RELATIONSHIP BETWEEN MARKET ANOMALIES AND FINANCIAL DISTRESS OF LISTED FIRMS IN NSE, KENYA

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Relationship between Market Anomalies and Financial Distress of Listed Firms in NSE, Kenya

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DECLARATION

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

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

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DEDICATION

To my wife, Emmy for her patience and bearing with me in the course of this study. To also my children, Michael George, James Maurice and Marjorie Lucie for their understanding as this will be an inspiration of hard work when they become of age. Further dedication goes to my late father, Michael for laying a firm foundation of education in my life besides my mother, Margaret for her care and encouragement in my life.

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ABBREVIATIONS AND ACRONYNMS

AMEX	American Stock Exchange
BOD	Board of Directors
CAPM	Capital Asset Pricing Model
CBK	Central Bank of Kenya
CMA	Capital Market Authority
DOW	Day of Week
EMH	Efficient Market Hypothesis
FAD	Fundamental Anomalies Dividends Per Share
FAE	Fundamental Anomalies Earnings Per Share
FE	Fixed Effect
FFJR	Fama, Fisher, Jensen and Roll
FTSE	Financial Times Stock Exchange
GLS	General Least Squares
HML	High-Minus-Low
IPS	Im, Pesaran and Shin
JSE	Johannesburg Stock Exchange
KCC	Kenya Cooperative Creameries
Kes	Kenya Shillings

KNBS	Kenya National Bureau of Statistics
LLC	Levin-Lin-Chu
NASDAQ	National Association of Securities Dealers Automated Quotations
NPV	Net Present Value
NSE	Nairobi Securities Exchange
NYSE	New York Securities Exchange
OLS	Ordinary Least Squares
RE	Random Effect
RSI	Relative Strength Index
RWH	Random Walk Hypothesis
SA	Seasonal Anomalies
SEA	Size Effect Anomalies
SMB	Small-Minus-Big
TAH	Technical Anomalies High Prices
TAL	Technical Anomalies Low Prices
TOM	Turn-of-the-Month
TOY	Turn-of-the-Year
WLS	Weighted Least Squares

DEFINITION OF TERMS

Financial distress	Financial distress as used in this study, is when a firm is still exhibiting unhealthy financial position and this is according to Altman zones, (Altman, 2000).
Fundamental anomalies	Securities prices at times do not reflect their intrinsic values, which is fundamental anomaly, Karz (2010) and this informs financial distress as the investors' securities prices expectations are not met.
Market Anomaly	In a society, there are widely accepted paradigms, but in case there is deviation from the presently accepted paradigms then market anomaly occurs, (Tversky & Kahneman, 1986).
Seasonal anomalies	There are always times when the returns on stocks are abnormal due to turning points in the year, month, the week and day and they arise at specific periods, (Aly & Perry, 2004; Karadžić & Vulić, 2011; Karz, 2010).
Securities exchange	Securities are tradable financial assets which include equity (stocks), debt (bonds) and derivatives.
Size effect anomalies	Means that smaller firms in respect to capitalization outperform larger firms. The theory holds water when the smaller capitalized firms get more growth opportunities than larger capitalized firms, (Keim, 1983).
Technical anomalies	When the prices of securities go against the expectation (negatively) as the investors relied on past prices, technical anomaly, then financial distress is eminent as investors lose their wealth, (Han, Yang & Zhou, 2013).

ABSTRACT

The universal objective of this study is to establish the relationship between market anomalies and financial distress of listed firms in NSE, Kenya. From the overall objective, this study sought to find out if fundamental, technical, seasonal and size effect anomalies have a relationship with financial distress of listed firms in NSE, Kenya and whether these relationships were of statistical significance or not. Due to the market anomalies, firms experience financial distress. This research takes a departure from past researches as it assesses firms undergoing challenges like; financial restructures, receiverships, suspensions or delisted from the stock markets while relating market anomalies to financial distress which created a scholarly gap. It is against this background of not paying attention to the mentioned challenges that this study proposes to establish such a relationship. The literature reviewed established this scholarly gap which this study seeks to fill. It adopts descriptive research design and positivist research. It considered all listed firms in NSE which had been licensed by CMA as at 1st January 2017, totaling to 67 which constitutes the target population. The study adopts secondary data which will be extracted from the audited financial statements from individual firms for an eleven years period, 2007 to 2017. Panel data model will be applicable in this study. The statistical software to be adopted in data analysis and presentation is EView while the p-value will be applicable in hypothesis testing. The Z-Score, a multivariate approach to be applied as the financial prediction model. The results were presented using tables. FAD had a moderate positive correlation while FAE, TAL and SA had weak positive correlations with the dependent variable. TAH and SEA had weak negative correlations with the dependent variable. All the independent variables were statistically significant at five percent level of significance meaning that all the null hypotheses failed to be accepted. The study established that the relationship between market anomalies and financial distress of listed firms in NSE, Kenya. The study's recommendations will assist the management in putting in place the right policies to guide the firm on the treatment of dividends declaration or non-declaration at the close of the financial trading period of the firm. Investors should make long term investment decisions and also right choices in which stocks worth investing in. The policy makers and regulators should instill sanity in the listed firms and this will enable all the stakeholders to have more confidence in the NSE as it will be more effective and efficient. The findings of this study set a ground for further research in a number of areas; seasonal anomaly has not been exhaustively dealt with, determine if the relationship between the market anomalies and financial distress is linear or not, researchers should look into other measures of firm size other than market capitalization, researchers to examine the financial health of listed firms in NSE in all the economic sectors and a research should be followed through for an extended period of time so as to be considered adequate.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The key components of the background of this study were; security exchange, financial distress and market anomalies. Security exchange is a place whether physical or electronic where securities in listed firms are bought and sold. It may be a private firm, a non-profit firm or a publicly traded firm. Some exchanges have shares that trade on their own floors. It also provides a well governed and regulated place where brokers and firms meet in order to make investments on a neutral ground. According to Karugu, Memba and Muturi (2018), a stock exchange also known as securities exchange or bourse is a formal organization regulated by act of parliament and is a physical location where members gather to trade in securities.

Securities are tradeable financial assets which are grouped into equity securities (stocks), debt securities (bonds) and derivative securities. Securities exchange traces its roots to medieval France and the Low Countries, where agricultural products were traded for cash or debt. The French stock exchange may be traced back as early as the 12^{th} century, when trading occurred in commercial bills of exchange. According to Pezzolo (2005), monti shares were the first securities that were traded in secondary markets which were closely followed by bills of exchange. Bills of exchange provided the medium of exchange in long-distance trade from the fifteenth century until the early twentieth century. Securities can be traded on an exchange or over the counter.

This study focused on equity securities which are also known as stocks. Stocks are categorized as a security that represents ownership interest in a firm. Stock market has immensely attracted so much interests from various stakeholders around the world as they endow exceedingly to the growth of the world economy. As an economic institution, stock market performs an important responsibility in the economy which improves the effectiveness in capital origination and allotment, (Olweny & Kimani, 2011). Alile (1984) states that stock market serves an as

economic tool for mobilization and apportionment of investments amidst competing utilities as these utilities are very important to the advancement and efficacy of the economy.

Stock trading therefore permits firms to raise capital to settle debt, launch contemporary products and enlarge if not diversify its operations. For investors, stocks give the opportunity to profit from yields in stock value in addition to company dividend payments. Stock market therefore afford the listed firms with a podium to step-up long-term capital and in addition to presenting the investors with alternate investments, (Olweny & Kimani, 2011). Thus, stock market ought to be efficient as this efficiency is very important in determination of the overall economy growth, (Alile, 1984).

Kenya being no exception to this, the stock market, NSE has gained immense interests by all stakeholders. In emerging economies like Kenya, stock market is a significant constituent in the financial sector, (Olweny & Kimani, 2011). All listed firms in the NSE have to be guarded at all costs against financial distress which occur due to market anomalies. Financial distress has effects to all the stakeholders and this will not go down well to the Kenyan economic history as the NSE is the beacon of hope in the stock market in the Sub-Sahara Africa. The expectation is that the stakeholders will have financial prudence to caution all firms against the effects of financial distress which will enable firms to be in a healthy financial position which in turn will attracts investors, (Maina & Sakwa, 2012).

In the Kenyan context, it will be key to understand how the stock market was born. To start off, the Kenyan stock market, Nairobi Stock Exchange was registered in 1954. It came to being as a voluntary union of the European community stockbrokers and was certified under the Societies Act. Trading of the first stock was conducted in 1922 in the Exchange Bar in the Stanley Hotel in the capital city of Nairobi. At that time, it is worth to note that there were no existence of any policies, processes and procedures to govern the stock broking activities. The London Stock Exchange (LSE) officials in July 1953, agreed to admit Nairobi Stock Exchange as an Overseas Stock Exchange (OSE) courtesy of a petition by Mr. Francis Drummond and Sir

Ernest Vasey who was then the Finance Minister of Kenya. Asians and Africans were not permitted to carry out any activity in trading in the stock market not until after the Kenya's independence in 1963, (NSE, 2017).

In July 2011, the Nairobi Stock Exchange Limited altered its identity to NSE Limited. The alteration of name was a strategy that was meant to make the former Nairobi Stock Exchange to offer entire service of securities exchange that backs trading, clearing and settlement of equities, debts, derivatives and other related instruments. This change of identity was due to contemplation of the 2010 to 2014 strategic plan of the NSE. The NSE Limited in September 2011, transformed from a firm limited by guarantees to a one limited by shares. This enabled NSE to embrace a new Memorandum and Articles of Association in mirroring the alteration, (NSE, 2017).

The NSE equity secondary market is divided into Main Investment Market Segment (MIMS), Alternate Investment Market Segment (AIMS), Fixed Income Securities Market (FIMS) and Growth Enterprise Market Segment (GEMS), (Muchina, 2015). The first three were created in 2001 to cater for stocks of large and medium-sized firms, corporate and government bonds. In 2013 the Growth segment was established to give the small enterprises an opportunity to also access the stock market. On 27th June 2014, the CMA approved the listing of the NSE stock through an Initial Public Offer and later self-listed its shares on the MIMS. This listing propelled the NSE to join JSE in the Africa continent as being the only exchanges that are self-listed, (NSE, 2017).

Notably on 18th February, 1994, the NSE 20-share index documented a high of 5030 points, in which by going with ratings of IFC, NSE emerged as the top performing stock market in the world. This was so as it, NSE gave a return of 179% in dollar terms. Kenya being the biggest economy in East Africa, the NSE has shown great improvement over the last one year. It shows that the NSE 20 share index expanded from 3,179 points in August 2016 to 3,243 points in September 2016, while the total number of shares traded increased from 708 million shares to 746 million shares during the same period, (KNBS, 2016).

Stock prices impact consumer and business confidence. This kind of impact subsequently influences the overall performance of the economy. Stock prices of individual stocks are ecstatic, thus they are dynamic in nature. This dynamism thus gives the entire stock market a dynamic and even a volatile if not erratic trait. There is tendency of stock prices to be in a trending mode. These trends have psychological effect on both individuals and firms. The stock market includes directional prices trends and historical price patterns. The directional price trend can be either upwards or downwards which brings in the fact of the market either being bull market or bear market respectively. The historical price patterns are very important to the technical analysts as it assist them to look at the past to help predict the future, (Han, Yang & Zhou, 2013). Between the two mentioned trends, directional and historical, this study focused on the directional prices trend that forms either bull or bear markets.

Rising stock markets are commonly pointed out as bull markets as this is when stock prices are on an upward trend. A bull market is a market trend where investors are very optimistic regarding the future stock index and the buyers outnumber the sellers, thus rising of stock prices and the overall rise in stock index. It involves directional price trends with an upward trend with higher highs and higher lows. Bull markets establish a sense of confidence concerning the direction which the economy is taking. This boils down to the investors feeling more confident as their investment portfolio appreciates in market price, (Levine & Zervos, 1998).

As prices continue rising, the more the investors come into the market. This makes the stock prices to keep on building momentum which makes the prices to keep on rising. Bull markets can create wealth effect and thus have a big boost to economic development, (Levine & Zervos, 1998). This is clearly seen during mergers and acquisitions when the stock price of the target firm rises because the acquiring firm has to pay premium for the acquisition, (Chetan, Ning & Liping, 2012).

In a bull market, there is a sense of strong demand and weak supply for stocks of firms. This is so because a large number of investors are desiring to buy stock while scarcely any are desiring to sell. Psychologically, in the stock market, investors voluntarily participate in the bull market in the hope of getting more profit. Thus,

stock market is an auxiliary in the movement of savings to investment, (Olweny & Kimani, 2011). In a bull market, the economy is very vibrant and strong. This is so because people's propensity to spend is high and this in turn stimulates and strengthens the economy, (Levine & Zervos, 1998).

Falling stock markets also referred to as bear markets usually have the opposite effect of the bull markets. This is when the stock prices experience the downward trend. According to Marcus, Yves-Michel and Ching-Hwa, (2015), falling of stock prices is commonly known as the bear market which means that the overall market sentiment is pessimistic and negative. It is coupled with widespread investor fear and pessimism leading to more sellers than buyers and thus fall in stock prices and overall fall in stock index. Confidence of the investors is very vital as a large number of potential investors may not be interested in investing the stocks as the returns may not seem to be attractive, (Olweny & Kimani, 2011).

The bear market includes the directional price trends which signifies a downward trend with lower highs and lower lows. Falling of stock prices establish an inverse in the wealth effect referred to as wealth erosion. The bear market creates unpredictability on the future of the economy. It makes the consumers to withhold onto their spending especially on non-essential goods and services. Thus, during such a period people only spend on essential goods and services. It makes the economy to have the recession effect as prices of stocks fall, (Adjasi & Biekiepe, 2006).

In a bear market, there is more supply than demand for stocks of firms. This implies that many people are willing to sell than buy. Market propensity is conservative if not positive as investors move their money out of the stock market. This happens so as they move into fixed-income securities as they await for a positive stir in the stock market. It jolts investor confidence which makes the investors hold on to their investments and keep them out of the stock market which in turn causes a general price decline as outflow, (Olweny & Kimani, 2011).

A bear market is usually correlated with a debilitated economy as businesses document low profits because the consumers' propensity to consume is equally low. The reduction in profits subsequently influence the value of the market. This

occasions stoppage of the growth of the economy and then the economy contracts, (Adjasi & Biekiepe, 2006). A bear market has an average life span of 367 days and accustomed knowledge puts it that it may last for 18 months. In the years between 1900 and 2008, the bear markets had 32 occurrences with an average duration of 367 days. This occurrence took place once every three years.

Media information on the stock market trends is a good catalyst in the bear market as it conceives a sense of panic as efficient market adjusts quickly to new information, (FFJR, 1969). Investors will start moving funds away from the stock market to low-risk investments which have the potential of further depressing the stock prices. This will slow down economic growth as the consumer spending is a primary integral of the gross domestic product. This signifies the bear market where unemployment is high, recession is approaching and prices are on a downward trajectory. Thus, the media has a very vital role not to cause a stir in all the stakeholders but to educate on the benefits of the stock markets, (Olweny & Kimani, 2011).

Stock markets have effect on business investment decisions. There is a high likelihood of firms making capital investments decisions when they anticipate that such investment decisions will cut an edge to rising stock market values, the bull markets, will be high. It should also be acknowledged that the management has more operational resilience if interrupted stock price increases which lead to heightened consumer spending. Merger and acquisitions tend to upsurge in the time of bull markets as firms can use stocks as medium of exchange, currency. Initial Public Offerings (IPOs) gain ground as firms take advantage of the stock market optimism of raising capital. In the bull market, the pioneer investors do not lose their investments as they can comfortably and expeditiously dispose-off their stake in firms, (Bencivenga & Smith, 1991).

Bear markets have the contrary effects compared to the bull markets. This is so as businesses' level of confidence is lowered as the businesses investing in new infrastructure projects or expansion plans dwindle. As mergers and acquisitions melt down, so is the number of new firm listings. Mahmood *et al.* (2012), reported that mergers and acquisitions can have positive, negative or no effect on share prices. In

the bear markets, mergers and acquisitions possess a negative impact on the share prices of stocks. Mergers and acquisitions have imposed marginal losses for shareholders and on average no gains to bondholders of acquiring firms, (Chetan, Ning & Liping, 2012). This happens when the stocks of the acquiring firm declines and at times hit the rock bottom. This slowdown in business activities eventually decelerates the growth of the economy.

Financial distress is a state through which a firm finds itself in an awkward financial position in which it is incapable of meeting its financial commitments which may ultimately lead to such a firm being declared bankrupt, (Higgins, 2012). The process of financial distress starts when a firm is unable to accommodate its short-term commitments when they come in demand, (Whitaker, 1999). Financial distress is grievous liquidity difficulties which are incapable of being settled without reduction of the firm's performance or form, (Foster, 2005). Fama and French (1992) research did show that financial distress factor not well calculated by past betas would certainly match the underestimation of financial distress risk with high revenues of high book-to-market, nonetheless CAPM might be excused**.** However, for this study, financial distress is whereby firms are exhibiting unhealthy financial status.

It is worth to be keen on financial distress than financial performance because financial distress is the root cause of financial performance of any firm and thus determines how a firm will perform financially. According to Pandey (2017), financial performance simply means quantifiable measure of a firm's efficiency to meet its financial commitments by ensuring sound liquidity, solvency and profitability as well as maintaining positive value of assets. Strictly speaking, financial performance is the determination of outcomes of firms' processes, procedures and policies in fiscal terms. Therefore, performance is not a solution to a financial problem but rather a measurement of financial status of a firm.

In Kenya, the economic consequence or aftermath of financial distress to listed firms is enormous especially to stakeholders of these firms. Before a collapse of a firm, then the firm must have been definitely in a financial distress position. This is because such firms are not in a healthy financial position. Consequently, stakeholders

who include investors, employees, creditors, financiers, management, shareholders, scholars and the government usually take financial distress as a matter of great interest, (Baimwera & Muriuki, 2014).

Financial distress gives a grave worry to all stakeholders, (Altman & Hotchkiss, 2010). To managers, their job surety and standing in the society are in limbo in case a firm collapses, (Altman, 2000). To employees, their basic livelihoods are threatened, (Memba & Abuga, 2013). This came into play in Kenya, when Chase Bank senior management were sacked and locked up when the Bank was put under receivership by CBK in 2016. Securing employment for these managers has proved futile as they were blacklisted by CBK. To investors and lenders, their equity and claims are not guaranteed, (Bender, 2013). Last but not least, government suffers declining tax and adverse economic development as a result of collapse of firms in the economy, (Fabozzi & Drake 2009).

Financial distress affects the survival of firms listed in the stock market as these firms face restructures, being put under receivership, under suspension or possibly delisted from the stock markets. Globally all stakeholders are mostly concerned with the financial health of firms listed in the stock markets, (Altman & Hotchkiss, 2010). This has then rendered the stock market as a tool which is very effective for economy development of any country in the world. Therefore, stock market is a suitable device for mobilizing and allocating savings amid rival uses that are imperative to the development and effectiveness in the economy, (Olweny & Kimani, 2011).

When a firm finds itself in a state of prolonged financial distress, this situation will sharply reduce its market value. This is more often than not referred to as the erosion of the stockholders' wealth. Goods and services suppliers will mostly insist on cash on delivery (COD) terms of supply. It is also worth noting that under such a circumstance, the big customers may opt to cancel their orders anticipating or citing delays in deliveries, (Almeida & Philippon, 2006).

According to Bloomfield (2010), anomalies are observations which are inconsistent with the paradigm. Santos (2011), defines anomalies as forms of judgments and choices that are not consistent with utility maximization. Brav and Heaton (2002),

found out that there are two competing theories in the financial market anomalies. The first one is behavioural theory which states that investors are irrational and secondly, rational structural uncertainty theory which is based on incomplete information about the economy structures in which investors operate in. A market anomaly is at times referred to as an inefficient market. This is when the price or return rate is distorted on a financial market and contradicts the EMH. Market anomaly mostly associates with structural factors such as unjust regulatory actions, competition and no transparency in the market.

Also, an anomaly is an observation that is difficult in the traditional framework of financial economics and at times is referred to as a puzzle, (Szyszka, 2007). Anomalies can also be referred to as when the opportunities of trading arise from the strategies by which trading in stock give birth to above-normal returns, (Hubbard, 2008). According to Brav and Heaton (2002), financial anomaly refers to a price pattern conduct that is not in conformity with the traditional forecasts of markets efficiency, logical expectations and asset pricing theory. Market anomalies are considered to be cross-sectional and time series designs in assets or stocks yields which are unpredictable by a principal view. Based on above definitions, it can be deduced that there is no general definition of this phenomenon, market anomaly.

In this study, market anomalies consist of fundamental, technical, seasonal and size effect anomalies. In the African region, the market anomalies which have been mostly witnessed are seasonal anomalies, (Ayadi, Dufrene & Chatterjee, 1998; Bhana, 1985; Chukwuogor-Ndu, 2007; Coutts & Sheikh, 2002; Mlambo & Biekpe, 2006; Roux & Smit, 2001). Seasonal anomalies have also been witnessed in the NSE and have been more pronounced in terms of December and January effects, (Kuria & Riro, 2013). During these periods, the firms' stocks prices are lower and unattractive. When firms are in such a scenario, then these firms will exhibit the signs of financial distress. This will be clearly shown by the Altman's Z-Score variables, (Altman, 2000).

When there is market anomaly, then firms tend to exhibit unhealthy financial position which is financial distress. Thus, market anomaly and financial distress have

a relationship. This link is further discussed by Avramov, Chordia, Jostova and Philipov (2013), who stated that importantly to note is the financial distress and not poor performance which is depicted through falling stock prices that impacts anomalies. Finding out the link which exists in this relationship will be a sigh of relieve to all the stakeholders, (Baimwera & Muriuki, 2014). According to Avramov *et al*. (2013), it was discovered that companies with high credit risk Z-Score reach a minimum downgrade to capture financial distress.

1.1.1 Global Perspective of Financial Distress

When firms are nearing financial distress from the global perspective, then asset pricing deformities are the firms' poor stock performance. Chava and Purnanandam (2010), decries unexpected wave of insolvencies in the United States, in which the mid-1980s bears the responsibility that stocks of firms with soaring non-payment possibilities possess subsequent low yields. In the United States, stocks which are distressed earn puzzlingly low returns, (Eisdorfer, Goyal & Zhdanov, 2018). According to Ashmead-Latham (2018), in the United Kingdom there was a significant financial distress rise in every sector. The Brexit which was triggered in March 2017 witnessed a number of businesses experience a significant financial distress which rose by 33%.

Gao, Parsons and Shen (2013) evaluated over 3.4 million firm-months as a sample, which translated to more than 36,000 state owned firms. Their study was conducted in 39 countries covering approximately two decades which was from 1992 to 2010. The study documented the presence of financial distress anomaly. They found out that financial distress is present mainly amidst the stocks of small firms in North America and Europe. They further found out that the magnitudes of financial distress vary across specifications. Their study continued to spell out that averagely when funding a short position in a nation's utmost distressed decile with a long position in its least distressed decile among small stocks can make a return of up to 50 basis points on a monthly basis. This approximately will be on the same level with the earnings of a plain vanilla momentum approach.

Eisdorfer *et al.* (2018), studied distressed firms returns in 34 nations over a period between the years 1992 and 2010. The firms' individual data were mined from World Scope, while nation-individual data were mined both from three aggregation of firm-individual data and from sources applied in preceding international studies. Identifying financially distressed firms in different nations is very difficult for various reasons. Identification of financial distress econometric models are commonly premised on a considerable set of accounting variables which are lacking for most of the international firms, (Campbell, Hilscher & Szilagyi, 2008; Altman, 1968; Ohlson, 1980).

Stock returns seasonality was for the first time documented by Watchel, (Watchel, 1942). The January effect was registered by Rozeff and Kinney in 1976 in NYSE in the period between 1904 and 1974, (Rozeff & Kinney, 1976). In study, it emerged that average earnings were higher for the month of January than other months under consideration signifying a pattern in stock returns. As a researcher, Keim in 1983 also studied seasonality along with size effects in stock returns, (Keim, 1983). The outcomes of the study was that the earnings of small firms were significantly higher than those of large firms in the month of January. The researcher associated the study's conclusion to the tax-loss-selling and information assumptions.

In the study of seasonality of the Australian stock market, there was a proof of the December-January and July-August seasonal effects, with the latter due to a June-July tax year, (Brown & Warner, 1985). In a rejoinder, Raj and Thurston in their study came up with a conclusion that the January and April effects in the New Zealand stock market were not statistically significant, (Raj & Thurston, 1994). In a study of calendar effect, for a period between 1986 and 1992, Mill and Coutts, found out that indeed there was the presence of the calendar effect, (Mill & Coutts, 1995). There was no trace of seasonal effect in the stock returns of the Jamaican stock market, (Ramcharan, 1997). There was the January effect on the UK and the US stock returns but none was documented in the German stock market, (Choudhary, 2001). In a study of 18 stock markets, there were reported instances of seasonality in returns, (Fountas & Segredakis, 2002).

The world experienced a financial crisis that commenced in the late 1997 through the better part of the 1998 that became an impediment to the ethics of the world financial system. This culminated into worldwide acceptance of the microeconomic nature of crisis; enterprise and financial institutions in most of Eastern side of Asia and most of the emerging economies which were staring at dire financial distress, (Claessens, Djankov & Mody, 2001). In the study of East Asian countries in 1998 during the financial crisis, Malaysia, Indonesia, Korean Republic and Thailand, the findings were that 60% illiquid firms accounted for 60% and 30% were considered in technical insolvency state, (Claessens, Djankov & Ferri, 1999). In the same research, it was determined that in Indonesia, 77% of firms are illiquid while 65% insolvent. Hungary in 1992 saw slightly more than 5,000 companies subjected to bankruptcy proceedings, (Gray, Sclorke & Szanyi, 1996).

According to Geng, Bose and Chen (2015), the fast advancement of stock market alongside the embodiment of world economy, have seen an upsurge of a number of firms that go through financial distress. As much as financial distress is a worldwide challenge, the financial distress shocks might not be as severe as many economies depend on each other such that if one economy is so severely affected, then the effects could be shouldered by other economies which have not been affected as much. Financial distress in listed firms has seen a number of corporates collapse and the significant increase delisting of the listed firms. In the global frontier, notably AIG, Enron, Lehman Brothers, World COM, among others were some of the cases of corporate failures and delisting in the past few years, (Shahwan, 2015).

1.1.2 Regional Perspective of Financial Distress

African region is considered to be a less developed stock market as it falls under the emerging market. Emerging markets tend to be more vulnerable to financial distress than developed markets as they have little capacity to respond to the financial distress shocks, (Giorgia, 2017). The stock market in Africa in capitalization is still very low as it stands at 2.09% of world's market capitalization, (AfDB, 2009). In the region, the stock market of South Africa, JSE is among the very developed stock markets.

The African region has not been either spared by the wrath of financial distress as the continent has poor financial systems which have limited association to the world economy. Thus, the effect of the financial crisis has been passed to the African economies through global recession. African investors and in particular investors from Egypt and Nigeria have recorded loss of more than half their affluence by end of July 2008, (AfDB, 2009). Sectors such as manufacturing, tourism and mining saw a decline as much as did of Foreign Direct Investments (FDIs) flows. These created a brooding ground for financial distress to listed firms in the stock markets. With these, firms are expected to close shop which will lead to all the stakeholders being negatively affected, (Altman & Hotchkiss, 2010; Baimwera & Muriuki, 2014; Memba & Abuga, 2013).

Unlike global economy, African economy is exposed to financial distress shocks as there are no developed economies to absorb the financial distress shocks, (Giorgia, 2017). This is the main reason why the African stock market experiences devastating consequences of financial distress on listed firms than in the international arena as the African economy is an emerging market. Emerging market carry a much higher risk because their stocks are quite volatile, but this means that its stocks have great potential for higher returns. In the course of yet another world financial crisis after approximately a decade, which began in the year 2007 and ended in the year 2008, most of the African stock markets got seriously influenced by contagion effects which resulted into large losses in stocks values. This was also coupled with stock over-pricing and restricted diversification of stocks, (AfDB, 2009).

1.1.3 Local Perspective of Financial Distress

Kenya's economy falls within the emerging economy category. This implies that the stock market in Kenya is still immature in most fronts compared to the developed economies, (Ongore, 2011). NSE is considered among the biggest stock markets in the region after South Africa, Egypt and Nigeria. The Kenya stock market, NSE is considered to be a more mature stock market in the Sub-Saharan Africa. Also, it is considered to be the biggest economy in East Africa and has shown great improvement in 2015, (KNBS, 2016).

The financial distress effects have devastating impacts on the Kenyan stock market, NSE. This is so because the adverse effects of the financial distress are only borne by the Kenyan economy without taking into account other economies. This is furthered by the findings of Maina and Sakwa (2012) that from the 30 firms analyzed, only five of the firms were in non-distress zone as they were contemplated to be in a healthy financial state meaning that a whole whopping 83% were in financial distress. Thus, most firms in NSE don't in perpetuum display a healthy financial state, (Maina & Sakwa, 2012). The liquidity problems facing listed firms in 2016 spilled over to 2017 limiting firm's ability to borrow and even pay existing debts, (KFSSR, 2018).

Thus, during financial distress in the NSE, then it's only the Kenyan economy which is expected to absorb all the shocks of financial distress without the support of any other economy, (Giorgia, 2017). Maina and Sakwa (2012) found out that there were investors understanding of the financial distress positions of listed firms in NSE which was considered to be one of the most vital facets of investments. This is so as the investors will definitely take the necessary precautionary measures at the earliest opportunity possible in safeguarding their interests. In August 2016, the total value of NSE shares traded decreased from Kes 17.66 billion to Kes 16.87 billion in September 2016 and this signaled financial distress, (KNBS, 2016). This shows that the NSE is a good measure of how the stock prices can affect the economy of Kenya and by extension to the region.

Kenya has its fair share when it comes to financially distressed firms in the NSE. Listed firms have been faced with financial restructure, put under receivership, suspended or delisted. These firms include; KCC, Nyaga Stock Brokers, Eveready East Africa, A Baumann and Company, Bulk Medical Limited, Kenya Airways, Uchumi Supermarket, Nakumatt Supermarket, Imperial Bank, Chase Bank, ARM Cement, Home Africa, TransCentury, East African Packaging, Pearl Dry Cleaners, Mumias Sugar Company, Sameer Africa, Car & General, KenGen, East Africa Portland Cement Company, Rea Vipingo Plantations, Hutchings Biemer and A. Baumann & Company, Express Limited, Development & Support Services, Deacons (East Africa) PLC, Limuru Tea Company among others, (NSE, 2017).

In conclusion after discussing financial distress globally, regionally and locally there is divergence in the results. One reason for such divergence is that the results between matured and emerging markets is market capitalization, (Eisdorfer *et al.*, 2018). Undeniably, preceding evidence for the United States shows that the distress effect is stronger in smaller companies, (Banz, 1981; Reinganum, 1981; Fama & French, 1992 & 1993). Consistent with the earlier assertion, the distress puzzle was evident as small-cap companies exhibited higher distress effects but coincidentally there was none in the large-cap companies in the matured markets, (Eisdorfer *et al.*, 2018). It is still worth noting that segregating on market capitalization still acknowledges no evidence of distress puzzle in emerging markets, (Eisdorfer *et al.*, 2018).

1.2 Statement of the Problem

Financial distress takes a lion's share of challenges which firms listed in NSE are exposed to in their day-to-day operations. Firms experience different forms of financial distress based on their liquidity, leverage, profitability, market value and efficiency, (Altman, 2000). According to Arnold (2016), the effects of financial distress are so severe to the operations of a firm and its environment. The environment in this instance consists of stockholders, credit institutions, investors, management, employees and a whole economy.

Financially distressed firms' market value substantially declines and so their stock prices equally reduce (Warner, 1977). Big firms quoted in the stock market not always do exhibit a healthy financial position. Specifically in Kenya, about 53% of the firms listed in NSE are financially distressed, (Maina & Sakwa, 2012). Still in the local front, 21 listed firms had undertaken financial restructure, put under receivership, suspended or delisted from NSE due to financial distress since independence, (CMA, 2012).

This study attempts to ascertain if the market anomalies comprising of fundamental, technical, seasonal and firm size anomalies have a statistically significant relationship with financial distress, (Elena-Dana & Iona-Christina, 2013; Chinga, Munira & Bahrona, 2014; Karadžić & Vulić, 2011; Kuria & Riro, 2013; Banz,

1981). These are temporary occurrences and could be having the ramifications on the status of firms in form of financial distress, (Altman, 2000). Financial distress ushers sharp responses in the stock values as this could be likely associated with the changes of market anomalies. Normally, distressed stocks realize lower returns than healthy stocks but when the reverse is true, then this is when we witness "financial distress puzzle". However, it's quite puzzling when financially distressed firms have higher market betas than financially healthy firms, (Eisdorfer & Misirli, 2017).

Previous studies; Eisdorfer *et al*. (2018), Chinga *et al*. (2014), Han *et al*. (2013), Avramov *et al*. (2013), Elena-Dana and Iona-Christina (2013), Karadžić and Vulić (2011, 2012) and Graham and Dodd (2008), did focus on the relationship between market anomalies and financial distress. This research takes a departure from the past mentioned researches. Other than focusing only on the relationship between market anomalies and financial distress, this study also assesses firms undergoing financial restructures, being put under receivership, suspended or delisted from the stock markets. This is done in tandem with the relationship of market anomalies to financial distress which created a scholarly gap.

It is against this background of not only studying on the relationship between market anomalies and financial distress but also taking into consideration the firms' financial restructures, firms being put under receivership, firms under suspension or firms delisted from the stock markets. It should also be understood that most of these studies, Eisdorfer *et al*. (2018), Chinga *et al*. (2014), Han *et al*. (2013), Avramov *et al*. (2013), Elena-Dana and Iona-Christina (2013), Karadžić and Vulić (2011, 2012), did not take into consideration firms that were facing restructures, in receiverships, in suspension and delisted while researching on the relationship between market anomalies and financial distress. It is with the foregoing reasons that this study proposes to establish the relationship between market anomalies and financial distress of listed firms in NSE, Kenya. Thus, this study considers the fundamental, technical, seasonal and size effect anomalies as the significant players in the financial distress of firms which leads to firms' restructures, receivership or delisting from the stock market.

1.3 Study Objectives

In accomplishing the study, the study objectives are classified into general and specific objectives.

1.3.1 General Objective

The main purpose of this study is to establish the relationship between market anomalies and financial distress of listed firms in NSE, Kenya.

1.3.2 Specific Objectives

The specific objectives of this study are:

1. To examine the relationship between fundamental anomalies and financial distress of listed firms in NSE, Kenya.
2. To determine the relationship between technical anomalies and financial distress of listed firms in NSE, Kenya.
3. To explore the relationship between seasonal anomalies and financial distress of listed firms in NSE, Kenya.
4. To establish the relationship between size effect anomalies and financial distress of listed firms in NSE, Kenya.

1.4 Research Hypotheses Testing

The research will test the following null hypotheses:

H_{01}: Fundamental anomalies have no statistical significant relationship with the financial distress of listed firms in NSE, Kenya.

H_{02}: Technical anomalies have no statistical significant relationship with the financial distress of listed firms in NSE, Kenya.

H_{03}: Seasonal anomalies have no statistical significant relationship with the financial distress of listed firms in NSE, Kenya.

H_{04}: Size effect anomalies have no statistical significant relationship with the financial distress of listed firms in NSE, Kenya.

1.5 Significance of the Study

This study is aimed at establishing the relationship between market anomalies and financial distress of listed firms in NSE, Kenya. Targeted firms in this study are the ones listed in NSE, under the period in consideration. As economic advancement and stock market go hand in hand, the stock market therefore takes an important role in economic advancement of the country, Kenya. NSE is thought-out to be one of the most developed stock markets in Africa and particularly in the Sub-Saharan African region. The following stakeholders will reap immensely from this study's findings.

a) Employees and Management

Findings of this study will be of great benefit to employees who include the management and staff, commonly referred to as the intrapreneurs. The management oversees the implementation of business strategies which have been laid down by the BOD, while the lower cadre employees are the ones who actually get down to work. The intrapreneurs will take advantage of the opportunity they have and add something new to the firm while the managers could use this study as a reference in examining the firm's current financial health for business plan and growth. This will enable the management to cushion the firms against financial distress.

b) Investors

This study will be very helpful to the investors or entrepreneurs who are speculators in the stock market. It will enable them make informed decisions as to when to dispose and buy particular stocks in the markets which is known as Buy-and-Hold Abnormal Returns (BHARs). The importance of the BHARs cannot be overemphasized, because they 'precisely measure investor's experience'. The investors will be able also to categorize stocks with regard to their risk appetites or even beat the market. It will assist in maximizing the shareholders wealth while boosting the investors' confidence in the Kenyan stock market, NSE.

c) Stock Brokers

This study will also be beneficial to the stock brokers whose roles on a day-to-day basis entail giving investment advice to their clients on which stocks are worth investing in and which ones to be disposed-off and as at when. This study will enable them to make informative investment advice to both their existing and potential clients. It will also make them to be viewed by the investors as knowledgeable which in turn earns them trust and dependability. This will grant the investors the confidence in the stock brokers who in turn will love their job more and thus making the stock market more dependable and efficient in its operations.

d) Policy Makers and Regulators

This study will also be important to both the policy makers and regulators in the formulation of appropriate policies necessary for continuous monitoring and appraisal of the financial health of firms listed in NSE. The BOD of individual firms will make sound strategic decisions regarding the financial wellbeing of the firms. Listed firms in the NSE are governed by the Companies Act Cap 486, Nairobi Security Exchange Regulations, CMA Act Cap 485, Insurance Act (Amendment) 2006 Cap 487 and CBK Act Cap 491. With the right policies and regulations in place, will see an efficient stock market and financially healthy firms and not being in the storm of financial distress. This enhances the trust and confidence of the stakeholders in the institutions which govern both the stock market and the firms in the NSE.

e) Scholars and researchers

Scholars and researchers will benefit immensely from this study as it will bequeath to the anatomy of knowledge by establishing the relationship between the market anomalies and financial distress of listed firms in NSE, Kenya. The study also acts as a stepping stone for them as they prepare to jump into the sea of finding new knowledge, thus it contributes positively to the already exiting knowledge. Also, the general framework has been formulated to guide further research which is of great significance to the scholars and researchers. In other words, the study will not only

make the scholars to add new knowledge but also challenges the minds of scholars for further research.

1.6 The scope of the Study

This study covers all the listed firms in the NSE between 1st January, 2007 and 31st December, 2017. Being listed firms in NSE, there is much discipline and adherence to good practices which are from time to time being overseen by the regulators and financial statements are mandatory whose information should be in the public domain. The financial statements in this context reflect the fair status of the financial position of the listed firms. Such financial statements are relied upon by the interested parties to make their investment decisions in the stock market.

The criterion used in choosing the target population is that all firms that were operating within the period from 1st January, 2007 and 31st December, 2017 were considered. Firms that were listed within this period were excluded in the study. This is due to the fact that they did not submit their audited financial statements for the entire period under consideration. Suspended and delisted firms within the study period were also incorporated in the study. Locally, it was during this period that the country was plunged into a political crisis, 2007, which saw unprecedented election violence due to disputed presidential election results. This almost brought the economy of Kenya down to its knees and thus affected the stock market, NSE. It was also during this period that the world experienced one of the major financial crises, 2007-2008, global financial crisis.

The study dwelt mainly in financial distress which is one of the main variables. It focusses on this variable which is the dependent variable as it further seeks to explain the interaction between the market anomalies and financial distress of listed firms in NSE, Kenya. It also covers the market anomalies which consists of fundamental, technical, seasonal and firm size anomalies. This is the independent variable in this relationship between market anomalies and financial distress of listed firms in NSE, Kenya.

1.7 Limitations of the Study

There were three challenges experienced in this study. First, there was the challenge of heteroscedasticity. When the scatter of errors are different, varying depending on the value of one or more independent variables, then the error terms are said to be heteroscedastic. To mitigate against this challenge of heteroscedasticity, the data was changed into their natural logs. This was done so as to deal with the problem of large numbers.

Secondly, due to the nature of the data, there was the challenge of heterogeneity. Heterogeneity is where every member of a population or sample has a different result or value. This problem was cured through the adoption of the panel data regression model. If this challenge was not dealt with, then there would be chances of arriving at a biased conclusion of the study. Bias is any tendency which prevents unprejudiced consideration of a research question or problem. It occurs when systematic errors are introduced into the research by encouraging one outcome over others.

Thirdly, there was a challenge of multicollinearity. This is when there is high correlation between two or more independent variables. To mitigate against this limitation, the study employed correlation analysis. Correlation analysis checks the variables that are highly correlated with the sole objective of reducing the severity of multicollinearity.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter focused on the theories, models and empirical literature relevant to the relationship between market anomalies and financial distress in listed firms in NSE, Kenya. It commences with the theoretical review which involves discussion of key theories starting with efficient market hypothesis that takes into consideration the random walk hypothesis. Following suit is the CAPM and Fama-French three-factor theory. This is closely followed by expected utility theory.

Next in line are the dividends theories which comprise of dividend relevance theory, dividend irrelevance theory, residual theory of dividends, the bird-in-hand theory of dividends and the tax preference theory of dividends. The chapter moves on to discuss financial distress theories which include traditional ratio analysis, z-score model, zeta model and wreckers theory. Conceptual framework follows in suit which is then followed by empirical literature review and thereafter gives a critique of the literature in the study. It further goes ahead to expound on the research gaps and finally gives the summary of the literature.

2.2 Theoretical Review

A theory may be spelt out as a well thought statement or group of statements that are backed by evidence for the sole purpose of explaining some phenomena. It can also be defined to mean a methodical reasoning of the relationship amidst phenomena. Theories over time have been known to provide a non-specified account to an occurrence. A theory is also said to be a set of assumptions and propositions. The main reasons why there are theories formulations are to explain, predict and understand phenomena. Also, they are to question and enhance existing knowledge within the boundaries of very important hypotheses, (Abend, 2008).

Theory is a well thought assertion which is reinforced by corroboration that can give an explanation to a phenomenon. Is also known to be acceptable facts that try to come up with a reasonable or logical clarification of cause-and-effect (causal) associations among a group of noted phenomenon. This term, 'theory', can be traced to Greece which was coined from the Greek term 'thorós', meaning a spectator. It emphasizes on the reality that all theories are psychological models thought to be the truth. A researcher has to be conversant with the theories which are relevant to the field of study, (Kombo & Tromp, 2013; Smyth, 2004).

Theories came into existence to justify, foretell and understand a phenomenon. In most cases theories also came in to provoke and expand the present knowledge inside the boundaries of crucial present premises. Thus, theoretical framework is a formation which reinforces a research theory. Aguilar *et al*. (2009), state that a theoretical framework acts as a guide to research, dictates which variables are for evaluation and which statistical associations to be considered in the context of a problem under research. In conclusion, theoretical framework aids the researcher to notice the variables of the research which in turn gives a more universal structure for the analysis of data which assists in the choice of relevant the design of research.

2.2.1 Efficient Market Hypothesis

This term, efficient, is primarily used in the description of a market which possesses applicable information which is incorporated into the price of fiscal assets, (Dimson & Mussavian, 1998). Efficiency also makes reference to the capability of the stock market to operate so that the prices of stocks respond expeditiously to new information, (FFJR, 1969). Markets are considered to be efficient in theoretical sense, if there is a possibility of free flow of information and the market allows the absorption of this information absolutely and immediately. When this happens, then such efficiency will generate prices that are suitable in terms of the up-to-date knowledge and investors will have the capability of making very wise investment decisions.

The words, ‘efficient market hypothesis’ were coined first by Louis Bachelier in 1900 dissertation, “Théorie de la Spéculation” when he began modelling stock price movements, (Muchina, 2015). Samuelson and Fama in the 1960s furthered the works of Louis. According to Fama (1965), EMH articulates that the market prices absolutely reflect all the available information. EMH can be said in other words that all securities are accurately valued and that no abnormal profits can be realied by seeking for mispriced securities. At times it proves to be very challenging to achieve and it seems to become even impossible to maintain an efficient market, (Jekaterina & Ina, 2013).

In modern economics, Samuelson is credited as the first person to give EMH a form, (Samuelson, 1965). Within informative efficient market, variances in price should not be predictable when the prices are appropriately expected, (Samuelson, 1965). Dimson and Mussavian (1998) found out that the term efficient market is primarily prone to narrate a market where material facts is confiscated into the value of financial assets. Fama (1995) refers to an efficient market as a marketplace in which there is sizeable number of logical, profit-maximizers industriously in competition with one another in attempting the forecast the upcoming market prices of particular stocks and importantly present information is almost without cost available to all stakeholders.

FFJR (1969), states that an efficient market adjusts swiftly to new information. Grossman and Stiglitz (l980), defined market efficiency as rowdy logical presuppositions symmetry, the supply-influenced noise hampering the investors' capability of deducing information from prices. Fama (1976), revised the definition of the market efficiency by saying that it is the market that accurately utilizes all available information. Beaver (1981), gives it more impetus by linking it in consideration to information unit meaning that prices behave as if all the market have that information.

Grossman and Stiglitz (l980) did not concur with Fama (1970) that prices actually reflect all the information which is available and such a market would not offer any motivation to any individual as it will be costless to reveal it to others. They

redefined market efficiency as a clamorous logical anticipation, in which the supply-induced noise makes the investors' capability to of deducing information from prices. Prices therefore under normal circumstances may not reflect absolutely all information without noise. Thus, without motivation and noise, no information can be generated. Therefore, prices may not reflect absolute information, because there is presence of uninformed traders, (Grossman & Stiglitz, l980).

EMH in other words is taken as all securities are accurately priced and no abnormal profits can be realized by looking for mispriced securities. EMH posits that in a market which is efficient, prices must cast back every available material information at any time. However, when new information comes into the market, then there is a reaction or over-reaction which might bring in extreme price movement, (Maraga, Nyamosi & Onsando, 2015). At times markets which are efficient are hard to attain and even more so very hard to sustain, (Jekaterina & Ina, 2013).

Fama (1995) acknowledges that in a market where there is efficiency, true value of a stock will be its intrinsic value. It is vital to have in mind that this being a world without certainty, one can never fix upon the intrinsic value of a stock accurately. There will be always no free space for agreement amongst market actors on what the intrinsic value of a particular stock is. It is such disagreements that will give birth to differences between the absolute prices and the intrinsic values.

EMH affirms that for a market to be efficient, then prices must at all times reflect all available relevant information. However, when new information comes into the market, there is a reaction or over-reaction which might bring in extreme price movement. Such a scenario played out in one of the listed firms in NSE, CFC Bank. Its stocks in January 2008 failed to trade for a whole week because the shares price skyrocketed. The shares price shot from Kes 110 to a high of Kes 900 which implied 718% increase, (Maraga Nyamosi & Onsando, 2015).

Fama (1995) also acknowledges that an efficient market at any time, the actual price of a security will be a good estimate of its intrinsic value. However, in an uncertain world the intrinsic value of a security can never be determined exactly. Thus, there is always room for disagreement among market participants concerning just what the

intrinsic value of an individual security is. It is such disagreement that will give rise to discrepancies between actual prices and intrinsic values.

For the market efficiency hypothesis to be actualized, then the following assumptions ought to be considered. Firstly, information must be free and fast flowing. Secondly, for all investors the accessibility information is the same and as such no one investor can take advantage of the rest, (FFJR, 1969). Thirdly, transactions costs, taxes and any other barriers are absent, thus not hindering the supply and demand which are the free forces of market.

Fourthly, investors are rational and always think of how they can cut down on costs while maximizing on returns, (Fama, 1995). High costs make firms to realize lower returns and thus the firm's profitability is compromised. Fifthly, every investor is accessible to the same rate of lending and borrowing. Lastly, market prices are not sticky as the information is absorbed quickly and also there is the response of the market efficiently and quickly to new technology, new trends, tastes, consumers' habits etc.

There are three forms of EMH and these are weak, semi-strong and strong EMH. The weak-form EMH states that all the previous information inclusive of previous prices and returns have already been considered in the current prices of stocks, (Bodie, Alex & Alan, 2014). Only public information is assumed to have been assimilated into the stock price almost immediately. In the weak-form, EMH assumes the public market information is absorbed expeditiously by the market. It also assumes that the change in price precisely reflects the ramifications of the news. Still in the weak-form, other public and private information are not assumed to be part and parcel of the stock price. This therefore signifies that there is no more possibility of fundamental analysis to work when it is premised on an information advantage. It absorbs only market price information.

In semi-strong efficient market hypothesis, current securities prices reflect all publicly accessible information as well as previous information. This means that nobody can generate additional profit on the premise of fundamental analysis, (Bodie *et al.,* 2014). Also, in semi-strong, the present stock price has both the publicly

accessible information and previous information and thereby no particular market participant can earn excess profit on the foundation of fundamental analysis, (Bodie *et al.,* 2014). It absorbs both market price information and all other public information. The stock markets are not efficient in semi-strong form, (Maringa & Muturi, 2016).

Lastly, strong-form EMH acknowledges that all past, public and private information which form part of material information are reflected in the present security prices, (Bodie *et al.*, 2014). The proponents believe that information is universally shared and immediately is reflected in share prices. In the strong-form EMH, there exists no distinction between private and public information and such information source is not important. The share price is a perfectly absolute reflection of the projected future cash flows of the firm. In the strong-form EMH, fundamental analysis is not useful. This is because the consolidation of perfect information and rational investors means that the stock price will all the time reflect the intrinsic value of the share. It considers all other types of information in addition to the insider information.

