 2004). The later increases the financial risk of the firm that must service debt regularly unlike equity, consequently the optimal division between debt and equity financing for a firm is mostly used to balance the lower average cost of capital with the increased financial risk brought about by debt financing (Wambui & Muturi, 2014).

Firms determine their optimal capital structures by equating the marginal tax benefit of debt and the marginal cost of bankruptcy (Damodaran, 2010). Firm chooses how much debt and equity to use in financing its operations by balancing the cost and benefits associated with each source of financing. Firms chose an optimum capital structure that balances the benefits and disadvantages of both debt and equity. Consequently, within the premise of the trade-off theory it's argued that the optimal division between debt and equity financing is geared towards balancing the lower average cost of capital with the increased financial risk brought caused by debt financing options and this is highly influenced by the investors corporate size dispersion (Yamaguchi *et al.*, 2016). This theory informed corporate size dispersion and external financing decision as variables of this study.

2.2.6 Pecking Order Theory

Myers and Majluf 1984 as cited in (Shahar *et al.*, 2015) proposed a pecking order theory of corporate financing, they considered the conflict between insiders and outsiders due to information asymmetry. Managers know more about the value of the firm than potential investors, they act to maximize the value of existing shareholders. The main factor determining the level of debt ratios are supply and demand factors, this does not take consideration on optimum corporate financing structure (Dong, Loncarski, Horst, & Veld, 2011).

However, decisions about the sources of financing depend on the preference order, internal finance like reserves and retain earnings, debt and finally equity. Businesses adhere to a hierarchy of financing sources by which internal financing is preferred to external financing. In the situation where not enough retained earnings are available in the firm, debt will be issued by taking on more loans, while equity is issued if more funds are needed to fund corporate functions (Bayar *et al.*, 2010).

Companies maximize their value by choosing to finance new investments with cheapest available sources however investors heterogeneous behaviour influences the choice by corporate agents (Bancel & Mittoo, 2004). According to the Pecking order theory businesses adhere to a hierarchy of financing sources by which internal financing is preferred to external financing, however this is also influenced by heterogeneity of investors behaviour towards the firm operations (Jahanzeb, Saif, Bajuri, Karami, & Ahmadimousaabad, 2013).

This theory also posits that debt ratios are inversely related to the profitability of the firm. Scholars and practitioners have argued that short-term debt is less sensitive to mispricing than long-term debt hence short-term debt should be exhausted before the firm issues long-term debt (Hongyu & Meiyue, 2012). Rational potential investors discount the value of any security issued, as a result when undertaking valuable investment projects, managers will prefer to use internal funds and if a security must be issued the firm will choose the safest claim.

Secured debt may be safer than unsecured debt because of less information asymmetry regarding the value of the collateral securing the debt than there is regarding the value

of the firm. If this is the case, firms that face severe information asymmetry problems are more likely to issue secured debt, this is mostly influenced by investors heterogeneous behaviour (Bancel & Mittoo, 2004). Debt has the prior claim over equity and debt issuers are less exposed to information asymmetry therefore investors firm size dispersion, perception and attitude toward risk influences the decision made by corporate agents. Therefore, issue of the debt affects the price as compared to equity issue.

Holding other factors constant due to asymmetric information, managers issue debt when they are positive about their firms 'future prospect and issue equity when not sure about the firms' prospects (De Franco *et al.*, 2009). Adverse selection and moral hazard are the two common types of asymmetric information problems in financial markets. Firms may decide to use asset-backed securities as a means of external financing, where the debt cash flows could be reengineered into a risk less security that is marketed to outsiders and a risky security that is retained internally. Riddiough (2011) posits that adverse selection causes risk to be internalized through retention of the risky of a junior security. Trade-off theory makes an ambiguous prediction on the effect of regulation on leverage. Under a pure pecking order perception, the industry should only matter to the extent that it serves as a proxy for the firm's financing deficit, making it an indirect link, while under the market timing theory, the industry should matter only if valuations are correlated across firms in an industry (Hongyu & Meiyue, 2012).

According to the pecking order theory, the issuance of information-sensitive securities costs more when information asymmetry exists between firms and investors. Pecking order theory therefore posits that debt ratios are inversely related to the profitability of the firm. Scholars and practitioners have argued that short-term debt is less sensitive to mispricing than long-term debt hence short-term debt should be exhausted before the firm issues long-term debt (Albring *et al.*, 2016). Adverse selection and moral hazard are the two common types of asymmetric information problems in financial markets. DeMarzo and Duffie (1999) as cited in (Lin *et al.*, 2013) developed a liquidity-based model of security design assuming that the security issuer or underwriter has superior information about the distribution of the cash flows from the underlying assets. Therefore this theory informed the dependent variable external financing decisions by listed companies in Kenya.

2.2.7 Market Timing Theory

Market timing theory pioneered by Baker and Wurgler (2002) as cited in (Jahanzeb *et al.* 2013) explains firms' incentive to issue common equity by assuming market inefficiency. Market Timing theory of capital structure assumes that firms time their equity issues whereby they will issue new stock when the Share price is perceived to be overvalued (high price), and repurchase their shares when there is undervaluation (low price), volatility in share price is linked to heterogeneity of investors behaviour (Ma & Rath, 2016). Market timing theory has behavioural finance influences and is based on the assumption that the company selects the financing that is regarded most cost efficient at the point in time capital is needed. When the market-to-book value is high the management is inclined to issue new stocks. When the market-to-book value is low repurchasing of stocks is regarded more favourable (Jahanzeb *et al.*, 2013).

The convergent propositions underlying market timing hinges on four explanations stating that mispricing of corporate stocks as a result of heterogeneity of investors' behaviour forms the basis of market timing. Consistent firm timing of issues implies Share prices do not equate the fundamental value. Equity issues will be made at high valuation and stock repurchases or debt offerings represent low valuation. Since little information is known about a company prior to listing on an exchange, the degree of overvaluation will be higher for IPOs than for SEOs (Ghosh *et al.*, 2012). As a consequence of market timing Share prices react when security issues are made, this is as a result of investors' heterogeneous behaviour. Investor optimism is high at low asymmetric information which in turn motivates equity issues.

Equity issues are timed to meet periods of low information problems. Survey evidence underscores managers' persistent attempts to time the market (Manson & Tonell, 2001). Corporations' capital structure is an accumulated result of earlier attempts to utilize arbitrage possibilities at the market. If assumptions are made that the company issues equity in perfect correlation with good news presented, there would be no information asymmetry influence on corporate external financing. However empirical studies have indicated the existence of irrational behaviour giving arbitrary potential for management (Manson & Tonell, 2001).

Recent studies on corporate financing contend that capital structure affects firm value and render the theoretical result of capital structure relevance redundant. Impliedly, it is necessary that managers take financing decisions with the view to improving the overall shareholder value (Colombage, 2007). Therefore, the degree of mispricing enables firms to issue securities that enhance corporate value. Not only does mispricing of corporate stocks encourage equity offering but also other evidences suggest that mispricing is the result of available growth opportunities to a firm influenced by heterogeneous investors' behaviour. Firms with substantial investment options have the edge to source financing from external capital market (Bayar *et al.*, 2010).

In the spirit of market timing, firms issue equity at high valuation and repurchase equity/issue debt at low valuation. With increasing levels of equity the capital mix tilts more towards low leverage and corresponding leverage increasing transactions (repurchase/debt issue) result in high leverage. Conclusively, firms that time the market in their issues have low leverage for equity issues and improve their leverage levels at low valuations (Jahanzeb *et al.*, 2013). Changes in valuation should trigger specific financing decisions in line with market timing proposition. If analysts are optimistic about the earnings of the company, there is the tendency for the market value to deviate markedly from the fundamental value. This encourages opportunistic managers to issue equity to profit from the temporary price divergence.

Companies do not only make equity financing at high valuation and repurchase at low valuation but also capitalise on analyst favourable opinion about the company (Baker, Stein, & Cova, 2004). Financial preferences of the firms indicate the results of precedent modifications of their Share prices plus the aspiration to time the market. Certainly, managers seize the benefit of the circumstances to issue shares to alleviate the pressure of debt constrictions and in that way amplify the opportunity of its entrenchment, throughout the phase of market expansion and affluence (Dörner, 2005).

When the environment is unpromising financial market that matches a stringent control implemented by the mass of shareholders, officers are limited towards requirements as well as restrictions forced by means of the market, in search of issuing less risky debt. Business executives seem to vigorously employ their financing decisions with market timing (Dong *et al.*, 2011). Therefore under the premise of market timing theory

heterogeneity of investors' behaviour, influence financing decisions made by agents of a corporation. This theory informed the investors' behavioural bias, investors' preference analysts' dispersion and equity financing decision by listed companies in Kenya.

2.3 Conceptual Framework

The conceptual framework stems from the theoretical framework and usually concentrates on one section of the theoretical framework which becomes the basis of the study by Kumar (2005) as cited in (Pauluzzo & Geretto, 2017). Five proxies were used to measure the heterogeneity of investor behaviour as the independent variable. An increase in heterogeneity of investor behaviour is associated with investors behavioural bias affecting trading turnover, investor preference leading to volatility of share price, analysts dispersion towards corporate earnings per share and investors risk perception measured by idiosyncratic volatility (Xiong & Scheinkman, 2004; Friesen, Zhang, & Zorn, 2004).

Since investors overconfidence bias induces trading, stocks with more divergent behaviour among investors tend to have higher trading volume and increased share price fluctuations (Ray & Chakravart, 2010). Studies have shown that a firm facing a higher level of investors risk perception experiences greater idiosyncratic volatility (Brandt, Graham, Brav, & Kumar, 2009). It is also evident that small firms tend to generate more divergence of opinion among analysts and more uncertainty than large firms because small firms have less information available for the public. Therefore firm size dispersion has been used by scholars to proxy for both behavioural differences and uncertainty among investors both corporate and individual investors (Ezeoha, 2009).

This study controlled for firm leverage because employing debt allows the owner to control greater volume of assets than they could if they invested their own money in the firm (Kirui *et al.*, 2014). Financial risk occurs due to the higher proportion of financial obligations in the firms cost structure (Chemmanur & Simonyan, 2010). Firm leverage will be measured through determination of long-term debt equity ratio (LTDEBT) as the ratio of the amount of debt to the book value of total assets (Andani & Al-hassan, 2007). External financing decision was measured by common equity, straight debt and covered bond.

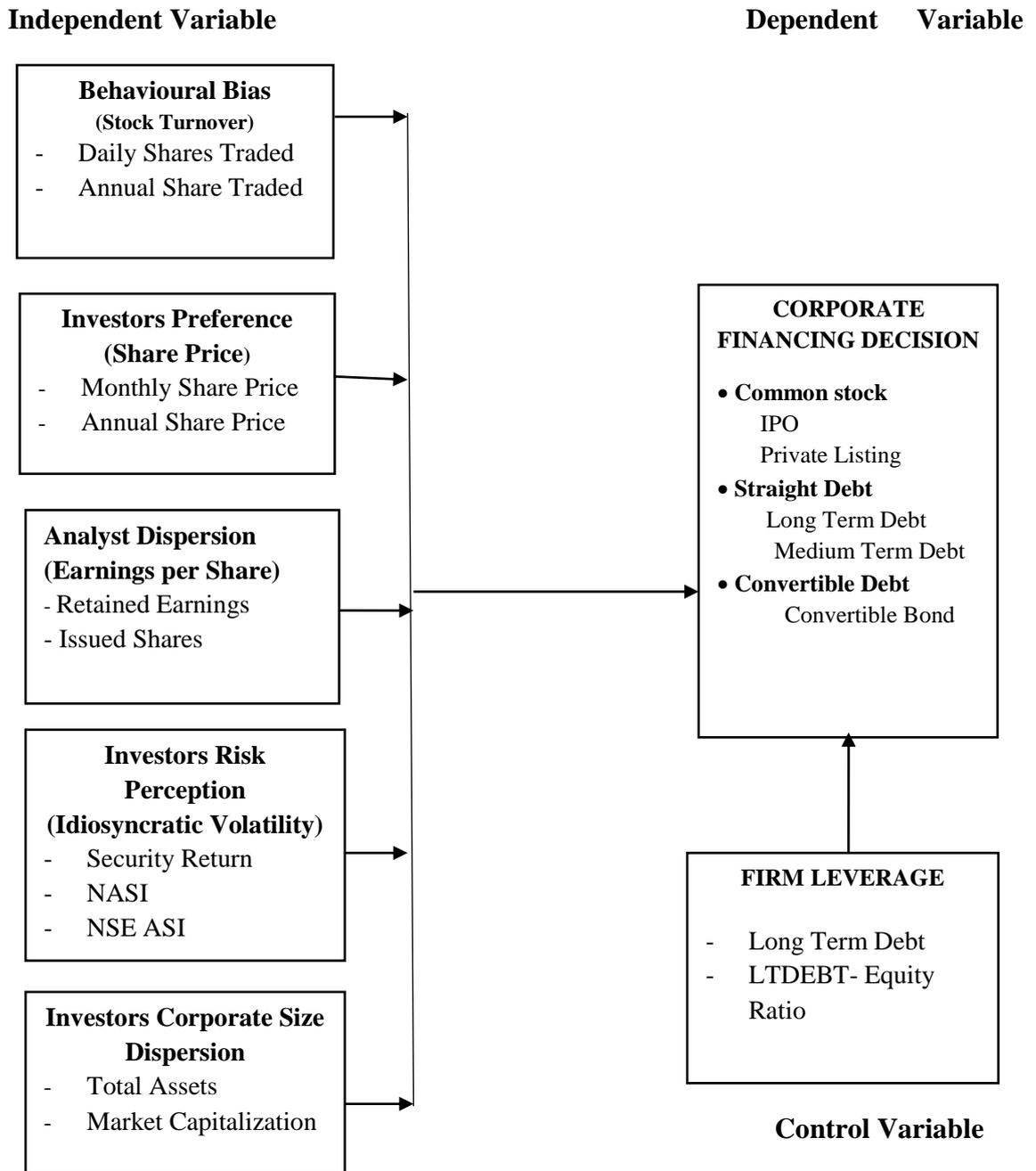


Figure 2.1: Conceptual Framework

Operationalization of the variables

Operationalization of the variables is important as it helps to measure the variables quantitatively therefore allowing the hypotheses to be tested. According to Muthuva, (2016) research constructs must be operationalized to allow for the relationships among them to be tested. The relationship among variables of this study is as shown in table 2.1. Research variables included measure of heterogeneity of investors' behaviour that included investors' behavioural bias, investors' preference, analysts' dispersion, investors' risk preference and investors' corporate size dispersion.

Table 2.1: Genesis of the Study Variables

Variable	Type	Measurement	Source	Supporting Theory
Independent				
<i>Heterogeneity of Investors Behaviour</i>				
Investors Behavioural Bias (Stock Turnover) (Z ₁)	Continuous	-Daily Stock Trade -Annual Stock trade volume	(Lin <i>et al.</i> , 2013) (Lin <i>et al.</i> , 2013)	Herd, Myopic and Behavioural Behavioural, Prospect
Investors Preference (Share Price) (Z ₂)	Continuous	-Daily Market Price per Share -Annual Market Price per Share	(Jiao & Yan, 2015), (Yamaguchi <i>et al.</i> , 2016) (Jiao & Yan, 2015)	Herd, Prospect, Myopic Behavioural
Analyst Dispersion (Earnings per Share) (Z ₃)	Continuous	-Retained Earnings after tax -Issued Shares EPS (Earnings After Tax divided by Number of issued shares)	(Bancel & Mittoo, 2004) (Bancel & Mittoo, 2004) (Bancel & Mittoo, 2004)	Herd, Prospect Myopic, Prospect and Behavioural
Investors Risk Perception (Idiosyncratic Volatility) (Z ₄)	Continuous	Security Return Market Return Idiosyncratic volatility	(Brandt <i>et al.</i> , 2009) (Thiagarajan & Li, 2010) (Brandt <i>et al.</i> , 2009)	Behavioural Portfolio Behavioural Portfolio Behavioural Portfolio
Corporate Size Dispersion (Firm size) (Z ₅)	Continuous	-Total Assets -Market capitalization	(Ezeoha, 2009) (De Franco <i>et al.</i> , 2009)	Trade off Market Timing
<i>Dependent Variable</i>				
<i>Corporate External Financing</i>				
Common Equity (IPO, SEO)	continuous	Annual Offerings	(Lin <i>et al.</i> , 2013)	Market Timing Theory
Straight Bond (LTDebt)	continuous	Annual Offering	(Loncarski <i>et al.</i> , 2008)	Trade off Theory
Convertible Bond (Convert. Debt)	continuous	Annual Offering	(Jiao & Yan, 2015)	Pecking Order Theory
<i>Control Variable</i>				
LTDebt/Equity Ratio	Continuous	Long term Debt and Total Equity LTDebt:Equity	(Kim & Zhang, 2014) (Kim & Zhang, 2014)	Market Timing Theory Pecking Order

2.3.1 Investors' Behavioural Bias and Corporate External Financing Decision

Behavioural finance studies the psychological aspect of financial decision making and explains the irrationality of investors in investment decision-making. Usually, the investor's behaviour deviates from making rational or logical decisions and leans towards being influenced by various behavioural biases. These biases influence the investor's rationality in investment decision-making (Kumar & Goyal, 2016).

Kahneman and Tversky (1979) as cited in (Kumar & Goyal, 2015) developed prospect theory and explained that the investor's decision-making is based on potential gains and losses rather than on final outcomes. This phenomenon occurs because of the cognitive biases that affect the judgement of these gains and losses. Trading volume reflects individual investor's behavioural bias towards firm financial announcements and performance.

Growing stocks have low earnings-to-price ratios and tend to induce overconfidence bias about their dividend growth rates. This leads to divergent behaviour about the value of and growth of the stocks and consequently this is reflected in the trading volumes at the bourse (Livdan, Sapriza, & Zhang, 2015). Irrational investors who are introspective in their irrationality, only examining their performance and deficiencies, however they do not have systematic effect on stock returns when combined with rational investors. Social implication is that mass psychology impacts financial asset prices (Feldman & Lepori, 2016)

Bancel and Mittoo (2004) postulate that stocks with lower earnings-to-price ratios have more dispersion in analysts' earnings forecasts this is consistent with the idea that growth stocks have greater overconfidence bias than income stocks. The greater the content of earnings announcement, the more the average investors' overconfidence bias is likely to be revised, leading to higher stock turnover surrounding the earnings announcement period. Likewise, the greater the earnings announcement content, the more likely investors interpret the content of earnings announcements differently, leading to an increase in trading activities as reflected by the stock turnover of different stocks in the market (Truong, 2012).

2.3.2 Investors' Preference and Corporate External Financing Decision

Share price changes at the exchange reflect the average change in investors' behaviour about the firm future anticipated performance and earnings announcements made by the firm agents. Therefore Share price measures the content of earning announcements and ultimately Share price volatility measures the investors behaviour towards the earning announcements and investors preference (Bayar *et al.*, 2010). Growing stocks have low earnings-to-price ratios and tend to induce divergent behaviour about their dividend growth rates. This leads to divergent behaviour about the value of and growth of the stocks thereby affecting Share price at the exchange (Livdan, Sapriza, & Zhang, 2015).

Feldman and Lepori (2016) studied whether psychology affects asset prices using agent-based modelling. They set up three simulation regimes where the first regime contained fundamental investors who invest based on the mean-variance framework. The second regime included purely irrational investors who invest based on behavioural biases. The third regime combines the two types of investors. They tested whether the return properties from regime 3 converge to that of regime 1 or 2. Their findings suggest that investors' irrationality affects corporate return properties in different ways (Feldman & Lepori, 2016).

Varki, Sabherwal, Bitta, Moore and Moore (2006) sought to show that marketing and psychology literature can shed light on why investors' exhibit preferences for certain price ends. The perspective adopted by their research was that the stock market is a marketplace in which investors, as consumers, buy and sell financial products such as stocks. The paper analysed trading data from the stock exchanges to empirically test propositions about investor behaviour vis-à-vis certain price ends of interest derived from the marketing and psychology literature. Findings of their study indicate that investors, as consumers, favour price-ends of 0 and 5 more than price-ends of 9, in that they trade more frequently and more aggressively at these price ends. Further, even price ends of 0 are favoured more than odd price ends of 5. The results of the study shed light on how the cognitive bias of the consumer thwarts the otherwise efficient functioning of the financial market (Varki *et al.*, 2006).

Their paper used market-level data to gain insights into the cognitive process of the individual investor, in addition to teasing out specific biases that have not been identified earlier in the literature. It extends the study of consumer behaviour to non-traditional, but consequential, market places such as the stock market (Varki *et al.*, 2006). Investor behaviour tends to eliminate any profit opportunity associated with Share price patterns. The security prices reflect the past information about the price movements in the weak form of efficiency.

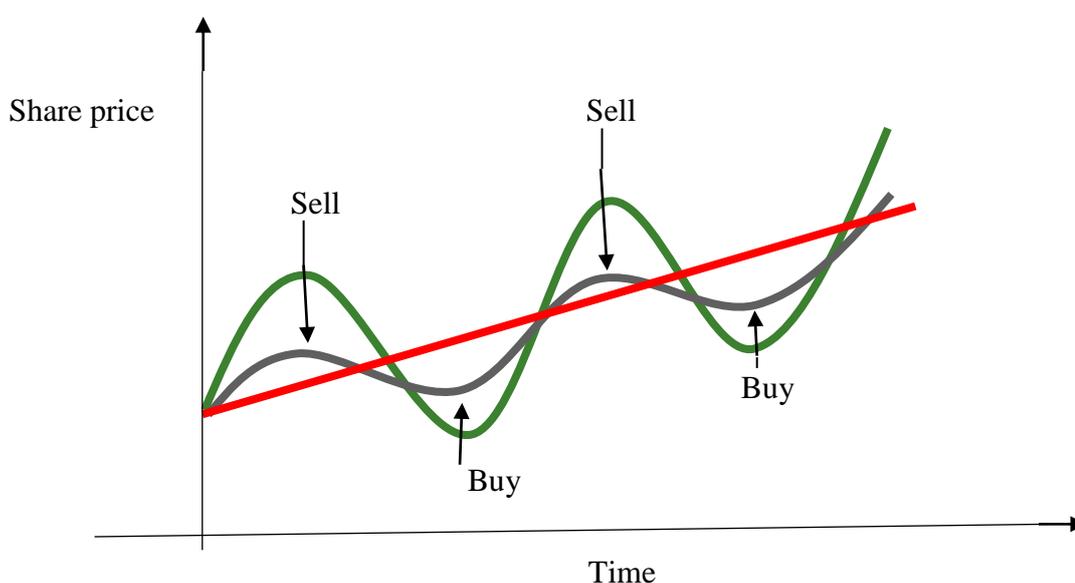


Figure 2.2: Technical Analysis of investors' behaviour due to Share price variation
(Jagongo & Mutswenje, 2014)

2.3.3 Analysts' Dispersion and Corporate External Financing Decision

The dispersion in financial analysts' earnings forecasts, is a widely used proxy for dispersion of opinion (Ebrahimi, Dastgir, & Latifi, 2016). Goetzmann and Massa (2003) as cited in (Friesen, Zhang, & Zorn, 2004) find dispersion of opinion among investors correlates with dispersion in financial analysts' earnings forecasts. Barron *et al.* (1998) as cited in (Xiong & Scheinkman, 2004) posit that dispersion in analysts' earnings forecasts captures both the uncertainty in analysts' forecasts and the diversity in analysts' information.

Qu *et al.* (2004) as cited in (Gaarfinkel, 2009) state that analyst dispersion embodies a measure of information risk. Analyst dispersion strongly influences investor personality

traits, this plays a vital role in determining behaviour of investor based on earnings per share. Psychological factors related to individuals' personality seem to play an important role also with regard to people's attitude towards portfolio monitoring. Gherzi *et al.* (2014) as cited in (Buccioli & Zarri, 2015) find that investors behave like hyper-vigilant individuals as they increase their portfolio monitoring following both positive and daily negative market returns. Neuroticism is shown to moderate the pattern of portfolio monitoring in the market.

Based on data from the British household panel survey, Brown and Taylor (2014) as cited in (Buccioli & Zarri, 2015) investigated the effect of personality traits on people's decision making process and concluded that self-confidence (self-mastery) trait significantly associated with people's degree of risk-taking and openness to new experiences trait is also affect people's decision making process. According to Truong (2012) both the size and magnitude of earnings per share surprises are associated with abnormal Share price changes, indicating that stock earnings announcements relays information that is valuable to investors.

Williams and Tang (2009) argue that in equilibrium, expected abnormal returns should not be zero, otherwise there would be no incentive to gather and process costly information. Growth stocks have low earnings-to-price ratios and tend to induce divergent behaviour about their dividend growth rates, this lead to divergent behaviour about the value of growth stocks. Baik and Park (2003) as cited in (Jagongo & Mutswenje, 2014) conjecture that stocks with lower earnings per share have more dispersion in analysts' earnings forecasts and consequently affecting investors' likelihood to buy such stocks (Chen, 2016). This is consistent with the idea that growth stocks have greater behavioural heterogeneity than income stocks. Investor behaviour tends to eliminate any profit opportunity associated with Share price patterns.

Security prices reflect the past information about the price movements in the weak form of efficient market. According to Goetzmann and Massa (2003) as cited in (Jarrett, 2010) dispersion of opinion among investors correlates with the dispersion in financial analysts' stock earnings forecasts. Dispersion in analysts' stock earnings forecasts captures both the uncertainty in analysts' forecasts and the heterogeneity in analysts' information. Stocks with higher dispersion in analysts' earnings forecasts, earn lower

future returns than otherwise similar stocks (Bancel & Mittoo, 2004). Dispersion of investors and analysts opinion is positively related to contemporaneous stock earnings and negatively related to future stock earnings supporting Miller's 1977 overvaluation theory (Friesen *et al.*, 2004).

Based on the standard deviation of financial analysts' forecasts on a firm's one-year-ahead earnings, a higher level of stock earnings dispersion indicates a higher level of heterogeneous investor attitudes towards the stock (Diether, Malloy, & Scherbina 2002) as cited in (Hoffmann & Post, 2015). Analyst dispersion therefore is a proxy for heterogeneity of opinion about stocks among investors therefore a measure of investors heterogeneous behaviour (Semykina, 2012).

2.3.4 Investors' Risk Perception and Corporate External Financing Decision

Campbell *et al.* (2001) as cited in (Thiagarajan & Li, (2010) analyzing data from 1926 to 1997, documented a deterministic time trend in aggregate idiosyncratic volatility (IVol) and noted a dramatic increase in the idiosyncratic volatility of stock as a result of investors perception towards risk. They also noted that there are periods when IVol is quite high, even though market volatility is low. Potential explanations have been offered for the increase in aggregate idiosyncratic risk, including an inter-temporal increase in the variance of cash flows; trends in executive compensation, leverage, and financial innovation. Appropriately the financial economics literature refers to observed phenomenon in idiosyncratic volatility as the "IVol puzzle" (Thiagarajan & Li, 2010).

Recent research on this variable has resulted in many different explanations for the increase in idiosyncratic risk as a result of investors risk perception. These include firm fundamentals becoming more volatile, more opaque and riskier and product markets becoming more competitive therefore investors behaviour towards the firm shifting (Thiagarajan & Li, 2010). According to Truong (2012), larger firms often have a larger amount of pre-disclosed information, thereby reducing the surprise component of financial disclosures. It's evident that idiosyncratic volatility is positively related to the information content of earnings announcements. Therefore, firms with high idiosyncratic volatility in the normal period also exhibit a tendency of high idiosyncratic volatility in the earnings announcement period (Kim & Zhang, 2014).

According to Friedman (1953) as cited in (Shiller, 2003) irrational traders using wrong attitudes cannot survive in a competitive market, since they will eventually lose their wealth to rational traders in the long run due to idiosyncratic volatility existence in the market. Irrational traders may survive in the long-run since they may hold a portfolio with excessive risk but also higher expected return and therefore their wealth can eventually outgrow that of rational traders (Tchuindjo, 2014). Therefore idiosyncratic volatility is the best measure of investors' behaviour and perception towards risk (Thiagarajan & Li, 2010).

Isnurhadi and Jie (2017) looked at risk perception and psychological behaviour of investors in emerging market focusing on Indonesian Stock Exchange. The sample consists of 100 individual investors in Palembang, South Sumatera Indonesia. The data were collected during March-May 2016 using questionnaire. Research findings show that perception of risk and psychology significantly affects confidence. Furthermore, confidence has a significantly positive impact on performance. The decision to purchase and sell common stock is affected the ability of the investor to manage the risk as a response to risk perception.

This study proves that the understanding of risk perception is able to control the level of confidence in investing. Furthermore, investor's psychology about the nature of individual investors is reflected by the cognitive, affective, and cognitive characteristics and is able to influence the level of confidences for stock investments. Both of these factors affect the decision of buying and selling stock which is reflected in dividend and capital gain as the total return (Isnurhadi & Jie, 2017).

2.3.5 Investors' Corporate Size Dispersion and Corporate External Financing Decision

Firm size essentially constitutes an important consideration for corporate financing. There are differences in investors' opinion concerning the firm size; one possible reason for the divergences could be the adoption of varying definitions of firm size in the studies reported herein. According to Pandey (2004) as cited in (Ezeoha, 2009) logarithm of total assets is used as a measure of corporate size, while accepting total assets as good measure of firm size. Huang and Song (2002) as cited in (Ezeoha, 2009)

did not completely agree on the use of logarithm of total assets, they instead choose to make use of the absolute values of total assets or the logarithm of sales as better measures of size, because according to them the two are highly correlated with a coefficient of 0.79. Small firms tend to generate more divergence of opinion and more uncertainty than large firms because small firms have less information available for the public.

Therefore investors' firm size dispersion is a proxy for both investors' behaviour differences and uncertainty (Audretsch & Elston, 2000). Ezeoha (2009) posits that firm size is considered a vital element that can influence the financial architecture of the firm. This is because it's linked to the leverage ratios of the firm and the capital structure of the firm. Additionally, large firms tend to be more diversified and thereby less prone to financial distress compared to small firms therefore investors behaviour towards a firm is highly influenced by the firm size.

Large firms have more steady cash flows and may be able to exploit the economies of scale in issuing securities (Kariuki & Kamau, 2014). Larger firms have an advantage over smaller firms in accessing credit markets and can borrow under better conditions. Firm size is a pointer of borrowing capacity of a firm, both long term and short term creditors consider the firm size as a propensity to credit worthiness. Therefore larger firms have higher borrowing capacity and lower cost of borrowing with better access to capital markets (Chandra, Sanningammanavara, & Nandini, 2017).

The size of a firm plays an important role in determining the kind of relationship the firm enjoys within and outside its operating environment (Ezeoha, 2009). Emerging issues suggest that the impact of size on financial leverage may actually depend on the level of financial markets development in a particular country. According to Li *et al.* (2007), large economies benefit firms of different sizes, especially small firms, in assessing long-term loans, whereas fast-growing economies only increase the access of large and medium firms to long-term debt.

2.3.6 Institutional Leverage and Corporate External Financing Decision

Researchers have presented evidence of negative relationship between leverage and firm size (Ezeoha, 2009). Consistent with this assertion Audretsch and Elston (2000)

observes that small firms tend to rely greatly on bank credit for their financing needs owing to their restricted access to the equity capital market. As a result, they become more levered than larger firms. Moreover some researchers observe no systematic relationship between firm size and total leverage (Ozkan, 2001). Liquidity is the ability of a company to meet its short term obligations, it is the ability of the company to convert its assets into cash in a short term (Wambui & Muturi, 2014). A company that cannot pay its creditors on time and continue not to honour its obligations to the suppliers of credit, services, and goods can be declared a bankrupt company. Inability to meet the short term liabilities may affect the company's operations and in many cases it may affect the company reputation too (Agudelo, 2010).

Institutional investors still regard liquidity as one of the major obstacles to investing in emerging markets, along with poor disclosure standards and weak regulatory regimes thereby affecting firm leverage (Bekaert, Ehrmann, & Fratzscher, 2014). Stock market liquidity is linked to economic growth in global markets; higher liquidity allows firms to raise capital at a lower cost, increases the incentives for financial analysts to acquire information. Although a firm may have adequate earnings to declare dividends it may not have sufficient cash to pay dividends. Thus the cash position of the firm is an important consideration for any firm (Korkeamaki & Michael, 2013).

According to Nguyen and Ramachandran (2006) as cited in (Ezeoha, 2009) there are conflicting theoretical predictions on the influence of profitability on the leverage of the firms. The trade-off theory predicts that profitable firms would more likely be able to benefit from greater tax advantages of debt which might induce them to be more levered with low risk of financial distress. Different researchers have buttress this assertion by observing that if past profitability is a good proxy for future profitability, profitable firms could borrow more, as the likelihood of paying back the debt is greater (Almeida & Campello, 2010).

2.4 Empirical Literature Review

2.4.1 Investors' Behavioural Bias and Corporate External Financing Decision

Empirical studies on trading volatility posit that trading volume contains information about investors' heterogeneous behaviour. Hong and Stein (2003) as cited in (Jiao &

Yan, 2013) presented models suggesting that differences in investors behavioural bias motivates trades resulting into volatility in trade turnover and stock mispricing. Therefore an increase in trading volume indicates an increase in the investors' behavioural bias toward the firms' stock. Excessive trading of individual investors is referred to as active investing puzzle. Individual investors trade individual stocks actively, and on average lose money by doing so. The more actively investors trade, the more they typically lose thereby affecting trading volume at the exchange (Daniel & Hirshleifer, 2015).

Barber and Odean (2011) provided an overview of research on the stock trading behaviour of individual investors. Their research documents that individual investors exhibit the following five characteristics; underperform standard benchmarks (a low cost index fund), sell winning investments while holding losing investments this is referred to as the disposition effect. They are heavily influenced by limited attention and past return performance in their purchase decisions. They engage in naive reinforcement learning by repeating past behaviours that coincided with pleasure while avoiding past behaviours that generated pain, and tend to hold undiversified stock portfolios. These behaviours deleteriously affect the financial well-being of individual investors.

Disposition effect is the first important behavioural bias wherein investors are more prone to selling the winning stock and tend to hold on to the loss-making asset. Chen *et al.* (2007) observed that at the end of the year, because of tax motivation, investors are more willing to sell the loss-making assets. Shefrin and Statman (2010) developed a theoretical framework concerned with selling of the winning stock and holding on to the loss-making asset this is supported by empirical evidence, therefore disposition effect influences trading volume at the exchange.

Chen *et al.* (2007) using brokerage accounts data from China, analysed investment decision making in an emerging market. Their study posits that Chinese investors make poor trading decisions, the stocks they purchase underperform those they sell, and this affects the stock trading turnover during trading period. Their study also posits that Chinese investors suffer from three behavioural biases: they tend to sell stocks that have appreciated in price, but not those that have depreciated in price. Consistent with a disposition effect, investors are believed to have a tendency of acknowledging gains but

not losses, they seem overconfident and appear to believe that past returns are indicative of future returns as a result this behaviour affects the stock trading turnover during trading period (a representativeness bias) (Chen *et al.*, 2007).

Herding is the second important behavioural bias; it refers to the situation wherein rational people start behaving irrationally by imitating the judgements of others while making decisions. There can be numerous reasons for herd behaviour being exhibited among different types of investors. Individual investors tend towards demonstrating herd behaviour because they follow the decisions of a large group or noise traders. Analysts may herd their past experiences decisions or imitate others to protect their reputational or compensation concern (Shikuku, 2012).

Home bias, also termed equity home bias is the third behavioural bias; it refers to the situation wherein individuals or institutions prefer to hold on to domestic securities rather than to foreign assets in their portfolio (Kantola, 2010). It is also known as the equity home bias puzzle because returns realised through domestic equity portfolio implies that more potential benefits are derived from the international diversification of portfolio. The possible reasons behind home bias may be investment barriers, transaction costs, information asymmetry, inflation hedging and non-tradable assets (Trehan & Sinha, 2015). Various research studies have elucidated that there are no conclusive explanations for home bias, so it remains a puzzle among market participants.

Overconfidence is the fourth behavioural bias influencing stock turnover, it is a well-established and common bias that makes people too confident about their knowledge and skills and ignore the risk associated with their investment. Earlier studies have explained how the overconfidence bias influences rational decision-making behaviour. Barber and Odean (2011) explained that investors with discount brokerage accounts become overconfident and engage in excess trading. However, Odean (1999) as cited in (Kumar & Goyal, 2015) posit that because of excess trading, the realised gains are not sufficient to cover the transaction cost incurred by the trader.