Before Leroy and Lucas, much of the EMH literature rotated about the Random Walk Hypothesis, (Leroy, 1973 and Lucas, 1978). The RWH began with the work of Jules Regnault, who was a French broker in the year of 1863. This theory acquired new dimensions later in 1900 in the form of perceptions by Louis Bachelier. Later on, this subject of RWH was approached by Cootner, Malkiel and last but not least by Fama, (Cootner, 1964; Malkiel, 2003; Fama, 1965).

Pearson (1905), asserts that RWH is considered as a process of locating a drunkard in the middle of a field. The drunkard is anticipated to stagger and probably might edge nearer to where he was than to any other point. RWH can be seen more clearly when Kendall examined 22 UK stock and the findings were that after a close observation of price series at reasonably adjacent intervals, the random alterations from one term to the next one is also too broad to morass any methodical effect that might have been present. Kendall (1953), observing prices closely concluded that prices of stock behave closely to a wandering series. Thus, RWH acknowledges that prices always move in a random manner and it is autonomous of the previous prices.

There are various assumptions of the RWH. The first assumption is that market is paramount, this implies that no single investor or conglomerate of investors can sway it in whichever way. Secondly, all information is discounted quickly by the stock prices. Thirdly, there is a free flow of and unbiased information in markets that are efficient. Fourthly, all investors are assumed to have the same degree of access to information and thus no single investor has superior knowledge or expertise over others. Fifthly, in the operation of the free forces of the market which are demand and supply, the market adjusts itself quickly to any deviation from equilibrium level, (Bodie *et al*., 2014).

Sixthly, when there is information relating to the fundamentals of the market, then only that is when there is experience in prices change and at this juncture is when there is shift in the equilibrium level. Seventh, the prices move independently within undue pressures or manipulations. Eighth, no single individual has superior knowledge or insider information. Ninth, all investors have rational behaviour as the free forces of the market, demand and supply are as a consequence of rational investment decisions. Tenth, the market cannot be persuaded or swayed by institutional investors or major fund managers who will be forced to follow the market and not the other way round. Lastly, for perfect market conditions of competitions to prevail, then there must be the presence of a large number of buyers and sellers, (Bodie *et al*., 2014).

According to the RWH, future listed financial stock prices cannot be decided or forecasted, due to their random advancement to their intrinsic value, (Fama, 1995). RWH is also seen in this scenario, for there to be the presence of efficiency in the stock markets, then the stock prices are expected to come after RWH. RWH acknowledges that stock price cannot be predicted and that future prices can also not be anticipated premised on previous prices. The theorists of RWH usually move away from the base of argument that the dominant stock exchanges are the best illustrations of "efficient" markets. After Samuelson and Fama, many works have been put to this field like Leroy, Rubinstein and Lucas, (Leroy, 1973; Rubinstein, 1976; Lucas, 1978).

The debate on whether the early researches were supported or criticized have come in this historical sequence after Fama as Leroy (1973), Rubinstein (1975), Beja (1976), Fama (1976), Jensen (1978), Grossman and Stiglitz (1980), Beaver (1981), Jordan (1983) and Latham (1986), just but to mention a few. Fama (1976) revised the definition of the market efficiency by sharing that market efficiency is the market that correctly uses all available information. Beaver (1981), depicts an efficient market as that one in which all the stakeholders are well aware of an information item and the prices reflect as such.

In the observations made by Latham (1986), there was coherent feasibility of information that led to compensating changes in investors' individual portfolios. This happens with no any net effect on excess demand and thus on prices too. It should be understood that the information could feasibly make two different investors to make accurately offsetting buy and sell decisions. Therefore, Latham thus gave efficiency a definition as it is analogous to some set of information if by revealing this kind of information to all the stakeholders would not either change the equilibrium prices or the portfolios.

When comparing EMH and RWH, then the weak form of EMH is seen to have a close link with the RWH. This is so as the previous prices have already been absorbed by the market and it is then acknowledged that the present prices do not depend on the previous prices, which is similar to the RWH, (Bodie *et al.*, 2014). Therefore, the present trends are considered to be random variables and the previous data cannot be utilized in the prediction of the future prices, (Kendall, 1953). This basically means that all the previous data on the price trends and volumes had already been absorbed. This is so because the prices do not possess the capability of having a memory of the past, prices of yesterday have go no absolutely nothing to do with today's prices, (Bodie *et al.*, 2014).

The main reason why stock markets in the developed world attract more attention from the prospective global investors is market efficiency. For the African stock markets to be of serious attraction to global investors, then these markets need to be very efficient. Stock markets are usually inferred to be efficient in association to the

immediate inclusion of all familiar and new cropping information into the prices of stocks, (Eisdorfer *et al*., 2018). This will assist the African stock market to withstand the financial distress shocks, (Giorgia, 2017).

In reality, it is important to know that markets cannot be absolutely wholly efficient or inefficient, (Jekaterina & Ina, 2013). With this fact coming to play, then it might be reasonable to look at markets as essentially a mixture of both. This means that day after day resolutions and happenings cannot be consistently reflected instantly in the market. If all the market stakeholders were to believe that the market is efficient, then no one would seek extraordinary profits. Extraordinary profit is simply defined as the force that keeps the wheels of the market in motion.

EMH is founded on the accessibility of both the potential and existing investors having all the relevant stock market information. It is very unlikely that all the investors at any period in time will have similar and relevant information about the stock market, (Bodie *et al*., 2014). Also, Jaketerina and Ina (2013) agree that such a state as efficient market is hard to achieve. The prices of stocks in the NSE cannot be perfectly predicted, thus the applicability of RWH.

However, the relevance of EMH to this study cannot be over emphasized as the more the information an investor has, the more informed decision the investor will make. Such an investor will know when to hold, buy and sell the stocks in NSE, (Bodie *et al*., 2014). This theory is relevant to the fundamental anomalies in the form of semi-strong EMH. Also, it relates to technical anomalies as it looks at the past prices of the stocks, thus past information which is weak EMH. Lastly it relates to seasonal anomalies which also utilizes past information. Therefore, this theory relates to the three independent variables of the main objective of the study, establishing the relationship between market anomalies and financial distress of listed firms in NSE, Kenya.

2.2.2 Capital Asset Pricing Model (CAPM)

Since Modern Portfolio Theory (MPT) could not sort out most of the challenges raised against its capability and more specifically, the issue of systematic risk, this gave birth to CAPM. CAPM came into existence to answer how the systematic risk of an investment should affect its expected return, (Sharpe, 1964). The model starts with the idea that an individual investment contains two types of risks. First, systematic risks which are markets risks that cannot be diversified away like interest rates, recessions and wars among others. Secondly, unsystematic risks, also known as specific risks are risks specific to the individual stocks and can be diversified away as the investor increases the number of stocks in his or her portfolio.

CAPM is a theory that describes the relationship between risk and expected return and is used in pricing of risky securities. The general idea behind CAPM is that investors need to be compensated in two ways; time value of money and risk, (Sharpe, 1964). The time value of money is represented by the risk-free (rt) rate in the formula and compensates the investors for placing money in any investment over a period of time. The other half of the formula represents risk and calculates the amount of compensation the investor needs for taking on additional risk. This is calculated by taking a risk measure (beta) that compares the asset's returns to the market over a period of time and to the market premium (Rm-rt).

Empirical tests of the CAPM first became possible with the creation of computerized databases of stock prices in the U.S. in the 1960s. To implement the tests, researchers often estimate cross-sectional regressions of the form;

$$Ri = ao + a1\beta i + \sum aj\ cij + ei$$

Where βi is the security's beta which measures its covariance with the return on the market and cij represents security-specific characteristic j (size and earnings yield) for security i. The CAPM predicts that the aj , for $j > 1$, is zero. Early tests supported the CAPM (significant positive values for aj, for $j < 1$, insignificant values for aj, for $j > 1$), (Sharpe, 1964). The explanatory power of beta came into question in the late 1970s when researchers identified security characteristics such as the earnings-to-

price ratio and market capitalization of common equity with more explanatory power than beta.

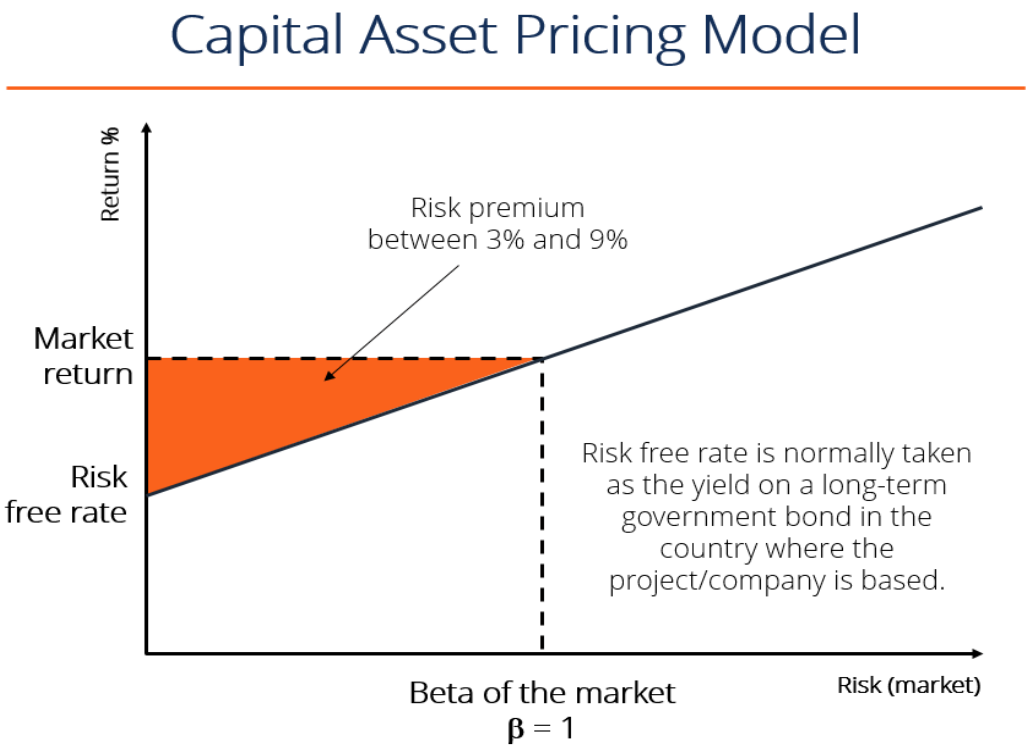

Figure 2.1: Capital Asset Pricing Model

The CAPM is a theory that is relevant to the market anomalies in the overall objective of the study as it establishes the relationship between market anomalies and financial distress of listed firms in NSE, Kenya. Its relevance comes into play as it is a model which measures the intrinsic value of the stocks and incorporates all information in the market, (FFJR, 1969; Fama, 1995).

2.2.3 Fama-French Three-Factor Model

It is an extension of the CAPM and was developed by Fama and French to capture the relation between average return and size, which comprises of market capitalization and price times shares outstanding and the relation between average return and price ratios like book-to-market. The Fama-French three-factor model describes stock returns through three factors; market risk, the outperformance of

small capitalized firms relative to large capitalized firms and the outperformance of high-to-market value firms versus low book-to-market value firms, (Fama & French, 1993). The original model is as below;

$$Expected\ Rate\ of\ Return = Risk - free\ Rate + Market\ Risk\ Premium + SMB + HML$$

The reasoning behind this model was that high value and small capitalized firms tend to in most circumstances outperform the overall market. Fama and French argued that because small firms can suffer a long earnings depression that bypasses big firms, size is associated with a common risk factor that might explain the negative relation between size and average return, (Fama & French, 1993). The importance of the Fama-French three-factor model is adjusted for outperformance tendencies. Also, two extra risk factors make the model more flexible relative to CAPM.

The Fama-French Three-Factor Model Formula;

$$r = r_f + \beta_1 (r_m - r_f) + \beta_2 (SMB) + \beta_3 (HML) + \varepsilon$$

Where:

r = *Expected rate of return*

r_f = *Risk-free rate*

β = *Factor's coefficient*

$r_m - r_f$ = *Market risk premium*

SMB (Small Minus Big) = *Historic excess returns of small-cap firms over large-cap firms*

HML (High Minus Low) = *Historic excess returns of value stocks (high book-to-price ratio)*

ε = *Risk.*

The Fama-French three-factor model is relevant to the size effect anomaly, which is the fourth specific objective of the study as the overall objective of the study is to establish the relationship between market anomalies and financial distress of listed firms in NSE, Kenya.

2.2.4 Expected Utility Theory (EUT)

This theory generally means choosing rationally when one is not sure which outcome will result from one's actions. This theory came into existence courtesy of the work of Bernoulli, (Bernoulli, 1738). In the game of St. Petersburg, the paradox, participants were asked how they would remunerate for the probability of tossing a coin when it is a tail or head. After two centuries, Allais (1953) interrogated the genuineness of Expected Utility Theory-based choices which gave birth to the innovation of a thought-provoking issue commonly referred to as the Allais paradox. The history of Expected Utility Theory is interpreted in terms of the concept of exploiting anticipated fiscal values antidates Expected Utility Theory.

In Finance, a decision maker has to make a choice among uncertain prospects by contrasting their anticipated utility values, (Mongin, 1988). This theory therefore has two versions which are, uncertainty, explained by the Subjective Expected Utility Theory (SEUT), Schmeidler (1989) and risk taken care of by Von Neumann-Morgenstern Theory (VNMT), (Fishburn, 1989). An action's expected utility is weighted averages of utilities of every probable result, in which the utility of a result shows the scope to which that result has considered other choices. The usefulness of every result is weighted depending on the chances that the action will give that result.

18th century saw the works of Daniel Bernoulli which was given a new form by John Von Neumann and Oscar Morgenstern, commonly referred as VNM, (Von Neumann & Morgenstern, 1944). They opted in the determination of the utility value of a randomized approach in a mathematically intelligent manner. VNM theoretical conclusion was indeed justified to be of long-lasting clout. VNM and Bernoulli were alike as they were all concerned with the case in which the likelihoods are component of the decision complication.

Good (1967), states that the expected utility theory lays ground that it's usually logical to get proof prior to taking an action, only when the evidence is free of cost and thus concurs with the common saying that think before taking an action. Later on, this theory was further developed by Savage (1972), when he defined the EUT in terms of preferences. Spohn (1977), threw the spanner into the work of Savage by suggesting ways of weakening Savage's assumptions, but Joyce (1999) comes into Savages rescue by arguing that even if the assumptions are weakened, the domain of acts remain unquestionably substantial.

Fishburn and Wakker discussed about EUT while evaluating its work of the developmental years, (Fishburn, 1989; Fishburn & Wakker, 1995). Bouyssou and Vansnick (1990) provided a formal method for comparing utility differences which agreed with Fishburn's (1989) work. Greaves and Wallace (2006) used expected utility theory to justify bring up to date by conditionalization. EUT is used in the justification of a new regulation for updating on the evidence that are not certain, (Leitgeb & Pettigrew, 2010). According to Jeffrey (1983), this assertion is in conflicts with the more orthodox "probability kinematics". Greaves (2013), spells out another application of expected utility theory, as the evaluation of probabilities. Probabilities in this case are considered as individual degrees of belief.

The relevance of EUT is applicable to this study as an investor may not be in a position to choose rationally when he is not sure of the outcome. This atmosphere of uncertainty is very risky when it comes to making a decision on an investment. This is expressly explained in SEUT, (Schmeidler, 1989). There exist plenty of uncertainty concerning tomorrow in the stock market which will be pegged on

today's actions. In this study, this theory, the EUT is linked to the technical anomaly as an independent variable thereby relating to the second specific objective of the study, to determine the relationship between technical anomalies and financial distress of listed firms in NSE, Kenya.

2.2.5 Dividends Theories

Dividend refers to the fraction of net profits of a firm which is apportioned to the shareholders. A decision on dividend points out to all means used in the determination of the dividend levels that can be distributed to the shareholders. The later raises the concern in deciding between the dividend's distribution and the capitalization of a greater part of the net profit of a firm. The dividend decision is the most contentious as the challenging point for both financing and investment decisions is the dividend itself, (Lumby, 1991). The dividend mystery has been both an enduring concern in finance and also stands unsettled, (Al-Malkawi, Rafferty & Pillai, 2010).

Theories of dividend decision are the support and the modelers of practices for decisions in dividends. There are two theoretical trends where there are theories that promote the distribution of dividends and theories that discourage the distribution of dividends, (Berceanu & Siminica, 2009). Dividends theories comprise of dividend relevance theory, dividend irrelevance theory, residual theory of dividends, the bird-in-hand theory of dividends and the tax preference theory of dividends. All these dividends theories came into being through the works of Professors James E. Walter, Myron Gordon, Modigliani and Miller, (Walter, 1963; Gordon, 1963; Modigliani & Miller, 1961). The last two researchers are commonly referred to as MM in the field of finance.

There exists a difference amidst dividend theory, dividend policy and practiced dividend policy. A dividend theory is a framework of a probable association which tries to illustrate a connection between dividend designs and different causal factors impacting these designs. Dividend policy is the scheme which a company uses to structure its dividend payout to shareholders, (Lease *et al*., 2009). Lastly, practiced dividend policies are premised upon the examined corporate behavior

illustrating its payout procedures. Practiced policies more often than not cannot be fully explained by pure theory.

Dividend Relevance Theory

This is when there is preference of the dividend policy that influences the firm's value. With such a dividend policy in place then it means that a change in the dividend payout will definitely lead to a proportionate change in the market value of the firm. There ought to be an optimum dividend payout ratio for a theory to be considered to be relevant. The optimum payout ratio more often than not grants the highest market value per share. The dividends relevance theory is supported by Walter's and Gordon's models, (Walter, 1963; Gordon, 1963).

In Walter's Model, the optimum dividend policy relies heavily on the association between the firm's internal rate of return and the cost of capital. When the internal rate of return (r), is more than the cost of capital (k), then the firm should retain the whole revenues. Whereas when the internal rate (r) of return is less than the cost of capital (k), this implies that the firm should appropriate the earnings to the shareholders. The rationale behind this is that when the internal rate of return (r), is more than the cost of capital (k), then the firm has the ability of generating more earnings than the shareholders who get their returns from the retained earnings, (Walter, 1963).

The Walter's Model is premised on several assumptions. Firstly, the firm is assumed to finance all its investments through retained earnings. Secondly, the internal rate of return of the firm and its cost of capital are always constant. Thirdly, all earnings are either distributed as dividend or reinvested internally without any delay. Fourthly, beginning earnings and dividends never change. Though different values of earnings per share (EPS) and dividends per share (DPS) may be used in the model but they are assumed to be constant while determining a value. Fifthly, the firm has a very long or infinite life. Sixthly, the present value of an infinite stream of constant. Seventhly, it assumes that the capital market is perfect. Lastly, the present value of the infinite stream of stream gains, (Walter, 1963).

In the Walter's model, firms in financial distress have an internal rate of return (r) which is less than the cost of capital (k) which is equated in this formula, $r < k$. Firms in financial distress are also referred to as declining firms. These firms generate returns which are less than what shareholders can earn on their investments. It is irrational to retain the firm's earnings. It will be logical to maximize the price of the shares and to distribute entire earnings to the shareholders. In such situations, the optimum dividend payout ratio will be at 100%, (Walter, 1963).

As much as the Walter's model is good, it has also its fair share in the shortcomings. Firstly, in share valuation, there is a mixture of the dividend policy with the investment policy of a firm. This assumption puts forward the idea that the investment opportunities of the firm are purely financed by the retained earnings and no external debt financing or equity. Secondly, it is based on the assumption that the internal rate of return is constant. The internal rate of return decreases as more investment occurs. This is an untrue and misplaced policy as it fails to optimize the investment of owners, (Walter, 1963).

Thirdly, the conclusion of retaining 100% of earnings is unrealistic. This is in consideration of dividend payments by other firms, it is of paramount importance for equity dividend payment to be done and if this is not done then the firm's stocks will fall out of favour with the market. The return in form of cash generated from the equity dividend payment will offer more psychological satisfaction as compared to change in the price of the stock. Fourthly, capital market being perfect is not realistic as stating that there is no floatation cost, no transaction cost and no corporate dividend tax is just an illusion. Lastly, the cost of capital or discount rate of the firm keeps on changing. It changes undeviatingly with the firm's risk. The risk effect on the value of the firm is clearly outlined out in the Walter's Model, (Walter, 1963).

Gordon's Model of the dividend relevance theory states that when the internal rate of return (r) is more than the cost of capital (k), then the dividend payout ratio decreases as the price per share increases. When the internal rate of return (r) is less than the cost of capital (k), the price per share remains unchanged in reaction to the corresponding change in the payout ratio, (Gordon, 1963). Comparing the two

models, it comes out that there is no much difference between the two. Thus, the Gordon's model's conclusion about the dividend policy is the same as that of Walter's, (Walter, 1963; Gordon, 1963).

Gordon's Model is also based on several assumptions. The first, assumption is that the firm is an all-equity firm. This gives birth to the second assumption; no debt financing is available as the firm is financed purely on equity. Thirdly, the internal rate of return (r) of the firm is constant. Fourthly, the applicable discount rate (K) of the firm is upheld constant. Fifthly, the firm and its source of earnings are ceaseless. Sixthly, the corporate taxes are non-existence or not applicable. Seventhly, the retention ratio (b), once determined, it remains at that and there is no option of changing it. This simply means that the growth rate (g) remains constant perpetually. Lastly, when the discount rate (K) is greater than the retention ratio (b) and the internal rate of return (r) which equals to the growth rate (g), if this condition is unfulfilled, then one fails to get a meaningful value for share. This assumption is depicted by this formula, $K > br = g$, (Gordon, 1963).

Dividend Irrelevance Theory

The Modigliani and Miller (MM) dividend irrelevance theory asserts that the firm's dividend policy does not possess any influence at all on value of the firm or its stock price, (Modigliani & Miller, 1961). It continues to state that when the firm is declaring dividends and payments thereof, these would have slight or no impact on stock price. When dividends do not possess the capability of adding or subtracting any value to a firm's stock price, then this theory holds true. Thus, the shareholders will not be troubled by the decision of dividend. There is existence of a general belief that the dividend policy has absolutely no repercussion on the share prices of a firm

other than the investment policy which is the one that increases the value of firm. The thing that adds to the wealth of the shareholders, the investment and dividend decisions are irrelevant, is just a residual part of the decision, (Modigliani & Miller, 1961).

This theory heavily relies on set of assumptions in which one of them is that there is existence of a perfect financial market. This implies that the shareholders can design their own dividend policy simply by using the free forces of the market, demand and supply. The shareholders can therefore engage themselves in buying or selling of shares in the market as they deem fit. In case the shareholders are in need of liquidity, they can freely and willingly sell shares without incurring any brokerage costs. If there is no need of liquidity then the shareholders will not dispose-off their shares but rather hold on to them. Secondly, the theory has an assumption that there are no existence of brokerage fees or capital gains taxes. Thirdly, there is an assumption that there are no such factors as control of voting preferences and any signalling effects which usually comes in as a result of dividend payments, (Modigliani & Miller, 1961).

When all the above stipulated assumptions are not considered, relaxed or followed strictly, then dividends do not really count. Thus, given these assumptions, Modigliani and Miller concluded that the firm's value is not determined purely on dividends. This is the main reason why dividends policy becomes irrelevant in the determination of the firm's value. Thus, according to the irrelevance theory, dividend decisions have no capacity of affecting the value of a firm and this is the reason why it is referred to as irrelevance theory, (Modigliani & Miller, 1961).

MM's reasoning was that a firm's decision on dividends is not only based on the dividends declaration or payments, but more often than not it is made up of other financing and investment decisions, (Modigliani & Miller, 1961). When a firm is positive about its future and would wish to retain its earnings for a new investment, then the management may decide to lower its dividend policy. When this happens, then the dividend policy turns out to be an outgrowth of the firm's decision on capital budgeting. This will make the stock prices to fall because the dividends are not paid

so as to undertake the new investment decision. In another scenario, a firm may end up financing its expenditures by borrowing. This will definitely make the firm to release cash for dividends and the stock prices will definitely rise. Here again, the dividend policy proves to be a by-product of the financing decision, (Modigliani & Miller, 1961).

With these two illustrations, it can be clearly seen that for the true definition of the dividend policy to be gotten, then it will be good to seclude dividend policy from financing and investment decisions. At this juncture, it is important to differentiate financing decisions from investment decisions. Financing decision is about when, where and how should a firm source for funding. It is an important decision as a firm tends to profit most when the market estimation of the firm's share expands and this is not only a sign of development for the firm but also it boosts the investors' wealth. This relates to the composition of various securities in the capital structure of a firm, debt/equity, (Modigliani & Miller, 1961).

However, investment decision also known as capital budgeting decision relates to the diligent selection of assets in which funds will be invested by a firm. A firm's assets and resources are rare and should be put to their utmost utilization. The firm puts its funds in procuring fixed and current assets. This should be done very carefully as an investment choice in order to gain the highest conceivable returns. Also, dividend decision is important as this relates to the distribution of profits earned by a firm. It is to make a choice on whether to retain the earnings/profits or to distribute to the shareholders, (Modigliani & Miller, 1961).

In order to keep a fair and true association between dividend policy and share price, the first step is to make a decision on the financing and investment decisions and then issuance of share to finance the dividend payment. Figure 2.2 portrays a true dividend policy in which there is a trade-off. The trade-off is making a consideration between retaining cash flow by issuing new shares and paying out cash in terms of dividends. Nonetheless, once the financing and investment decisions are taken, the MM interpretation of the "dividend decision" continues to have no repercussion on

the firm's value, (Modigliani & Miller, 1961). Thus, in the Modigliani & Miller world, dividends do not mean anything, they are just irrelevant.

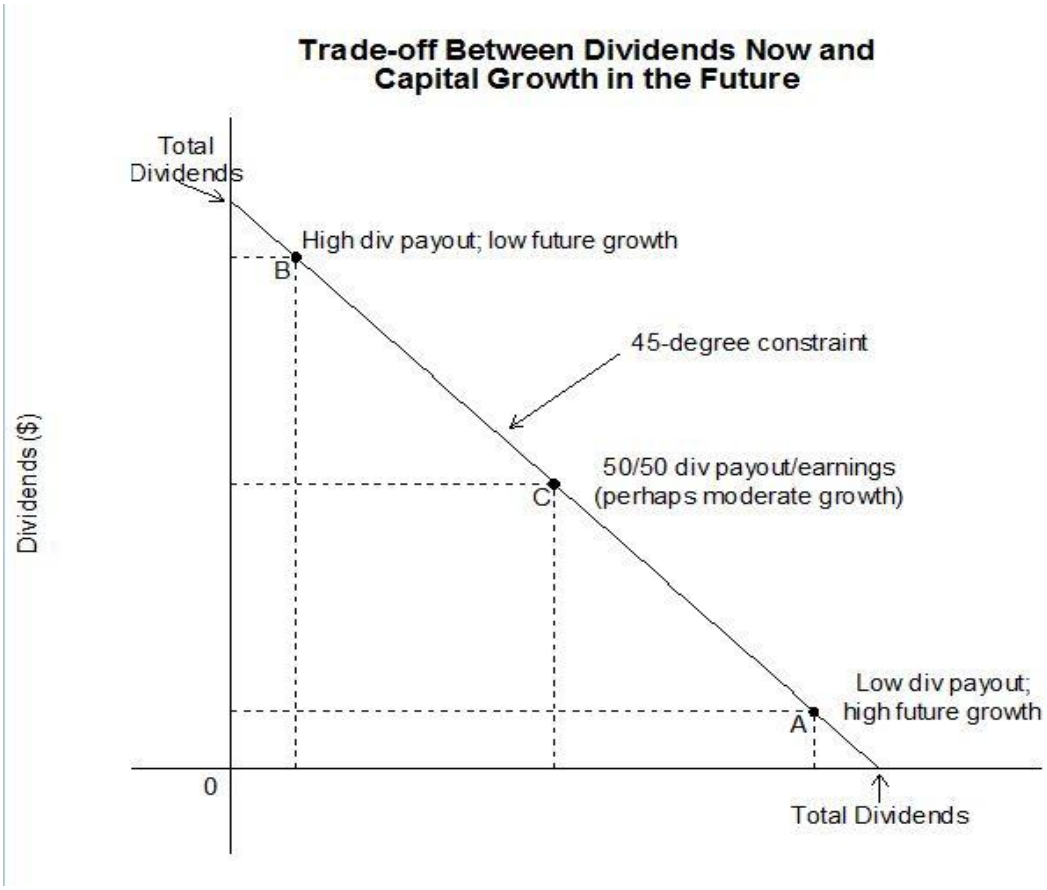

Figure 2.2: Dividend Policy

Source: Modigliani and Miller (1961).

The opponents of the dividend irrelevance theory argue that investors are more interested in stocks which have good performance in dividends and thus dividends are very relevant to the value of the firm as they are highly regarded. This is supported by the assertion that most shareholders are in favour of a reasonable dividend which has a sense of stability. These qualities provide the market with an opportunity to positively respond to the stability or a step-by-step increase of the dividend, (Lintner, 1956). According to Halpern, Weston and Brigham (1998), shareholders favour dividend payments to capital gains which are expected to be generated from the accrued profits which are more often than not reinvested.

Residual Theory of Dividends

It is one of the theories which is not in favour of the dividends allocation. This reasoning becomes true when the dividends are not in direct association with the firm's profit's level, (Berceanu & Siminica, 2009). It holds that a firm will only issue dividend from residual earnings. This simply means that the dividend which is paid up by a firm is the residual amount after the firm has undertaken all other investment and financing activities. Residual amount therefore can be said to be the amount that remains after all admissible financing and investment opportunities have been done away with.

In other words, it is only after financing the firm's investments and other financing activities that the dividend would be paid up where internally generated funds remain. This further means that dividends are only payable from the remaining funds after the optimum level of capital expenditures are incurred. This therefore means that dividends are only paid after all the suitable investment opportunities have been fully financed. A residual dividend policy can therefore be looked at as one that is designed not to be paying dividend, but the firm will have to pay a special dividend when only certain conditions are met, (Baker, 2011).

A firm with a residual policy tends to hold zero cash at any given point in time. This is so because all excess cash can either be reinvested in the firm to boost its business operations or be redistributed among the shareholders, (Baker, 2011). However, this is an assumption based on the perfect stock market, but in reality, there are imperfections in the stock market which makes it very unlikely for a firm to strictly pursue a pure residual policy. To be at par with the reality of the stock market, then firms adopt smooth dividend policies that demonstrate some correlations with firm's past and present earnings. This theory ensures that cash is only reinvested into profitable investments. The residual dividend theory is based on the following equation;

Dividends = Net Income – (Target Equity Ratio x Total Capital Budget)……2.1

The residual theory of dividend has more advantages than disadvantages. The first advantage is that the residual dividend policy ordinarily depends on lean recent stock issues and floatation which are of lower costs. Secondly, it makes the firm to concurrently take into consideration its desired capital structure which consists of debt and equity at the point of raising capital for investment. Thirdly, it makes sure that during the process of capital budgeting, all positive NPV projects are considered when coming up with its optimal investment spending blueprint. In case the positive NPV projects are present and are continually experiencing capital constraints then no dividend should be distributed at all as the firm's earnings should be reinvested, (Smith, 2009).

Fourthly, the residual theory of dividend emphasizes the thought that earnings that cannot be used in profitable projects should be refunded back to shareholders as dividends. This will then automatically bar the negatives associated with the signalling effects. Fifthly, while firms should not be encouraged to utilize the residual model in setting out the annual dividend payouts, they are inspired to utilize the model in setting up the long-run target of the firm's payout ratio. Lastly, the residual thought can be easily mixed up with one of the various cash adjustments smoothing techniques. In most instances, this is the way it is applied in real-world dividend practice, (Smith, 2009).

As advantages exist in this model, likewise disadvantages are also present. The first disadvantage is that it may send conflicting signals to investors. The challenging part of the residual dividend theory is its ability to accurately predict cash flows and investment opportunities, (Smith, 2009). With such inaccuracy in the forecasting, then it leaves the investors with mixed reactions which is not good in making financial decisions. It is also disadvantageous as it symbolizes a risk level that is increased for shareholders as dividend incomes remains quite uncertain. Most investors and shareholders prefer to be involved in investments where there is certainty, (Smith, 2009).

The proponents of the residual dividends theory argue that a firm may make use of the dividend as a signaling mechanism for investors and other stakeholders. It portrays the firm's growth potentiality and stability. Furthermore, dividend forms a sizable chunk in a firm's capital structure (Frank & Goyal, 2003; Aggarwal & Kyaw, 2010). When this happens, the proponents of the residual dividend theory contends that if there are no profitable business opportunities, then firms can only disburse profit, (Baker & Smith, 2006; Smith, 2009).

As much as there are proponents of this theory, there are also opponents of the same. The opponents of the residual dividend theory states that this theory is complicated, thus firms often favour dividend model which has the elements of continuity and stability to a pure residual policy, (Smith, 2009). These two elements are very important in the determination of the preferred if not favoured model to be adopted. Other opponents state that due to the association between dividends and the investment needs of firms, it renders the dividends unstable and thus the investors might have a view that this theory is unreliable, (Baker, 2011).

The Bird-in-the-Hand Theory of Dividends

It is a theory that was deliberated by Gordon and Lintner also known as Gordon/Lintner Theory, (Gordon, 1963; Lintner, 1962). It states that due to the uncertainties which surround the capital gains, investors prefer stock dividends which they are sure of rather than potential capital gains which they are not sure of. This means that there is certainty to the dividends which is of today, while there exist a lot of uncertainty to the capital gains of tomorrow. It was developed to counter the Modigliani-Miller (MM) dividend irrelevance theory in which the investors are indifferent betwixt dividends today and capital gains tomorrow, (Modigliani & Miller, 1961). The MM dividend irrelevance theory preserves that investors are not bothered with where their returns come from. There exist studies which stand up as the major proponents of the bird-in-the-hand theory, (Gordon & Shapiro, 1956; Gordon, 1959 & 1963; Lintner, 1962; Walter, 1963).

The theory takes a fundamentally about turn view of dividends from what had been initially brought to the attention of the researches and scholars. Myron Gordon came

up with the model which detailed the association between the stock's price and the dividend which came to be commonly known as the Gordon Growth Model (GGM) or the Dividend Discount Model (DDM), (Gordon, 1963). The very noble thinking behind the curtain of this theory by Gordon and Lintner was that low dividend payout catapults into increase in the cost of capital. Thus, the more the dividend payout rate, the more the stock price. This model is expressed in equation 2.2 as stated below.

$$Stock\ Price = \frac{D_0 X (1+g)}{k_e - g} = \frac{D_1}{k_e - g} \quad \text{..... 2.2}$$

Where D_0 is the per share amount of last dividend paid, g is constant growth rate, k_e is investors' requisite rate of return and D_1 is the expected dividend.

This theory sticks to the idea that investors or shareholders are not indifferent between dividends today and a proportionate amount of capital gains at a later date. In other words, it states that investors favour stock dividends today to potential capital gains tomorrow due to uncertainty of the capital gains. It should be understood that investors prefer a surer dividend today to a more uncertain capital gain tomorrow. Investors count on something they have put in their pockets today to hopes of tomorrow, (Gordon, 1963; Lintner, 1962).

Indeed, from the above statements, then there is a general agreement with the common English saying which states that, "a bird in hand is worth two in the bush". This argument can be furthered by pointing out that an investor is better off with a coin in the pocket than with a promise of very many coins in the future. Frankfurter and Bob (2002) acknowledges that researchers Graham and Dodd were absolutely right in their argument that the sole purpose of a firm's existence is to pay dividends to the shareholders. Thus, firms which are able to pay higher dividends must also have a capacity of selling their stocks at higher prices.

The theory asserts that investors under normal circumstances discount the expected capital gain yield at a much higher rate than the dividend yield. This means that firms which employ a high dividend pay-out coincidentally have also a low expected yield in capital gain. They can afford to pay shareholders who under normal circumstance favour a high current pay-out at a lower total rate of return than firms which employ a lower dividend pay-out strategy. When a desired lower return results is to be achieved then a higher stock price would be put for firms. This is done so with the sole aim of the stock prices matching the high current pay-out pattern which is the main desire of the bird-in-the-hand investors, (Frankfurter & Bob, 2002).

According to Gordon and Lintner, the bird-in-the-hand theory relied on the following assumptions. Firstly, the company is financed by only equity, thus no debt finance is used. Secondly, retained earnings is the only source of finance which means that no other sources of financing are available. Thirdly, there is a constant retention ratio which indicates that there is a constant growth rate of earnings. Fourthly, the firm's cost of capital is constant and is always greater than growth rate. Lastly, there is no existence of corporate tax, (Gordon, 1963; Lintner, 1962).

The main proponent of this theory of the bird-in-the-hand were MM, who had advanced an argument that the dividend policy had absolutely no bearing at all on the cost of capital of a firm and that shareholders are only concerned with the total returns, (Modigliani & Miller, 1961). This means that dividends are not relevant to the share of capital gains and dividends. This further means that investors or shareholders more often than not reinvest dividend by buying more stocks of the same or other different firms. This indicates that firms plough back the biggest share of dividends payouts. This brings in a conclusion according to Modigliani-Miller, that this theory is irrelevant simply because the firm's value or cost of capital is not relevant to the bird-in-the-hand theory as it depends on its capability to generate earnings and lower the business risk.

Tax Preference Theory of Dividends

The tax preference theory asserts that a few investors look up to long-term capital gains to current dividend yield. Investors look favourably at firms which consider

paying low dividends or not paying any dividends at all as the taxes to be paid if any are very minimal. These shareholders are more than willing to pay extra for the stock of a firm that has the capability of recouping its earnings into capital-appreciating investments rather than disbursing these revenues as dividends. In a capital market of perfection, there is no any taxes, transaction costs or agency cost, (Modigliani & Miller, 1961).

The time value of money and taxes form basis of the tax preference theory. This is considered so, since to the tax man, the stock price appreciation attracts less tax compared to the kind of taxes that are levied to the dividend pay-outs. Shareholders of a firm would be more comfortable in choosing for the after-tax return instead of paying tax on dividends which causes the dividends and capital gains to exist with differential in tax treatment. It also demonstrates that when cut down, the dividend pay-out ratio can determine the firm's value in reaching the maximum point and add on with that cost of capital which will definitely also decrease, yet the stock price will immediately increase, (Laiboni, 2013).

According to Shackelford (2001), tax occupies a central role in the determination of stock prices. It was also noted that there is a response of stock prices which respond spontaneous to the changes in the capital gains tax policy. It is worth noting and also of great importance that the stock prices respond instantaneously to information on tax legislation, (FFJR, 1969). Lastly the price of stock response is widely complete by public broadcast of the change of the tax policy, (FFJR, 1969). Thus, the significance of the price of stock response is material, (Shackelford, 2001).

There exist underlying assumptions of tax preference theory which are to be met for the theory to hold and they are enumerated as follows. Firstly, the capital gains tax rate is assumed to be of higher rate or the same to the dividend tax rate. If this assumption holds then the investors will in favour buying of stocks of firms which in practice or in normal operation do not pay any dividends. This will assist them maximizing on their cash flows, (Modigliani & Miller, 1961).

Secondly, it is assumed that the capital gains tax has to be paid at that time when there is actual realization of the capital gains. Investors have the capacity of deciding when capital gains will be realized, that is, when they actually feel to offload their stock. In contrast, dividend payouts solely rely on the firms' management which infers that the investors do not have the ability of influencing it in any way. Lastly, if an investor passes on, then the heirs will not be in a position of paying capital gains tax. This is so as the heirs may opt to sell the inherited stock and thus avoid paying the capital gains tax, (Modigliani & Miller, 1961).

Dividend theories discussed in this study comprising of dividend relevance theory, dividend irrelevance theory, residual theory of dividends, the bird-in-hand theory of dividends and the tax preference theory of dividends are classified into either relevant or irrelevant theories. This classification solely depends on the dividend policy of the firm which might change from time to time depending on the management decisions which are informed by the mission and vision of the firm, (Lease *et al*., 2009). These theories are relevant to the fundamental anomalies that are measured by dividend yield (DPS) and price to earnings (EPS). The tax preference theory of dividends is also relevant to seasonal anomalies. Thus, these theories are relevant to both fundamental and seasonal anomalies which are independent variables in tackling the main objective of the study, to establish the relationship between market anomalies and financial distress of listed firms in NSE, Kenya.

2.2.6 Financial Distress Models

These are models which are applied in foretelling the status of financial health of different firms. Financial distress models comprise of Traditional Ratio Analysis (TRA), Z-Score, ZETA and Wreckers Theory of Financial Distress. Amongst the measures applied, Z-Score was found to be the most preferred measure of financial distress as it was 80-90% in the determination of the financial distress levels in firms, (Altman, 2000). Thus, with such a high level of accuracy, the Z-score will be used in this study as the measurement tool of the financial soundness or health of firms listed in NSE.

Traditional Ratio Analysis (TRA)

Financial distress detection is specifically receptive to financial ratios analysis; profitability, liquidity and solvency which are commonly referred to as TRA. Agencies were founded to provide qualitative information in evaluating the credit worthiness of a specific customer. This was done before the evolution of quantitative measures of a firm's performance. Beaver (1967), provides a typical assignment in the field of ratio analysis bankruptcy segmentation.

Beaver (1967), showed that a lot of measures could make biased opinion on matched samples of collapsed and successful firms up to five years before collapse. Generally; solvency, liquidity and profitability ratios are considered as the most significant barometers. Ranking of their significance is not certain. This is so because most studies picked a different ratio as the best indicator of existing difficulties. Subsequently Deakin (1972), used same variables as Beaver and concluded that indeed there is a definite ratio in forecasting bankruptcy.

The theory is considered to be relevant to this study as it is applicable in measuring of the financial health which is the financial distress level of a specific firm. Profitability, liquidity and solvency may be considered as good measures of the financial health of a firm, (Beaver, 1967). These ratios though might not be the best measures or superior indicators in defining the financial health of a firm. These ratios are put into much use when determining a firm's profits and its earnings to the shareholders.

Beaver put into use the binary classification system in the determination of the error rates which a potential creditor is likely to experience. Such experience would be felt if it segregated firms on the premise of individual financial ratios as collapsed or succeeded firms, (Wang, Wang & Wang, 2017). In this study, these ratios might not be the best when it comes to measuring financial health of listed firms in NSE. With this incapacity, then they will not be used in this study as measures of the financial distress.

Z-Score Model

Limitations which were witnessed in the Traditional Ratio Analysis (TRA) saw the birth of Z-Score model. This model gave an answer to Beaver's concern. It came into being in 1968 through the works of Edward Altman and was regarded as quantitative balance sheet technique of dictating a firm's financial health. Altman puts into use a technique of Multiple Discriminant Analysis (MDA). This method was basically invented to sort out the vagueness dilemma connected with Beaver's univariate examinations and to assess a wholesome firm's financial profiling, (Wang, Wang & Wang, 2017).

According to Altman, it can be computed for all financial and non-financial firms. The risk was considered to be greater when the score was low as such a firm was considered to be actually falling into financial distress. The original work was premised on the data sourced from 66 publicly held manufacturing firms. It was surprising to note that a half of firms had filed for insolvency between 1946 and 1965. Altman examined 22 conceivably helpful financial ratios out of which he picked five that when combined provided the best overall forecasting corporate bankruptcy, (Altman, 1968).

The variables which Altman used were classified into categories of five standard ratio as: liquidity, leverage, profitability, market value and efficiency ratios, (Altman, 1968). Below is the model which was applicable for the manufacturing firms;

$$Z - Score = 1.2X_1 + 1.4X_2 + 3.3X_3 + 0.6X_4 + 0.999X_5 \quad \text{..... 2.3}$$

Where $X_1 = Working\ Capital/Total\ Assets$ *(Liquidity)*

$X_2 = Retained\ Earnings/Total\ Assets$ *(Leverage)*

$X_3 = EBIT/Total\ Assets$ *(Profitability)*

$X_4 = Market\ Value\ of\ Equity/Total\ Liabilities$ *(Market Value)*

$X_5 = Sales/Total\ Assets$ *(Efficiency)*

According to Altman, Hartzell and Peck (1995), for non-manufacturing firms, the model does not have the sales/total assets (efficiency) ratio as this was to minimize the risk in the potential industry. The model's specifications are as follows;

$$Z - Score = 6.56X_1 + 3.26X_2 + 6.72X_3 + 1.05X_4 \quad \text{..... 2.4}$$

When the Z-Score is above 2.99, the firms are viewed to be in "safe" zone. When the score is between 1.81 and 2.99, is a "gray" zone as there is a likelihood of the firm getting into financial predicament approximately in the next two years of operation. If the Z-Score is below1.81, then a firm is considered to be in a "distress" zone in which there is a high likelihood of financial distress within the time period, (Altman, 2000).

In early years, Altman Z-Score was noted to be 72% of reliability in foretelling bankruptcy two years before it occurs, (Altman, 1968). In successive tests, 31 years later that is in 1999, it was noted to be 80% to 90% reliable in prediction of bankruptcy before its occurrence. A firm with the Z-Score less than one ended up to underperform the bigger market by more than four percent, (Altman, 2000). It is important as an investor, when the results of the Z-score is close to or below three, it is advisable to engage an expert in doing some quite extensive due diligence before investments considerations are made.

ZETA Model

With the handicaps experienced in the Z-Score, there was need to develop a superior model which saw the coming into existence of ZETA model. The ZETA was developed in 1976 by Altman, Haldeman and Narayanan due to the shortcomings of the original Z-Score. The purpose of coming up with ZETA as a model was to establish, evaluate and demonstrate a new bankruptcy categorization model. It considered clearly recent evolutions in consideration to business failures during the period 1969 to 1975, (Altman, Haldeman & Narayanan, 1977).

According to Altman *et al*. (1977), the principal findings gave a conclusion that the ZETA theory for bankruptcy categorization seemed to be very precise. This was measured up to five years before collapse with successful categorization of above 90% of one year before and 70% certainty up to five years. The ZETA model did better than the other bankruptcy categorization approaches in the forms of anticipated cost basis using prior likelihoods and clear cost of error approximations, (Altman *et al*., 1977). In their examination, they were amazed to note that regardless of the statistical data attributes show that a quadratic format is suitable, the linear framework of the similar model surpassed the quadratic format in testing the model correctness.

There are compelling reasons for constructing the ZETA model. Firstly, it is very effective in predicting the firms' failures up to five years before the firm collapsing. Secondly, it uses a larger size firm as the firms' average size and the financial profile have so far changed. This brings in the requirement that the new model be as up to date as possible in regard to the temporary nature of data. Thirdly, past failed models either put too much emphasis on the broad categorization of manufactures or particular industries. Fourthly, it became useful due to alterations in financial reporting standards and acceptable accounting practices, (Altman *et al*., 1977).

ZETA model's relevance in this study is that it gives the stakeholders of listed firms' ability to predict with more accuracy the firms' failures. It's percentage in prediction is very high while it can also predict up to five years before firms collapse. According to Altman *et al*. (1977), ZETA theory, is used to measure the financial health of firms and this basically means the financial distress of firms which is this study's dependent variable. As much as ZETA model is superior to the Z-score, this study used the later as a measure of the financial distress because it considered a longer period of time and more firms.

Wreckers Theory

The Wreckers theory was first advanced by Campbell, Hilscher, and Szilagy in 2005. They hypothesized that the stocks of distressed firms' performance are subordinate to the stocks of financially healthy firms, (Campbell *et al*., 2008). Wreckers theory

attempts to give an explanation of the gains which may be generated from the financial distress to all the stakeholders. Campbell *et al*. (2008), likened this theory to the account of profiting from the wreckage of a ship. They came out with a picture of a firm being smashed by a succession of negative upsets, making losses and heading towards a position financial distress.

This theory explores to demonstrate the benefits that may emanate from financial distress to stakeholders, (Kalckreuth, 2005). This theory contributes to an efficient-market interpretation of a stock market. It links the work on private benefits to the literature on the empirics of asset pricing and that the financial structure and the probability of default may be essential for determining the size of private benefits of control, (Kalckreuth, 2005). Kalckreuth (2005), claimed that with a cumulative probability of default, there is a superior incentive to get out firms' resources from the private and non-dividend advantages.

Consideration has been taken not to always associate negative excessive returns to distressed firms in an efficient or irrational market. With the volatility of share prices increase which have higher leverage in consideration to private information, then the fate of a firm relies on issues not known to the general public which brings in aspect of information asymmetry. If market is efficient, then the returns must be shown in the stock valuation, (Campbell *et al*., 2008). This is labelled as the Wreckers theory of financial health of firms.

The relevance of the financial distress models is that they assist the stakeholders to foretell which firms are likely to enter into the financial distress status and which ones are financially healthy. For investors in the NSE, they will know which firms to invest in and which ones to avoid. They will also know when to buy which shares and when to sell, thus buy-and-hold strategy, (Bodie *et al*., 2014). In this study, financial distress models are linked to financial distress which is the dependent variable in achieving the overall objective of the study, to establish the relationship between market anomalies and financial distress of listed firms in NSE, Kenya.

2.3 Conceptual Framework

Myers (2013), states that conceptual framework uses graphs or diagrams in representing associations among variables being investigated by the research. Miles and Huberman (2009), points out that conceptual framework brings about main aspects, establishes variables and presupposes association amidst them. With the foregoing, a conceptual framework is conglomeration of ideas and principles which are applicable to the disciplines of explorations and come up with presentations. The main aim of a conceptual framework is to classify and narrate ideas which are applicable to the study and find out the associations which exist amid them.

Kothari and Garg (2014), show that if one variable is dependent on another or is the result of that variable, then we have a dependent variable. The predecessor variable to the dependent variable is called an independent variable. This shows that an independent variable is a phenomenon that is manipulated to determine the value of a dependent variable. Independent variable may also mean a variable whose variation does not depend on that of another variable.

This study hypothesized a causal relationship between the independent variable which includes; fundamental, technical, seasonal and size effect anomalies and the dependent variable, financial distress as indicated in figure 2.3 below. Figure 2.3 depicts the conceptual framework of the research and further shows the inter-relationships which exist among the study variables. Financial distress is the dependent variable in the study. Market anomaly which comprises of fundamental, technical, seasonal and size effect anomalies as the independent variables, (Kothari & Garg, 2014).

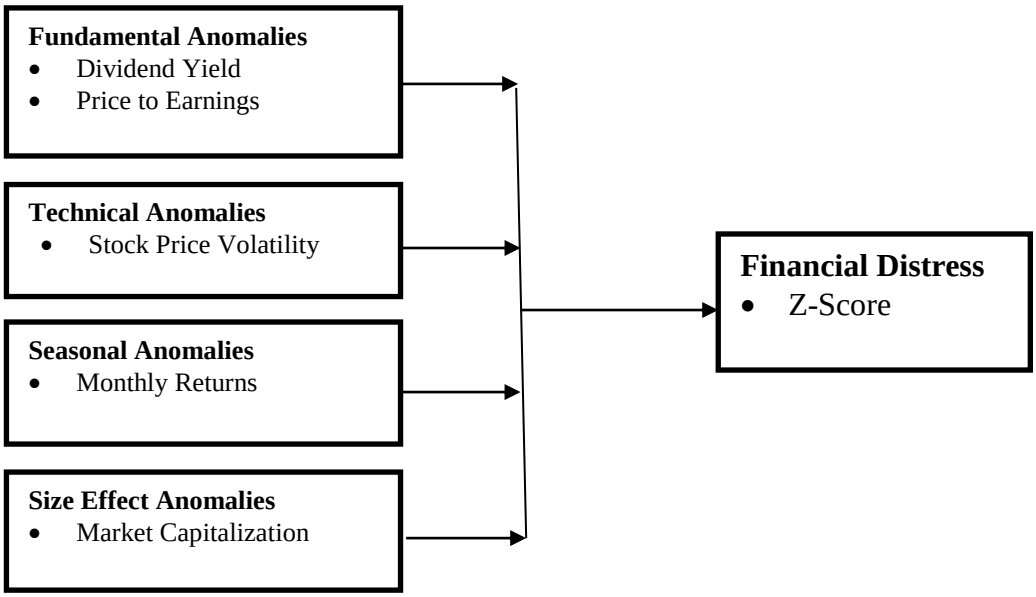

Figure 2.3: Conceptual Framework

Source: Researcher (2018)

Figure 2.3 shows the conceptualization of the dependent and independent variables of the study. The independent variables of this study indicate the statistics that were used to measure effects of market anomalies. Fundamental anomalies were measured by dividend yield and price to earnings. Technical anomalies were measured by stock price volatility. Seasonal anomalies were measured by monthly returns. Size effect anomalies were measured by market capitalization. The dependent variable, the financial distress was measured by Altman's Z-score.

2.4 Empirical Literature Review

Simply means looking into the past studies. Miller and Yang (2008), states that it enables a researcher to position the study into an academic and ancient context, which makes the researcher support the research with intellectual reasons why the research is of importance. Zikmund, Babin, Carr and Griffin (2013) acknowledge that an empirical literature review is a supervised exploration of promulgated endeavor that comprise of books and periodicals that deliberate about theories and

presents empirical outcomes that are relevant to the subject under consideration. This section considers previous reviews by other scholars or researchers on the study's independent variables; market anomalies which comprise of the fundamental, technical, seasonal and size-effect anomalies and the dependent variable, financial distress.

2.4.1 Fundamental Anomalies

Fundamental anomalies indicate that the prices of securities do not entirely reflect their intrinsic values. Types of fundamental anomalies are; value anomalies and small cap effect, low price to book (P/B), high dividend yield, low price to sales (P/S), low price to earnings (P/E), value versus growth anomaly, overreaction anomaly and neglected stocks, (Karz, 2010). The value strategies can outperform growth stock strategies because of the market overreaction. This happens so as growth stocks are more affected by the decline movement of the market. Graham and Dodd (2008) concluded that value anomaly emerges when the investors failed to predict correctly as they over relied on the estimation of the future earnings and returns of growth companies. This also happens when the investors have underestimated the future returns and earnings of value firms.

Dividend yield anomaly comes about when high dividend yield stocks outmaneuver the market in performance. Also, it can be noted that in the fundamental anomalies, stocks having low price to earnings ratio outrun stocks with high price to earnings. Various studies have thrown their weights behind this noble idea that high dividend yield stock outshines the market in performance than the low dividend yield stocks. Patel, Yao and Barefoot (2006), found out that stocks (assets or securities) having high dividend yield and low payout ratio outperform the stocks (assets or securities) possessing low dividend yield. It is also evident that the ex-dividend date is normally identified by abnormal returns or earnings on that material date. It was also discovered that there exists a negative and non-significant return on the ex-dividend date. It is also interesting to see that there is existence of a positive and significant return on day before the dividend payment day.

Price to earnings (P/E) ratio refers to that scenario when stocks with low P/E ratio realize large risk adjusted return than high P/E ratio. This is mainly because the firms with low price to earnings are in most circumstances undervalued. This happens so as the investors are not optimistic on their returns and earnings after an influx of bad news or bad series of earning, (FFJR, 1969). A firm with high price to earning is more often than not tends to be overvalued, (De Bondt & Thaler, 1985). In the case of overreaction anomaly, loser stocks, either assets or securities overreact to market more than winner stocks, either assets or securities. This is because the effect of overreaction is larger for the loser stock than the winner stock, either asset or security, (De Bondt & Thaler 1985).

Fama (1991) found out that low price to book (P/B) as the stocks whose ratio generate more returns than the stocks with a high P/B ratio. This is an anomaly which is fundamental in nature as it is expected that stocks with a high P/B ratio will definitely outperform the low P/B ratio stocks. This is so as under normal circumstance; it is expected that stocks with low P/B ratio ought to generate low return and not vice-versa. Fama and French (1998) states that stocks with high dividend yield will generate more returns as the market will be outperformed by the former. If the yield in dividend is high, then the expectation is that the stock will definitely generate more return.

According to the study of Basu (1977), stocks with low price to earnings ratios tend to have higher average returns than the stocks with high price to earnings ratios. He also indicated that there was a belief that price to earnings ratio is good indicator of the future investment performance of a security. He further went on to say that the proponents of the price to earnings claim that low price to earnings securities will tend to outperform high price to earnings stocks. From this study it was also found that returns on stocks with low price to earnings tend to be larger than warranted.

Elena-Dana and Iona-Christina (2013), states that the primary foundation of fundamental analysis is that market price of a fiscal instrument is the outcome of supply and demand of the instrument. When market price of stocks does not follow the principle of supply and demand, then we have fundamental anomaly. Prices

prediction and universal market growth is through the analysis of economically, politically and socially factors indicators that have high chances of influencing the stock exchange prices which are usually done by the fundamental analysts, (Elena-Dana & Iona-Christina, 2013).

Most of the investors use this technique as an investment approach, "against the market". This implies that the investors choose portfolios while focusing on most abandoned and less traded stocks on the market. De Bondt and Thaler (1985), found out that best performance mostly is attained by the abandoned stocks whose earnings are higher. Essentially in value strategy, this anomaly come into being when investors incorrectly overvalue growth expectations for the firms and undervalue them. Lakonishok, Shleifer and Vishny (1994) states that there are traders who base their strategies of trading on the value of the firms and take advantage of the ordinary investor mistakes while end up offering a high yield not because of the fundamentals of risks involved but, on the errors, made by the investors.

Elena-Dana and Iona-Christina (2013) found out that there subsists positive association betwixt the fundamental anomalies and financial distress in firms. It is due to this anomaly that many firms experience cash crunch or financial distress as they are unable to meet their day-to-day operational needs of the firm. Goodman and Peavy (1983), document that stocks with low price to earnings (P/E) ratios have higher chances of generating higher earnings and outdo the market. This happens as the stocks with high price to earnings (P/E) ratios are likely to underperform than the market index, which is a fundamental anomaly.

Patel *et al.* (2006) research showed that stocks that have performed better in respect to the market price usually give out a higher dividend yield than stocks whose performance are lower which usually give out a lower dividend yield. This finding differs with the other findings which advocate that the better the performance of the financial instruments, then the lower the dividend yields which is an anomaly. In the study of Patel *et al.* (2006), such investors use an investment strategy commonly known as the "against the market". This means that the investors will purposely select their portfolios in which they will be very keen in securities which are most

neglected in the market. Thus, their portfolio will be mostly the stocks that are less traded in the stock market and in this case referred to as the neglected stocks. In conclusion on the performance of the neglected stocks, the highest performance is normally attained by the neglected stocks which are the less traded of the market; their yields are far much higher than the overall average of the market, (De Bondt & Thaler, 1985).

Before abandoned stocks generate more returns, preceding best performers therefore underperform than the market index, (De Bondt & Thaler, 1985). Graham and Dodd (2008), there subsists a positive relationship between the fundamental anomalies and financial distress as the value approaches outdo the market. In the value approaches the stocks with low price respective to earning, historical prices and dividend are buy outs. The stocks values perform better in particular to growth stocks due to the actual growth stocks which are lower than value stocks. More often than not the market overvalues the future growth of stocks, (Lakonishok & Chan, 2002).

Malholtra and Tandon (2013), undertook a study which took place in National Stock Exchange in New Delhi, India. A population of 100 companies out of which 95 firms were sampled for a duration of five years, 2007 to 2012. The authors used correlation and linear regression models and the outcomes depicted that the firms' book to value (P/V), earnings per share (EPS) and price to earnings (P/E) ratios seemed to have positive relation with the stock prices of a firm. However, it is also interesting to see in the same study, that the firm's dividend yield has a significant inverse relationship the firm's stock market price.

Yan and Zheng (2017), focused on rudimentary variables for various justifications. They discovered that most fundamental signals are important forecasters of cross-sectional stock returns. This forecasting capability is more conspicuous in small-firm ownership stocks. They also found out that long-short returns are related to fundamental indicators and are importantly higher after high-emotional periods. The above outcomes give an indication that the fundamental-based anomalies have high chances of resulting from mispricing.

Due to the maturity level of the Kenyan stock market, an emerging market, this study favours dividend yield and price to earnings anomalies as the types of the fundamental anomaly which is the independent variable. These anomalies are operationalized through Dividend Per Share (DPS) and Earnings Per Share (EPS) also referred to as Dividend-Price ratio, (D/P) and Earnings-Price ratio (E/P) respectively, (De Bondt & Thaler, 1985). The D/P is determined by dividing dividend per share by price per share. E/P is the quotient of earnings per share and the price of the stock. These two ratios, D/P and E/P are related to semi-strong form of EMH, (Chinga *et al*., 2014). In this variable, fundamental anomaly, the hypothesized hypothesis is that fundamental anomalies have no statistical significant relationship with the financial distress in listed firms in NSE, Kenya. Thus, in this study, it will be proved whether fundamental anomalies have a relationship with the financial distress of listed firms or not which is the specific objective of the study.

2.4.2 Technical Anomalies

Originated through the works of Dow, (Elena-Dana & Iona-Christina, 2013). The fundamental principles of technical anomalies are that the market activities update all things. The prices of stocks which are listed are projected as the meeting point of the supply and demand of the instruments, (Elena-Dana & Iona-Christina, 2013). The existing configurations-attempts to give theories of market prices evolution founded on past data which give chances that specific outcome can be expected. In this, history repeats itself as graphic configuration has a tendency of repeating itself over time because of the characteristic of human psychology.

A number of analyzing techniques which are required to make use of the forecasted future prices of stocks are considered to be of technical analysis in nature. The prices of stocks are arrived at on the premise of past prices and necessary past information. It is true that when the market has a grip of weak form efficiency, then this means that the prices have already reflected the past information and technical analysis is useless, (Bodie *et al.,* 2014). This then means that investor cannot beat the market by making more profits than expected on the basis of technical analysis and the presence of past information.

Elena-Dana and Iona-Christina (2013), state that technical analysis involves market price trends and movements forecasting techniques. This is done by examining the graphs of the market which include the prices of the listed instruments. It fits very well in the weak EMH where the current prices of stock are based on the past information. This includes momentum effect in which investors can outdo the stock market by buying previous winners and selling previous losers.

Technical anomalies are founded on past prices and the trends of stocks. It perfectly fits the weak form of EMH as Bodie *et al*. (2014), states that current stocks prices are based on previous information. Techniques of the technical anomalies are; moving averages and trading breaks as they are based on support and resistance levels of the investors whereby, they make buy or sell decisions, (Brock et al., 1992). The main advantage of this anomaly is that it uses comprehensive financial instruments in each stock market which make it to be very flexible. However, the main disadvantages of technical anomaly are both subjectivity and the information used might not be accurate, thus giving wrong conclusions.

Technical anomalies occur when the information about the past prices do not follow the expectations of the efficient market. This occurs in a situation when an investor buys stock which are winners in the market and disposes the losers. Such an investor expects the prices of the winner's stocks to be on the rise while the prices of the losers to be on a downward trend. This happens not to be the case as the winner stocks go on a downward trend while the loser stocks are on upward trajectory and this is an anomaly which is referred to as technical anomaly, (Karz, 2010).

Relying on the past market information has proved to be of great assistance to an investor as it helps the investor in making an informed decision on which stocks to buy, hold onto and sell, in case of a market anomaly, then there is stocks price distortion, (Karz, 2010). Such stocks price distortion, can lead to financial distress in the stock market as the firms' financial performance would be definitely affected. An investor may opt to buy certain stocks in the stocks market hoping for a better yield only for the stock's price to have lost in the stock market. Such an investor might

decide to sell the stock and this will portray the stock as a weak stock which will affects the firm's financial performance which in turn results into financial distress.

Technical anomalies are founded on the historical trends and prices of stocks, (Bodie *et al*., 2014). As initially indicated, it fits very well in the weak EMH where the current prices of stock are premised on the past information and includes momentum effect. This is an effect whereby investors can outperform the market. This act of outperforming the market is simply necessitated by the investors engaging in the purchase of past winners and in the off-loading of past losers. Technical analysis techniques comprise of moving averages and trading range breaks.

There are various types of technical anomalies which include short-term momentum, long-run return reversals and stock price volatility, (Chinga *et al.,* 2014). Short-term momentum simply means that the stocks prices are in a continuous move in the same direction without changing to other directions. This is well evidenced by serial correlation or autocorrelation in stock prices, (French & Roll, 1986; Malkiel, 2003). Stock mispricing is a likely origin of negative serial correlations meaning that prices do not exhibit a close intrinsic value for short periods.

Long-run return reversals are gotten from the testimonies of negative serial correlation in stock returns over long period, (Malkiel, 2003). Mean reversion of stock returns depicts the inclination of stocks with high returns today to experience low returns in the future and vice-versa (Hubbard, 2008). According to Zaremba, Kizys and Raga (2020), the long-term reversal effect is the tendency of securities with high returns over the past three to five years to underperform relative to securities with low returns through the same period. In conclusion on the long-run return reversal, it encompasses the predictability of returns of the loser stock portfolios alongside the winner stock portfolios.

NSE being an emerging market, stock price volatility is preferred and will form the main focus of this study as far as the types of technical anomaly is concerned. The volatility anomaly suggests that low volatile stocks tend to provide significant positive abnormal returns over high volatility stocks and vice versa. According to Thomsett (2006), volatility of stock prices is the propensity of stock prices to change

or move in a trading range over time, whereby high volatility is characterized by a broad trading range and widely varying price trends, while low volatility is characterized by a narrow trading range and stable price trends. Trading range is one of the techniques used for the determination of the stock price volatility.

Thomsett (2006) defines trading range as the distance between a stock's established high and low prices over a period of time. Stock market volatility is further classified as either a normal volatility or a jump volatility. A normal volatility comes out as the ordinary variability of stock returns, like the ups and downs in return. However, in jump volatility, there is the occasional and sudden extreme changes in returns (Becketti & Sellon, Jr., 1989). Additionally, according to Becketti and Sellon, Jr. (1989), the concern of the excessive volatility of financial assets' prices is that it may impair the smooth functioning of financial system and adversely affect economic performance.

Long and short period averages usually generate the sense of buying and selling stocks which is an important technique in the technical analysis commonly known as the moving averages. This strategy involves buying of stocks which happens during the short period averages that rises over long period averages. On the other hand, the selling of the stock's activity occurs when the short period averages slumps beneath the long period averages. In order for the investors to earn abnormal profits, Hons and Tonks (2003), asserts that it is the positivity in autocorrelation in returns which takes place for a short period of time and is also occasioned by the investors buying past winners and selling past losers.

Many researches have been administered to determine the positive association betwixt technical anomalies and financial distress. Chinga *et al*. (2014), found out that technical anomalies have positive effect in the financial distress of firms. Thus, technical anomalies impact directly to the status of the financial distress of firms. In the opinion of Hons and Tonks (2003), trading strategies such as momentum effect was present in the U.S stock market between 1977 and 1996. In their research, investors can gain by applying the momentum strategies. By disposing off the

previous losers and purchasing the previous winners, the investors can get abnormal profits which is linked to the positive autocorrelation, (Hons & Tonks, 2003).

In the study by Chinga *et al.* (2014) which was done in Malaysia mainly dealt in technical anomalies. These researches did their work at the University of Malaysia Sabah, Malaysia. The study was done to understand a theoretical review of the technical anomalies. The reason why the study was carried out was to determine whether the technical anomalies affect or influences the EMH which was carried out by the validation of the weak-form EMH which depends on RWH and the absence of technical anomalies. The investors can confidently exploit the available window of opportunities of earning abnormal returns from the price prediction once the technical anomalies are discovered which are primarily premised on the interpretation of technical analysis.

The findings of the study done by Chinga *et al.* (2014), an argument by certain economists that anomalies last not for a long period, thus they cannot be relied upon to exploit the abnormal returns in the long-run, which concurs with the findings of Fama, French, Timmermann, and Granger, (Fama & French, 1988; Timmermann & Granger, 2004). This way of reasoning supports the belief that EMH is valid and this implies that stock series are more often than not characterized by a random walk process. This therefore means that when validating the weak-form EMH, the presence of technical anomalies cannot be avoided being considered.

The weak-form EMH is rejected at the point when a stock sequence manifests a framework that can be predicted and thus be reliably exploited for earning abnormal returns. In this sense, it will be very vital to assess very keenly the realistic reliability of the predictability prowess of technical analysis. Once an anomaly becomes a public knowledge, then it may disappear. This will enable the arbitrageurs in bringing stocks back to their intrinsic values. When such happens, then the value of technical analysis is neglected, (Chinga *et al.*, 2014).

Han, Yang and Zhou (2013) study put more attention on portfolios which are categorized by price volatility. This is so as stock price volatility is just an uncomplicated intermediary of uncertainty in information. When there is a lot of

uncertainties about the future information on a stock, then definitely the price of such a stock will equally be volatile. The data in this research collected were founded on the NYSE/AMEX stocks that were classified into ten deciles. The sorting was done through their yearly standard deviations that were approximated by the usage of the daily returns within the previous year.

The sample of volatility period was taken from July 1, 1963 to December 31, 2009 which coincided with the Fama-French 3-factors. The research design applied are the CAPM and the Fama and French 3-factor models, (Fama & French, 1993). The findings of this research were that a standard moving average (MA) of technical analysis, if applied to the portfolios that were classified by the stock price volatility, they can end up by generating investment timing portfolios which can immensely outperform the buy-and-hold strategy. Additionally, the distinctions gotten from the two returns have got no positive or has minimal risk exposures if any to the market factor, the SMB and HML factors, (Fama & French, 1993).

According to Han *et al*. (2013), technical analysis utilizes the previous prices and may be other previous data to forecast future changes in the market which may be classified as social issues which consists of momentum, high-frequency and algorithm trading. Also, according to Han *et al*. (2013), there subsists a positive relationship betwixt technical analysis and financial distress in the stock market. Bodie *et al*. (2014), state that when the market is efficiently weak, then it shows that the prices have already been in the previous information and technical analysis is useless. With this, an investor finds it impossible to circumvent the market principles by pocketing profits which are abnormal on the foundation of technical analysis and previous statistics. Han *et al*. (2013), focused on portfolios classified by volatility as stock volatility is an agent of information uncertainty. Due to the uncertainty of the future information on the stock, then the more uncertain price of stock will be.

Malkiel (2003) contributed immensely on the narration of how psychological feedback mechanisms and underreaction of investors to new information can cause positive serial correlations. In the foregoing, economists and psychologists in the field of behavioural finance state there exist short-term and long-term momentums.

These mechanisms give rise to the bandwagon effect which is believed to arise from the stock market trading. Malkiel (2003), believed that Graham and Dodd were absolutely right in their suggestion that while stock market in the short-run may be a voting mechanism, in the long-run it will be a weighing mechanism.

Firstly, short-term momentum is seen as being in consistent with the psychological feedback mechanisms. It so happens that when investors see that there is a rise stock prices, this triggers a sense in the investors whereby they are drawn into the stock market. The reverse is true as when the prices of stocks are seen to be plummeting, investors tend to quickly and hurriedly get out of the stock market. This movement of in and out of the stock market because of the stock price movement is just psychological which produces a reaction. Thus, such psychological feedback mechanisms explain the reasoning behind observable successive moves of stock price in the same direction, (Malkiel, 2003).

Secondly, short-term momentum comes into being as a result of investors' underreaction to new information, (Malkiel, 2003). There is a possibility that share prices do not fully adjust to new information immediately. This is against the general belief that share prices more often than not adjust quickly to the inflow of new information. If the full impact of an important news announcement is only grasped over a period of time, stock prices may exhibit positive serial correlation over the short-horizon, (Chinga et al., 2014).

Due to the nature of the Kenyan stock market, this study singles out trading range as the main technique in the short-term volatility clustering. This methodology is premised on the levels of resistance and support. When the prices of stocks reach a resistance level, then this signals a buying activity which is the local maximum. At the time when an investor wants to sell at the highest price, the peak, this selling pressure makes the resistance level to breakout than previous level and this break causes the buy signal. In the same breath, a selling signal is generated when prices hit the support level which is lowest price level. It is a rather difficult strategy to implement, but the technical analysts give out a recommendation that is advisable to

buy the stocks when the prices rise above last peak and sell the stocks when the prices fall beneath last trough, (Hons & Tonks, 2003).

The technical analysis boasts of giving out accurate results to the stock market. However, the opponents of the technical analysis results' accuracy which is obtained by the usage of technical analysis techniques bring in the aspect of two theories. The first theory is as an account of the random walk theory and the second one is the theory of confirmed projection. In the RWH there is an assertion that the future prices of listed firms in the stock markets cannot be precisely determined or predicted as they possess a random evolution to their intrinsic value, (Fama, 1995).

The confirmed projection theory features the analysis of graphs which are more than subjective. By using the past prices and statistics, technical analysts always try to predict the future prices of the listed financial instruments in the stock markets. Trading approaches are premised on the classical graphical analysis that has turned out to be the simplest approach. It comprises the interpretation of straight movement of building compositions or their ability to reverse the lines of support, resistance, moving averages or gaps, (Brock, Lakonishok & LeBaron, 1992).

Technical analysis has demonstrated that it has as many advantages as disadvantages. The first documented advantages are that technical analysis may be applied to a vast spectrum of financial instruments listed on all stock markets, thus its flexibility. This makes technical analysis to be adaptable to distinct products being traded or to distinct kinds of stock markets, as the principle do not change. Secondly, the representations in graphs of the transformation of stock prices may be achieved for different periods. This can be in terms of hours to past data for decades. This is due to advancement in technology used and more specifically the computers used at that particular point in time. Thirdly, with time, the financial instruments which were used in the technical analysis, were noticed to have gone through an advancement. Lastly, in recent years, due to technological advancement, there is the usage of real time data as the data historically used by the technical analysts are historical data, (Reuters, 2001).

The first disadvantage of technical analysis is that it can be subjective as human beings are involved in the analysis as this brings in the issue of the same data being interpreted differently by various analysts. Secondly, as initially indicated, the technical analysis is premised on the estimation of events and the passage of time which is a subject matter of the probability theory. The probability theory is based on the future events which a human being cannot predict with certainty. Thus, with this, technical analysis takes care of a long outstanding matter for human beings which is knowing what the future holds. Thirdly, the technical analysis main concern is in determination of the likelihood of stock market quotations and less bothered about the certainty that they will be accurate. Lastly, at times the information being utilized by the technical analysts can be at times erroneous, or inaccurate, which might also interfere with the results as predicted, (Reuters, 2001).

This variable, technical anomaly is important in our stock market, NSE, in the sense that if it occurs then it will definitely stir a crisis, financial distress. This variable comes face to face with the reality that past information can have great influence on the decision investors make, (Karz, 2010). Reliance on the past information, might not be accurate as there might be an anomaly and the predictions of the future stock prices are totally wrong. This study focused on the stock price volatility clustering anomaly by the use of the trading range break technique which is operationalized either through low or high prices, (Brock *et al*., 1992). In this variable, technical anomaly, the hypothesized hypothesis is that technical anomalies have no statistical significant association with the financial distress in listed firms in NSE, Kenya.

2.4.3 Seasonal Anomalies

Watchel became the first researcher to report on seasonal anomalies in stock earnings, (Watchel, 1942). When price of certain stock does not follow what is expected in the period being taken into consideration, gives a totally different price against the norm, then this is seasonal anomaly. This influences performance of firms and hence financial distress. Seasonal anomalies, commonly known as calendar anomalies came into existence because of departure from the normal conducts of stock prices in consideration to time periods.

Stock returns display some regular forms during particular moments of the day, week or month, (Aly & Perry, 2004). At times some days in a week give lower earnings in comparison to other days and this is regarded as days of the week effect, (Hossain, 2004). Monthly patterns is also one of the most common patterns and this is when particular months give more returns as compared to the rest of the months and this is referred to as the month of the year effect. The presence of seasonality in stock markets violates a very vital theory in the realm of finance that is EMH, which forms an integral paradigm in the field. The EMH correlates with how expeditiously and precisely the market responds to new information, (Schwert, 2002).

Calendar anomaly which is also considered as time anomaly goes against the weak form of efficiency. This is so as the weak form efficiency hypothesizes that the stock markets are efficient. Then, this acknowledges that the past prices cannot influence and predict the future prices of the stocks. The existence of seasonality and monthly effects does not support the market efficiency hypothesis which make the investors earn an abnormal return, (Boudreaux, 1995).

The assumption that a certain security will perform well during a particular season brings in financial distress as the expectation is not met, (Karadžić & Vulić, 2011). Seasonal anomalies rebut the weak form efficiency as the later posits that markets are efficient in previous prices and it's impossible to foretell future prices grounded on these foundations. However, it is interesting to know that the seasonality effects existence rebuts market efficiency theory where investors earn abnormal returns, (Boudreaux, 1995). The main causes of seasonal anomalies are differences on how taxes are handled, adjustments of cash flow, unspontaneous adjustment to new information, different tax treatments and behavioral limitations of investors.

Seasonal anomalies, commonly known as calendar anomalies came into existence simply because there was departure from how stocks behaved normally with respect to time periods. It can also be said to be the market anomalies that have a relationship with specific time period. This can be seen in the changes of stock prices from day to day, month to month and year to year. Such price changes are categorized into turn-

of-year, turn-of week effect, weekend effect, Monday effect and January effect, (Karz, 2010).

When the price of a certain stock does not follow what is expected in the period being taken into consideration, gives a totally different price against the norm, then this is seasonal anomaly. This fits well in the weak form of EMH and more so to the RWH, (Fama, 1995). Also, another relevant theory in seasonal anomalies is the tax preference theory. This uncertain price movement of stock is expected to affect the performance of the firms and hence such firms will eventually experience financial difficulties mostly referred to as financial distress in the stock market.

Brown and Warner (1985) recorded seasonality in the Australian stock market. The stock returns in the months of January and April were not statistically significant in the stock market of New Zealand, (Raj & Thurston, 1994). According to Mills and Coutts (1995), calendar effect existed in FTSE 100 between 1986 and 1992. Choudhry (2002), recorded the January effect on the United Kingdom and United States stock market returns but none were recorded in German stock market. According to Gultekin and Gultekin (1983), seasonality in the stock market was present in 16 industrial nations. This showed that there was seasonality in the stock market because of January returns as they were extremely large in 15 of 16 nations. According to Fountas and Segredakis (2002), seasonal patterns in earnings were noted in 18 stock markets. Logically, January effect in most of the developed nations like U.S and U.K are assigned to the tax-loss-selling theory, settlement processes and insider trading information.

Surprisingly, Reinganum (1983) was with a different opinion that the presence of seasonality in the earnings of the stock may not be fully described by tax-loss-selling proposition only. Window dressing is another effect that is associated with organizational trading. In order not to incur losses in the firm's portfolio selection associated by the end of the year, firms need to dispose-off their losers in December. After which these stocks are bought after reporting date in January as this will make them hold onto their intended portfolio form once more.

Half-month effect has also been recorded by various researches in literature. To this effect, during the first half of month, daily stock returns have been documented to be higher than last half of the month. This has been manifested in the research of Ariel (1987) who carried out a research using United States stock market indices between 1963 and 1981. According to Agrawal and Tandon (1994), such effects are reflected in various global markets. During the first and the last four days of the month, stock market earnings were continually higher, (Ziemba, 1991).

Turn-of-the-year effect is another form of seasonal anomaly. According to Agrawal and Tandon (1994), this anomaly exhibits how the increase in the stock prices and volume of trading in the stock market happens in the last week of December and the first half month of January. In the study conducted by Keim (1983) and Reinganum (1983) exposed that considerable amount of the abnormal profits to firms that are small are quantified relative to the CAPM more often than not this comes into play during the first two weeks of the month of January. This anomaly is favoured to be referred to as the "turn-of-the-year effect". The January effect is the situation in which the stocks of small firms have the ability to produce more returns than the stocks of big firms in the market and this takes place in the first two to three weeks of January. Due to high liquidity in the month of January, January effect bounces in action, (Ligon, 1997).

Turn-of-the-year effect which is frequently considered as the January effect as initially indicated, is a type of the seasonal anomalies specified in literature considerably. It occurs when an investor buys more stocks before the year end at a lower price. After this, the investor sells the same in month of January with a sole aim of making profit from the price differences. According to Karadžić and Vulić (2011), the propensity of increase of stock prices in the last two and the first three days of every month is called turn-of-the-month effect. This means that **t**he stocks prices have a possibility of increasing in the last trading day and the first three days of the following month, (Agrawal & Tandon, 1994). When investors buy stocks on days when the prices are abnormally low and sells them on days when the prices are abnormally high, this is referred to as the day-of-the-week effect, (Basher & Sadorsky, 2006).

When the stock market performs better on any day that precedes a holiday, then this is known as the holiday effect. This shows that there are better returns in trading days close to holidays, mostly in the pre-holiday periods. Higher returns were recorded during the preholiday trading days in every year in the U.S stock market, (Lakonishok & Smidt, 1988; Ariel, 1990; Cadsby & Ratner 1992). During the month of Ramadhan, Husain (1998) recorded a decline in stock returns, though the mean return did not indicate a significant change.

The Monday effect came into the limelight in the early of 1920s. The data was based on a three-year analysis of the US stock market which picked out that on Monday is the worse day to buy stocks, (Kelly, 1930). In a different study which was performed by Hirsch in 1968, he reported that Monday did not give any positive returns, (Hirsch, 1968). The mean returns of the S&P 500 for the period between 1953 and 1970 for Friday proved to be higher than mean return on Monday, (Cross, 1973). Another study by Gibbons and Hess in 1981 on the DOW effect in US stock returns of S&P 500 and CRSP indices while using a sample of data from 1962 to 1978, found out that there were negative returns on Monday and coincidentally higher returns on Friday, (Gibbons & Hess, 1981). Of great interest was that Smirlock and Laura (1986) recorded same findings.

Jaffe and Westerfield (1989), discovered that in the stock markets, the minimum returns happened on Monday in U.K and Canada markets. However, they discovered that the same occurred on Tuesday in Japanese and Australian markets. Thailand, Malaysia, Philippines, South Korea and Taiwan, which form part of Southeast Asian stock markets, it was discovered that neither Philippines nor South Korea had significant calendar effects, (Brooks & Persand, 2001). However, they recorded that on Monday there was a significant positive return while on Tuesday there was significant negative return in Thailand and Malaysia, (Brooks & Persand, 2001).

Ajayi, Mehdian and Perry (2004), researched on 11 Eastern Europe major stock market indices between 1990 and 2002. They reported that there were negative returns on Monday in six stock markets and while the remaining nations had positive returns. After studying the European markets, the researchers went ahead to study

seasonal effects in an Asian nation, India. While studying the presence of seasonal effect in BSE Sensex, India, the researchers discovered that indeed there was the presence of January effect in the stock market, (Pandey, 2017).

According to Tonchev and Kim (2004), Worthington (2010), Agrawal and Tandon (1994), beginning-of-the-month effect is when the returns of stocks of a firm are higher in the first few trading days of the month. The beginning-of-the-month effect is considered to be another form of seasonal effects. It is also said to be experienced when the stock earnings in some months are significantly higher or lower than in others, (Dzhabarov & Ziemba, 2010; Gultekin & Gultekin, 1983; Ariel, 1987). A current research by Darrat, Li, Liu and Su (2012), recorded that there was no evidence in 34 international stock markets for the January effect.

Among the most celebrated seasonal anomalies is the day-of-the-week, especially the Monday effect. Monday effects display significantly non-positive average returns in the US stock market, (Keim & Stambaugh, 1984; Cho, Linton & Whang, 2007). Jaffe and Westerfield (1985) reported the same anomalies as indicated above in the international stock markets. Weekend effect comes into play when the prices of stocks have a high likelihood of falling on a Monday. This means therefore means that the closing price of stocks on Monday is usually less than the closing stock price of previous Friday, (Smirlock & Laura, 1986).

Market efficiency is a very vital endorsement in a more complex stock market. It is for this reason that the stock markets in developed countries have been in a better position in winning over greater consideration from global investors. This throws the spanner into the works for the African stock market to receive such attraction. Thus, for the African stock markets to seriously win over serious global investment funds, there must be likewise a serious commitment by the stakeholders to prove beyond any reasonable doubt that these markets are becoming more and more efficient. There is an assumption that the stock markets are normally efficient in relation to the spontaneous inclusivity of all familiar and new arriving information into the prices of stocks, (FFJR, 1969). In most circumstances, stock returns show a methodical framework at particular periods of the day, week or month, (Ajayi *et al.*, 2004).

In emerging African stock markets, Alagidede (2008a) researched on day-of-the-week effect in South Africa, recorded higher returns on Monday in years between 2001 and 2006. Alagidede (2008b) also explored the South Africa stock market and recorded the presence of the month-of-the-year effect and noticed higher earnings in February in the years between 1997 and 2006. Lucey (2001) reported lower returns on Friday in South Africa stock markets. Coutts and Sheikh (2002) through their study did not report any presence of weekend and January effects in South Africa.

Ayadi *et al*. (1998) while researching on turn-of-the-year effect in the Ghanaian, Nigerian and Zimbabwean stock markets, did not trace seasonality in the Nigerian and Zimbabwean stock markets while recorded seasonality for Ghanaian stock market. January effect was present for Ghanaian while there was no evidence for Nigerian and Zimbabwean stock markets, (Ayadi *et al*., 1998). Bhana (1985), Mondays recorded significant negative earnings while significant positive earnings on Wednesdays for the shares in the JSE between 1978 and 1983. Roux and Smit (2001), investigated and confirmed that between 1978 and 1998 most of the seasonal anomalies are not present anymore in JSE.

Mlambo and Biekpe (2006) investigated seasonality in nine African stock markets. They confirmed significant Monday effects in Botswana and Morocco. They also noticed significant TOM effects on the Egyptian and Mauritian stock markets. However, the TOM effects could not be traced in the Egyptian and Mauritian markets after removal the TOY effects. This indicates that TOM effects could be TOY effects in these markets. The TOY effects were evidenced in Egyptian and Zimbabwean but absent in the Mauritian market.

Chukwuogor-Ndu (2007), while examining five stock markets in Africa for the DOW effect presence recorded that Ghanaian and Nigerian stock markets did not experience significant negative returns. There was presence of negative returns in Botswana and Egypt on Tuesday while in South Africa, the JSE on Wednesday had a negative return. Highest return was seen on Wednesday in Botswana, Ghana and Nigeria but on Monday in South Africa. DOW effects were not evidenced in Botswana, Egypt, Ghana, Nigeria and South Africa between 1997 and 2004,

(Chukwuogor-Ndu, 2007). Subadar (2008) also noticed the DOW effects on the Mauritius Stock Exchange and the study further revealed that returns on Friday were highest.

In Kenya through NSE, Kuria and Riro (2013), evidenced that average earnings were significantly negative on Sunday and Monday, while positive for all other trading days. Thursdays had significant positive return that shows significant presence DOW effect in NSE. This may mean that a probable justification for such a result might be because of the news which is economically positive which trickles at the end of the week. This makes the investors to have confidence and invest in the stocks that end up making Thursdays to have positive returns. Coincidentally, negative economic news is usually presented at the start of the week which makes investors to dispose-off their stocks which brings in negative returns on Mondays, (Kuria & Riro, 2013).

What is interesting about seasonal anomaly in NSE and which makes it a very significant variable in this study is relying on what the prices of stock at the day, week, month or year, (Karz, 2010). This might not always be true as the Monday, weekend, month end and holiday effects might make the prices of stocks to be against the expectation. If this happens, then we get ourselves in a financial crisis, financial distress.

Due to the existence of seasonal anomalies, there is a suggestion that market inefficiency opens up the likelihood of formulation of profitable trading regulations which are primarily premised on seasonal patterns. A good illustration is the day traders can formulate portfolios at the end of first trading day. After this, then the traders can sell the portfolios at the end of the third trading day in each month with the sole objective of earning abnormal profits. In the same breath, traders may opt to christen Mondays and Tuesdays as specifically the buying days of the week. According to the findings of Coutts and Sheikh (2002) these results were similar.

This is so since the results show that the stock prices in the two mentioned days are the minimum in the stock market in the week. There were insignificant daily returns in any month of the year taking into consideration the month-of-the-year effect. Having the month of July as the benchmark month, it was discovered that the other

month's daily returns statistically were not different from the returns of the month of July. The aforementioned findings are similar to the recorded study's evidence on seasonality, (Coutts & Sheikh, 2002).

The scope of seasonal anomaly is a well-recognized section in the field of weak-form EMH researches. Tax preference theory also fits in well in seasonal anomalies. Seasonal anomalies may be measured daily, monthly or annually. This can be seen in, some seasonal returns that are consistently recurring patterns of stock series which appear per week, per month or annually, (Karz, 2010). Thus, seasonal anomalies can come up from seasonal returns. In this study due to the nature of the stock market, seasonal anomalies will be operationalized by the frequencies of occurrences on a monthly basis, (Karz, 2010). In this variable, the hypothesized hypothesis is that seasonal anomalies have no significant association with the financial distress in listed firms in NSE, Kenya.

2.4.4 Size Effect Anomalies

Is the negative association betwixt stock earnings and market price of the firm's equity. Banz was considered to be the first person to document the size effect phenomenon for United States stocks besides Reinganum. He also found out that stocks of small capitalized firms possess higher earnings than stocks of larger ones, (Banz, 1981). Small cap firms have more volatile business domain and problems correction, particularly correction of funding deficiency which leads to a large price appreciation. Size effect anomaly causes stir in the stock market as investors have their investments in the big firms in which they do not earn much which comes in with financial distress, (Banz, 1981).

Size effect came to be known through the works of Reinganum (1981) and Fama and French (1992 & 1993), who found out that small firms' stocks perform well compared to those ones of lager firms. In other words, stocks of small firms in terms of capitalization outperform the stocks of bigger if not large ones. This is against the norm where we expect the stocks of bigger or larger firms to outperform the stocks of smaller firms. The main measure in this type of anomaly is that a firm is either small or big in terms of capitalization.

According to Banz (1981), Reinganum (1981), Dimson and Marsh (1999), Fama and French (1993) and Daniel and Titman (1997), it is always expected that big firms' stocks will outperform the stocks of small capitalized firms. When the stocks of small capitalized firms outperform the big capitalized ones then this is an anomaly. When such an anomaly occurs, then the firms' performance is affected which in turn brings in financial distress to such firms. Size is an important identifier to a firm's peer group, (Muchina, 2015). Campbell, Hilscher and Szilagyi (2011), found out that underperformance stocks of firms in financial distress status is still existing in large firms.

To operationalize the size effect in a research, then the size of the firm is evaluated by total sales, total assets and market capitalization, (Chongyu, Zhichuan & Chen, 2018). However, profitability is also a good indicator of the size of a firm. In measuring the firm's total resources, total assets are handy while total sales measure the product market competition, (Chongyu *et al.,* 2018). Total assets are the assets which are owned by a firm that has an economic value where benefits can be gotten in the future. They can be further categorized into liquid and illiquid assets depending on how fast they can be converted into cash. In the firm's financial position, they can be either short-term or long-term depending on the liquidation period as less than one year is considered to be short-term and vice versa.

Market capitalization also known as market cap is the firm's value based on current share prices in the stock market, (Chongyu *et al.,* 2018). In other words, it is the aggregate valuation of the company based on its current share price and the total number of outstanding stocks. It is calculated by multiplying the current market price of the firm's share with the total outstanding shares of the firm. It is also the amount of money it would cost an investor to purchase every single share of stock a firm had issued at the then current price. It helps the investor in the determination of the returns and the risk in a share. Also, it aids the investor in choosing the share that can meet their risk and diversification criterion. The bigger the market capitalization the bigger the firm and vice-versa.

Banz (1981), while studying a 50-year performance of the NYSE revealed that there subsits a negative relationship between firm size and stock earnings. It is worth noting that current studies revealed divergent results. There was no presence of size effect according to the study of Fama and French (2011) between 1990 and 2010. This position concurred with the results of Dimson and Marsh (1999), pointed out that the existence of small capitalized firms also referred to as small cap firms do not last for long.

Reinganum (1981), revealed that the largest size decile is outperformed by the smallest by 1.77%. The size effect also can emanate from insufficient information on small firms, (Merton, 1987). He predicted that stocks with smaller investor base will give higher returns than the ones with bigger investor bases. Banz (1981) and Reinganum (1981), revealed that small-capitalization firms on the NYSE earned higher average returns. This outcome differs with the prediction of Sharpe and Lintner in CAPM from 1936-1975, (Sharpe, 1964; Lintner, 1965).

Fama and French (1992 & 1993) in their famous financial studies confirmed that small firms with small capital base generate higher returns than firms with large capital base. This is the paradox of the size effect. To put this into a proper perspective, a sample of NYSE, AMEX and NASDAQ stocks over the period between the years 1963 and 1990, were considered and it was evidenced that the smallest size decile outperforms the largest size decile by 0.63% per month, (Fama & French, 1992 & 1993). This is also in agreement with Fama and French (2001), found out that firms with higher growth and investments opportunities seemed to possess lower returns. This is absolutely an anomaly as one expects that firms which are of higher growth and investments opportunities would definitely have higher returns and not vice-versa.

Smaller firms in size experienced higher returns compared to larger firms in January, (Keim, 1983). Hawawini and Keim (2000), in their study also acknowledges the size effect for major stock markets all over the globe. The risk premia are reversed in case of long periods. This was specifically witnessed for the periods in the 1950s and the 1980s whereby large capitalized firms outperformed small capitalized firms. This

was in pure contrast to other periods like 1930s, 1940s, 1970s and post 2000 where small cap firms outperformed large cap firms. It is important to query whether the 79-year for the in the United States stock market which was very long than in any other developed stock markets could have captured the "long-run" immensity of such volatile effects.

Small firms are the ‘‘fallen angels’’ and have lost their position in the market value due to poor performance, (Chan & Chen, 1991). Various researches did not buy the idea that the size effect can be justified by financial distress. The distress factor determines the likelihood of bankruptcy, (Dichev, 1998). Campbell *et al*. (2008), concludes that stocks which seem to possess a high risk of failure usually deliver an anomalously low average returns, thereby signifying a positive relationship between market anomalies and financial distress. In the US, firms have a high likelihood of bankruptcy because they possess higher loading on the SMB factor, (Campbell *et al*., 2008).

Elton (1999), evidenced that due to prolonged periods, the actual returns can vary from expected returns. This brings in the ‘‘disappearance’’ of the size effect which could be a non-permanent event occasioned by transient information shocks. This made the reaped returns on small cap firms and large cap firms in the 1980s and 1990s vary significantly from the expected returns. Moore and College (2000), had a different view that the size effect may still be present with various calculations of firm size.

There is evidently growth of the percentage share of the US stock market which are held by institutional investors. This has increased the demand for large and liquid stocks which consequently has reduced the corresponding performance of small stocks over the years between 1980 and 1996, (Gompers & Metrick, 2001). In the Forbes magazine of 1997, there is an article by Mark Hulbert which gives an account which contradicts the small cap myth which paints a picture that small cap firms usually give a higher return than large cap firms. Hulbert states that there is absolutely no benefit and surety for the investors who opt to invest in the stocks of small capitalization firms, (Forbes, 2012).

Hulbert further clarifies that the research which was ventured by Banz in 1981 never took into consideration the transaction costs. These costs are very significant to the small cap firms and not so to the large cap firms. Thus, to the large cap firms, the financial effect might not be felt as to the small cap firms. This is so as the small cap firms might not have the financial shock absorbers as the large cap firms, (Giorgia, 2017). He also believed that the size effect as suggested by Banz cannot be extended to all world stock markets. This was so as the research was solely carried out by the usage of the stock market data from the US. In this stock market, the small capitalization firms have absolutely a much higher capitalization than firms which have large capitalization whose stocks are listed on other stock exchanges of the world and more specifically to the developing stock markets, (Forbes, 2012).

Moore and College (2000), focused on association betwixt a firm's size and the earnings on its stock and their findings show that small cap firms are more bothered with establishing equity and gaining market share than big cap firms are. This makes their earnings to be distributed depending on their priorities. The probability of a small cap firm reinvesting its earning is higher than the big cap firms. This makes their retained earnings to grow faster rate and increases the value of their common stocks. The study of Duy and Phuoc (2016), examined the presence of size effect in Vietnamese stock market revealed existence of significantly negative association between firm size and stock earnings. This meant that smaller firms can earn higher earnings in both dividends and capital gain in favour of the shareholders.

In overall, the size effect has not been fully concluded. Loughran *et al*. (2000), found out that size effect is no longer prevalent in the US stocks which goes against the earlier findings by various researchers. Also, Gompers and Metrick (2001), suggested that large cap firms have relatively higher returns than the small ones. This was evidenced in the US stock market which is considered to be among the developed stock markets. These findings differed significantly with the findings of Banz (1981) and Keim (1983) whose findings stated that small cap firms' returns are superior to those ones of the large cap firms. This difference in the outcome is due to the difference between developed and developing stock markets which are related to the capitalization of the stock market.

Indeed, past proof for U.S indicates that the distress effect is seemingly strong in smaller cap firms. Consistently with the foregoing, it is found that the distress puzzle is more conspicuous in small-cap firms but non-existent of large-cap firms in developed stock markets. According to the findings of Campbell *et al*. (2011), there exists a positive association with the size of the firm and financial distress. This is due to the fact that the study concluded that underperformance stocks of firms in financial distress status is still existing in large firms.

What is worth taking note of and which is equally important about the size effect anomaly in NSE is that investors should not rely so much on the big capitalized firms at the expense of the small ones. According to Fama and French (1992 & 1993), the small firms have been seen to be giving back better returns than the big firms. It will be very interesting and encouraging at the same time to see investors putting their wealth in small firms than big ones. A good example is Centum Investment Company which a few years back was little known, but today, it is a firm worth investing in.

The capitalization of the market involves a firm's growth opportunities and the equity market status. It also acts as a barometer for an economy, an indicator of the stock market development, and an indicator of the performance of NSE, (CMA, 2018). In this study due to the status of the market development of NSE, the measure which is considered while dealing in the size of a firm anomaly is market capitalization, (Chongyu *et al.,* 2018). In this variable, size effect anomaly, the hypothesized hypothesis is that size effect anomalies have no statistical significant relationship with the financial distress in listed firms in NSE, Kenya.

The term can also refer to bankruptcy, insolvency, failure or default. As per the findings of Adeyemi (2011), financial distress is when a firm is experiencing difficulties in its operations, management and finances. Wruck (1990), financial distress in a firm can be detected by the dividends of the firm. Hussain, Toms and Diacon (2002), states that financial distress is a state when a firm's liabilities are greater than assets. Another good indicator of financial distress is the slip of the levels of dividends issued out or when the dividends are not issued at all. When a

firm is in the state financial distress, this situation will drastically reduce its market value in the stock market, (Baimwera & Muriuki, 2014).

Stickney (1996), stated that financial wellbeing of a firm is looked in the perspective of a continuum which consists of financially healthy, financially troubled, bankrupt and liquidated. Campbell *et al*. (2008), discovered that loadings of distressed firms are high on the SMB and HML elements, however they produce not higher but lower returns. This is about the argument against a priced distressed factor. Chan and Chen (1991), describe firms in financial distress status as firms that are inefficient producers, have lost the value of the market and possibly are experiencing high fiscal leverage and cash flow difficulties. Campbell *et al*. (2011), state that features of distressed firms are; made losses recently, high leverage, low level of cash holdings, volatile and low stock returns. It's puzzling to note that investors have inclination towards returns which are positive and holds onto stocks which are distressed in spite of low returns, (Campbell *et al*., 2008).

A firm which is experiencing financial distress can incur costs which are associated with the status, like a more costly financing, opportunity costs of projects and employees who are less productive employees, (Memba & Abuga, 2013). Weitzel and Jonsson (1989), resignations of top management and employees' retrenchment are seen as good indicators of financial distress. Employees of a distressed firm in most circumstances experience a low level of morale and their stress level is equally high which as there is a high likelihood of the firm going under which will make them loose their livelihood.