Trehan and Sinha (2015) studied existence of overconfidence biases among investors and its impact on investment decision in India. The study aims to explore the existence

of overconfidence bias among investors while taking investment decisions. The objective was achieved by using a structured questionnaire and collecting empirical data from active investors on their knowledge about market's past performances, ability, skills and views about future investment plans and stock markets. Their study concludes that overconfidence exists in investors while taking investment decisions. It was evident that investors were overconfident about their knowledge, ability to pick stocks, holding of stocks, optimism, control over portfolio, and other factors.

Investors take credit for their successes, assume to have full control over their portfolio, trade frequently, and are quite optimistic about their stock market performance (Trehan & Sinha, 2015). Researchers have identified overconfidence as powerful reason behind high levels of trading volumes leading high stock turnover at the exchange. Overconfident investors trade more than rational investors which lower their expected utilities. Hence greater overconfidence leads to excessive trading and lower expected utility, this ultimately influences seasoned equity offering by corporations (Chen *et al.*, 2007).

Daniel and Hirshleifer (2015) studied overconfidence investors, predictable returns and excessive trading. They concluded that overconfidence not only increases the trading activity but also makes the investors too certain about their opinions. Investors ignore the opinions of others resulting in heterogeneity of investor beliefs. Prediction and certainty overconfidence can lead investors to making investment mistakes. Increased trading turnover influences the share price due to forces of demand and supply, this ultimately influence corporate agents' decisions on SEOs, share split and other external financing options (Deangelo *et al.*, 2010).

Overconfident investors overestimate their ability to evaluate a company as potential investment, as a result, they become blind to any negative information that might normally indicate a warning sign that either a stock purchase should not take place or stock that was already purchased should be sold. Overvaluation of an investment target could influence the decision made by corporate agents in external financing (Durand *et al.*, 2013).

Ishikawa and Takahashi (2012) examine relationship between managerial overconfidence and corporate financing decisions by constructing proxies for managerial overconfidence based on the track records of earnings forecasts in Japanese listed firms. Their study finds that managers have stable tendency to forecast overly upward earnings compared to actual ones and that their upward bias decreases the probability of issuing equity in the public market by about 4.7 percent per one standard error, which economically has the strongest impact on financing decisions. This tendency is observed when alternative measures for managerial overconfidence and other model specifications are employed (Kamoto, 2014).

Overconfident investors can trade excessively as a result of believing that they possess special knowledge that others do not have. Such investors can underestimate their downside risks because they either do not know, do not understand, or do not heed historical investment performance statistics. Therefore, this behaviour could influence corporate external financing options taken by agents of a firm (Ishikawa & Takahashi, 2012). Overconfidence indicates that too much trading, self-attribution, better than average effect, optimism, trading experience, miss-calibration and illusion of control are prominent characteristics of overconfident investor and these characteristic has an influence on external financing option by agents of a firm (Ishikawa & Takahashi, 2012).

Zaiane and Abaoub (2010) carried out a survey on investors' overconfidence on Tunisian stock market the aim of their study was to check if investors in emergent markets, especially in the Tunisian stock market, suffer from the overconfidence bias. To achieve this purpose the study adopted a survey approach on individual investors from the Tunisian stock exchange. The finding of their study was that Tunisian investors seem to be overconfident in general cases and in beating the market (Zaiane & Abaoub, 2010).

Nyamute *et al.* (2015) sought to determine the contribution of investor behaviour in influencing investor portfolio performance at the Nairobi Securities Exchange in Kenya using a sample of 385 individual stock investors. Their study posits that investors' behaviour influences portfolio performance with herding and disposition effect having a positive effect on portfolio performance while overconfidence has a negative effect on

performance. The findings provide an eye-opener and a basis of appreciation of the effect of behavioural biases on the results of trading activities (Nyamute *et al.*, 2015).

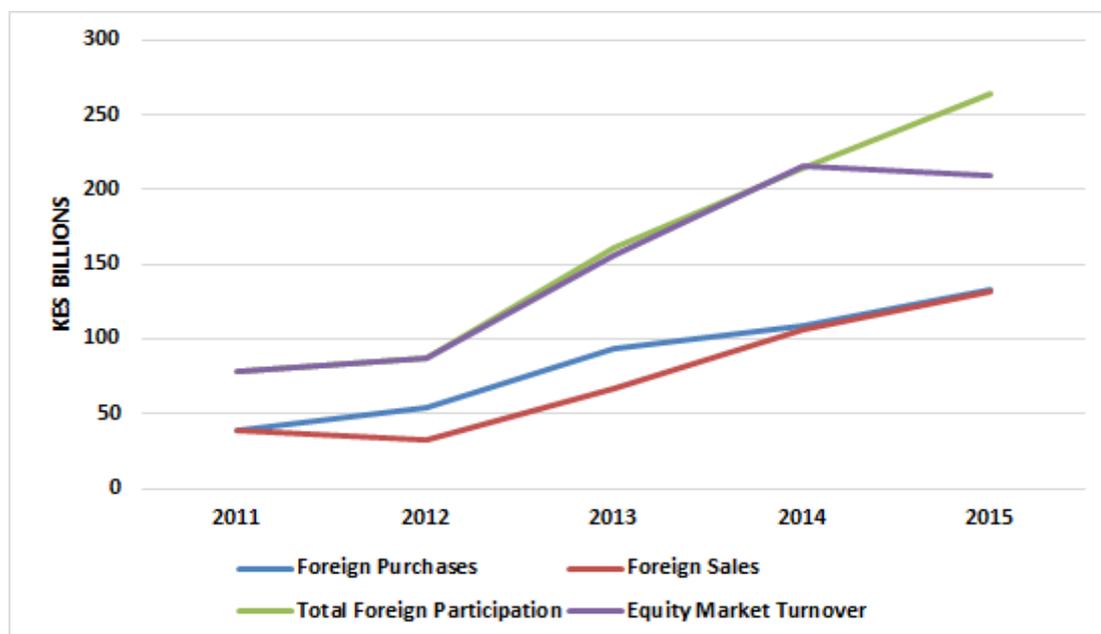


Figure 2.3: Nairobi Security Exchange 5 year Performance

Source: (Dyer and Blair Investment Bank, 2016)

2.4.2 Investors' Preference and Corporate External Financing Decision

Miller (1977) as cited in (Chakravarty & Ray, 2010) provided a model of heterogeneous beliefs and prices. He argued that in equilibrium, asset prices are a weighted average valuation of two classes of agents in the market, the optimists and the pessimists. Hence, when short selling constraints exist, immediately after an IPO prices reflect only the opinion of the optimists because the pessimists cannot sell short. In the long run, such constraints are relaxed and prices go down. Ekeland and Taflin (2005) while considering theory of bond portfolio posit that, assets with more dispersed subjective probabilities are associated with reduced Share price thereby affecting the likelihood of investors' attraction and therefore experiencing fluctuation in share price at the exchange. This characteristic of assets has a direct effect on corporate external financing decision.

Doukas *et al.* (2004) while studying institutional liquidity used the divergence of opinion to explain the superior return of stocks with high book-to-market ratios. They found stocks with high book-to-market ratios are exposed to greater behavioural heterogeneity, suggesting that cash flows of stocks with high book-to-market ratios are perceived by investors as more uncertain and more risky than stocks with low book-to-market ratios. This perception always affects the share price at the exchange, volatility in share price influences corporate agent financing decision making.

Ray and Chakravart (2010) using a new dataset from India, pit heterogeneous priors against private information to test the explanatory power of such heterogeneous priors. Their measure of heterogeneous priors was based on abnormal order data submitted by institutions, high net worth individuals and retail investors for a sample of Indian IPOs. Their measure of private information was the probability of informed trade commonly used in market microstructure literature and computed from high frequency transaction data. Their findings indicated that private information dominates heterogeneous priors in explaining trading volume, heterogeneous priors measure dominates imbalance in trading frequency or net buy, the difference between buy and sell trades. Further, heterogeneous priors affect prices significantly through this trading imbalance.

Vieito, Pownall, Rocha, and Rocha (2014) conducted a study in Portugal, analysing the neural behaviour of investors, they analysed male and female patterns of brain activity associated with financial decision making and to what extent brain activity is different across gender. They further investigated if these differentials also occur for different types of investment decision. In particular the study focused on the decisions to buy, sell or hold stocks. In line with empirical findings in the behavioural finance literature, men prefer to trade more stocks and women prefer to buy more and sell less. Moreover women prefer to hold a larger proportion of the portfolio in cash and men more stocks, thereby affecting share price (Vieito *et al.*, 2014).

Khisa (2015) applied behavioural finance factors to explain investment decision making by investors of the NSE market in Kenya. The study investigated the behavioural finance factors influencing investment decisions in Kenyan bourse with a particular interest in Machakos County. This was aimed at better reflecting the way NSE investors think and behave by use of behavioural finance. The study concludes that stock market

investment decisions are influenced by behavioural bias and preference of individual stock market investors. The study established that certain-return bias, loss aversion, regret aversion and random walk framing had an effect on the decisions made by the investors at the NSE (Khisra, 2015).

2.4.3 Analysts' Dispersion and Corporate External Financing Decision

Several empirical studies examine valuation effect of differences in analyst dispersion of opinion towards the firm. Diether *et al.* (2002) as cited in (Xiong & Scheinkman, 2004) find empirical support for the overvaluation theory of Miller (1977). They posit that stocks with high analyst dispersion have high earnings per share forecast and earn lower future returns than otherwise similar stocks. This effect is most pronounced in small stocks and stocks that have performed poorly over the past year.

Goetzmann and Massa (2005) as cited in (Rüdiger & Christian, 2018) used a panel of more than 100,000 investor accounts in US stocks to construct an investor-based measure of analysts' dispersion of opinion. They used this measure to test the relation between dispersion of opinion and cross-sectional stock earnings. They find that dispersion of analyst opinion is positively related to contemporaneous stock earnings and negatively related to future stock earnings, supporting Miller's (1977) overvaluation theory.

Shefrin and Statman (2011) analysing developed markets earnings per share changes in Europe and USA, posit that Markets that are not rational are not necessarily easily beatable by rational investors. High earnings per share and low dividend yields indicate the presence of bubbles in the market. Their study based on Campbell and Shiller (1998) as cited in (Shiller, 2003) posits that stocks with relatively high earnings per share and low dividend yields characteristics predict relatively low subsequent long-run returns on the stock due to heterogeneity of investors' behaviour.

Barber and Odean (2011) empirically analysed USA investors and posit that investors who inhabit the real world and those who populate academic models are distant cousins. They concluded that in theory, investors hold well diversified portfolios and trade infrequently so as to minimize taxes and other investment costs, while in practice, investors behave differently based on analyst dispersion on stocks earnings per share.

The investors in this trading bandwidth trade frequently and have perverse stock selection ability based on the stocks earnings per share, incurring unnecessary investment costs and return losses (Almeida & Campello, 2010). Investors tend to sell their winners and hold their losers, generating unnecessary tax liabilities. These investment activities are usually guided by analyst dispersion towards firms' earnings per share. Many hold poorly diversified portfolios, resulting in unnecessarily high levels of diversifiable risk, therefore being unduly influenced by media and past experience. Individual investors who ignore the prescriptive analyst dispersion generally do so to their detriment (Barberis & Thaller, 2003).

Jagongo and Mutswenje (2014) while establishing the factors influencing investment decisions at the Nairobi Security Exchange, found that the most important factors that influence individual investment decisions were, reputation of the firm, firm's status in industry, expected corporate earnings, profit and condition of statement, past performance firm's stock, price per share, feeling on the economy and expected dividend and most of these factors are influenced by analyst dispersion (De Franco *et al.*, 2009).

Many participants in the investment business still rely on EPS, to the exclusion of important measures of the firm performance, such as revenues and cash flow. This emphasis is useful to investors with limited attention and processing power. When faced with many relevant signals, investors can try to leverage their attention by focusing on more important information items. Evidence from both psychology and market behaviour indicates that individuals often fail to adjust appropriately for the fact that they have left some information unprocessed (Daniel & Hirshleifer, 2015)

2.4.4 Investors' Risk Perception and corporate External Financing Decision

The academic literature reveals that various disciplines provide an assortment of perspectives in terms of how to define, describe, and analyse risk. The behavioural finance perspective encompasses the subjective and objective factors of risk within the domains of risk perception and risk tolerance (Hoffmann & Post, 2015). Risk perception is the subjective decision-making process that an investor uses when evaluating risk and the amount of uncertainty. Risk tolerance is the degree of risk that an investor is willing

to endure in the pursuit of a financial objective. A number of factors influencing the risk perception of investors include unpredictability of returns, knowledge about the financial assets, chance for incurring loss, diversification of portfolios, and dependence on professional investment advice (Isnurhadi & Jie, 2017).

Thiagarajan and Li (2010) in their empirical study of idiosyncratic volatility in Asian markets looked at the implications of idiosyncratic volatility for stock selection and asset allocation strategies. They posit that portfolio managers, even though they have little control over idiosyncratic volatility, in aggregate they are critically affected by these trends. This is because the efficacy of the factors used in their investment strategies varies with changes in idiosyncratic volatility. Cross-sectional variations in idiosyncratic volatility (IVol) makes economically and statistically significant difference to the efficacy of the factors used in stock selection, thereby influencing the investment behaviours of both corporate and individual investors (Brandt *et al.*, 2009). Considering the temporal trends, Thiagarajan and Li (2010) analysis posit that stock selection factors, particularly mean reversion, work much better during periods of low aggregate idiosyncratic volatility. However, their inference is limited because of the small number of different temporal regimes in aggregate idiosyncratic volatility.

The investors' heterogeneous behaviour can be illustrated through idiosyncratic volatility. Studies done in developed and developing markets especially in European and Asian market posit that aggregate idiosyncratic volatility (IVol) and, more importantly, its impact on cross-sectional returns is a critical feature in financial economics and most investment analysts conjecture that IVol is an appropriate measure of investors heterogeneous behaviours in the market (Brandt *et al.*, 2009). Wang *et al.* (2011) as cited in (Gentile, Linciano, Lucarelli, & Soccorso, 2015) indicate that when people rate certain assets as easier to understand (probably driven by a familiarity bias), they also perceive them as less risky. Following the psychometric paradigm adopted by Fischhoff *et al.* (1978) as cited in (Gentile *et al.*, 2015) their study asked participants to rank 20 investment products on seven scales.

The first three scales (understanding, expert knowledge, and prevalence) correspond to the familiarity, and the last four scales (risk of capital loss, risk of lower-than-expected return, variation and chance of higher-than-inflation return) correspond to the different

statistical measures of risk. Moreover, participants were asked to rate the perceived risk of each product. Results show a high degree of inter-correlation among the seven judgment scales and the overall perceived risk. In particular, the perceived risk is almost perfectly correlated with the scale ‘risk of capital loss’, ‘risk of lower than-expected-return’, and ‘variation of gains and losses’, whereas the correlation between perceived risk and the ‘chance of higher-than-inflation return’ is the lowest, implying that the gain potential is less prominent than the loss potential and volatility for the risk judgment (Gentile *et al.*, 2015).

Shafi, Akram, Hussain, Sajjad, and Rehman (2014) studied the relationship between risk perception and employee investment behaviour. Their research study was conceptual in nature and mainly based on previous literature findings and evidences. Findings of this study suggested that employees risk perception is directly related to investment behaviour and that there is strong relationship between them (Shafi *et al.*, 2014). Hoffmann and Post (2015) analysed how return and risk experiences shape investor beliefs and preferences.

They combined brokerage records and matching monthly survey measurements of a sample of individual investors from the Netherlands for the period April 2008 through March 2009, and examine how individual investors update their beliefs (return expectations and risk perceptions) and preferences (risk tolerance) as a result of their personal return and risk experiences. The finding was that investors’ past returns positively impact return expectations and risk tolerance, and negatively impact risk perceptions; however realised risk has no effect on return expectation (Hoffmann & Post, 2015).

A considerable body of research has identified discernible trends in IVol; these trends significantly impact portfolio managers, even though managers have no control over them. The study show that commonly used stock selection signals behave very differently for groups of stocks with high or low IVol. Therefore, conditioning signals for IVol make a meaningful difference for both stock selections, and asset allocation strategies (Trehan & Sinha, 2015). Aspirations for wealth and status blinded bankers to the risks they take when issuing or holding debt securities. Shefrin and Statman (2010) describes some of the biases that affected managers of companies associated with

mortgage securities as they sped along the road which ended in the financial crisis, this is because such corporate agents ignore signals send by investors through the idiosyncratic volatility measures.

2.4.5 Investors' Corporate Size Dispersion and External Financing Decision

Shefrin and Statman (2011) noted that it is difficult to lay blame for the financial crisis on a belief that markets are efficient, whether rational or merely unbeatable. Large firms supposedly ought to have higher investment opportunities than smaller firms. Central to the above general positions is the truth that as a firm grows in size, its ability to borrow increases, and so, its debt-equity ratio increases concurrently (Prevost *et al.*, 2013). Within the circuit of small firms, the need for funds may be limited by the fact that their scales of operations are also limited.

Consequently, not only would banks and investors alike be afraid of committing funds in the projects of small businesses, the small firms themselves may be indisposed to exposing themselves to risks associated with distress and bankruptcy, as well as loss of ownership (Dang & Willms, 2003). According to Diether et al. (2002) as cited in (Ezeoha, 2009) dispersion of opinion among investors tends to be greater for small firms than large firms. Most financial analysts only follow large firms and small firms may be unable to bear high disclosure preparation costs. The lack of disclosed information induces both divergent attitude and uncertainty about the value of small firms.

According to Myers and Majluf (1984) as cited in (Axelson, 2007) negative relationship exist between profitability and debt financing using the pecking order theory, on the basis that profitable firms do not rely heavily on outside financing. Kantola (2010) looked at equity characteristics and investor preferences empirical evidence from Finland and Sweden. The goal of the study was to test whether retail investors show preference towards certain type of companies. The study compares the similarities between domestic and foreign equity holdings. The result indicate that retail investors show a preference towards smaller sized companies both in the domestic as well as in the foreign shareholdings.

Similar type of preference can be noticed also among mutual fund holdings. There the relation is however not linear with respect to equities size and also other variables influence the results, especially size of fund assets under management (Kantola, 2010). Zadeh and Eskandari (2012) reviewed risk disclosure and firm-specific characteristic (firm size) which can influence the level of risk disclosure. It is realized that the firm's characteristic such as firm size has different quality and quantity for various countries. However most studies found a positive relationship between firm size and the level of risk disclosure therefore firm size can influence the risk disclosure level. This could ultimately affect investors' dispersion towards the firm and external financing options availability (Kantola, 2010).

2.4.6 Institutional Leverage and Corporate External Financing Decision

According to Koh and Lee (2015) internal financing deficit is one of the most important financial factors to induce firms to borrow money from a bank or issue stocks or bonds. If firms report losses is unprofitable in the financial statements, it will be difficult for them to borrow money from a bank or even further, they may not be able to issue stocks or bonds at adequate prices. Therefore, financing deficit leads to managers' opportunistic behaviour to make firms look profitable to the capital market, implying that financing deficit raises a firm's financial decision (Ezeoha, 2009).

The lack of disclosed information by unlevered small firms induces both divergent attitude and uncertainty about the value of small firms. Profitability and corporate leveraging plays a critical role in corporate performance. Studies in developed markets postulate a negative relationship between profitability and debt using the pecking order theory, on the basis that profitable firms do not need to rely heavily on outside financing. Instead, profitable firms will lower leverage as they will predominantly meet their financing needs through retained earnings (Ezeoha, 2009).

Cash flow rich firms may suffer from the agency problems of free cash flows. Therefore managers may expropriate private benefits creating a conflict of interest between the managers and the shareholders. As a result, leverage may thereby be increased to discipline the managers and limit their consumption or perquisites, hence predicting a negative relationship between leverage and profitability (Abor & Bokpin, 2010).

The empirical results of capital structure determinants study conducted in Pakistan revealed that firms with high profitability used retained earnings, followed by debt financing and equity financing was considered as a last resort. Studies have presented evidence for a positive correlation between financial leverage and the firm's profitability. The positive association between profitability and leverage may be due to lenders being more willing to lend to profitable firms. Hence, more profitable firms would have greater access to debt markets and would be more likely to benefit from greater tax shield of debt (Mackie-Mason, 1990).

2.4.7. Corporate External Financing Decision

Making optimal external financing decisions, requires corporations and individuals to acquire information and financial knowledge as well as having ability to process information (Vieito, Pownall, Rocha, & Rocha, 2014). Convertible debt has long been considered as a source of corporate external financing especially in developed economies, Dutordoir and Gucht (2009) posit that European convertibles are mainly used as sweetened debt instruments acting as motivation as reflected in the highly debt-like design of most European convertible issues.

Bancel and Mittoo (2004) surveyed European managers to gain some insights into motivations of convertible issuance. Their analysis shows that a majority of firms issue convertibles as delayed equity and as debt sweetener. Managers also use convertibles to avoid short-term equity dilution and to signal firm's future growth opportunities. Evidence suggests that the popularity of convertibles is driven primarily by their versatility in adjusting their design to fit the financing needs of individual firms, and by their increased demand among institutional investors.

There is evidence showing that psychological elements seems to be crucial in financial decision making and these elements more often affect the role of information in investment decision making. Individuals tend to retain information consistent with their preferences but tend to forget information that conflicts with their preference thereby affecting their ultimate decision making. Behavioural studies posits that when individuals process information, they sometimes choose to ignore available information and act on impulses or are sometimes guided by what they believe to be true rather than

available information negating efficient market hypothesis (Cheng, Dhaliwal, & Neamtiu, 2011).

Studies have suggested that some of the financial crises are partly due to overconfidence within collectives and cognitive biases by individuals. These behaviours often lead individuals to overinvest in risky assets or display excessive appetite for risk despite contrary market signals based on real and available information (García, 2013). Recent empirical evidence from surveys and experimental work in finance and economics have shown that, individuals pay little attention to financial information and their capacity to process such information is also limited (Shefrin & Statman, 2011).

Business organizations can achieve their ultimate goal, if they perfectly perform their activities of financial management. Finance managers have to play a vital role by taking some major financial decisions like, investment decision, financing decision and dividend decision. These financial decisions are influenced by two categories of factors which include internal factors and external factors. Internal factors are those possible to control by the business organization itself while external factors are beyond the control of the company such factors include heterogeneity of investors behaviour (García, 2013).

The major internal factors that influences the financial decision includes, nature of business, the forms of legal organization, situation of business cycle, assets structure, regularity and adequacy of income, economic life of business, terms of credit, and management philosophy (Kimberlin & Winterstein, 2008). External factors are those which can't be controlled by the business organization. Such as economic condition of the country, government regulation, tax system and condition of the money market and capital market, these factors must be considered while making decision regarding finance.

Therefore financial managers have to be efficient enough to deal with these external and internal factors and take most effective financial decision to implement (Yamaguchi *et al.*, 2016). The effect of convertible debt issuance on leverage is not obvious because, it has both debt-like and equity-like components when the entire sample of convertible issues is analysed. However for more debt like convertibles the level of debt-related cost

at the firm level should have a negative impact on the price response (Dutordoir & Gucht, 2009).

The effect of issuer characteristics on the size of the wealth associated with announcement of the convertible debt offering can be separated according to the dominating nature of the convertible issue and according to the related motives for issuing such a security. Convertible debt is particularly useful financing instrument in cases where information asymmetry and market imperfection make the use of straight debt or equity more costly or even impossible to issue (Bancel & Mittoo, 2004).

According to Gilchrist and Himmelberg (2004) as cited in (Muradoglu, 2012) posit that because of the firm being a monopolist in the supply of its own shares, USA banks issue only to the point where the marginal revenue from issuance equals the marginal cost of dilution, this occurs where price is above fundamental value. Most stocks are tracked by more than one analyst, and these analysts rarely agree on their forecast of a firm's future earnings.

Diether, Malloy, and Scherbina (2002) as cited in (De Franco, Vasvari & Wittenberg-Moerman, 2009) using the variance of analysts' earnings forecasts as a proxy for the dispersion of shareholder opinion about a firm's fundamental value, show that high-dispersion stocks have abnormally low future returns, consistent with the view that such firms are overvalued and slowly may revert to their fundamental value when deciding on corporate financing. The significant determinants of external financing decision to obtain optimal capital structure have been disagreed over decades.

Specifically what are the influential factors in determining how firms select the types of security to be issued are considered to be questionable. Additionally most firms adjust their capital structure when debt levels are above-target leverage and below-target leverage as well (Yamaguchi *et al.*, 2016). Furthermore, corporate external financing decision-making is even more complicated when it is examined in an international context, particularly in developing countries where markets are characterized by controls and institutional constraints (Kariuki & Kamau, 2014).

2.5 Critique of Existing Literature

Literature on corporate external financing posits an asymmetric information explanation that external debt financing can help reduce adverse-selection costs arising from information asymmetry (Dutordoir & Gucht, 2009). Studies on heterogeneity variables are related to degree of information asymmetry, it is possible for concerns to be raised about the findings being driven by information asymmetry suggesting that both convertibles and straight bonds can serve as signals, with straight bonds being a stronger signal than convertibles. However they failed to consider the influence of these behaviours on corporate external financing decision.

The asymmetric information theories predict an order of straight bonds, convertibles, and common stock, however, the pecking order theory predicts an order of internal finance, convertible bond, straight bond and lastly common stock. Therefore the presence of a higher level of information asymmetry and influence of investors heterogeneous behaviour, is contradictory to the pecking order assumptions of external financing decisions (Almeida & Campello, 2010). The study done on the choice between straight bonds and convertibles are inconsistent with the asymmetric information explanation (Chemmanur & Krishnan, 2011).

The study failed to determine whether the choice between straight debt financing and convertible debt financing was influenced by the investors' behaviours. Loncarski *et al.* (2008) found that convertibles can help reduce various types of agency costs, similar to the issuances of other securities such as debt and equity. The issuance of convertibles could be driven by factors other than the asymmetrical information focussed on by most studies. The literature on the use of different securities for institutional funding also suggests an asymmetric information explanation, convertibles bond issuer can help reduce adverse-selection costs arising from information asymmetry (De Jong, Duca, & Dutordoir, 2013).

The research published through the late 1990s, looked at the investors' performance and focused almost exclusively on the performance of institutional investors, in general, and, more specifically, equity mutual funds. These studies focused on evidence of superior investors to test the central prediction of the efficient markets hypothesis, as

investors are unable to earn superior returns. Rather than focussing on the market imperfection and investors irrationality, they failed to consider influence of investors' behaviours on corporate external financing decision (Xiong & Scheinkman, 2004).

The study by Shikuku (2012) investigated the effects of behavioural factors on investment decisions making by unit trust companies in Kenya. The study sought to establish whether heuristics (overconfidence behaviour, herd behaviour, and anchoring behaviour) affect investment decisions in unit trusts. The study established that unit trusts' investment decisions are affected by overconfidence, herd, and anchoring behaviours. According to the findings, managers who are overconfident are also likely to follow the masses in decision making. However the study failed to ascertain whether these factors influence corporate external financing decision.

Khisa (2015) employed cross-sectional survey research design with a survey questionnaire to collect data from NSE investors within Machakos County as provided by registered stockbrokerage firms operating within Machakos County, the study concluded that stock market investment decisions are influenced by behavioural biases of individual stock market investors. The study established that certain-return bias, loss aversion, regret aversion and random walk framing had an effect on the decisions made by the investors at the NSE, however failed to ascertain whether investors behaviour have influence on corporate external financing decision.

2.6 Research Gaps

Barber and Odean (2011) reviewed and documented patterns in investment behaviour in the American market. They posit that individual investors underperform standard benchmarks; they sell winning investments while holding on losing investments. These investors are heavily influenced by limited attention and past return performance in their decision making. They engage in naive reinforcement learning by repeated past behaviour that coincides with pleasure while avoiding past behaviour that generates pain. Their study however did not establish the influence of investors' behavioural bias on asset acquisition and disposal on corporate external financing decision.

Jiao and Yan (2015) focused on convertible bond and heterogeneity of investor attitude on future stock returns in Europe. They empirically examined the effect of investors'

heterogeneous attitudes on stock value returns. Their findings support the predictions of Miller's model, on the implications of heterogeneous attitudes among investors for long-run stock returns. However their study did not determine the influence of investors' preference towards corporate share price on corporate external financing decision.

Barber and Odean (2011) focused on individual investor's behaviour; they concluded that investors who inhabit the real world and those who populate academic models are distant cousins. In theory investors hold well diversified portfolios and trade infrequently so as to minimize taxes and other investment costs. In practice, investors behave differently; they trade frequently and have perverse stock selection ability, incurring unnecessary investment costs and return losses. They tend to sell their winners and hold their losers (Stocks), generating unnecessary tax liabilities. However this study failed to ascertain the influence of investors' personality traits towards corporate earnings per share on corporate external financing decision.

Barber and Odean (2011) posits that investors hold poorly diversified portfolios, resulting in unnecessarily high levels of diversifiable risk, and many are unduly influenced by media and past experience. Individual investors who ignore the prescriptive advice to buy and hold low-fee, well-diversified portfolios, generally do so to their detriment. The study however failed to determine whether these investors behaviour have effect on corporate external financing decision especially in developing market. Agrawal (2012) as cited in (Feldman & Lepori, 2016) considered the framework of behavioural biases in finance, and found that announcements on returns were lower for overconfident bidders as compared to rational bidders. The study did not consider the effect of these behavioural biases on the external financing decision making by corporations.

Vieito *et al.* (2014) investigated the neutral behaviour of investors in Japan, their investigation is among the first to analyse male and female patterns of brain activity associated with financial decision making. The study looked at the extent at which investment brain activity is different across gender. However their study failed to assess the influence of investors' corporate size dispersion on corporate external financing decisions by listed companies in Kenya

Khisa (2015) considered the effect of behavioural finance factors on stock investment decision in Kenya. From the findings, the study concludes that stock market investment decisions are influenced by behavioural biases of individual stock market investors. The study established that certain-return bias, loss aversion; regret aversion and random walk framing as having an effect on the decisions made by the investors at the Nairobi Security Exchange. These factors were established as having varied degrees of effect on the decisions of stock market investors in the anticipation of continuous better returns (Khisa, 2015), however his study failed determine the influence of these behaviours on corporate financing decision.

Dolreen (2014) considered the effect of anchoring on investors' decision making by individual investors in Kenya. The study concludes that "Volatility" extreme movements in global indices and Share prices because of fear and anticipation has made life tough for a rational investor. Market sentiments were observed to sway wildly from positive to negative and back, in the shortest timeframes like weeks, days and hours (Dolreen, 2014). However the study failed to consider influence of investors' behaviours on corporate external financing decision.

Waithaka and Ngugi (2013) focused on the factors influencing acquisition of stressed assets. The study concludes that organization structure, capital structure and leadership structure affects the practice of acquisition of stressed asset, while business culture affected the practice of securitization to great extent. Their study also asserts that organization leadership, performance, reputation, existing business environment, level of interests and level of customers buying power affect the practice of acquisition of stressed assets (Waithaka & Ngugi, 2013). Their study however failed to ascertain influence of investors' heterogeneous behaviour on corporate external financing decision.

Shikuku (2012) investigated the effects of behavioural factors on investment decisions making by unit trust companies in Kenya. Literature documented that individual and even institutional investors have embraced heuristics in their investment decision making. The study therefore sought to establish whether heuristics (overconfidence behaviour, herd behaviour, and anchoring behaviour) affect investment decisions in unit trusts. The study established that unit trusts' investment decisions are affected by

overconfidence, herd, and anchoring behaviours. Unit trust managers tend to be overconfident while making investment decisions. Their decisions are also affected by experience of their past performance suggesting the effect of anchoring. However the study did not consider how investors' behavioural bias influences corporate external financing decision (Shikuku, 2012).

Kimani (2011) surveyed the influence of behavioural factors on individual investors' choices of securities at Nairobi Security Exchange. The findings indicate that investors suffer from behavioural biases in their decision making. His study however failed to evaluate how the decisions of investors influence the corporate external financing decision making. The current study addresses this gap by determining the influence of heterogeneity of investors' behaviour on corporate external financing decision by listed companies in Kenya.

2.7 Summary of Literature Reviewed

Behavioural finance establishes the influence of psychology on the behaviour of financial practitioners and the subsequent effect on market. It attempts to better understand and explain how emotions and cognitive errors influence decision making. Most of economic and financial theories presume that individuals act rationally and consider all available information in the investment decision-making process. This study discussed seven theories that have been advanced to explain influence of heterogeneity of investors' behaviour on corporate external financing decision. Different scholars have explain that behavioural bias lead to individuals overestimating the precision of their own beliefs, or underestimate the variance of risky processes thereby affecting external financing decision making.

There is emerging evidence that institutional investors behave differently from individual investors, in part because they are agents acting on behalf of the ultimate investors. Similarly the models within the traditional finance paradigm assume that investors act rationally and consider all available information in the decision-making process, hence investment markets are efficient and security prices reflect the true intrinsic values of the assets. Seven theories helped in providing framework within which investors' heterogeneous behaviour and the associated external financing

decision was examined. The study then generated constructs which formed the conceptual framework on which the study was anchored.

The variables in the study were operationalized through detailed review of relevant empirical literature aligned to the problem statement and the objectives of the study. Based on the theoretical and empirical literature review, it was evident that heterogeneity of investors' behaviour is still a potential aspect for further research, in terms of sectorial, cultural or country specific biases within the growing field of behavioural finance.

Behavioural finance theories were replicable in different settings within the chapter and interrogated appropriately to ascertain their relevancy and linkage between the independent and dependent variables. Further empirical studies were necessary to test the theories and models and provide more rationale for interrogating extant literature. This was done accordingly, several research gaps emerged which strengthened the objectives of this study. Therefore findings of this study opens up a wide field of behavioural finance by forming a foundation for policy guidelines, considerations and implementation within behavioural finance contest.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter outlines the methodology used in conducting this research. This includes describing the sample size, sampling procedure and technique, instruments and procedures used in data collection and finally data presentation. This section explain technical procedures in a manner appropriate to the audience, it achieves this objective by addressing the research designs used by the study, the sample size, data collection and analysis done to the collected data. This is therefore the philosophy or general principle that guided this research and dealt with the description of the methods applied while carrying out this study.

3.2 Research Philosophy

The study was founded on positivist philosophical paradigm; the underlying assumptions of positivism are the belief that the social world can be studied in the same way as the natural world. Generally that there is a method for studying the social world that is value-free way and the explanation of a casual nature can be provided. Positivists assume that the researcher and the subject of the study are independent and do not influence each other. This philosophy holds that a researcher should strive to achieve objectivity in research by remaining neutral to prevent values and biases from influencing the work and following prescribed procedures (Mkansi & Acheampong, 2012).

The positivist's position was grounded in the theoretical belief that there is an objective reality that can be known to the researcher if one uses the correct methods and applies those methods in a correct manner (Mkansi & Acheampong, 2012). Positivist's philosophy relies heavily on phenomena that can be observed and that leads to the production of credible data. To generate a research strategy to collect these data the researcher used existing theories to develop hypotheses. The generated hypotheses were tested and confirmed, leading to development of theory which may then be tested by further research (Mkansi & Acheampong, 2012).

Research under this philosophy is evaluated using three criteria that includes, validity which involves the extent to which a measurement approach or procedure gives the correct answer, reliability which involves the extent to which a measurement approach or procedure gives the same answer whenever it is carried out and generalization that involves the extent to which the findings of the study can be applied externally or more broadly outside the study context (Saunders, Lewis, & Thornhill, 2009). These three principles guided the approaches applied in data collection, data analysis, formulation of the findings, interpretation of findings, and conclusion made by this study.

3.3 Research Design

This study was anchored on a descriptive survey research design, whose objective was to portray an accurate profile of situation. Descriptive research design is usually structured and specifically designed to measure the characteristics described by the research questions of the study (Saunders *et al.*, 2009). Hypothesis derived from the theory usually serve to guide the process and provide a list of what needs to be measured (Thomas, 2010). The objective of descriptive research design was to portray an accurate profile of persons, events or situations.

The survey strategy allowed the researcher to collect quantitative data which was analysed quantitatively using descriptive and inferential statistics. This study employed quantitative data in ways that ostensibly bridged their differences while addressing the research questions (Thomas, 2010). The information concerning the current status of the phenomena was obtained and the design helped to describe what exists with respect to variables or conditions in a situation (Thomas, 2010). Therefore this study used a descriptive survey research design and secondary data collected through detailed secondary data collection matrix (see appendix 3).