Large corporations facing insolvency can liquidate assets to settle their debts, but this is a challenge to small enterprises. This is due to the fact that they own small value assets to sell and are prone to the collaterized creditors who engage debt collectors and auctioneers to the impairment of the small cap firms, (Gopinath, 1995). Zwaig and Pickett (2012), note that majority of firms solely depend on their financial performances which is the main indicator of their financial health, it would be vital to take into consideration both the managerial and operational signals. Low profits reveal that a firm is not encountering a healthy financial status. Nyamboga,

Omwario, Muriuki and Gongera (2014), stated that both the stakeholders and creditors are concerned with the profitability of firms.

Decline in sales shows that the market is not positively receiving the products and services of the firm premised on the business model. A firm should consider a sales decline more consequential than the reduction in earnings. This concurs with Natalia (2007), who noted that distressed firms suffer low sales which leads to loss of market share. In case there is no decline in sales, then the management can recover the earning strains which will eventually cause rise in stock price and if there is reduction in sales then the stock prices will definitely fall, (Madiha, Shanza, Mariam & Samia, 2011).

Financial distress can also be witnessed in a company when debtors delay or not honouring their debts, which will cause the cash flow to be acutely stretched. This agrees with Memba and Abuga (2013) when they observed that in the course of the contract term, not all debtors will repay their debt on time. This brings about an inequality betwixt cash inflows and outflows. This imbalance means that there is non-success in a firm in terms of the function of cash management. Aziz and Dar (2006), found out that such tenacity of the disparity betwixt cash inflows and outflows may cause financial distress and eventually the firm's collapse. The risk is more pronounced particularly when a firm relies on one or two major customers.

Bankruptcy cost is the most common example of the cost of financial distress where a company is unable to meet the costs of direct expenses. Bankruptcy is defined as a position when the net worth of a firm goes to zero, (Memba & Abuga, 2013). Bankruptcy is considered as a legal status in which a firm is not in a position of paying the creditors. It is noted that the price of financial distress can be paid even if bankruptcy is avoided and this is known as indirect costs. According to Theodossiou, Kahya, Saidi and Philippatos (1996), firms in financial distress do not file for bankruptcy proceeding while those not in financial distress file for bankruptcy proceedings with intention of escaping from taxes and legal suits. This necessitated Kenya in adoption of the Insolvency Act, 2015 because entrepreneurs were taking advantage of the Bankruptcy Act.

Memba and Abuga (2013); Jahur and Quadir (2012), stated that origin of financial distress in firms were; lack of technical skills-management team is unbalanced, hostile economy which results into demand reduction, interest rates increase and worsening foreign exchange, lack of innovation, natural calamities, bankruptcy of a major customer, low price competition, employees' high turnover and government policy changes. According to Harlan and Marjorie (2002), financial distress arises in firms mainly due to the agents of the firms who are the managers, mostly consider short term profit goals at the expense of the long-term ones. Financial distress may out-turn in being without main customers, suppliers and more often than not the key employees, (Memba & Abuga, 2013). The management should spend more time in strategizing on the core business of the firm instead of wasting time in managing financial distress.

Kihooto, Omagwa, Wachira and Emojong (2016), while studying financial distress, they linked it to a firm's failure. Failure refers to situation where a company's required rate of return is not met. This means the firm has failed to achieve the set targets at the beginning of the financial year. They also equated financial distress to insolvency which basically means that a firm is not able to meet the liquidity levels required. This may lead to the firm not meeting obligations and contracts which are associated by law suits against the firm. Financial distress prediction has become an integral part of corporate governance as it helps all the stakeholders analyse the company on the direction it is taking. Accordingly, Kenya has experienced its fair share of firms which are in financial distress and almost on the verge of collapsing. This therefore begs the question as to whether these crises could have been predicted before the actual events.

In this study, this variable, financial distress is considered to be the dependent variable. It has the capacity of measuring the financial health of a firm. The indicators which are applicable in this variable of financial distress are; liquidity, leverage, profitability, market value and efficiency. This variable is operationalized through the Altman's Z-Score due to its level of accuracy in the predictability of the financial health of a firm, (Altman, 2000). In this variable, there are different zones which a firm can find itself in. A firm can be in the safe, gray or distress zones

depending on the values of the Z-Scores. This variable is use in the general objective of the study, to establish the relationship between market anomalies and financial distress of listed firms in NSE, Kenya.

2.5 Critique of the Literature

The overall purpose of this study is to establish the relationship between market anomalies and financial distress of listed firms in NSE, Kenya. From the literatures reviewed, it is apparent that most researches used both the primary and secondary data as well as using qualitative and quantitative data collection techniques. While studying the stock market, it is paramount to consider both the secondary and quantitative data as there is the usage of the financial statements. Relying on the primary and qualitative data may be a dangerous route to take in the stock market as such findings may be subject to information distortion and biasness, (Moore & College, 2000).

In the developed economies, the populations considered are quite big, Moore and College (2000), a population of 1500 firms were taken into consideration. Such a population is very big and the bigger the population under study, the less accurate the findings. Some studies even failed to disclose the population, sampling frame and sampling techniques used and worse non-disclosure of the research design applied, (Chinga *et al*., 2014; Duy & Phuoc, 2016; Elana-Dana & Iona-Christina, 2013; Kuria & Riro, 2013; Moore & College, 2000).

The period in which a study is being undertaken should neither be too long nor too short. This is more pronounced in the study of Rozeff and Kinney (1976), between 1904 and 1974. This is a whole whooping 71 years! Hawawini and Keim (2000), considered 79-year sample in the US stock market. During such long periods, so many things might have changed like technology, the financial reporting standards among others. The period under study also should not be too short as during such a short period may be quite a number of fundamental issues in the stock market may have not changed at all. This might give limiting results, inferences, findings or conclusions.

Empirical literature focused mostly on the developed stock markets, (Agrawal & Tandon, 1994; Ajayi *et al*., 2004; Ariel, 1987; Ariel, 1990; Brooks & Persand 2001; Brown & Warner, 1985; Cadsby & Ratner, 1992; Chinga *et al*., 2014, Choudhry, 2002; Fountas & Segredakis, 2002; Gibbons & Hess, 1981; Husain, 1998; Kelly, 1930; Lakonishok & Smidt, 1988; Mills & Coutts, 1995; Pandey, 2017; Raj & Thurston, 1994; Ramcharan, 1997; Ziemba, 1991). Developed countries asset markets are very different from the developing ones. The dynamics and challenges facing firms in the developing economies like Kenya, might not be the same as those of developed economies. It may be therefore an uphill task to implement the solutions from such studies to be employed all over the world and specifically to the developing economies.

2.6 Research Gaps

As much as market anomalies and financial distress is a frequent area of research in finance, there is very little if none of the studies has been carried out in establishing the relationship between the market anomalies and financial distress while concurrently taking into account the listed firms which are being restructured, in receivership, suspended or delisted from the stock exchange. Most studies carried out did not to include an observation of the firms which were being restructured, in receivership, suspended from the bourse or delisted from the stock exchange. Kuria and Riro (2013), while carrying out a study on market anomalies and especially studying seasonal effects on average returns of NSE, found that seasonal anomalies are persistent in the markets of both advanced and emerging countries for instance, Kenya. The finding did not touch on the firms facing challenges like restructures, receiverships, suspensions or delisting from the stock market.

Agrawal and Tandon (1994) conducted a research on anomalies or illusions? This research was conducted from stock markets in eighteen countries. They found out that there was the presence of seasonal anomalies in the countries studied. In the finding, the research did not pay any attention to firms which were undergoing restructures, in receivership, in suspension or delisted from the stock markets. Also, study's recommendations for further research were quiet on the same.

Darrat *et al*. (2012), while researching about seasonal anomalies from an international perspective, the South African Market. They found that seasonal effects disappeared in the post 2007-2008 period following the global financial crisis. The conclusion drawn was that the South African stock market might have filtered out seasonal anomalies and became more efficient in the aftermath of the recent global financial crisis. The study at least touched on financial crisis but did not touch on restructures, receiverships, suspensions or delisting challenges which face firms that were listed in JSE. The research did not suggest further studies that could be carried out on listed firms which could have been facing restructures, receiverships, suspensions or delisted from the stock markets.

Since the findings and conclusions of the previous studies only came from the firms which were not experiencing any challenges like restructures, receiverships, suspensions or delisting from the bourse. This study, therefore was an attempt to fill in the missing link in knowledge concerning the relationship between market anomalies and financial distress in NSE, Kenya. The study employed quantitative and secondary data for both the independent and the dependent variables.

2.7 Summary of the Literature

From the literature review, it is clear that market anomalies cause firms to experience financial distress. Also from the literature review, market anomalies; fundamental, technical, seasonal and size effect anomalies seemingly have a statistically significant association with financial distress. The literature review confirms that market anomaly contributes significantly to firms being in the status of financial distress.

In the literature review, it was evidenced that fundamental anomalies have statistical significant relationship with the financial distress of listed firms, (Patel *et al.*, 2006). In fundamental anomalies, securities or stocks of firms fail to exhibit their intrinsic value meaning that they only show their face values. The face value does not give the accurate value of the stocks, unlike the intrinsic value that gives the actual value of the stocks. Measures that are put in place to determine the intrinsic values of stocks are; D/P and E/P ratios, (De Bondt & Thaler, 1985).

According to Elena-Dana and Iona-Christina (2013) on the research on the paradoxes of modern stock exchange markets and their impact on the real economy, while addressing technical anomalies found out that anomalies in trading financial instruments are associated with the moments when securities prices deviate from their normal behaviour, creating opportunities for those who identify them. Thus, the conclusion was that technical anomalies have a statistically significant relationship with the financial distress of listed.

Keim and Stambaugh (1984) while researching on a further investigation of the weekend effect in stock returns. The study uses a more extended time period and additional stocks to investigate the weekend effect further. The study found out that most notably, the average return for Monday (close Friday to close Monday) is significantly negative. Thus, with such a finding, it can be concluded that the research disagrees with the hypothesis that seasonal anomalies have no statistical significant relationship with the financial distress of listed firms in NSE, Kenya.

Banz (1981) examined the empirical relationship between the return and the total market value of NYSE common stocks. The study found that smaller firms had higher risk-adjusted returns, on average, than larger firms. The study also found that there was a relationship between size effect and market value which was not linear. This finding disagrees with this study's hypothesis that size effect anomalies have no statistical significant relationship with the financial distress of listed firms in NSE, Kenya.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter outlines the methodological design that was used to achieve the aims and objectives of the study which was to establish the relationship between market anomalies and financial distress of listed firms in NSE, Kenya. Besides this relationship, the study also focused on the listed firms which were facing restructures, in receiverships, in suspension or delisted from the stock market. In order to achieve this, the chapter begins with the research design, research philosophy, population of the study, data collection procedures and data analysis and presentation. It further goes on to focus on hypothesis research testing, research model and finally on diagnostic tests for this study.

Research methodology is a systematic design on how a researcher will carry out a research with an objective of ensuring validity and reliability of the results in addressing the research's aims and objectives. Dawson (2014) categorically points out that research methodology is the general principle that gives direction to the research. Kombo and Tromp (2013) also acknowledge that research methodology concentrates on the demonstration of the techniques used in conducting the study. According to Zikmund *et al*. (2013), research methodology is a chunk that explains the practical processes in a way deemed to be suitable to the assemblage.

3.2 Research Design

Is a universal scheme of acquiring responses to the questions being researched and administering the complications experienced in the course of the research, (Polit & Beck, 2017). Research design empowers a researcher to share scarce resources by making sure that an appropriate methodology is applied (Cooper & Schindler, 2014). According to Kothari and Garg (2014) and Parahoo (2014), a research design constitutes decisions in respect of when, where, what, how much and by what means regarding a research study. Grove, Burns and Gray (2014), describe it as a blue print

for carrying out research with full influence above the elements that can hamper the authenticity of findings. Polit, Hungler and Beck (2001) states that research design is the researcher's inclusiveness of responding to all fact-finding inquiries or checking the reliability of the study hypothesis.

Kothari (2009) said that research design is necessary or paramount because it assists in the smooth sailing of the various research operations. Kothari continues to state that this will make the research to be very efficient and thus will be generating maximum information with minimal expenditure on resources such as effort, time and money. Research design should stand out for prior organization of the techniques to be used for data collection which should be relevant and the techniques to be adopted while bearing in mind the research objectives and the availability of resources such as staff, time and money, (Kothari, 2009). A good research design is expected to minimize biasness and maximize the reliability of the collected and analyzed data. It should also have the capability of looking at different aspect of the research problem while giving maximum information.

According to Shaughnessy, Zechmeister and Zechmeister (2002), there are various research designs that can be used in a research. Among the various research designs available, this study adopts the descriptive research design. Grove *et al*. (2014), state that a descriptive research design is planned to take the picture as is basis or the way it naturally occurs. Cooper and Schindler (2014), descriptive research enables an in-depth study of phenomena or characteristic associated with the subject population such as to who, what, when, where and how of the subject. Bajpai and Singh (2011), objectives of a descriptive research are identifying present conditions, needs, studying immediate status of a phenomenon, finding out facts about a problem and explaining the relationships of traits and characteristics. The main aim of descriptive research is to systematically describe a population, situation or phenomenon as it seeks to answer what, where, when and how questions as opposed to answering the why question.

The choice of the research design in this study was because of it gives the researcher the present conditions. The design also uses the secondary data which are quantitative in nature besides the data collection sheets to mine data from the listed firms' annual financial reports in which census was used as the entire population was considered and also the use the panel data analysis as the statistical data analysis for data analysis. The data collected were used in the determination and description of the financial distress levels for listed firms in NSE. The data is also used in associating the Z-Score values in association to the fundamental, technical, seasonal and size effect anomalies in which inferences were made. Baimwera and Muriuki (2014), Nyamboga *et al*. (2014), and Yegon (2015) are among some of the researchers who have used similar research design due to its richness in information.

3.3 Research Philosophy

Is faith concerning the process of data gathering, analysis, interpretation and utility on a phenomenon, Mugenda (2008), states that it appertains to the growth of knowledge, essence of that knowledge and entails vital premises concerning how the researchers look at the world. The custom of academic research is fundamentally driven by an epistemic imperative or the quest for the creation of knowledge. The word epistemology acquires its origin from episteme, which is a Greek word for knowledge that is further defined as how we come to know. Easterby-Smith, Thorpe and Jackson (2015), epistemology is more concerned with what composes admissible knowledge in a field of study.

Epistemology is the assumption on the best way of how to study the world which can be either in an objective or a subjective approach with a bottom line of studying social reality, (Bhattacherjee, 2012). Bryman and Bell (2007) goes ahead to explain that epistemology is categorized as descriptive where it can be described as a philosophical situation which can be ascertained in a study. It's interesting to get another angle of its description as it is considered to be more of a scientific study. A scientific inquiry involves the pursuit of knowledge which seeks to close an approximation of truth as possible, (Remenyi, Pather & Klopper, 2011).

This study adopts the positivism research approach as it engages verifiable procedures and makes substantial use of quantitative data and analysis and develops a rational calculus to construct documented expository and scientific postulations, (Levin, 1988). Positivism research approach is deductive, objective, value free, no biasness and uses quantitative data. The choice of positivism research in this study came to be as both the independent and the dependent variables were quantitative thus deductive, objective, value free and no biasness. This study is an empirical analysis in establishing the association of market anomalies and financial distress in listed firms NSE, Kenya which was guided by theories and conceptual framework.

The theories included; EMH, CAPM, Fama-French three-factor theory, EUT, dividend relevance theory, dividend irrelevance theory, residual theory of dividends, the bird-in-hand theory of dividends, tax preference theory of dividends, TRA, Z-score model, ZETA model and Wreckers theory, (Fama, 1965; Willian, 1964; Fama & French, 1993; Bernoulli, 1738; Walter, 1963; Gordon, 1963; Modigliani & Miller, 1961; Beaver, 1967; Altman *et al*., 1977; Campbell *et al*., 2008). The theories used in the study were to explain what informed the choice of market anomalies; fundamental, technical, seasonal size effect and financial distress. The study was essentially geared towards establishing the relationship between market anomalies and financial distress in listed firms in NSE, Kenya. Also, it was to find out possible correlation in this relationship and find out the strength of such relationship if they existed.

3.4 Population of the Study

In statistics, population is the act of collection of any finite or infinite of individuals or items. It is the entire cluster of elements that conclusions ought to be drawn, (Cooper & Schindler, 2014). It refers to a whole unit of individuals, events or objects possessing routine visible attributes, (Mugenda & Mugenda, 2013). It is the entire group of people, happenings or things of concern that a researcher is investigating, (Sekaran & Bougie, 2011). Parahoo (2014), states that population is the total units from which data is to be collected. Grove *et al*. (2014), population is all the elements which qualify for incorporation in a research and proceed on to expound the

qualification barometer as a schedule of attributes that are necessary for the membership. A population of study is a well-expounded assemblage of individuals or objects having same attributes.

In this study, census will be considered as all firms in the population target will be considered for analysis. It is favoured because of the definite number of elements in the target population that made it practicable to research each and every listed firm. According to Kothari and Garg (2014), census methods involve an exhaustive enumeration of the units constituting the target population. Census is more advantageous as it solves the problem of accuracy which is associated with sampling, (Saunders, Lewis & Thornhill, 2012). Thus, the population target of this study will be all firms listed in NSE.

The period under consideration was between 1st January, 2007 and 31st December, 2017. This period was significant to this study due to the fact that it witnessed one of the global financial crises, 2007-2008 also known as the global financial crisis which was a severe worldwide economic crisis. It is generally expected that during the periods under financial crisis, the stock prices see steep decline in value, (Marcus *et al.*, 2015). This period was also of importance to the study as it witnessed Kenya experience one of its lowest moments as the country was plunged into electoral violence occasioned by the 2007 disputed presidential election results. The country's political instability severely affected the general state of the economy of the country.

Also, during the period under consideration of the study, the listed firms should have complied with Companies Act 486, CMA Act 485 and Laws of Kenya (2012) which requires that all listed firms in NSE to submit their annual audited financial positions every end of their financial years for the public scrutiny and information, (CMA, 2012). The secondary data for the Z-Score analysis for the firms will be considered hinged on the accessibility of relevant information. Firms suspended and delisted from NSE will also be included in the study. Their inclusion is necessary since they possess the much-needed information.

Table 3.1: List of Firms

Sector	No. of Firms	Proportion
Agricultural	6	8.96
Automobiles and Accessories	3	4.48
Banking	11	16.42
Commercial	12	17.91
Construction and Allied	5	7.46
Energy and Petroleum	5	7.46
Insurance	6	8.96
Investment	5	7.46
Investment Services	1	1.49
Manufacturing and Allied	10	15.39
Telecommunication and Technology	1	1.49
Real Estate Investment Trust	1	1.49
Exchange Traded Funds	1	1.49
Total	67	100.00

Source: NSE 2017

3.5 Data Collection Procedures

Are the activities on how to gather and measure information on variables of concern in founded structured manner which allows a researcher to give feedback on raised study questions, hypothesis testing and evaluation outcome. There exist different means in which data collection can be done depending upon whether it is primary, secondary, quantitative or qualitative, (Cooper & Schindler, 2014). When data collection is done anew and rudimentary, then this is referred to as primary data. Primary data are original in attributes while secondary data is in contrast as their collection have already been done by another person and have already been subjected to the statistical process, (Kothari & Garg, 2014).

When selecting a suitable data collection procedure, a researcher ought to logically choose the procedure for the research, having in mind factors as nature, scope and object of enquiry, funds availability, time factor and precision required, (Kothari & Garg, 2014). Steps to be followed in the data collection procedures starts with identification of issues or opportunities for collecting data. Secondly, selecting issues and or opportunities and setting goals. Thirdly, planning an approach and procedure of collecting data and lastly, collecting the data.

This study relies heavily on the quantitative and secondary data collection methods. In secondary data collection, a researcher simply relies on the works of another to get on moving with their intended study. Kothari and Garg (2014), secondary data must be suitable, adequate and reliable. The study used panel data technique for the 11year period, 1st January, 2007 to 31st December, 2017. This choice was informed by the fact that panel data contains observations about different cross sections across time and this is so with the listed firms in NSE over the period under study.

The interpretation of the regression coefficients was modeled by the utilization of the E-views software output. Annual data encompassing the entire period of study were considered as this was to ensure that there were enough degrees of freedom estimations in the models. The secondary data was acquired from published annual financial reports of all firms in the NSE. Also, admissible literature in magazines, websites and other relevant secondary sources formed part of the secondary data. All these sources of the secondary data were believed to be suitable adequate and reliable, (Kothari & Garg, 2014).

3.6 Data Analysis and Presentation

Analysis of data means the calculation of definite indices or computes through with looking for patterns of association that subsist amidst the data groups, (Kothari & Garg, 2014). Giles (1974), alludes that the data analysis procedures, associations or differences in support or in conflict with original or new hypotheses should be put to statistical tests of significance to ascertain the data credibility which is seen to justify all inferences. Therefore, analysis of data is the procedure of coming up with responses to questions throughout the investigations and interpretations of data. It

influences future developments to the procedure of a study. Thereby, data analysis requires the researcher to organize, provide structure and elicit meaning of the study as hand.

Since this study considers 67 listed firms in NSE, whose investigation have to be for a period of 11 years, the best choice is panel data analysis. This is a statistical technique extensively employed in social science to analyze two-dimensional data. First it analyzes the cross sectional and secondly the longitudinal data as it gives better regression results, (Baltagi, 2013). Social phenomena are complex and multidimensional and thus panel data techniques seek to ameliorate and robust investigation for scientific task, (Gil-Garcia & Puron-Cid, 2015).

In the fields of both statistics and econometrics, panel data which is at times referred to as longitudinal data are multi-dimensional data entailing measurement of data for a period of time, (Diggle, Heagerty, Liang, & Zeger, 2013; Fitzmaurice, Laird & Ware, 2004). There are two major benefits of panel data analysis. Firstly, it allows the researcher to take charge of heterogeneity which are not observed. Secondly, due to the fact that its data contain both the cross-sectional and time series features, it therefore gives the researcher adequate data points which assists in the reduction of the probability of the 'parameter estimators' biasness, (Muiruri, 2015).

The annual financial reports for the years 2007-2017 were scrutinized and statistics derived from reports were keyed in a Microsoft excel spreadsheets. The spreadsheets were designed in such a manner that helped in calculation of the coefficients as are applicable to Altman Z-Score model equation, (Altman, 2000). The coefficients were multiplied by the constant and the products summed up in determination of the Z-Score of a firm. Using EViews, the linear regression model is investigated on how well it is aligned to the data. The panel data methodology is tabulated and analyzed using the EViews. EViews, also known as Econometric Views is a statistical package utilized in time series based on analysis of econometrics.

In determination of the normality of the data under consideration, skewness, kurtosis, Jacque-Bera and the probability value were used. Skewness shows the amount and direction of change, in this case known as a skew which is the departure from

horizontal symmetry, (Desgagne & Lafaye, 2018). When the change, skewness is less than negative one or greater than positive one, the distribution is highly skewed. But, when the skewness is between negative one and negative 0.5 or between positive 0.5 and positive one, then this is termed as the distribution is moderately skewed. When the skewness is between positive 0.5 and negative 0.5, the distribution approximately systematic.

Kurtosis is the tallness and sharpness the central peak is which resembles a standard bell curve. A kurtosis value of positive or negative one is considered very good and also positive or negative two is usually acceptable. Skewness and kurtosis are important because they show if the investment returns are in normal distribution or not. Skewness and kurtosis as seen from the above definitions form part and parcel of the Jarque-Bera test which is a goodness-of-fit test. It tests whether or not the data possess the skewness and kurtosis that matches a normal distribution, (Desgagne & Lafaye, 2018).

When skewness and kurtosis have a value of zero, then null hypothesis is termed as a joint hypothesis. The alternate hypothesis is that the data are not gotten from the normal distribution. If the Jarque-Bera probability value is greater than 0.05, then the null hypothesis is accepted, thus the data is normally distributed. But when the Jarque-Bera probability value is less than 0.05, the null hypothesis is failed to be accepted as the data is not normally distributed also known as non-normal distribution, (Desgagne & Lafaye, 2018).

In the same spirit, correlation coefficient was applied to determine the association and the strength betwixt the variables, (Gupta, 2002). Correlation coefficient is also defined as an indicator of degree of linear relationship betwixt two variables, (Rao, 2010). The coefficient value shows the average change of the dependent variable given a one-unit shift in an independent variable. The values range between negative one and positive one. A correlation of negative one shows a perfect negative correlation. A correlation of positive one equally shows a perfect positive correlation.

A perfect correlation takes place when there is functional dependency between the variables, all points are in a straight line. A positive correlation happens when an increase in one variable increases the value of another. A negative correlation is brought in when a decrease in one variable decreases the value of another. No correlation arises when there is no linear dependency between the two variables. When the points are closer to each other, then the correlation is said to be stronger while when the points are further apart, it is a weak correlation, (Gupta, 2002).

In testing the stability of the data, R-squared, Adjusted R-squared and F-statistic were used. R-squared is a statistical measure in a regression model that determines the percentage of variance in the dependent variable that can be explained by the independent variable, (Gupta, 2002). It tells how well the data fit the regression model also known as goodness of fit. It takes the value between zero and one which is on a convenient zero percentage to 100%. In other words, it indicates the percentage of the variance in the dependent variable and the independent variables where the explanation is given out collectively or jointly. It thus measures the strength of the association betwixt the dependent and the independent variables, (Gupta, 2002).

R-squared should not be taken alone while making conclusions on a study as it does not disclose information on the causation of the association betwixt the independent and the dependent variable, (Gupta, 2002). It does not also demonstrate the accuracy of the regression model. The higher the R-squared the better the fit of the model. R-squared is also acknowledged as coefficient of determination.

The adjusted r-squared is a modification of the r-squared for the number of predictors in the model. It can be negative but it is not always. It displays the linear association in the data even when there is none of the elementary association. The adjusted r-squared compares the descriptive power of regression models. It worthwhile in noting that r-squared is used in measuring the proportion of the variation in the dependent variable which is explained by the independent variable for a linear regression model while adjusted r-squared adjusts the statistic depending on the number of the independent variables present in the model, (Gupta, 2002).

The F-statistic is a ratio of two variances that are expected to be approximately equal under the null hypothesis which yields an F-statistic of roughly one. The F-statistic is the test statistic which is used to find out whether two independent variables of population variance differ significantly, (Gupta, 2002). Variances are measures of dispersion, in other words, how far the data are scattered from the mean. According to Gupta (2002), variances are used to test whether the means of a specified classification differ significantly.

Thus, variance is determined whether the given classification is important in affecting the results or not, (Gupta, 2002). Larger values of the measure represent greater dispersion from the mean. Variance is computed as the square of the standard deviation. Notably, F-statistics are based on the ratio of mean squares. While F-statistic is used to compare two population variances, t-test is applied in the comparison of the means of two populations. When the null hypothesis is true, then the value of F-statistic is anticipated to be close to 1.0 most of the time.

The F-test of general significance demonstrates whether the linear regression model presents a better fit to the data than a model that consists of no independent variables, (Gupta, 2002). F-test overall significance has two hypotheses. The first one is the null hypothesis which asserts that in order for the model to fit the data, then there are no independent variables. The second hypothesis is the alternative hypothesis which states that the model fits the data better than the intercept-only model.

While interpreting the F-test comprehensive significance on the best fit, then the p-value should be taken into consideration. Probability is the chance of an event happening. Thus, probability value simply referred to as the p-value is the many times the event is happening. If an experiment is performed over and over again, under homogeneous conditions, then the limiting value of the ratio of the number of times of trials become indefinitely large the probability of the happening of the event which is assumed that the limit finite and unique, (Gupta & Kapoor, 2002). If the p-value is found to be less than the significance level, then the data has a sufficient evidence in the conclusion that the regression model is considered to be fitting the data in a better than the model without the independent variables.

Also tested in this study is the significance of each independent variable. If the p-value is less than or equal to the set significance level, then the data is considered to be statistically significant. Level of significance is the probability of type I error, which is the error of failing to reject the null hypothesis when it is true, (Gupta & Kapoor, 2002). As a general rule, the significance level is commonly set to 0.05 which means that the probability of observing the differences in the data by chance is just 5%. Thus, if the p-value is less than 0.05, it is statistically significant. This indicates a strong evidence against the null hypothesis as it shows that there is less than a five percent probability that the null hypothesis is correct, thereby we fail to accept the null hypothesis. The level of significance is defined as the probability of not accepting the null hypothesis when it is really true.

The LLC was considered used to check on the stationarity of the data. Levin, Lin and Chu (2002) came up with a proposal of a test which had an alternative hypothesis that the p_i are identical and negative. Because p_i are fixed across i, this is one of the

most sophisticated of the tests as the data from different individuals are consolidated into a single final regression. Stationarity in time series is defined as one whose statistical properties like mean, variance, autocorrelation and the likes do not change over time, they are all constant over time, (Levin *et al.*, 2002). Likewise, non-stationary series is one which the statistical properties change over time. These statistical measures are helpful for describing future behaviour only if the series are stationary, (Levin *et al.*, 2002).

Unit root tests are tests for checking stationarity in time series. Unit root checks if a time series variable is non-stationary and is in possession of a unit root. A time series is considered to be having the attribute of stationarity if a shift in time causes no change in the distribution shape, (Levin *et al.*, 2002). One of the causes of non-stationarity is the unit root. When there is the presence of a unit root then there is null hypothesis. Equally the alternative hypothesis is either stationary, trend stationary or explosive root based on the test applied, (Levin *et al.*, 2002).

The conclusions of this study will be established if not founded on the p-value. When the null hypothesis of the p-value is failed to be accepted, then this means that overall model is significant, (Gupta & Kapoor, 2002). But when null hypothesis is accepted, then this means that the overall model is insignificant. The benchmark of this entire study is either the failure to accept or to reject the null hypothesis at a level of significance of five percent. If the p-value is less than five percent then the null hypothesis failed to be accepted. This therefore means that the alternate hypothesis failed to be rejected. Likewise, if the p-value is greater than five percent then the null hypothesis failed to be rejected while the alternate hypothesis failed to be accepted. Thus, the p-value is applicable in testing the significance of the overall model at a confidence level of five percent.

3.6.1 Measure of Variables

Table 3.2: Measures of variables

	Variables	Measures
Dependent Variables	Financial Distress	Z-Score
Independent Variables	Fundamental Anomalies	Dividend Yield
		Price to Earnings
	Technical Anomalies	Stock Price Volatility
	Seasonal Anomalies	Monthly Returns
	Size Effect	Market Capitalization

Source: Researcher (2018).

3.6.2 Hypothesis Research Testing

Hypothesis testing is an act in statistics whereby a researcher put to test an assumption regarding a population parameter. According to Gupta and Kapoor

(2002), hypothesis testing is a two-decision problem after the experimental sample values have been obtained, the two actions being failure to reject or rejection of the hypothesis under consideration. In this study, there will be the usage of four null hypotheses to test the specific objective. The null hypotheses tests will be conducted on individual independent variables. Thus, the testing will be on fundamental, technical, seasonal and size effect anomalies that they have no statistical significant relationships with financial distress of listed firms in NSE, Kenya.

Testing Research Hypothesis 1

To test the first hypothesis that fundamental anomalies have no statistical significant relationship with financial distress of listed firms in NSE, Kenya. The following panel regression model will be used;

$$\gamma_{it} = \beta_0 + \beta_1 X_{1it} + \epsilon_{it} \text{.....3.01}$$

Where γ_{it} is the dependent variable representing financial distress of firm i at time t;

i represents the observations (firms); *i* = 1……..67, while *t* is the time period, t = 2007……2017. β_1 is the regression coefficient of fundamental anomalies and

X_{1it} is the independent variable, fundamental anomalies, of firm *i* at time *t* and ϵ_{it} is

a composite error term? The other independent variables; technical, seasonal and size effect anomalies are constant, denoted by β_0.

Testing Research Hypothesis 2

Testing the second hypothesis that technical anomalies have no statistical significant relationship with financial distress of listed firms in NSE, Kenya. The following panel regression model will be used;

$$\gamma_{it} = \beta_0 + \beta_2 X_{2it} + \epsilon_{it}$$……..3.02

Where γ_{it} is the dependent variable representing financial distress of firm i at time t;

i represents the observations (firms); *i* = 1…….67, while t is the time period, *t* = 2007……2017. β_2 is the regression coefficient of technical anomalies and X_{2it} is the independent variable, technical anomalies, of firm i at time t and ϵ_{it} is a composite error term. The other independent variables; fundamental, seasonal and size effect anomalies are constant, denoted by β_0.

Testing Research Hypothesis 3

To test the third hypothesis that seasonal anomalies have no statistical significant relationship with financial distress of listed firms in NSE, Kenya. The following panel regression model will be used;

$$\gamma_{it} = \beta_0 + \beta_3 X_{3it} + \epsilon_{it}$$……...……3.03

Where γ_{it} is the dependent variable representing financial distress of firm *i* at time *t*;

i represents the observations (firms); *i* = 1……..67, while t is the time period, *t* = 2007……2017. β_3 is the regression coefficient of seasonal anomalies and X_{3it} is the independent variable, seasonal anomalies, of firm i at time t and ϵ_{it} is a composite error term. The other independent variables; fundamental, technical and size effect anomalies are constant, denoted by β_0.

Testing Research Hypothesis 4

To test the first hypothesis that size effect anomalies have no statistical significant relationship with financial distress of listed firms in NSE, Kenya. The following panel regression model will be used;

$$\gamma_{it} = \beta_0 + \beta_4 X_{4it} + \epsilon_{it} \quad \text{.....3.04}$$

Where γ_{it} is the dependent variable representing financial distress of firm i at time t;

i represents the observations (firms); *i* = 1……..67, while *t* is the time period, *t* = 2007……2017. β_4 is the regression coefficient of size effect anomalies and X_{4it} is

the independent variable, size effect anomalies, of firm *i* at time t and ϵ_{it} is a

composite error term. The other independent variables; fundamental, technical and seasonal anomalies are constant, denoted by β_0.

3.6.3 Research Model

This study employs linear panel regression model to establish the relationship between market anomalies and financial distress of listed firms in NSE, Kenya. This was because the data used in this study possess the cross-sectional and time-series dimensions, (Greene, 2012). According to Gujarati (2003), the amalgamation of time series and cross-section will intensify the quality and quantity of data in a manner that would not be possible in utilizing either of the two dimensions. Ngumi (2013), Ngigi (2012) and Muigai (2016) are some of the studies which have also used a similar model.

It is more suitable to use panel data analysis than either cross-sectional or time-series. Moreover, it is a precise conclusion model which has greater ability of capturing the complexity of human behaviour and has simplified computation and statistical inference, (Hsiao, 2006). It is also preferred as it permits the researcher to account for unobservable heterogeneity. Baltagi (2013), panel data enables a researcher to attain a larger sample size than with either cross-sectional or time-series. Its limitations are that the design and data collection problems, measurement errors manipulations, complications of selectivity and short time series dimensions. The research model is best suited with the Hausman Test.

Below is the empirical model which is applicable in the study;

$$\gamma_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} \ldots\ldots\ldots + \beta_k X_{kit} + \epsilon_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 3.05$$

In this study the model is:

$$\gamma_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \epsilon_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 3.06$$

The above equation 3.06, is summarized as:

$$\gamma_{it} = \beta_0 + \sum_{i=1}^{k} \beta_i X_{kit} + \epsilon_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 3.07$$

Where X is the independent variable; X_1 is fundamental anomaly, X_2 is technical anomaly, X_3 is seasonal anomaly and X_4 is size-effect anomaly. γ_{it} is the dependent variable denoting financial distress of firm i at time t, X_{it} is the independent variable of firm i at time t, β_0 is the constant term, β_i is the coefficient of the independent variable.

3.6.4 Stability of the Model

A model is stable when the outputs do not vary wildly for small changes to the inputs. In this study, the probability of F-Statistics is used to determine whether the model is stable or not. The probability of F-Statistics will show the stability of the model if it has a value of less than 0.05 which is significant at five percent level of significance. This will mean that there is no multicollinearity and heteroscedasticity, (Gujarati & Porter, 2010).

Multicollinearity

Multicollinearity is a state where there exists two or more relationships, associations, inter-associations or inter-correlations amidst the independent variables, (Gujarati & Porter, 2010). Wooldridge (2015), multicollinearity difficulty occurs if there is evidence of a high correlation between two or more independent variables. Mashotra (2007), a problem of collinearity is present when the coefficient of correlation in the variable is greater than 0.75. According to Hair, Blacks, Babin, Anderson and Tatham (2006), coefficient of correlation which falls above 0.9 leads to the problem of multicollinearity. Cooper and Schindler (2014), pairwise coefficient of correlation that are below 0.8 imply that the issue of multicollinearity have less severity. But when the coefficient of correlation among the study explanatory variables goes beyond 0.8, it should be accounted for and corrected immediately.

Heteroscedasticity

Heteroscedasticity is also known as heteroskedasticity. The terms ‘hetero’ means different and ‘scedasticity’ means variance or variation, (Gujarati & Porter, 2010). This takes place when there is no constant variance between or among the error terms. Error terms which are related to large firms might also have larger variances compared to the error terms related with smaller firms. Remedial of heteroscedasticity, when δ^2 is known, use WLS but when δ^2 is unknown, use adhoc

procedure.

3.7 Justification for use of Panel Data Approach

Panel data is at times referred to as pooled or combined data due to the existence of time series and cross section data elements in it. According to Damodar et al., (2013), one of the advantages of the panel data is the fact that it relates to individuals over time, in which there is bound to be heterogeneity in these individuals. Thus, it considers different individuals, *n*, over a period of time, *t*. This is so important and relevant to as a researcher as more often than not research problems involve different individuals being studied over a period of time.

Secondly, panel data regression controls heterogeneity of cross-section units over time by permitting for individual and specific variables, (Baltagi, 2013). Thirdly, through the combination of time series and cross section observations, the panel data technique has a better comparison, gives data that are more informative, more variability, with less collinearity in the midst of the variables, more degree of freedom and is more efficient, (Gichamo, 2012). Fourthly, through having data availability for many units, panel data considers all cross-section units as heterogeneous and gives unbiased estimations of time invariant and state invariant variables, which we observe, or not. This minimizes biasness that might come out if the study agglomerates individuals into broad aggregates.

Fifthly, it is a better detector and measurement of the dynamics of change as it is best suited for understanding transition behavior, financial distress in this study, (Altman, 1968). Sixthly, panel data is also a better detector and measurement of the effects that are unobservable in either cross-section or time series data. Lastly, it allows a study of a more complicated behavioral model, seasonal anomalies, (Karz, 2010). The use of panel data in this study has been occasioned by the above advantages which enrich the empirical analysis, this might have been impossible if only cross-section or time series data is put into use.

3.8 Descriptive Statistics

Descriptive statistic is a summary statistic that describes quantitatively the features of data. Descriptive statistics are utilized in the presentation of the quantitative

descriptions in a form that can be managed easily, (Williams, 2006). Therefore, they assist in making the large data simple in a sensible way. They are very crucial in the determination of the statistical properties of the model in the selection of appropriate functional structure of the estimable model. This study therefore seeks to determine the spread of data that comprise of the calculations of the mean, standard deviation, standard errors, maximum and minimum values of the variables over time. This further involved finding the correlation matrix in order to ascertain variables which were highly correlated as this would assist in avoiding the issue of multi-collinearity which is common occurrence in time series data.

Descriptive research design comes in handy besides the inferential statistics where correlation and panel multiple regression analysis are of great assistance. It summarizes and profiles the relationships of fundamental, technical, seasonal and size effect anomalies and the financial distress of the firms in NSE. The inferential statistics is used to test hypothesized effects generalize the findings in the population. It makes deductions, predictions and conclusions about a population on a sample of data appropriated from the population under study. The term inferential originates from the term “infer” which simply means to deduce or conclude from evidence and reasoning rather than from explicit statements. According to Kothari and Garg (2014) and Cooper and Schindler (2014), inferential statistics is all about testing the null hypothesis to determine the validity of making conclusions and estimations of the population parameters.

3.9 Diagnostic Tests

Examination in identification of an individual’s specific weakness and strength areas in determination of a condition, then diagnostic tests come in handy. The diagnostic tests in this study considers normality test, Durbin Watson test and correlation coefficient. The diagnostic tests further consider unit root test which comprises of LLC test and Plackett and Pearson (PP) which are the most commonly applied tests, (Liang, 2017). It moves further to Im, Pesaran and Shin test and Augmented Dickey-Fuller test. Last but not least, Hausman test is taken into consideration as it also forms part of the diagnostic tests.

3.9.1 Normality Test

Is used in determination of whether the data sets are designed suitably by a normal distribution and to calculate the likelihood of random variable which underlies the set of data considered to be under the normal distribution. This study adopts the descriptive statistics which involves the calculation the goodness of fit to the data of a normal model. When the goodness fit is poor, then the model is not designed suitably in respect to the normal distribution without judging the underlying variable, (Henry, 2002). Jarque-Bera (JB) test of 1987 is the most popular test for normality, (Jarque & Bera, 1987). It is an asymptotic test and is dependent on OLS residuals. It computes the coefficients of skewness, S and kurtosis, K of a random variable.

$$JB = \frac{n}{6}\left[S^2 + \frac{(K-3)^2}{4}\right] \quad \text{3.08}$$

Where n is the sample size, S represents skewness and K represents kurtosis.

3.9.2 Durbin Watson Test

This is a measure of autocorrelation errors from regression analysis in which autocorrelation is the uniformity of time series over consecutive time intervals. This is the most celebrated test of autocorrelation, (Gujarati & Porter, 2010).

$$DW = \frac{\sum_{t=2}^{T}(e_t - e_{t-1})^2}{\sum_{t-1}^{T} e_t^2} \quad \text{3.09}$$

The test static value lies between zero and four. When there is autocorrelation, the value is four. When the value is two, it is a negative autocorrelation and when the value is zero, then there is positive autocorrelation. Remedial of autocorrelation is the use of GLS procedure to estimate the parameter.

3.9.3 Correlation Coefficient

The term correlation simply means co-relation. This in other words is referred to as the degree that two variables "go together" or “accompany each other”. According to Gupta (2002), correlation measures the degree and nature of the effect of one variable on another. If two or more quantities vary in other sympathy so that movements in one trend to be accompanied by corresponding movements in the other, (Rao, 2010). Thus, correlation shows the strength of an association is between two variables.

Therefore, correlation analysis is the preserve for the determination of the relationship between two variables and what the strength of the relationship is, (Rao, 2010). Linear correlation means to go together in a straight line. The values lie between negative one and positive one. The sign of the correlation coefficient shows the direction of the relationship. In this study, correlation above 0.4 is considered as relatively strong, correlation between 0.2 and 0.4 is moderate and below 0.2 is seen as weak. A negative and a positive correlation coefficient demonstrate a connection between two variables and their relative strengths.

3.9.4 Unit Root Test

Is considered to possess a stochastic trend in time series at times acknowledged as random walk with a drift. When time series possess a unit root, it indicates a methodical pattern which cannot be predicted and this can be linked to the Random Walk Hypothesis, (Fama, 1995). They also help in the determination of whether the time series variable is stationary or non-stationary and whether it has a unit root or not. Stationarity is gotten in a time series when the mean is constant and also there is the presence of constant finite variance. A non-stationary series on the contrary, accommodates a vivid time trend and possesses a variance that is not constant overtime. Non-stationary series have the capacity of displaying a high degree of never giving up or persistence. In order to avoid unsuitable model specification and at the same time increase the confidence of the results in this study, time series qualities of the data were cross-examined.

In order to avoid likely spurious associations amidst the variables, it is always wise to take an early stride before proceeding with Granger Causality Test of testing for a unit root which is that the variables ought to be stationary. For this study to achieve this, it used an amalgamation of tests which included Augmented Dickey-Fuller (ADF), Plackett and Pearson (PP), Levin, Lin and Chu (LLC) and Im, Pesaran and Shin (IPS) were carried on to check for stationarity of the data, (Kinnalone, 2017; Dickey & Fuller, 1981; Plackett & Pearson, 1983; Levin *et al.*, 2002; Im, *et al.*, 2003). These tests are among the extensively used and influential, (Liang, 2017).

The variables under this study are expected to be between I(0) and I(1) in the unit root tests. The study settled on the adoption of the unit root tests to ensure that none of the variables exceeded the I(1) order of integration as this could have resulted into inconsistent estimations, (Asteriou & Monastiriotis, 2004). For this to be achieved, there was the application of the three frequently utilized panel unit root tests, which are LLC test, IPS test and Fisher Chi-square tests, (Levin *et al*., 2002; Im *et al.*, 2003). These tests are premised on the assumption that under the null hypothesis, all series are non-stationary while takes into consideration the autoregressive coefficient. This autoregressive coefficient is based on the assumption that it changes freely amidst the variables under study.

Levin, Lin and Chu (LLC) Test

According to Levin *et al*. (2002), the LLC test engages a null hypothesis of a unit root with the below Augmented Dickey-Fuller specification:

$$\Delta y_{it} = \alpha y_{it-1} + \sum \beta_{it} \Delta y_{it-1} + X_{it} + \varepsilon_{it} \quad \text{3.10}$$

Where y_{it} refers to the pooled variable, X_{it} corresponds to the exogenous variables like the cross section fixed effects and ε_{it} denotes the error terms or the independent disturbances. The Levin, Lin and Chu **(**LLC) test is proper on account of it covering the most universal requirements all the pooled variables with the incorporation of a constant, a trend and lags, (Mathiyazhagan, 2005).

Im, Pesaran and Shin (IPS) Test

For investigation of the likelihood of panel cointegration, it is imperative for the determination of the presence of unit roots in the data series. For this study, IPS test is chosen, as it is premised on the well-known Dickey-Fuller process, (Im *et al.*, 2003). The test results of IPS asserts that all the variables are stationary at their first difference. So, the null hypothesis of non-stationarity is failed to be accepted at five percent level of significance. This therefore means that the alternative hypothesis is accepted as the null hypothesis was failed to be accepted.

Im, Pesaran and Shin (IPS) gave out a proposal of a test for the existence of the unit roots as it does the combination of the information from the time series dimension with those from the cross-section dimension. This enables fewer observations in terms of time which are required for the test to have power. IPS test has since been found to have superior test power by researchers in economics in the analysis of the long-run associations in the panel data, this study will employ also this procedure, (Wooldridge, 2015). IPS test specifies a separate Augmented Dickey-Fuller regression for each cross-section with individual effects and without time trend.

$$\Delta y_{it} = \alpha_i + \rho_i y_{i,t\ 1} + \sum_{j=1}^{p_i} \beta_{ij} \Delta y_{i,t\ j} + \varepsilon_{it} \quad \text{…….....……..….. 3.11}$$

Where i = 1, . . .,*N* and *t* = 1, . . .,*T*

IPS test utilizes a different unit root tests for the *N* cross-section units. It also uses a distinct unit root tests for the *T* time series. The IPS test is majorly based on the Augmented Dickey-Fuller statistics which is averaged across groups, (Im *et al.*, 2003). After the estimation of the separate Augmented Dickey-Fuller regressions, the average of the *t*-statistics for p_1 from the individual Augmented Dickey-Fuller regressions, $t_{iT_i}(p_i)$:

$$\bar{t}_{NT} = \frac{1}{N} \sum_{i=1}^{N} t_{iT}(p_i \beta_i) \text{ ……..……..…..……} \quad 3.12$$

The *t*-bar is subsequently standardized and thereafter it is demonstrated that the standardized *t-bar* statistic duly converges to the standard normal distribution as N and $T \rightarrow \infty$. The IPS test exhibited that *t-bar* statistic possesses a superior performance when N and T are small. The proposal given by the IPS test, a cross-sectionally disparaged version of both tests which ought to be used in the scenario where the errors in different regressions possess a common time-specific component. Bangake and Eggohi (2008) used the IPS method to authenticate that all variables are integrated to the same order. As per the results of the IPS test, that executed the Monte-Carlo simulations, which was to equate the IPS test and the LLC test, with the hypothesis of no cross-sectional correlation in panels, the result demonstrated that the IPS test is more superior to the LLC test.

Augmented Dickey-Fuller (ADF) Test

When considering time series, there is need to verify that the process is stationary and weakly dependent, (Wooldridge, 2015). Once this is ascertained, then there is an assumption that there is some sense of comfort of stability over time. The stochastic process is considered to be stationary when the joint probability distribution does not change, after any sequence in the process being considered and moving it ahead *h* time periods. The process of attaining the stationarity of covariance commences when the anticipated value of the process is constant about its mean, if the variance is constant and if for any *t* and $h \leq 1$ $cov\,(yt, yt + h)$ be subject to only *h* but not subject to *t.* It then automatically follows that if the covariance is subject to only h, then so is the correlation betwixt yt and $yt+h$. It has also been established that neither the anticipated value nor the variance can be said to be relying on time, meaning that a lot of care should always be observed while relating with trending time series.

A covariance stationary process is weakly dependent if the correlation moves toward zero as h approaches infinity, $(yt,+h) \rightarrow 0\ as\ h \rightarrow \infty$. It is vital that the time series is stationary and weakly dependent. This is so as this fundamentally replaces the law of large numbers and the central limit theorem, in whose absence the OLS regression would be a challenge to deal with. If it is not weakly dependent then this summed up as a strongly dependent or unit root process, (Wooldridge, 2015).

In testing the unit root, the Augmented Dickey-Fuller test is favoured as it more dependable and is a commonly applied test. The null hypothesis in the Augmented Dickey-Fuller (ADF) test states that there is an existence of a unit root or the time series is non-stationary and the alternative hypothesis is that the time-series is stationary and weakly dependent, (Stock & Watson, 2012). The Augmented Dickey-Fuller test can be defined as:

$$\Delta Y_t = Y_0+\alpha t+\Phi Y_{t-1}+\sum \Phi_i Y_{t-i}+ \varepsilon_t \quad \text{..... 3.13}$$

$$\Delta Y_t= Y_t-Y_{t-1} \quad \text{..... 3.14}$$

Where: Y_t = Dependent variable, Y_0 = Constant term, t = Trend Variable and ε_t = Stochastic disturbance term.

Hypotheses used to test series:

$H_0 = \Phi = 0$ (Y_t is non-stationery)

$H_1 = \Phi \neq 0$ (Y_t is not non-stationery)

Plackett and Pearson (PP) - Fisher Chi-Square Test

Chi-Square is an instrument which is used in the analysis of information associated with the relationships among data. This test was first brought in Pearson, (Pearson, 1900). An important modification to the Pearson's X^2 test was brought in by Fisher,

(Fisher, 1922). This modification by Fisher took place when he decreased by one unit the degree of freedom in the contingency table.

Another landmark by Fisher was when he took into consideration a number of unknown specifications related with the theoretical distribution, the specifications are estimated from central moments, (Sorana *et al.,* 2011). Further analysis was done by Plackett and Pearson, (Plackett & Pearson, 1983). The Chi-square test proves to be the utmost recognized statistics in testing the concurrence betwixt observed and theoretical distributions, independency and homogeneity. The advantage of the

Fisher-type unit root test has an advantage of it being applicable in almost every set of data, (Durnel, 2012).

The Fisher-type statistic is computed premised on the formula conferred in equation 3.15.

$$X^2 = \sum_{i=1}^{f} \frac{(O_i - E_i)^2}{E_i} \approx \chi^2(\mathrm{f} - \mathrm{t} - 1) \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 3.15$$

Where X^2 is the Chi-square statistics value; χ 2 is the value of the chi-square parameter that is gotten from chi-square distribution formular; Oi refers to the empirical or ascertained frequency related to the i^{th} frequency class; E_i is the anticipated frequency that is computed from the theoretical distribution law for the i^{th} frequency class and *t* refers to parameter numbers which exist in the theoretical distribution approximated from central moments. The computation of the probability of failing to accept the null hypothesis is based on the theoretical distribution (X^2). If the likelihood of rejecting $(x^2{}_{CDF}(X^2$, f-t-1)) is less than five percent then the null hypothesis is accepted.

3.9.5 Hausman Test

This test is also referred as a test for model specification. In panel data analysis, Hausman test assists in selecting between two models, Fixed Effects Model (FE) and Random Effects Model (RE), (Hausman, 1978). Fixed effects are inefficient but consistent, while random effects are efficient but inconsistent. The null hypothesis concurs that the favoured model is the random effects model. The alternative is that the model is fixed effects. Thus, the model of choice under the null hypothesis is RE because of its higher efficiency and can handle the regressors that are fixed across

individuals. When a sample has taken into consideration the entire population, then the reciprocating variable is fixed but if the sample has only considered a paltry portion of the population, then the reciprocating variable is random, (Green & Tukey, 1960).

It is essential to understand that the test investigates existence of a correlation betwixt unique errors and regressors in the model. If there is no correlation between the two, then this is termed as the null hypothesis. When the p-value is less or equal to a stated level of significance that is 0.05, 0.01 or 0.1, the null hypothesis is failed to be accepted. The challenge is brought about by the fact that various versions of the tests with different hypothesis and possible conclusions do exist. According to Chmelarova (2007), some of the available tests suggest as opposite as conclusions about the null hypothesis.

The FE Model, $\gamma_{it} = \beta_1 X_{1it} + \alpha_i + \mu_{it}$ ……...… 3.16

$\gamma_{it} = \beta_0 + \beta_1 X_{1it} + \cdots \ldots + \beta_k X_{kit} + Y_2 E_2 + \cdots \ldots Y_n E_n + \mu_{it}$ ……...…….. 3.17

The RE Model, $\gamma_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} \ldots\ldots\ldots + \beta_k X_{kit} + \epsilon_{it}$ ……..... 3.18

$\gamma_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} \ldots\ldots\ldots + \beta_k X_{kit} + \lambda_i + \mu_{it}$ …...……... 3.19

As $\epsilon_{it} = \lambda_i + \mu_{it}$

Where X_{kit} is the independent variables; γ_{it} is the dependent variable of firm i at time t. X_{it} is the independent variable of firm i at time t, β_0 is the constant term, β_i is

the coefficient of independent variables, E_n is the entity n since they are binary (dummies) n-1 entities, Y_n is the coefficient of binary repressors (entities) and μ_{it} is the error term.

When there is no correlation between regressors and errors, then fixed effects and random effects are both consistent but fixed effects is not efficient. When there is correlation, fixed effects is consistent and random effects is not consistent, (Hausman, 1978). In the null hypothesis of no correlation, then there should exist no differences betwixt the estimators. In execution of Hausman Test, calculate $\widehat{\beta_{RE}} - \widehat{\beta_{FE}}$ and its covariance, (Hausman, 1978). Hausman Test is a test for the independence of $\searrow_i$ and X_{kit}. Zero is the difference in covariance of an efficient and inefficient estimators. The following is the equation of test under the null hypothesis.

$$W = (\beta_{RE} - \beta_{FE})^{'-1}(\beta_{RE} - \beta_{FE}) \sim x^2(k) \quad \text{.....} \quad 3.20$$

If W is significant, then the random effects estimator should be utilized. Fixed effects are estimated using least squares while random effects are approximated with contraction sometimes called linear unbiased prediction, (Robinson, 1991).

CHAPTER FOUR

RESULTS, FINDINGS AND DISCUSSIONS

4.1 Introduction

The purpose of this study is to establish the relationship between market anomalies and financial distress of listed firms in NSE, Kenya. The study adopted descriptive research design, positivism research approach, census, secondary data, quantitative data, linear regression model and panel data approach. This chapter thereby spells out results, findings and discussions with various statistical tools for different constructs and variables in the study. It covers; descriptive statistics, correlation analysis, unit root tests and panel regression equation which comprised of Hausman test and fixed effects model. The fixed effect model covered hypotheses testing of the study which stated that; fundamental, technical, seasonal and size effect anomalies have no statistical significant relationships with financial distress of listed firms in NSE, Kenya.

4.2 Descriptive Statistics

In this study, the data was changed into their natural logs so as to deal away with the challenge of large numbers as this will also get rid of heteroscedasticity. This study as earlier intimated seeks the determination of the data spread which considered the calculations of mean, median, standard deviations, maximum and minimum points of the variables over time. It also considered correlation analysis as a mean of checking the variables which are highly correlated with the sole aim of reducing the problem of multicollinearity which is a very familiar face in time series data. It further involved the normality tests which are in the form of skewness, kurtosis and Jarque-Bera, (Jarque & Bera, 1987).

Table 4.1: Descriptive statistics

	LN_Z	LN_FAD	LN_FAE	LN_TAL	LN_TAH	LN_SA	LN_SEA
Mean	0.919192	-3.270962	-2.378667	3.190268	4.151054	2.108684	15.89881
Median	0.917689	-3.316346	-2.378968	3.151653	4.123086	2.302585	16.10833
Maximum	1.942604	1.806648	1.557335	6.052089	6.802395	4.564348	20.01562
Minimum	-0.580257	-10.01002	-5.791751	-2.995732	1.536867	0.000000	8.223815
Std. Dev.	0.574154	1.198330	0.959136	1.636430	1.215468	1.174280	2.180459
Skewness	-0.030158	-0.886188	0.125238	-1.225874	-0.000890	-0.352885	-0.870898
Kurtosis	2.264766	12.46913	5.164125	6.119170	1.961656	2.190527	4.420947
Jarque-Bera	2.947791	502.6981	25.70844	85.25993	5.840042	6.247360	27.37010
Probability	0.229032	0.000000	0.000003	0.000000	0.053933	0.043995	0.000001
Sum	119.4950	-425.2251	-309.2268	414.7348	539.6371	274.1289	2066.845
Sum Sq. Dev.	42.52527	185.2432	118.6724	345.4494	190.5798	177.8824	613.3179
Observations	130	130	130	130	130	130	130

Notations:

LN_ - Natural log of

LN_Z - Natural log of z-score

LN_FAD - Natural log of Fundamental Anomalies Dividend per Share

LN_FAE - Natural Log of Fundamental Anomalies Earnings per Share

LN_TAL - Natural Log of Technical Anomalies Low Prices

LN_TAH - Natural Log of Technical Anomalies High Prices

LN_SA - Natural log of Seasonal anomalies

LN_SEA - Natural log of Size effect anomalies

In this study, a normally distributed curve assumes skewness value of zero with equally distributed errors between the two tails. In kurtosis, a normally distributed curve assumes a value of three. Likewise, a Jarque-Bera (JB) of value close to zero assumes a normally distributed curve, (Jarque & Bera, 1987). Also taken into consideration are the values of mean and standard deviation in which if the standard deviation value does not bear a huge deviation from the mean, then the data is

normally distributed. Lastly a probability value of more than 0.1 means that the data is normally distributed.

4.2.1 Financial distress

Financial distress is measured through equations 2.1 and 2.2 which result into Z-score, (Altman, 1968). Out of the 67 listed firms in NSE, financial distress which is the dependent variable had a skewness value of -0.0302 which meant that it was negatively skewed and thus the curve was not normally distributed as the value was not zero. The kurtosis value was 2.2648 signified that the curve was platikurtic as this value was less than three and thus not normal. A Jacque-Bera value of 2.9478 meant that this curve was not normally distributed as the value was not close to zero.

Mean, standard deviation and probability are measures which are considered to be having absolute figures and thus better in determination of normality than skewness, kurtosis and Jaque-Bera. The Z-score had a mean of 0.9192 and a standard deviation value of 0.5742 meaning that there is no huge deviation from the mean during the period of study. The probability value of 0.2290 gave a clear indication that there is a normal distribution in the data as the value was more than 0.1. In the table above, only the dependent variable, financial distress is normally distributed as per the probability value.

4.2.2 Fundamental Anomalies

There are two measures in this independent variable, fundamental anomalies. These two measures are dividends per share and earnings per share. In determination of the normality of the data, this study employed normality tests such as skewness, kurtosis, Jarque-Bera, mean, standard deviation and probability. The measures were analyzed independently. The results and discussions derived are as follows.

Fundamental Anomalies Dividends Per Share

The FAD had a skewness value of -0.8862. Since this value is not zero and is below zero, then the FAD is negatively skewed and thus not normal. Kurtosis value of 12.4691 means that the curve is not normal but leptokurtic as this value is more than

three. Jarque-Bera of 502.6981 as per table 4.1 meant that this curve is not normal as the value is not close to zero.

FAD had a mean value of -3.2710 and a standard deviation value of 1.1983. This meant that value lies between -2.0727 and -4.4693 which signified that there was no huge deviation from the mean for the period of the study. With the probability value of 0.0000 which is less than 0.1 meant that the curve was not normally distributed. In other words, it can be said that the data for FAD is abnormal in distribution.

Fundamental Anomalies Earnings Per Share

FAE had a skewness of 0.1252, this indicated that the curve is not normal as the value is not zero. The result further indicated that the curve is positively skewed. Kurtosis of 5.1641, meant that this curve was leptokurtic as the value was more than three, thus not normal. Jarque-Bera of 25.7084, meant that the value is not close to zero, thus this is not a normally distributed curve.

The mean value of -2.3790 and a standard deviation of 0.9591 meant that there was no huge deviation in the course of the study. With the probability value of 0.0000 which is less than 0.1 meant that the data was not normal. Thus, the results of normality tests showed that the data for both FAD and FAE under consideration were not normal. This could be summarized as data under fundamental anomalies are not normal as seen in the normality tests.

4.2.3 Technical Anomalies

Technical anomalies being an independent variable, involved two measures which are the low and high prices of the stocks in the NSE for the period under consideration. The first measure to be considered was the Technical Anomalies Low Prices (TAL) and the other one was the Technical Anomalies High Prices (TAH). The technical anomalies data were put into the normality tests which included skewness, kurtosis, Jarque-Bera, mean, standard deviation and probability to determine whether the data was normal or not. The two measures were analyzed independently and the results and discussions derived were as below.

Technical Anomalies Low Prices

TAL had a skewness value of -1.2259 which indicated that the curve is skewed to the negative and thus not normally distributed as the value was not zero. Kurtosis of 6.1192 is more than three, thus this was a leptokurtic curve which meant that the data were not normally distributed. Jarque-Bera value of 85.25993 was not close to zero, thus this is not a normally distributed curve.

The mean had a value of 3.1903 and a standard deviation value of 1.6364 meaning that there was no huge deviation from the mean during the period of study. TAL had a probability of 0.0000, which indicated that the data is abnormally distributed as it is not more than 0.1. When considering all the normality tests in this study, the data in TAL proved to be not normal.

Technical Anomalies High Prices

TAH had skewness value of -0.0009, which meant that the curve is negatively skewed as the value is not equal to zero. Kurtosis value of 1.9617, meant that this curve is platikurtic as the value is less than three. Jarque-Bera value of 5.8400, meant that the data was not normally distributed as this value was not close to zero. These tests confirmed that the data was not normally distributed.

TAH had a mean value of 4.1511 and a standard deviation value of 1.2155 meaning that there was no huge deviation from the mean under the period of study. The probability value of 0.0539 meant that this data was not normally distributed as the value was not more than 0.1. In all the tests for normality, the data for TAH proved not to be normally distributed. With the results in both TAL and TAH, the data under technical anomalies can be said to be not normally distributed.

4.2.4 Seasonal Anomalies

Seasonal anomalies had a skewness value of -0.3529, which signified that the curve is negatively skewed as the value is not equal to zero. Kurtosis value of 2.1905, meant that this curve was mesokurtic as it was less than three, thus not normally distributed. Jarque-Bera (JB) value of 6.2474 meant that data is not normally

distributed as the value is not close to zero. The skewness, kurtosis and JB tests have shown that the data was not normally distributed.

The mean value of 2.1087 and a standard deviation value of 1.1743, meaning that there were no huge deviations from the mean during the period of study. The probability value of 0.0440 meant that the data was not normally distributed as the value was not more than 0.1. In all the parameters put into consideration in the normality tests, the data in seasonal anomalies were not normally distributed. Thus the data has proved to be abnormally distributed.

4.2.5 Size Effect Anomalies

The curve was negatively skewed as it had a skewness value of -0.8719 which meant that the curve was not normally distributed as it did not have the value of zero. Kurtosis of 4.4209 meant that the curve is leptokurtic. This is so as the value was more than three and thus the curve is not normally distributed. A Jarque-Bera value of 27.3701, meant the curve was not normally distributed as the value was not close to zero.

There was a mean value of 15.8988 and a standard deviation value of 2.1805 meaning that there were no huge deviations from the mean. A probability of 0.0000 signified that the data was not normally distributed as the value was less than 0.1. The results yielded by the normality tests of the data in the size effect anomalies, proved that the data was not normally distributed. In other words, this can be looked at as all the tests of normality proved beyond any reasonable doubt to be abnormal.

All the measures of normality tests in the market anomalies and financial distress, indicated that the data for measures of fundamental and technical anomalies are not normally distributed. Likewise for seasonal and size effects anomalies had similar results. These findings concur with the finding that data can never be normal because of asymmetries, discreteness and boundedness of the observable data, (Westfall, 2014). Data may also not be normal simply because of outliers which can be on either extreme end, (Adams *et al*., 2018).

4.3 Correlation analysis

Table 4.2: Correlation Analysis

	LN_Z	LN_FAD	LN_FAE	LN_TAL	LN_TAH	LN_SA	LN_SEA
LN_Z	1.000000						
LN_FAD	0.329061	1.000000					
LN_FAE	0.062851	0.339948	1.000000				
LN_TAL	0.090441	-0.151044	-0.255116	1.000000			
LN_TAH	-0.061668	-0.241033	-0.252192	0.655144	1.000000		
LN_SA	0.082999	0.058698	0.248810	-0.062897	0.056293	1.000000	
LN_SEA	-0.166462	-0.048945	-0.255342	0.104762	0.229962	-0.021272	1.000000

4.3.1 Fundamental Anomalies

In table 4.2, the fundamental anomalies dividend per share had a correlation coefficient value of 0.3291 with the Z-score signifying that there was a moderate positive correlation between fundamental anomalies with the financial distress. This was so as the correlation value was between 0.2 and 0.4. This means that when fundamental anomalies dividend per share increased by 0.3291 per year then the dependent variable, financial distress is increased by one percent in the subsequent year. Fundamental anomalies earnings per share had a coefficient value of 0.0629 signifying a weak positive correlation with the Z-score as the correlation value was below 0.2. This means that when fundamental anomalies earnings per share is increased by 0.0629 per year then the dependent variable, financial distress is increased by one percent in the subsequent year. Thus, in the fundamental anomalies, it has been examined that indeed there exists a relationship between fundamental anomalies and financial distress which concurs with the finding of Elena-Dana and Iona-Christina (2013), who found out that there subsists positive association betwixt the fundamental anomalies and financial distress in firms.

4.3.2 Technical Anomalies

Technical anomalies low prices had a correlation coefficient value of 0.0904 which means that there exists a weak positive correlation with the Z-score as the value is below 0.2. This therefore means that when technical anomalies low prices are increased by 0.0904 per year, then financial distress increases by one percent in the subsequent year. This finding agrees with the finding of Chinga *et al*. (2014) who found out that technical anomalies have positive effect in the financial distress of firms. Technical anomalies high prices had a coefficient value of -0.0617 signifying a weak negative correlation with the Z-score as the value is below 0.2. This means that when technical anomalies high prices are decreased by 0.0617 per year then the financial distress is decreased by one percent in the subsequent year.

4.3.3 Seasonal Anomalies

Seasonal anomalies had a coefficient of 0.0830 signifying a weak positive correlation with the Z-score. This is so because the value is below 0.2 which is the threshold. This therefore means that when seasonal anomalies are increased by 0.0830 per year then the Z-sore is increased by one percent in the subsequent year. This consequently means that an increase of 0.0830 of a unit of seasonal anomalies attracts an increase of a unit of financial distress in the subsequent year. This result gave out a finding that there is a positive relationship between seasonal anomalies and financial distress of listed firms in NSE which is also similar to the findings of Kuria and Riro (2013), who also witnessed that there was a relationship between seasonal anomalies and financial distress in NSE.

4.3.4 Size Effect Anomalies

Size effect anomalies had a correlation coefficient of -0.1665. This signified a weak negative correlation with the z-score as the value was below 0.2. Therefore, this means that when size effect anomalies decreased by -0.1665 per year then the financial distress is decreased by one percent in the subsequent year. Thus, a decrease of 0.1665 of a unit of size effect anomalies, consequently reduces a unit of financial distress in the successive year. This finding indeed established that there

exists a negative relationship between size effect anomalies and financial distress of listed firms in NSE which is also similar to the findings of Duy and Phuoc (2016), where the study's finding also gave a negative relationship.

The above results of correlation coefficients can be summarized as; FAD is 0.3291 which signifies a moderate positive correlation with the dependent variable. The correlation coefficients FAE, TAL and SA were 0.0629, 0.0904 and 0.0830 which signified weak positive correlations with the dependent variable. The correlation coefficients of TAH and SEA conversions were -0.0617 and -0.1665 respectively signifying weak negative correlations with the dependent variable. Thus, there were no highly correlated variables with dependent variable, financial distress in the model.

4.4 Unit Root Tests at Intercept and Level I (0)

In the panel unit root test framework, various tests have been developed. These tests are; LLC test, IPS test and fisher type tests, ADF and Plackett and Pearson (PP), (Levin *et al.*, 2002; Im *et al*., 2003; Dickey & Fuller, 1981). The main limitation of these tests is that they are based on the assumption of cross-sectional independence across variables. In this section, the study critically analyses the dependent variable, financial distress and the independent variables which include fundamental, technical, seasonal and size effect anomalies independently with their measures in determination whether the variables possess the unit root or not.

4.4.1 Financial Distress

In table 4.3, the dependent variable, financial distress was found to be stationary at intercept and level I (0). This was so as the results of LLC test statistic, IPS test, Augmented Dickey-Fuller and Plackett and Pearson (PP) indicated that all the tests had probability values of 0.0000 which were statistically significant at five percent level of significance. Since the p-values of the considered tests were less than five percent, therefore, we fail to accept the null hypothesis that dependent variable, financial distress has a unit root and thus stationary. This was the reason why it is meant that the financial distress was stationary at the intercept and level I (0). This

result is similar to the findings of the study by Nunzio and Diego (2016) who found the presence of stationarity in the data being researched.

Table 4.3: Panel Root Test for FD

Panel unit root test: Summary
Series: LN_Z

Method	Statistic	Prob.	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
LLC	-23.2433	0.0000	48	446
Null: Unit root (assumes individual unit root process)				
IPS	-5.75092	0.0000	48	446
ADF	170.348	0.0000	48	446
PP	188.212	0.0000	48	454

4.4.2 Fundamental Anomalies

Fundamental Anomalies Dividend Per Share

In table 4.4, the test results of LLC test statistic, IPS test, Augmented Dickey-Fuller and Plackett and Pearson for FAD showed that all the tests under consideration had probability values of 0.0000 which were statistically significant at one percent level of significance. Since all the p-values were less than five percent level of significance, therefore we fail to accept the null hypothesis that FAD has a unit root and thus stationary. This then meant that FAD was found to be stationary at intercept and level I (0). This finding agrees with the finding of Nunzio and Diego (2016) that they reject no cointegration in favor of stationarity of the vector autoregression (VAR) model in all cases.

Table 4.4: Panel Root Test for FAD

Panel unit root test: Summary Series: LN_FAD				
Method	Statistic	Prob.	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
LLC	-14.0202	0.0000	41	344
Null: Unit root (assumes individual unit root process)				
IPS	-6.39159	0.0000	40	341
ADF	182.521	0.0000	41	344
PP	215.812	0.0000	41	349

Fundamental Anomalies Earnings Per Share

According to table 4.5, FAE was found to be stationary at intercept and level I (0) because the LLC test statistic, IPS test, Augmented Dickey-Fuller and Plackett and Pearson (PP) had probability values of 0.0000 which was statistically significant at one percent level of significance. Therefore, we fail to accept the null hypothesis that FAE has a unit root and thus stationary. This is so as the p-values under consideration were found to be less than five percent level of significance. This thus meant that the FAE was established to stationary at intercept and level I (0) which is similar to the conclusions by; Phillips and Perron (1987) and Nunzio and Diego (2016) in their research.

Table 4.5: Panel Root Test for FAE

Panel unit root test: Summary				
Series: LN_FAE				
Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
LLC	-15.8765	0.0000	47	373
Null: Unit root (assumes individual unit root process)				
IPS	-5.66762	0.0000	45	367
ADF	182.055	0.0000	47	373
PP	199.274	0.0000	47	379

4.4.3 Technical Anomalies

Technical Anomalies Low Prices

Table 4.6 indicates the results of the probability values for the tests under consideration. The LLC test statistic, IPS test, Augmented Dickey-Fuller and Plackett and Pearson (PP) were found to be having probability values of 0.0000 which was statistically significant at five percent level of significance. This was so since the results of the tests which were considered were less than one percent level of significance. Therefore, we fail to accept the null hypothesis that TAL has a unit root and thus stationary. Thus, TAL was found to be stationary at intercept and level I (0). While carrying out tests for the presence of stationarity, Nunzio and Diego (2016), found the presence of stationarity in the data being studied and thus their finding agrees with the finding of this study.

Table 4.6: Panel Root Test for TAL

Panel unit root test: Summary Series: LN_TAL				
Method	Statistic	Prob.	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
LLC	-8.93484	0.0000	49	473
Null: Unit root (assumes individual unit root process)				
IPS	-4.10378	0.0000	49	473
ADF	169.319	0.0000	49	473
PP	180.082	0.0000	49	483

Technical Anomalies High Prices

According to table 4.7, the LLC test statistic for TAH had a probability value of 0.0000 which is significant at five percent level of significance. Therefore, we fail to accept the null hypothesis that TAH has a unit root. IPS test had a value of 0.0157 which was statistically significant at five percent level of significance. It meant that we fail to accept the null hypothesis that TAH has a unit root and thus stationary. Augmented Dickey Fuller had a value of 0.0144 which was significant at five percent level of significance. Plackett and Pearson (PP) had a value of 0.0000 which was significant at five percent level of significance. The p-values of the tests considered were less than the level of significance, therefore this meant that TAH was found to be stationary at intercept and level I (0). This finding does not differ at all with the findings of Nunzio and Diego (2016), who concluded that there the presence of stationarity in the data researched.

Table 4.7: Panel Unit Root Test for TAH

Panel unit root test: Summary Series: LN_TAH				
Method	Statistic	Prob.	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
LLC	-7.11633	0.0000	49	468
Null: Unit root (assumes individual unit root process)				
IPS	-2.15194	0.0157	49	468
ADF	131.069	0.0144	49	468
PP	166.628	0.0000	49	483

4.4.4 Seasonal anomalies

According to table 4.8 below, the LLC test statistic for SA had probability values of 0.0000 which is significant at five percent level of significance. IPS test had probability values of 0.0000 which is significant at five percent level of significance. Augmented Dickey-Fuller had probability values of 0.0213 which was significant at five percent level of significance. Plackett and Pearson (PP) had probability values of 0.0109 which was statistically significant at five percent level of significance. Since the p-values of the results of the tests under consideration were less than the level of significance, therefore we fail to accept the null hypothesis that SA has a unit root and thus stationary. This thus meant that SA was found to be stationary at intercept and level I (0). This finding concurs with the findings of Nunzio and Diego (2016) that there is the presence of stationary in the data under research.

Table 4.8: Panel Unit Root Test for SA

Panel unit root test: Summary Series: LN_SA				
Method	Statistic	Prob.	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
LLC	-15.5628	0.0000	10	36
Null: Unit root (assumes individual unit root process)				
IPS	-7.22655	0.0000	4	19
ADF	32.1087	0.0213	9	34
PP	34.4997	0.0109	9	34

4.4.5 Size Effect Anomalies

In table 4.9 below, SEA was found to be stationary at intercept and level I (0) because the LLC test statistic had probability value of 0.0000 which is significant at five percent level of significance. IPS test had probability value of 0.0710 which is statically insignificant at five percent level of significance. Augmented Dickey-Fuller (ADF) had probability value of 0.1651 which is statistically insignificant at five percent level of significance. Plackett and Pearson (PP) had probability values of 0.0001 which is significant at five percent level of significance. Therefore, using LLC and PP, we fail to accept the null hypothesis that SEA has a unit root and that SEA was found to be stationary at intercept and level I (0). This result concurs with the findings of Nunzio and Diego (2016) of the presence of stationarity.

However, using IPS and ADF values which were more than 0.05, then the results indicated that we accept the null hypothesis that SEA has a unit root and that SEA was found not to be stationary at intercept and level I (0), thus bringing in the type I error. This finding concurs with the findings of Reed (2014) who found that unit root tests can suffer from inflated Type I error rates when data are cointegrated. This finding also was in agreement with the results of Nelson and Plosser (1982), who found out a strong evidence in favour of unit root non-stationarity using Dickey-Fuller (1979) testing procedure.

Table 4.9: Panel Unit Root Test for SEA

Panel unit root test: Summary Series: LN_SEA				
Method	Statistic	Prob.	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
LLC	-6.52166	0.0000	49	484
Null: Unit root (assumes individual unit root process)				
IPS	-1.46813	0.0710	49	484
ADF	111.549	0.1651	49	484
PP	157.597	0.0001	49	490

4.5 Panel Regression Equation

The data was lagged by one period since market anomalies experienced in one period tend to have their implications felt in the subsequent periods. In panel regression equation there is the use of Hausman test, which was applicable to all the variables under consideration, (Hausman, 1978). In Hausman test, Chi-square test statistic was considered in determination of the level of significance. This led to making a decision as to whether to adopt the fixed effects model or random effects model.

4.5.1 Hausman Test

Table 4.10 was used in determination of the most convenient model to be used in this study which is choosing between fixed effects model and random effects model. The Chi-square test statistic was 18.4369 with a significant probability value of 0.0052 which was significant at five percent level of significance. When the probability value is more than 0.05, we accept the use of random effects model and when the value is less than 0.05 then this allows the applicability of the fixed effects model. Table 4.10 gave a probability value is 0.0052 which is less than 0.05 and thus the adoption of the fixed effects model. The adoption of fixed effects model was also supported by the fact that the entire population was studied, (Green & Tukey, 1960).

This therefore meant that the null hypothesis was not accepted in favour of the fixed effects model. With the preceding result we therefore accept the adoption of the fixed effects model as better placed model for this study. This is also supported by the fact that there is large *t* with small *n*, there is likelihood of existence of little difference, thereby preferring the fixed effects. This reasoning is furthered by the fact that the population, *n*, is definite as in this study census has been applied, (Green & Tukey, 1960).

Table 4.10: Correlated Random Effects - Hausman Test

Correlated Random Effects - Hausman Test
Equation: EQ02FIRSTDIFFERENCE
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	18.436861	6	0.0052

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var (Diff.)	Prob.
DFAD	0.379601	0.279855	0.000950	0.0012
DFAE	-0.249160	-0.069527	0.004241	0.0058
DTAL	0.143879	0.077409	0.002277	0.1636
DTAH	-0.130841	-0.154396	0.000700	0.3734
DSA	0.006627	-0.008949	0.000030	0.0044
DSEA	-0.049141	0.347519	0.014647	0.0010

Notations;

D - First Difference of

DFAD - First Difference of Fundamental Anomalies Dividend Per Share

DFAE - First Difference of Fundamental Anomalies Earnings Per Share

DSA - First Difference of Seasonal Anomalies

DSEA - First Difference of Size Effect Anomalies

DTAH - First Difference of Technical Anomalies High Prices

DTAL - First Difference of Technical Anomalies Low Prices

4.5.2 Fixed Effects Model

In this study, the choice of fixed effects models as opposed to the random effects model as initially mentioned was due to the entire population being considered, (Green & Tukey, 1960). Also, the Huasman test gave a p-value of 0.0052 which was less than 0.05, (Hausman, 1978). There are various assumptions in the fixed effects model. Firstly, the error is uncorrelated with all observations of the variable XX for the entity ii over time. If this assumption is violated, then we face the bias of omitted variables. Secondly, the model ensures that variables are iid across entities $i = 1 \ldots \ldots, ni = 1, \ldots \ldots, n.$ This assumption does not require the observations to be uncorrelated within an entity. The $XitXit$ are allowed to be autocorrelated within entities. This property is common with time series data. The same is allowed for errors $uituit$. This assumption is justified if the entities are selected by simple random sampling. Thirdly, large outliers are unlikely and lastly, there is no perfect multicollinearity.

The p-value as per table 4.11 was analyzed for all the independent variables with their values being taken into consideration in the determination as to whether they are of statistical significance or not. For fundamental anomalies, dividends per share and earnings per share are considered, (De Bondt & Thaler, 1985). In technical anomalies, the low and high prices are taken into consideration, (Brock *et al*., 1992). In seasonal anomalies, frequencies of occurrences on a monthly basis are taken, (Karz, 2010), while in the size-effect anomalies market capitalization for the size-effect is considered, (Chongyu *et al.*, 2018).

Table 4.11: Fixed Effects Model

Dependent Variable: FD
Method: Panel Least Squares
Cross-sections included: 22
Total panel (unbalanced) observations: 36

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DFAD	0.379601	0.068816	5.516165	0.0006
DFAE	-0.249160	0.090862	-2.742164	0.0254
DTAL	0.143879	0.056626	2.540866	0.0347
DTAH	-0.130841	0.062248	-2.101923	0.0687
DSA	0.006627	0.011076	0.598290	0.5662
DSEA	-0.049141	0.147486	-0.333192	0.7476
C	-0.010649	0.018645	-0.571121	0.5836

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.964596	Mean dependent var	-0.005585
Adjusted R-squared	0.845108	S.D. dependent var	0.203078
S.E. of regression	0.079924	Akaike info criterion	-2.164000
Sum squared resid	0.051103	Schwarz criterion	-0.932374
Log likelihood	66.95200	Hannan-Quinn criter.	-1.734130
F-statistic	8.072745	Durbin-Watson stat	3.492419
Prob (F-statistic)	0.002294		

Fundamental Anomalies

Fundamental anomalies are measured both in dividends per share and earnings per share, (De Bondt & Thaler, 1985). FAD had a coefficient of 0.3796 which signifies a moderate positive relationship with FD. A probability value of 0.0006 means that FAD is significant at five percent level of significance. This means that when fundamental anomalies dividend per share increased by 0.3796 percent per year then the dependent variable, financial distress increased by one percent in the subsequent year. Thus, they have a positive and significant relationship. Therefore, we fail to accept the null hypothesis that FAD had no significant relationship with the financial distress of listed firms in NSE, Kenya. Therefore, we conclude that there indeed exists a relationship between fundamental anomalies and financial distress of listed firms in NSE, Kenya.

FAE had a coefficient of -0.2492 which signifies a weak negative relationship with the dependent variable. A probability value of 0.0254 is significant at five percent level of significance. This means that FAE had significant effect on the dependent variable, financial distress during the period of study. This further implies that when FAE decreased by -0.2492 percent per year then the dependent variable, FD is decreased by one percent in the subsequent year. This implies that they had a negative and a statistically significant relationship. Therefore, we fail to accept the null hypothesis, that FAE had no statistical significant relationship with the financial distress of listed firms in NSE, Kenya. Thus, we conclude that FAE indeed has a relationship with the financial distress of listed firms in NSE, Kenya.

In the two measures of the fundamental anomalies, dividends per share and earnings per share, we conclude that since we failed to accept the null hypothesis, H_{01}, we

have examined that indeed there is a relationship between fundamental anomalies and financial distress of listed firms in NSE, Kenya. This conclusion agrees with the findings of Elena-Dana and Iona-Christina and those ones of Graham and Dodd, (Elena-Dana & Iona-Christina, 2013; Graham & Dodd, 2008). This therefore signifies that fundamental anomaly has got a straight through effect on the financial health of a firm in NSE and as such when the annual financial statements and reports are released, the stakeholders need to be keen in the information on dividends and earnings per share. These two give an indication of whether a firm is in financial distress or not.

Technical Anomalies

Technical anomalies have both low and high prices as measures, (Brock *et al*., 1992). The technical high prices had a coefficient of -0.1308 and a statistically significant probability value of 0.0687 which is insignificant at five percent level of significance. This means that when technical anomalies high prices decreased by 0.1308 percent per year then the dependent variable, financial distress is decreased by one percent in the subsequent year. They had a negative and a statistically insignificant relationship. Therefore, accept the null hypothesis that TAH has no

statistical significant relationship with the financial distress of listed firms in NSE, Kenya. We thus conclude that TAH indeed has a relationship with the financial distress of listed firms in NSE, Kenya.

Technical anomalies low prices had a coefficient of 0.1439 and a statistically significant probability value of 0.0347 which is significant at five percent level of significance. This means that when technical anomalies low prices are increased by 0.1439 percent per year then the dependent variable, financial distress is increased by one percent in the subsequent year. They had a positive and significant relationship. Therefore, we fail to accept the null hypothesis that TAL had no statistical significant relationship with the financial distress of listed firms in NSE, Kenya. We thereby conclude that TAL indeed has a relationship with the financial distress of listed firms in NSE, Kenya.

Since we have failed to accept that the TAL has no significant relationship with the financial distress of listed firms in NSE, Kenya. We therefore conclude that we fail to accept the null hypothesis, H_{02}, technical anomalies have no statistical significant

relationship with the financial distress of listed firms in NSE, Kenya. Thus indeed, we have determined that there exists a relationship between technical anomalies and financial distress of listed firms in NSE, Kenya. This conclusion concurs with the conclusions of Chinga *et al*., Han *et al*. and Bodie *et al*., (Chinga *et al*., 2014; Han *et al*., 2013; Bodie *et al*., 2014). Friewald, Wagner and Zechner (2012) concurs also with this study's conclusion by stating that there is a positive relationship between bankruptcy risk and stock returns. The findings of Avramov *et al.* (2013) also state that financial distress has led to razor-sharp responses in the prices of stocks and bonds and this pattern could likely be associated to the dynamics of anomalies.

Recent works have established either a positive according to Friewald, Wagner and Zechner (2012) or negative, Anginer and Yıldızhan (2012) association betwixt risk of bankruptcy and returns in stock premised on the other assessments of the risk of bankruptcy. This basically means that there is or no relationship between the financial distress and market anomaly. This is so because bankruptcy risk is part of

financial distress while the stock returns forms part of the market anomalies in this study. In the first instance, there exists a relationship which is the main interest of this study.

Seasonal Anomalies

Seasonal anomalies are operationalized through the frequencies of occurrences, (Karz, 2010). Seasonal anomalies had a coefficient of 0.0066, signifying a weak positive relationship. This then meant that when SA is increased by 0.0066, then FD is increased by a unit in the subsequent year. It also had a probability value of 0.5662 which is statistically insignificant at five percent level of significance. This means that seasonal anomalies had no significant effect on the dependent variable, financial distress during the period of study. They had a weak positive but a statistically insignificant relationship. Therefore, we accept the null hypothesis, H_{03}, that

seasonal anomalies have no statistical significant relationship with the financial distress of listed firms in NSE, Kenya.

We have explored and concluded that indeed there exists a relationship between seasonal anomalies and financial distress of listed firms in NSE, Kenya. This therefore signifies that seasonal anomaly has a link with the financial position of firms in NSE. The findings of this study confirms the result by Kuria and Riro (2013) while conducting a study on stock market anomalies, NSE. The research was specifically about seasonal effects on the average returns of the stocks.

Their study established that in December and January, the stock prices were low and unattractive. Also, they found out that due to the negative economic news which was usually presented at the start of the week, it made investors dispose-off their stocks which brought in negative returns on Mondays. The result was a confirmation that indeed there exists a positive relationship between seasonal market anomalies and financial distress in NSE. The finding of this study also concurs with the findings of Karadžić and Vulić, (Karadžić & Vulić, 2011).

Size Effect Anomalies

Size effect anomalies which are measured in terms of market capitalization, (Chongyu *et al.,* 2018). It had a coefficient of -0.0491 and a significant probability value of 0.7476 which is insignificant at five percent level of significance. This means that when size effect anomalies are decreased by 0.0491 percent per year then the dependent variable, financial distress is decreased by one percent in the subsequent year. They had a weak negative and a statistical insignificant relationship which concurs with the study findings of Banz, (Banz, 1981).

Therefore, we accept the null hypothesis that SEA has no statistical significant relationship with the financial distress of listed firms in NSE, Kenya. This study has indeed established that there exists a relationship between size effect and financial distress of listed firms in NSE, Kenya. This signifies that size effect anomaly has a direct link with the firm's financial health in NSE. Locally this finding agrees with the findings of Muchina, (Muchina, 2015). Also, this finding concurs with the findings of Banz, Hawawini and Keim, Gompers and Metrick, Avramov *et al*. and Campbell *et al*., (Banz, 1981; Hawawini & Keim, 2000; Gompers and Metrick, 2001; Avramov *et al*., 2013 & Campbell *et al*., 2011).

Market Anomalies and Financial Distress of Listed Firms in NSE, Kenya.

The constant C had a coefficient of -0.0106 which signified a weak negative relationship as it was less than 0.2 and significant probability value of 0.5836. Table 4.11 captures the research model equation, 3.05 which is furthered in equation 3.06 and summarized in equation 3.08. In this study the model equation as per table 4.11 is captured as;

FD = -0.0106 + 0.3796FAD - 0.2492FAE + 0.1439TAL - 0.1308TAH + 0.0066SA-0.0491SEA. ……...……..…….. 4.1

When all the proxies of market anomalies were aggregated in the constant C with a coefficient of -0.0106 and significant probability value of 0.5836, jointly did not significantly affect the financial distress during the period of study.

This signifies that when all the proxies of the market anomalies are decreased by 0.0106, then the dependent variable, financial distress is decreased by one percent in the subsequent year. Thus, the relationship which subsists between market anomalies and financial distress is a weak negative one which concurs with the local findings of Kuria and Riro, (Kuria & Riro 2013). The findings of this study agree with the findings Elena-Dana and Iona-Christina (2013), Graham and Dodd (2008), Chinga *et al*. (2014), Han *et al*. (2013), Bodie *et al*. (2014), Friewald, Wagner and Zechner (2012), Karadžić and Vulić (2011), Keim (2000), Gompers and Metrick (2001), Campbell *et al*. (2008), Avramov *et al*. (2013) and Campbell *et al*. (2011) from a global perspective. This study has established the relationship between market anomalies and financial distress of listed firms in NSE, Kenya.

R-squared had a value of 0.964596 which is 96%. This meant that 96% explains the market anomalies, independent variables affecting the financial distress, dependent variable. The Adjusted R-squared had a value of 0.845108 which is 85%. It meant that 85% of the market anomalies, independent variables affected the financial distress, dependent variable. When the difference between R-squared and Adjusted R-squared is less than 20%, then the data is deemed to be stable. If the difference between the two is more than 20%, then the data is considered to be unstable. In this study, the difference between the two is 11%. This meant that the two values are not far away from each other, thus the data is stable, (Gupta, 2002).

The probability F-statistic value was also considered in the determination of the model stability. The probability F-statistic was 0.0023 which is significant at five percent level of significance. Since this value was less than 0.05, it therefore meant that there was great stability in the model. With such a low figure, then it can be conclusively said that the model is very stable, (Gujarati & Porter, 2010). Lastly in the model stability, was the consideration of Durbin Watson value which was at 3.4924, meaning that the data in this study had no autocorrelation at all as the value was not four, (Gujarati & Porter, 2010).

The study also confirmed that there was no challenge of multicollinearity as the coefficient of correlation did not go beyond the stipulated values of 0.75, 0.8 or 0.9 (Mashotra, 2007; Cooper & Schindler, 2014; Hair *et al.,* 2006). The results showed that the coefficient of correlation values were far below the stipulated values and thus the challenge of multicollinearity was less severe between or among the variables as it had been dealt with in the study. Also, the results indicated that there was no challenge of heterodasticity as there was no constant variance between or among the error terms, (Gujarati & Porter, 2010).

It is interesting also to note that the results by Maina and Sakwa (2012) indicated that 53% of all the firms in NSE were in financial distress. In this study, 41% of the firms listed in NSE were in financial distress while only 33% of the firms were in the safe zone in 2017. During the world financial crisis of 2007 and 2008, this study indicated that in 2007, 35% of the firms were in the distress zone while 33% of the firms were in the safe zone and in 2008 41% of the firms were in the distress zone and 33% in safe zones. Immediately after the world financial crisis of 2007 and 2008 that is in 2009, 37% of the firms were in the distress zone while 31% were in the safe zone. From the above results, it can be inferred that the NSE did not really face the wrath of the 2007 – 2008 world financial crisis.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The universal objective of this study is to establish the relationship between market anomalies and financial distress of listed firms in NSE, Kenya. From the overall objective, this study sought to find out if fundamental, technical, seasonal and size effect anomalies have a relationship with financial distress of listed firms in NSE, Kenya and whether these relationships were of statistical significance or not. This then gives an opportunity of the null hypothesis either being accepted or failed to be accepted. This chapter therefore presents summary of findings, overall conclusions based on managerial, investors, policy makers and regulators and theoretical implications of the relationship of market anomalies and financial distress of listed firms in NSE, Kenya. Finally, this chapter proposes areas for further study to the researchers to give a discourse to the gaps which the study was unable to fill.

5.2 Summary of Findings

The study was conducted based on the premise that market anomalies have no statistical significant relationship with the financial distress of listed firms in NSE, Kenya. The study reviewed both theoretical and empirical literature on market anomalies and financial distress. From the review of the related literature, a comprehensive conceptual framework of argument of the relationship between market anomalies and financial distress was formulated.

The hypothesized relationship was tested empirically guided by the following specific objectives; to examine the relationship between fundamental anomalies and financial distress of listed firms in NSE, Kenya, to determine the relationship between technical anomalies and financial distress of listed firms in NSE, Kenya, to explore the relationship between seasonal anomalies and financial distress of listed firms in NSE, Kenya and to establish the relationship between size effect anomalies and financial distress of listed firms in NSE, Kenya. The hypothesized relationship

between market anomalies and financial distress of listed firms in NSE, Kenya, were presented in a conceptual framework.

Based on the conceptual framework and objectives of the study, a collection data sheet in the form Microsoft excel was prepared to collect the secondary data from the audited financial reports for the firms listed in NSE. This was done for both the independent and dependent variables from a population of 67 firms. The independent variables of the study were tested for multicollinearity, heteroscedasticity and heterogeneity. Normality tests were carried out on the variables using descriptive statistics.

Durbin-Watson test was carried out to test autocorrelation of the data. Correlation analysis was used to test the direction and strength of the independent variables against the dependent variable. Unit root tests was to check for the stationarity of the independent variables and Hausman test was used to determine whether to adopt random or fixed effect model. Eviews was the statistical tool for analysis all through. Quantitative data was analyzed and described using descriptive statistics. Linear panel regression model was used to test the combined effect of all the independent variables.

5.2.1 Relationship between Fundamental Anomalies and Financial Distress of Listed Firms in NSE, Kenya.

This study examined and found out that there subsists positive and statistically significant relationship between fundamental anomalies and financial distress of listed firms in NSE, Kenya. This therefore means that the null hypothesis was failed to be accepted that fundamental anomalies have no statistical significant relationship with the financial distress of listed firms in NSE, Kenya. This signified that a slight change in fundamental anomalies is very critical in determination of the financial health of a firm. As such, the regulatory bodies such as CMA and NSE should put up controls so that the firms listed in NSE give true and fair view of dividends and earnings per share in their end year financials and reports. This will curtail firms which use orthodox means of giving falsified information about their financial

positions. This will go a long way in helping the potential and existing investors in making the right financial decision in the stock market with all available facts.

5.2.2 Relationship between Technical Anomalies and Financial Distress of Listed Firms in NSE, Kenya.

This study determined that indeed there exists a negative and statistically significant relationship between technical anomalies and financial distress of listed firms in NSE, Kenya. This therefore means that the null hypothesis was failed to be accepted that technical anomalies have no statistical significant relationship with the financial distress of listed firms in NSE, Kenya. The results stipulate that a very slight alteration in the prices of shares of firms listed in the NSE, causes an alteration in the financial health of the firm. This calls for the regulators and policy makers, CMA and NSE to have in place measures that will make sure that the stock prices are not manipulated. If this is not checked, then there might be challenges in the NSE in which the confidence of all the stakeholders might be eroded as they will not have access to the right information.

5.2.3 Relationship between Seasonal Anomalies and Financial Distress of Listed Firms in NSE, Kenya.

This study explored and found out that there exists a negative and statistically significant relationship between seasonal anomalies and financial distress of listed firms in NSE, Kenya. This therefore means that the null hypothesis was failed to be accepted that seasonal anomalies have no statistical significant relationship with the financial distress of listed firms in NSE, Kenya. This signifies that in case of any slight change in seasonal anomalies, then the financial health position of the firms listed in NSE also changes and unfortunately the change is for the worse meaning that the financial health of the firms will deteriorate. Actually, this means that the regulators, CMA and NSE must have all it takes to foretell that the firms' stocks will have to face the seasons' shocks so as to be prepared to put in place the financial shock absorbers or creators.

5.2.4 Relationship between Size Effect Anomalies and Financial Distress of Listed Firms in NSE, Kenya.

This study established that there was a negative relationship between size effect anomalies and financial distress of listed firms in NSE, Kenya but statistically significant during the period under study. This therefore means that the null hypothesis was failed to be accepted that size effect anomalies have no statistical significant relationship with the financial distress of listed firms in NSE, Kenya. The result demonstrated that CMA, NSE and investors will take up the firms' capitalization as the measure of firms' size as this affects the financial position of firms. This is so because any slight change in the size of the firm definitely affects the financial position of the firms listed in NSE. As such the regulators and investors have to closely monitor the size of the firms as any slight change may have negative repercussions.

5.2.5 Relationship between Market Anomalies and Financial Distress of Listed Firms in NSE, Kenya.

This study established that there was a negative but statistical insignificant relationship between market anomalies and financial distress of listed firms in NSE, Kenya. All the proxies of market anomalies aggregated in the constant C jointly did not significantly affect the financial health position during the period of study. This demonstrated the need for the government to act on market anomalies. If uncontrolled, its increase or decrease would negate this relationship from negative to positive and the effect from insignificant to being significant in Kenya.

5.3 Conclusions

While there are quite a number of empirical studies on the association betwixt market anomalies and financial distress, this study established the relationship between market anomalies and financial distress of listed firms in NSE, Kenya. The linear panel regression model demonstrated that all the proxies of the market anomalies; fundamental, technical, seasonal and size effect anomalies jointly did not significantly affect nor influenced the financial distress during the period of study. It

meant that when market anomalies are lumped together, there was a negative relationship with the financial distress during the period of study but did not have significant effects jointly.

5.3.1 Relationship between Fundamental Anomalies and Financial Distress of Listed Firms in NSE, Kenya.

Our results established that there was indeed a relationship between fundamental anomalies and financial distress of listed firms in NSE, Kenya. Firstly, there is need to take keen interest in the firms' dividends and earnings policies. Secondly, there is also need to pay keen attention on the low and high prices of stocks of firms as they have impact on financial distress. Thirdly, there is need to have regard for seasons in terms of hourly, daily, weekly, monthly or annually price movements of stocks. Lastly, a lot of inquisitiveness should be put on the size effect of firms as they impact also on the financial health of firms.

One of the conclusions that there was a positive and significant relationship between fundamental anomalies and financial distress, clearly shows that fundamental anomalies have a direct link with financial distress. This is so as firms which experience financial distress have very low or do not the capacity to declare dividends or earnings per share. This confirms the the bird-in-the-hand theory of dividends which shows the existence of a positive relationship between the stock's price and the dividend. The investors who have put their investments in the stock market will be keen on the financial health of the firms listed in NSE as much as they will get capital gains but also they will amass more wealth in terms of dividends payments.