3.4 Target Population

Kothari (2004) state a population as any finite or infinite collection of individual elements, it is also described as a total numeration or the entire collection of objects or respondents in which the study is interested. A population refers to all items in any field of inquiry and is also known as the ‘universe’, it’s the aggregate or totality of those conforming to a set of specifications. Accessible population refers to the population in

the research to which the researcher can apply their conclusions, while the target population refers to the entire group of individuals or objects to which researcher is interested in generalizing the conclusions (Creswell, 2003). This study's population was sixty seven (67) listed companies at the Nairobi Security Exchange during the study period between 2007 and 2016. The data on these institutions was obtained from individual institution audited financial statements, Central Bank of Kenya data base, Insurance Regulatory Authority data base and Capital Market Authority data base. The Central Bank of Kenya and the Capital Market Authority CMA outlines all the institutions licensed in the different sectors and all listed companies as at December 2016 (Appendix 5).

3.5 Sampling Frame

Semykina (2012) posits that, sampling frame is a list of the target population from where study sample is selected. Descriptive survey research posits that a sampling frame usually consists of a finite population. Sampling frame is also considered as a list of members of the research population from which a random sample may be drawn. Kothari (2004) define the term sampling frame as a list that contains the names of all the elements in a universe. The sampling frame for this study consisted of all the companies listed at Nairobi Security Exchange as at December, 2016 as they appear in the CMA database and also as laid on appendix 5.

3.6 Sample and Sampling Technique

Saunders *et al.* (2009) describes a sample in a survey research context as a subset of elements drawn from a larger population. It is also a collection of units chosen from the universe to represent it. A sample is needed in research because a study that is insufficiently precise lacks the power to reject a false null hypothesis and such a study is a waste of time and money. It is more practical and less costly to collect data from a sample than from an entire population thereby saving both money and time (Thomas, 2010). This research adopted census because of the small number of companies listed at NSE.

According to Saunders *et al.* (2009), a censor approach enhances validity of the collected data by including certain information rich cases for study. In determining

sample size Gay and Suskie (1996) as cited in (Wafula, 2013) indicates that for a small population ($N < 100$) there is little point in sampling, therefore a survey should be carried out on the entire population. The population size of this research was 67 companies, however some companies had been delisted, suspended, and others listed for less than five year as shown in Table 3.1. To enhance comparability, companies listed for less than 5 (five) years and those delisted and suspended from trading during the study period (2007-2016) were eliminated, accordingly resulting to a population of fifty three (53) companies. The companies eliminated, are shown in the Table 3.1. Secondary data for institutional external financing decision, heterogeneity of investors' behaviour and corporate leverage was therefore collected from individual organization financial statements, CMA, and NSE database.

Table 3.1: Delisted, Suspended and Companies listed for less than five year

Company	Year Listed/Delisted/Suspended
Nairobi Security Exchange	2014
Stanlib Fahari REITS	2015
UAP	2012
Longhorn	2012
CIC Insurance	2012
Umeme	2012
Home Africa	2013
Flame Tree	2014
Kurwitu	2014
Nairobi Business Ventures	2016
CMC Holdings	Delisted 2011
Unilever Tea Kenya	Delisted 2008
Atlas Development and Support Services	Suspended 2016
A Baumann	Suspended 2008

3.7 Data Collection Procedure

The researcher obtained a research permit from the University before embarking on the data collection process to allow utilization of data from published financial statements of the fifty three companies. The study utilised secondary data, obtained from listed

companies' published financial statements using the secondary data collection matrix (Appendix 3). Data extracted from the audited and published financial statements of these companies was employed to construct the estimates for the function parameters. The data collected was panel data consisting of time series and cross-sections data.

Data for analysing stock turnover, share price and idiosyncratic volatility was collected from the NSE daily share volumes performance of the indices and share prices for the study period, while data for analysing earnings per share, corporate size and external financing options was collected from financial statements of individual corporations. A combination of time series with cross-sections data enhances the quality and quantity of data to levels that would otherwise be impossible to achieve with only one of the two dimensions (Shaari, 2013)

3.7.1 Investors' Behavioural Bias Measures

Stock Turnover was used to determine investors behavioural bias, this was determined as the natural logarithm of annual stock trading volume. Determined by taking the total daily stock trades during the trading year spanning from January to December this sum gave the annual trades per every firm's stock at the NSE. The study obtained the summation of stock trades where daily stock traded was used to construct the aggregate monthly trades and annual trades as shown in Table 3.2. This study endeavoured to determine actual stock trades by being cognoscente of days within a month when trades did not take place. Therefore stock trading volume measures the content of earning announcements within the firm.

Table 3.2: Investors Behavioural Bias

Variable	Proxy Definition	Measurement
	Input Measures	
Daily Sales Volume	X1 = Daily Sales	Sum of Stocks Traded per trading days
Monthly Sales Volume	X2 = Monthly Sales	Aggregate daily trades per month.
Annual Sales Volume	X3 = Annual Sales	Aggregate monthly trades per annum.

Source: (Gregoriou & Rhodes, 2017)

3.7.2 Investors Risk Perception Measure

Risk perception was measured using Idiosyncratic volatility, in measuring idiosyncratic volatility, CLMX 2001 built a simple insightful volatility decomposition framework where the volatility of the firm stock returns could be decomposed into three components the market wide volatility, an industry specific and residual return volatility and a firm specific IVol. The CLMX specification implicitly assumes that systematic risks are captured by industry returns and that firms have unit betas with respect to industry, this is relatively in agreement with CAPM framework (Thiagarajan & Li, 2010).

The study followed the CAPM volatility decomposition framework where daily stock returns was used to construct the aggregate monthly idiosyncratic volatility time series as shown in Table 3.3. This study only endeavoured to calculate the stock's beta since it is only systematic risk that is rewarded and tested its relationship with the return of the same stocks. This was based on the following CAPM formulae: $R_j = R_f + (R_m - R_f) \beta_j$. Where (R_s) is the return on the individual stock, the return of the individual stock was obtained by subtracting the previous year average Share price (P₀) from the present year's average Share price (P₁) and dividing this with the previous year average Share price (P₀) and adding the dividend yield (D_t) to obtain the percentage of the return.

Similarly (R_m) is the returns on the Nairobi Securities Exchange market all share indices. The return of the Nairobi Securities Exchange market index was obtained by

subtracting the previous year average market index (I_0) from the present year's average market index (I_1) and dividing this with the previous year's average market index (I_0) to obtain the percentage return. Results of the values determined above were used to determine idiosyncratic volatility (β_j) as shown in panel 3.

Panel 1:- $\epsilon_{jf} = (R_s - R_f)$

Panel 2:- $\epsilon_{mf} = (R_m - R_f)$

Panel 3:- $\beta_j = \epsilon_{jf} / \epsilon_{mf}$

Table 3.3: Risk Perception Measures

Variable	Proxy Definition	Measurement
Input Measures		
Return on Industry Stock	$X_1 = R_s$	((Present Year Stock-Previous Year Stock)/Prev. Year Stock) + Dividend Yield
All Share Index Return	$X_2 = R_m$	(Present year Average Market Index- Previous year Average market Index)/Previous year Average Index
Output Measures		
Market Deviation	$Y_1 = R_s - R_f$	Return on the Industry stock -Risk Free rate of Return
Risk Premium	$Y_2 = R_m - R_f$	Return on the market(All Share Index Return) – Risk Free Rate of Return
Beta coefficient	$Y_3 = (R_s - R_f) / (R_m - R_f)$	(Market Deviation / Risk Premium)

Source: (Brandt *et al.*, 2009;Thiagarajan & Li, 2010;Kirui *et al.*, 2014)

3.8 Pilot Test

The key indicators of the quality of a measuring instrument are the reliability of the measurements; in addition the responsiveness of the measure to change is always of interest to the study. However, most data sources involve a greater degree of subjectivity in judgment or other potential sources of error in measurement. In such cases, it is incumbent on the researcher to control for known sources of error and to report the reliability and validity of measurements used (Kimberlin & Winterstein,

2008). This study however employed secondary data collected from the listed corporations audited and published financial reports therefore there was no need for pilot testing of quantitative data collection matrix as an instrument of data collection ([Http://programeval.ucdavis.edu](http://programeval.ucdavis.edu), 2011).

3.9 Data Processing and Analysis

This study employed a multinomial logistic regression model in determining the influence of heterogeneity of investors' behaviour on corporate external financing decision. Multinomial logistic regression model was used to predict the probability of category membership on a dependent variable based on multiple independent variables (So & Kuhfeld, 1995). There is a continual emphasis among different scholars that regression methods have become integral component of any data analysis concerned with describing the relationship between a response variable and one or more explanatory variables (Landsman & Peasnell, 2008). The most important concept to understand is that the goal of an analysis using this method is the same as that of any model building technique used in statistics (Starkweather & Moske, 2011). The regression method finds the best fitting and most parsimonious, yet reasonable model to describe the relationship between an outcome variable and a set of independent variables (Landsman & Peasnell, 2008).

3.9.1 Multinomial Logistic Regression

The independent variables are expected to be either dichotomous (binary) or continuous (interval or ratio in scale). Determination of the influence of heterogeneity of investors' behaviour on corporate external financing decision involved the use of multinomial logistic regression by determining maximum likelihood estimation and evaluation of the probability of categorical membership in the financing decision making by corporations (Starkweather & Moske, 2011). Multinomial logistic regression is often considered an attractive analysis because it does not assume normality, linearity, or homoscedasticity. Logistic regression does have assumptions, such as the assumption of independence among the dependent variable choices. This assumption states that the choice of membership in one category is not related to the choice or membership of another category in other words the dependent variable are independent of each other. The

assumption of independence was tested using Hausman-McFadden test (Starkweather & Moske, 2005).

Similarly multinomial logistic regression also assumes non-perfect separation. If the groups of the outcome variable are perfectly separated by the predictor(s), then unrealistic coefficients will be estimated and effect sizes will be greatly exaggerated. Logistic regression does not make many of the key assumptions of linear regression and general linear models that are based on ordinary least squares algorithms particularly regarding linearity, normality, homoscedasticity, and measurement level. Logistic regression handles all sorts of relationships, because it applies a non-linear log transformation to the predicted odds ratio (So & Kuhfeld, 1995).

Therefore independent variables did not need to be metric (interval or ratio scaled) however this model does have assumptions, like assumption of independence among the dependent variable choices (Starkweather & Moske, 2005). This assumption states that the choice of or membership in one category should not be related to the choice or membership of another category (the dependent variable). This model also assumes non-perfect separation (Starkweather & Moske, 2011). Therefore this study employed a multinomial logistic model to determine the influence of heterogeneity of investors' behaviours on corporate external financing decisions by listed companies in Kenya.

3.9.2 Model Specification Test

Several preliminary tests were performed in association with multinomial logistic model (MNLM). The first preliminary test was the assumptions of independence among the dependent variable (IIA). This assumption states that the choice of membership in one category should not be related to the choice or membership of another category. The assumption of independence was tested with the aid of Hausman-McFadden test. Furthermore, multinomial logistic regression also assumes non-perfect separation, If the groups of the outcome variable are perfectly separated by the predictor(s), then unrealistic coefficients will be estimated and effect sizes will be greatly exaggerated (So & Kuhfeld, 1995).

There was need however to make sure that there was non-violation of some of the assumptions of the classical linear regression model (CLRM) before employing the

multinomial logistic model. Violating some assumptions of the classical linear regression model could lead the researcher into running the risk of obtaining biased, inefficient, and inconsistent parameter estimates. Consequently, the following diagnostic tests were conducted in order to ensure proper specification of models, these included factor analysis, Hausman McFadden test for independent, correlation analysis, autocorrelation and test for normality.

Factor analysis tests employed in the study, included the fixed effect and random effect analysis. To decide between fixed or random affects, Hausman fixed-random effect test was used where the null hypothesis (H_0) was that the preferred model is random effects and the alternative hypothesis (H_a) was that the fixed effects model was preferred. The first test involves testing that all of the coefficients associated with an independent variable are simultaneously equal to zero (test that a variable has no effect). Second test involves testing whether the independent variable differentiates between two outcomes this test is commonly used to test if two outcomes can be combined. The third test involved the assumption of the independence of irrelevant alternatives (IIA) using either a Hausman test or the LR test (Vijverberg, 2011).

Fixed Effect Analysis

An important assumption of the FE model was that those time-invariant characteristics were unique to the individual and should not be correlated with other individual characteristics. Each entity was different therefore the entity's error term and the constant (which captures individual characteristics) did not correlate with others (Frondel & Vance, 2010). The study made assumptions that some factors within the data set could impact or bias the predictor or outcome variables therefore, there was need to control for these factors (Guggenberger, 2010). This was the rationale behind the assumption of the correlation between entity's error term and predictor variables.

Fixed Effects was employed to remove the effect of these time-invariant characteristics in order to assess the net effect of the predictors on the outcome variable. Another important assumption of the FE model is that time-invariant characteristics are unique to the individual and should not be correlated with other individual characteristics (Guggenberger, 2010). Each entity were supposed to be different, therefore the entity's

error term and the constant (which captures individual characteristics) are not supposed to be correlated with others (Guggenberger, 2010). Correlated error terms render the FE not suitable since inferences may not be correct and there is need to model that relationship probably using random-effects. This was the main rationale for the Hausman test Table 4.5, the model for fixed effect employed was:

$$Y_{it} = \beta_1 X_{it} + \alpha_i + u_{it}$$

Where– α_i ($i=1\dots n$) is the unknown intercept for each entity (n entity-specific intercepts). Y_{it} was the dependent variable (DV) where i = entity and t = time. – X_{it} represents one independent variable (IV),– β_1 is the coefficient for that IV, – u_{it} is the error term

Random Effect Analysis

Random effect model could have been the appropriate model if error terms were correlated. This model treats the time-invariant un-observables as part of the disturbances, thereby assuming that their correlation with the regressors is zero. Meeting this assumption the random-effects estimator confers the advantage of greater efficiency over the fixed-effects estimator. Violation of the assumption, however, implies biased estimates (Frondel & Vance, 2010). The rationale behind random effects model was that, unlike the fixed effects model, the variation across entities is always assumed to be random and uncorrelated with the predictor or independent variables included in the model. An advantage of random effects is that time invariant variables can be incorporated. The random effects model used was as follows:

$$Y_{it} = \beta X_{it} + \alpha + u_{it} + \varepsilon_{it}$$

The crucial distinction between fixed and random effects is whether the unobserved individual effect embodies elements that are correlated with the regressors in the model, not whether these effects are stochastic or not” (Torres-reyna, 2007). Therefore the study employed classical Hausman McFadden specification to distinguish between fixed-effect model and random effects model as shown in Table 4.5.

Hausman McFadden Test for Independence Homoscedasticity

The econometric modelling of panel data typically applied two principle approaches, fixed- and random-effects estimators. Fixed Effect explored the relationship between predictor and outcome variables within an entity (Industry, company, etc.). Each entity had its own individual characteristics that influenced the predictor variables. To test for IIA, Hausman and McFadden provide the following test statistic; Hausman McFadden = $\chi^2(N) = (b-B)'[(V_b - V_B)^{-1}](b-B)$ (Guggenberger, 2010).

Test for Correlation

Multiple regression analysis is based on the assumption that the independent variables are not correlated with each other. When the independent variables are highly correlated with each other then it is very difficult to isolate the effect of each one of them on the dependent variables. This occurs when there is a simultaneous movement of two or more independent variables in the same direction and almost at the same time (Salam, 2011). The study therefore conducted correlation analysis that involved testing the strength of association/relationship between the research variables using composite value, hence the use of Pearson's Correlation Coefficient (Jesshim, 2003).

Correlation indicated both direction and degree to which research variables co-vary with one another from case to case without implying that one caused the other. Correlation analysis results gave a correlation coefficient which measured the linear association between two variables. Correlation matrix was used to determine whether independent variables were highly correlated. Correlation coefficients (r) range from -1.0 to +1.0 and the closer r is to +1 or -1 the closer the two variables are related either positively or negatively. The existence of a correlation coefficient of more than 0.8 between two independent variables indicates the likelihood of occurrence of Multi-collinearity problem (Williams & Dame (2015).

Test for Autocorrelation

Autocorrelation also known as serial correlation or cross-autocorrelation is the cross-correlation of a signal with itself at different points in time. Informally, it determines the similarity between observations as a function of the time lag between them. This serial

correlation can lead to underestimation of the standard error and cause the researcher to think that predictors are significant when they are not (Jesshim, 2003). Durbin Watson Test was used to test for serial correlation; the DW coefficient indicated by the expression below was determined by use of Stata command (dwtest) giving a DW coefficient.

$$DW = \frac{\sum_{t=2}^T (e_t - e_{t-1})^2}{\sum_{t=1}^T e_t^2}$$

Where the $e_i = y_i - \hat{y}_i$ are the residuals, T = the number elements in the sample, t = the number of independent variables, d takes on values between 0 and 4. A value of DW coefficient ranges from 1.5 to 2.5, indicates that there is no autocorrelation. A value substantially below 2 (and especially a value less than 1.5) means that the data is positively auto-correlated, in other words on average a data element is close to the subsequent data element. Value of d substantially above 2.5 means that the data is negatively auto-correlated, in other words on average the data element is far from the subsequent data element.

Test for Normality

Normality test was used to determine if the dataset was well modelled by a normal distribution. The Shapiro-Francia test was used to test for normality of the data collected from audited financial statements of listed companies. This tested the null hypothesis, that data was drawn from a normal distribution versus the alternative hypothesis that data was drawn from a distribution that was not normal. The estimation of the Shapiro-Francia test statistics was a stepwise manoeuvre that involved determination of the **W** coefficient value. This was the value that measured the extent of correlation among variables in the study. The Shapiro-Francia test statistics was defined using the following statistical formula:

$$\left[\frac{\sum_{i=1}^n (x_i - \bar{x})(m_i - \bar{m})}{\sqrt{(\sum_{i=1}^n (x_i - \bar{x})^2)(\sum_{i=1}^n (m_i - \bar{m})^2)}} \right]$$

This value was evaluated under the H_0 (null hypothesis) that the data was drawn from a normal distribution, and that the correlation was strong, so that \mathbf{W} values clusters just under 1 with the peak becoming narrower and closer to 1 as the sample size is increased. If the data deviates strongly from a normal distribution then the value of \mathbf{W} became smaller and therefore indicating lack of normality. Comparison studies have concluded that Shapiro-Francia and Shapiro-Wilk are among the most powerful of the established statistical test for normality (Starkweather & Moske, 2005).

Test for Stationarity and Unit Root

The data collected from the study population was panel data for a ten year period; therefore need to test for the Stationarity of the data. The estimation of time series data was based on the assumption that the variables are stationary. Estimating models without taking into account the non-stationary nature of the data could lead to spurious results (Mwangi, 2014). The study employed Levin-Lin-Chu test (LLC), Harris-Tzavalis (HT) and Fisher-type based Dickey-Fuller test (FDF) to test for Stationarity of the panel data, the advantage of FDT test is that it allows for unbalanced panels with gaps (Shaari, 2013).

The null hypothesis (H_0) of the test was that all panels had unit root while the alternative hypothesis was that at least one panel did not have unit roots or some panels did not have unit root. All these methods tested the same null hypothesis of non-Stationarity (H_0): $P = 1$ but they differed in terms of the considered alternative (Guggenberger, 2010). `Fisher type based Dickey-Fuller test (FDF) is a parametric test while the LLC test uses non-parametric statistical methods to take care of the serial correlation in the error terms without adding lagged difference terms. Levin-Lin-Chu test (LLC), and Harris- Tzavalis (HT) tests assume cross-sectional independence, but allow for heterogeneity in the form of individual deterministic effects (constant and or

linear time trend) and heterogeneous serial correlation structure of the error terms (Guggenberger, 2010).

3.9.3 Statistical Analysis

This sought to determine the likelihood of issuing convertibles versus seasoned stocks and straight bonds by running the multinomial logistic regression analysis based on the data collected. The panel/longitudinal data collected was analyzed quantitatively using multinomial logistic models, with the help of various statistical tools and systems aided by statistical package for social science (SPSS Statistics) version 21 and Stata version 12.0. Three different unordered choices were explained (Equity Financing, Straight Debt Financing, and Covered Debt Financing). The multinomial logistic model was derived by letting the probability for $j=1, 2, 3$ as shown below.

$$\text{Pr. (y = j)} = \frac{\exp(Z_{ij})}{\sum_{j=i}^n \exp(z_{jk})}$$

Model 1: Multinomial Logistic Model

$$\begin{aligned} \text{Pr. (y = j)} &= \frac{\exp(\theta Z_i)}{\sum_{j=i}^n \exp(\theta z_{jk})} \\ &= \frac{1}{\sum_{j=1}^n (e^{(ST\beta_1 + MPS\beta_2 + EPS\beta_3 + IVol\beta_4 + MC\beta_5 \dots \dots \sigma)})} \end{aligned}$$

The above model clearly satisfied the condition that $P_{i1} + P_{i2} + \dots + P_{ij} = 1$ for all $i = 1, \dots, n$.

Model 2: Multinomial Logistic Control Effect Model

$$\text{Pr. (y = j)} = \frac{1}{\sum_{j=1}^n e^{((\beta_1 ST + \beta_2 MPS + \beta_3 EPS + \beta_4 IVol + \beta_5 MC \dots \dots \sigma) + \beta_6 LR)}}$$

Typically the normalization $\beta_i = 0$ was made and this incorporated the six independent variables used in the study. The regression coefficients β was interpreted as reflecting the effects of the covariates on the odds of making a given choice or on the underlying utilities of the various choices. Where $j = 1, 2, 3$ stands for unordered choices for convertible offerings, straight bond offerings, and seasoned stock offerings, respectively. The vectors of independent variables are proxies for the Heterogeneity of investor behaviours: **ST**= Stock Turnover, **MPS**= Share price, **EPS**= Earnings per

Share, **IVol** =Idiosyncratic volatility (Beta), **TA**= Total Assets, **MC** =Market Capitalization, **LR**= Firm Leverage, β =the constants for the independent variables. The convertible offerings was treated as ($j = 3$) as the base category in the regression model above. The study estimated the likelihood of straight bond offerings relative to the likelihood of convertible offerings (bond equation) and the likelihood of seasoned stock offerings relative to the likelihood of convertible offerings (stock equation).

3.9.4 Measure of Fit of Independent Variables

The presence of a relationship between the dependent variable and combination of independent variables was based on the statistical significance of the model chi-square after the independent variables have been added to the analysis. More independent variables gave rise to block 1, where the independent variables were entered giving rise to -2logarithm measuring the standard error associated with trying to predict the independent variables. The difference between the two gave rise to the chi-square, the model chi-square was used to test the overall significance as derived from the likelihood of observing the actual data under the assumption that the model fits accurately. This assumption gave rise to the premise for testing the hypothesis relating to the overall fit of the model as follows:

H₀: The model is a good fitting model

H_a: The model is not a good fitting model

The log likelihood of the intercept model was treated as a total sum of squares, and the log likelihood of the full model was treated as the sum of squared errors. The ratio of the likelihoods suggested the level of improvement over the intercept model offered by the full model. A likelihood ratio falls between 0 and 1, so the log of a likelihood is less than or equal to zero. If a model has a very low likelihood, then the log-likelihood will have a larger magnitude than the log of a more likely model. Thus, a small ratio of log-likelihoods indicates that the full model is a far better fit than the intercept model. If comparing two models on the same data, McFadden's would be higher for the model with the greater likelihood (Vijverberg, 2011).

$$R^2 = 1 - \frac{\ln \hat{L}(M_{Full})}{\ln \hat{L}(M_{Intercept})}$$

M_{full} = Model with predictors

$M_{intercept}$ = Model without predictors

\hat{L} = Estimated likelihood

McFadden's adjusted mirrors the adjusted R-squared in OLS by penalizing a model for including too many predictors. If the predictors in the model are effective, then the penalty will be small relative to the added information of the predictors. However, if a model contains predictors that do not add sufficiently to the model, then the penalty becomes noticeable and the adjusted R-squared can decrease with the addition of a predictor, even if the R-squared increases slightly (Vijverberg, 2011).

3.9.5 Analysis of Multinomial Regression Model output

Separate odds ratios were determined for all independent variables for each category of the dependent variable with the exception of the reference category, which was omitted from the analysis. The exponential beta coefficient represented the change in the odds of the dependent variable being in a particular category vis-a-vis the reference category, associated with a one unit change of the corresponding independent variable (Starkweather & Moske, 2005). The closer a logistic coefficient is to zero, the less influence the predictor has in predicting the logistic.

Each separate logistic output displayed the standard error, t statistic, and the p-value. The t-test for each coefficient was used to determine if the coefficient was significantly different from zero. The Pseudo R-Square (McFadden R^2) was treated as a measure of effect size, similar to how R^2 is treated in standard multiple regressions. However, this type of metrics does not represent the amount of variance in the outcome variable accounted for by the predictor variables, however higher values indicate better fit.

3.9.6 Relative Risk Ratio (Odds Ratio)

The odds ratios were equivalent to the exponential coefficients from the Multinomial logistic model. The interpretation of the output followed directly on the heels of the binary logistic model. Multinomial logistic model estimated k-1 models, where the kth equation was relative to the referent group. The model was written out in an exponential form where the predictor of interest was evaluated at $x + \delta$ and at x for outcome m

relative to referent group (Prevost *et al.*, 2013). The exponential multinomial logistic coefficient provided the estimates of relative risk.

The exponential coefficient are commonly interpreted as odds ratios of the study (Prevost *et al.*, 2013). Standard interpretation of the relative risk ratios is for a unit change in the predictor variable, the relative risk ratio of outcome (m) relative to the referent group is expected to change by a factor of the respective parameter estimate given that other variables in the model are held constant. Therefore Odds a ratio in logistic regression was interpreted as the effect of a one unit of change in X in the predicted odds ratio with the other variables in the model held constant.

$$\frac{\text{odds(if the corresponding variable is incremented by 1)}}{\text{odds(if variable not incremented)}}$$

$$\frac{P(\text{event} | x + 1) / (1 - P(\text{event} | x + 1))}{P(\text{event} | x) / (1 - P(\text{event} | x))}$$

3.9.7 Data Presentation and Discussion

The study sought to determine the influence of heterogeneity of investors' behaviour on corporate external financing decision. Secondary data was collected from fifty three listed companies and analysed. The results show the logistic coefficient (B) for each predictor variable for each alternative category of the outcome variable. The logistic coefficient was the expected amount of change in the logistic for each one unit change in the predictor (Starkweather & Moske, 2005). The exponential (B) is the odds ratio associated with each predictor. Predictors which increased the logistic displayed exponential (B) greater than 1.0, predictors that did not have effect on the logistic displayed an exponential (B) of 1.0 and predictors which decreased the logistic had exponential (B) values less than 1.0.

The closer a logistic coefficient is to zero, the less influence the predictor has on predicting the logistic (Starkweather & Moske, 2005). The likelihood ratio chi-square test was the alternative test of goodness-of-fit (Idowu, 2016). The logistic coefficient (β) for each predictor variable for each alternative category of the outcome variable was determined and the alternative category obtained. The reference (base) category for the

study was covered debt financing. The logistic coefficient was the expected amount of change in the logistic for each one unit change in the predictor. The t-test for each coefficient was used to determine if the coefficient is significantly different from zero. Data was presented by use of pie charts, bar charts, graphs, percentages and frequency tables. SPSS was used to perform the analysis and aided in organizing and summarizing the data by the use of descriptive statistics tables, visual plots and charts.

Table 3.4: Operationalization of the Variables

VARIABLES	PROXY DEFINITIONS	MEASUREMENT	MODEL/ANALYSIS
DEPENDENT VARIABLE			
Institutional External Financing Decision	Convertible Bond	Offered (1)	Panel data/Longitudinal
	Straight Bond	Offered (2)	Panel data/Longitudinal
	Common Stock	Offered (3)	Panel data/Longitudinal
INDEPENDENT VARIABLES:			
Heterogeneity of Investors Behaviours	Investors Behavioural Bias (Stock Turnover)	-Daily Trades (Total daily trades) -Annual Trades (Total annual share trades)	Panel data/Longitudinal
	Investors Preference (Share Price)	-Daily Share price ((Opening Share price + Closing price)/2) -Annual Share price (Average annual Share price)	Panel data/Longitudinal
	Analyst Dispersion (Earnings Per Share)	-Retained Earnings (Earnings after Tax) -Issued Shares (Share issued through IPO, Rights issue, Private placement, Issue by introduction)	Panel data/Longitudinal
	Investors Risk Perception (Idiosyncratic Volatility)	- Security Return - Beta = $(R_j - R_f) + (R_m - R_f)\beta_j$	Panel data/Longitudinal
	Investors Corporate Size Dispersion	-Total Asset (Current +Fixed Assets) -Market Capitalization(Issued shares multiply by current Share price)	Panel data/Longitudinal
	CONTROL VARIABLE		
Corporate Leverage	LEV (Z_6)	- Long Term - LTDebt:Equity	Panel data/Longitudinal

Source: (De Franco *et al.*, 2009; Chemmanur & Karthik, 2011)

CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSION

4.1 Introduction

This chapter presents the results of the analyses of secondary data collected from the audited annual financial reports of the listed companies; Nairobi Security Exchange is regulated by Capital Market Authority and Central Bank of Kenya as shown in institutional data base stipulated by the objectives and conceptual framework in chapters preceding. This chapter proceeds in sections, the first section gives the preliminary findings of the study, which is then followed by descriptive statistics analysis section and panel data specification tests. The findings are presented under the following sections, inferential statistics, hypotheses testing and chapter summary.

4.2 Data Sources

Nairobi Security Exchange has a total of 13 sectors trading as shown in Table 4.1. Data was collected from the 53 companies representing 10 sectors after excluding those listed for less than 5 years. These 53 companies represented 79.1% of the population as shown in Table 4. Data collected from over 50% of the population is considered good while data collected from over 70% of the population is considered a very good representation of the population (Idowu, 2016). Kothari (2004) indicated that for a social study data collected from above 60% of the target population is adequate; therefore a good response rate for a study is important because it reflects the suitability of the study procedure.

The 79.1% response rate is therefore considered a good representative of respondents to provide enough information for analysis and to derive conclusions. Equity Market at NSE is divided into two segments, the Main Investment Market segment and the Alternative Investment Market Segment. The Main Investment Market segment constitute the following sectors, the Agricultural Sector, Automobile and Accessories, Banking, Commercial and Services, Construction and Allied, Energy and Petroleum, Insurance, Manufacturing and Allied, Telecommunication and Technology Segment.

Real Estate Investment Trust, Investment Services and Exchange Traded Funds (Appendix 5) (Dyer and Blair Investment Bank, 2016).

The NSE's liquidity, market capitalization, and market turnover influenced it being classified as both an emerging market and a frontier market in Africa (Ayako, Kungu, & Githui, 2015). Three sectors dominates the NSE in terms of the number of companies listed at the NSE this includes the Commercial and Services, Banking and Manufacturing and Allied. Commercial and Services sector has the highest number of trading companies totalling twelve, data from seven companies under this sector was collected. Banking sector had 11 listed banks that had been listed for more than 5 years, therefore 100% response rate. Manufacturing sector has 10 listed companies and 80% were included in the study due to some having been listed for less than 5 years hence shorter listing period.

Table 4.1: Secondary Data Actual Source

Sector	Target	Actual	Percentage (%)
Banking	11	11	100
Manufacturing and Allied	10	8	80
Insurance	6	5	83.33
Commercial and Services	12	7	83.33
Energy and Petroleum	5	4	80
Construction and Allied	5	5	100
Agricultural	6	6	100
Investment	5	3	60
Automobile and Accessories	3	3	100
Telecommunication and Technology	1	1	100
Real Estate Investment Trust	1	0	0
Investment Services	1	0	0
Exchange Traded Funds	1	0	0
Total	67	53	79.10

Insurance sector has 6 listed companies one was excluded leaving 5 companies that formed 83% followed by Energy and Petroleum sector that has 5 trading companies. The Stanlib Fahari is the only trading company in REITs sector since the Real Estate Investment Trust was introduced in 2015; this was excluded from the study due to short

trading period hence unavailability of most data. Financial and non-financial companies in Kenya have embraced equity external financing by floating common equity through IPO or by private introduction this has led to growth of the market for the last 10 years (CMA, 2014). The research focused on the secondary data collected from these institutions for a period of ten years (2007-2016).

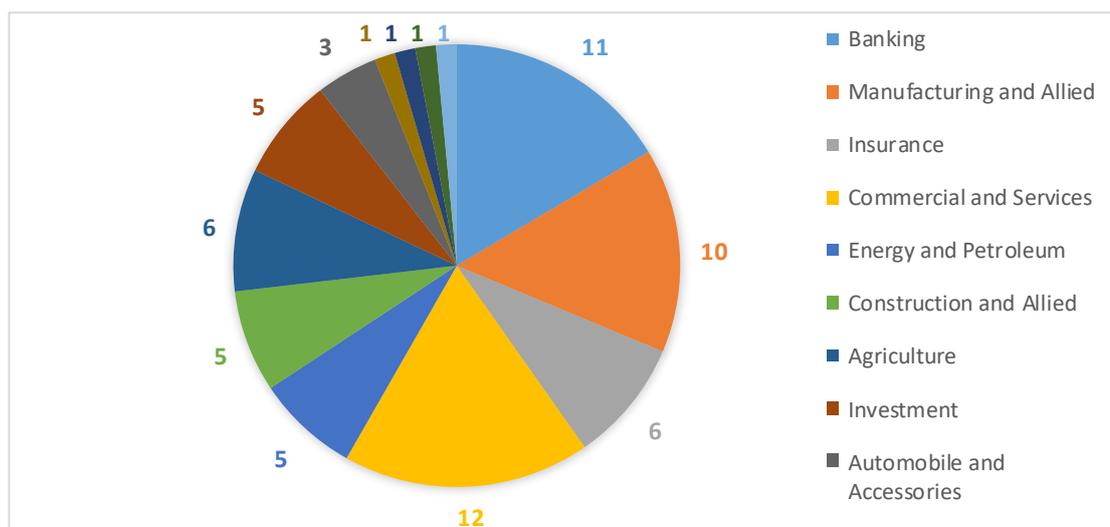


Figure 4.1: Sectors Trading at Nairobi Security Exchange 2007-2016.

Data for measuring the heterogeneity of investor’s behaviour and the external financing decision was collected from individual company’s consolidated financial statements NSE database and the CMA data base as shown in Figure 4.2. Data for eight variables was collected from 53 companies for a period of 10 years from 2007-2016 (CMA, 2017), this formed balanced panel data-set (n x t) with 53 cross-sections and 10 periods. Banking and manufacturing and allied sectors have high number of companies listed at NSE.

However in terms of market capitalization and the number of stock turnover per companies telecommunication sector represented by Safaricom has shown exemplary performance for years (Ayako *et al.*, 2015). Figure 4.2 indicates that data from five companies was collected in construction and allied sector, four companies from energy and petroleum, six companies from agriculture sector three companies from investment and automobile and one company from telecommunication sector. These companies were 53 in total which is more than 79% of the target population. Kothari (2004)

indicates that tests of significance used for dealing with problems relating to large samples are different from those used for small samples.

Assumptions made in case of large samples do not hold good for small samples. In case of large samples, the assumption is that the sampling distribution tends to be normal and the sample values are approximately close to the population values. When sample size (n) is large, the probability of a sample value of the statistic deviating from the parameter by more than three times its standard error is very small and as such the z-test is applied to find out the degree of reliability of a statistic (Kothari, 2004).

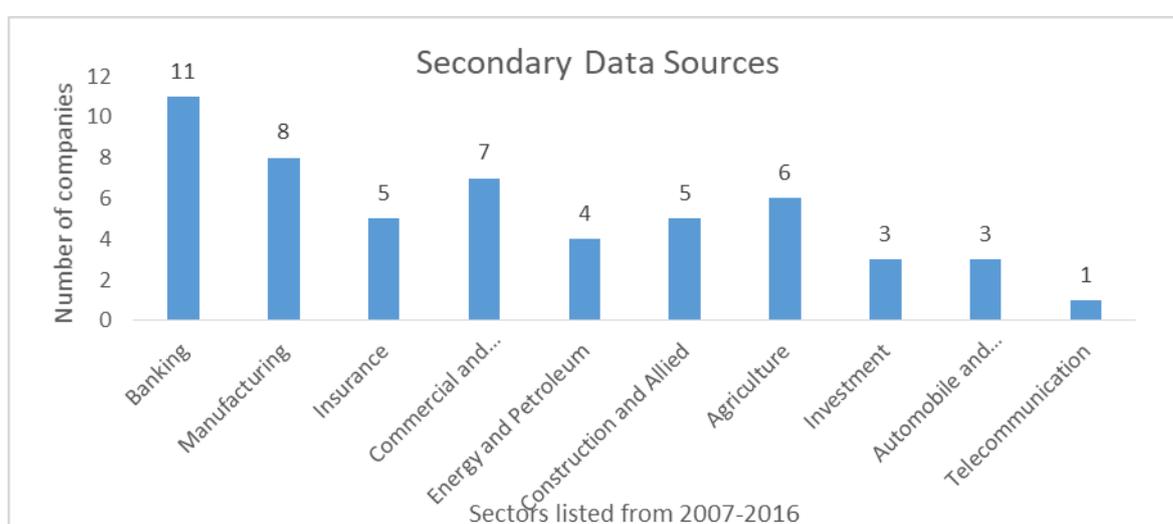


Figure 4.2: Sectors listed from 2007-2016

4.3 Descriptive Statistical Analysis

The descriptive statistical contents in this section includes, statistics for all the independent variables of companies listed at NSE during the period under study ranging from 2007-2016. The data used in this study was substantially edited to avoid inconsistencies, reporting errors and double counting of institutions. The section that follows shows the descriptive statistics for the secondary data variables. The study used 530 panel data set collected from companies listed for more than five years at Nairobi Security Exchange. The data set units for different variables across the proxy variables vary by several orders of magnitude. Using raw data might have led to over-weighting some proxies simply because of their scale. Therefore the study transformed the data on stock turnover, firm size, and corporate leverage into natural logarithm (Ezeoha, 2009).

4.3.1 Heterogeneity of Investor Behaviours

Table 4.2 presents descriptive statistics for five proxies, used to determine heterogeneity of investors' behaviour. The sample included 53 firms during the study period from January 2007 to December 2016. Each proxy variable was measured at annual frequency. There is a wide dispersion around the mean for the three proxy variables (Stock turnover, Share Price and Earnings per share) as shown by the standard deviations of the heterogeneous behaviour variable in Table 4.2. The Mean of the annual share price during study period was 80.09232. This indicates that during the study period most listed companies had their annual Share price of Kshs. 80.09232 and earnings per share mean of 10.83078.

There is a wide dispersion around the mean for the three variables (Stock turnover, Share price and Earnings per share) as shown by the standard deviations of the three variable in Table 4.3. High dispersion is attributed to variation of the Share price affected by different economic and political situation, this findings agrees with Nasieku (2014). The year 2007/2008, 2012/2013 and 2016 experienced heightened political activities compounded by post-election violence in the year 2008 and drought that could have caused the high variance in the Share prices. Table 4.3 shows variable interactions comparing within and between and overall Mean and Standard deviations. This explains the extent to which independent variables vary overall within and between each other.

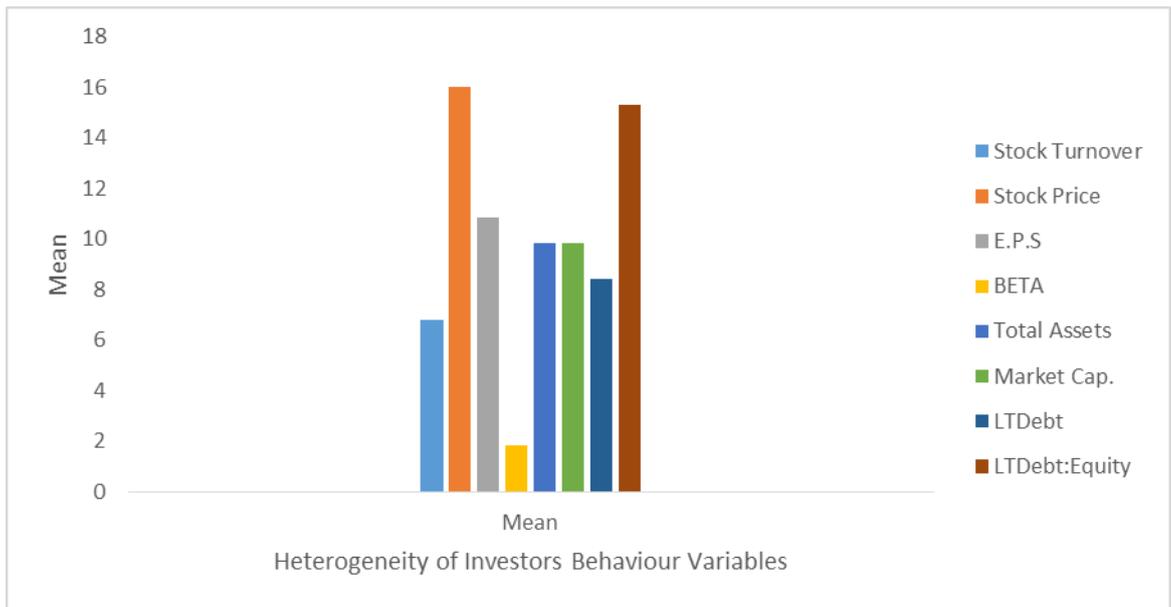


Figure 4.3: Mean of the Heterogeneity of Investors Behaviour proxy Variables

Investors Behavioural Bias and Corporate External Financing Decision

Investors' behavioural bias was determined by stock turnover during the study period. Overall average share traded for the period of the 10 years had a log. Mean of 6.778211 translating to a Mean of 6000825.528 with an overall standard deviation of 1.450816, between the firms' standard deviation of 1.170787 and within the firms' standard deviation of 0.8703138 as shown in Table 4.3. High dispersion is attributed to variation of the Share movement affected by different economic and political situation during study period. The year 2007/2008, 2012/2013 and 2016 experienced heightened political activities compounded by post-election violence in the year 2008 and drought.

These phenomena could be the cause of high variance in Stock turnover and Share prices. Nairobi Security Exchange has maintained a healthy growth for the last 10 years as shown in Table 4.3. The outstanding performance of NSE in terms of stock performance is a clear indication that the market is growing (Wambui & Muturi, 2014). The high variance in the market is due to differences across the industry. The variation of market characteristics resulted in some companies' shares performing poorly at Nairobi security exchange, indicating that investors behaviour at the market can be measured through the stock turnover this findings agrees with Lin *et al.* (2013).

Investors Preference and Corporate External Financing Decision

Investors' preference was determined using Share price volatility during the study period. The average share price for the period was 80.09232 with a variance of 14463.309. The high variance is attributed to fluctuation in the Share price during the study period. Barber and Odean (2011) explained that investors with discount brokerage accounts become overconfident and engage in excess trading thereby influencing share price volatility within a given period. Overconfidence and disposition effect are well-established and common biases that makes people too confident about their knowledge and skills and ignore the risk associated with the investment.

Therefore high volatility of stock could be what brought about high variance of the Share price of firms listed at NSE. Earlier studies in this area have explained how the overconfidence bias influences rational decision-making behaviour thereby influencing the Share price (Barber & Odean, 2011). Disposition effect is another important behavioral bias wherein investors are more prone to selling the winning stock and tend to hold on to the loss-making asset. Shefrin and Statman (2010) observed that at the end of the trading period, because of tax motivation, investors are more willing to sell the loss-making assets. Therefore investors' behavioural bias influences the Share price of the assets. Investors, who overestimate the probability of the upside cash flow of an organization, always overvalue the firm's securities relative to their respective fundamental values.

Analyst Dispersion and Corporate External Financing Decision

Analysts' dispersion was determined using earnings per share. Overall average earnings per share for the period of the 10 years had a Mean of 10.83078 and an overall standard deviation of 24.76644, between the firms' standard deviation is 21.21454 and within the firms' standard deviation is 13.07581 as shown in Table 4.3. High dispersion is attributed to variation of the earnings per share between firms in different sectors. This could also be due to different economic and political situation between the year 2007 and 2016 acknowledging the political events during the study period. The year 2007/2008, 2012/2013 and 2016 experienced heightened political activities compounded by post-election violence in the year 2008 and drought that could have caused the high variance in the Share prices.

Investors Risk Perception and Corporate External Financing Decision

Overall average idiosyncratic volatility for the period of the 10 years had a mean of 1.831098 with an overall standard deviation of 2.395529 and between the firms' standard deviation of 0.1342168 and within the firms' standard deviation of 2.39183 as shown in Table 4.3. High dispersion is attributed to stock volatility, influenced by investors' behaviour attributed to different economic and political situation. The year 2007/2008, 2012/2013 and 2016 experienced heightened political activities compounded by post-election violence in the year 2008 and drought that could have caused the high volatility rates.

Thiagarajan and Li (2010) examine the implications of both time-trends and cross-sectional differences in idiosyncratic risk for factors typically used in quantitative stock selection models such as valuation, mean reversion, and stock price momentum. They find that cross-sectional variations in idiosyncratic volatility make an economically and statistically significant difference to the efficacy of the factors used in stock selection. The efficacy of tactical asset allocation signals also depends on cross sectional variations in IVol, these findings supports the findings of this study. Therefore individual investors tend to demonstrating herd behaviour because they follow the decisions of a large group or noise traders. Analysts may herd their past experiences or decisions or imitate others to protect their reputational or compensation concern, this behaviours influence the stock volatility leading to a huge dispersion as shown in table 4.3.

Investors Corporate Size Dispersion and Corporate External Financing Decision

Corporate size was evaluated in terms of total assets and market capitalization. Market capitalization had an overall average mean for the period of the 10 years and a log mean of 9.823327 and an overall standard deviation of 1.419228. Standard deviation between the firms' was 0.9089191 and within the firms was 1.096417. Whereas Total Assets had a logarithm mean of 9.846098 and an overall standard deviation of 1.122002. Between the firms' standard deviation was 1.061455 and within the firms' standard deviation of 0.4407968 as shown in Table 4.3.

High dispersion is attributed to variation in the market capitalization between firms in different sectors. Different firms listed at NSE come from different sectors and industries faced with different economic conditions however due to contagion effect;

ultimately the entire economy is affected by any negative economic factor within a sector in the economy. The variation could also be due to different economic and political situation between the year 2007 and 2016 acknowledging the political events during the study period (Bechtel, 2010). Dispersion as shown in figure 4.4 therefore can be explained by the economic events during the study period.

The financial crises that started in 2006 and had global impact up to 2009, the political conditions within the country more so the Kenyan post-election violence of 2007/2008. This was followed by a period of a number of political leaders being under the International Criminal jurisdiction that brought a lot of uncertainty to the country thereby affecting the economy negatively, with investors losing confidence in the Kenyan market (Bechtel, 2010).

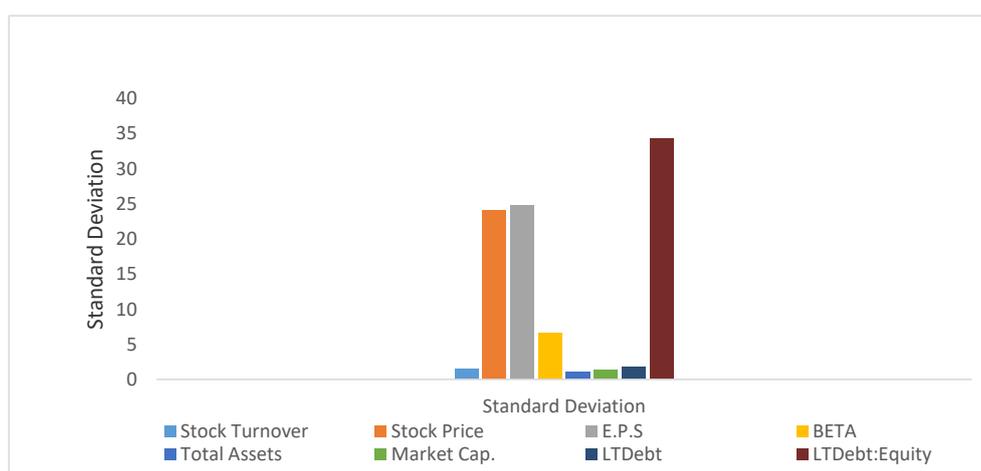


Figure 4.4: Dispersion of Heterogeneity of Investors Behaviour Variables.

Table 4.2 gives a clear indication of the mean and variance of different variables. The total number of companies under study was 53 for a period of 10 years this gave total of $(53 \times 10 = 530)$ observations which is the same as the sum of weights under study. The preference that investors exhibit towards certain price-ends result from the desire of investors to avoid significant deliberation costs when retrieving and processing numerical information. The costs of thinking indicate that consumers willingly trade off the benefits of accuracy against the mental cost of achieving that accuracy. This desire derives from the principle as articulated by Varki, Sabherwal, Bitta, Moore, and Moore (2006).

Table 4.2: Descriptive statistics for Heterogeneity of Investor Behaviours

Proxy Variable	Obs.	Sum of Wgt.	Mean	Std. Dev.	Variance
Stock Turnover	530	530	6.778211	1.450816	2.104868
Share price	530	530	80.09232	120.2635	14463.309
Earnings Per Share	530	530	10.83078	24.76644	613.3767
Idiosyncratic volatility	530	530	1.831098	2.395529	5.738559
Total Assets	530	530	9.846098	1.122002	1.258888
Market Capitalization	530	530	9.823327	1.419228	2.014209
LTDebt	530	530	8.429277	1.742766	3.037233
LTDebt:Equity	530	530	15.30132	34.3514	5900.116

The findings of the study in Table 4.3 show that the number of sample was 53 for a period of 10 years giving total observation of 530. The stock turnover standard deviation between the firms is higher compared to within the firms; the Share price standard deviation between the firms is higher compared to within the firms, the earnings per share between the firms is higher than within the firms, idiosyncratic volatility between the firms is higher than within the firm. This is also shown by the high variation between the minimum and maximum units observed in the study.

The period under study 2007-2016 signifies a period when the country was going through 2007/2008, post-election violence and the International Criminal Court process. The 53 firms in the study were faced with political and economic conditions during this period that resulted into high overall and between the firm variations. These economic conditions within the Kenyan economy specifically during the study period could be the cause of the variability within and between the firms under study. This findings are in agreement with findings by Nyamita, Garbharran, and Dorasamy (2014) findings on factors influencing debt financing decision of corporations.

They concluded that both firm specific factors and macroeconomic factors influence debt financing decision by the firm. The firm specific factors include profitability, corporation size, nature of asset, growth opportunity, corporation risk, corporation tax rate, liquidity, non-debt tax shield, probability of bankruptcy, corporation age and its corruption perception index. The macroeconomic factors include gross domestic product, inflation rate, interest rates, industry influence and financial markets

conditions. These factors influence the debt financing decisions of corporations either positively or negatively.

Table 4.3: Panel Data Summary Statistics

Variable		Mean	Std. Dev.	Min	Max	Observations
Stock Turnover	Overall	6.778211	1.450816	0	9.618093	N 530
	Between		1.170787	3.596910	9.484671	n 53
	Within		.8703138	2.373534	10.63034	T 10
Share price	Overall	80.09232	120.2635	0	1043.140	N 530
	Between		102.0016	3.645000	496.5740	n 53
	within		65.08459	-185.4527	626.6583	T 10
Earnings Per Share	Overall	10.83078	24.76644	-11.88000	220.1000	N 530
	Between		21.21454	-.966000	133.6640	n 53
	within		13.07581	-73.16522	176.4118	T 10
Idiosyncratic volatility	Overall	1.831098	2.395529	6.920000	15.27000	N 530
	Between		.1342168	10.68400	11.25400	n 53
	Within		2.39183	7.133328	15.49913	T 10
Total Assets	Overall	9.846098	1.122002	6.498794	11.89004	N 530
	Between		1.061455	6.991813	11.50589	n 53
	Within		.3890622	6.996246	12.43932	T 10
Market Capitalization	Overall	9.823327	1.419228	0	12.93626	N 530
	Between		.9089191	7.250828	11.51989	n 53
	Within		1.096417	.1589347	13.79947	T 10

4.4 Panel Data Specification Tests

The first test involved visual plot and testing that all of the coefficients associated with an independent variable are simultaneously equal to zero (test that a variable has no effect). Second test involved testing whether the independent variable differentiates between two outcomes this test is commonly used to test if two outcomes can be combined. The third test involved the assumption of the independence of irrelevant alternatives (IIA) using either a Hausman test or the LR test proposed by McFadden *et al.* (1976). In this section, the diagnostic tests performed prior to multinomial logistic regression analyses are presented.

4.4.1 Visual Plot

Visual Plot helped to visualize the trend of the panel regression variables (Greene, 2008). The plots help to visualize the trend of the entire panel variables used in this study. Figure 4.5 visual plots show the shape of Annual share traded curves over the study periods. The plots have a trend that is moving upwards, indicating that the stock turnover had an upward trend over the study period 2007 to 2016. The troughs and peaks as indicated by the detrended logistic plot indicates the changes in investors' behaviour and attitude towards a specific listed company therefore leading to fluctuation in volume traded over the study period. Therefore positing varied investors behaviour towards the listed companies at NSE during the study period.

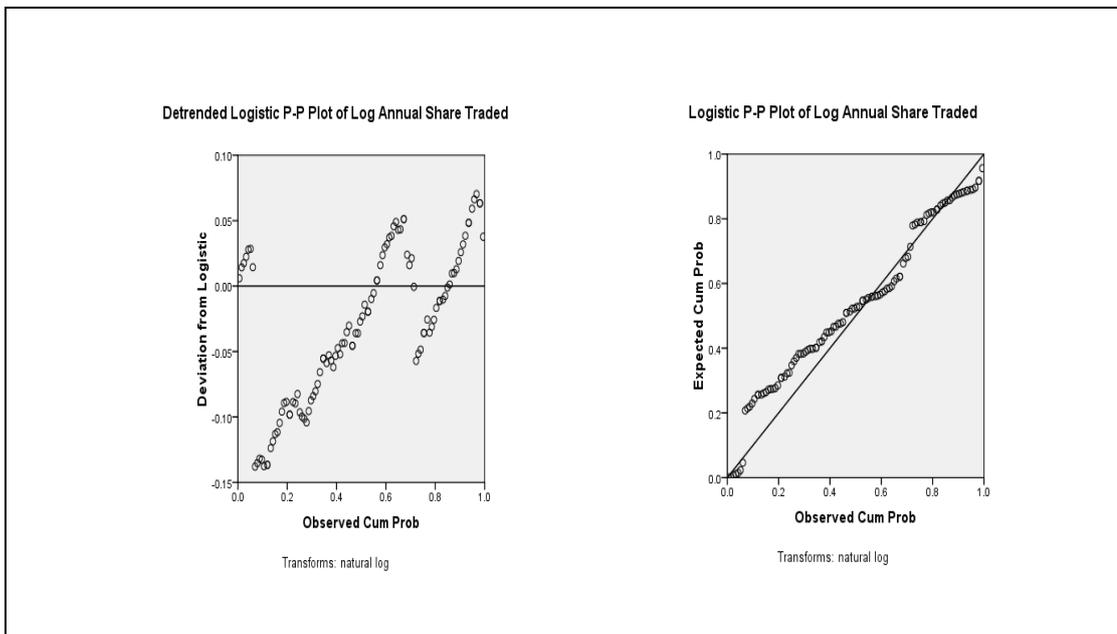


Figure 4.5: Investors Overconfidence Bias Visual Plots

Figure 4.6 visual plots show the shape of Share price curves over the study periods. The plots have a trend that is moving upwards, indicating that the idiosyncratic volatility had an upward trend over the study period 2007 to 2016. The peaks and troughs as indicated by the detrended plot gives an indication of investors Behaviours under varied economic and political conditions during the study period. There were massive changes in companies' Share price during the study period. The troughs and peaks as indicated by the detrended logistic plot indicates the fluctuations of companies Share price at the

NSE positing varied investors behaviour towards the listed companies at NSE during the study period.

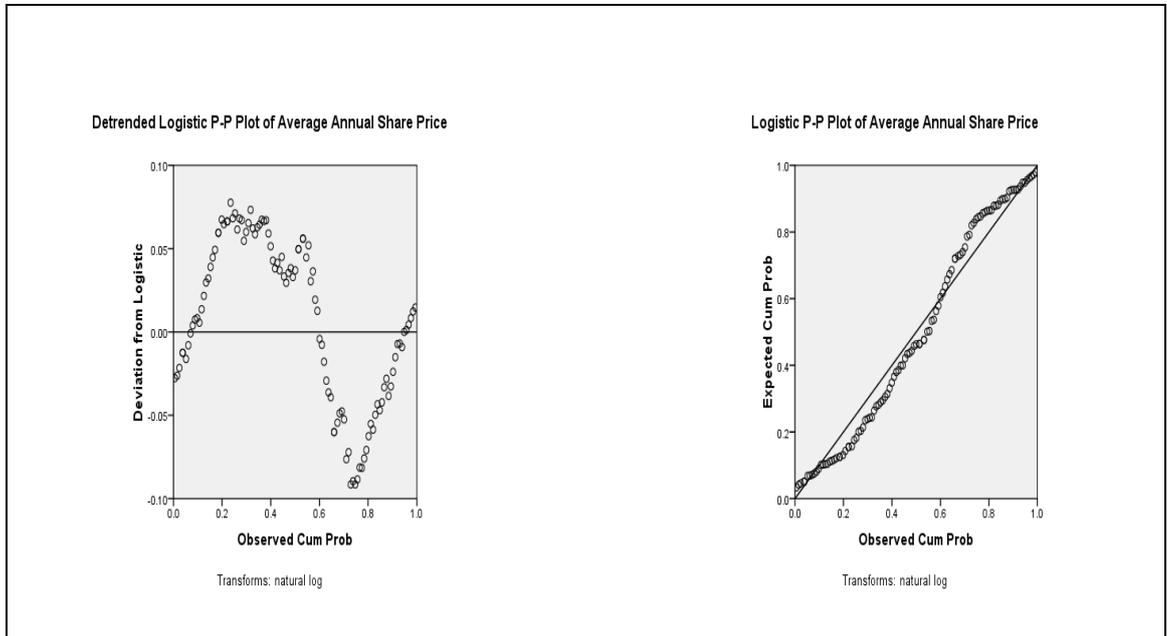


Figure 4.6: Investors Preference Visual Plots

Figure 4.7 visual plots show the shape of Earnings per Share curves over the study periods. The plots have a trend that is moving upwards, indicating that the idiosyncratic volatility had an upward trend over the study period 2007 to 2016. The peaks and troughs as indicated by the detrended plot gives an indication of investors' behaviour under varied economic and political conditions during the study period. Companies registered varied earnings per share during the study period. The troughs and peaks as indicated by the detrended logistic plot indicates the fluctuations of companies reported earnings per share thereby varied investors behaviour towards the company's earnings announcements.

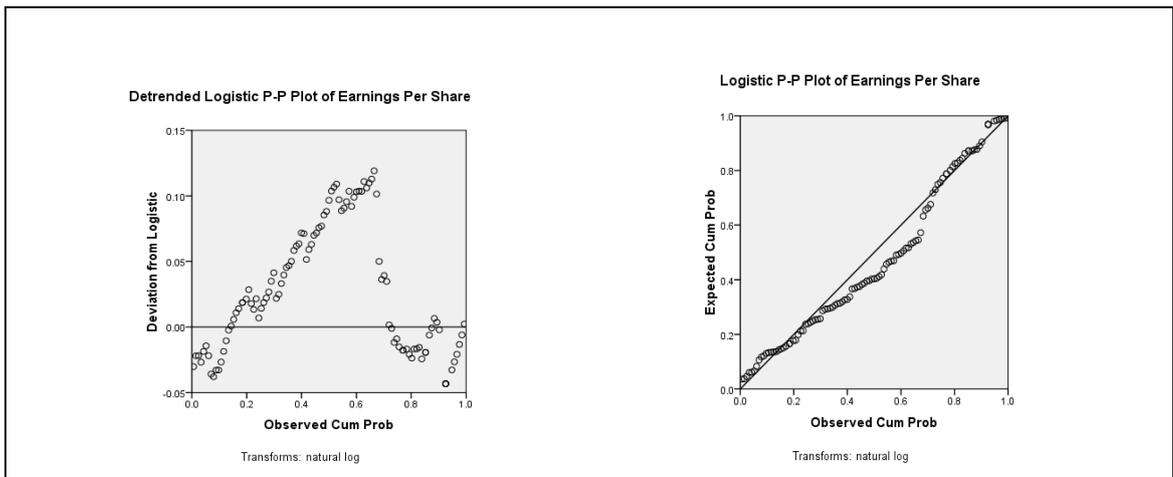


Figure 4.7: Analyst Dispersion Visual Plots

Figure 4.8 visual plots shows the shape of the idiosyncratic volatility curves over the study periods. The plots have a trend that is moving upwards, indicating that the idiosyncratic volatility had an upward trend over the study period 2007 to 2016. The peaks and troughs as indicated by the detrended plot gives an indication of investors Behaviours under varied economic and political conditions during the study period.

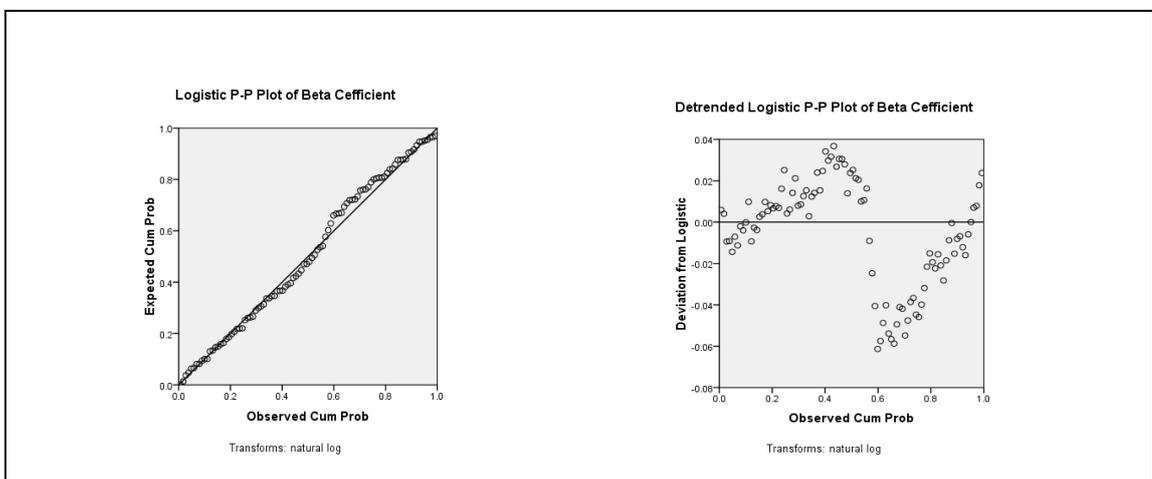


Figure 4.8: Investors Risk Perception Visual Plots

Figure 4.9 plots shows shapes of Market capitalization and Total Assets curves over the study periods. These plots revealed that listed companies size have a trend that is moving upwards, indicating that listed companies increased in size from the year 2007 to 2016. The peaks and troughs as indicated by the plots give an indication of investors Behaviours under varied economic and political conditions during the study period, the

findings are in agreement with the findings of the study done by Kumar and Goyal (2016). Introduction of the time series trend analysis revealed the clear upward trend of the listed companies' size.

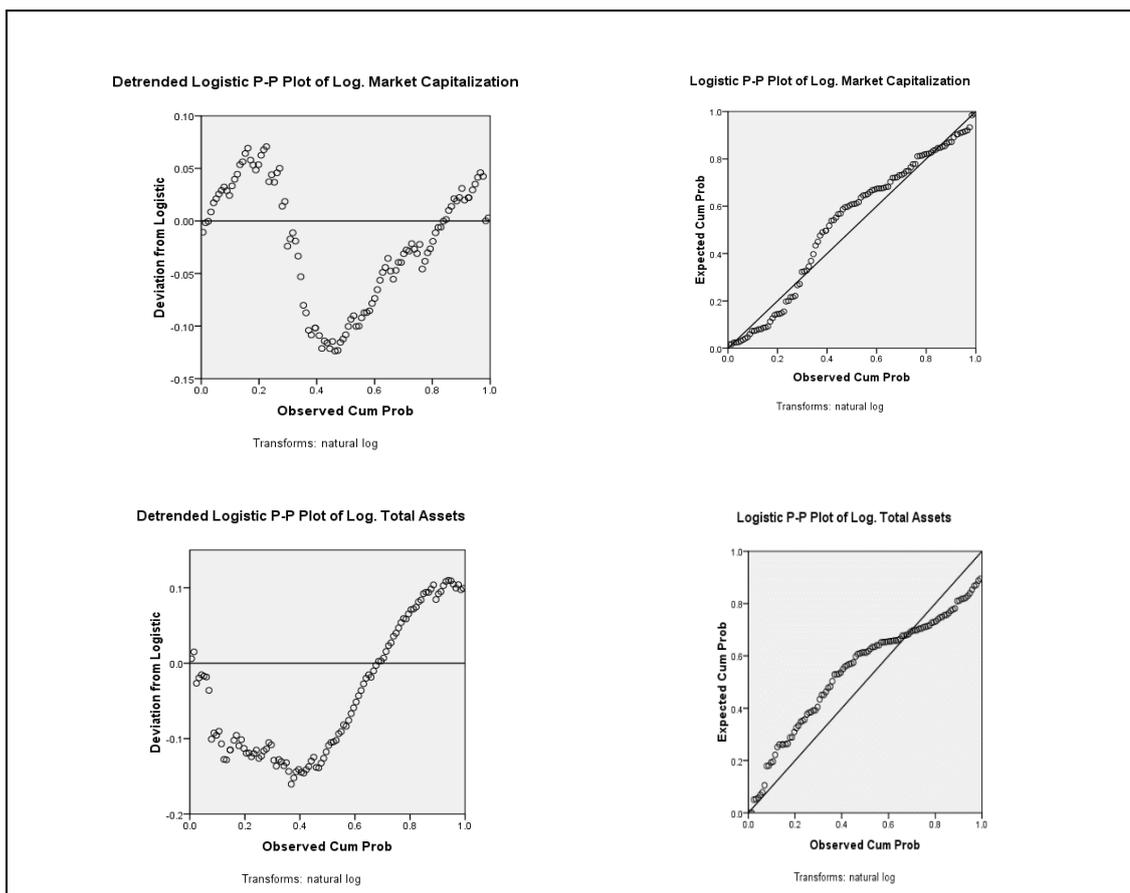


Figure 4.9: Investors Corporate Size Perception Visual Plots

4.4.2 Fixed and Random Effect Tests

Given the nature of data on heterogeneity of investors' behaviour and the study period, data collected was panel in nature with corporations of different sizes (large, medium and small). Therefore, a panel regression equation was solved on the assumption that there were both significant spatial and temporal effects over the 2007-2016 study periods. Multinomial logistic regression does have assumptions, such as the assumption of independence among the dependent variable choices.

The assumption of independence was tested using the Hausman-McFadden test. This test was based on the premise that the set of coefficient estimates gleaned from the fixed-effects estimation should not differ systematically from that of the random-effects estimation if the orthogonally assumption of the unobservable individual-specific effects and the regressors is correct.

Hausman-McFadden Test for Independence and Homoscedasticity

To decide between fixed or random affects a Hausman fixed random effect test was applied where the null hypothesis (H_0) was that the preferred model is random effects and the alternative hypothesis (H_a) was that the preferred model was fixed effects test. This basically tested whether the unique errors (u_i) were correlated with the regressors. The null hypothesis was that they are not. It was established as shown in Table 4.4 and 4.5 that the fixed effect was consistent under null hypothesis and alternative hypothesis obtained from Hausman test as shown in Table 4.4.

Based on the rule of the thumb the Hausman-McFadden test probability χ^2 is less than 0.05 (significant) therefore fixed effect model was appropriate. This is because the chi square was established to be 0.0354 as shown in the table 4.4. To test for IIA, Hausman and McFadden provide the following test statistic as shown in Table 4.4. The HM statistic confirmed the presence of IIA; therefore the disturbances are independent and homoscedasticity. This was determined statistically using the following model $HM = \chi^2 (N) = (b-B)'[(Vb-V_B)^{-1}](b-B)$.

Should the HM statistic indicate a rejection of the null hypothesis of IIA, then the disturbances may not be independent and homoscedasticity. Table 4.5 indicates the relevance of the variables under fixed effect model. The higher the P-value the higher the relevance of the variable, therefore all the six independent variables were significant having their P-value greater than 0.05. Two-tail P-values test the hypothesis that each coefficient is different from 0. To reject this, the P-value has to be greater than 0.05. All the independent variables were statistically significant with $P \geq 0.05$

Table 4.4: Hausman Fixed and Random Effect

	Coefficients			
	(b) fixed	(B) Random	(b-B) Difference	Sqrt. (diag (v_b-v_B)) S.E
Stock Turnover	-.0983643	-.0487824	-.049582	.0447153
Share price	-.0008787	-.000098	-.0007808	.0003649
Earnings Per Share	.0028967	.0013602	.0015365	.0020304
Idiosyncratic Volatility	-.0037986	-.0046082	.0008096	.0017199
Total Assets	-.0239849	-.0612455	.0372607	.0817449
Market Capitalization	.0803126	.0720866	.008226	.0310631
LTDebt	.0236555	.0173968	.006259	.0269935
LTDebt:Equity Ratio	.0001447	-.0000771	.0002218	.0001682

b = Consistent under Ho and Ha; obtained from xtreg
B = Inconsistent under Ha, efficient under Ho; obtained from xtreg
b = Consistent under Ho and Ha; obtained from xtreg
Test: Ho: difference in coefficients not systematic

$$\text{chi2 (8) = (b-B)'[(V_b-V_B)^{-1}](b-B) = 21.25}$$

$$\text{Prob > chi2 = 0.0354}$$
If the Prob > chi2 is less than 0.05 (significant) then fixed effect model is used.

Test for Fixed Effects

Table 4.5 shows that the Probability >F is 0.000 indicating that the model is appropriate. This is an F test to see whether all the coefficients in the model are different than zero. The overall R-square of the fixed effect model was 0.0045 this indicates the amount of variance of Y explained by X. The coefficients of the regressors (coefficient.), varies across the independent variables as shown in Table 4.5. This indicated how much external financing decision changes when independent variable increases by one unit. The t-values of the variables as shown in the table vary from -1.37 to 1.37 with a constant of 1.67. This tested the null hypothesis Ho: Each coefficient is different from 0. Table 4.5 indicates that the null hypothesis was accepted and that each coefficient was different from zero. To reject the null hypothesis the t-value had to be higher than 1.96 (for a 95% confidence).

Table 4.5: Fixed Effect (Within) Regression

Group variable: Company			Number of Obs.	= 530
R-Squared	Within	0.0379	Number of groups	= 53
	Between	0.0000	Obs. Per group	Min = 10.0
	Overall	0.0045		Avg = 10.0
				Max = 10.0
Corr (u _i , xb)	= -0.7454		F(14, 52)	= 384.89
			Prob > F	= 0.000

External Financing Decision	Coef.	Std. Err	t	P > t	(95% Conf. Interval)	
Stock Turnover	-.0983643	.0593647	-1.37	0.475	-.215022	.0182933
Share price	-.0008787	.0005249	-0.90	0.617	-.0019101	.0001526
Earnings Per Share	.0028967	.0025399	1.17	0.524	-.0020944	.0078878
Idiosyncratic Volatility	-.0037986	.0055422	-0.68	0.501	-.0146896	.0070924
Total Assets	-.0239849	.0985208	-0.22	0.829	-.2175883	.1696185
Market Capitalization	.0803126	.0493902	1.24	0.622	-.0167441	.1773693
LTDebt	.0236555	.0363077	0.76	0.548	-.0476928	.0950037
LTDebt:Equity	.0001447	.0002689	1.37	0.675	-.0003836	.0006731
_cons	4.918993	2.811487	1.67	0.102	-.6058616	10.44385
Sigma_u	.42807465					
Sigma_e	.74275771					
rho	.01564196					
F test that u _i = 0:				F(52, 463) = 1.27	Prob > F = 0.1044	

4.4.3 Correlation Result

The findings of the correlation analysis presented in the Table 4.6 indicates that the correlation coefficients were all significant with P-value less than 0.05. Share price negatively correlated with Stock turnover with a correlation coefficient of -0.1439 the relationship is a weak negative correlation. Stock Turnover negatively correlated with Earnings per share with a Correlation Coefficient of -0.1362, this relationship was a weak negative correlation. The Earnings per Share was positively correlated to Share price with a correlation coefficient of 0.3495, Total Assets was positively correlated to Share price with a correlation coefficient of 0.0601, Idiosyncratic volatility was positively correlated to Share price with a correlation coefficient of 0.2147 and Market capitalization was positively correlated to Share price with a correlation coefficient of 0.2550. Total Assets was positively correlated to Stock Turnover with a correlation coefficient of 0.3669, this relationship was also a weak relationship.