5.3.2 Relationship between Technical Anomalies and Financial Distress of Listed Firms in NSE, Kenya.

The study also determined and found out that there was a weak positive relationship between technical anomalies and financial distress of listed firms in NSE. It should be noted that the relationship was significant as the correlation of coefficient was less than 0.05. It showed that technical anomalies and financial distress are linked, the

lower or higher the price of stocks are, the worse or better the financial health of firms. This confirms the applicability of the EMH which states that investors must possess all the relevant information. This is furthered by RWH which asserts that the prices of stocks are unpredictable. As prices of stocks are difficult to accurately predict, then the Expected Utility Theory which is explained by the Subjective Expected Utility Theory and risk taken by Von Neumann-Morgenstern Theory.

5.3.3 Relationship between Seasonal Anomalies and Financial Distress of Listed Firms in NSE, Kenya.

The study explored and found out that there was a positive relationship between seasonal anomalies and financial distress of listed firms in NSE, but the relationship was significant. It signified that there was a link between seasonal anomalies and financial distress. This confirms the application of the EMH which focuses on the RWH. The Random Walk Hypothesis shows that the prices of stock behave closely to a wandering series.

5.3.4 Relationship between Size Effect Anomalies and Financial Distress of Listed Firms in NSE, Kenya.

The study established that there was a positive relationship between size effect anomalies and financial distress of listed firms in NSE. This relationship was also found to be insignificant. It signified that there was a link between size effect anomalies and financial distress. This confirms the applicability of the Efficient Market Hypothesis which allows the investors have in their possession all the relevant information required in their decision making as to whether it is worth in investing in a specific stock or not. Also, the theory of Fama-French three-factor is applicable.

When all the proxies of market anomalies were aggregated, they jointly did not significantly affect the financial distress during the period of study. Thus, this meant that all the proxies of market anomalies had a negative relationship with the financial distress during the period of study but did not have statistical significant effects jointly. Therefore, the results of this study established that there was indeed a

relationship between market anomalies and financial distress of listed firms in NSE, Kenya. This confirms the application of EMH, CAPM, Fama-French three-factor theory, EUT, dividends theories and financial distress theories, in particular the Altmann's Z-score.

5.4 Recommendations

Due to numerous results, findings and conclusions made by the study, various recommendations are proposed. The recommendations are made to the management, investors, policy makers and regulators. At the management cadre, the recommendations will assist in the implementation of business strategies while noticing early signs of financial distress. For policy makers and regulators, the recommendations will assist in restoring law and order in the listed firms and this will make all the stakeholders to have confidence in NSE.

5.4.1 Relationship between Fundamental Anomalies and Financial Distress of Listed Firms in NSE, Kenya.

The results demonstrated that dividends have great impact on all the shareholders of a firm. The management should therefore put in place the right policies to guide the firm on the treatment of dividends declaration or non-declaration at the close of the financial trading period of the firm. The dividends declaration or non-declaration is the sole prerogative of the management and as such it should be handled well with full information on the impact of the same. As much as dividends show openly how it affects the shareholders of firms, likewise is the earnings per share which makes the stakeholders of firms to make management or financial decisions. This also calls for the management to be vigilant in the firm's earnings per share as it will eventually determine the financial health of a firm.

The tax preference theory of dividends as spelt out in this study will assist the government, through KRA in taxation matters. KRA should have the capability and capacity of unearthing this infamous practice of tax evasion or tax fraud when it comes to paying taxes by firms. The top management do this by successfully by failing to declare dividends to shareholders and converting the same to shares and

reinvesting this into the firm's operations. The KRA should work around the clock to prove that this is actually is tax evasion and not tax avoidance as the latter is not illegal while tax evasion is illegal. Tax is a vital component which any government of the day as the funds generated from it are used for development projects in the country.

The policy makers and regulators should get rid of malpractices such as giving cooked and untimely annual financial reports of the listed firms in NSE. This occurs when the management of a firm intentionally misstate the financial statements and reports to favourably represent the firm's financial performance as this interferes with the intrinsic values of the stocks. It is also known as financial statements manipulation is usually perpetrated by upper management. The policy makers and regulators should make sure that firms in NSE publish their financial statements and reports in a specified time period and in a prescribed manner. The firms which participate in the NSE are expected to publish their end of year financial statements and reports within a stipulated time frame and to appear in the any of the three most circulated dailies in Kenya. This will get rid of the issues of biasness, errors and unbalanced data panels encountered in the financial statements and reports.

They should make sure that listed firms in NSE avail their annual financial statements and reports without fail to stakeholders and through appropriate means. Failing to provide the financial statements and reports means that the firm has denied the stakeholders the knowledge of the firm's performance. This will be treated as disregarding the CMA Act, cap. 485A of 2012, legal notice number 61, section 9(h), on non-disclosures which can render a firm to be suspended and eventually delisted from NSE. These reports provide very important information on the financial health of firms to the stakeholders. This will enable the stakeholders to make informed decision about a particular firm of interest.

The policy makers and regulators and by extension the investors will have an opportunity to determine the financial health of firms listed in NSE through the market anomalies. This will enable them make an informed decision in regulatory and investment terms. The policy makers and regulators will know the financial

health of the firms listed in NSE and as such will know which firms to focus on. In investment terms, this is so as the firm's material facts are confiscated into the value of financial assets.

The policy makers and regulators should guard against short-termism. Employees and consumers are vulnerable to the adverse effects of the short-termism that in more circumstances the stock market encourages. Usually, the shareholders want bigger dividends as opposed to smaller or no dividends. Thus, this makes the firms listed in NSE to be under an immense pressure to increase short-term profits. It is not the best strategy as it leads to cost cutting which will affect the employees or the firm may be in the temptation of engaging in collusive practices which result into pushing up consumers' prices. Thus, the policy makers and regulators should encourage long-term success of firms as opposed to short-term successes. They should be at the forefront and willing to encourage more long-term investment rather than short-term profit maximization for the listed firms in NSE.

5.4.2 Relationship between Technical Anomalies and Financial Distress of Listed Firms in NSE, Kenya.

The study therefore recommends that the management should be in cognizance of the fact that share prices of firms can be at times low or high. This is referred to as the troughs and peaks in the stock market. The stakeholders can be on either side of the coin as this depends on the action being undertaken by them. Depending on which side of the coin the stakeholders are, the management should make sure that according to their judgments whether the share prices are low or high, they would have achieved the firm's objective of being attractive to the stakeholders. Stock market correction is an inevitable part of stock ownership which lasts for a shorter period of time.

The management also should be aware that as much as the stock market correction is inevitable but also is unpredictable. They should advise the investors to maintain long term investment view on the stock as this is a recipe of good night sleep. It also gives a long-term investor an opportunity to add high quality stocks in to his portfolio at a bargain. Thus, this becomes an issue to short term investors as they

might end up losing their wealth. The variations in share prices can have a huge impact on the financial health of a firm. As such, the management should equally be well equipped on how to act best when the share prices at troughs and peaks.

The government through the media regulatory bodies are supposed to be in full control of the media content as any negative information about the market trends is capable of creating a sense of panic which can be very detrimental to the economy. This can result into the investors moving funds away from stocks to less risky investments. If such an action takes place, then the stock prices are even depressed further. Thus, the government through bodies like the Media Council of Kenya, Communications Authority of Kenya and the likes should vet all information especially stocks market information before it is out to the public.

The policy makers and regulators should have in place measures which are to take care of the market when it is bear. When the stock market is bear then there is an existence of uncertainty on the economy's future. People tend to hold back on their spending which slows down the economic growth. The policy makers and regulators should encourage the market to be bullish as this will make the investors to be optimistic about the economy performance. People will feel more confident as their investment portfolios rise in price and thus there is creation of additional wealth.

The policy makers and regulators should instill sanity in firms listed in NSE so as to stop insider trading as this would make investors lose their hard-earned wealth. The policy makers and regulators have to rein on in randy insiders who use their positions of influence to enrich themselves at the expense of the poor investors. This in turn makes investors feel good about their investments or participation in the firms listed in NSE. Once this is achieved, then the investors' confidence will be restored in NSE which will enable the capital market to be more effective and efficient.

Public and private pension trusts have high chances of being affected negatively by the bear market. Pension fund managers invest significant part of their funds in the stock market. In case there exists a prolonged decline in share prices, then this erodes the wealth of the pension funds. This will automatically mean that in future there will be minimal if not lower pension payouts. When such a scenario plays out, then the

investors in the pension schemes will earn lower pension income and may opt to invest elsewhere. This means that the regulatory bodies like RBA should be on the look to make sure that such investment decisions are done in accordance with the law and in financially healthy listed firms in NSE. This calls for the pension funds managers to engage in due diligence before investment decision are made.

5.4.3 Relationship between Seasonal Anomalies and Financial Distress of Listed Firms in NSE, Kenya.

The results have also demonstrated that seasonality cannot be avoided. The management should be aware that financial or market risks cannot be avoided but they can only be mitigated. It is therefore recommended that the management has to put in place mitigants so as to avoid the harsh repercussions of the effects of seasonal anomalies. In such difficult times, the management ought to have put in place measures that will help in safeguarding the firms' financial health.

It is also important for the investors to understand seasonal anomalies through experts as they enable investors to take advantage of regular shifts in the market by designing trading strategies. Investors should be long term investors rather than being short term ones. They should also know when to hold on to their investments and when to sell them. Investors should invest in financially healthy firms.

Stock market is a source of business investment as firms offer new shares to finance investments. This could lead to more job opportunities and eventual economy growth. The stock market also can be a source of private finance when external funding becomes a problem. This provides a low-cost way of borrowing more money than external sources. However, when there is an experience of falling share prices, bear market, this can hamper firms' ability to raise finance on the stock market and thus investment expansion for such firms become very difficult if not impossible.

5.4.4 Relationship between Size Effect Anomalies and Financial Distress of Listed Firms in NSE, Kenya.

The results have indicated that a slight alteration in the firm size also affects the financial health of a firm. It thus recommends that the management should have proper and accurate records of the firm size. This should be closely monitored so as to see that there is no significant change in the size of the as this may have a negative impact on the financial health of the firm. The study further recommends that market capitalization should be used as a tool for monitoring the firm's size.

Before making an investment decision, the investors need to engage experts who will be mandated to carry out due diligence on the listed firms before investing in them. As the study has pointed out that firms which are about to experience can be predicted in two years before this happens, then potential investors should be wary and not invest in such stocks. If they do, then definitely in two years to come, they will lose their wealth.

5.4.5 Further Research

The findings of this study set a ground for further research in a number of areas. Firstly, seasonal anomaly has not been exhaustively dealt with especially in listed firms in NSE. Further research should be carried out to find out the occurrence of seasonality on hourly, daily, weekly and annually basis in the NSE. As suggested earlier, a more rigorous academic enquiry to be petitioned to make a more informative conclusions on seasonal anomalies in NSE.

Secondly, a further study should be done so as to determine if the relationship between the market anomalies and financial distress in listed firms in NSE, Kenya is linear or not. This study has established that indeed there exists a relationship between market anomalies and financial distress but whether the relationship is linear or not, is yet to be given a discourse of as this study has not tackled this. Therefore, the findings of this study appeal for more studies to establish whether the relationship between market anomalies and financial distress in listed firms in NSE, Kenya is linear or not.

Thirdly, researchers should look into other measures of firm size other than market capitalization such as total assets, total sales and profitability in determining firm size in listed firms in NSE, Kenya. This means that there exist other forms of measuring the firm size other than market capitalization. This will form a very good insight of having more variables in determination of the size of a firm. Thus, the findings of this study offer a fertile ground for more studies to make more informative conclusions on the firm size.

Fourthly, it will be important for researchers to examine the financial health of listed firms in NSE in all the economic sectors. This study only related the market anomalies to financial distress of firms listed in NSE, Kenya. An academic inquiry is required in the evaluation the financial health positions of all listed firms in various economic sectors in the NSE. This will assist the stakeholders in determining which firms and sectors are considered healthy or not. It will also assist the stakeholders in prescribing the measures to be undertaken so as to make all the listed firms in NSE to be in healthy financial positions.

Fifthly, a research should be followed through for an extended period of time so as to be considered adequate. As such, more lengthy and rigorous academic inquiry is invited to make more informative conclusions on establishment of the relationship between market anomalies and financial distress of listed firms in NSE, Kenya. This will go a long way in aiding in the provision of an in-depth, thorough and exhaustive understanding of the relationship between market anomalies and financial distress of listed firms in NSE, Kenya.

The four proxies of market anomalies explained the changes in financial distress by up to 85% in NSE, Kenya during the period of study. Channels of market anomalies are multiple and one study is not enough to capture all the channels used in such a relationship. Thus, the remaining 15% is left unexplained which sets the ground for more studies to make more informative conclusions on market anomalies in this relationship in NSE, Kenya.

To cap it all, this study offers insights to future studies in this area and assists employees, management, investors, stock brokers, policy makers and regulators appreciate the fact that market anomalies are related to financial distress in many ways. This study extends the borderline of existing knowledge in the areas of relationship between market anomalies and financial distress. It also fills pertinent gaps in literature by linking market anomalies and financial distress in this relationship. This study therefore has added value to the anatomy of knowledge by demonstrating that indeed there exists a relationship between market anomalies and financial distress.

5.5 Contributions of this Study

This study has brought to the fore the relationship between market anomalies and financial distress of listed firms in NSE, Kenya, in the dawn of increased financial globalization. The study established a relationship between market anomalies and financial distress of listed firms in NSE, Kenya. This study calls for an increased attention and a deliberate effort by the government to put more effort in the financial distress of firms in the country. Empirically, there are studies done on the relationship between market anomalies and financial distress in Kenya as well as the Africa region, but there is need to investigate further on this relationship as Kenya moves towards a more globalized economy.

The differentiating attribute of this study from other studies in the Africa region is that this study covered the period during and after the major world financial crisis of 2007-2008. Additionally, empirical literatures on Africa region, concentrated more on the seasonal anomalies. Thus, this study comes up with a new benefaction to the already existing literatures by focusing on the fundamental, technical and size effect anomalies other than seasonal anomalies on the relationship between market anomalies and financial distress of listed firms in NSE, Kenya. This study also adds to the finance literature by the adoption of the fundamental, technical and size effect anomalies in this relationship.

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APPENDICES

Appendix I: Listed Firms in Nairobi Securities Exchange

	AGRICULTURAL	LISTING	SUSPENSION	DELISTING
1	Eaagads Ltd Ord 1.25	1972		
2	Kakuzi Ltd Ord.5.00	1951		
3	Kapchorua Tea Co. Ltd OrdOrd 5.00	1972		
4	The Limuru Tea Co. Ltd Ord 20.00	1967		
5	Sasini Ltd Ord 1.00	1965		
6	Williamson Tea Kenya Ltd Ord 5.00	1972		
	AUTOMOBILES & ACCESSORIES			
7	Car & General (K) Ltd Ord 5.00	1950		
8	Marshalls (E.A.) Ltd Ord 5.00			2017
9	Sameer Africa Ltd Ord 5.00	1994		
	BANKING			
10	Barclays Bank of Kenya Ltd Ord 0.50	1986		
11	Diamond Trust Bank Kenya Ltd Ord 4.00	1972		
12	Equity Bank Ltd Ord 0.50	2006		
13	Housing Finance Co.Kenya Ltd Ord 5.00	1992		
14	I & M Holdings Ltd Ord 1.00	2013		
15	Kenya Commercial Bank Ltd Ord 1.00	1989		
16	National Bank of Kenya Ltd Ord 5.00	1994		
17	NIC Bank Ltd Ord 5.00	1971		
18	Standard Chartered Bank Kenya Ltd Ord 5.00	1988		
19	Stanbic Bank Ltd Ord. 5.00	1970		
20	The Co-operative Bank of Kenya Ltd Ord 1.00	2008		
	COMMERCIAL & SERVICES			
21	Atlas African Industries Ltd	2014		
22	Deacons (EA) Private Ltd Company Ord 2.50	2016		
23	Express Kenya Ltd Ord 5.00	2006		
24	Hutchings Biemer Ltd Ord 5.00	1978	2001	2017
25	Kenya Airways Ltd Ord 5.00	1996		
26	Longhorn Kenya Ltd Ord 1.00	2012		
27	Nairobi Business Ventures Ltd 1.00	2016		
28	Nation Media Group Ltd Ord. 2.50	1973		
29	Standard Group Ltd Ord 5.00	1994		
30	TPS Eastern Africa Ltd Ord 1.00	1997		
31	Uchumi Supermarket Ltd Ord 5.00	1992		
32	WPP Scangroup Ltd Ord 1.00	2006		
	CONSTRUCTION & ALLIED			
33	Athi River Mining Cement Ltd Ord 1.00	1997		
34	Bamburi Cement Ltd Ord 5.00	1970		
35	Crown Paints Kenya Ltd Ord 5.00	1992		
36	E.A.Cables Ltd Ord 0.50	1973		
37	E.A.Portland Cement Co. Ltd Ord 5.00	2006		

	ENERGY & PETROLEUM			
38	KenGen Co. Ltd Ord. 2.50	2006		
39	KenolKobil Ltd Ord 0.05	1959		
40	Kenya Power & Lighting Co Ltd Ord 2.50	1972		
41	Total Kenya Ltd Ord 5.00	1988		
42	Umeme Ltd Ord 0.50	2012		
	INSURANCE			
43	British-American Investments Co.(Kenya) Ltd Ord 0.10	2011		
44	CIC Insurance Group Ltd Ord.1.00	2012		
45	Jubilee Holdings Ltd Ord 5.00	1984		
46	Kenya Re Insurance Corporation Ltd Ord 2.50	2006		
47	Liberty Kenya Holdings Ltd Ord.1.00	2007		
48	Pan Africa Insurance Holdings Ltd Ord 5.00	1963		
	INVESTMENT			
49	Centum Investment Co Ltd Ord 0.50	1977		
50	Home Africa Ltd Ord 1.00	2013		
51	Kurwitu Ventures Ltd Ord 100.00	2014		
52	Olympia Capital Holdings Ltd Ord 5.00	1974		
53	Trans-Century Ltd Ord 0.50	2011		
	INVESTMENT SERVICES			
54	Nairobi Securities Exchange Ltd Ord 4.00	2014		
	MANUFACTURING & ALLIED			
55	A. Baumann & Co Ltd Ord 5.00		2008	2017
56	B.O.C Kenya Ltd Ord 5.00	1969		
57	British American Tobacco Kenya Ltd Ord 10.00	1969		
58	Carbacid Investments Ltd Ord 1.00	1972		
59	East African Breweries Ltd Ord 2.00	1972		
60	Eveready East Africa Ltd Ord.1.00	2006		
61	Flame Tree Group Holdings Ltd Ord 0.825	2015		
62	Kenya Orchards Ltd Ord 5.00	1959		
63	Mumias Sugar Co. Ltd Ord 2.00	2001		
64	Unga Group Ltd Ord 5.00	1971		
	TELECOMMUNICATION & TECHNOLOGY			
65	Safaricom Ltd Ord 0.05	2008		
	REAL ESTATE INVESTMENT TRUST			
66	Stanlib Fahari I-Reit Ltd Ord 20.00	2015		
	EXCHANGE TRADED FUNDS			
67	New Gold Issuer (RP) Ltd	2017		

Source: Nairobi Securities Exchange, (2017).

Appendix II: Data of Listed Firms in NSE

KAKUZI PLC											
1. Financial Distress('000)											
Year	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Current Assets	337,274	439,361	618,438	795,569	1,174,645	1,237,473	1,170,655	1,181,085	1,530,073	2,049,347	2,407,204
Current Liabilities	429,922	408,889	413,155	383,678	351,157	146,023	147,181	185,857	377,646	416,738	616,900
Working Capital	(92,648)	30,472	205,283	411,891	823,488	1,091,450	1,023,474	995,228	1,152,427	1,632,609	1,790,304
Total Assets	2,373,681	2,662,519	2,873,255	3,218,590	3,817,320	3,571,700	3,717,543	3,861,749	4,559,474	5,064,414	5,746,126
Total Liabilities	1,107,765	1,094,886	908,646	1,008,086	1,060,555	772,475	813,515	872,726	1,111,210	1,218,156	1,424,090
Retained Earnings	1,134,912	1,369,690	1,582,563	1,848,721	2,325,157	2,631,014	2,722,542	2,805,106	3,234,793	3,611,645	4,066,088
EBIT	270,330	390,189	553,934	558,629	920,093	479,299	239,306	232,799	764,445	757,779	849,123
Market Value of Equity	1,265,916	1,567,633	1,888,294	2,210,504	2,756,765	2,801,225	2,904,028	2,980,587	3,439,729	3,846,258	4,322,036
Sales	1,512,118	1,620,319	2,008,157	2,113,774	2,376,862	1,564,792	1,384,375	1,689,917	2,481,844	2,651,199	2,823,926
WC/TA	(0.0390)	0.0114	0.0714	0.1280	0.2157	0.3056	0.2753	0.2577	0.2528	0.3224	0.3116
RE/TA	0.4781	0.5144	0.5508	0.5744	0.6091	0.7366	0.7323	0.7264	0.7095	0.7131	0.7076
EBIT/TA	0.1139	0.1465	0.1928	0.1736	0.2410	0.1342	0.0644	0.0603	0.1677	0.1496	0.1478
MVE/TL	1.1428	1.4318	2.0781	2.1928	2.5994	3.6263	3.5697	3.4153	3.0955	3.1574	3.0349
Sales/TA	0.6370	0.6086	0.6989	0.6567	0.6227	0.4381	0.3724	0.4376	0.5443	0.5235	0.4914
Z-Score	2.3204	2.6846	3.4381	3.5022	4.0887	4.4543	4.0819	4.0115	4.2509	4.2965	4.1641
2. Establishing the relationship between market anomalies and financial distress of listed firms in NSE, Kenya.											
a) Fundamental Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Dividend Per Share	0.00	1.00	2.50	2.50	3.75	3.75	3.75	3.75	5.00	6.00	7.00
Earnings Per Share	9.68	9.23	17.34	15.99	28.06	19.35	8.42	8.17	26.92	28.70	30.19
Price Per Share	36.25	23.00	31.75	81.50	69.50	72.00	125.00	137.00	317.00	309.00	329.00
D/P	0.0000	0.0435	0.0787	0.0307	0.0540	0.0521	0.0300	0.0274	0.0158	0.0194	0.0213
E/P	0.2670	0.4013	0.5461	0.1962	0.4037	0.2688	0.0674	0.0596	0.0849	0.0929	0.0918
b) Technical Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Low	29.00	20.50	17.15	28.00	58.50	60.50	65.00	93.00	180.00	250.00	266.00
High	47.00	40.00	35.00	104.00	90.00	84.50	100.00	230.00	383.00	348.00	350.00
c) Seasonal Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
January				7		1			7		
February				12					1		
March				7	1						
May											
June	2										
October	2										
November	6										
December	1										
Total	**11**	**0**	**0**	**26**	**1**	**1**	**0**	**0**	**8**	**0**	**0**
d) Size Effect Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Total Sales ('000)	1,512,118	1,620,319	2,008,157	2,113,774	2,376,862	1,564,792	1,384,375	1,689,917	2,481,844	2,651,199	2,823,926
Total Assets ('000)	2,373,681	2,662,519	2,873,255	3,218,590	3,817,320	3,571,700	3,717,543	3,861,749	4,559,474	5,064,414	5,746,126
Par Value	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Share Capital ('000)	98,000	98,000	98,000	98,000	98,000	98,000	98,000	98,000	98,000	98,000	98,000
Oustanding Shares ('000)	19,600	19,600	19,600	19,600	19,600	19,600	19,600	19,600	19,600	19,600	19,600
Market Cap ('000)	710,500	450,800	622,300	1,597,400	1,362,200	1,411,200	2,450,000	2,685,200	6,213,200	6,056,400	6,448,400
Profitability ('000)	191,597	282,918	390,295	388,666	644,397	408,656	165,028	160,205	527,687	562,425	591,643

KAPCHORUA TEA CO. LTD											
1. Financial Distress ('000)											
Year	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Current Assets	258,390	208,461	347,641	678,761	575,942	752,190	823,337	621,620	650,243	895,577	788,704
Current Liabilities	128,725	117,585	206,617	413,617	274,093	456,895	388,985	121,855	114,444	210,298	227,766
Working Capital	129,665	90,876	141,024	265,144	301,849	295,295	434,352	499,765	535,799	685,279	560,938
Total Assets	1,109,894	982,058	1,167,797	1,498,931	1,570,203	1,962,897	2,078,475	1,929,161	1,983,239	2,144,587	2,030,309
Total Liabilities	399,248	360,748	478,537	680,199	593,806	829,262	794,462	548,496	555,560	686,710	614,807
Retained Earnings	573,041	494,578	571,104	708,239	870,885	925,738	1,096,010	1,210,202	1,183,174	1,280,907	1,196,587
EBIT	2,054	(103,081)	99,735	199,538	268,393	112,576	255,753	182,079	(29,536)	151,443	(72,323)
Market Value of Equity	710,646	621,308	689,260	818,732	976,397	1,133,635	1,284,013	1,380,665	1,427,679	1,514,215	1,415,502
Sales	610,303	574,997	743,079	1,130,108	1,246,636	1,406,794	1,353,206	1,192,489	1,073,989	1,209,133	1,292,123
WC/TA	0.1168	0.0925	0.1208	0.1769	0.1922	0.1504	0.2090	0.2591	0.2702	0.3195	0.2763
RE/TA	0.5163	0.5036	0.4890	0.4725	0.5546	0.4716	0.5273	0.6273	0.5966	0.5973	0.5894
EBIT/TA	0.0019	(0.1050)	0.0854	0.1331	0.1709	0.0574	0.1230	0.0944	(0.0149)	0.0706	(0.0356)
MVE/TL	1.7800	1.7223	1.4403	1.2037	1.6443	1.3670	1.6162	2.5172	2.5698	2.2050	2.3024
Sales/TA	0.5499	0.5855	0.6363	0.7539	0.7939	0.7167	0.6511	0.6181	0.5415	0.5638	0.6364
Z-Score	2.4864	2.0880	2.6113	2.7884	3.3510	2.5663	3.0152	3.6284	3.1931	3.3389	3.0563
2. Establishing the relationship between market anomalies and financial distress of listed firms in NSE, Kenya.											
a) Fundamental Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Dividend Per Share	5.00	2.50	6.50	6.25	7.50	7.50	7.50	7.00	5.00	6.00	3.00
Earnings Per Share	(0.24)	(17.84)	17.87	35.60	47.80	19.93	28.42	(5.82)	(2.91)	29.95	30.95
Price Per Share	112.00	75.00	68.00	146.00	115.00	121.00	145.00	137.00	130.00	79.00	79.00
D/P	0.04	0.03	0.10	0.04	0.07	0.06	0.05	0.05	0.04	0.08	0.04
E/P	(0.00)	(0.24)	0.26	0.24	0.42	0.16	0.20	(0.04)	(0.02)	0.38	0.39
b) Technical Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Low	84.00	68.00	60.00	86.00	95.00	111.00	110.00	120.00	115.00	71.50	65.00
High	135.00	90.00	100.00	177.00	140.00	148.00	150.00	180.00	242.00	240.00	200.00
c) Seasonal Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
January								5			1
February								9			
March				14		5	10	7			
April				9							
May				10				1			
June				13				4			
July				18				2	1		9
August	1			8					5		11
September	1			10							3
October	2			4				13			1
November	3			5				7			6
December	3			5				1			4
Total	**10**	**0**	**0**	**96**	**0**	**5**	**10**	**49**	**6**	**0**	**35**
d) Size Effect Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Total Sales ('000)	610,303	574,997	743,079	1,130,108	1,246,636	1,406,794	1,353,206	1,192,489	1,073,989	1,209,133	1,292,123
Total Assets ('000)	1,109,894	982,058	1,167,797	1,498,931	1,570,203	1,962,897	2,078,475	1,929,161	1,983,239	2,144,587	2,030,309
Par Value	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Share Capital ('000)	19,560	19,560	19,560	19,560	19,560	19,560	19,560	19,560	19,560	39,120	39,120
Oustanding Shares ('000)	3,912	3,912	3,912	3,912	3,912	3,912	3,912	3,912	3,912	7,824	7,824
Market Cap ('000)	438,144	293,400	266,016	571,152	449,880	473,352	567,240	535,944	508,560	618,096	618,096
Profitability ('000)	(928)	(69,778)	69,908	139,252	187,005	77,968	179,718	125,991	(22,785)	106,096	(51,769)

THE LIMURU TEA CO. LTD											
1. Financial Distress ('000)											
Year	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Current Assets	54,362	69,528	56,226	82,993	100,341	130,762	138,682	132,007	163,565	144,218	140,277
Current Liabilities	10,259	5,494	17,138	11,196	5,487	10,537	8,221	16,331	135,378	27,920	39,439
Working Capital	44,103	64,034	39,088	71,797	94,854	120,225	130,461	115,676	28,187	116,298	100,838
Total Assets	48,458	57,775	84,794	158,305	191,242	320,023	343,007	338,600	342,161	282,193	262,009
Total Liabilities	19,920	21,658	28,831	38,978	41,532	77,790	82,661	86,885	87,901	76,481	74,411
Retained Earnings	16,228	18,117	22,963	86,327	116,710	209,233	227,346	226,515	230,230	181,712	163,778
EBIT	3,363	15,234	38,731	104,328	59,849	146,621	41,556	2,078	5,126	(26,731)	(31,565)
Market Value of Equity	31,228	35,117	55,963	119,327	149,710	242,233	260,346	251,715	254,260	205,712	187,778
Sales	54,362	59,528	91,130	123,859	102,504	116,012	104,192	92,250	122,374	103,915	80,370
WC/TA	0.9101	1.1083	0.4610	0.4535	0.4960	0.3757	0.3803	0.3416	0.0824	0.4121	0.3849
RE/TA	0.3349	0.3136	0.2708	0.5453	0.6103	0.6538	0.6628	0.6690	0.6729	0.6439	0.6251
EBIT/TA	0.0694	0.2637	0.4568	0.6590	0.3129	0.4582	0.1212	0.0061	0.0150	(0.0947)	(0.1205)
MVE/TL	1.5677	1.6214	1.9411	3.0614	3.6047	3.1139	3.1496	2.8971	2.8926	2.6897	2.5235
Sales/TA	1.1218	1.0303	1.0747	0.7824	0.5360	0.3625	0.3038	0.2724	0.3577	0.3682	0.3067
Z-Score	3.8513	4.6413	4.6779	6.1010	5.1806	5.1086	3.9773	3.3772	3.1831	3.0652	2.7599
2. Establishing the relationship between market anomalies and financial distress of listed firms in NSE, Kenya.											
a) Fundamental Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Dividend Per Share	5.00	10.00	7.50	7.50	7.50	7.50	1.25	1.00	1.00	-	-
Earnings Per Share	3.40	14.11	22.47	62.37	33.74	84.86	1.77	(0.02)	0.80	(1.19)	(9.22)
Price Per Share	375.00	305.00	305.00	300.00	335.00	430.00	500.00	771.00	1085.00	530.00	500.00
D/P	0.0133	0.0328	0.0246	0.0250	0.0224	0.0174	0.0025	0.0013	0.0009	0.0000	0.0000
E/P	0.0091	0.0463	0.0737	0.2079	0.1007	0.1973	0.0035	0.0000	0.0007	-0.0022	-0.0184
b) Technical Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Low	350.00	305.00	300.00	290.00	270.00	350.00	430.00	450.00	835.00	490.00	500.00
High	400.00	338.00	530.00	350.00	356.00	500.00	500.00	1,185.00	1,248.00	980.00	980.00
c) Seasonal Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
January	1										
March				5							
April				6							
June				4	1						
July				1	1						
August				1							
October					1						
November				2							
December					1						1
Total	**1**	**0**	**0**	**19**	**4**	**0**	**0**	**0**	**0**	**0**	**1**
d) Size Effect Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Total Sales ('000)	54,362	59,528	91,130	123,859	102,504	116,012	104,192	92,250	122,374	103,915	80,370
Total Assets ('000)	48,458	57,775	84,794	158,305	191,242	320,023	343,007	338,600	342,161	282,193	262,009
Par Value	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00
Share Capital ('000)	12,000	12,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000
Oustanding Shares ('000)	600	600	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200
Market Cap ('000)	225,000	183,000	366,000	360,000	402,000	516,000	600,000	925,200	1,302,000	636,000	600,000
Profitability ('000)	2,045	8,466	20,969	74,840	40,484	101,834	28,513	(331)	3,044	(19,074)	(22,134)

SASINI LTD											
1. Financial Distress											
Year	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Current Assets	275,129	283,086	295,591	639,053	511,243	528,033	758,926	766,965	847,294	1,534,142	1,502,070
Current Liabilities	262,095	353,198	223,905	351,056	385,755	378,114	666,157	623,231	177,972	200,241	289,487
Working Capital	13,034	(70,112)	71,686	287,997	125,488	149,919	92,769	143,734	669,322	1,333,901	1,212,583
Total Assets	1,441,137	840,737	523,817	3,834,665	4,090,598	3,705,119	3,936,553	8,708,766	7,077,764	7,753,027	7,742,374
Total Liabilities	870,412	2,079,001	2,335,211	2,570,082	2,699,855	2,496,178	2,671,455	2,808,609	2,486,022	1,744,534	1,880,148
Retained Earnings	789,339	(80,358)	80,811	277,472	447,889	438,246	348,353	399,834	686,917	1,323,526	1,179,828
EBIT	(70,723)	290,509	97,809	1,382,375	1,014,139	(30,342)	113,754	442,723	513,364	840,792	282,139
Market Value of Equity	1,017,394	3,070,653	3,223,522	2,619,695	3,003,066	2,780,348	2,708,642	7,426,195	6,694,519	7,169,666	7,064,333
Sales	1,325,354	392,648	827,383	564,553	753,657	859,636	478,897	723,432	934,798	1,296,513	1,705,553
WC/TA	0.0090	(0.0834)	0.1369	0.0751	0.0307	0.0405	0.0236	0.0165	0.0946	0.1720	0.1566
RE/TA	0.5477	(0.0956)	0.1543	0.0724	0.1095	0.1183	0.0885	0.0459	0.0971	0.1707	0.1524
EBIT/TA	(0.0491)	0.3455	0.1867	0.3605	0.2479	(0.0082)	0.0289	0.0508	0.0725	0.1084	0.0364
MVE/TL	1.1689	1.4770	1.3804	1.0193	1.1123	1.1138	1.0139	2.6441	2.6929	4.1098	3.7573
Sales/TA	0.9197	0.4670	1.5795	0.1472	0.1842	0.2320	0.1217	0.0831	0.1321	0.1672	0.2203
Z-Score	2.2358	2.2592	3.4026	2.1397	1.8597	1.0872	0.9774	1.9213	2.2364	3.4363	2.9960
2. Establishing the relationship between market anomalies and financial distress of listed firms in NSE, Kenya.											
a) Fundamental Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Dividend Per Share	-	-	0.40	0.50	0.80	0.75	0.25	0.25	1.25	1.50	0.75
Earnings Per Share	(0.15)	3.84	2.30	4.30	1.72	-	0.54	0.10	4.83	2.53	1.49
Price Per Share	17.24	7.75	6.05	13.30	12.05	10.95	13.30	14.05	16.35	18.05	26.50
D/P	0.0000	0.0000	0.0661	0.0376	0.0664	0.0685	0.0188	0.0178	0.0765	0.0831	0.0283
E/P	-0.0087	0.4955	0.3802	0.3233	0.1427	0.0000	0.0406	0.0071	0.2954	0.1402	0.0562
b) Technical Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Low	13.35	5.00	3.85	7.25	9.00	9.60	10.45	11.50	11.60	16.00	17.00
High	155.00	18.50	9.00	16.65	15.05	13.50	16.00	19.95	22.75	23.25	32.00
c) Seasonal Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
January									21	1	13
February									5		9
March											3
December									14		1
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**40**	**1**	**26**
d) Size Effect Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Total Sales	1,325,354	392,648	827,383	564,553	753,657	859,636	478,897	723,432	934,798	1,296,513	1,705,553
Total Assets	1,441,137	840,737	523,817	3,834,665	4,090,598	3,705,119	3,936,553	8,708,766	7,077,764	7,753,027	7,742,374
Par Value	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Share Capital	228,055	228,055	228,055	228,055	228,055	228,055	228,055	228,055	228,055	228,055	228,055
Outstanding Shares	228,055	228,055	228,055	228,055	228,055	228,055	228,055	228,055	228,055	228,055	228,055
Market Cap	3,931,668	1,767,426	1,379,733	3,033,132	2,748,063	2,497,202	3,033,132	3,204,173	3,728,699	4,116,393	6,043,458
Profitability	(33,571)	202,981	139,801	993,729	450,347	851	73,962	306,181	504,204	749,180	235,057

WILLIAMSON TEA KENYA LTD											
1. Financial Distress ('000)											
Year	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Current Assets	414,224	367,333	493,345	982,493	1,132,992	1,377,859	1,597,782	1,802,753	1,911,537	1,974,325	1,769,191
Current Liabilities	135,565	139,221	179,735	376,225	245,385	350,854	226,991	138,557	187,647	293,155	411,664
Working Capital	278,659	228,112	313,610	606,268	887,607	1,027,005	1,370,791	1,664,196	1,723,890	1,681,170	1,357,527
Total Assets	2,023,897	2,040,018	2,043,160	2,732,443	3,269,579	3,645,372	4,173,320	4,614,876	4,808,120	4,740,096	4,488,735
Total Liabilities	1,087,494	1,056,231	1,291,714	1,858,225	1,761,515	2,298,171	2,165,577	1,958,673	1,975,522	2,315,507	2,269,855
Retained Earnings	1,286,167	1,303,868	1,322,897	1,777,259	2,336,686	2,380,472	2,853,136	3,236,268	3,218,249	3,096,143	2,818,636
EBIT	214,067	(143,984)	145,341	1,223,281	1,293,690	1,163,499	1,155,760	1,041,033	(298,565)	286,575	21,211
Market Value of Equity	1,505,725	1,505,360	1,514,242	1,951,647	2,497,265	2,694,999	3,245,939	3,644,111	3,748,226	3,659,852	3,349,510
Sales	1,206,528	1,185,755	1,489,982	2,723,187	3,284,909	3,607,409	3,490,681	3,512,086	2,590,416	1,205,000	1,198,088
WC/TA	0.1377	0.1118	0.1535	0.2219	0.2715	0.2817	0.3285	0.3606	0.3585	0.3547	0.3024
RE/TA	0.6355	0.6391	0.6475	0.6504	0.7147	0.6530	0.6837	0.7013	0.6693	0.6532	0.6279
EBIT/TA	0.1058	(0.0706)	0.0711	0.4477	0.3957	0.3192	0.2769	0.2256	(0.0621)	0.0605	0.0047
MVE/TL	1.3846	1.4252	1.1723	1.0503	1.4177	1.1727	1.4989	1.8605	1.8973	1.5806	1.4756
Sales/TA	0.5961	0.5812	0.7293	0.9966	1.0047	0.9896	0.8364	0.7610	0.5388	0.2542	0.2669
Z-Score	2.8302	2.2319	2.7573	4.2800	4.4863	3.9978	4.0001	4.0355	2.8390	2.7419	2.4097
2. Establishing the relationship between market anomalies and financial distress of listed firms in NSE, Kenya.											
a) Fundamental Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Dividend Per Share	5.00	0.50	4.00	6.25	12.50	7.50	7.50	7.00	40.00	20.00	10.00
Earnings Per Share	15.95	(11.14)	12.55	100.05	(46.74)	97.61	94.36	81.36	(26.00)	42.15	(13.73)
Price Per Share	110.00	57.50	47.00	221.00	185.00	230.00	228.00	290.00	287.00	183.00	161.00
D/P	0.0455	0.0087	0.0851	0.0283	0.0676	0.0326	0.0329	0.0241	0.1394	0.1093	0.0621
E/P	0.1450	(0.1937)	0.2670	0.4527	(0.2526)	0.4244	0.4139	0.2806	(0.0906)	0.2303	(0.0853)
b) Technical Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Low	100.00	52.00	43.00	117.00	162.00	180.00	180.00	230.00	230.00	162.00	150.00
High	165.00	110.00	180.00	249.00	310.00	315.00	350.00	320.00	435.00	353.00	199.00
c) Seasonal Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
January		3		14						7	
February				17							
April											
June											
July										11	
August											
September											
October					6						
November			1		9						
December			3	1	3						
Total	**0**	**3**	**4**	**32**	**18**	**0**	**0**	**0**	**0**	**18**	**0**
d) Size Effect Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Total Sales ('000)	1,206,528	1,185,755	1,489,982	2,723,187	3,284,909	3,607,409	3,490,681	3,512,086	2,590,416	1,205,000	1,198,088
Total Assets ('000)	2,023,897	2,040,018	2,043,160	2,732,443	3,269,579	3,645,372	4,173,320	4,614,876	4,808,120	4,740,096	4,488,735
Par Value	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Share Capital ('000)	43,782	43,782	43,782	43,782	43,782	43,782	43,782	43,782	43,782	87,563	87,563
Oustanding Shares ('000)	8,756	8,756	8,756	8,756	8,756	8,756	8,756	8,756	8,756	17,513	17,513
Market Cap ('000)	963,204	503,493	411,551	1,935,164	1,619,934	2,013,972	1,996,459	2,539,356	2,513,087	3,204,806	2,819,529
Profitability ('000)	139,671	(97,517)	109,870	876,055	884,385	854,740	855,659	740,721	(227,636)	261,879	39,911

CAR & GENERAL (K) LTD											
1. Financial Distress ('000)											
Year	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Current Assets	1,271,836	1,829,332	2,191,107	2,686,734	3,487,990	3,397,179	4,188,592	5,026,058	5,276,589	5,666,853	4,812,213
Current Liabilities	965,848	1,413,637	1,681,144	2,048,108	3,105,247	2,928,463	3,766,604	4,190,457	4,995,790	5,636,222	4,835,729
Working Capital	305,988	415,695	509,963	638,626	382,743	468,716	421,988	835,601	280,799	30,631	(23,516)
Total Assets	2,042,407	2,750,520	3,214,248	3,880,055	5,562,239	5,705,400	6,901,430	8,152,812	8,988,047	9,705,198	9,400,007
Total Liabilities	1,155,808	1,621,602	1,902,696	2,324,149	3,641,917	3,562,246	4,397,252	5,320,414	5,966,934	6,466,659	6,042,200
Retained Earnings	630,719	830,069	1,014,643	1,240,475	1,430,624	1,666,406	1,948,665	2,159,223	2,174,032	2,271,246	2,349,133
EBIT	257,446	321,565	279,390	329,175	427,926	354,518	458,969	420,267	81,069	150,278	98,305
Market Value of Equity	886,599	1,128,845	1,307,802	1,555,906	1,920,322	2,143,154	2,504,178	2,832,398	3,021,113	3,238,539	3,357,807
Sales	1,846,523	2,997,342	4,349,489	4,779,318	6,086,106	5,711,529	7,056,021	8,298,564	9,929,190	9,735,788	9,635,150
WC/TA	0.1498	0.1511	0.1587	0.1646	0.0688	0.0822	0.0611	0.1025	0.0312	0.0032	(0.0025)
RE/TA	0.3088	0.3018	0.3157	0.3197	0.2572	0.2921	0.2824	0.2648	0.2419	0.2340	0.2499
EBIT/TA	0.1261	0.1169	0.0869	0.0848	0.0769	0.0621	0.0665	0.0515	0.0090	0.0155	0.0105
MVE/TL	0.7671	0.6961	0.6873	0.6695	0.5273	0.6016	0.5695	0.5324	0.5063	0.5008	0.5557
Sales/TA	0.9041	1.0897	1.3532	1.2318	1.0942	1.0011	1.0224	1.0179	1.1047	1.0032	1.0250
Z-Score	2.3915	2.4960	2.6834	2.5573	2.1060	2.0736	2.0512	2.0002	1.8133	1.6852	1.7388
2. Establishing the relationship between market anomalies and financial distress of listed firms in NSE, Kenya.											
a) Fundamental Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Dividend Per Share	0.67	0.67	0.67	0.80	0.55	0.55	0.80	0.60	0.60	0.60	0.60
Earnings Per Share	7.71	9.50	8.80	7.12	7.78	7.48	8.83	6.57	0.76	2.22	1.71
Price Per Share	55.00	44.00	35.00	47.00	22.75	24.50	21.50	47.00	40.00	29.00	21.50
D/P	0.01	0.02	0.02	0.02	0.02	0.02	0.04	0.01	0.02	0.02	0.03
E/P	0.14	0.22	0.25	0.15	0.34	0.31	0.41	0.14	0.02	0.08	0.08
b) Technical Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Low	33.00	36.00	29.00	30.00	19.50	21.75	20.00	28.00	36.00	24.50	16.00
High	63.00	58.00	45.00	58.50	68.00	29.00	30.00	62.00	58.00	40.00	27.00
c) Seasonal Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
January			6	14						7	1
February				17	11						
March				1		2					
May						7					
June						6				11	
July						4					
September											5
October											1
November		1									2
December		3					1				1
Total	**0**	**4**	**6**	**32**	**11**	**19**	**1**	**0**	**0**	**18**	**10**
d) Size Effect Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Total Sales ('000)	1,846,523	2,997,342	4,349,489	4,779,318	6,086,106	5,711,529	7,056,021	8,298,564	9,929,190	9,735,788	9,635,150
Total Assets ('000)	2,042,407	2,750,520	3,214,248	3,880,055	5,562,239	5,705,400	6,901,430	8,152,812	8,988,047	9,705,198	9,400,007
Par Value	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Share Capital ('000)	111,398	111,398	111,398	111,398	167,097	167,097	167,097	200,516	200,516	200,516	200,516
Oustanding Shares ('000)	22,280	22,280	22,280	22,280	33,419	33,419	33,419	40,103	40,103	40,103	40,103
Market Cap ('000)	1,225,378	980,302	779,786	1,047,141	760,291	818,775	718,517	1,884,850	1,604,128	1,162,993	862,219
Profitability ('000)	174,794	214,840	197,984	238,234	288,706	266,556	315,790	278,363	127,147	88,872	79,841

MARSHALLS (EA) LTD											
1. Financial Distress ('000)											
Year	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Current Assets	737,368	671,689	555,572	284,076	182,914	197,102	147,219	181,340	125,599	65,868	499,018
Current Liabilities	600,905	519,142	626,752	570,532	673,297	174,466	220,552	305,644	264,281	251,501	539,251
Working Capital	136,463	152,547	(71,180)	(286,456)	(490,383)	22,636	(73,333)	(124,304)	(138,682)	(185,633)	(40,233)
Total Assets	1,256,055	1,210,100	1,433,970	1,126,208	1,076,865	567,095	515,116	603,935	551,198	510,534	765,671
Total Liabilities	793,073	969,022	956,736	993,195	673,797	174,966	233,016	324,316	291,972	268,739	570,264
Retained Earnings	125,521	(157,398)	(265,315)	(600,475)	(419,411)	165,575	59,410	60,793	187,260	169,829	539,251
EBIT	42,321	(169,688)	(117,479)	(344,722)	181,501	(165,527)	(110,029)	(2,481)	(20,393)	(17,431)	53,135
Market Value of Equity	462,982	241,078	477,234	132,513	403,068	392,129	282,100	279,619	259,226	241,795	191,210
Sales	1,291,845	894,585	592,843	604,815	263,078	234,306	230,463	221,161	105,354	81,247	2,268,948
WC/TA	0.1086	0.1261	(0.0496)	(0.2544)	(0.4554)	0.0399	(0.1424)	(0.2058)	(0.2516)	(0.3636)	(0.0525)
RE/TA	0.10	(0.13)	(0.19)	(0.53)	(0.39)	0.29	0.12	0.10	0.34	0.33	0.70
EBIT/TA	0.03	(0.14)	(0.08)	(0.31)	0.17	(0.29)	(0.21)	(0.00)	(0.04)	(0.03)	0.07
MVE/TL	0.58	0.25	0.50	0.13	0.60	2.24	1.21	0.86	0.89	0.90	0.34
Sales/TA	1.03	0.74	0.41	0.54	0.24	0.41	0.45	0.37	0.19	0.16	2.96
Z-Score	1.76	0.39	0.12	(1.45)	0.07	1.25	0.46	0.8	0.8	0.6	4.3
2. Establishing the relationship between market anomalies and financial distress of listed firms in NSE, Kenya.											
a) Fundamental Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Dividend Per Share	1.00	-	-	-	-	-	-	-	-	-	4.25
Earnings Per Share	2.94	(11.80)	(8.16)	(23.95)	12.61	(11.50)	(7.64)	(0.17)	(1.42)	(1.21)	61.70
Price Per Share	24.33	18.85	24.00	19.00	14.15	12.05	12.40	10.00	12.00	25.50	13.00
D/P	0.04	-	-	-	-	-	-	-	-	-	0.33
E/P	0.12	(0.63)	(0.34)	(1.26)	0.89	(0.95)	(0.62)	(0.02)	(0.12)	(0.05)	4.75
b) Technical Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Low	23.00	27.00	21.75	14.00	11.40	11.80	10.85	8.00	9.30	8.00	8.50
High	47.00	46.50	24.50	21.75	14.26	14.20	14.20	12.00	13.60	13.20	11.80
c) Seasonal Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
January									9	4	1
February	2								1	4	1
March	7								3	1	
April	1										2
May	11										4
June	2								1		3
July									8		
August									1		
September									1		
November	7						13		8		
December									6		
Total	**30**	**0**	**0**	**0**	**0**	**0**	**13**	**0**	**38**	**9**	**11**
d) Size Effect Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Total Sales ('000)	1,291,845	894,585	592,843	604,815	263,078	234,306	230,463	221,161	105,354	81,247	2,268,948
Total Assets ('000)	1,256,055	1,210,100	1,433,970	1,126,208	1,076,865	567,095	515,116	603,935	551,198	510,534	765,671
Par Value	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Share Capital ('000)	71,966	71,966	71,966	71,966	71,966	71,966	71,966	71,966	71,966	71,966	71,966
Oustanding Shares ('000)	14,393	14,393	14,393	14,393	14,393	14,393	14,393	14,393	14,393	14,393	14,393
Market Cap ('000)	350,187	271,312	345,437	273,471	203,664	173,438	178,476	143,932	172,718	367,027	187,112
Profitability ('000)	42,321	(169,837)	(117,479)	(344,722)	181,501	(165,527)	(110,029)	(2,481)	(17,431)	(17,431)	49,339