Idiosyncratic volatility was positively correlated to Stock Turnover with a correlation coefficient of 0.0060. Market capitalization was positively correlated to Stock Turnover

with a correlation coefficient of 0.2374. Total Assets was positively correlated to Earnings per Share with a correlation coefficient of 0.0092. Idiosyncratic volatility was positively correlated to Earnings per Share with a correlation coefficient of 0.0579 and Market capitalization was positively correlated to Earnings per share with a correlation coefficient of 0.1672. The results show that idiosyncratic volatility was positively correlated to Total Assets with a correlation coefficient of 0.0904. The findings of the study further show that there was a positive correlation between Market capitalization and Total Assets with a correlation coefficient of 0.3038.

The correlation between Market capitalization and idiosyncratic volatility was positive with a correlation coefficient 0.0641. The presence of a positive correlation coefficient indicates that as one variable increases the other variable also gets increases and vice versa and a negative correlation coefficient indicates that as one variable increases the other variable decreases and vice versa. The existence of multi-collinearity is however affirmed especially when there is existence of a correlation coefficient of more than 0.8 between two independent variables; this indicates the likelihood of occurrence of Multi-collinearity problem. There was no multi-collinearity because all the independent variables had a correlation coefficient of less than 0.8. This agrees with Williams and Dame (2015) study that indicate that a correlation coefficient less than 0.8 indicates absence of multi-collinearity.

Table 4.6: Correlation Coefficient Matrix (P-values in parenthesis)

	Share Price	Stock Turnover	Earnings Per Share	Total Assets	Idiosyncratic Volatility	Market Capitalization
Share price	1.0000 (0.0000)					
Stock Turnover	-0.1436 (0.0007)	1.0000 (0.0000)				
Earnings per Share	0.3495 (0.0310)	-0.1362 (0.0102)	1.0000 (0.0000)			
Total Assets	0.0601 (0.0022)	0.3669 (0.0011)	0.0092 (0.0061)	1.0000 (0.0013)		
Idiosyncratic Volatility	0.2147 (0.0000)	0.0060 (0.0000)	0.0579 (0.0000)	0.0904 (0.0000)	1.0000 (0.0000)	
Market Capitalization	0.2550 (0.0000)	0.2374 (0.0011)	0.1672 (0.0000)	0.3038 (0.0000)	0.0641 (0.0000)	1.0000 (0.0000)

4.4.4 Test for Autocorrelation

A key assumption in regression is that the error terms are independent of each other. The result presented by table 4.7 determined whether there was autocorrelation (serial correlation), was analyzed using Durbin-Watson test. This test is relevant with time series data where data is sequenced by time. According to (Jesshim, 2003), a value of *DW coefficient* between 1.5 and 2.5 indicates that there is no autocorrelation. The result of the analysis gave a DW coefficient of 2.039. Therefore confirming that there was no error terms correlation in the 10 years secondary data collected as shown in Table 4.7.

Table 4.7: Durbin-Watson Autocorrelation Results

Durbin Watson Autocorrelation	
Test	Durbin Watson
Value	2.039

4.4.5 Test for Normality

Inferential statistics are meant to infer whether there is underlying relationship within the respective variables for purposes of sequential analysis. The variables were subjected to normality test to check whether the data provided was normally distributed. This was evaluated to test whether data collected was normal. This was performed using the Shapiro-Francia test statistic with the aid of Stata version 12.0. According to Garson (2012) Shapiro-Francia is an effective test for normality.

For a linear model to fit to some given data the data has to be normally distributed, Shapiro-Francia test is appropriate test for testing normality. The coefficient value *W* closer to 1 indicates that the data is normal. According to the findings in Table 4.8 the distribution of the correlation was strong as indicated by the clustering of *W* coefficient values just under 1.000, indicating that the data was normally distributed.

Table 4.8: Shapiro-Francia W' Test for Normal Data

Variable	Obs.	W	V	Z	Pro.>z
Stock Turnover	530	0.91335	32.806	9.985	0.00001
Share price	530	0.82595	10.373	7.273	0.00001
Earnings Per Share	530	0.97260	65.893	5.006	0.00001
Idiosyncratic Volatility	530	0.85725	54.044	6.746	0.00001
Total Assets	530	0.96383	13.692	5.564	0.00001
Market Capitalization	530	0.70406	12.039	8.587	0.00001
LTDebt	530	0.95426	31.231	6.998	0.00000
LTDebt:Equity	530	0.91178	17.872	7.329	0.00000

4.4.6 Test for Stationarity

A unit root test was done to determine if the panel data was stationary or non-stationary. The study employed Levin-Lin-Chu test, Harris-Tzavalis and Fisher-type based Dickey-Fuller test to test for stationary of the panel data, the advantage of this tests is that it allows for unbalanced panels. The model was solved on the basis of Monte Carlo simulations in 1st differential equation.

$$Y_{i,t} = \alpha + \rho Y_{i,t-1} + u_{i,t}$$

Where:

$$t = 1, 2, \dots, 10 \text{ years}$$

$$i = 1, 2, \dots, 53 \text{ Listed Companies}$$

The null hypothesis (H0): $\rho = 1$ was tested against the alternative hypothesis (H1): $\rho < 1$. If $\rho = 1$ this means the random observation y at time t is determined by the previous $t - 1$ observation, if so a unit root exist and the data under consideration is non stationary. If $\rho < 1$ this meant that the current observation of $Y_{i,t}$ was not dependent on the previous observation $Y_{i,t-1}$ and the data is stationary. The tests on Table 4.9 are based Levin-Lin-Chu test, Harris-Tzavalis and Augmented Dickey and Fuller (ADF) tests. All these methods tested the same null hypothesis of non-stationary [(H0): $\rho = 1$];

The results shown on Table 4.8 is based on Levin, Lin and Chu (LLC), Harris-Tzavalis (HT) and Augmented Dickey and Fuller (ADF). However, irrespective of the test used, the analysis on Table 4.9 with all test having a P-value less than 1 ($P < 1$) this indicated the rejection of null hypothesis (the data is non-stationary and has a unit root). This indicated that individually each company data observation for 10 year period (2007-2016) was stationary and did not require any adjustments.

Table 4.9: Panel Unit Root Test Summary

VARIABLE	TEST	STATISTICS (Adjusted)	Z	P - Value	
Stock Turnover	Levin-Lin-Chu	t	-20.8625		0.0000
	Harris-Tzavalis	Rho	0.2446	-2.6575	0.0039
	Fisher type Based on	P	293.6883		0.0000
	Augmented Dickey-Fuller tests	Z	-7.3261		0.0000
		L*	-9.1171		0.0000
Share price		Pm	12.8905		0.0000
	Levin-Lin-Chu	t	-14.6745		0.0000
	Harris-Tzavalis	Rho	0.2646	-2.2513	0.0122
	Fisher type Based on	P	179.2297		0.0000
	Augmented Dickey-Fuller tests	Z	-1.1689		0.1212
Earnings Per Share		L*	-2.3438		0.0000
		Pm	5.0294		0.0000
	Levin-Lin-Chu	t	-25.6839	-	0.0000
	Harris-Tzavalis	Rho	0.0591	-6.4401	0.0000
	Fisher type Based on	P	322.270		0.0000
Idiosyncratic Volatility	Augmented Dickey-Fuller tests	Z	-3.7022		0.0000
		L*	-8.1186		0.0000
		Pm	14.8535		0.0000
	Levin-Lin-Chu	T	-29.9215		0.0000
	Harris-Tzavalis	Rho	-0.1970	-11.6602	0.0000
Total Assets	Fisher type Based on	P	256.5631		0.0000
	Augmented Dickey-Fuller tests	Z	-7.8883		0.0000
		L*	-8.9682		0.0000
		Pm	10.3407		0.0000
	Levin-Lin-Chu	T	-23.9664		0.0000
Market Capitalization	Harris-Tzavalis	Rho	0.4516	1.5616	0.9408
	Fisher type Based on	P	187.2814		0.0000
	Augmented Dickey-Fuller tests	Z	1.1851		0.8820
		L*	-0.7241		0.2348
		Pm	4.9643		0.0000
Market Capitalization	Levin-Lin-Chu	t*	-8.4068		0.0000
	Harris-Tzavalis	Rho	0.2006	-3.5545	0.0002
	Fisher type Based on	P	161.4383		0.0004
	Augmented Dickey-Fuller tests	Z	-0.4135		0.3396
	Total Assets tests	L*	-2.0736		0.0195
	Pm	3.8075		0.0001	

Where P indicates the Inverse chi-squared (106), Z indicates the Inverse normal, L* indicates the inverse logistic, t (269) and Pm indicates the Modified Inverse chi – squared

4.4.7 Measure of Model Fits

To assess the model fit, goodness of fit statistics such as the overall model chi-square, log-likelihood values, and pseudo- R^2 values were examined. These statistics provided evidence of a good model fit (had values close to 1). The probability of the model chi-square of this study was (189.882) with a significant value of 0.009, less than the statistical level of significance of 0.05. Moreover, the overall model chi-square, log likelihood values, and pseudo- R^2 values could become quite large for data with large weights and this results in the generalized r-square almost always being one (1) (Idowu, 2016).

The maximum likelihood was used to find the function that maximizes the ability to predict the probability of external financing decision based on heterogeneity of investors' behaviour. The maximum likelihood determined the best values for multinomial logistic regression (Starkweather & Moske, 2005). Likelihood just meant probability under a specified hypothesis. The study logistic regression adopted two hypotheses of interest: the null hypothesis, which was that, all the coefficients in the regression equation take the value zero.

The alternate hypothesis was that, the model with predictors currently under consideration is accurate and differs significantly from the null of zero, in other words gives significantly better than the chance or random prediction level of the null hypothesis. The model converged at $\chi^2 = 189.882$, d.f =5, P =0.009 and a likelihood ratio of 906.016 as shown in Table 4.10.

Table 4.10: Model Fitting Information

Model	Model Fitting Criteria		Likelihood Ratio Tests	
	-2 Log Likelihood	Chi-Square	d.f	Sig.
Intercept Only	1.096E3			
Final	906.016	189.882	5	.009

The Cox and Snell, Nagelkerke and McFadden Pseudo R square were determined and all gave an indication that the model was fit as shown in Table 4.11. The Cox and Snell coefficient was 0.406, Nagelkerke coefficient was 0.551 and McFadden Pseudo R square was found to be 0.377 as shown in Table 4.11, this indicates that the model is good fit.

Table 4.11: Pseudo R-Square

Pseudo R-Square	
Cox and Snell	.406
Nagelkerke	.551
McFadden	.377

4.4.8 Hausman and Lemeshow Test for goodness of fit.

Hausman and Lemeshow test is an alternative to chi-square model used in logistic regression for testing the goodness of fit. A well-fitting model is one where the test statistic is greater than 0.05, the case where we fail to reject the null hypothesis that there is no difference between observed and model predicted values. Hausman and Lemeshow Test for goodness of fit performed to ascertain the model fit. Logistic regression uses the test as an alternative to chi-square for test of model significance. The model was deemed to have a good fit because the results were non-significant.

The results of this analysis show non-significance at a computed P-value of 0.536 hence greater than statistical $P < 0.05$. The table 4.12 shows Hausman and Lemeshow test results with a significance of 0.536 indicating that the result is statistically significant being construed to mean goodness of fit. The results in table 4.12 and table 4.13 indicate that the study failed to reject the null hypothesis H_0 : There is no difference

between observed and model predicted values. Therefore it was concluded that the research model has a good fit.

Table 4.12: Hausman and Lemeshow test

Post Estimation Likelihood Test		
Likelihood-ratio test	LR chi 2 (4) =	9.32
Assumption: - (nested in full)	Prob. > chi 2 =	0.536

4.4.9 Independent Variables Likelihood Ratio Test

The likelihood of observing the data was determined under the research hypotheses as indicated in chapter one. The likelihood ratio test was based on $-2\log$ likelihood ratio. This is a test of the significance of the difference between the likelihood ratio ($-2\log$ likelihood) for the study model with predictors (called model chi square) minus the likelihood ratio for baseline model with only a constant in it.

Technically the significance level at $P < 0.05$ or lower means that the model with the predictors is significantly different from the one with the constant only (all 'b' coefficients being zero). Therefore this measured the improvement in fit that the explanatory variables made compared to the null model, Chi square was used to assess significance of this ratio. Therefore logistic regression formed a best fitting equation or function using the maximum likelihood method, which maximized the probability of classifying the observed data into the appropriate category given the regression coefficients.

Table 4.13 indicates the likelihood ratio tests with a significant P-Value < 0.05 ; this means that the model with the predictors is significantly different from the one with the constant only. The chi-square statistic is the difference in $-2 \log$ -likelihoods between the final model and a reduced model. The reduced model is formed by omitting an effect from the final model. The null hypothesis is that all parameters of that effect are 0. This reduced model is equivalent to the final model because omitting the effect does not increase the degrees of freedom.

Table 4.13: Fixed Effect Likelihood Ratio Tests

Effect	Model	Fitting	Likelihood Ratio Tests	
	Criteria			
	-2 Log Likelihood			
	of Reduced			
	Model	Chi-Square	d.f	Sig.
Intercept	9.019E2 ^a	0.000	0	
Stock Turnover	906.049	4.108	2	.000
Share price	908.294	6.353	2	.000
EarningsPerShare	911.573	9.632	2	.008
Idiosyncratic volatility	902.590	0.649	2	.000
TotalAssets	904.409	2.468	2	.001
MarketCapitalization	908.330	6.388	2	.041
LTDebt	905.567	3.626	2	.033
LTDebtEquityRatio	902.043	0.102	2	.050
Industry	9.019E2 ^a	0.000	0	
Firm	1.023E3	121.196	86	.007
Year	913.877	11.936	18	.851

4.5 Sector Analysis of Investors' Behaviour and Corporate External Financing

Companies in different sectors are faced with sector specific characteristics inherent in a given industry. These characteristics could influence external financing decisions of corporations in that sector differently (Nyamita *et al.*, 2014). Corporations in an industry face common factors that affect their external financing decisions and these could reflect on product market interactions or the nature of competition. It could also reflect on industry heterogeneity in the types of assets, business risk, technology, or regulation these factors shape the investors behaviour towards a firm.

According to Almeida and Campello (2010) regulated corporations have stable cash flows and lower expected costs of financial distress. Therefore, these corporations should have more debt financing than equity financing. Considering agency cost and information asymmetry, managers have less discretion in regulated corporations, which reduces the severity of shareholder-manager conflicts and makes debt financing less desirable from a control perspective thereby influencing investors perception towards a firm (Nyamita *et al.*, 2014). The 'b' coefficients for each of the independent variables

Z_1, \dots, Z_6 denote the various odds ratios which are indicative of the slope values. The model provides knowledge of the relationships and strengths among the variables which are based on the results of the model predictions of the dependent variable based on the contributions of all the independent variables.

4.5.1 Investors' Behaviour and External Financing Decision in Banking Sector

The odds ratio is a measure of effect size, in this study the odds ratios for Stock Turnover was 18.952, indicating that one point increase in the investors behavioural bias influence positively equity financing decision made by commercial banks listed at NSE by a multiplicative factor of 19.0 and a P-value of 0.044, relative to Covered debt financing. The results reveal this variable was statistically significant since the $P < 0.05$. The odds ratios for Investors' preference was 1.065, indicating that one point increase in investors preference, influence positively equity financing decision by commercial banks listed at NSE by a multiplicative factor of approximately 1.1 and a P-value of 0.002, relative to Covered debt financing. The results reveal this as a variables with high probability and statistically significant since statistically $P < 0.05$.

The odds ratios for analysts' dispersion was 1.968, indicating that one point increase in analysts' dispersion influence positively equity financing decision by commercial banks listed at NSE by a multiplicative factor of approximately 1.968 and a P-value of 0.010, relative to covered bond financing. This indicates that earnings per share have a significant influence on the logistic since it displayed an exponential (B) of 1.968. The odds ratios for investors' risk perception was 0.291, indicating that one point increase in investors' risk perception, influence negatively equity financing decision by commercial banks listed at NSE by a multiplicative factor of 0.291 and a P-value of 0.038.

The results reveal this variables to be statistically significant since the $P < 0.05$. The odds ratios for Total Assets was 1.875, indicating that one point increase in corporate size dispersion positively equity financing decision by commercial banks listed at NSE by a multiplicative factor of approximately 1.88 and a P-value of 0.046, relative to covered bond financing. The results reveal this variable to be statistically significant since the $P < 0.05$. The odds ratios for Market capitalization was 1.132, indicating that one point increase in corporate size dispersion influence positively equity financing decision by

banks listed at NSE by a multiplicative factor of approximately 1.132 and a P-value of 0.033, relative to covered bond financing. The results reveal this variable to be statistically significant since the $P < 0.05$.

$$\Pr(y=1) = \frac{1}{\sum_{j=1}^n (e^{(Z1\beta1+Z2\beta2+Z3\beta3+Z4\beta4+Z5\beta5+Z6\beta6)})}$$

Probability ($y = \text{Common Equity Financing Decision}$) =

$$\frac{1}{\sum_{j=1}^6 (18.952ST+1.065MPS+1.967EPS+0.291IVol+1.875MC+1.132TA)}$$

Heterogeneity of Investors' Behaviour and Straight Debt Financing Decision in Banking Sector

The constant does not have a significant impact on the choice of the external financing decision in the banking sector. The odds ratio is a measure of effect size, in this study the odds ratios for Stock Turnover was 0.750, indicating that one point increase in the investors' behavioural bias influence negatively straight debt financing decision made by commercial banks listed at NSE by a multiplicative factor of 0.750 and a P-value of 0.032, relative to Covered bond financing. The results reveal this variable is statistically significant since the $P < 0.05$. The odds ratios for Share price was 0.0552, indicating that one point increase in investors preference influence negatively straight debt financing decision by commercial banks listed at NSE by a multiplicative factor of approximately 0.0552 and a P-value of 0.022, relative to Covered bond financing. The results reveal this as a variable with high probability and statistically significant since statistically $P < 0.05$.

The odds ratios for Earnings per Share was 0.0276, indicating that one point increase in analysts' dispersion influence negatively straight debt financing decision by commercial banks listed at NSE by a multiplicative factor of approximately 0.0276 and a P-value of 0.018, relative to covered bond financing. The results reveals this as a variables with high probability and statistically significant since statistically $P < 0.05$. The odds ratios for idiosyncratic volatility was 1.432, indicating that one point increase in the investors' risk perception influence positively the straight debt financing decision by commercial

banks listed at NSE by a multiplicative factor of 1.432 and a P-value of 0.035 relative to covered bond financing. The results reveal this variables to be statistically significant since the $P < 0.05$.

The odds ratios for Total Assets was 1.882, indicating that one point increase in investors' corporate size dispersion influences the straight debt financing decision by commercial banks listed at NSE positively by a multiplicative factor of approximately 1.882 and a P-value of 0.032, relative to covered bond financing. The results reveal this variable to be statistically significant since the $P < 0.05$. The odds ratios for Market capitalization was 1.506, indicating that one point increase in investors' corporate size dispersion influence the Equity financing decision by banks listed at NSE positively by a multiplicative factor of approximately 1.506 and a P-value of 0.034, relative to covered bond financing. The results reveal this variable to be statistically significant since the $P < 0.05$.

$$\text{Pr.}(y=2) = \frac{1}{\sum_{j=1}^n (e^{(Z1\beta1+Z2\beta2+Z3\beta3+Z4\beta4+Z5\beta5+Z6\beta6)})}$$

Prob. (y = Straight Debt Financing)

$$= \frac{1}{\sum_{j=1}^6 (0.750Z1+0.055Z2+0.028Z3+1.432Z4+1.882Z5+1.506Z6)}$$

Table 4.14: Investors Behaviour and External Financing Decision in Banking

External Financing Decisions		B	Std. Error	Wald	d.f	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
								Lower Bound	Upper Bound
Equity Financing Decision	Intercept	10.444	20.080	.271	1	.603			
	Stock Turnover	2.942	1.461	4.053	1	.044	18.953	1.081	32.368
	Share price	.063	.020	9.520	1	.002	1.065	1.023	1.108
	Earnings Per Share	.072	.032	1.145	1	.003	1.967	.909	1.028
	Idiosyncratic volatility	-1.234	.736	2.814	1	.038	.291	.069	1.231
	Total Assets	.133	1.611	.007	1	.046	1.875	.037	20.573
	Market Capitalization	-2.023	.949	4.537	1	.033	1.132	.021	.851
	LTDebt	-1.082	.513	4.439	1	.035	.339	.124	.927
	LTDebt:Equity Ratio	-.718	.512	1.964	1	.047	.448	.179	1.331
Straight Debt Financing Decision	Intercept	12.592	20.588	.374	1	.541			
	Stock Turnover	.300	1.414	.045	1	.032	0.750	.084	21.586
	Share price	.014	.021	.410	1	.022	.0552	.972	1.057
	Earnings Per Share	.010	.025	.165	1	.018	.0276	.962	1.061
	Idiosyncratic volatility	.832	.740	1.266	1	.035	1.435	.102	1.854
	Total Assets	-.553	1.471	.141	1	.033	1.882	.032	10.279
	Market Capitalization	-.125	1.235	.010	1	.034	1.506	.078	9.932
	LTDebt	-.681	.503	1.833	1	.002	1.514	.189	1.356
	LTDebt:Equity Ratio	.415	.523	.629	1	.028	1.744	.534	4.218

The reference category is covered debt financing, this parameter is set to zero because it is redundant

4.5.2 Investors' Behaviour and Financing Decision in Manufacturing Sector

The odds ratio is a measure of effect size, in this study the odds ratios for Stock Turnover was 2.334, indicating that one point increase in the investors' behavioural bias influences positively equity financing decision made by companies in manufacturing and allied sector listed at NSE by a multiplicative factor of 2.334 and a P-value of 0.011, relative to Covered bond financing. The results reveal this variable is statistically significant since the $P < 0.05$. The odds ratios for Share price was 1.171, indicating that one point increase in investors' preference influences positively equity financing decision by companies in manufacturing and allied sector listed at NSE by a multiplicative factor of approximately 1.171 and a P-value of 0.002, relative to Covered

debt financing. The results reveal this variable to be statistically significant since statistically $P < 0.05$.

The odds ratios for Earnings per Share was 1.822, indicating that one point increase in analysts' dispersion influences positively equity financing decision by companies in manufacturing and allied sector listed at Nairobi Security Exchange by a multiplicative factor of approximately 1.822 and a P-value of 0.031, relative to covered bond financing. This indicates that analysts' dispersion positively influences the logistic since it displayed an exponential (B) of greater than 1.0. The results reveals this variables to be statistically significant since statistically $P < 0.05$.

The odds ratios for idiosyncratic volatility was 0.300, indicating that one point increase in the investors' risk perception influence negatively Equity financing decision by companies in manufacturing and allied sector listed at NSE by a multiplicative factor of 0.300 and a P-value of 0.015. The results reveal this variable to be statistically significant since the $P < 0.05$. This indicates that investors' risk preference negatively influences the logistic since it displayed an exponential (B) of less than 1.0.

The odds ratios for Total Assets was 1.0833, indicating that one point increase in corporate size dispersion influences positively equity financing decision by companies listed in manufacturing and allied sector listed at NSE by a multiplicative factor of approximately 1.1 and a P-value of 0.043, relative to covered bond financing. The results reveal this variable to be statistically significant since the $P < 0.05$. This indicates that Total Assets positively influences the logistic since it displayed an exponential (B) of greater than 1.0.

The odds ratios for Market capitalization was 1.6122, indicating that one point increase in corporate size dispersion influences positively equity financing decision by companies in manufacturing and allied sector listed at NSE by a multiplicative factor of approximately 1.6122 and a P-value of 0.023, relative to covered bond financing. The results reveal this variable to be statistically significant since the $P < 0.05$. This indicates that the Total Assets positively influences the logistic since it displayed an exponential (B) of greater than 1.0.

$$\Pr(y=1) = \frac{1}{\sum_{j=1}^n (e^{(Z1\beta1+Z2\beta2+Z3\beta3+Z4\beta4+Z5\beta5+Z6\beta6)})}$$

Probability of (y = Equity Financing Decision)

$$\frac{1}{\sum_{j=1}^6 (2.3345T+1.171MPS+1.822EPS+0.300IVol+1.0833MC+1.6122TA)}$$

Heterogeneity of Investors' Behaviour and Straight Debt Financing Decision in Manufacturing and Allied Sector

The constant does not have a significant impact on the choice of the external financing decision in the manufacturing and allied sector. The odds ratio for Stock Turnover was 0.130, indicating that one point increase in investors' behavioural bias influences negatively straight debt financing decision by companies in manufacturing and allied sector listed at NSE by a multiplicative factor of 0.13 and a P-value of 0.007, relative to Covered bond financing. The results reveal this variable is statistically significant since the $P < 0.05$.

The odds ratios for Share price was 0.945, indicating that one point increase in investors' preference influences negatively the straight debt financing decision by companies in manufacturing and allied sector listed at NSE by a multiplicative factor of approximately 0.945 and a P-value of 0.028, relative to Covered debt financing. The results reveal this as a variables with high probability and statistically significant since statistically $P < 0.05$. The odds ratios for Earnings per Share was 0.950, indicating that one point increase in analysts' dispersion influence negatively the straight debt financing decision by companies in manufacturing and allied sector listed at NSE by a multiplicative factor of approximately 0.950 and a P-value of 0.018, relative to covered bond financing. The results reveals this as a variables with high probability and statistically significant since statistically $P < 0.05$.

The odds ratios for idiosyncratic volatility (Beta) was 1.379, indicating that one point increase in investors' risk perception influences positively the straight debt financing decision by companies in manufacturing and allied sector listed at NSE by a multiplicative factor of 1.379 and a P-value of 0.006 relative to covered bond financing.

The results reveal this variables to be statistically significant since the $P < 0.05$. The odds ratios for Total Assets was 2.853, indicating that one point increase in investors' corporate size dispersion influences positively the straight debt financing decision by companies in manufacturing and allied sector listed at NSE by a multiplicative factor of approximately 2.853 and a P-value of 0.012, relative to covered bond financing. This shows this variable to be statistically significant since the $P < 0.05$.

The odds ratios for Market capitalization was 6.406, indicating that one point increase in investors' corporate size dispersion influence equity financing decision by companies in manufacturing and allied sector listed at NSE positively by a multiplicative factor of approximately 6.406 and a P-value of 0.029, relative to covered bond financing. The results reveal this variable to be statistically significant since the $P < 0.05$. This indicates that the Market capitalization positively influences the logistic since it displayed an exponential (B) of greater than 1.0.

$$\text{Prob. (y=2)} = \frac{1}{\sum_{j=1}^n (e^{(Z_1\beta_1 + Z_2\beta_2 + Z_3\beta_3 + Z_4\beta_4 + Z_5\beta_5 + Z_6\beta_6)})}$$

Prob. (y = Straight Debt Financing)

$$\frac{1}{\sum_{j=1}^6 (0.130ST + 0.945MPS + 0.950EPS + 1.379IVol + 2.853MC + 6.406TA)}$$

Table 4.15: External Financing Decision in Manufacturing and Allied Sector

External Financing Decisions		B	Std. Error	Wald	D.f	Sig.	Expon. (B)	95% Confidence Interval for Exp (B)	
								Lower Bound	Upper Bound
Equity Financing Decision	Intercept	1.137	2.266	.003	1	.603			
	Stock Turnover	10.058	1.486	.047	1	.011	2.334	6.295	8.653
	Share price	.273	.297	.843	1	.042	1.171	.425	1.363
	Earnings Per Share	.196	.720	.074	1	.031	1.822	.200	3.371
	Idiosyncratic volatility	-1.205	1.834	.043	1	.015	.300	3.238	27.728
	Total Assets	-96.632	1.354	.927	1	.043	1.083	4.088	2.851
	Market Capitalization	-54.783	.860	.838	1	.023	1.612	1.800	1.452
	LTDebt	-8.499	.657	.038	1	.000	4.907	3.388	7.108
	LTDebt:Equity Ratio	-17.261	.708	.171	1	.000	3.136	9.870	9.967
Straight Debt Financing Decision	Intercept	-21.132	20.588	.022	1	.883			
	Stock Turnover	.021	1.414	.141	1	.007	0.130	7.604	13.461
	Share price	-.056	.021	.047	1	.028	.945	.569	1.572
	Earnings Per Share	-.051	.025	.164	1	.018	.950	.741	1.217
	Idiosyncratic volatility	.970	.740	.056	1	.006	1.379	.000	11.288
	Total Assets	-.370	1.471	.326	1	.012	2.853	6.769	8.333
	Market Capitalization	-1.958	1.235	.047	1	.029	6.406	5.021	8.173
	LTDebt	1.238	.503	.008	1	.027	3.447	1.219	9.744
	LTDebt:Equity Ratio	2.846	.523	.008	1	.018	17.213	4.948	5.989

The reference category is covered debt financing, this parameter is set to zero because it is redundant

4.5.3 Investors' Behaviour and External Financing Decision in Insurance Sector

Table 4.16 shows the odds ratios for Stock Turnover as 6.291, indicating that one point increase in investors' behavioural bias influences positively equity financing decision made by insurance companies listed at NSE by a multiplicative factor of 6.291 and a P-value of 0.000, relative to Covered bond financing. The results reveal this as a variables with high probability and statistically significant since the $P < 0.05$. The odds ratios for Share price was 18.825, indicating that one point increase in investors' preference

influences positively equity financing decision by insurance companies listed at NSE by a multiplicative factor of approximately 18.825 and a P-value of 0.002, relative to Covered debt financing. The result reveals this as one of the variables with high probability and statistically significant since statistically $P < 0.05$.

The odds ratios for Earnings per Share was 1.097, indicating that one point increase in analysts' dispersion influence positively equity financing decision by insurance companies listed at NSE by a multiplicative factor of approximately 1.097 and a P-value of 0.000, relative to covered debt financing. The results reveal this as one of the variables with high probability and statistically significant since the $P < 0.05$. The odds ratios for idiosyncratic volatility is 0.259, indicating that one point increase in investors' risk perception influence negatively equity financing decision by insurance companies listed at NSE by a multiplicative factor of 0.259 and a P-value of 0.000.

The results reveal this as one of the variables with high probability and statistically significant since the $P < 0.05$. The odds ratios for Total Assets was 3.654, indicating that one point increase in investors' corporate size dispersion influences positively equity financing decision by insurance companies listed at NSE by a multiplicative factor of approximately 3.654 and a P-value of 0.000, relative to covered debt financing. The results reveal this as one of the variables with high probability and statistically significant since the $P < 0.05$.

The odds ratios for Market capitalization is 4.675, indicating that one point increase in investors' corporate size dispersion influence positively equity financing decision by insurance companies listed at NSE by a multiplicative factor of approximately 4.675 and a P-value of 0.000, relative to covered bond financing. The results reveal this as one of the variables with high probability and statistically significant since the $P < 0.05$. The model provides knowledge of the relationships and strengths among the variables which are based on the results of the model predictions of the dependent variable based on the contributions of all the independent variables.

$$\Pr(y=1) = \frac{1}{\sum_{j=1}^n (e^{(Z1\beta1+Z2\beta2+Z3\beta3+Z4\beta4)})}$$

Prob. (y = Equity Financing Decision) =

$$\frac{1}{\sum_{j=1}^6 (6.291ST+18.825MPS+1.097EPS+0.259IVol+3.654MC+4.675TA)}$$

Heterogeneity of Investors' Behaviour and Straight Debt Financing Decision in the Insurance Sector

Table 4.16 shows the odds ratio for Stock Turnover as 0.921, indicating that one point increase in the Stock Turnover, influence negatively straight debt financing decision made by companies in insurance sector listed at NSE by a multiplicative factor of 0.921 and a P-value of 0.022, relative to Covered bond financing. The results reveal this variable is statistically significant since the $P < 0.05$. This indicates that the stock turnover negatively influences the logistic since it displayed an exponential (B) of less than 1.0.

The odds ratios for Share price was 0.428, indicating that one point increase in Share price, influence negatively straight debt financing decision by companies in insurance sector listed at NSE by a multiplicative factor of approximately 0.4280 and a P-value of 0.038, relative to Covered debt financing. The result reveals this as a variable with high probability and statistically significant since statistically $P < 0.05$. This indicates that the Share price negatively influences the logistic since it displayed an exponential (B) of less than 1.0 and it's statistically significant.

The odds ratios for Earnings per Share is 0.502, indicating that one point increase in Earnings per Share influence negatively straight debt financing decision by companies in insurance sector listed at NSE by a multiplicative factor of approximately 0.502 and a P-value of 0.047, relative to covered bond financing. The result reveals this as a variable with high probability and statistically significant since statistically $P < 0.05$. This indicates that the earnings per share negatively influence the logistic since it displayed an exponential (B) of less than 1.0 and it is statistically significant.

The odds ratios for idiosyncratic volatility was 1.401, indicating that one point increase in the idiosyncratic volatility, influence positively the straight debt financing decision by companies in insurance sector listed at NSE by a multiplicative factor of 1.401 and a P-value of 0.036 relative to covered bond financing. The results reveal this variables to be statistically significant since the $P < 0.05$. This indicates that the Beta negatively influences the logistic since it displayed an exponential (B) of less than 1.0.

The odds ratios for Total Assets was 2.4821, indicating that one point increase in Total Assets influences positively the straight debt financing decision by companies in insurance sector listed at NSE by a multiplicative factor of approximately 2.4821 and a P-value of 0.042, relative to covered bond financing. The results reveal this variable to be statistically significant since the $P < 0.05$. This indicates that total assets positively influence the logistic since it displayed an exponential (B) of greater than 1.0.

The odds ratios for Market capitalization was 3.0375, indicating that one point increase in Market capitalization influence straight debt financing decision by companies in insurance sector listed at NSE positively by a multiplicative factor of approximately 3.0375 and a P-value of 0.009, relative to covered bond financing. The results reveal this variable to be statistically significant since the $P < 0.05$. This indicates that the Market capitalization positively influences the logistic since it displayed an exponential (B) of greater than 1.0 and it's statistically significant.

$$\text{Pr. (y=2)} = \frac{1}{\sum_{j=1}^n (e^{(Z_1\beta_1+Z_2\beta_2+Z_3\beta_3+Z_4\beta_4+Z_5\beta_5+Z_6\beta_6)})}$$

Prob. (y = Straight Debt Financing)

$$\frac{1}{\sum_{j=1}^6 (0.921ST+0.428MPS+0.502EPS+1.401IVol+2.4821MC+3.0375TA)}$$

Table 4.16: External Financing Decision in Insurance Sector

External Financing Decisions		B	Std. Error	Wald	d.f	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
								Lower Bound	Upper Bound
Equity Financing Decision	Intercept	-1.123	1.378	.656	1	.418			
	Stock Turnover	-2.301	1.363	1.629	1	.000	6.291	1.234	2.552
	Share price	2.935	.186	.225	1	.002	18.825	.237	34686
	Earnings Per Share	4.383	.972	2.175	1	.035	1.097	.000	27117
	Idiosyncratic volatility	-1.351	.873	.039	1	.000	.259	4.674	18350
	Total Assets	- 101.558	1.683	.016	1	.000	3.654	1.053	2 ^b
	Market Capitalization	138.259	.739	.713	1	.000	4.674	.000	2.632
	LTDebt	4.496	.910	.009	1	.000	1.053	.000	b
	LTDebt:Equity Ratio	462.546	.411	.064	1	.000	2.570	.000	b
Straight Debt Financing Decision	Intercept	-1.678	1.164	.034	1	.883			
	Stock Turnover	.493	1.886	.743	1	.022	.921	.000	b
	Share price	.154	.286	.252	1	.038	.428	.000	b
	Earnings Per Share	.185	.069	2.391	1	.047	.502	.741	2.593E41
	Idiosyncratic volatility	.913	.959	.017	1	.026	1.401	.000	5.940E31
	Total Assets	1.524	1.535	.001	1	.042	2.4821	.000	.000
	Market Capitalization	1.583	1.470	.437	1	.009	3.0375	5.021	b
	LTDebt	3.616	.265	1.711	1	.027	3.447	1.219	b
	LTDebt:Equity Ratio	1.953	.642	.063	1	.000	17.213	4.948	.000

The reference category is covered debt financing, this parameter is set to zero because it is redundant

4.5.4 Investors' Behaviour and Financing Decision in Commercial and Services Sector

Table 4.17 shows the odds ratios for Stock Turnover as 1.131, indicating that one point increase in investors' behavioural bias influences equity financing decision by commercial and services companies listed at NSE by a multiplicative factor of 1.131 and a P-value of 0.000, relative to Covered debt financing. The results reveal this as a variables with high probability and statistically significant since the $P < 0.05$. The odds ratios for Share price was 1.844, indicating that one point increase in investors' preference influence positively equity financing decision by Commercial and Services

Sectorcompanies listed at NSE by a multiplicative factor of approximately 1.844 and a P-value of 0.002, relative to Covered debt financing. The results reveal this as one of the variables with high probability and statistically significant since statistically $P < 0.05$.