SAMEER AFRICA LTD											
1. Financial Distress ('000)											
Year	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Current Assets	2,225,528	2,066,940	2,075,045	1,918,319	2,277,373	2,665,330	2,822,531	2,872,111	2,765,545	2,290,282	1,698,490
Current Liabilities	1,048,014	812,054	605,763	554,547	754,107	940,764	836,561	1,137,995	1,254,205	1,449,092	1,096,854
Working Capital	1,177,514	1,254,886	1,469,282	1,363,772	1,523,266	1,724,566	1,985,970	1,734,116	1,511,340	841,190	601,636
Total Assets	3,161,883	3,076,148	3,005,374	2,845,307	3,125,040	3,399,651	3,668,487	3,857,392	3,751,225	3,290,867	2,969,868
Total Liabilities	1,200,051	940,582	722,807	677,165	875,252	1,072,928	988,874	1,320,948	1,258,778	1,455,673	1,132,014
Retained Earnings	627,016	777,864	795,463	853,608	894,888	1,015,057	1,324,883	539,828	1,248,452	598,022	611,051
EBIT	166,520	165,522	221,464	62,199	148,446	216,667	534,297	(69,457)	5,689	(865,056)	27,164
Market Value of Equity	1,961,922	2,135,566	2,282,567	2,168,142	2,249,788	2,326,723	2,679,613	2,536,444	2,492,447	1,835,194	1,837,854
Sales	3,469,283	3,026,747	3,278,118	3,344,895	3,784,622	3,762,363	4,018,142	3,777,140	3,363,976	2,882,230	2,626,975
WC/TA	0.3724	0.4079	0.4889	0.4793	0.4874	0.5073	0.5414	0.4496	0.4029	0.2556	0.2026
RE/TA	0.1983	0.2529	0.2647	0.3000	0.2864	0.2986	0.3612	0.1399	0.3328	0.1817	0.2058
EBIT/TA	0.0527	0.0538	0.0737	0.0219	0.0475	0.0637	0.1456	(0.0180)	0.0015	(0.2629)	0.0091
MVE/TL	1.6349	2.2705	3.1579	3.2018	2.5704	2.1686	2.7098	1.9202	1.9801	1.2607	1.6235
Sales/TA	1.0972	0.9839	1.0908	1.1756	1.2111	1.1067	1.0953	0.9792	0.8968	0.8758	0.8845
Z-Score	2.9754	3.3664	4.1848	4.1628	3.8947	3.6438	4.3559	2.8063	3.0383	1.3251	2.4191
2. Establishing the relationship between market anomalies and financial distress of listed firms in NSE, Kenya.											
a) Fundamental Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Dividend Per Share	-	-	0.50	-	0.20	0.25	0.30	-	-	-	-
Earnings Per Share	0.43	0.54	0.57	0.21	0.35	0.68	1.44	(0.24)	(0.06)	(2.34)	0.05
Price Per Share	12.36	6.01	5.18	7.70	4.43	4.16	5.21	6.02	3.78	2.80	2.80
D/P	0.0000	0.0000	0.0965	37.3400	12.6300	6.0900	3.7100	24.9500	0.0000	0.0000	0.0000
E/P	0.0348	0.0899	0.1100	0.0273	0.0790	0.1635	0.2764	-0.0399	-0.0159	-0.8357	0.0179
b) Technical Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Low	9.00	5.00	4.05	4.50	3.55	3.20	3.85	5.10	3.15	2.25	2.30
High	32.00	14.45	6.45	10.25	8.00	4.90	5.95	9.40	7.00	4.40	3.30
c) Seasonal Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
January	22	11									
February	20										
March	22	9									
April	19	13				2					
May	22	5				4		3			
June	20					4					
July	22										
August	23										
September	19										
October	4										
November											
December	7										
Total	**200**	**38**	**0**	**0**	**0**	**10**	**0**	**3**	**0**	**0**	**0**
d) Size Effect Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Total Sales ('000)	3,469,283	3,026,747	3,278,118	3,344,895	3,784,622	3,762,363	4,018,142	3,777,140	3,363,976	2,882,230	2,626,975
Total Assets ('000)	3,161,883	3,076,148	3,005,374	2,845,307	3,125,040	3,399,651	3,668,487	3,857,392	3,751,225	3,290,867	2,969,868
Par Value	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Share Capital ('000)	1,391,712	1,391,712	1,391,712	1,391,712	1,391,712	1,391,712	1,391,712	1,391,712	1,391,712	1,391,712	1,391,712
Oustanding Shares ('000)	278,342	278,342	278,342	278,342	278,342	278,342	278,342	278,342	278,342	278,342	278,342
Market Cap ('000)	3,440,312	1,672,838	1,441,814	2,143,236	1,233,057	1,157,904	1,450,164	1,675,621	1,052,134	779,359	779,359
Profitability ('000)	118,615	150,848	158,005	57,396	96,948	161,712	508,245	(66,929)	(15,652)	(652,101)	13,029

BARCLAYS BANK OF KENYA LTD											
1. Financial Distress ('M)											
Year	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Current Assets	148,751	159,556	155,835	159,935	153,954	173,522	196,631	220,633	235,528	254,756	268,151
Current Liabilities	130,512	138,159	131,771	129,063	126,431	143,025	164,893	180,344	193,404	217,430	228,515
Working Capital	18,239	21,397	24,064	30,872	27,523	30,497	31,738	40,289	42,124	37,326	39,636
Total Assets	157,928	168,785	165,151	172,691	167,395	184,826	206,737	225,841	240,877	259,718	271,572
Total Liabilities	140,092	148,047	140,666	140,950	137,806	155,239	174,367	187,486	201,161	217,403	216,777
Retained Earnings	12,781	15,236	16,793	19,326	19,236	21,811	26,367	29,913	32,467	34,901	36,052
EBIT	7,078	8,016	9,002	10,775	12,013	13,020	11,921	12,293	12,074	10,439	10,005
Market Value of Equity	17,564	20,463	24,210	31,465	29,223	29,583	32,371	38,355	39,716	42,095	43,558
Sales	13,634	27,850	26,594	31,544	28,333	30,970	30,359	31,625	34,337	36,783	35,628
WC/TA	0.1155	0.1268	0.1457	0.1788	0.1644	0.1650	0.1535	0.1784	0.1749	0.1437	0.1460
RE/TA	0.0809	0.0903	0.1017	0.1119	0.1149	0.1180	0.1275	0.1325	0.1348	0.1344	0.1328
EBIT/TA	0.0448	0.0475	0.0545	0.0624	0.0718	0.0704	0.0577	0.0544	0.0501	0.0402	0.0368
MVE/TL	0.1254	0.1382	0.1721	0.2232	0.2121	0.1906	0.1856	0.2046	0.1974	0.1936	0.2009
Z-Score	1.4543	1.5902	1.8343	2.1913	2.1581	2.1406	2.0053	2.1827	2.1307	1.8543	1.8488
2. Establishing the relationship between market anomalies and financial distress of listed firms in NSE, Kenya.											
a) Fundamental Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Dividend Per Share	1.65	2.00	2.50	5.45	1.50	1.00	0.70	1.00	1.00	1.00	1.00
Earnings Per Share	3.60	4.07	4.49	7.80	1.49	1.61	1.40	1.54	1.55	1.36	1.28
Price Per Share	78.81	50.50	45.00	61.00	13.05	15.70	17.60	16.60	13.60	9.10	9.60
D/P	0.02	0.04	0.06	0.09	0.11	0.06	0.04	0.06	0.07	0.11	0.10
E/P	0.05	0.08	0.10	0.13	0.11	0.10	0.08	0.09	0.11	0.15	0.13
b) Technical Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Low	55.00	38.50	32.25	42.00	9.50	10.60	14.50	14.40	10.75	7.50	7.05
High	95.00	83.00	60.00	71.00	75.00	16.00	19.00	19.50	18.00	14.50	12.00
c) Seasonal Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
January	2										
Total	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
d) Size Effect Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Total Sales ('M)	13,634	27,850	26,594	31,544	28,333	30,970	30,359	31,625	34,337	36,783	35,628
Total Assets ('M)	157,928	168,785	165,151	172,691	167,395	184,826	206,737	225,841	240,877	259,718	271,572
Par Value	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Share Capital ('M)	2,716	2,716	2,716	2,716	2,716	2,716	2,716	2,716	2,716	2,716	2,716
Outstanding Shares ('M)	5,432	5,432	5,432	5,432	5,432	5,432	5,432	5,432	5,432	5,432	5,432
Market Cap ('M)	428,096	274,316	244,440	331,352	70,888	85,282	95,603	90,171	73,875	49,431	52,147
Profitability ('M)	4,910	5,525	6,091	10,599	8,073	8,741	7,623	8,397	8,401	7,111	6,679

DIAMOND TRUST BANK KENYA LTD											
1. Financial Distress ('000)											
Year	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Current Assets	35,202,928	54,716,547	64,622,178	81,381,424	103,497,284	131,624,672	158,062,573	204,248,714	263,461,484	231,284,765	254,769,362
Current Liabilities	30,518,866	47,157,941	56,628,977	71,230,979	94,510,999	116,834,491	142,776,947	179,275,854	233,303,209	282,167,952	309,683,645
Working Capital	4,684,062	7,558,606	7,993,201	10,150,445	8,986,285	14,790,181	15,285,626	24,972,860	30,158,275	(50,883,187)	(54,914,283)
Total Assets	35,997,571	56,145,697	66,679,080	83,600,177	107,759,818	135,461,412	166,520,351	211,539,412	271,608,597	328,044,501	363,303,400
Total Liabilities	30,518,866	49,125,280	58,590,882	73,340,498	94,516,245	116,834,491	142,776,047	179,275,854	233,303,209	282,167,952	309,683,645
Retained Earnings	1,563,020	2,582,523	3,628,298	5,627,348	7,796,631	11,012,392	15,477,589	19,986,040	25,293,925	30,682,722	35,934,013
EBIT	1,055,270	1,604,296	1,929,862	3,462,999	3,248,474	4,669,663	7,235,003	8,521,286	9,565,192	10,995,696	10,098,235
Market Value of Equity	5,478,705	5,905,514	6,998,163	8,939,503	11,593,302	16,522,162	18,568,277	25,784,414	29,996,201	36,431,809	43,003,972
Sales	3,085,485	4,695,985	6,461,453	7,364,179	7,225,667	12,682,015	12,124,435	14,275,788	18,033,177	24,803,939	25,633,393
WC/TA	0.1301	0.1346	0.1199	0.1214	0.0834	0.1092	0.0918	0.1181	0.1110	(0.1551)	(0.1512)
RE/TA	0.0434	0.0460	0.0544	0.0673	0.0724	0.0813	0.0929	0.0945	0.0931	0.0935	0.0989
EBIT/TA	0.0293	0.0286	0.0289	0.0414	0.0301	0.0345	0.0434	0.0403	0.0352	0.0335	0.0278
MVE/TL	0.1795	0.1202	0.1194	0.1219	0.1227	0.1414	0.1301	0.1438	0.1286	0.1291	0.1389
Z-Score	1.3806	1.3513	1.2837	1.4223	1.1143	1.3614	1.3337	1.5041	1.4036	(0.3518)	(0.3365)
2. Establishing the relationship between market anomalies and financial distress of listed firms in NSE, Kenya.											
a) Fundamental Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Dividend Per Share	1.40	1.40	1.55	1.60	1.70	1.90	2.10	2.40	2.50	2.60	2.60
Earnings Per Share	4.72	5.07	6.19	11.31	13.15	17.44	23.77	23.58	27.26	53.56	47.47
Price Per Share	92.64	68.50	70.00	135.00	90.50	115.00	192.00	235.00	187.00	118.00	192.00
D/P	0.02	0.02	0.02	0.01	0.02	0.02	0.01	0.01	0.01	0.02	0.01
E/P	0.05	0.07	0.09	0.08	0.15	0.15	0.12	0.10	0.15	0.45	0.25
b) Technical Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Low	9.00	50.00	40.50	63.00	76.50	1.00	106.00	20.00	171.00	118.00	102.00
High	110.00	100.00	80.00	144.00	160.00	125.00	198.00	280.00	251.00	226.00	200.00
c) Seasonal Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
March			5								
June								1			
July						6		9			
October						3					
November	1										
Total	**1**	**0**	**5**	**0**	**0**	**9**	**0**	**10**	**0**	**0**	**0**
d) Size Effect Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Total Sales ('000)	3,085,485	4,695,985	6,461,453	7,364,179	7,225,667	12,682,015	12,124,435	14,275,788	18,033,177	24,803,939	25,633,393
Total Assets ('000)	35,997,571	56,145,697	66,679,080	83,600,177	107,759,818	135,461,412	166,520,351	211,539,412	271,608,597	328,044,501	363,303,400
Par Value	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Share Capital ('000)	652,148	652,148	652,148	652,148	782,578	880,400	880,400	968,440	968,440	1,065,284	1,118,409
Oustanding Shares ('000)	163,037	163,037	163,037	163,037	195,645	220,100	220,100	242,110	242,110	266,321	279,602
Market Cap ('000)	15,103,748	11,168,035	11,412,590	22,009,995	17,705,827	25,311,500	42,259,200	56,895,850	45,274,570	31,425,878	53,683,632
Profitability ('000)	739,954	1,126,465	1,354,435	2,482,170	2,246,891	3,068,693	5,230,754	5,708,430	6,599,806	14,263,252	13,271,430

EQUITY GROUP HOLDINGS LTD											
1. Financial Distress ('M)											
Year	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Current Assets	49,803	71,336	91,345	132,769	184,824	228,227	262,284	327,052	403,272	447,189	500,795
Current Liabilities	38,159	59,299	77,904	115,814	162,009	200,254	226,173	280,796	355,924	391,736	431,323
Working Capital	11,644	12,037	13,441	16,955	22,815	27,973	36,111	46,256	47,348	55,453	69,472
Total Assets	53,076	78,879	100,812	143,018	196,294	243,170	277,729	344,572	428,063	473,713	524,466
Total Liabilities	38,159	59,299	77,904	115,814	162,009	200,254	226,174	280,796	355,926	391,737	431,323
Retained Earnings	1,754	4,498	7,110	11,204	17,715	25,088	32,590	43,055	52,217	60,550	71,535
EBIT	2,379	5,022	5,278	9,045	12,834	17,420	19,004	22,364	23,958	24,927	26,882
Market Value of Equity	14,917	19,580	22,908	27,204	34,285	42,916	51,556	63,776	72,136	81,977	93,143
Sales	6,316	13,967	17,298	24,215	31,786	43,711	47,260	53,841	65,304	72,561	73,743
WC/TA	0.2194	0.1526	0.1333	0.1186	0.1162	0.1150	0.1300	0.1342	0.1106	0.1171	0.1325
RE/TA	0.0330	0.0570	0.0705	0.0783	0.0902	0.1032	0.1173	0.1250	0.1220	0.1278	0.1364
EBIT/TA	0.0448	0.0637	0.0524	0.0632	0.0654	0.0716	0.0684	0.0649	0.0560	0.0526	0.0513
MVE/TL	0.3909	0.3302	0.2941	0.2349	0.2116	0.2143	0.2279	0.2271	0.2027	0.2093	0.2159
Z-Score	2.2586	1.9615	1.7651	1.7047	1.7182	1.7974	1.9347	1.9626	1.7122	1.7579	1.8848
2. Establishing the relationship between market anomalies and financial distress of listed firms in NSE, Kenya.											
a) Fundamental Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Dividend Per Share	2.00	3.00	0.40	0.80	0.80	1.25	1.50	1.80	2.00	2.00	2.00
Earnings Per Share	6.88	10.56	1.14	1.93	2.79	3.26	3.59	4.63	4.52	4.26	5.00
Price Per Share	148.49	176.00	14.35	26.75	16.40	19.25	30.75	50.00	40.00	30.00	39.75
D/P	0.01	0.02	0.03	0.03	0.05	0.06	0.05	0.04	0.05	0.07	0.05
E/P	0.05	0.06	0.08	0.07	0.17	0.17	0.12	0.09	0.11	0.14	0.13
b) Technical Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Low	70.50	114.00	11.60	12.90	16.00	14.50	23.75	29.50	35.00	24.25	23.50
High	285.00	341.00	193.00	28.00	30.25	25.25	38.75	63.00	56.50	43.00	45.00
c) Seasonal Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
January			21					14			
February			20								
March			18								
September										1	
Total	**0**	**0**	**59**	**0**	**0**	**0**	**0**	**14**	**0**	**1**	**0**
d) Size Effect Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Total Sales ('M)	6,316	13,967	17,298	24,215	31,786	43,711	47,260	53,841	65,304	72,561	73,743
Total Assets ('M)	53,076	78,879	100,812	143,018	196,294	243,170	277,729	344,572	428,063	473,713	524,466
Par Value	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Share Capital ('M)	1,811	1,851	1,851	1,851	1,851	1,851	1,851	1,851	1,887	1,887	1,887
Outstanding Shares ('M)	3,622	3,702	3,702	3,702	3,702	3,702	3,702	3,702	3,774	3,774	3,774
Market Cap ('M)	537,831	651,552	53,124	99,029	60,713	71,264	113,837	185,100	150,960	113,220	150,017
Profitability ('M)	1,890	3,910	4,234	7,132	10,325	12,080	13,278	17,151	16,739	16,603	18,918

HF GROUP LTD

1. Financial Distress ('000)

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Current Assets	9,899,695	13,902,880	17,430,973	28,530,099	31,013,078	39,467,925	45,012,193	58,025,483	10,025,655	9,998,127	10,041,730
Current Liabilities	8,922,984	10,641,952	14,165,983	17,864,645	19,984,954	25,606,700	41,073,258	37,172,381	144,349	114,335	160,214
Working Capital	976,711	3,260,928	3,264,990	10,665,454	11,028,124	13,861,225	3,938,935	20,853,102	9,881,306	9,883,792	9,881,516
Total Assets	10,369,255	14,294,368	18,239,359	29,278,396	31,870,916	40,956,577	47,389,377	60,961,680	71,659,434	71,930,140	67,541,116
Total Liabilities	8,922,984	10,641,952	14,165,983	25,020,989	27,153,552	35,819,333	41,529,870	54,402,798	61,036,793	60,640,878	56,091,581
Retained Earnings	820,521	2,451,666	2,872,626	3,056,657	3,514,489	3,933,494	4,653,407	5,350,232	8,827,408	9,491,604	9,651,102
EBIT	113,397	202,670	351,118	561,028	975,795	907,631	1,480,356	1,400,653	1,753,518	1,347,880	311,624
Market Value of Equity	1,459,968	3,652,416	4,073,376	4,257,407	4,717,364	5,137,244	5,681,853	6,276,033	9,269,225	9,363,048	9,895,673
Sales	1,157,625	1,533,032	2,031,024	2,730,010	3,755,698	5,352,701	6,808,429	7,217,477	9,269,255	8,607,499	8,479,052
WC/TA	0.0942	0.2281	0.1790	0.3643	0.3460	0.3384	0.0831	0.3421	0.1379	0.1374	0.1463
RE/TA	0.0791	0.1715	0.1575	0.1044	0.1103	0.0960	0.0982	0.0878	0.1232	0.1320	0.1429
EBIT/TA	0.0109	0.0142	0.0193	0.0192	0.0306	0.0222	0.0312	0.0230	0.0245	0.0187	0.0046
MVE/TL	0.1636	0.3432	0.2875	0.1702	0.1737	0.1434	0.1368	0.1154	0.1519	0.1544	0.1764
Z-Score	1.1212	2.5113	2.1190	3.0374	3.0176	2.8328	1.2189	2.8056	1.6301	1.6196	1.6418

2. Establishing the relationship between market anomalies and financial distress of listed firms in NSE, Kenya.

a) Fundamental Anomalies

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Dividend Per Share	0.25	0.30	0.50	0.70	1.20	1.40	1.75	1.50	1.30	1.30	0.35
Earnings Per Share	0.64	0.79	1.02	1.65	2.70	3.22	4.30	4.21	3.43	3.43	3.43
Price Per Share	45.13	19.40	18.00	26.50	12.40	15.45	31.50	45.75	22.25	22.25	10.40
D/P	0.01	0.02	0.03	0.03	0.10	0.09	0.06	0.03	0.06	0.06	0.03
E/P	0.01	0.04	0.06	0.06	0.22	0.21	0.14	0.09	0.15	0.15	0.33

b) Technical Anomalies

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Low	19.50	5.00	12.00	15.00	11.75	11.05	14.00	29.00	2.50	11.00	9.25
High	50.00	55.00	19.40	32.25	30.00	17.00	34.00	53.00	55.00	23.50	14.00

c) Seasonal Anomalies

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
January	1										3
March				1							
April				4							1
August											
Total	**1**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**4**

d) Size Effect Anomalies

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Total Sales ('000)	1,157,625	1,533,032	2,031,024	2,730,010	3,755,698	5,352,701	6,808,429	7,217,477	9,269,255	8,607,499	8,479,052
Total Assets ('000)	10,369,255	14,294,368	18,239,359	29,278,396	31,870,916	40,956,577	47,389,377	60,961,680	71,659,434	71,930,140	67,541,116
Par Value	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Share Capital ('000)	575,000	1,150,000	1,150,000	1,150,000	1,152,125	1,153,000	1,155,350	1,157,900	1,744,983	1,746,908	1,747,683
Oustanding Shares ('000)	115,000	230,000	230,000	230,000	230,425	230,600	231,070	231,580	348,997	349,382	349,537
Market Cap ('000)	5,189,950	4,462,000	4,140,000	6,095,000	2,857,270	3,562,770	7,278,705	10,594,785	7,765,174	7,773,741	3,635,181
Profitability ('000)	73,508	136,427	234,176	379,531	622,278	743,334	995,196	975,336	1,196,969	888,056	126,216

I & M HOLDINGS LTD											
1. Financial Distress ('000)											
Year	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Current Assets	28,328,436	41,086,309	52,499,503	83,973,518	104,923,198	115,730,357	137,407,606	172,311,236	188,881,394	201,265,738	225,940,685
Current Liabilities	25,553,145	37,679,439	46,971,548	70,888,467	89,461,269	95,419,234	105,935,376	134,030,401	144,365,424	157,729,779	180,432,764
Working Capital	2,775,291	3,406,870	5,527,955	13,085,051	15,461,929	20,311,123	31,472,230	38,280,835	44,515,970	43,535,959	45,507,921
Total Assets	29,420,098	42,857,942	54,434,468	86,882,153	108,063,712	119,276,044	141,364,216	176,464,451	191,723,542	210,542,393	240,110,741
Total Liabilities	25,553,145	36,590,097	31,468,171	73,031,717	71,634,687	99,885,654	117,508,026	131,635,601	136,006,356	171,035,976	193,095,258
Retained Earnings	1,486,159	1,905,689	2,714,176	4,605,637	7,185,254	10,241,780	13,722,035	7,360,529	12,971,933	18,217,056	22,621,210
EBIT	1,294,184	1,591,551	1,794,833	3,526,481	4,953,893	5,702,304	7,262,666	8,229,894	10,167,661	10,603,188	9,894,574
Market Value of Equity	3,866,953	5,178,503	7,462,920	13,850,437	15,166,671	19,410,390	23,856,189	28,106,142	33,721,299	39,506,417	47,015,483
Sales	3,414,172	4,869,529	6,120,463	8,750,973	11,502,286	15,774,773	17,981,984	18,807,924	23,219,966	29,424,534	30,186,588
WC/TA	0.0943	0.0795	0.1016	0.1506	0.1431	0.1703	0.2226	0.2169	0.2322	0.2068	0.1895
RE/TA	0.0505	0.0445	0.0499	0.0530	0.0665	0.0859	0.0971	0.0417	0.0677	0.0865	0.0942
EBIT/TA	0.0440	0.0371	0.0330	0.0406	0.0458	0.0478	0.0514	0.0466	0.0530	0.0504	0.0412
MVE/TL	0.1513	0.1415	0.2372	0.1896	0.2117	0.1943	0.2030	0.2135	0.2479	0.2310	0.2435
Z-Score	1.2380	1.0646	1.2993	1.6327	1.6857	1.9223	2.3353	2.0966	2.3604	2.2195	2.0830
2. Establishing the relationship between market anomalies and financial distress of listed firms in NSE, Kenya.											
a) Fundamental Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Dividend Per Share			18.00	20.00	26.00	26.00	35.00	45.00	47.70	50.25	38.50
Earnings Per Share			52.90	92.51	117.72	134.03	160.32	178.35	204.85	225.86	198.45
Price Per Share			100.00	100.00	110.00	110.00	120.00	123.00	100.00	90.00	127.00
D/P	#DIV/0!	#DIV/0!	0.1800	0.2000	0.2364	0.2364	0.2917	0.3659	0.4770	0.5583	0.3031
E/P	#DIV/0!	#DIV/0!	0.5290	0.9251	1.0702	1.2185	1.3360	1.4500	2.0485	2.5096	1.5626
b) Technical Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Low			41.75	41.75	41.75	41.75	81.00	113.00	90.00	74.00	74.50
High			129.00	129.00	129.00	129.00	125.00	147.00	139.00	113.00	130.00
c) Seasonal Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
January											
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
d) Size Effect Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Total Sales ('000)	3,414,172	4,869,529	6,120,463	8,750,973	11,502,286	15,774,773	17,981,984	18,807,924	23,219,966	29,424,534	30,186,588
Total Assets ('000)	29,420,098	42,857,942	54,434,468	86,882,153	108,063,712	119,276,044	141,364,216	176,464,451	191,723,542	210,542,393	240,110,741
Par Value	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Share Capital ('000)	2,174,000	2,324,000	2,613,561	2,880,245	2,880,245	2,880,245	2,880,245	2,880,245	2,880,245	2,880,245	2,880,245
Oustanding Shares ('000)	2,174,000	2,324,000	2,613,561	2,880,245	2,880,245	2,880,245	2,880,245	2,880,245	2,880,245	2,880,245	2,880,245
Market Cap ('000)	-	-	261,356,100	288,024,500	316,826,950	316,826,950	345,629,400	354,270,135	288,024,500	259,222,050	365,791,115
Profitability ('000)	882,852	1,113,678	1,247,414	2,524,568	3,472,724	4,119,557	4,981,361	5,734,013	7,144,411	7,760,162	7,264,249

KCB GROUP LTD											
1. Financial Distress ('M)											
Year	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Current Assets	114,964	183,525	185,671	245,578	321,129	356,900	379,127	475,730	542,779	578,157	627,002
Current Liabilities	107,275	170,125	172,196	212,226	277,560	304,801	319,777	427,440	456,711	475,526	525,648
Working Capital	7,689	13,400	13,475	33,352	43,569	52,099	59,350	48,290	86,068	102,631	101,354
Total Assets	120,480	191,212	195,012	251,356	330,664	368,019	390,852	490,338	558,094	595,240	646,669
Total Liabilities	107,275	170,125	172,208	212,226	286,177	313,724	327,497	414,705	476,841	498,674	540,703
Retained Earnings	6,728	8,741	13,953	17,722	18,277	28,875	36,599	46,340	56,230	59,413	68,926
EBIT	4,226	6,012	6,300	9,798	15,129	17,208	20,124	22,362	23,445	29,091	29,114
Market Value of Equity	13,205	21,087	22,804	39,130	44,487	54,295	63,355	75,634	81,254	96,566	105,965
Sales	15,300	22,627	26,404	33,099	41,576	57,044	57,059	67,510	77,292	85,950	87,130
WC/TA	0.0638	0.0701	0.0691	0.1327	0.1318	0.1416	0.1518	0.0985	0.1542	0.1724	0.1567
RE/TA	0.0558	0.0457	0.0715	0.0705	0.0553	0.0785	0.0936	0.0945	0.1008	0.0998	0.1066
EBIT/TA	0.0351	0.0314	0.0323	0.0390	0.0458	0.0468	0.0515	0.0456	0.0420	0.0489	0.0450
MVE/TL	0.1231	0.1240	0.1324	0.1844	0.1555	0.1731	0.1935	0.1824	0.1704	0.1936	0.1960
Z-Score	0.9657	0.9502	1.0427	1.5558	1.5152	1.6804	1.8505	1.4521	1.8013	1.9882	1.8840
2. Establishing the relationship between market anomalies and financial distress of listed firms in NSE, Kenya.											
a) Fundamental Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Dividend Per Share	0.70	1.00	1.00	1.25	1.85	1.90	2.00	2.00	2.00	3.00	3.00
Earnings Per Share	1.49	1.97	1.84	2.76	3.72	4.11	4.82	5.63	6.49	6.43	6.43
Price Per Share	28.50	23.50	20.50	21.75	16.85	29.75	47.25	57.00	43.75	28.75	42.75
D/P	0.02	0.04	0.05	0.06	0.11	0.06	0.04	0.04	0.05	0.10	0.07
E/P	0.05	0.08	0.09	0.13	0.22	0.14	0.10	0.10	0.15	0.22	0.15
b) Technical Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Low	17.00	1.00	13.50	0.05	7.50	15.00	27.50	37.50	36.00	22.50	23.00
High	282.00	34.75	25.00	25.00	27.00	30.75	50.50	62.00	65.50	44.25	47.50
c) Seasonal Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
January			4								
February			5								
March			10								
July		1									
Total	**0**	**1**	**19**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
d) Size Effect Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Total Sales ('M)	15,300	22,627	26,404	33,099	41,576	57,044	57,059	67,510	77,292	85,950	87,130
Total Assets ('M)	120,480	191,212	195,012	251,356	330,664	368,019	390,852	490,338	558,094	595,240	646,669
Par Value	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Share Capital ('M)	1,996	2,218	2,218	2,950	2,969	2,970	2,984	3,025	3,025	3,066	3,066
Outstanding Shares ('M)	1,996	2,218	2,218	2,950	2,969	2,970	2,984	3,025	3,025	3,066	3,066
Market Cap ('M)	56,886,000	52,123,000	45,469,000	64,162,500	50,027,650	88,357,500	140,994,000	172,425,000	132,343,750	88,147,500	131,071,500
Profitability ('M)	2,975	4,191	4,084	7,178	10,981	12,204	14,341	16,849	19,623	19,723	19,704

NATIONAL BANK OF KENYA LTD											
1. Financial Distress ('000)											
Year	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Current Assets	40,287,091	41,070,170	49,276,329	57,588,441	65,522,113	63,489,942	87,641,276	117,574,262	119,369,184	104,485,737	103,873,141
Current Liabilities	36,447,037	38,261,908	43,288,068	50,097,083	58,208,042	56,711,429	80,583,516	110,845,997	114,364,791	105,175,680	102,639,232
Working Capital	3,840,054	2,808,262	5,988,261	7,491,358	7,314,071	6,778,513	7,057,760	6,728,265	5,004,393	(689,943)	1,233,909
Total Assets	41,414,272	42,695,700	51,404,408	60,026,694	68,664,516	67,154,805	92,555,717	123,091,996	125,440,316	112,086,130	109,873,141
Total Liabilities	36,447,037	36,487,855	43,496,716	50,097,083	58,208,042	56,704,829	80,667,318	110,867,973	114,386,767	102,639,233	105,175,680
Retained Earnings	(2,603,421)	(1,374,030)	53,563	2,006,611	2,501,448	2,564,301	3,277,535	3,378,423	(1,020,259)	(1,367,738)	(3,525,502)
EBIT	1,610,084	1,796,565	2,159,441	2,697,823	2,443,850	1,156,856	1,812,168	1,303,131	(1,684,397)	79,891	785,052
Market Value of Equity	4,967,235	6,207,845	7,907,692	9,929,611	10,456,474	10,467,176	11,888,399	12,224,023	6,884,996	6,910,450	7,233,908
Sales	5,457,699	5,887,632	6,894,321	8,170,207	9,178,192	11,288,315	11,022,828	13,839,101	15,405,757	14,957,864	12,391,174
WC/TA	0.0927	0.0658	0.1165	0.1248	0.1065	0.1009	0.0763	0.0547	0.0399	(0.0062)	0.0112
RE/TA	(0.0629)	(0.0322)	0.0010	0.0334	0.0364	0.0382	0.0354	0.0274	(0.0081)	(0.0122)	(0.0321)
EBIT/TA	0.0389	0.0421	0.0420	0.0449	0.0356	0.0172	0.0196	0.0106	(0.0134)	0.0007	0.0071
MVE/TL	0.1363	0.1701	0.1818	0.1982	0.1796	0.1846	0.1474	0.1103	0.0602	0.0673	0.0688
Z-Score	0.8077	0.7880	1.2408	1.4378	1.2453	1.0962	0.9020	0.6350	0.2082	(0.0047)	0.0893
2. Establishing the relationship between market anomalies and financial distress of listed firms in NSE, Kenya.											
a) Fundamental Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Dividend Per Share	-	-	-	1.00	0.40	0.20	0.33	-	-	-	-
Earnings Per Share	3.89	4.50	5.61	4.18	3.19	1.52	2.32	2.91	(3.86)	0.23	1.26
Price Per Share	46.75	43.00	39.00	39.00	20.25	17.25	28.75	24.75	15.75	7.20	9.35
D/P	-	-	-	0.03	0.02	0.01	0.01	-	-	-	-
E/P	0.08	0.10	0.14	0.11	0.16	0.09	0.08	0.12	(0.25)	0.03	0.13
b) Technical Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Low	30.00	30.75	24.50	30.00	16.70	15.00	15.10	22.00	13.50	6.00	5.40
High	70.00	69.00	45.00	63.50	48.00	23.00	30.00	39.25	27.50	17.40	12.25
b) Seasonal Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
January	9							2			
March				15							
April				6							
June	1										
Total	**10**	**0**	**0**	**21**	**0**	**0**	**0**	**2**	**0**	**0**	**0**
b) Size Effect Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Total Sales ('000)	5,457,699	5,887,632	6,894,321	8,170,207	9,178,192	11,288,315	11,022,828	13,839,101	15,405,757	14,957,864	12,391,174
Total Assets ('000)	41,414,272	42,695,700	51,404,408	60,026,694	68,664,516	67,154,805	92,555,717	123,091,996	125,440,316	112,086,130	109,873,141
Par Value	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Share Capital ('000)	6,675,000	6,675,000	6,675,000	7,075,000	7,075,000	7,075,000	7,075,000	7,075,000	7,214,976	7,214,976	7,368,906
Oustanding Shares ('000)	1,335,000	1,335,000	1,335,000	1,415,000	1,415,000	1,415,000	1,415,000	1,415,000	1,442,995	1,442,995	1,473,781
Market Cap ('000)	62,411,250	57,405,000	52,065,000	55,185,000	28,653,750	24,408,750	40,681,250	35,021,250	22,727,174	10,389,565	13,779,854
Profitability ('000)	1,119,396	1,240,610	1,462,955	2,021,919	1,546,113	736,366	1,112,803	870,702	(1,153,477)	70,953	410,784

NIC BANK LTD											
1. Financial Distress ('000)											
Year	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Current Assets	30,553,864	41,512,966	46,059,530	57,488,271	76,596,953	110,228,344	119,519,532	143,342,134	162,380,445	165,226,211	199,796,804
Current Liabilities	25,455,695	36,082,828	40,037,104	49,708,304	68,461,052	92,866,971	99,865,664	108,071,312	124,085,936	119,148,137	154,430,365
Working Capital	5,098,169	5,430,138	6,022,426	7,779,967	8,135,901	17,361,373	19,653,868	35,270,822	38,294,509	46,078,074	45,366,439
Total Assets	31,281,018	42,619,119	47,558,241	59,013,922	78,984,005	108,348,593	121,062,739	145,780,505	165,788,268	169,458,985	206,172,460
Total Liabilities	26,543,285	37,053,369	40,765,987	50,660,693	68,461,052	92,866,971	103,493,833	122,429,792	139,442,126	139,113,621	171,456,223
Retained Earnings	2,608,812	3,254,083	4,173,753	5,748,216	7,902,122	10,638,623	12,592,743	16,012,992	19,421,923	23,012,504	27,815,058
EBIT	1,049,907	1,484,174	1,526,793	2,608,392	3,604,948	4,517,967	5,009,571	6,230,650	6,397,275	6,166,949	5,600,950
Market Value of Equity	4,737,733	5,565,750	6,792,254	8,353,229	10,522,953	15,481,622	17,568,906	23,350,713	26,344,142	30,345,364	34,716,237
Sales	2,799,924	3,747,301	4,425,440	4,943,344	8,201,506	13,040,833	13,497,701	15,836,192	19,483,202	21,736,091	21,393,667
WC/TA	0.1630	0.1274	0.1266	0.1318	0.1030	0.1602	0.1623	0.2419	0.2310	0.2719	0.2200
RE/TA	0.0834	0.0764	0.0878	0.0974	0.1000	0.0982	0.1040	0.1098	0.1171	0.1358	0.1349
EBIT/TA	0.0336	0.0348	0.0321	0.0442	0.0456	0.0417	0.0414	0.0427	0.0386	0.0364	0.0272
MVE/TL	0.1785	0.1502	0.1666	0.1649	0.1537	0.1667	0.1698	0.1907	0.1889	0.2181	0.2025
Z-Score	1.7540	1.4765	1.5075	1.6525	1.4700	1.8265	1.8604	2.4327	2.3548	2.7001	2.2784
2. Establishing the relationship between market anomalies and financial distress of listed firms in NSE, Kenya.											
a) Fundamental Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Dividend Per Share	0.80	0.50	0.50	0.50	0.50	1.00	1.00	1.00	1.25	1.25	1.00
Earnings Per Share	2.57	3.18	3.01	5.06	5.54	6.03	6.12	7.07	7.00	6.73	6.53
Price Per Share	62.50	60.00	31.25	46.00	24.00	38.25	60.00	57.50	43.25	26.00	33.75
D/P	0.01	0.01	0.02	0.01	0.02	0.03	0.02	0.02	0.03	0.05	0.03
E/P	0.04	0.05	0.10	0.11	0.23	0.16	0.10	0.12	0.16	0.26	0.19
b) Technical Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Low	50.00	36.25	25.00	28.50	21.00	2.00	35.25	8.00	34.25	22.00	20.00
High	205.00	68.00	52.00	54.00	54.00	43.00	65.00	85.00	72.00	44.00	41.00
c) Seasonal Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
January											
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
d) Size Effect Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Total Sales ('000)	2,799,924	3,747,301	4,425,440	4,943,344	8,201,506	13,040,833	13,497,701	15,836,192	19,483,202	21,736,091	21,393,667
Total Assets ('000)	31,281,018	42,619,119	47,558,241	59,013,922	78,984,005	108,348,593	121,062,739	145,780,505	165,788,268	169,458,985	206,172,460
Par Value	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Share Capital ('000)	1,483,462	1,483,462	1,631,808	1,794,989	1,974,488	3,714,921	2,714,921	3,199,728	3,199,728	3,199,728	15,000,000
Oustanding Shares ('000)	296,692	296,692	326,362	358,998	394,898	742,984	542,984	639,946	639,946	639,946	3,000,000
Market Cap ('000)	18,543,275	17,801,544	10,198,800	16,513,899	9,477,542	28,419,146	32,579,052	36,796,872	27,677,647	16,638,586	101,250,000
Profitability ('000)	745,687	1,037,681	1,085,718	1,863,918	2,707,137	3,036,794	3,237,301	4,116,674	4,485,125	4,330,396	4,144,418

STANDARD CHARTERED BANK KENYA LTD											
1. Financial Distress ('000)											
Year	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Current Assets	89,832,179	97,225,493	121,431,905	143,819,823	155,232,722	187,318,983	212,989,129	215,646,022	227,794,412	245,022,485	279,271,793
Current Liabilities	80,205,934	87,520,764	109,786,817	121,316,601	143,352,168	164,599,942	184,635,413	181,374,013	192,684,626	205,878,172	240,059,904
Working Capital	9,626,245	9,704,729	11,645,088	22,503,222	11,880,554	22,719,041	28,353,716	34,272,009	35,109,786	39,144,313	39,211,889
Total Assets	91,121,942	99,019,571	123,778,972	142,746,249	164,046,624	195,352,756	220,391,180	222,495,824	233,965,447	250,482,000	285,724,441
Total Liabilities	80,205,934	87,520,764	109,786,817	122,415,127	143,352,168	164,599,942	184,184,779	181,837,650	192,713,662	205,878,172	240,059,904
Retained Earnings	4,907,923	5,280,702	6,607,254	7,872,096	10,240,075	14,304,972	18,119,239	20,814,449	24,856,136	26,750,324	28,003,352
EBIT	4,910,188	4,719,814	6,724,447	7,681,884	8,255,135	11,556,191	13,354,965	14,345,981	9,159,932	13,288,119	10,071,293
Market Value of Equity	10,916,008	11,498,807	13,992,155	20,331,122	20,694,456	30,752,814	36,206,401	40,658,174	41,251,784	44,603,828	45,664,537
Sales	11,215,634	11,754,013	14,299,121	15,621,985	18,284,216	26,650,375	29,213,702	30,739,040	30,207,345	34,542,966	35,224,203
WC/TA	0.1056	0.0980	0.0941	0.1576	0.0724	0.1163	0.1287	0.1540	0.1501	0.1563	0.1372
RE/TA	0.0539	0.0533	0.0534	0.0551	0.0624	0.0732	0.0822	0.0935	0.1062	0.1068	0.0980
EBIT/TA	0.0539	0.0477	0.0543	0.0538	0.0503	0.0592	0.0606	0.0645	0.0392	0.0531	0.0352
MVE/TL	0.1361	0.1314	0.1274	0.1661	0.1444	0.1868	0.1966	0.2236	0.2141	0.2167	0.1902
Z-Score	1.3736	1.2751	1.2901	1.7500	1.1683	1.5953	1.7256	1.9835	1.8186	1.9573	1.6564
2. Establishing the relationship between market anomalies and financial distress of listed firms in NSE, Kenya.											
a) Fundamental Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Dividend Per Share	10.00	10.00	12.00	13.50	11.00	12.50	14.50	17.00	17.00	20.00	17.00
Earnings Per Share	12.14	11.34	16.45	18.58	19.75	26.60	29.42	33.21	19.97	25.85	19.64
Price Per Share	206.00	160.00	161.00	258.00	160.00	235.00	304.00	334.00	195.00	189.00	208.00
D/P	0.05	0.06	0.07	0.05	0.07	0.05	0.05	0.05	0.09	0.11	0.08
E/P	0.06	0.07	0.10	0.07	0.12	0.11	0.10	0.10	0.10	0.14	0.09
b) Technical Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Low	140.00	136.00	119.00	35.00	142.00	31.00	224.00	271.00	180.00	171.00	165.00
High	270.00	236.00	169.00	320.00	301.00	240.00	326.00	350.00	357.00	270.00	243.00
c) Seasonal Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
January	14		18				16				6
February							1				1
March	2										
April										2	
July										1	
October						3					
December			4								
Total	**16**	**0**	**22**	**0**	**0**	**3**	**17**	**0**	**0**	**3**	**7**
d) Size Effect Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Total Sales ('000)	11,215,634	11,754,013	14,299,121	15,621,985	18,284,216	26,650,375	29,213,702	30,739,040	30,207,345	34,542,966	35,224,203
Total Assets ('000)	91,121,942	99,019,571	123,778,972	142,746,249	164,046,624	195,352,756	220,391,180	222,495,824	233,965,447	250,482,000	285,724,441
Par Value	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Share Capital ('000)	1,639,839	1,639,839	1,639,839	1,715,386	1,715,386	1,825,798	1,825,798	1,825,798	1,825,798	1,997,553	1,997,553
Oustanding Shares ('000)	327,968	327,968	327,968	343,077	343,077	365,160	365,160	365,160	365,160	399,511	399,511
Market Cap ('000)	67,561,367	52,474,848	52,802,816	88,513,918	54,892,352	85,812,506	111,008,518	121,963,306	71,206,122	75,507,503	83,098,205
Profitability ('000)	3,469,877	3,250,813	4,732,754	5,376,191	5,836,821	8,069,533	9,262,921	10,436,180	6,342,427	9,049,307	6,914,098

STANBIC HOLDINGS PLC											
1. Financial Distress ('000)											
Year	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Current Assets	39,556,971	97,696,619	111,721,875	104,402,319	136,305,197	129,822,339	167,215,790	167,311,105	195,301,743	200,414,698	233,198,268
Current Liabilities	22,070,935	73,127,061	82,550,233	86,670,578	114,759,251	102,932,895	133,322,844	131,641,407	157,554,225	162,763,824	196,158,100
Working Capital	17,486,036	24,569,558	29,171,642	17,731,741	21,545,946	26,889,444	33,892,946	35,669,698	37,747,518	37,650,874	37,040,168
Total Assets	43,262,781	111,128,799	127,690,950	140,080,202	150,171,015	143,212,155	180,511,797	180,998,985	208,451,915	214,682,729	248,738,719
Total Liabilities	37,249,812	91,880,826	107,349,348	115,311,587	130,841,888	115,971,267	148,373,001	144,702,944	170,327,464	174,541,855	205,783,032
Retained Earnings	2,636,622	2,738,554	3,184,382	4,676,820	5,289,343	8,223,466	12,506,196	15,635,275	18,146,346	20,649,216	22,948,720
EBIT	1,352,919	1,322,356	709,301	2,630,825	2,798,901	4,588,088	7,224,005	7,700,246	7,359,414	6,049,086	5,401,248
Market Value of Equity	8,012,969	19,247,973	20,341,602	24,768,615	19,329,127	27,240,888	32,425,791	36,895,193	38,364,829	40,140,874	42,955,687
Sales	5,520,494	10,628,167	9,983,485	11,697,145	13,565,614	19,377,861	19,305,858	20,297,873	22,632,847	25,121,892	25,429,557
WC/TA	0.4042	0.2211	0.2285	0.1266	0.1435	0.1878	0.1878	0.1971	0.1811	0.1754	0.1489
RE/TA	0.0609	0.0246	0.0249	0.0334	0.0352	0.0574	0.0693	0.0750	0.0845	0.0962	0.0923
EBIT/TA	0.0313	0.0119	0.0056	0.0188	0.0186	0.0320	0.0400	0.0369	0.0343	0.0282	0.0217
MVE/TL	0.1852	0.1732	0.1593	0.1768	0.1287	0.1902	0.1796	0.1770	0.1787	0.1170	0.1022
Z-Score	3.2547	1.7925	1.7846	1.2511	1.3164	1.8339	1.9151	1.9714	1.8815	1.7763	1.5309
2. Establishing the relationship between market anomalies and financial distress of listed firms in NSE, Kenya.											
a) Fundamental Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Dividend Per Share	0.07	0.28	-	0.80	-	0.73	2.15	6.15	6.15	5.25	5.25
Earnings Per Share	4.94	3.35	(0.22)	5.86	5.99	9.90	12.97	14.38	12.41	11.18	10.90
Price Per Share	129.00	60.00	45.00	75.50	40.00	42.00	89.00	125.00	82.50	70.50	81.00
D/P	0.00	0.00	-	0.01	-	0.02	0.02	0.05	0.07	0.07	0.06
E/P	0.04	0.06	(0.00)	0.08	0.15	0.24	0.15	0.12	0.15	0.16	0.13
b) Technical Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Low	80.00	50.00	42.75	38.00	38.00	0.50	38.00	79.50	80.00	65.50	58.00
High	900.00	130.00	70.00	94.50	84.50	50.00	92.00	155.00	181.00	98.00	88.50
c) Seasonal Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
January	5										
February	8										
March	4										
August						3					
September						17					
October						6					
Total	**17**	**0**	**0**	**0**	**0**	**26**	**0**	**0**	**0**	**0**	**0**
d) Size Effect Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Total Sales ('000)	5,520,494	10,628,167	9,983,485	11,697,145	13,565,614	19,377,861	19,305,858	20,297,873	22,632,847	25,121,892	25,429,557
Total Assets ('000)	43,262,781	111,128,799	127,690,950	140,080,202	150,171,015	143,212,155	180,511,797	180,998,985	208,451,915	214,682,729	248,738,719
Par Value	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Share Capital ('000)	1,368,421	1,368,421	1,368,421	1,368,421	1,368,421	1,976,608	1,976,608	1,976,608	1,976,608	1,976,608	1,976,608
Oustanding Shares ('000)	273,684	273,684	273,684	273,684	273,684	395,322	395,322	395,322	395,322	395,322	395,322
Market Cap ('000)	35,305,262	16,421,052	12,315,789	20,663,157	10,947,368	16,603,507	35,183,622	49,415,200	32,614,032	27,870,173	32,021,050
Profitability ('000)	924,717	846,593	35,928	1,787,368	1,838,992	3,009,891	5,127,156	5,686,661	4,905,734	4,418,589	4,309,494