The odds ratios for Earnings per Share was 2.579, indicating that one point increase in analysts' dispersion influence positively equity financing decision by Commercial and Services Sectorcompanies listed at NSE by a multiplicative factor of approximately 2.579 and a P-value of 0.035, relative to covered bond financing. The results reveal this as one of the variables with high probability and statistically significant since the $P < 0.05$. The odds ratios for idiosyncratic volatility was 0.281, indicating that one point increase in the investors' risk perception influences negatively equity financing decision by Commercial and Services Sector companies listed at NSE by a multiplicative factor of 0.281 and a P-value of 0.000.

The results reveal this as one of the variables with high probability and statistically significant since the $P < 0.05$. The odds ratios for total Assets was 5.950, indicating that one point increase in investors' corporate size dispersion influences equity financing decision by Commercial and Services Sectorcompanies listed at NSE by a multiplicative factor of approximately 5.950 and a P-value of 0.000, relative to covered bond financing. The results reveal this as one of the variables with high probability and statistically significant since the $P < 0.05$.

The odds ratios for Market capitalization was 1.253, indicating that one point increase in investors' corporate size dispersion influences the Equity financing decision by Commercial and Services Sectorcompanies listed at NSE by a multiplicative factor of approximately 1.253 and a P-value of 0.000, relative to covered bond financing. The results reveal this as one of the variables with high probability and statistically significant since the $P < 0.05$. The model provides knowledge of the relationships and strengths among the variables which are based on the results of the model predictions of the dependent variable based on the contributions of all the independent variables.

$$\Pr(y=1) = \frac{1}{\sum_{j=1}^n (e^{(Z_1\beta_1 + Z_2\beta_2 + Z_3\beta_3 + Z_4\beta_4)})}$$

Prob. (y = Common Equity Financing) =

$$\frac{1}{\sum_{j=1}^6 (1.131ST + 1.844MPS + 2.579EPS + 0.281IVol + 5.950MC + 1.253TA)}$$

Heterogeneity of Investors' Behaviour and Straight Debt Financing Decision in the Commercial and Services Sector

Table 4.17 shows the odds ratio for Stock Turnover as 0.657, indicating that one point increase in investors' behavioural bias influence negatively straight debt financing decision by companies in Commercial and Services Sector listed at NSE by a multiplicative factor of 0.657 and a P-value of 0.022, relative to Covered debt financing. The results reveal that this variable is statistically significant since the $P < 0.05$. This indicates that the stock turnover negatively influences the logistic since it displayed an exponential (B) of less than 1.0.

The odds ratios for Share price was 0.816, indicating that one point increase in investors' preference influence negatively straight debt financing decision by companies in Commercial and Services Sector listed at NSE by a multiplicative factor of approximately 0.816 and a P-value of 0.038, relative to Covered bond financing. The results reveal this as a variables with high probability and statistically significant since statistically $P < 0.05$. This indicates that the Share price positively influences the logistic since it displayed an exponential (B) of greater than 1.0 and it's statistically significant.

The odds ratios for Earnings per Share was 0.219, indicating that one point increase in analysts' dispersion influences negatively straight debt financing decision by companies in Commercial and Services Sector listed at NSE by a multiplicative factor of approximately 0.219 and a P-value of 0.047, relative to covered bond financing. The results reveal this as a variables with high probability and statistically significant since statistically $P < 0.05$. This indicates that the earnings per share negative influences the logistic since it displayed an exponential (B) of less than 1.0 and it is statistically significant.

The odds ratios for idiosyncratic volatility was 2.382, indicating that one point increase in investors' risk perception influences positively the straight debt financing decision by companies in Commercial and Services Sector listed at NSE by a multiplicative factor of 2.382 and a P-value of 0.026 relative to covered bond financing. The results reveal this variables to be statistically significant since the $P < 0.05$. This indicates that the investors risk perception positively influences the logistic regression since it displayed an exponential (B) of greater than 1.0.

The odds ratios for Total Assets was 5.351, indicating that one point increase in investors' corporate size dispersion influences positively the straight debt financing decision by companies in Commercial and Services Sector listed at NSE by a multiplicative factor of approximately 5.351 and a P-value of 0.042, relative to covered bond financing. The results reveal this variable to be statistically significant since the $P < 0.05$. This indicates that corporate size dispersion positively influences the logistic since it displayed an exponential (B) of greater than 1.0.

The odds ratios for Market capitalization was 3.340, indicating that one point increase in investors' corporate size dispersion influences positively the Equity financing decision by companies in Commercial and Services Sector listed at NSE by a multiplicative factor of approximately 3.340 and a P-value of 0.009, relative to covered bond financing. The results reveal this variable to be statistically significant since the $P < 0.05$. This indicates that the corporate size dispersion positively influences the logistic since it displayed an exponential (B) of greater than 1.0 and it's statistically significant.

$$\text{Pr. (y=2)} = \frac{1}{\sum_{j=1}^n (e^{(Z_1\beta_1 + Z_2\beta_2 + Z_3\beta_3 + Z_4\beta_4 + Z_5\beta_5 + Z_6\beta_6)})}$$

$$\text{Prob. (y = Straight Debt Financing Decision) =}$$

$$\frac{1}{\sum_{j=1}^6 (0.657ST + 0.816MPS + 0.219EPS + 2.382IVol + 5.351MC + 3.340TA)}$$

Table 4.17: External Financing Decision in Commercial and Services Sector

External Financing Decisions	B	Std. Error	Wald	d.f	Sig.	Expon. (B)	95% Confidence Interval for Expon. (B)		
							Lower Bound	Upper Bound	
Equity	Intercept	-54.919	1.410E4	.008	1	.418			
Financing Decision	Stock Turnover	9.301	.007	.021	1	.000	1.131	.000	b
	Share price	.769	1.371	.625	1	.002	1.844	9.486	7.019E13
	Earnings Per Share	7.855	1.302	.003	1	.035	2.579	3.378	3.068E12
	Idiosyncratic volatility	17.306	1.275	.008	1	.000	0.281	1.441	3.938E17
	Total Assets	-9.729	0.009	.000	1	.000	5.950	.000	b
	Market Capitalization	.226	1.093	.005	1	.000	1.253	7.755	957.340
	LTDebt	12.828	1.992	.019	1	.000	3.725	.000	b
	LTDebt:Equity Ratio	.828	1.421	.164	1	.000	2.289	.000	b
Straight Debt Financing Decision	Intercept	-96.203	1.410E4	.000	1	.883			
	Stock Turnover	-.803	1.226	.343	1	.022	.657	.000	b
	Share price	-.203	1.186	.752	1	.038	.816	.000	b
	Earnings Per Share	.077	1.069	2.391	1	.047	.219	.000	b
	Idiosyncratic volatility	16.986	.959	.017	1	.026	2.382	.000	b
	Total Assets	-9.836	1.312	.001	1	.042	5.351	.000	b
	Market Capitalization	6.864	.000	.437	1	.009	3.340	.000	b
	LTDebt	10.646	.265	1.711	1	.027	5.352	.000	b
LTDebt:Equity Ratio	1.677	.642	.063	1	.000	7.513	.000	b	

The reference category is covered debt financing, this parameter is set to zero because it is redundant

4.5.5 Investors' Behaviour and Financing Decision in Energy and Petroleum Sector

Table 4.18 shows the odds ratios for Stock Turnover as 1.365, indicating that one point increase in investors' behavioural bias influences positively equity financing decision by energy and petroleum sector companies listed at NSE by a multiplicative factor of 1.365 and a P-value of 0.010, relative to Covered bond financing. The results reveal this as a variables with high probability and statistically significant since the $P < 0.05$.

This indicates that investors' behavioural bias influences positively the logistic since it displayed an exponential (B) of greater than 1.0 and it's statistically significant. The odds ratios for Share price was 1.879, indicating that one point increase in investors' preference influences positively Equity financing decision by energy and petroleum sector companies listed at NSE by a multiplicative factor of approximately 1.879 and a P-value of 0.000, relative to Covered bond financing. The results reveal this as one of the variables with high probability and statistically significant since statistically $P < 0.05$.

This indicates that investors' preference influences positively the logistic since it displayed an exponential (B) of greater than 1.0 and it's statistically significant. The odds ratios for Earnings per Share was 2.538, indicating that one point increase in analysts' dispersion influence positively equity financing decision by energy and petroleum sector companies listed at NSE by a multiplicative factor of approximately 2.538 and a P-value of 0.015, relative to covered bond financing.

The results reveal this as one of the variables with high probability and statistically significant since the $P < 0.05$. This indicates that the analysts' dispersion influences positively the logit since it displayed an exponential (B) of greater than 1.0 and it's statistically significant. The odds ratios for idiosyncratic volatility was 0.951, indicating that one point increase in investors' risk perception influences negatively the Equity financing decision by energy and petroleum sector companies listed at NSE by a multiplicative factor of 0.951 and a P-value of 0.000.

The results reveal this as one of the variables with high probability and statistically significant since the $P < 0.05$. This indicates that investors' risk perception influences negatively the logistic since it displayed an exponential (B) of less than 1.0 and it's statistically significant. The odds ratios for Total Assets was 1.308, indicating that one point increase in investors' corporate size dispersion influences positively equity financing decision by energy and petroleum sector companies listed at NSE by a multiplicative factor of approximately 1.308 and a P-value of 0.032, relative to covered debt financing.

The results reveal this as one of the variables with high probability and statistically significant since the $P < 0.05$. This indicates that corporate size dispersion influences

positively the logistic since it displayed an exponential (B) of greater than 1.0 and it's statistically significant. The odds ratios for Market capitalization was 8.034, indicating that one point increase in investors' corporate size dispersion influence positively Equity financing decision by energy and petroleum sector companies listed at NSE by a multiplicative factor of approximately 8.034 and a P-value of 0.000, relative to covered bond financing.

The results reveal this as one of the variables with high probability and statistically significant since the $P < 0.05$. This indicates that the Market capitalization influences positively the logistic since it displayed an exponential (B) of greater than 1.0 and it's statistically significant. The model provides knowledge of the relationships and strengths among the variables which are based on the results of the model predictions of the dependent variable based on the contributions of all the independent variables.

$$\Pr(y=1) = \frac{1}{\sum_{j=1}^n (e^{(Z_1\beta_1 + Z_2\beta_2 + Z_3\beta_3 + Z_4\beta_4 + \dots)})}$$

Prob. (y = Equity Financing Decision)

$$\frac{1}{\sum_{j=1}^6 (1.365ST + 1.879MPS + 2.538EPS + 0.951ZIVol + 1.308MC + 8.034TA)}$$

Heterogeneity of Investors Behaviour and Straight Debt Financing Decision in Energy and Petroleum Sector

Table 4.18 shows the odds ratio for Stock Turnover as 0.044, indicating that one point increase in investors' behavioural bias influences negatively the straight debt financing decision made by companies in energy and petroleum sector listed at NSE by a multiplicative factor of 0.044 and a P-value of 0.022, relative to Covered bond financing. The results reveal this variable is statistically significant since the $P < 0.05$. This indicates that investors' behavioural bias influences negatively the logistic since it displayed an exponential (B) of less than 1.0.

The odds ratios for Share price was 0.904, indicating that one point increase in investors' preference influence negatively the straight debt financing decision by companies in energy and petroleum sector listed at NSE by a multiplicative factor of approximately 0.908 and a P-value of 0.000, relative to Covered bond financing. The results reveal this as a variables with high probability and statistically significant since

statistically $P < 0.05$. This indicates that investors' preference influences negatively the logistic since it displayed an exponential (B) of less than 1.0 and it's statistically significant.

The odds ratios for Earnings per Share is 1.684, indicating that one point increase in analysts' dispersion influence positively the straight debt financing decision by companies in energy and petroleum sector listed at NSE by a multiplicative factor of approximately 1.684 and a P-value of 0.047, relative to covered debt financing. The results reveal this as a variables with high probability and statistically significant since statistically $P < 0.05$. This indicates that analysts' dispersion positively influences the logistic since it displayed an exponential (B) of greater than 1.0 and it's statistically significant.

The odds ratios for idiosyncratic volatility is 1.757, indicating that one point increase in investors' risk perception influence positively the straight debt financing decision by companies in energy and petroleum sector listed at NSE by a multiplicative factor of 1.757 and a P-value of 0.006 relative to covered bond financing. The results reveal this variables to be statistically significant since the $P < 0.05$. This indicates that investors' risk perception positively influences the logistic since it displayed an exponential (B) of less than 1.0.

The odds ratios for Total Assets is 0.035, indicating that one point increase in investors' corporate size dispersion influences negatively the straight debt financing decision by companies in energy and petroleum sector listed at NSE by a multiplicative factor of approximately 5.351 and a P-value of 0.092, relative to covered bond financing. The results reveal this variable to be statistically significant since the $P < 0.05$. This indicates that corporate size dispersion negatively influences the logistic since it displayed an exponential (B) of less than 1.0.

The odds ratios for Market capitalization was 148.840, indicating that one point increase in investors' corporate size dispersion influences positively straight debt financing decision by companies in energy and petroleum sector listed at NSE by a multiplicative factor of approximately 148.840 and a P-value of 0.009, relative to covered bond financing. The results reveal this variable to be statistically significant

since the $P < 0.05$. This indicates that investors' corporate size dispersion positively influences the logistic since it displayed an exponential (B) of greater than 1.0 and it's statistically significant.

$$\text{Prob.}(y=2) = \frac{1}{\sum_{j=1}^n (e^{(Z_1\beta_1 + Z_2\beta_2 + Z_3\beta_3 + Z_4\beta_4 + Z_5\beta_5 + Z_6\beta_6)})}$$

Prob. (y = Straight Debt Financing Decision)

$$= \frac{1}{\sum_{j=1}^s (0.044ST + 0.908MPS + 1.684EPS + 1.757IVol + 1.035MC + 148.840TA)}$$

Table 4.18: External Financing Decision in Energy and Petroleum Sector

External Financing Decisions		B	Std. Error	Wald	d.f	Sig.	Expon.(B)	95% Confidence Interval for Exp.(B)	
								Lower Bound	Upper Bound
Equity Financing Decision	Intercept	-52.898	1.445	.307	1	.531			
	Stock Turnover	.285	1.308	.732	1	.010	1.365	7.533E-7	251.799
	Share price	.429	0.099	.991	1	.000	1.879	.682	1.133
	Earnings Per Share	.850	.633	.949	1	.015	2.538	.423	12.954
	Idiosyncratic volatility	-.050	.251	.020	1	.000	.951	.478	1.895
	Total Assets	.983	.871	1.145	1	.032	1.308	.000	11.945
	Market Capitalization	1.294	1.701	1.830	1	.000	8.034	.115	5.599E10
	LTDebt	.483	1.222	.013	1	.000	1.621	.000	7068.525
Straight Debt Financing Decision	Intercept	39.089	91.959	.181	1	.671			
	Stock Turnover	-3.133	1.205	.395	1	.022	.044	2.508E-6	758.144
	Share price	-.101	.096	.617	1	.000	.904	.702	1.163
	Earnings Per Share	.521	.631	.351	1	.047	1.684	.300	9.448
	Idiosyncratic volatility	-.279	.216	.650	1	.006	1.757	.384	1.491
	Total Assets	.339	.532	1.652	1	.092	1.035	.000	5.767
	Market Capitalization	5.003	1.355	.737	1	.049	148.840	.002	1.358E7
	LTDebt	-3.382	1.397	.605	1	.057	.034	6.771E-6	170.654
LTDebt:Equity Ratio	1.559	1.742	.230	1	.000	4.752	.008	2767.461	

The reference category is covered debt financing, this parameter is set to zero because it is redundant

4.5.6 Investors Behaviour and Financing Decision in Construction and Allied Sector

Table 4.19 shows the odds ratios for Stock Turnover as 3.3051 indicating that one point increase in investors' behavioural bias influence positively equity financing decision by companies in construction and allied sector listed at NSE by a multiplicative factor of 3.3051 and a P-value of 0.044, relative to Covered bond financing. The results reveal this as a variables with high probability and statistically significant since the $P < 0.05$. This indicates that investors' behavioural bias influences positively the logistic since it displayed an exponential (B) of greater than 1.0 and it's statistically significant.

The odds ratios for Share price is 1.046, indicating that one point increase in investors' preference influence positively equity financing decision by companies in construction and allied sector listed at NSE by a multiplicative factor of approximately 1.046 and a P-value of 0.052, relative to Covered bond financing. The results reveals this as one of the variables with high probability and statistically significant since statistically $P < 0.05$. This indicates that investors' preference influences positively the logistic since it displayed an exponential (B) of greater than 1.0 and it's statistically significant.

The odds ratios for Earnings per Share is 2.386, indicating that one point increase in analysts' dispersion influence positively Equity financing decision by companies in construction and allied sector listed at NSE by a multiplicative factor of approximately 2.386 and a P-value of 0.035, relative to covered bond financing. The results reveal this as one of the variables with high probability and statistically significant since the $P < 0.05$. This indicates that analysts' dispersion influences positively the logistic since it displayed an exponential (B) of greater than 1.0 and it's statistically significant.

The odds ratios for idiosyncratic volatility is 0.443, indicating that one point increase in investors' risk perception influence negatively the Equity financing decision by companies in construction and allied sector listed at NSE by a multiplicative factor of 0.443 and a P-value of 0.000. The results reveal this as one of the variables with high probability and statistically significant since the $P < 0.05$. This indicates that investors' risk perception influences positively the logistic since it displayed an exponential (B) of less than 1.0 and it's statistically significant.

The odds ratios for Total Assets is 2.498, indicating that one point increase in investors' corporate size dispersion influences positively equity financing decision by companies in construction and allied sector listed at NSE by a multiplicative factor of approximately 2.498 and a P-value of 0.002, relative to covered bond financing. The results reveal this as one of the variables with high probability and statistically significant since the $P < 0.05$. This indicates that investors' corporate size dispersion influences positively the logistic since it displayed an exponential (B) of greater than 1.0 and it's statistically significant.

The odds ratios for Market capitalization was 1.475, indicating that one point increase in investors' corporate size dispersion influence the positively Equity financing decision by companies in construction and allied sector listed at NSE by a multiplicative factor of approximately 1.475 and a P-value of 0.000, relative to covered bond financing. The results reveal this as one of the variables with high probability and statistically significant since the $P < 0.05$. This indicates that investors' corporate size dispersion influences positively the logistic since it displayed an exponential (B) of greater than 1.0 and it's statistically significant. The model provides knowledge of the relationships and strengths among the variables which are based on the results of the model predictions of the dependent variable based on the contributions of all the independent variables.

$$\Pr(y=1) = \frac{1}{\sum_{j=1}^n (e^{(Z_1\beta_1 + Z_2\beta_2 + Z_3\beta_3 + Z_4\beta_4 + \dots)})}$$

Prob. (y = Equity Financing Decision) =

$$\frac{1}{\sum_{j=1}^6 (3.3051ST + 1.046MPS + 2.386EPS + 0.443IVol + 2.498MC + 1.475TA)}$$

Heterogeneity of Investors Behaviour and Straight Debt Financing Decision in Construction and Allied Sector

Table 4.19 shows the odds ratio for Stock Turnover as 0.738, indicating that one point increase in investors' behavioural bias influence negatively straight debt financing decision made by companies in construction and allied sector listed at NSE by a multiplicative factor of 0.738 and a P-value of 0.022, relative to Covered bond

financing. The results reveal this variable is statistically significant since the $P < 0.05$. This indicates that investors' behavioural bias influences positively the logistic since it displayed an exponential (B) of less than 1.0. The odds ratios for Share price was 0.274, indicating that one point increase in investors' preference influences negatively the straight debt financing decision by companies in construction and allied sector listed at NSE by a multiplicative factor of approximately 0.274 and a P-value of 0.000, relative to Covered bond financing. The results reveal this as a variables with high probability and statistically significant since statistically $P < 0.05$. This indicates that investors' preference influences negatively the logistic since it displayed an exponential (B) of less than 1.0 and it's statistically significant.

The odds ratios for Earnings per Share is 0.358 indicating that one point increase in analysts' dispersion influence negatively straight debt financing decision by companies in construction and allied sector listed at NSE by a multiplicative factor of approximately 0.358 and a P-value of 0.047, relative to covered bond financing. The result reveals this as a variable with high probability and statistically significant since statistically $P < 0.05$. This indicates that analysts' dispersion positively influences the logistic since it displayed an exponential (B) of less than 1.0 and it's statistically significant.

The odds ratios for idiosyncratic volatility is 3.890, indicating that one point increase in investors' risk preference influence positively the straight debt financing decision by companies in construction and allied sector listed at NSE by a multiplicative factor of 3.890 and a P-value of 0.006 relative to covered bond financing. The results reveal this variables to be statistically significant since the $P < 0.05$. This indicates that investors' risk preference positively influences the logistic since it displayed an exponential (B) of greater than 1.0.

The odds ratios for Total Assets is 4.719, indicating that one point increase in investors' corporate size dispersion influences positively the straight debt financing decision by companies in construction and allied sector listed at NSE by a multiplicative factor of approximately 4.719 and a P-value of 0.092, relative to covered bond financing. The results reveal this variable to be statistically significant since the $P < 0.05$.

This indicates that investors' corporate size dispersion positively influences the logistic since it displayed an exponential (B) of greater than 1.0.

The odds ratios for Market capitalization is 7.831, indicating that one point increase in investors' corporate size dispersion positively influences Equity financing decision by companies in construction and allied sector listed at NSE positively by a multiplicative factor of 7.831 and a P-value of 0.049, relative to covered bond financing. The results reveal this variable to be statistically significant since the $P < 0.05$. This indicates that investors' corporate size dispersion positively influences the logistic since it displayed an exponential (B) of greater than 1.0 and it's statistically significant.

$$\text{Prob. (y=2)} = \frac{1}{\sum_{j=1}^n (e^{(Z_1\beta_1+Z_2\beta_2+Z_3\beta_3+Z_4\beta_4+Z_5\beta_5+Z_6\beta_6)})}$$

Prob. (y = Straight Debt Financing Decision) =

$$\frac{1}{\sum_{j=1}^6 (0.7382ST+0.274MPS+0.3583EPS+3.890IVol+4.719MC+7.831TA)}$$

Table 4.19: External Financing Decision in Construction and Allied Sector

External Financing Decisions		B	Std. Error	Wald	D.F	Sig.	Expon.(B)	95% Confidence Interval for Expon. (B)	
								Lower Bound	Upper Bound
Equity Financing Decision	Intercept	-1.701E3	2.108E5	.000	1	.531			
	Stock Turnover	0.751	.988	.000	1	.044	3.3056	.000	b
	Share price	.045	.167	.000	1	.052	1.046	3.954E-22	2.765E21
	Earnings Per Share	.868	.250	.000	1	.035	2.386	1.255E-11	4.523E11
	Idiosyncratic volatility	.366	.662	.000	1	.000	0.443	1.203E-295	1.730E295
	Total Assets	19.697	.368	.004	1	.002	2.498	.000	b
	Market Capitalization	7.953	.058	.000	1	.000	1.475	.000	b
	LTDebt	29.966	.503	.000	1	.000	1.033	.000	b
	LTDebt:Equity Ratio	3.428	1.146	.000	1	.000	1.558	.000	b
Straight Debt Financing Decision	Intercept	-1.006	2.759	.000	1	.119			
	Stock Turnover	.383	.815	.000	1	.022	.738	.000	b
	Share price	.142	.060	.000	1	.000	.274	1.056E-56	1.538E57
	Earnings Per Share	.206	.890	.000	1	.047	.358	8.849E-22	2.085E21
	Idiosyncratic volatility	1.287	.561	.000	1	.006	3.890	2.654E-306	b
	Total Assets	4.498	1.376	.004	1	.092	4.719	.000	b
	Market Capitalization	3.267	1.799	.000	1	.049	7.831	.000	b
	LTDebt	3.732	.029	.000	1	.057	1.122	.000	b
	LTDebt:Equity Ratio	6.149	1.493	.000	1	.000	9.327	.000	b

The reference category is covered debt financing, this parameter is set to zero.

4.5.7 Investors Behaviour and External Financing Decision in Agricultural Sector

Table 4.20 shows the odds ratios for Stock Turnover as 2.212, indicating that one point increase in investors' behavioural bias influences positively equity financing decision by companies in Agricultural sector listed at NSE by a multiplicative factor of 2.212 and a P-value of 0.010, relative to Covered bond financing. The results reveal this as a variables with high probability and statistically significant since the $P < 0.05$. This indicates that investors' behavioural bias influences positively the logistic since it displayed an exponential (B) of greater than 1.0 and it's statistically significant.

The odds ratios for Share price was 1.347, indicating that one point increase in investors preference influence positively equity financing decision by companies in Agricultural sector listed at NSE by a multiplicative factor of approximately 1.347 and a P-value of 0.000, relative to Covered bond financing. The results reveals this as one of the variables with high probability and statistically significant since statistically $P < 0.05$. This indicates that investors' preference influences positively the logistic since it displayed an exponential (B) of greater than 1.0 and it's statistically significant.

The odds ratios for earnings per Share is 1.752, indicating that one point increase in analysts' dispersion influence positively equity financing decision by companies in Agricultural sector listed at NSE by a multiplicative factor of approximately 1.752 and a P-value of 0.015, relative to covered bond financing. The results reveal this as one of the variables with high probability and statistically significant since the $P < 0.05$. This indicates that analysts' dispersion influences positively the logistic since it displayed an exponential (B) of greater than 1.0 and it's statistically significant.

The odds ratios for idiosyncratic volatility is 0.740, indicating that one point increase in investors' risk perception influence negatively equity financing decision by companies in Agricultural sector listed at NSE by a multiplicative factor of 0.740 and a P-value of 0.000. The results reveal this as one of the variables with high probability and statistically significant since the $P < 0.05$. This indicates that investors' risk perception influences positively the logistic since it displayed an exponential (B) of greater than 1.0 and it's statistically significant.

The odds ratios for total assets was 1.301, indicating that one point increase in investors' corporate size dispersion influences positively Equity financing decision by companies in Agricultural sector listed at NSE by a multiplicative factor of approximately 1.301 and a P-value of 0.032, relative to covered bond financing. The results reveal this as one of the variables with high probability and statistically significant since the $P < 0.05$. This indicates that investors' corporate size dispersion influences positively the logistic since it displayed an exponential (B) of greater than 1.0 and it's statistically significant.

The odds ratios for Market capitalization is 7.731, indicating that one point increase in investors' corporate size dispersion influence positively Equity financing decision by energy and petroleum sector companies listed at NSE by a multiplicative factor of approximately 7.731 and a P-value of 0.000, relative to covered bond financing. The results reveal this as one of the variables with high probability and statistically significant since the $P < 0.05$. This indicates that investors' corporate size dispersion influences positively the logistic since it displayed an exponential (B) of greater than 1.0 and it's statistically significant. The model provides knowledge of the relationships and strengths among the variables which are based on the results of the model predictions of the dependent variable based on the contributions of all the independent variables.

$$\Pr(y=1) = \frac{1}{\sum_{j=1}^n (e^{(Z_1\beta_1 + Z_2\beta_2 + Z_3\beta_3 + Z_4\beta_4 + \dots)})}$$

Probability (y = Equity Financing Decision) =

$$\frac{1}{\sum_{j=1}^6 (2.212ST + 1.347MPS + 1.752EPS + 0.740IVol + 1.301MC + 7.731TA)}$$

Heterogeneity of Investors Behaviour and Straight Debt Financing Decision in Agriculture Sector

Table 4.20 shows the odds ratio for Stock Turnover as 0.410, indicating that one point increase in investors' behavioural bias influence negatively the straight debt financing decision made by companies in Agricultural sector listed at NSE by a multiplicative factor of 0.410 and a P-value of 0.022, relative to Covered bond financing. The results reveal this variable is statistically significant since the $P < 0.05$. This indicates that investors' behavioural bias influences negatively the logistic since it displayed an exponential (B) of less than 1.0.

The odds ratios for Share price was 0.720, indicating that one point increase in investors preference influence negatively the straight debt financing decision by companies in companies in Agricultural sector listed at NSE by a multiplicative factor of approximately 0.720 and a P-value of 0.000, relative to Covered bond financing. The result reveals this as a variable with high probability and statistically significant since statistically $P < 0.05$. This indicates that investors' preference influences negatively the logistic since it displayed an exponential (B) of less than 1.0 and it's statistically significant.

The odds ratios for Earnings per Share is 0.738, indicating that one point increase in analysts' dispersion influence negatively the straight debt financing decision by companies in Agricultural sector listed at NSE by a multiplicative factor of approximately 0.738 and a P-value of 0.047, relative to covered bond financing. The results reveal this as a variable with high probability and statistically significant since statistically $P < 0.05$. This indicates that analysts' dispersion positively influences the logistic since it displayed an exponential (B) of less than 1.0 and it is statistically significant.

The odds ratios for idiosyncratic volatility is 1.174, indicating that one point increase in investors' risk perception influence positively the straight debt financing decision by companies in Agricultural sector listed at NSE by a multiplicative factor of 1.174 and a P-value of 0.006 relative to covered bond financing. The results reveal this variables to be statistically significant since the $P < 0.05$. This indicates that investors' risk preference

negatively influences the logistic since it displayed an exponential (B) of less than 1.0. The odds ratios for total assets is 1.044, indicating that one point increase in investors' corporate size dispersion influences positively straight debt financing decision by companies in Agricultural sector listed at NSE by a multiplicative factor of approximately 1.044 and a P-value of 0.042, relative to covered bond financing. The results reveal this variable to be statistically significant since the $P < 0.05$. This indicates that investors' corporate size dispersion positively influences the logistic since it displayed an exponential (B) greater than 1.0.

The odds ratios for Market capitalization is 1.109, indicating that one point increase in investors' corporate size dispersion influence positively equity financing decision by companies in Agricultural sector listed at NSE positively by a multiplicative factor of approximately 1.109 and a P-value of 0.049, relative to covered bond financing. The results reveal this variable to be statistically significant since the $P < 0.05$. This indicates that investors' corporate size dispersion positively influences the logistic since it displayed an exponential (B) of greater than 1.0 and it's statistically significant.

$$\text{Prob. (y=2)} = \frac{1}{\sum_{j=1}^n (e^{(Z_1\beta_1 + Z_2\beta_2 + Z_3\beta_3 + Z_4\beta_4 + Z_5\beta_5 + Z_6\beta_6)})}$$

Prob. (y = Straight Debt Financing)

$$\frac{1}{\sum_{j=1}^6 (0.410ST + 0.720MPS + 0.738EPS + 1.174IVol + 1.044MC + 1.109TA)}$$

Table 4.20: External Financing Decision in Agricultural Sector

External Financing Decisions		B	Std. Error	Wald	d.f	Sig.	Expon.(B)	95% Confidence Interval for Expon. (B)	
								Lower Bound	Upper Bound
Equity Financing Decision	Intercept	1.094	1.141	.000	1	.531			
	Stock Turnover	.595	.746	.000	1	.010	2.212	.000	b
	Share price	.298	.554	.000	1	.000	1.347	6.670	2.720
	Earnings Per Share	.285	.250	.000	1	.015	1.752	2.718	2.080
	Idiosyncratic volatility	-.977	.840	.000	1	.000	.740	.000	b
	Total Assets	.138	.041	.000	1	.032	1.301	.000	b
	Market Capitalization	.190	.062	.000	1	.000	7.731	.000	b
	LTDebt	.726	1.601	.000	1	.000	4.061	.000	b
	LTDebt:Equity Ratio	.201	1.406	.000	1	.000	2.702	.000	b
Straight Debt Financing Decision	Intercept	1.809	1.282	.000	1	.119			
	Stock Turnover	.019	.980	.000	1	.022	.410	.000	b
	Share price	-.329	.883	.000	1	.000	.720	2.901	1.785E31
	Earnings Per Share	.037	.826	.000	1	.047	.738	6.046	1.781E129
	Idiosyncratic volatility	.610	.172	.000	1	.006	1.174	.000	b
	Total Assets	.851	1.029	.000	1	.092	1.044	.000	b
	Market Capitalization	.860	1.882	.000	1	.049	1.109	.000	b
	LTDebt	.938	1.919	.000	1	.057	4.990	.000	b
	LTDebt:Equity Ratio	1.938	1.725	.000	1	.000	1.310	.000	b

The reference category is covered debt financing, this parameter is set to zero.

4.5.8 Investors Behaviour and External Financing Decision in Investment Sector

Table 4.21 shows the odds ratios for Stock Turnover as 4.997, indicating that one point increase in investors' behavioural bias influence positively Equity financing decision made by companies in the investment sector listed at NSE by a multiplicative factor of 4.997 and a P-value of 0.010, relative to Covered bond financing. The results reveal this as a variables with high probability and statistically significant since the $P < 0.05$. This indicates that investors' behavioural bias influences positively the logistic since it displayed an exponential (B) of greater than 1.0 and it's statistically significant.

The odds ratios for share price is 1.365, indicating that one point increase in investors' preference influences positively Equity financing decision by companies in the investment sector listed at NSE by a multiplicative factor of approximately 1.365 and a P-value of 0.000, relative to Covered bond financing. The results reveal this as one of the variable with high probability and statistically significant since statistically $P < 0.05$. This indicates that investors' preference influences positively the logistic since it displayed an exponential (B) of greater than 1.0 and it's statistically significant.

The odds ratios for earnings per share is 7.480, indicating that one point increase in analysts' dispersion influences positively equity financing decision by companies in the investment sector listed at NSE by a multiplicative factor of approximately 2.538 and a P-value of 0.015, relative to covered bond financing. The results reveal this as one of the variables with high probability and statistically significant since the $P < 0.05$. This indicates that analysts' dispersion influences positively the logistic since it displayed an exponential (B) of greater than 1.0 and it's statistically significant.

The odds ratios for idiosyncratic volatility is 0.223, indicating that one point increase in investors' risk perception influences negatively Equity financing decision by companies in the investment sector listed at NSE by a multiplicative factor of 0.223 and a P-value of 0.000. The results reveal this as one of the variables with high probability and statistically significant since the $P < 0.05$. This indicates that investors' risk perception influences positively the logistic since it displayed an exponential (B) of greater than 1.0 and it's statistically significant.

The odds ratios for total assets is 4.561, indicating that one point increase in investors' corporate size dispersion influences positively equity financing decision by companies in the investment sector listed at NSE by a multiplicative factor of approximately 4.561 and a P-value of 0.032, relative to covered bond financing. The results reveal this as one of the variables with high probability and statistically significant since the $P < 0.05$. This indicates that investors' corporate size dispersion influences positively the logistic since it displayed an exponential (B) of greater than 1.0 and it's statistically significant.

The odds ratios for market capitalization was 2.212, indicating that one point increase in investors' corporate size dispersion influence positively equity financing decision by

companies in the investment sector listed at NSE by a multiplicative factor of approximately 2.212 and a P-value of 0.000, relative to covered bond financing. The results reveal this as one of the variables with high probability and statistically significant since the $P < 0.05$. This indicates that investors' corporate size dispersion influences positively the logistic since it displayed an exponential (B) of greater than 1.0 and it's statistically significant. The model provides knowledge of the relationships and strengths among the variables which are based on the results of the model predictions of the dependent variable based on the contributions of all the independent variables.

$$\text{Prob.}(y=1) = \frac{1}{\sum_{j=1}^n (e^{(Z_1\beta_1 + Z_2\beta_2 + Z_3\beta_3 + Z_4\beta_4 + \dots)})}$$

Probability (y = Equity Financing Decision) =

$$\frac{1}{\sum_{j=1}^6 (4.997ST + 1.365MPS + 7.480EPS + 0.223IVol + 4.561MC + 2.212TA)}$$

Heterogeneity of Investors Behaviour and Straight Debt Financing Decision in Investment Sector

Table 4.21 shows the odds ratio for stock turnover as 0.659, indicating that one point increase in investors' behavioural bias influence negatively the straight debt financing decision made by companies in the investment sector listed at NSE by a multiplicative factor of 0.659 and a P-value of 0.022, relative to Covered bond financing. The results reveal this variable is statistically significant since the $P < 0.05$. This indicates that investors' behavioural bias influences negatively the logistic since it displayed an exponential (B) of less than 1.0.

The odds ratios for Share price is 0.764, indicating that one point increase in investors' preference influence negatively the straight debt financing decision by companies in the investment sector listed at NSE by a multiplicative factor of approximately 0.764 and a P-value of 0.000, relative to Covered bond financing. The results reveal this as a variable with high probability and statistically significant since statistically $P < 0.05$. This

indicates that investors' preference influences negatively the logistic since it displayed an exponential (B) of less than 1.0 and it's statistically significant.

The odds ratios for Earnings per Share is 0.942, indicating that one point increase in analysts' dispersion influence negatively the straight debt financing decision by companies in energy and petroleum sector listed at NSE by a multiplicative factor of approximately 0.942 and a P-value of 0.047, relative to covered bond financing. The results reveal this as a variable with high probability and statistically significant since statistically $P < 0.05$. This indicates that analyst' dispersion negatively influences the logistic since it displayed an exponential (B) of less than 1.0 and it's statistically significant.

The odds ratios for idiosyncratic volatility was 1.628, indicating that one point increase in investors' risk perception influence positively straight debt financing decision by companies in the investment sector listed at NSE by a multiplicative factor of 1.628 and a P-value of 0.006 relative to covered bond financing. The results reveal this variables to be statistically significant since the $P < 0.05$. This indicates that investors' risk perception positively influences the logistic since it displayed an exponential (B) of less than 1.0.

The odds ratios for total assets is 1.256, indicating that one point increase in investors' corporate size dispersion influences positively straight debt financing decision by companies in the investment sector listed at NSE by a multiplicative factor of approximately 1.256 and a P-value of 0.002, relative to covered bond financing. The results reveal this variable to be statistically significant since the $P < 0.05$. This indicates that investors' corporate size dispersion positively influences the logistic since it displayed an exponential (B) of greater than 1.0.

The odds ratios for Market capitalization is 6.562, indicating that one point increase in investors' corporate size dispersion influence positively equity financing decision by companies in the investment sector listed at NSE by a multiplicative factor of approximately 6.562 and a P-value of 0.049, relative to covered bond financing. The results reveal this variable to be statistically significant since the $P < 0.05$. This indicates

that investors' corporate size dispersion positively influences the logistic since it displayed an exponential (B) of greater than 1.0 and it's statistically significant.

$$\text{Prob. (y=2)} = \frac{1}{\sum_{j=1}^n (e^{(Z_1\beta_1+Z_2\beta_2+Z_3\beta_3+Z_4\beta_4+Z_5\beta_5+Z_6\beta_6)})}$$

Prob. (y = Straight Debt Financing Decision)

$$= \frac{1}{\sum_{j=1}^6 (0.659ST + 0.764MPS + 0.942EPS + 1.628IVol + 1.256MC + 6.562TA)}$$

Table 4.21: External Financing Decision in Investment Sector

External Financing Decisions		B	Std. Error	Wald	d.f	Sig.	Expon.(B)	95% Confidence Interval for Expon. (B)	
								Lower Bound	Upper Bound
Equity Financing Decision	Intercept	2.277	1.849	.000	1	.531			
	Stock Turnover	-9.904	1.180	.000	1	.010	4.997	.000	b
	Share price	.311	.990	.000	1	.000	1.365	.000	b
	Earnings Per Share	.433	.543	.000	1	.015	7.480	.000	b
	Beta	.806	1.894	.000	1	.000	.223	.000	b
	Total Assets	.924	1.809	.000	1	.032	4.561	.000	b
	Market Capitalization	.702	1.616	.000	1	.000	2.212	.000	b
	LTDebt	-.929	.105	.000	1	.000	.395	.000	b
	LTDebt:Equity Ratio	-.240	1.458	.000	1	.000	2.621	.000	b
Straight Debt Financing Decision	Intercept	-2.449	1.679	.000	1	.119			
	Stock Turnover	.344	1.809	.000	1	.022	.659	.000	b
	Share price	.567	2.333	.000	1	.000	.764	.000	b
	Earnings Per Share	.458	9.474	.000	1	.047	.942	.000	b
	Beta	.210	1.661	.000	1	.006	1.628	.000	b
	Total Assets	.963	1.242	.000	1	.002	1.256	.000	b
	Market Capitalization	1.289	1.881	.000	1	.049	6.562	.000	b
	LTDebt	.155	7.042	.000	1	.057	2.751	.000	b
	LTDebt:Equity Ratio	-.551	7.042	.000	1	.000	1.321	.000	b

The reference category is covered debt financing, this parameter is set to zero.

4.5.9 Investors Behaviour and External Financing Decision in Automobile, Accessories and Telecommunication Sectors

Table 4.22 shows the odds ratios for stock turnover as 2.269, indicating that one point increase in investors' behavioural bias influences positively Equity financing decision made by Automobile and Accessories and Telecommunication Sectors companies listed at NSE by a multiplicative factor of 2.269 and a P-value of 0.010, relative to Covered bond financing. The results reveal this as a variables with high probability and statistically significant since the $P < 0.05$. This indicates that investors' behavioural bias influences positively the logistic since it displayed an exponential (B) of greater than 1.0 and it's statistically significant.

The odds ratios for Share price was 1.972, indicating that one point increase in investors' preference influence positively equity financing decision by companies in Automobile, Accessories and Telecommunication Sectors listed at NSE by a multiplicative factor of approximately 1.972 and a P-value of 0.000, relative to Covered bond financing. The results reveal this as one of the variables with high probability and statistically significant since statistically $P < 0.05$. This indicates that investors' preference influences positively the logistic since it displayed an exponential (B) of greater than 1.0 and it's statistically significant.

The odds ratios for earnings per share is 2.009, indicating that one point increase in analysts' dispersion influences positively equity financing decision by companies in Automobile, Accessories and Telecommunication Sectors listed at NSE by a multiplicative factor of approximately 2.009 and a P-value of 0.015, relative to covered bond financing. The results reveal this as one of the variables with high probability and statistically significant since the $P < 0.05$. This indicates that analysts' dispersion influences positively the logit since it displayed an exponential (B) of greater than 1.0 and it's statistically significant as shown in table 4.22.

The odds ratios for idiosyncratic volatility is 0.898, indicating that one point increase in investors' risk perception influence negatively the Equity financing decision by companies in Automobile, Accessories and Telecommunication Sectors listed at NSE by a multiplicative factor of 0.898 and a P-value of 0.000. The results reveal this as one

of the variables with high probability and statistically significant since the $P < 0.05$. This indicates that investors' risk perception influences negatively the logistic since it displayed an exponential (B) of less than 1.0 and it's statistically significant.

The odds ratios for total assets was 2.682, indicating that one point increase in investors' corporate size dispersion influences positively equity financing decision by companies in Automobile, Accessories and Telecommunication Sectors listed at NSE by a multiplicative factor of approximately 2.682 and a P-value of 0.032, relative to covered bond financing. The results reveal this as one of the variables with high probability and statistically significant since the $P < 0.05$. This indicates that the total assets influence positively the logistic since it displayed an exponential (B) of greater than 1.0 and it's statistically significant.

The odds ratios for Market capitalization is 1.257, indicating that one point increase in investors' corporate size dispersion influence positively equity financing decision by companies in Automobile, Accessories and Telecommunication Sectors listed at NSE by a multiplicative factor of approximately 1.257 and a P-value of 0.000, relative to covered bond financing. The results reveal this as one of the variables with high probability and statistically significant since the $P < 0.05$. This indicates that investors' corporate size dispersion influences positively the logistic since it displayed an exponential (B) of greater than 1.0 and it's statistically significant. The model provides knowledge of the relationships and strengths among the variables which are based on the results of the model predictions of the dependent variable based on the contributions of all the independent variables.

$$\text{Prob. (y=1)} = \frac{1}{\sum_{j=1}^n (e^{(Z_1\beta_1 + Z_2\beta_2 + Z_3\beta_3 + Z_4\beta_4)})}$$

$$\text{Prob. (y = Equity Financing Decision) =}$$

$$\frac{1}{\sum_{j=1}^6 (2.269ST + 1.972MPS + 2.009EPS + 0.898IVol + 2.682MC + 1.257TA)}$$

Heterogeneity of Investors Behaviour and Straight Debt Financing Decision Automobile and Accessories Sector and Telecommunication Sector

Table 4.22 shows the odds ratio for Stock Turnover as 0.364, indicating that one point increase in investors' behavioural bias influence negatively the straight debt financing decision made by companies in Automobile, Accessories and Telecommunication Sector listed at NSE by a multiplicative factor of 0.364 and a P-value of 0.022, relative to Covered bond financing. The results reveal this variable is statistically significant since the $P < 0.05$. This indicates that investors' behavioural bias influences negatively the logistic since it displayed an exponential (B) of less than 1.0.

The odds ratios for Share price is 0.649, indicating that one point increase in investors' preference influence negatively the straight debt financing decision made by companies in Automobile, Accessories and Telecommunication Sector listed at NSE by a multiplicative factor of approximately 0.649 and a P-value of 0.000, relative to Covered bond financing. The results reveals this as a variables with high probability and statistically significant since statistically $P < 0.05$. This indicates that investors' preference influences negatively the logistic since it displayed an exponential (B) of less than 1.0 and it's statistically significant.

The odds ratios for Earnings per Share is 0.911, indicating that one point increase in analysts' dispersion influence negatively straight debt financing decision by companies in Automobile, Accessories and Telecommunication Sector listed at NSE by a multiplicative factor of approximately 0.911 and a P-value of 0.047, relative to covered bond financing. The results reveal this as a variable with high probability and statistically significant since statistically $P < 0.05$. This indicates that analysts' dispersion positively influences the logistic since it displayed an exponential (B) of less than 1.0 and it's statistically significant.

The odds ratios for idiosyncratic volatility was 1.971, indicating that one point increase in investors' risk perception influence positively the straight debt financing decision by companies in Automobile, Accessories and Telecommunication Sector listed at NSE by a multiplicative factor of 1.971 and a P-value of 0.006 relative to covered bond financing. The results reveal this variables to be statistically significant since the

P<0.05. This indicates that investors' risk perception positively influences the logistic since it displayed an exponential (B) of value greater than 1.0.

The odds ratios for total assets is 1.556, indicating that one point increase in investors' corporate size dispersion influences positively the straight debt financing decision by companies in Automobile, Accessories and Telecommunication Sector listed at NSE by a multiplicative factor of approximately 1.556 and a P-value of 0.009, relative to covered bond financing. The results reveal this variable to be statistically significant since the P <0.05. This indicates that investors' corporate size dispersion positively influences the logistic since it displayed an exponential (B) value greater than 1.0.

The odds ratios for Market capitalization is 1.113, indicating that one point increase in investors' corporate size dispersion influence positively equity financing decision by companies in Automobile, Accessories and Telecommunication Sector listed at NSE positively by a multiplicative factor of approximately 1.113 and a P-value of 0.049, relative to covered bond financing. The results reveal this variable to be statistically significant since the P<0.05. This indicates that investors' corporate size dispersion positively influences the logistic since it displayed an exponential (B) of greater than 1.0 and it's statistically significant.

$$\text{Prob. (y=2)} = \frac{1}{\sum_{j=1}^n (e^{(Z_1\beta_1+Z_2\beta_2+Z_3\beta_3+Z_4\beta_4+Z_5\beta_5+Z_6\beta_6)})}$$

Probability (y = Straight Debt Financing)

$$= \frac{1}{\sum_{j=1}^6 (0.364ST+0.649MPS+0.911EPS+1.971IVol+1.556MC+1.113TA)}$$

The behavioural analysis of different sectors trading at NSE indicates a general trend that investors' behaviour influence significantly corporate external financing decision. This is revealed despite the economic and corporate factors that influences the external financing decision (Nyamita *et al.*, 2014). Xiong and Scheinkman (2004) surveyed recent developments in finance by analyzing how heterogeneous beliefs among investors generate speculation and trading. They described the joint effects of heterogeneous beliefs and short-sales constraints on asset prices, using both static and dynamic models. Their discussion entailed review of no-trade theorem in the rational

expectations framework, and present investor overconfidence as a potential source of heterogeneous beliefs. They highlighting the implied correlation between investors' preference and investors' behavioural bias, their findings support the findings of our study.

Mayfield, Perdue, and Wooten (2008) examine several psychological antecedents to both short-term and long-term investment intentions, with specific focus on the Big Five personality taxonomy. Their findings indicate that individuals who are more extraverted intend to engage in short-term investing, while those who are higher in neuroticism and or risk aversion avoid this activity. Risk averse individuals also do not engage in long-term investing. Individuals who are more open to experience are inclined to engage in long-term investing, these behaviours ultimately influence corporate external financing. These findings support the findings of our study as discussed above.

Table 4.22: External Financing Decision in Automobile, Accessories Sector and Telecommunication Sectors

External Financing Decisions		B	Std. Error	Wald	d.f	Sig.	Expon. (B)	95% Confidence Interval for Expon. (B)	
								Lower Bound	Upper Bound
Equity Financing Decision	Intercept	-.475	.295	.005	1	.531			
	Stock Turnover	.147	1.040	.001	1	.010	2.269	.000	b
	Share price	.628	.013	.000	1	.000	1.972	.0699	1.350
	Earnings Per Share	3.001	1.171	.000	1	.015	2.009	1.301	3.104E7
	Idiosyncratic volatility	-.108	.431	.000	1	.000	.898	1.691	4.770E4
	Total Assets	1.171	.595	.003	1	.032	2.682	.000	b
	Market Capitalization	.431	.264	.001	1	.000	1.257	.000	b
	LTDebt	.595	.223	.000	1	.000	.013	2.636	b
	LTDebt:Equity Ratio	.264	.789	.000	1	.000	1.257	.000	b
Straight Debt Financing Decision	Intercept	-1.568	1.357	.003	1	.119			
	Stock Turnover	.491	1.033	.001	1	.022	0.364	.000	b
	Share price	-.433	.015	.000	1	.000	.649	4.658	9.037
	Earnings Per Share	.320	.652	.000	1	.047	0.911	1.237	2.951
	Idiosyncratic Volatility	.430	.439	.002	1	.006	1.971	1.824	5.166
	Total Assets	.309	.608	.000	1	.009	1.556	.000	b
	Market Capitalization	.184	.354	.000	1	.049	1.113	.000	b
	LTDebt	-1.388	.229	.001	1	.057	.249	4.928	b
	LTDebt:Equity Ratio	.858	.737	.000	1	.000	.771	.000	b

The reference category is covered debt financing, this parameter is set to zero.

4.6 General investors behaviour and Corporate External Financing Decision

The Wald test for general model was used to determine statistical significance of each individual independent variable and the relationship of each to the dependent variable. This helped in eliminating any overlap between predictors. The result in Table 4.23 and Table 4.24 provides evidence to reject the null hypothesis and conclude that the model estimates fit the data set at an acceptable level. Individual coefficients represent change in probability of being a member of the modelled category irrespective of the value of the other variables. Multi-collinearity in the logistic regression solution was detected by

examining the standard errors for the B coefficients. A standard error larger than 2.0 indicates numerical problems among the independent variables.

4.6 1 Investors Behaviour and Corporate Equity Financing Decision

The results of our study indicate that the standard errors of all the independent variables are less than 2.0. This also indicates that one unit change in the dependent variable increases the odds of modelled events of all the independent variables by less than 10 times. This was an indication that there is no problem of multi-collinearity and that the model is appropriate for the interpretation of the results. The reference category was covered debt financing, and this parameter was set at zero because it's redundant.

Influence of investors' Behavioural bias on Corporate Equity Financing Decision

The influence of investors' behavioural bias on corporate equity financing decision had an exponential (B) value of 1.677 which implies that a one unit increase investors' behavioural bias increased the odds for equity financing decision relative to covered debt financing decision. The corporate common equity financing decision was influenced positively to a large extent by a factor of 1.677. The results show that the variable has an un-standardized coefficient of 0.517 with a significant outcome of 0.034 where the statistical P-value ≤ 0.05 , therefore this variable is significant.

The results reveal this as one of the variables with high probability and statistically significant since the $P < 0.05$. Theoretical and empirical review conjecture that investors' behavioural bias affects trading volume such that securities that have had low-trading volume in the past demand an illiquidity premium compared to securities with high trading volume as a result of investors' behavioural bias. Therefore our findings indicate that investors' behavioural bias significantly influences corporate external financing. Sehgal and Vasishth (2015) concluded that the source of corporate share price and volume momentum seem to be partly risk and partly behavioural.

Therefore findings of their study agree to a larger extend with the findings of our study in Kenya. Daniel and Hirshleifer (2015) in their empirical study conclude that there are anomalies in financial markets that include unprofitable active trading, and patterns of return predictability that are puzzling from the perspective of traditional purely rational

models. Models of overconfidence, and of the dynamic psychological processes that underlie overconfidence, can plausibly explain why these patterns exist and persist. These patterns influence market reaction to stocks of different firms thus influencing investment and financing decision making.

Therefore their findings conjecture with our findings that investors' behavioural bias significantly influences corporate external financing decision. Seppälä (2009) findings agree with our study findings on the theory proposed by Miller (1977) as cited in (Friesen *et al.*, 2004) positing that when short-sales constraints limit market participation and investors have differing estimates of expected return, the market price will be bid up by a small group of poorly informed or excessively optimistic investors.

Hence, greater divergence of opinion about the return of a security leads to a higher security price, and this overvaluation leads to lower future returns and affects corporate external financing (Jagongo & Mutswenje, 2014). This indicates that people in general are exposed to the overconfidence biases but the degree and impact are affected by experience and other characteristics. These align with the findings of our study that investors' behavioural bias positively influences corporate equity financing decision.

Influence of Investors' Preference on Corporate Equity Financing Decision by listed Companies in Kenya

The influence of investors share price preference on external financing decision had an exponential (B) value of 1.633 which implies that a one unit increase in investors' preference increases the odds for equity financing decision relative to covered debt financing decision. Therefore increase in investors' preference as measured by volatility in share price significantly influences corporate common Equity financing decision to a large extent by a factor of 1.633. The results indicate that the variable has an unstandardized coefficient of 0.003 with a significant outcome of 0.013 where the statistical P-value ≤ 0.05 . This variable is significant since it has a computed p-value of 0.013 less than statistical $P \leq 0.05$. The finding of this study is in agreement with the findings of earlier study by Kantola (2010) indicating that Retail investors show a preference towards specific shares and smaller companies both in the domestic as well

as in the foreign shareholdings, this preference ultimately influence investment and financing decision making.

Similar preference can be noticed also among mutual fund holdings where relation is however not linear with respect to equity size and also other variables influence the results, especially the size of fund assets under management. These findings are in line with the findings of our study indicating that investors' preference influences external financing decision to some extent. Jarrow (1980) as cited in (Chakravarty & Ray, 2010) extends Miller's (1977) model and finds that when investors have heterogeneous beliefs on the mean return but agree on the covariance matrix of future prices, short-sales constraints will increase risky asset prices, thereby influencing investment and financing options. Their findings align with the findings of this study conjecturing that investors' preference has significance influence on corporate external financing decision making.

Hoffmann and Post (2015) while considering how return and risk experience shape investors beliefs and preference, ascertained that investors' return experiences drive updates in beliefs, and to some extent also updates in preferences. That is, past returns positively impacts return expectations and negatively impact risk perceptions. The tendency to look primarily at past returns in terms of share price performance is pronounced among inexperienced and unsophisticated investors. These investors might find it difficult to interpret portfolio risk and use portfolio returns as a more easily available performance metrics. These behavioural bias in the long run influences corporate investment and financing decisions. These findings are in line with the findings of our study indicating that investors' preference significantly influences corporate equity financing decision.

Influence of Analyst Dispersion on Corporate Equity Financing Decisions by Listed Companies in Kenya

Influence of analyst dispersion on corporate external financing decision had an exponential (B) value of 1.314 which implies that a one unit increase in analysts' dispersion increased the odds for equity financing decision relative to covered debt financing decision. Corporate common equity financing decision was influenced positively to a large extent by a factor of 1.314. These results indicates that the variable

has an un-standardized coefficient of -0.005 with a significant outcome of 0.033 where the statistical P-value ≤ 0.05 . This variable is significant since it has a computed P-value of 0.033 that is less than the statistical $P \leq 0.05$. The findings of this study indicate that analyst dispersion significantly influences corporate equity financing decision. This is in agreement with the findings of the study by Jiao and Yan (2015) indicating that the likelihood of a firm issuing convertibles is higher and the likelihood of issuing straight bonds or seasoned stocks is lower when the firm faces more disagreement among financial analysts about the firm's earnings forecasts, higher idiosyncratic volatility, higher trading turnover, or lower breadth of mutual fund ownership.

They find that stocks with higher dispersion in analysts' earnings forecasts earn lower future returns than otherwise similar stocks this influences external financing decision (Jiao & Yan, 2015). Analysts' dispersion influence is most pronounced in small stocks and stocks that have performed poorly over the past year. The findings of our study agree with the findings of the study by Goetzmann and Massa (2005) who ascertained that dispersion of opinion is positively related to contemporaneous returns and negatively related to future returns, this ultimately influences equity financing decisions by corporate agents, supporting Miller's (1977) overvaluation theory and agreeing with our study.

Influence of Risk Perception on Corporate Equity Financing Decision by Listed Companies in Kenya

Influence of risk perception as measured by idiosyncratic volatility on corporate equity financing decision had an exponential (B) value of 0.975 implying that a one unit increase in investors' risk perception decreased the odds for equity financing decision relative to covered debt financing. The corporate common equity financing decision was influenced negatively by a factor of 0.975. The results show that the variable has an un-standardized coefficient of 0.019 with a significant outcome of 0.048 where the statistical P-value ≤ 0.05 . This variable is significant since it has a computed P-value of 0.048 that is less than the statistical $P \leq 0.05$.

The findings of our study have shown that investors' risk perception influence corporate equity financing decision relative to covered debt financing. The findings of our study

agrees with Brandt *et al.* (2009) study that conjecture that in aggregate, portfolio managers are critically affected by idiosyncratic volatility trends. Accordingly cross section variation in idiosyncratic volatility makes economically and statistical significant differences to the efficacy of the factors used in stock selection thereby influencing investment behaviour of both corporate and individual investors and this ultimately influence external financing decision.

Gurusamy (2011) studied investors preference towards various investment avenues, his findings concludes that investors have varied risk appetite towards certain investments where mutual funds and insurance are perceived to carry moderate risk. Therefore investor risk perception influences corporate external financing decision. This finding is in agreement with the findings of our study. Thiagarajan and Li (2010) while considering idiosyncratic volatility concluded that discernible trends in Idiosyncratic Volatility significantly impact portfolio managers, even though managers have no control over them. Commonly used stock selection signals behave very differently for groups of stocks with high or low idiosyncratic volatility. Therefore, idiosyncratic volatility has a great influence on asset selection and ultimately influences corporate external financing decision.

Hoffmann and Post (2015) while considering how risk experience shape investors beliefs and preference, ascertained that past returns positively impact return expectations and negatively impact risk perceptions. They also ascertained a positive impact of past returns on risk tolerance, but only in some model specifications. The absence of an effect of realized risk is related to the complexity of standard risk measures, investor sophistication and potentially to the lower availability of return signals compared to risk signals. Therefore the findings of our study concurs with Hoffmann and Post (2015) assertion that idiosyncratic risk has a negative influence on corporate equity financing decision

Influence of Corporate Size Dispersion on Corporate Equity Financing Decision by Listed Companies in Kenya

The influence of Total Assetson external financing decision had an exponential (B) value of 1.142 which implies that a one unit increase in investors' corporate size

dispersion increased the odds for equity financing decision relative to covered debt financing decision. Corporate common equity financing decision was influenced positively by a factor of 1.142. The results indicate that this variable has an un-standardized coefficient of 0.133 with a significant outcome of 0.028 where the statistical $P\text{-value} \leq 0.05$. This variable is significant since it has a computed P-value of 0.028 that is less than the statistical $P \leq 0.05$. Influence of Market capitalization on corporate external financing decision had an exponential (B) value of 1.574 which implies that a one unit increase in investors' corporate size dispersion increased the odds for equity financing decision relative to covered debt financing decision. The corporate common Equity financing decision was influenced positively by a factor of 1.574.

The results indicate that the variable has an un-standardized coefficient of -0.555 with a significant outcome of 0.034 where the statistical $P\text{-value} \leq 0.05$. This variable is significant since it has a computed P-value of 0.034 that is less than the statistical $P \leq 0.05$. Similarly the findings have shown that corporate size influence corporate external financing decision relative to covered debt financing. These findings are in agreement with findings by Ezeoha (2009) citing (Diether *et al.*, 2002) positing that dispersion of opinion among investors tends to be greater for small firms than large firms. Myers and Majluf (1984) as cited in (Axelson, 2007) postulate a negative relationship between profitability and debt financing using the pecking order theory, on the basis that profitable firms do not need to rely heavily on outside financing to fund its operations.

The findings of our study are also in agreement with the study by Kantola (2010) that looked at equity characteristics and investor preferences empirical evidence from Finland and Sweden. The objective was to test whether retail investors show preference towards certain type of companies. The study compares the similarities between domestic and foreign equity holdings. The result of Kantola (2010) study indicates that retail investors show a preference towards smaller sized companies both in the domestic as well as in the foreign shareholdings. Similar type of preference can be noticed also among mutual fund holdings. The relation is however not linear with respect to equities size and also other variables influence the results, especially size of fund assets under management (Kantola, 2010). Therefore investors' corporate size dispersion significantly influences corporate external financing decision.

$$\text{Prob. (y=2)} = \frac{1}{\sum_{j=1}^n (e^{(Z_1\beta_1+Z_2\beta_2+Z_3\beta_3+Z_4\beta_4+Z_5\beta_5+Z_6\beta_6)})}$$

Probability (y = Common Equity Financing)

$$= \frac{1}{\sum_{j=1}^6 (1.677ST + 1.633MPS + 1.314EPS + 0.975IVol + 1.142TA + 1.574MC)}$$

Table 4.23: Investors behaviour and Common Equity Financing Decision

External Financing Decisions		B	Std. Error	Wald	d.f	Sig.	Exp. (B)	95% Confidence Interval for Exp. (B)	
								Lower Bound	Upper Bound
Equity	Intercept	-3.100	1.594	.031	1	.036			
Financing Decision	Stock Turnover	.517	.280	1.423	1	.034	1.677	.970	2.901
	Share price	.003	.002	1.691	1	.013	1.633	.999	1.007
	Earnings Per Share	-.005	.002	1.217	1	.033	1.314	.991	1.000
	Idiosyncratic volatility	.019	.031	.360	1	.048	.975	.959	1.083
	Total Assets	.133	.431	.095	1	.028	1.142	.490	2.660
	Market Capitalization	-.555	.262	4.501	1	.034	1.574	.344	.959
	LTDebt	-.308	.203	2.287	1	.010	.735	.494	1.095
	LTDebt:Equity Ratio	-.003	.177	.000	1	.047	.997	.705	1.410

4.6.2 Heterogeneity of Investors' behaviour and Corporate Straight Debt Financing Decisions

The standard error for straight debt financing variable was less than 2.0 as shown in Table 4.24. The results of this study indicate that the standard errors of all the independent variables are less than 2.0. This indicates that there is no problem of multi-collinearity and that the model is appropriate for the interpretation of the results.

Influence of Investors' Behavioural Bias on Corporate Straight Debt Financing Decision.

Influence of investors' behavioural bias on corporate straight debt financing decision had an exponential (B) value of 0.995 which indicates that a one unit increase in investors' behavioural bias decreases the odds for straight debt financing decision

relative to covered debt financing decision. The corporate straight debt financing decision is therefore influenced negatively by a factor of 0.995. The results indicate that the variable has an un-standardized coefficient of 0.273 with a significant outcome of 0.014 where the statistical P-value ≤ 0.05 . This variable is significant since it has a computed P-value of 0.140 that is higher than the statistical $P \leq 0.05$. This finding of our study correspond with the findings of the study by Deangelo *et al.* (2010) indicating that both firm's market-timing opportunities and its corporate life cycle stage exert statistically and economically significant influences on the probability that it conducts a seasoned equity offering (SEO).

Therefore corporate external straight debt financing is negatively influenced by investors' behavioural bias. Park, Gu, Kumar, and Raghunathan (2010) ascertained that the strength of investors' beliefs influences their degree of behavioural bias and perceived competence, which subsequently affects investors' trading frequency and realized performance. Investors with strong beliefs exhibit stronger confirmation bias and experience a larger adverse impact on investment performance. This ultimately influences corporate straight debt financing decision making.

Influence of Investors' Preference on Corporate Straight Debt Financing Decision

The influence of Share price to straight debt financing decision had an exponential (B) value of 0.997 which implies that a one unit increase in investors' preference decreases the odds for corporate straight debt financing decision relative to covered debt financing. The corporate straight debt financing decision was influenced negatively by a factor of 0.997. The results show that the variable has an un-standardized coefficient of -0.003 with a significant outcome of 0.039 where the statistical P-value ≤ 0.05 . This variable is significant since it has a computed P-value of 0.039 that is less than the statistical $P \leq 0.05$.

The findings indicate that investors' preference significantly influence negatively external financing decision by corporations listed at NSE. These findings are in line with studies on price knowledge that often analyzed the importance of price in consumers' purchase decisions. Most of these studies found that those consumers who perceive prices more accurately are the ones who place a higher degree of importance

on them. This premise has also been largely confirmed by a number of empirical studies (Rosa-Diaz, 2004).

Rosa-Diaz (2004) examined the effect of consumers' attitudes towards prices and some demographic variables on price knowledge. The study arguments offered could be reinforced through an examination of the relationship between the importance of price for consumers and the way they perceive and interpret price information. When presented with price information, consumers behave as "information processors", who selects the information to which they will pay attention, interpret it, and translate it into an internal representation that influences their actions and that is stored in their memory to be recovered when they need it. This price preference influences investment options taken by investors and ultimately high investors' preference influences negatively straight debt financing option (Crocì, Doukas, & Gonenc, 2011).

Influence of Analysts' Dispersion on Corporate Straight Debt Financing Decisions by listed companies in Kenya.

The influence of Earnings per Share on corporate external financing decision had an exponential (B) value of 0.999 which implies that a one unit increase in analysts' dispersion decreases the odds for corporate straight debt financing decision relative to covered debt financing. The corporate straight debt financing decision was influenced on a small margin by a factor of 0.999. The results show that the variable has an unstandardized coefficient of -0.001 with a significant outcome of 0.558 with a statistical P-value ≤ 0.05 . This variable is insignificant since it has a computed P-value of 0.558 that is higher than the statistical $P \leq 0.05$. The findings indicate that analyst dispersion influence corporate equity financing decision relative to covered debt financing.

The findings of our study correspond with the study by Jiao and Yan (2015) indicating that a firm is more likely to issue convertibles rather than straight bonds and stocks in the public markets when the firm faces a higher level of heterogeneity of investor behaviour measured by analyst dispersion. In particular, when investors have heterogeneous beliefs about a firm's future cash flows, they would value the firm's securities differently. Some investors may overvalue straight bonds to the highest degree and equity to the lowest degree relative to their respective fundamental values.

Other investors may overvalue stocks to the highest degree and straight bonds to the lowest degree relative to their respective fundamental values. When the firm has to finance a sufficiently large amount of external capital, it has to appeal to both kinds of investors (Ray & Chakravart, 2010). Therefore analyst dispersion significantly influences negatively corporate straight debt financing.

Influence of Investors' Risk Perception on Corporate Straight Debt Financing Decision

The influence of Investors risk perception on external financing decision had an exponential (B) value of 1.129 which implies that a one unit increase in the investors' risk preference increases the odds for corporate straight debt financing decision relative to covered debt financing. The corporate straight debt financing decision was influenced positively by a factor of 1.129. The results indicate that the idiosyncratic volatility has an un-standardized coefficient of 0.009 with a significant outcome of 0.015 and statistical P-value ≤ 0.05 . Investors' risk perception was significant; it had a computed P-value of 0.015 less than the statistical $P \leq 0.05$. This finding is in agreement with the study by Gurusamy (2011) indicating that investment decisions made by both corporate and individual investors are guided by the investors risk perception. Investors perceive that investments in mutual funds carry moderate risk and offer better and steady returns.

The findings of our study are also in agreement with the study by Sindhu and Kumar (2014) that empirically analyzed the influence of risk perception of investors on investment decision and ascertained that mutual fund investors are financial conservatives. They are aware about the principle stating that the higher the risk, the higher the return and at the same time they understand that diversified portfolio reduces risk. This premise therefore influences investment decision and ultimately external financing options by agents of corporations.

Influence of Investors' Corporate Size Dispersion on Corporate Straight Debt Financing Decision

The influence of Total Assets on corporate straight debt financing decision had an exponential (B) value of 1.685 which implies that a one unit increase in the investors' corporate size dispersion increased the odds of straight debt financing decision relative

to covered debt financing. The corporate straight debt financing decision was influenced positively by a factor of 1.685. The results show that the variable has an unstandardized coefficient of 0.378 with a significant outcome of 0.038 where the statistical P-value ≤ 0.05 . Therefore investors' corporate size dispersion was significant; it has a computed P-value of 0.038 that is less than the statistical $P \leq 0.05$.

Influence of market capitalization on straight debt financing decision had an exponential (B) value of 1.730 implying that one unit increase in investors' corporate size dispersion increased odds for corporate straight debt financing decision relative to covered debt financing. The corporate straight debt financing decision was influenced positively by a factor of 1.730. The results show that the variable has an unstandardized coefficient of 0.315 with a significant outcome of 0.014 where the statistical P-value ≤ 0.05 . This variable is therefore significant since it has a computed P-value of 0.014 that is less than the statistical $P \leq 0.05$.

According to Diether *et al.* (2002) as cited in (Ezeoha, 2009) dispersion of opinion among investors tends to be greater for small firms than large firms. Most financial analysts only follow large firms and small firms may be unable to bear high disclosure preparation costs. The lack of disclosed information induces both divergent attitude and uncertainty about the value of small firms and this affects financing options available to the firm. Investors' corporate size dispersion therefore influences debt financing option. According to Myers and Majluf (1984) as cited in (Axelson, 2007) negative relationship exist between profitability and debt financing using the pecking order theory, on the basis that profitable firms do not rely heavily on outside financing. Therefore firm size dispersion significantly influences corporate straight debt financing. This agrees with the findings of our study as stipulated above.

$$\text{Prob. (y=2)} = \frac{1}{\sum_{j=1}^n (e^{(Z_1\beta_1 + Z_2\beta_2 + Z_3\beta_3 + Z_4\beta_4 + Z_5\beta_5 + Z_6\beta_6)})}$$

Probability (y = Straight Debt Financing)

$$\frac{1}{\sum_{j=1}^6 (0.995ST + 0.997MPS + 0.999EPS + 1.129IVol + 1.685MC + 1.73TA)}$$

Table 4.24: Investors' behaviour and Straight Debt Financing Decision

External Financing Decisions		B	Std. Error	Wald	d.f	Sig.	Expon. (B)	95% Confidence Interval for Expon. (B) Lower Bound Upper Bound	
Straight Debt Financing Decision	Intercept	7.275	17.923	.165	1	.044			
	Stock Turnover	.273	.294	.863	1	.014	.995	.739	2.337
	Share price	-.003	.003	.994	1	.039	.997	.992	1.003
	Earnings Per Share	-.001	.002	.343	1	.023	.999	.994	1.003
	Idiosyncratic volatility	.009	.034	.064	1	.015	1.129	.944	1.077
	Total Assets	.378	.429	.778	1	.038	1.685	.295	1.588
	Market Capitalization	.315	.282	1.248	1	.014	1.730	.420	1.268
	LTDebt	.379	.214	1.130	1	.007	1.684	.450	1.042
	LTDebt:Equity Ratio	-.003	.177	.000	1	.018	1.997	.705	1.411

4.7 Hypothesis Testing

The nested model fit was significant with a final-2 likelihood ratio of 906.016, a chi2 of 189.882, and a significant value of 0.009 which is less than statistically $P < 0.05$. This indicates that full model predicts significantly better, or more accurately the influence of heterogeneity of investors behaviour on corporate external financing decision. To get the expected β values, the exponential function applied to the coefficients was used.

The exponential (β) was the odds ratio associated with each predictor, predictors that increased the logistic regression displayed exponential (β) greater than 1.0, while those predictors that did not have an effect on the logistic regression displayed exponential (β) of 1.0. Predictors that decreased the logistic regression had exponential (β) values less than 1.0. The results of this study as depicted in Table 4.16 was used to decide whether to accept or reject the study null hypotheses (H_0), where covered debt financing was used as the base category.

1. Ho: Investors' behavioural bias does not significantly influence the corporate external financing decision

The parameter estimate result indicates that the influence of behavioural bias on equity financing has an exp. (B) of 1.677 and a p-value of 0.034 which is lower than statistical p-value < 0.05. Therefore investors' behavioural bias significantly influences equity financing decision. The influence of investors' behavioural bias on straight debt financing has an exp. (B) of 0.995 and a p-value of 0.014 which is lower than Statistical P-value < 0.05. Therefore investors' behavioural bias significantly influences straight debt financing. Therefore there is evidence to reject the null hypothesis and accept the alternative hypothesis that investors' behavioural bias significantly influences corporate external financing decision.

2. Ho: Investors' preference does not significantly influence the corporate External financing decision.

The parameter estimation result for the fixed model shows that the influence of investors' preference on equity financing has an exponential (B) of 1.633 and a p-value of 0.013 which is lower than statistical p-value < 0.05. Therefore investors' preference significantly influences equity financing decision. The influence of investors' preference on straight debt financing has an exponential (B) of 0.997 and a p-value of 0.039 lower than statistical p-value < 0.05. This indicates that investors' preference significantly influence straight debt financing. Therefore there is evidence to reject the null hypothesis and accept the alternative hypothesis that investors' preference significantly influences corporate external financing decision.

3. Ho: Analysts dispersion does not significantly influence the corporate External financing decision.

The parameter estimation result for the fixed model shows that the influence of analysts' dispersion on equity financing had an exponential (B) of 1.314 and a p-value of 0.033 lower than statistical P-value < 0.05. Therefore analysts' dispersion significantly influences equity financing decision. The influence of analysts' dispersion on straight debt financing had an exponential (B) of 0.999 and a p-value of 0.023 lower than statistical P-value < 0.05. This indicates that analysts' dispersion significantly influence

straight debt financing. Therefore there is evidence to reject the null hypothesis and accept the alternate hypothesis that analysts' dispersion significantly influences corporate external financing decision.

4. Ho: Investors' Risk Perception does not significantly influence the corporate External financing decision.

The parameter estimation result for the fixed model shows influence of investors risk perception on equity financing has an exponential (B) of 0.975 and a P-value of 0.048 which is lower than Statistical P-value <0.05 . Therefore the investors' risk perception significantly influences equity financing decision. The influence of investors' risk perception on straight debt financing had an exponential (B) of 1.129 and a P-value of 0.015 which is lower than statistical P-value <0.05 . Therefore investors' risk perception significantly influences straight debt financing. Therefore there is evidence to reject the null hypothesis and accept the alternative hypothesis that investors' risk perception significantly influences corporate external financing decision.

5. Ho: Investors' corporate size dispersion does not significantly influence the corporate external financing decision

The parameter estimation result for the fixed model shows influence of total assets on equity financing has an exponential (B) of 1.142 and a P-value of 0.028 which is lower than statistical P-value <0.05 . Therefore investors' corporate size perception significantly influences equity financing decision by companies listed at Nairobi Security Exchange. The influence of total assets on straight debt financing had an exponential (B) of 1.685 and a P-value of 0.038 which is lower than statistical P-value <0.05 . Therefore investors' corporate size dispersion significantly influences straight debt financing. Therefore there is evidence to reject the null hypothesis and accept the alternative hypothesis that investors' corporate size dispersion significantly influences corporate external financing decision.

The parameter estimation result for the fixed model shows influence of market capitalization on equity financing had an exponential (B) of 1.574 with a p-value of 0.034 which is lower than statistical p-value <0.05 . Therefore investors' corporate size dispersion significantly influences equity financing decision by companies listed at

Nairobi Security Exchange. The influence of market capitalization on straight debt financing has an exponential (B) of 1.730 and a P-value of 0.014 which is lower than statistical p-value <0.05 . Therefore investors' corporate size dispersion significantly influences straight debt financing. There is sufficient evidence to reject the null hypothesis and accept the alternative hypothesis that investors' corporate size dispersion significantly influences corporate external financing decision.

CHAPTER FIVE

SUMMARY CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of major findings of the study, relevant discussions, conclusions and the necessary recommendations. The summary was done in line with the objectives of the study based on the output of the descriptive and inferential statistical analyses guided to test the research hypothesis of the study. The summary of findings was presented as per the research objectives set out in chapter one. Finally, the chapter provides recommendations and possible areas of further research based on the analysed data related to the objectives of the study.

5.2 Summary of the Major findings

The forces driving firms' external financing decisions in developed capital markets appear to hold to some extent in emerging market settings, and generalising in such a manner might therefore be appropriate. Therefore a part from organization internal factors and external factors affecting corporate external financing decision making this study posits that heterogeneity of investors' behaviour has a significant influence on corporate external financing decision. This study was founded on positivist philosophical paradigm and anchored on descriptive survey research design whose objective was to portray an accurate profile of the situation. The population of the study was 67 listed companies at Nairobi Security Exchange during the 10 year study period from 2007 to 2016. The sampling frame for this study consisted of all companies listed at NSE as at December 2016. Therefore the study adopted a censor approach because of the small number of listed companies.

Data extracted from the audited and published financial statements and NSE indices was employed to construct the estimates for the function parameters. The study finally employed a multinomial logistic regression model in determining the influence of heterogeneity of investors' behaviour on corporate external financing decision. Several preliminary test including fixed and random effect tests, Hausman McFadden test, test for correlation, test for autocorrelation, test for normality and unit root test were

performed to ascertain the fitness of the data and the model. This study ascertained that issuing equity alone dominates issuing debt alone by listed firms in Kenya. The value of equity issued as external financing option is much more sensitive to the behaviours of outside investors than the value of both straight and covered debt. Therefore, if outside investors are much more optimistic than firm insiders, equity will be much more overvalued than straight debt based on insiders' behaviours. This will ultimately influence corporate external financing decision made by agents of the firm.

5.2.1 Investors' Behavioural Bias and Corporate External Financing Decision

Modelling listed firms as multi-product firms having to make external financing decision, studies posit that trading volume contains information about investors' heterogeneous behaviour. Considering 53 listed firms where investors' behavioural bias was determined by analysing stock turnover of firms listed at Nairobi Security Exchange. Statistically odds ratio of the influence of investors' behavioural bias on equity financing across all sectors listed at Nairobi Security Exchange was above 1.00 indicating a positive influence while the odds ratio of investors' behavioural bias influence on straight debt financing was below 1.00 indicating a negative influence relative to covered debt financing across eleven sectors listed at Nairobi Security Exchange.

Generally investors' behavioural bias influence on equity financing decision had an exponential β of 1.677 with a significant value of 0.34. Whereas investors' behavioural bias influence on straight debt financing had an exponential β of 0.995 and a significant value of 0.014. According to the findings of the study listed firms' external financing decisions is significantly influenced by investors' behavioural bias. Investors' behavioural bias has a positive influence on corporate equity financing decision and a negative influence on corporate straight debt financing option.

5.2.2 Investors' Preference and Corporate External Financing Decision

Investors' preference depends on the belief of the marginal outside investor on the firm's equity and performance. According to statistical findings on specific listed sector, the odds ratio of the influence of investors' preference on equity financing decision across all sectors listed at NSE was above 1.00 indicating a positive influence while the

odds ratio of investors' preference on straight debt financing was below 1.00 indicating a negative influence relative to covered debt financing across all sectors. Generally investors' preference influence on equity financing decision had an exponential β of 1.633 with a significant value of 0.013 indicating that one unit increase in investors' preference influences positively equity financing decision relative to covered debt financing.

Whereas investors' preference influence on straight debt financing decision had an exponential β of 0.997 and a significant value of 0.039 indicating that one unit increase in investors' preference influences negatively straight debt financing relative to covered debt financing. Therefore according to the findings of the study listed firms' external financing decisions is significantly influenced by investors' behavioural bias. Investors' behavioural bias has a positive influence on corporate equity financing decision and a negative influence on corporate straight debt financing option.

5.2.3 Analysts' Dispersion and Corporate External Financing Decision.

The firms with low ratios of fundamentals are known to have systematically lower future stock returns. Therefore analysts and investors monitor firm's fundamentals and sell their holdings in the firms as the firms fundamentals fall. According to statistical findings on specific listed sector, the odds ratio of the influence of analysts' dispersion on equity financing decision across all sectors listed at NSE was above 1.00 indicating a positive influence while the odds ratio of influence of analysts' dispersion on straight debt financing was below 1.00 indicating a negative influence relative to covered debt financing.

Generally analysts' dispersion influence on equity financing decision had an exponential β of 1.314 with a significant value of 0.033 indicating that one unit increase in analysts' dispersion influences positively equity financing decision relative to covered debt financing. Whereas analysts' dispersion influence on straight debt financing decision had an exponential β of 0.999 and a significant value of 0.023 indicating that one unit increase in analysts' dispersion influences negatively straight debt financing decision relative to covered debt financing.

The heterogeneity of the market perceptions of a firm's fundamentals may also be related to the degree of short selling experienced by a firm. To the extent that market participants diverge in their estimation of the value of a firm, those who believe the firm is overvalued may be motivated to sell short. Where a near consensus is held by the market players, little motivation exists for short selling.

5.2.4 Investors' Risk Perception and Corporate External Financing Decision.

The volatility decomposition framework developed in CLMX was followed using daily stock returns to construct the aggregate monthly idiosyncratic volatility time series as a measure of investors' risk perception. According to statistical findings on specific listed sector, the odds ratio of the influence of investors' risk perception on equity financing decision across all sectors listed at NSE was below 1.00 indicating a negative influence while the odds ratio of influence of investors' risk perception on straight debt financing was above 1.00 indicating a positive influence relative to covered debt financing.

Generally investors' risk perception influence on equity financing decision had an exponential β of 0.975 with a significant value of 0.048 indicating that one unit increase in investors' risk perception influences negatively equity financing decision relative to covered debt financing. Whereas investors' risk perception influence on straight debt financing decision had an exponential β of 1.129 and a significant value of 0.015 indicating that one unit increase in investors' risk perception influences positively straight debt financing decision relative to covered debt financing. According to the findings investors' risk perception manifests itself more strongly among stocks held by retail investors than institutions. Generally stock price volatility influence idiosyncratic volatility through the trading activities of retail investors in ways that are consistent. Therefore investors' risk perception influences corporate external financing decision by companies listed at Nairobi Security Exchange.

5.2.5 Investors' Corporate Size Dispersion and Corporate External Financing Decision.

Small firms tend to generate more divergence of opinion and more uncertainty than large firms because small firms have less information available for the public. Thus firm size is used to proxy for both investors' behaviour differences and uncertainty. Firm

size is considered a vital element that influences the financial architecture of the firm. Large firms tend to be more diversified and thereby less prone to financial distress. These firms have more steady cash flows and may be able to exploit the economies of scale in issuing securities. According to statistical findings on specific listed sector, the odds ratio of the influence of investors' corporate size dispersion on equity financing decision across all sectors listed at NSE was above 1.00 indicating a positive influence while the odds ratio of influence of investors' corporate size dispersion on straight debt financing was also above 1.00 indicating a positive influence relative to covered debt financing.

Generally investors' corporate size dispersion influence on equity financing decision had an exponential β of 1.574 with a significant value of 0.034 indicating that one unit increase in investors' corporate size dispersion influences positively equity financing decision relative to covered debt financing. Whereas investors' corporate size dispersion influence on straight debt financing decision had an exponential β of 1.730 and a significant value of 0.014 indicating that one unit increase in investors' corporate size dispersion influences positively straight debt financing decision relative to covered debt financing. Therefore heterogeneity of investors' behaviour significantly influences corporate external financing decision.

5.3 Conclusions

This study examined influence of heterogeneity of investors' behaviour on corporate external financing decision by firms listed at Nairobi Security Exchange. External financing decision studies have been carried out in an emerging market context to try and establish the extent to which empirical results found in advanced economic conditions are replicated in a developing market context. The results of the study demonstrate that the means by which Kenyan firms make external financing decisions and the characteristics of their financing practices is significantly influenced by investors' heterogeneous behaviour.

Influence of Investors' Behavioural Bias on Corporate External Financing Decision by Listed Companies in Kenya

Differences in investors' behaviour induce behavioural bias towards a firm affecting the stocks turnover, stock with more divergent behavioural bias tend to have higher trading volume. The higher standard deviation of investors' behavioural bias was attributed to the economic and political situations within the country during the study period specifically political tension during study period. Corporate agents financing decisions are significantly influenced by investors' behavioural bias when making external financing decision. Common equity financing is positively influenced by investors' behavioural bias relative to covered debt financing. Similarly investors' behavioural bias negatively influences the straight debt financing decision relative to covered debt financing.

Influence of Investors' Preference on corporate external financing decision by listed companies in Kenya.

Differences in investors' preference induce Share price volatility; stocks with more divergent beliefs among investors tend to have higher fluctuation in Share price. The findings of the study indicates that investors' preference influences positively corporate equity financing decision, while it influences negative corporate straight debt financing decision. The higher standard deviation of investors' preference was attributed to the economic and political situations within the country during the study period. Common equity financing is positively influenced by investors' preference relative to covered debt financing. Similarly investors' preference negatively influences straight debt financing decision relative to covered debt financing. The findings of the study therefore affirm the need for corporate managers to consider investors' behavioural implication on their financing decision making in order to make optimal corporate external financing, thereby affecting corporate structure and ultimately firm profitability and security.

Influence of Analysts' Dispersion on Corporate External Financing Decision by listed Companies in Kenya

Analysts' dispersion influences corporate external financing decision differently, according to the findings analysts' dispersion positively influence common equity financing decision relative to covered debt financing. Similarly it negatively influences straight debt financing relative to covered debt financing. Dispersion of opinion is positively related to contemporaneous stock earnings and negatively related to future stock earnings. Therefore analysts' dispersion influences positively equity financing decision while it negatively affects straight debt financing relative to covered debt financing. Therefore corporate agents should consider heterogeneity of investors' behaviour while making external financing decision.

Influence of Investors' Risk Perception on Corporate External Financing Decision by Companies Listed in Kenya

According to the findings of the study investors' risk perception negatively influences common equity financing decision while straight debt financing decision is positively influenced by investors' risk perception. Heterogeneous behaviour explain the option-implied volatility smile, the more the dispersion in behaviour, the steeper the volatility measures. Stocks with greater behaviour heterogeneity have more pronounced investors' risk perception. The findings of the study indicate that investors' risk perception significantly influence the corporate external financing decisions. Therefore corporate agents should consider heterogeneity of investors' behaviour while making external financing decision.

Influence of Corporate Size Dispersion on Corporate External Financing Decision by Listed Companies in Kenya

The dispersion of opinion among investors tends to be greater for small firms than large firms. The findings of the study indicates that investors' corporate size dispersion positively influences common equity financing decision relative to covered debt, similarly it positively influence straight debt financing. Most financial analysts only follow large firms and small firms may be unable to bear high disclosure preparation costs. The lack of disclosed information induces both divergent in investors' behaviour

and uncertainty about the value of small firms. Therefore corporate size dispersion significantly influences the corporate external financing decision. Therefore corporate agents should consider heterogeneity of investors' behaviour while making external financing decision.

5.4 Recommendations

General Recommendations

The findings of this study have important implications to global portfolio managers, policy makers, market regulators and the academic community. The findings of the study on investors' behavioural bias indicate that there is need to enhance investment knowledge by enlightening both corporate investors and investment trusts in Kenya. This will allow them to invest wisely while at the same time avoid adverse selection as a result of behavioural bias. Players at the Nairobi Security Exchange need to be able to make informed investment decision without relying on incorrect information or investors' behavioural bias.

Therefore availability of all market information and elimination of information biases will encourage both corporate and individual investors thus enhancing growth of the market. The study also recommends that corporations should understand, under what circumstance it's optimal to issue debt and or equity. This will enable the institutions in their quest for external financing to improve on their liquidity and avoid making financing decisions that are not optimal for the company seeking external financing.

The study recommends empowering of individual investors by offered them right investment vehicle thereby enhancing optimism, confidence and transparency in the market. A market that can be able to attract more individual investors, will enhances liquidity capability of the organizations, and therefore inspire economic growth. Therefore understanding the significance of the influence of investors heterogeneous behaviour on corporate external financing decision making will enlighten and encourage individual investors to invest wisely.

Policy Recommendations

The government as the policy formulator and enforcer through various institutions, the study recommend that the government should use behavioural theory and evidence to develop financial regulation. Although research advances have made identifying the prevalence of biases easier, tackling their influence effectively is not so easy. Behavioural economics research has proved that even highly-intelligent and well educated individuals are prone to errors of judgement and are subject to systematic biases and use heuristics that prevent them from behaving in their own long-term interest. The corollary justifies expanding the scope of paternalistic regulation employed for individuals' own good by directing how and when choices are made, by using nudges or by using regulations with existence of biasing effects, these regulation will enhance market performance.

When markets are doing well government expects increased income through taxation and consequently growth of GDP. The policy makers as well as market regulators must understand the inherent informational inefficiency in their markets. More efforts are required in future to improve market efficiency by strengthening corporate governance code encouraging better corporate disclosures reducing trading costs and taxing positions and widening investor base through a financial inclusion strategy including better financial education.

Behavioural economics highlights that whilst regulators are exposed to political influence from pressure groups and regulatory capture they are also real individuals, subject to the same bounded rationality, biases and heuristics they are trying to regulate away. The enthusiasm with which governments are rushing to embed behavioural science insights into financial regulation may be caused by biases such as availability (the salience of behavioural economics research output and overestimating the errors made leading to and during the crisis), overconfidence (underestimating the chances of their biases influencing policy-making, overestimating the success of their policies) and present bias (excessive short-run focus linked with political cycles). The first step in the application of behavioural economics insights must be on removal of biases by the regulators and minimising the drivers of inefficient regulation.

The Nairobi Security Exchange is an important market in Africa, because of the big roles it plays in the financial system. A country is only as strong as its financial system. The success of the market influences the Kenyan economy positively such that it boosts the local commerce and be relevant and competitive in global financial market. Financial innovative adoption is a central issue; its growth, process, acceptance and patronage must be continually monitored and upgraded to encourage both individual and institutional investors to trade. The study recommends minimisation of market volatility brought about by investors' biases that negatively influencing corporate external financing decision.

5.5 Contribution to Knowledge

This study provides a practical introduction to general tenets of behavioural finance and highlights the potential lessons for successful financing decision making. The heterogeneous investors' behaviour is ingrained aspects of human decision-making processes. Many of them have served us well as ways of coping with day-to-day choices. But, they may be unhelpful for achieving success in long-term activities such as investing. Behavioural finance holds out the prospect of a better understanding of financial market behaviour and scope for investors to make better investment decisions based on an understanding of the potential pitfalls. Advisers can learn to understand their own heterogeneous behaviour and also act as a behavioural coach to clients in helping them deal with their own biases.

In advancement of behavioural finance and external financing theories this study is one of the few studies that have performed comprehensive analysis on broad spectrum of investors' behaviour and financing decision by corporations in developing country concept. The study highlights several areas where behavioural finance can contribute significant benefits to a wide array of aspects of the finance industry. The study informs behavioural finance issues to encourage collaboration between the academic world and finance practitioners. This aimed to encourage a greater awareness of individual decision-making frames and heuristics and how industry can apply these concepts to improve the allocation of finance products to society.

Heterogeneous behavioural factors focused on by the study tend to sit deep within our psyche and may serve us well in certain circumstances. However, in investment and financing decision making they may lead us to unhelpful or even hurtful decisions. As a fundamental part of human nature, these biases affect all types of investors, both professional and private. However, if we understand them and their effects, we may be able to reduce their influence and learn to work around them.

5.6 Suggestions for Further Research

The aim of this research was to determine the influence of investors' behaviour on corporate external financing decision making and to address the question as to whether investors' behaviour influences external financing decision. This study focused on quantitative considerations of financial decision making by companies listed at NSE. This particular study helped to answer the influence of heterogeneity of investors' behaviour on corporate external financing decision. The study analysis disclosed that heterogeneity of investors' behaviour influenced the choice of external financing made by corporations in Kenya. This study has brought forward many issues and findings creating avenue for future research as discussed below.

Because some of the heterogeneity variables of this study could be related to degree of information asymmetry, one may be concerned that empirical findings of this study are driven by information asymmetry. However the asymmetric information theories would predict a pecking order of straight bonds, convertibles, and stocks in relation to information asymmetry. In contrast, we find that different external financing options are preferred under different conditions. Thus, our findings on the choice between common equity, straight bonds and convertibles are inconsistent with the asymmetric information explanation and this forms a source of further research.

Differences in behaviours are unobservable this study used observable proxy variables for heterogeneous behaviours. However, proxy variables do not cleanly capture investor behaviour differences and often embody both behaviour differences and uncertainty. The study therefore recommends future researchers in this field to develop a method that will disentangle the behaviour difference component and uncertainty component of proxy variables. Future research studies should concentrate on emerging stock markets

especially in East Africa Community and establish whether investors' bias influences investment decision. It has also been observed that after globalization, emerging economies have higher growth potential and investors (institutional and individuals) are more inclined to invest in stock market, which leaves a wide scope for future research (Colombage, 2007). Further, along with the stock market, there should be focus on other markets such as the derivatives market and bond market.

Attention should be given to primary data-based empirical research to analyze the behaviour of investors during investment decision-making and evaluate whether these behavioural biases influences performance of listed companies in developing markets. Besides equity and debt, other cross-border multi-assets and financial measures such as securitization, can be included while analyzing investment biases in developing economies. The rationale of inclusion of such classes of assets is that most of the research is focused on equity and debt home bias in portfolio allocation.

Finally considering home bias, more studies should be directed towards herding in individuals' investment decision-making and influence of such behaviours on corporate financing. Studies can be performed by combining different types of investors such as individuals, institutional (mutual funds, hedge funds, pension funds, investment advisors) to determine the difference in their behaviour and the effect of behavioural biases in their financial decision-making. This study established that many firms issue equity compared to straight debt and covered debt, a study should therefore be carried out to study the determinants driving Kenyan Common Equity issues.

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APPENDICES

Appendix 1: Letter of Authorization

Date.....

To

Chief Executive Officer

Name of the Institution.....

P.O. Box

NAIROBI

Dear Sir,

Re: Research Data on “Influence of Heterogeneity of Investors Behaviour on Corporate External Financing Decision by Companies listed in Kenya”

I am a student pursuing a Doctorate Degree in Business Administration- Finance Option at Jomo Kenyatta University of Agriculture and Technology. I’ am required to undertake a research thesis as partial fulfilment for the award of this higher degree. My research topic is stated above and I kindly request for your assistance in making my research a success. The purpose of this letter is therefore to request you to grant permission to collect relevant information from your institution. The information collected will be treated with utmost confidentiality and will be used for the purposes on this research only. For your information, the output of this research will add value to corporations and institutions of higher learning in Kenya in terms of appreciating the need for adoption different sources of financing. I wish your institution fruitful business.

Yours Sincerely

Fredrick Olanga Wafula

Registration Number: HD433/4144/2013

Appendix 2: Letter of Introduction

Date.....

To.....

Dear Sir/Madam,

RE: Collection of Thesis Data

My name is Fredrick Wafula a PhD student in Business Administration – Finance option at Jomo Kenyatta University of Agriculture and Technology. Currently, I’ am carrying out a research on the “*Influence of Heterogeneity of Investor Behaviour on Corporate External Financing Decision by Companies Listed in Kenya*”. I am in the process of gathering relevant data for this study.

Your Institution has been identified as one of the collaborators and respondents in this study and I kindly request for your assistance towards making this study a success. I therefore kindly request you to avail your financial reports for the period 2007-2016. I wish to assure you that the data collected will be treated with confidentiality and will be used solely for the purpose of this study. I thank you in advance for your time and assistance.

Yours Sincerely

Fredrick Olanga Wafula

Registration Number: HD433/4144/2013

Appendix 3: Secondary Data Collection Matrix

Name of the Company.....

Physical Address.....

Date Listed.....

Measurement		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Investors' behavioural Bias	Daily Turnover										
	Monthly Turnover										
Investors' Preference	Monthly Price										
	Annual Price										
Analysts' Dispersion	Retained Earnings										
	Issued Shares										
Investors' Risk Preference	Stock Return										
	Market Return										
	Risk Free Rate										
Investors' corporate size dispersion	Total Assets										
	Market Cap.										
External Financing Decision	Common stock										
	Straight Bond										
	Convertible Bond										
Leverage	Total Equity										
	LTDEBT										
	LTDebt:Equity										

Appendix 4: Case Processing Summary

		N	Marginal Percentage
External Financing Decision	Equity Financing	245	46.2%
	Straight Debt Financing	189	35.7%
	Covered Debt Financing	96	18.1%
Sectors Listed at NSE	AGRICULTURE	60	11.3%
	AUTOMOBI	30	5.7%
	BANKING	110	20.8%
	COMMERCIAL	70	13.2%
	CONSTRUC	50	9.4%
	ENERGY AND PETROLEUM	40	7.5%
	INSURANCE	50	9.4%
	INVESTME	30	5.7%
	MANUFACTURING	80	15.1%
	TELECOMM	10	1.9%
Companies Listed and NSE 2007-2016	ATHIRM	10	1.9%
	B.O.C LT	10	1.9%
	BAMBURI	10	1.9%
	BAT LTD	10	1.9%
	BBK	10	1.9%
	BRITAM	10	1.9%
	CAR GEN	10	1.9%
	CARBACID	10	1.9%
	CENTUM	10	1.9%
	CO-OP	10	1.9%
	CROWN	10	1.9%
	DTBANK	10	1.9%
	E.A CABL	10	1.9%
	EAAG	10	1.9%
EAB LTD	10	1.9%	

EAPC	10	1.9%
EQUITY	10	1.9%
EVEREADY	10	1.9%
EXPRESS	10	1.9%
HFCK BAN	10	1.9%
I&M BANK	10	1.9%
JUBILEE	10	1.9%
KAKUZI	10	1.9%
KAPCH	10	1.9%
KCB	10	1.9%
KENGEN	10	1.9%
KENOL	10	1.9%
KENYA AI	10	1.9%
KENYA RE	10	1.9%
KPLC	10	1.9%
LIBERTY	10	1.9%
LIMURU	10	1.9%
MARSH	10	1.9%
MUMIAS	10	1.9%
NBK BANK	10	1.9%
NIC BANK	10	1.9%
NMGROUP	10	1.9%
OLYMPIA	10	1.9%
ORCHARD	10	1.9%
S G LIM I	10	1.9%
SAFCOM	10	1.9%
SAMEER	10	1.9%
SANLAM	10	1.9%
SASINI	10	1.9%
SCBANK	10	1.9%
STANBIC	10	1.9%
TOTAL	10	1.9%
TPS SERE	10	1.9%
TRANS	10	1.9%
UCHUMI	10	1.9%

	UNGA LTD	10	1.9%
	WILLIAM	10	1.9%
	WPP SCAN	10	1.9%
Trading Year	2007	53	10.0%
	2008	53	10.0%
	2009	53	10.0%
	2010	53	10.0%
	2011	53	10.0%
	2012	53	10.0%
	2013	53	10.0%
	2014	53	10.0%
	2015	53	10.0%
	2016	53	10.0%
Valid		530	100.0%
Missing		504	
Total		1034	
Subpopulation		530 ^a	
a. The dependent variable has only one value observed in 530 (100.0%) subpopulations.			

Appendix 5: Study Population (Listed corporations in Kenya)

S. no	BANKING SECTOR
1	Kenya Commercial Bank
2	Barclays Bank of Kenya Ltd
3	Equity Bank Ltd
4	Co - operative Bank of Kenya Ltd
5	Standard Chartered Bank Ltd
6	Stanbic Bank Ltd
7	I & M Bank Ltd
8	National Bank of Kenya Ltd
9	Diamond Trust Bank Ltd
10	NIC Bank Ltd
11	Housing Finance Company of Kenya
MANUFACTURING AND ALLIED	
12	Unga group limited
13	Mumias Sugar
14	Kenya Orchards
15	Flame tree Holdings
16	Eveready East Africa limited
17	East Africa Breweries limited
18	Carbacid Investment limited
19	British American Tobacco Kenya
20	B.O.C Kenya limited
21	A. Baumann & Company limited

INSURANCE SECTOR

22	Britam Holdings
23	CIC Insurance group
24	Jubilee Holdings limited
25	Kenya Re-insurance corporation
26	Liberty Kenya Holdings
27	Pan Africa Insurance Holdings

COMMERCIAL AND SERVICES SECTOR

28	Atlas Africa Industries
29	Express Kenya limited
30	Hutching Biemer limited
31	Kenya Airways limited
32	Longhorn Publishers limited
33	Nation Media Group limited
34	Standard Group limited
35	TPS Eastern Africa
36	Uchumi Supermarket limited
37	WPP Scangroup
38	Nairobi Business Ventures
39	Deacons East Africa

ENERGY AND PETROLEUM SECTOR

40	Kengen Co. Limited
41	KenolKobil limited
42	Kenya Power and lighting
43	Total Kenya limited
44	Umeme limited

CONSTRUCTION AND ALLIED

45	ARM Cement limited
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46	Bamburi Cement limited
47	Crown Paints limited
48	E.A Cables limited
49	E.A Portland Cement co. limited

AGRICULTURAL

50	Eaagads limited
51	Kakuzi limited
52	Kapchoroa Tea Co. Limited
53	The Limuri Tea Co. Limited
54	Sasini Limited
55	Williamson Tea Kenya limited

INVESTMENT

56	Centum Investment co. limited
57	Home Afrika limited
58	Kurwitu Ventures limited
59	Olympia Capital Holdings
60	Transcentury limited

AUTOMOBILE AND ACCESSORIES

61	Car and General (K) limited
62	Marshal E.A limited
63	Sameer Africa limited

TELECOMMUNICATION AND TECHNOLOGY

64	Safaricom limited
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REAL ESTATE INVESTMENT TRUST

65	Stanlib Fahari 1-REIT
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INVESTMENT SERVICES

66	Nairobi Security Exchange limited
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EXCHANGE TRADED FUND

67	New Gold Issuer (RP) Limited
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Source: NSE (2016)

Appendix 6: Heterogeneity of investors behaviour and External Financing

							95% Confidence Interval for Exp(B)		
External Financing Decisions ^a		B	Std. Error	Wald	d.f	Sig.	Exp(B)	Lower Bound	Upper Bound
Equity Financing Decision	Intercept	-3.100	1.594	.031	1	.036			
	Stock Turnover	.517	.280	3.423	1	.034	1.677	.970	2.901
	Share price	.003	.002	1.691	1	.013	1.633	.999	1.007
	Earnings perShare	.005	.002	4.217	1	.033	1.314	.991	1.000
	Idiosyncratic volatility	.019	.031	.360	1	.048	0.975	.959	1.083
	TotalAssets	.133	.431	.095	1	.028	1.142	.490	2.660
	MarketCapitalization	.555	.262	4.501	1	.034	1.574	.344	.959
	LTDebt	-.308	.203	2.287	1	.010	.735	.494	1.095
	LTDebtEquityRatio	-.003	.177	.000	1	.047	.997	.705	1.410
	[Industry=AGRICULT]	1.657	2.573	.415	1	.520	5.244	.034	813.075
	[Industry=AUTOMOBI]	-3.874	2.556	2.296	1	.130	.021	.000	3.117
	[Industry=BANKING]	-2.123	2.194	.936	1	.333	.120	.002	8.818
Straight Debt Financing Decision	Intercept	7.275	17.923	.165	1	.036			
	Stock Turnover	.273	.294	.863	1	.014	.995	.739	2.337
	Share price	-.003	.003	.994	1	.039	.997	.992	1.003
	Earnings per Share	-.001	.002	.343	1	.023	.999	.994	1.003
	Idiosyncratic volatility	.009	.034	.064	1	.015	1.129	.944	1.077
	TotalAssets	-.378	.429	.778	1	.038	.685	1.685	1.588
	MarketCapitalization	-.315	.282	1.248	1	.014	.730	1.730	1.268
	LTDebt	-.379	.214	3.130	1	.007	.684	.450	1.042
	LTDebtEquityRatio	-.003	.177	.000	1	.018	.997	.705	1.411
	[Industry=AGRICULT]	3.605	2.740	1.731	1	.008	36.769	.171	7900.787
	[Industry=AUTOMOBI]	.485	2.733	.031	1	.029	1.624	.008	344.040
	[Industry=BANKING]	2.404	2.370	1.029	1	.031	11.067	.106	1151.795
	[Industry=COMMERC]	1.127	2.808	.161	1	.018	3.088	.013	757.695
	[Industry=CONSTRUC]	2.516	3.045	.683	1	.009	12.378	.032	4836.626
	[Industry=ENERGY A]	.941	2.784	.114	1	.035	2.562	.011	600.465
	[Industry=INSURANC]	1.241	3.125	.158	1	.001	3.459	.008	1580.475
	[Industry=INVESTME]	1.325	3.197	.172	1	.009	3.761	.007	1979.074
[Industry=MANUFACT]	19.213	4.778	16.169	1	.000	2.208E8	18919.912	2.577E12	

[Firm=ATHIRM]	.080	1.687	.002	1	.002	1.084	.040	29.550
[Firm=B.O.C LT]	.477	.000	.	1	.	1.612	1.612	1.612
[Firm=BAMBURI]	-1.215	1.775	.468	1	.000	.297	.009	9.631
[Firm=BAT LTD]	-20.795	3.502	35.259	1	.000	9.306E-10	9.722E-13	8.907E-7
[Firm=HFCK BAN]	-.078	1.664	.002	1	.004	.925	.035	24.117
[Firm=I&M BANK]	.827	1.465	.318	1	.009	2.286	.129	40.363
[Firm=JUBILEE]	-.762	1.574	.234	1	.018	.467	.021	10.215
[Firm=KAKUZI]	-2.385	1.984	1.446	1	.039	.092	.002	4.495
[Firm=KAPCH]	-4.115	2.890	2.027	1	.054	.016	5.661E-5	4.708
[Firm=KCB]	-.623	1.592	.153	1	.046	.537	.024	12.148
[Firm=KENGEN]	2.170	1.937	1.255	1	.063	8.758	.197	389.939
[Firm=KENOL]	-3.404	3.512	.939	1	.032	.033	3.405E-5	32.440
[Firm=KENYA AI]	4.587	2.544	3.251	1	.071	98.175	.671	14362.843
[Firm=KENYA RE]	.957	2.170	.195	1	.059	2.604	.037	183.173
[Firm=KPLC]	19.915	.000	.	1	.	4.456E8	4.456E8	4.456E8
[Firm=LIBERTY]	18.998	.000	.	1	.	1.781E8	1.781E8	1.781E8
[Firm=LIMURU]	-1.292	2.984	.188	1	.065	.275	.001	95.271
[Firm=MARSH]	-1.167	2.701	.187	1	.006	.311	.002	61.960
[Firm=MUMIAS]	-17.612	3.743	22.143	1	.000	2.246E-8	1.464E-11	3.445E-5
[Firm=NBK BANK]	.283	1.898	.022	1	.082	1.327	.032	54.792
[Firm=NIC BANK]	.136	1.303	.011	1	.017	1.145	.089	14.720
[Firm=NMGROUP]	19.202	.000	.	1	.	2.185E8	2.185E8	2.185E8
[Firm=OLYMPIA]	19.172	.000	.	1	.	2.119E8	2.119E8	2.119E8
[Firm=ORCHARD]	-19.112	.000	.	1	.	5.008E-9	5.008E-9	5.008E-9
[Firm=S G LIMI]	1.765	1.677	1.108	1	.003	5.842	.218	156.256
[Firm=SASINI]	.592	1.913	.096	1	.007	1.808	.043	76.901
[Firm=SCBANK]	.902	1.594	.320	1	.012	2.463	.108	55.985
[Firm=TPS SERE]	3.005	2.153	1.948	1	.023	20.179	.297	1371.331
[Firm=UCHUMI]	22.644	.000	.	1	.	6.829E9	6.829E9	6.829E9

a. The reference category is: Covered Debt Financing.

b. This parameter is set to zero because it is redundant.