THE CO-OPERATIVE BANK OF KENYA LTD											
1. Financial Distress ('000)											
Year	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Current Assets	62,043,021	79,114,012	104,405,805	147,397,258	159,015,124	189,483,928	218,084,499	272,985,838	331,987,907	340,766,937	376,378,084
Current Liabilities	58,863,924	69,759,489	94,386,499	134,225,316	147,360,141	166,947,241	184,378,975	224,249,461	273,925,345	270,924,025	295,400,893
Working Capital	3,179,097	9,354,523	10,019,306	13,171,942	11,654,983	22,536,687	33,705,524	48,736,377	58,062,562	69,842,912	80,977,191
Total Assets	65,324,205	83,485,855	110,678,091	154,339,991	168,311,639	200,886,582	231,215,358	285,396,067	342,499,809	351,856,250	386,857,637
Total Liabilities	58,863,924	69,876,714	94,386,499	134,359,493	147,360,141	171,519,246	194,631,367	242,518,948	293,196,557	316,564,707	342,196,110
Retained Earnings	2,698,362	4,253,642	6,514,270	9,851,595	14,171,970	19,558,597	26,439,285	32,206,653	39,574,445	48,208,633	55,329,786
EBIT	2,318,525	3,359,117	3,735,695	5,772,618	6,362,562	9,983,772	10,872,445	10,916,211	15,383,092	17,723,532	16,398,638
Market Value of Equity	6,460,281	13,609,141	16,291,592	19,980,498	20,951,498	29,367,336	36,583,991	42,877,119	49,303,252	61,314,523	69,564,967
Sales	9,311,115	11,490,334	14,012,525	18,310,046	23,653,839	32,525,344	33,976,099	40,298,699	50,034,634	55,039,231	53,865,228
WC/TA	0.0487	0.1120	0.0905	0.0853	0.0692	0.1122	0.1458	0.1708	0.1695	0.1985	0.2093
RE/TA	0.0413	0.0510	0.0589	0.0638	0.0842	0.0974	0.1143	0.1128	0.1155	0.1370	0.1430
EBIT/TA	0.0355	0.0402	0.0338	0.0374	0.0378	0.0497	0.0470	0.0382	0.0449	0.0504	0.0424
MVE/TL	0.1097	0.1948	0.1726	0.1487	0.1422	0.1712	0.1880	0.1768	0.1682	0.1937	0.2033
Z-Score	0.8077	1.3760	1.1938	1.1754	1.1321	1.5671	1.8424	1.9308	1.9672	2.2907	2.3377
2. Establishing the relationship between market anomalies and financial distress of listed firms in NSE, Kenya.											
a) Fundamental Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Dividend Per Share	8.00	0.10	0.20	0.40	0.40	0.50	0.50	0.50	0.80	0.80	0.80
Earnings Per Share	54.25	0.80	0.85	1.31	1.53	1.84	2.20	1.69	2.31	2.64	1.99
Price Per Share	10.00	10.60	8.95	19.00	12.25	12.60	17.75	20.00	18.00	13.20	16.00
D/P	0.80	0.01	0.02	0.02	0.03	0.04	0.03	0.03	0.04	0.06	0.05
E/P	5.43	0.08	0.09	0.07	0.12	0.15	0.12	0.08	0.13	0.20	0.12
b) Technical Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Low	9.00	9.10	5.50	9.00	11.30	9.90	11.40	14.05	15.00	9.75	11.00
High	20.00	13.50	11.60	21.75	21.25	15.00	19.00	25.00	23.00	23.00	18.05
c) Seasonal Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
January							22				
February							8				
Total	**0**	**0**	**0**	**0**	**0**	**0**	**30**	**0**	**0**	**0**	**0**
d) Size Effect Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Total Sales ('000)	9,311,115	11,490,334	14,012,525	18,310,046	23,653,839	32,525,344	33,976,099	40,298,699	50,034,634	55,039,231	53,865,228
Total Assets ('000)	65,324,205	83,485,855	110,678,091	154,339,991	168,311,639	200,886,582	231,215,358	285,396,067	342,499,809	351,856,250	386,857,637
Par Value	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Share Capital ('000)	2,856,450	3,492,370	3,492,370	3,492,370	3,492,370	4,190,844	4,190,844	4,889,317	4,889,317	4,889,317	5,867,180
Oustanding Shares ('000)	2,856,450	3,492,370	3,492,370	3,492,370	3,492,370	4,190,844	4,190,844	4,889,317	4,889,317	4,889,317	5,867,180
Market Cap ('000)	28,564,500	37,019,122	31,256,712	66,355,030	42,781,533	52,804,634	74,387,481	97,786,340	88,007,706	64,538,984	93,874,880
Profitability ('000)	1,549,606	2,373,936	2,967,962	4,580,698	5,362,602	7,723,858	9,108,186	8,014,997	11,705,559	12,676,210	11,405,065

EXPRESS KENYA LTD											
1. Financial Distress ('000)											
Year	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Current Assets	204,585	184,379	153,785	179,082	137,663	63,985	103,198	75,023	108,701	97,764	96,828
Current Liabilities	256,195	509,539	501,750	559,941	409,479	161,491	161,186	129,176	96,575	114,737	162,076
Working Capital	(51,610)	(325,160)	(347,965)	(380,859)	(271,816)	(97,506)	(57,988)	(54,152)	12,126	(16,973)	(65,248)
Total Assets	824,106	1,320,624	1,304,116	1,341,699	766,797	495,609	480,525	477,922	441,898	381,115	361,922
Total Liabilities	379,812	888,518	891,663	726,992	579,712	297,322	282,009	297,714	321,779	356,395	427,101
Retained Earnings	249,574	101,105	108,538	88,401	(135,201)	(76,031)	(74,065)	(149,702)	(199,924)	(286,995)	(367,477)
EBIT	112,380	(52,864)	25,916	(14,869)	(222,355)	(13,236)	(1,695)	(81,239)	(75,734)	(112,007)	(94,310)
Market Value of Equity	444,294	432,106	412,453	384,362	155,276	198,287	198,516	180,207	120,119	23,180	(67,169)
Sales	922,347	802,973	892,928	856,512	450,324	229,908	387,494	173,033	123,851	62,817	50,323
WC/TA	(0.0626)	(0.2462)	(0.2668)	(0.2839)	(0.3545)	(0.1967)	(0.1207)	(0.1133)	0.0274	(0.0445)	(0.1803)
RE/TA	0.30	0.08	0.08	0.07	(0.18)	(0.15)	(0.15)	(0.31)	(0.45)	(0.75)	(1.02)
EBIT/TA	0.14	(0.04)	0.02	(0.01)	(0.29)	(0.03)	(0.00)	(0.18)	(0.20)	(0.2939)	(0.2606)
MVE/TL	1.17	0.49	0.46	0.53	0.27	0.67	0.70	0.61	0.37	0.07	(0.16)
Sales/TA	1.12	0.61	0.68	0.64	0.59	0.46	0.81	0.39	0.32	0.16	0.14
Z-Score	2.62	0.58	0.82	0.67	(0.88)	0.32	0.86	(0.4)	(0.7)	(1.9)	(2.5)
2. Establishing the relationship between market anomalies and financial distress of listed firms in NSE, Kenya.											
a) Fundamental Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Dividend Per Share	0.50	-	-	-	-	-	-	-	-	-	-
Earnings Per Share	2.08	(1.22)	0.43	(0.79)	(6.47)	0.37	0.01	(2.32)	(1.69)	(2.74)	(2.55)
Price Per Share	24.50	13.00	8.05	7.80	3.90	3.50	3.90	6.20	4.50	3.55	3.75
D/P	0.02	-	-	-	-	-	-	-	-	-	-
E/P	0.08	(0.09)	0.05	(0.10)	(1.66)	0.11	0.00	(0.37)	(0.38)	(0.77)	(0.68)
b) Technical Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Low	19.25	10.90	8.00	7.25	3.50	3.15	2.95	3.75	3.60	2.70	2.45
High	32.00	25.00	13.50	12.30	9.00	4.50	4.50	8.50	6.90	5.00	4.30
b) Seasonal Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
January	10		15				1				
February	3										
March				1		2					
April						2					
December						1					
Total	**13**	**0**	**15**	**1**	**0**	**5**	**1**	**0**	**0**	**0**	**0**
b) Size Effect Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Total Sales ('000)	922,347	802,973	892,928	856,512	450,324	229,908	387,494	173,033	123,851	62,817	50,323
Total Assets ('000)	824,106	1,320,624	1,304,116	1,341,699	766,797	495,609	480,525	477,922	441,898	381,115	361,922
Par Value	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Share Capital ('000)	177,019	177,019	177,019	177,019	177,019	177,019	177,019	177,019	177,019	177,019	177,019
Oustanding Shares ('000)	35,404	35,404	35,404	35,404	35,404	35,404	35,404	35,404	35,404	35,404	35,404
Market Cap ('000)	867,393	460,249	285,001	276,150	138,075	123,913	138,075	219,504	159,317	125,683	132,764
Profitability ('000)	73,617	(43,236)	15,070	(28,091)	(229,088)	13,028	229,399	(23,112)	(59,993)	(96,939)	(90,349)

KENYA AIRWAYS LTD											
1. Financial Distress ('M)											
Year	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Current Assets	21,986	21,433	19,709	17,860	23,622	21,833	28,608	29,636	41,052	29,710	26,747
Current Liabilities	16,783	14,113	21,722	20,580	22,214	23,756	50,841	63,756	81,753	72,942	71,301
Working Capital	5,203	7,320	(2,013)	(2,720)	1,408	(1,923)	(22,233)	(34,120)	(40,701)	(43,232)	(44,554)
Total Assets	78,498	79,261	77,245	78,743	73,263	80,569	122,696	148,657	182,063	158,415	146,144
Total Liabilities	55,647	50,907	58,803	52,632	60,922	60,266	91,487	120,428	188,026	194,082	191,059
Retained Earnings	16,040	(20,960)	16,069	17,179	20,021	21,298	13,441	10,070	(15,676)	(42,503)	(51,871)
EBIT	5,975	6,526	(5,664)	2,671	5,002	2,146	(10,826)	(4,861)	(29,712)	(26,538)	(9,988)
Market Value of Equity	20,490	26,582	17,176	19,973	23,143	23,023	31,209	28,229	(5,963)	(35,667)	(44,915)
Sales	58,782	60,471	71,829	70,743	85,836	107,897	98,860	110,161	106,009	111,485	101,417
WC/TA	0.0663	0.0924	(0.0261)	(0.0345)	0.0192	(0.0239)	(0.1812)	(0.2295)	(0.2236)	(0.2729)	(0.3049)
RE/TA	0.2043	(0.2644)	0.2080	0.2182	0.2733	0.2643	0.1095	0.0677	(0.0861)	(0.2683)	(0.3549)
EBIT/TA	0.0761	0.0823	(0.0733)	0.0339	0.0683	0.0266	(0.0882)	(0.0327)	(0.1632)	(0.1675)	(0.0683)
MVE/TL	0.3682	0.5222	0.2921	0.3795	0.3799	0.3820	0.3411	0.2344	(0.0317)	(0.1838)	(0.2351)
Sales/TA	0.7488	0.7629	0.9299	0.8984	1.1716	1.3392	0.8057	0.7410	0.5823	0.7038	0.6940
Z-Score	1.5858	1.0878	1.1222	1.5011	2.0293	1.9964	0.6544	0.5924	(0.3647)	(0.6631)	(0.5361)
2. Establishing the relationship between market anomalies and financial distress of listed firms in NSE, Kenya.											
a) Fundamental Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Dividend Per Share	1.75	1.75	1.00	1.00	1.50	0.81	-	-	-	-	-
Earnings Per Share	8.87	9.91	(8.84)	4.40	7.65	3.58	(6.35)	(2.25)	(17.21)	(17.73)	(6.73)
Price Per Share	63.50	52.00	19.75	60.00	32.25	13.95	12.50	12.40	8.20	4.50	6.00
D/P	0.03	0.03	0.05	0.02	0.05	0.06	0.00	0.00	0.00	0.00	0.00
E/P	0.14	0.19	-0.45	0.07	0.24	0.26	-0.51	-0.18	-2.10	-3.94	-1.12
b) Technical Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Low	57.00	22.00	15.85	34.25	15.00	0.05	8.15	7.10	4.05	3.30	2.10
High	122.00	67.00	36.75	66.00	49.00	21.00	14.70	14.00	11.50	7.70	18.50
b) Seasonal Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
January	14	4				21					
March		2	1	4							
April						5					
October		7						5		6	
November		19	5							22	2
December		20	22							14	18
Total	**14**	**52**	**28**	**4**	**0**	**26**	**0**	**5**	**0**	**42**	**20**
b) Size Effect Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Total Sales ('M)	58,782	60,471	71,829	70,743	85,836	107,897	98,860	110,161	106,009	111,485	101,417
Total Assets ('M)	78,498	79,261	77,245	78,743	73,263	80,569	122,696	148,657	182,063	158,415	146,144
Par Value	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Share Capital ('M)	2,308	2,308	2,308	2,308	2,308	2,308	7,482	7,482	7,482	7,482	7,482
Oustanding Shares ('M)	462	462	462	462	462	462	1,496	1,496	1,496	1,496	1,496
Market Cap ('M)	29,311,600	24,003,200	9,116,600	27,696,000	14,886,600	6,439,320	18,705,000	18,555,360	12,270,480	6,733,800	8,978,400
Profitability ('M)	4,098	4,578	(4,083)	2,035	3,538	1,660	(7,864)	(3,382)	(25,743)	(26,565)	(10,072)

NATION MEDIA GROUP LTD											
1. Financial Distress ('M)											
Year	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Current Assets	3,614.4	4,027.8	3,765.6	5,076.8	5,855.1	7,248.2	7,854.3	7,375.0	7,524.9	7,163.3	6,311.1
Current Liabilities	1,895.4	2,172.9	1,769.4	2,553.1	2,530.9	3,216.7	3,116.4	3,118.3	3,591.1	3,456.0	3,128.1
Working Capital	1,719.0	1,854.9	1,996.2	2,523.7	3,324.2	4,031.5	4,737.9	4,256.7	3,933.8	3,707.3	3,183.0
Total Assets	5,898.6	6,722.6	6,572.4	7,975.2	8,816.3	10,677.4	11,444.2	11,944.3	12,696.7	12,174.1	11,320.3
Total Liabilities	2,162.6	2,304.1	1,858.7	2,553.1	2,693.9	3,353.9	3,200.8	3,186.2	3,853.0	3,501.2	3,154.0
Retained Earnings	2,854.6	3,316.0	3,637.3	3,916.4	4,630.2	5,563.1	6,163.7	6,765.4	7,076.2	6,882.9	6,302.3
EBIT	1,601.6	1,910.3	1,617.4	2,146.6	2,810.3	3,504.6	3,587.1	3,624.0	2,823.2	2,460.0	1,954.6
Market Value of Equity	3,736.0	4,314.6	4,713.7	5,422.1	6,122.4	7,323.5	8,243.4	8,768.1	8,953.7	8,702.9	8,166.3
Sales	7,685.6	8,251.5	8,189.8	9,602.5	11,245.8	12,346.8	13,373.7	13,351.3	12,339.5	11,324.8	10,624.9
WC/TA	0.2914	0.2759	0.3037	0.3164	0.3771	0.3776	0.4140	0.3564	0.3098	0.3045	0.2812
RE/TA	0.4839	0.4933	0.5534	0.4911	0.5252	0.5210	0.5386	0.5664	0.5573	0.5654	0.5567
EBIT/TA	0.2715	0.2842	0.2461	0.2692	0.3188	0.3282	0.3134	0.3034	0.2224	0.2021	0.1727
MVE/TL	1.7276	1.8726	2.5360	2.1237	2.2727	2.1836	2.5754	2.7519	2.3238	2.4857	2.5892
Sales/TA	1.3030	1.2274	1.2461	1.2040	1.2756	1.1563	1.1686	1.1178	0.9719	0.9302	0.9386
Z-Score	4.2614	4.3091	4.7178	4.4325	4.8775	4.7310	4.9979	4.9897	4.2510	4.2445	4.1778
2. Establishing the relationship between market anomalies and financial distress of listed firms in NSE, Kenya.											
a) Fundamental Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Dividend Per Share	10.50	5.50	5.50	8.00	8.00	10.00	10.00	10.00	10.00	10.00	10.00
Earnings Per Share	7.60	9.10	7.70	9.80	12.70	13.30	13.40	13.10	11.80	8.90	6.90
Price Per Share	326.00	144.00	118.00	167.00	140.00	222.00	314.00	263.00	191.00	93.00	116.00
D/P	0.03	0.04	0.05	0.05	0.06	0.05	0.03	0.04	0.05	0.11	0.09
E/P	0.02	0.06	0.07	0.06	0.09	0.06	0.04	0.05	0.06	0.10	0.06
b) Technical Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Low	178.00	100.00	102.00	107.00	125.00	123.00	208.00	225.00	124.00	85.50	72.00
High	380.00	395.00	150.00	175.00	190.00	248.00	400.00	345.00	285.00	190.00	125.00
b) Seasonal Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
January							5				
March								1			
April							8				
October								4			
November								6			
December								19			
Total	**0**	**0**	**0**	**0**	**0**	**0**	**13**	**30**	**0**	**0**	**0**
b) Size Effect Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Total Sales ('M)	7,685.6	8,251.5	8,189.8	9,602.5	11,245.8	12,346.8	13,373.7	13,351.3	12,339.5	11,324.8	10,624.9
Total Assets ('M)	5,898.6	6,722.6	6,572.4	7,975.2	8,816.3	10,677.4	11,444.2	11,944.3	12,696.7	12,174.1	11,320.3
Par Value	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50
Share Capital ('M)	356.5	356.5	356.5	392.8	392.8	392.8	471.4	471.4	471.4	471.4	471.4
Oustanding Shares ('M)	143	143	143	157	157	157	189	189	189	189	189
Market Cap ('M)	46,488	20,534	16,827	26,239	21,997	34,881	59,208	49,591	36,015	17,536	21,873
Profitability ('M)	1,076.4	1,295.9	1,119.2	1,538.4	2,006.8	2,510.3	2,533.2	2,460.5	2,222.7	1,688.9	1,310.8

STANDARD GROUP LTD											
1. Financial Distress ('000)											
Year	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Current Assets	930,911	1,154,155	1,081,798	1,369,287	1,287,683	1,248,272	1,643,577	1,491,019	1,704,446	2,001,691	1,874,482
Current Liabilities	702,317	845,209	850,966	1,035,672	1,194,519	1,118,703	1,421,651	1,222,841	1,787,245	1,711,903	2,213,332
Working Capital	228,594	308,946	230,832	333,615	93,164	129,569	221,926	268,178	(82,799)	289,788	(338,850)
Total Assets	2,204,050	2,686,213	3,003,966	3,306,000	3,512,257	3,501,548	4,136,762	4,101,749	4,355,614	4,404,931	4,459,637
Total Liabilities	1,411,493	1,213,849	1,742,538	1,770,222	1,858,191	1,662,646	2,108,367	1,893,706	2,478,041	2,328,837	2,595,381
Retained Earnings	182,609	363,750	601,660	814,262	996,346	1,168,075	1,365,487	1,534,491	1,252,721	1,428,014	1,156,922
EBIT	413,120	428,774	376,493	453,650	232,097	265,364	300,680	325,083	(395,801)	289,475	(282,186)
Market Value of Equity	792,455	998,044	1,261,428	1,535,778	1,654,066	1,838,902	2,028,395	3,208,043	1,877,573	2,076,094	1,865,256
Sales	2,608,218	2,618,860	2,767,835	3,105,436	3,174,907	3,617,816	4,818,808	4,782,649	4,488,399	4,815,327	4,657,488
WC/TA	0.1037	0.1150	0.0768	0.1009	0.0265	0.0370	0.0536	0.0654	(0.0190)	0.0658	(0.0760)
RE/TA	0.0829	0.1354	0.2003	0.2463	0.2837	0.3336	0.3301	0.3741	0.2876	0.3242	0.2594
EBIT/TA	0.1874	0.1596	0.1253	0.1372	0.0661	0.0758	0.0727	0.0793	(0.0909)	0.0657	(0.0633)
MVE/TL	0.5614	0.8222	0.7239	0.8676	0.8901	1.1060	0.9621	1.6941	0.7577	0.8915	0.7187
Sales/TA	1.1834	0.9749	0.9214	0.9393	0.9040	1.0332	1.1649	1.1660	1.0305	1.0932	1.0444
Z-Score	2.3780	2.3216	2.1410	2.3777	2.0842	2.4573	2.5073	3.0450	1.5640	2.3766	1.5377
2. Establishing the relationship between market anomalies and financial distress of listed firms in NSE, Kenya.											
a) Fundamental Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Dividend Per Share	1.00	1.10	0.50	0.50	-	-	0.50	0.50	-	-	-
Earnings Per Share	3.01	3.57	3.25	3.39	2.96	2.56	2.41	2.57	(2.95)	2.14	3.32
Price Per Share	57.00	50.00	38.00	45.50	25.00	21.75	26.00	34.75	28.00	16.50	37.00
D/P	0.02	0.02	0.01	0.01	-	-	0.02	0.01	-	-	-
E/P	0.05	0.07	0.09	0.07	0.12	0.12	0.09	0.07	(0.11)	0.13	0.09
b) Technical Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Low	45.00	42.75	33.00	32.00	22.50	18.75	20.25	23.50	25.00	16.50	17.15
High	85.00	63.00	50.50	52.00	46.50	28.50	39.00	42.00	47.50	32.00	39.50
b) Seasonal Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
January	1										
February	8							1	3		
March											
April							5				
September						1					
November									3		
December						1		1			
Total	**9**	**0**	**0**	**0**	**0**	**2**	**5**	**2**	**6**	**0**	**0**
b) Size Effect Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Total Sales ('000)	2,608,218	2,618,860	2,767,835	3,105,436	3,174,907	3,617,816	4,818,808	4,782,649	4,488,399	4,815,327	4,657,488
Total Assets ('000)	2,204,050	2,149,047	2,430,509	3,306,000	3,512,257	3,501,548	4,136,762	4,101,749	4,355,614	4,404,931	4,459,637
Par Value	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Share Capital ('000)	366,477	366,375	366,375	370,293	371,123	408,654	408,654	408,654	408,654	408,654	408,654
Oustanding Shares ('000)	73,295	73,275	73,275	74,059	74,225	81,731	81,731	81,731	81,731	81,731	81,731
Market Cap ('000)	4,177,838	3,663,750	2,784,450	3,369,666	1,855,615	1,777,645	2,125,001	2,840,145	2,288,462	1,348,558	3,024,040
Profitability ('000)	289,820	286,192	263,384	279,784	147,345	183,307	189,493	220,514	(289,603)	198,521	(210,838)

TPS EASTERN AFRICA LTD											
1. Financial Distress ('000)											
Year	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Current Assets	1,396,706	1,249,920	1,522,281	2,335,982	2,414,929	1,943,895	2,271,039	2,227,179	2,324,588	3,351,856	2,646,657
Current Liabilities	1,327,959	1,017,357	988,035	1,657,965	1,615,296	2,173,754	2,618,112	2,770,758	2,234,326	2,050,420	2,453,397
Working Capital	68,747	232,563	534,246	678,017	799,633	(229,859)	(347,073)	(543,579)	90,262	1,301,436	193,260
Total Assets	6,712,272	6,531,502	7,020,389	11,923,137	13,484,076	13,357,694	16,136,097	15,939,177	15,815,800	16,785,011	17,126,823
Total Liabilities	1,449,660	2,756,071	2,931,806	4,426,752	5,430,459	5,580,022	5,526,688	6,130,449	5,946,543	7,425,494	8,322,206
Retained Earnings	981,853	1,097,881	1,371,235	1,717,779	2,262,751	2,379,290	2,575,064	2,603,965	2,309,434	2,260,456	2,315,239
EBIT	617,380	330,014	519,689	692,933	853,133	721,516	755,717	220,101	(210,976)	315,148	260,747
Market Value of Equity	3,678,411	3,775,431	4,088,583	7,496,385	8,046,824	7,927,235	10,556,075	10,412,489	9,685,351	9,367,517	9,164,617
Sales	3,667,660	3,243,203	3,889,365	4,462,614	5,465,975	5,343,960	6,814,334	6,337,210	6,189,360	6,468,803	6,408,206
WC/TA	0.0102	0.0356	0.0761	0.0569	0.0593	(0.0172)	(0.0215)	(0.0341)	0.0057	0.0775	0.0113
RE/TA	0.1463	0.1681	0.1953	0.1441	0.1678	0.1781	0.1596	0.1634	0.1460	0.1347	0.1352
EBIT/TA	0.0920	0.0505	0.0740	0.0581	0.0633	0.0540	0.0468	0.0138	(0.0133)	0.0188	0.0152
MVE/TL	2.5374	1.3699	1.3946	1.6934	1.4818	1.4206	1.9100	1.6985	1.6287	1.2615	1.1012
Sales/TA	0.5464	0.4965	0.5540	0.3743	0.4054	0.4001	0.4223	0.3976	0.3913	0.3854	0.3742
Z-Score	2.5889	1.7628	1.9992	1.8517	1.8089	1.6590	1.9201	1.6496	1.5354	1.4855	1.2876
2. Establishing the relationship between market anomalies and financial distress of listed firms in NSE, Kenya.											
a) Fundamental Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Dividend Per Share	1.25	1.25	1.25	1.25	1.30	1.30	1.35	1.35	0.25	0.35	0.35
Earnings Per Share	3.91	2.10	3.32	4.39	4.51	3.60	2.26	1.35	(1.63)	0.48	0.36
Price Per Share	78.50	52.50	45.00	68.50	55.00	40.00	45.50	36.00	25.00	20.50	32.50
D/P	0.02	0.02	0.03	0.02	0.02	0.03	0.03	0.04	0.01	0.02	0.01
E/P	0.05	0.04	0.07	0.06	0.08	0.09	0.05	0.04	(0.07)	0.02	0.01
b) Technical Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Low	66.50	45.00	24.25	1.00	45.00	34.00	36.50	30.00	22.50	15.40	18.05
High	100.00	84.00	54.00	72.00	69.50	51.00	56.50	50.00	40.00	27.50	34.75
b) Seasonal Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
January			15								
Febuary			2								
March			9								
August				4							
December											1
Total	**0**	**0**	**26**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
b) Size Effect Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Total Sales ('000)	3,667,660	3,243,203	3,889,365	4,462,614	5,465,975	5,343,960	6,814,334	6,337,210	6,189,360	6,468,803	6,408,206
Total Assets ('000)	6,712,272	6,531,502	7,020,389	11,923,137	13,484,076	13,357,694	16,136,097	15,939,177	15,628,520	16,785,011	17,126,823
Par Value	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Share Capital ('000)	105,865	105,865	105,865	148,211	148,211	148,211	182,174	182,174	182,174	182,174	182,174
Oustanding Shares ('000)	105,865	105,865	105,865	148,211	148,211	148,211	182,174	182,174	182,174	182,174	182,174
Market Cap ('000)	8,310,403	5,557,913	4,763,925	10,152,454	8,151,605	5,928,440	8,288,917	6,558,264	4,554,350	3,734,567	5,920,655
Profitability ('000)	416,475	222,717	380,362	516,384	615,891	493,588	451,001	274,419	(280,613)	119,175	119,465

UCHUMI SUPERMARKET LTD											
1. Financial Distress ('000)											
Year	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Current Assets	763,537	899,756	1,089,612	1,193,567	1,397,650	1,594,146	1,725,315	2,845,600	1,777,287	1,664,039	556,046
Current Liabilities	1,085,257	1,453,073	1,849,054	1,294,438	1,542,187	2,203,769	2,448,121	3,404,135	5,179,947	6,432,172	6,720,887
Working Capital	(321,720)	(553,317)	(759,442)	(100,871)	(144,537)	(609,623)	(722,806)	(558,535)	(3,402,660)	(4,768,133)	(6,164,841)
Total Assets	1,583,757	1,629,163	2,488,648	3,153,511	4,004,720	4,941,888	5,573,533	6,918,847	6,302,246	5,002,216	4,327,281
Total Liabilities	2,683,207	2,633,162	2,669,143	1,614,578	1,725,555	2,284,078	2,648,121	3,581,505	5,562,891	7,099,593	7,711,959
Retained Earnings	(2,788,991)	(2,691,636)	(1,942,158)	(1,075,784)	(677,472)	(392,653)	(104,428)	191,103	(3,294,405)	(6,165,396)	(5,209,486)
EBIT	(256,560)	106,101	169,922	433,192	514,833	403,343	485,902	432,777	(3,513,064)	(2,671,497)	(2,138,082)
Market Value of Equity	(1,099,450)	(1,003,999)	(180,495)	1,538,933	2,279,165	2,657,810	2,925,412	3,337,342	739,355	(2,097,377)	(3,384,678)
Sales	3,883,013	5,978,227	8,202,221	9,559,682	10,770,961	13,802,191	14,270,598	14,364,844	12,888,974	6,402,937	2,587,239
WC/TA	(0.2031)	(0.3396)	(0.3052)	(0.0320)	(0.0361)	(0.1234)	(0.1297)	(0.0807)	(0.5399)	(0.9532)	(1.4246)
RE/TA	(1.7610)	(1.6522)	(0.7804)	(0.3411)	(0.1692)	(0.0795)	(0.0187)	0.0276	(0.5227)	(1.2325)	(1.2039)
EBIT/TA	(0.1620)	0.0651	0.0683	0.1374	0.1286	0.0816	0.0872	0.0626	(0.5574)	(0.5341)	(0.4941)
MVE/TL	(0.4098)	(0.3813)	(0.0676)	0.9531	1.3208	1.1636	1.1047	0.9318	0.1329	(0.2954)	(0.4389)
Sales/TA	2.4518	3.6695	3.2959	3.0314	2.6896	2.7929	2.5604	2.0762	2.0451	1.2800	0.5979
Z-Score	(1.0403)	0.9314	2.0185	3.5376	3.6235	3.4984	3.3265	2.7814	(1.0964)	(3.5303)	(4.6915)
2. Establishing the relationship between market anomalies and financial distress of listed firms in NSE, Kenya.											
a) Fundamental Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Dividend Per Share	-	-	-	-	-	0.30	-	0.30	-	-	-
Earnings Per Share	(1.39)	(1.43)	0.53	3.99	1.47	1.03	1.35	1.37	(10.85)	(7.77)	(4.61)
Price Per Share	3.10	4.30	2.34	14.50	11.40	15.90	17.93	12.75	8.95	2.90	1.20
D/P	-	-	-	-	-	0.0189	-	0.0235	-	-	-
E/P	(0.4484)	(0.3326)	0.2265	0.2752	0.1289	0.0648	0.0753	0.1075	(1.2123)	(2.6793)	(3.8417)
b) Technical Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Low			0.28	0.28	3.50	6.35	16.50	0.05	6.00	2.70	2.00
High			14.50	14.50	15.90	20.00	24.00	21.50	14.00	11.00	5.00
b) Seasonal Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
January										13	
April							3				
November								6			
Total	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**6**	**0**	**13**	**0**
b) Size Effect Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Total Sales ('000)	3,883,013	5,978,227	7,321,314	8,589,301	9,794,441	11,849,709	14,270,598	12,421,044	11,389,704	6,402,937	2,587,239
Total Assets ('000)	1,513,909	1,656,173	2,170,879	2,688,112	3,374,932	3,815,556	5,573,533	5,386,644	3,611,077	2,735,519	4,327,281
Par Value	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Share Capital ('000)	900,000	900,000	900,000	900,000	1,327,133	1,327,133	1,327,133	1,327,133	1,824,808	1,824,808	1,824,808
Oustanding Shares ('000)	180,000	180,000	180,000	180,000	265,427	265,427	265,427	265,427	364,962	364,962	364,962
Market Cap ('000)	558,000	774,000	421,200	2,610,000	3,025,863	4,220,283	4,759,099	3,384,189	3,266,406	1,058,389	437,954
Profitability ('000)	(256,560)	95,069	420,630	865,099	390,425	273,977	357,010	384,288	(3,421,360)	(2,836,732)	(1,650,928)

WPP SCAN GROUP LTD											
1. Financial Distress('000)											
Year	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Current Assets	1,611,878	3,593,824	3,213,445	7,117,892	7,772,923	7,735,575	10,459,953	10,923,159	10,136,904	11,112,161	10,924,015
Current Liabilities	1,146,493	1,690,428	1,555,306	4,240,483	3,797,599	3,389,273	4,259,750	4,440,009	3,678,463	4,673,097	4,787,863
Working Capital	465,385	1,903,396	1,658,139	2,877,409	3,975,324	4,346,302	6,200,203	6,483,150	6,458,441	6,439,064	6,136,152
Total Assets	1,753,635	3,773,957	3,933,148	8,009,431	8,489,938	8,646,961	12,744,583	13,284,104	12,468,479	13,486,398	13,758,912
Total Liabilities	1,149,974	1,694,493	1,566,926	4,431,626	4,135,029	3,747,331	4,618,133	4,741,473	3,864,219	4,677,759	4,793,743
Retained Earnings	349,658	517,798	780,519	1,248,761	1,807,599	2,236,625	(540,567)	(147,545)	86,598	508,141	320,150
EBIT	352,814	436,755	544,100	838,396	1,280,100	1,095,061	963,093	912,277	875,271	725,925	696,414
Market Value of Equity	603,661	2,079,464	2,366,222	3,577,805	4,354,909	4,899,630	8,126,450	8,542,631	8,604,260	8,808,639	8,965,169
Sales	4,776,885	5,793,866	5,921,504	11,364,738	11,916,422	13,225,576	14,190,210	17,149,354	17,266,551	16,735,663	14,430,162
WC/TA	0.2654	0.5044	0.4216	0.3593	0.4682	0.5026	0.4865	0.4880	0.5180	0.4774	0.4460
RE/TA	0.1994	0.1372	0.1984	0.1559	0.2129	0.2587	(0.0424)	(0.0111)	0.0069	0.0377	0.0233
EBIT/TA	0.2012	0.1157	0.1383	0.1047	0.1508	0.1266	0.0756	0.0687	0.0702	0.0538	0.0506
MVE/TL	0.5249	1.2272	1.5101	0.8073	1.0532	1.3075	1.7597	1.8017	2.2266	1.8831	1.8702
Sales/TA	2.7240	1.5352	1.5055	1.4189	1.4036	1.5295	1.1134	1.2910	1.3848	1.2409	1.0488
Z-Score	4.2978	3.4492	3.6503	2.8967	3.3916	3.6957	2.9419	3.1674	3.5824	3.1729	2.9046
2. Establishing the relationship between market anomalies and financial distress of listed firms in NSE, Kenya.											
a) Fundamental Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Dividend Per Share	0.90	0.70	0.50	0.70	0.70	0.60	0.40	0.50	0.50	0.50	0.75
Earnings Per Share	1.49	1.79	1.81	2.58	2.55	2.21	2.60	1.50	2.76	1.12	1.20
Price Per Share	29.75	26.75	25.50	61.50	41.50	68.50	48.25	45.25	30.00	18.10	19.00
D/P	0.03	0.03	0.02	0.01	0.02	0.01	0.01	0.01	0.02	0.03	0.04
E/P	0.05	0.07	0.07	0.04	0.06	0.03	0.05	0.03	0.09	0.06	0.06
b) Technical Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Low	17.60	23.00	13.50	22.75	32.00	34.00	45.00	36.75	21.75	14.50	16.00
High	31.50	35.00	30.00	76.00	69.50	71.00	78.00	247.00	52.00	32.25	25.50
b) Seasonal Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
January	1							12			
February			2								
March	6		20								
December	7										
Total	**14**	**0**	**22**	**0**	**0**	**0**	**0**	**12**	**0**	**0**	**0**
b) Size Effect Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Total Sales ('000)	4,776,885	5,793,866	5,921,504	11,364,738	11,916,422	13,225,576	14,144,826	16,886,418	16,791,084	16,735,663	14,430,162
Total Assets ('000)	1,753,635	3,773,957	3,933,148	8,009,431	8,489,938	8,646,961	12,744,583	13,284,104	12,468,479	13,486,398	13,758,912
Par Value	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Share Capital ('000)	160,000	220,609	220,690	234,570	284,789	284,789	378,865	378,865	378,865	378,865	378,865
Oustanding Shares ('000)	160,000	220,609	220,690	234,570	284,789	284,789	378,865	378,865	378,865	378,865	378,865
Market Cap ('000)	4,760,000	5,901,291	5,627,595	14,426,055	11,818,744	19,508,047	18,280,236	17,143,641	11,365,950	6,857,457	7,198,435
Profitability ('000)	244,433	315,789	401,148	640,585	911,116	752,009	831,327	625,476	478,672	460,380	477,943

ATHI RIVER MINING CEMENT LTD											
1. Financial Distress ('000)											
Year	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Current Assets	1,182,981	1,885,011	3,362,746	4,240,062	3,723,221	7,936,410	6,848,562	8,263,248	7,768,257	8,285,671	3,723,487
Current Liabilities	1,066,348	1,842,931	3,353,762	3,206,460	4,420,053	6,502,840	7,246,584	17,548,067	20,258,902	14,159,415	17,194,544
Working Capital	116,633	42,080	8,984	1,033,602	(696,832)	1,433,570	(398,022)	(9,284,819)	(12,490,645)	(5,873,744)	(13,471,057)
Total Assets	4,504,677	6,352,478	12,141,091	16,564,900	20,515,940	26,953,100	29,705,254	36,970,051	51,936,664	51,058,802	42,699,067
Total Liabilities	2,722,693	4,224,935	8,011,969	11,918,297	14,413,414	19,832,580	21,481,792	27,491,773	35,090,896	23,263,681	21,883,843
Retained Earnings	944,390	1,362,975	1,886,662	2,782,339	3,827,809	4,945,503	6,427,905	7,956,969	5,014,111	2,521,988	(2,948,977)
EBIT	620,640	705,450	948,714	1,112,962	1,362,912	1,790,296	2,000,060	2,018,133	(3,539,156)	(3,978,831)	(7,521,366)
Market Value of Equity	1,734,766	2,127,543	4,128,930	4,926,859	6,102,528	7,120,520	8,223,732	9,420,807	16,845,768	27,795,121	20,815,524
Sales	3,881,736	4,619,473	5,144,822	5,964,670	8,180,992	11,400,569	14,179,208	13,743,185	14,735,936	12,823,826	8,697,333
WC/TA	0.0259	0.0066	0.0007	0.0624	(0.0340)	0.0532	(0.0134)	(0.2511)	(0.2405)	(0.1150)	(0.3155)
RE/TA	0.2096	0.2146	0.1554	0.1680	0.1866	0.1835	0.2164	0.2152	0.0965	0.0494	(0.0691)
EBIT/TA	0.1378	0.1111	0.0781	0.0672	0.0664	0.0664	0.0673	0.0546	(0.0681)	(0.0779)	(0.1761)
MVE/TL	0.6372	0.5036	0.5153	0.4134	0.4234	0.3590	0.3828	0.3427	0.4801	1.1948	0.9512
Sales/TA	0.8617	0.7272	0.4238	0.3601	0.3988	0.4230	0.4773	0.3717	0.2837	0.2512	0.2037
Z-Score	2.0224	1.7034	1.2088	1.1395	1.0921	1.1779	1.2156	0.7571	0.1932	0.6417	(0.2824)
2. Establishing the relationship between market anomalies and financial distress of listed firms in NSE, Kenya.											
a) Fundamental Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Dividend Per Share	1.25	1.25	1.50	1.75	2.00	0.50	0.60	0.60	-	-	-
Earnings Per Share	4.26	5.08	6.52	10.92	11.63	2.51	2.74	3.01	(5.84)	(2.92)	(6.83)
Price Per Share	93.00	90.50	111.00	183.00	158.00	44.50	90.00	82.50	41.75	25.50	13.00
D/P	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	-	-	-
E/P	0.05	0.06	0.06	0.06	0.07	0.06	0.03	0.04	(0.14)	(0.11)	(0.53)
b) Technical Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Low	57.00	78.00	54.50	93.00	135.00	139.00	48.75	72.00	31.50	22.50	10.80
High	99.00	120.00	115.00	190.00	196.00	245.00	92.50	98.50	95.00	42.00	25.75
b) Seasonal Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
January							5	2			
February							1				
November							15				
December							15				
Total	**0**	**0**	**0**	**0**	**0**	**0**	**36**	**2**	**0**	**0**	**0**
b) Size Effect Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Total Sales ('000)	3,881,736	4,619,473	5,144,822	5,964,670	8,180,992	11,400,569	14,179,208	13,743,185	14,735,936	12,823,826	8,697,333
Total Assets ('000)	4,504,677	6,352,478	12,141,091	16,564,900	20,515,940	26,953,100	29,705,254	36,970,051	51,936,664	51,058,802	42,699,067
Par Value	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Share Capital ('000)	495,275	495,275	495,275	495,275	495,275	495,275	495,275	495,275	495,275	959,940	959,940
Oustanding Shares ('000)	495,275	495,275	495,275	495,275	495,275	495,275	495,275	495,275	495,275	959,940	959,940
Market Cap ('000)	46,060,575	44,822,388	54,975,525	90,635,325	78,253,450	22,039,738	44,574,750	40,860,188	20,677,731	24,478,470	12,479,220
Profitability ('000)	422,339	503,454	645,774	1,075,268	1,150,498	1,245,638	1,148,803	1,493,393	(2,890,841)	(2,800,175)	(6,549,812)

BAMBURI CEMENT LTD											
1. Financial Distress ('M)											
Year	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Current Assets	7,088	9,976	12,774	12,863	13,356	16,462	16,037	15,545	18,002	19,000	12,528
Current Liabilities	3,223	5,383	4,946	3,390	5,097	7,011	5,981	6,884	7,465	7,040	6,677
Working Capital	3,865	4,593	7,828	9,473	8,259	9,451	10,056	8,661	10,537	11,960	5,851
Total Assets	20,720	28,154	32,113	33,306	33,502	43,038	43,016	40,991	41,899	40,811	45,753
Total Liabilities	5,645	11,613	11,171	11,680	9,328	12,177	11,506	11,877	12,314	10,992	15,003
Retained Earnings	7,196	9,377	14,674	15,931	17,983	18,875	18,874	17,220	18,348	19,148	17,963
EBIT	5,443	4,889	9,596	7,564	8,466	7,176	5,516	5,801	8,458	8,271	4,116
Market Value of Equity	15,075	16,601	20,940	21,626	24,174	30,861	31,510	29,119	29,706	33,200	29,372
Sales	22,111	27,467	29,994	28,075	35,884	37,491	33,928	36,029	39,200	38,281	35,974
WC/TA	0.1865	0.1631	0.2438	0.2844	0.2465	0.2196	0.2338	0.2113	0.2515	0.2931	0.1279
RE/TA	0.3473	0.3331	0.4569	0.4783	0.5368	0.4386	0.4388	0.4201	0.4379	0.4692	0.3926
EBIT/TA	0.2627	0.1737	0.2988	0.2271	0.2527	0.1667	0.1282	0.1415	0.2019	0.2027	0.0900
MVE/TL	2.6705	1.4295	1.8745	1.8515	2.5916	2.5344	2.7386	2.4517	2.4124	3.0204	1.9577
Sales/TA	1.0671	0.9756	0.9340	0.8429	1.0711	0.8711	0.7887	0.8789	0.9356	0.9380	0.7863
Z-Score	4.2453	3.0674	3.9761	3.7134	4.5062	3.8186	3.7490	3.6578	3.9631	4.4266	2.9601
2. Establishing the relationship between market anomalies and financial distress of listed firms in NSE, Kenya.											
a) Fundamental Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Dividend Per Share	5.50	6.00	11.00	8.50	10.00	10.50	11.00	12.00	13.00	12.00	4.00
Earnings Per Share	9.91	8.78	18.32	14.02	14.44	12.17	9.55	9.80	14.49	14.44	4.54
Price Per Share	196.00	165.00	156.00	187.00	125.00	185.00	210.00	139.00	175.00	160.00	180.00
D/P	0.03	0.04	0.07	0.05	0.08	0.06	0.05	0.09	0.07	0.08	0.02
E/P	0.05	0.05	0.12	0.07	0.12	0.07	0.05	0.07	0.08	0.09	0.03
b) Technical Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Low	170.00	155.00	99.00	150.00	125.00	119.00	176.00	130.00	133.00	150.00	140.00
High	250.00	205.00	170.00	220.00	207.00	190.00	225.00	214.00	181.00	200.00	200.00
b) Seasonal Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
January				18			3				
February				8							
October		1									
November		1									
December		17			1						
Total	**0**	**19**	**0**	**26**	**1**	**0**	**3**	**0**	**0**	**0**	**0**
b) Size Effect Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Total Sales ('M)	22,111	27,467	29,994	28,075	35,884	37,491	33,928	36,029	39,200	38,281	35,974
Total Assets ('M)	20,720	28,154	32,113	33,306	33,502	43,038	43,016	40,991	41,899	40,811	45,753
Par Value	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Share Capital ('M)	1,815	1,815	1,815	1,815	1,815	1,815	1,815	1,815	1,815	1,815	1,815
Oustanding Shares ('M)	363	363	363	363	363	363	363	363	363	363	363
Market Cap ('M)	71,148,000	59,895,000	56,628,000	67,881,000	45,375,000	67,155,000	76,230,000	50,457,000	63,525,000	58,080,000	65,340,000
Profitability ('M)	3,810	3,413	6,970	5,299	5,859	4,882	3,673	3,903	5,872	5,890	1,973

CROWN PAINTS KENYA LTD											
1. Financial Distress ('000)											
Year	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Current Assets	971,876	1,376,483	1,326,166	1,480,069	1,569,315	1,589,244	2,167,353	2,866,643	3,293,507	3,781,745	4,545,367
Current Liabilities	609,363	1,030,327	923,649	991,781	1,071,998	1,034,709	1,568,798	2,500,558	2,976,463	3,250,210	3,817,884
Working Capital	362,513	346,156	402,517	488,288	497,317	554,535	598,555	366,085	317,044	531,535	727,483
Total Assets	1,525,910	1,948,281	1,858,452	1,972,337	2,215,352	2,258,263	2,945,434	3,852,814	4,539,148	5,059,029	5,871,607
Total Liabilities	712,041	1,126,330	1,021,509	1,069,992	1,162,932	1,082,061	1,583,720	2,505,483	3,186,366	3,340,087	3,776,921
Retained Earnings	487,997	501,070	514,989	585,251	714,253	839,651	1,040,748	1,036,998	815,575	906,870	1,124,478
EBIT	140,293	77,781	205,735	226,683	200,539	224,170	333,442	151,481	216,697	272,043	398,129
Market Value of Equity	813,869	821,952	836,943	902,345	1,052,420	1,176,202	1,361,714	1,347,331	1,352,782	1,562,116	1,757,616
Sales	2,089,988	2,389,520	2,543,657	3,068,468	3,853,569	4,432,877	5,158,992	6,039,061	6,737,108	7,347,557	7,351,326
WC/TA	0.2376	0.1777	0.2166	0.2476	0.2245	0.2456	0.2032	0.0950	0.0698	0.1051	0.1239
RE/TA	0.3198	0.2572	0.2771	0.2967	0.3224	0.3718	0.3533	0.2692	0.1797	0.1793	0.1915
EBIT/TA	0.0919	0.0399	0.1107	0.1149	0.0905	0.0993	0.1132	0.0393	0.0477	0.0538	0.0678
MVE/TL	1.1430	0.7298	0.8193	0.8433	0.9050	1.0870	0.8598	0.5378	0.4246	0.4677	0.4654
Sales/TA	1.3697	1.2265	1.3687	1.5558	1.7395	1.9630	1.7515	1.5674	1.4842	1.4524	1.2520
Z-Score	3.0903	2.3681	2.8721	3.1520	3.3002	3.7560	3.3778	2.5091	2.2304	2.2860	2.1705
2. Establishing the relationship between market anomalies and financial distress of listed firms in NSE, Kenya.											
a) Fundamental Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Dividend Per Share	1.00	1.00	1.25	1.25	1.25	1.25	1.75	1.75	0.60	0.60	0.60
Earnings Per Share	1.20	3.15	6.42	6.26	5.44	5.63	9.01	0.28	0.43	1.85	3.14
Price Per Share	50.50	24.75	25.00	36.00	20.50	42.50	75.00	111.00	61.00	42.00	80.00
D/P	0.02	0.04	0.05	0.03	0.06	0.03	0.02	0.02	0.01	0.01	0.01
E/P	0.02	0.13	0.26	0.17	0.27	0.13	0.12	0.00	0.01	0.04	0.04
b) Technical Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Low	30.00	8.00	10.00	22.50	18.00	19.50	39.00	70.00	54.00	40.00	42.00
High	64.50	56.00	33.75	45.00	37.75	42.50	79.50	130.00	187.00	63.50	82.50
b) Seasonal Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
January	9										
March	3										
Total	**12**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
b) Size Effect Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Total Sales ('000)	2,089,988	2,389,520	2,543,657	3,068,468	3,853,569	4,432,877	5,158,992	6,039,061	6,737,108	7,347,557	7,351,326
Total Assets ('000)	1,525,910	1,948,281	1,858,452	1,972,337	2,215,352	2,258,263	2,945,434	3,852,814	4,539,148	5,059,029	5,871,607
Par Value	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Share Capital ('000)	118,635	118,635	118,635	118,635	118,635	118,635	118,635	118,635	355,905	355,905	355,905
Oustanding Shares ('000)	23,727	23,727	23,727	23,727	23,727	23,727	23,727	23,727	71,181	71,181	71,181
Market Cap ('000)	1,198,214	587,243	593,175	854,172	486,404	1,008,398	1,779,525	2,633,697	4,342,041	2,989,602	5,694,480
Profitability ('000)	74,732	28,296	86,308			133,543	213,843	19,715	30,748	131,796	223,294

E.A. CABLES LTD											
1. Financial Distress ('000)											
Year	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Current Assets	2,228,347	1,973,398	1,699,156	1,795,686	2,407,504	3,031,439	3,613,974	3,846,795	2,945,075	2,229,562	2,376,559
Current Liabilities	1,435,422	1,188,676	1,247,084	1,399,362	2,074,312	2,532,226	2,776,898	3,293,689	3,155,110	3,319,124	3,966,544
Working Capital	792,925	784,722	452,072	396,324	333,192	499,213	837,076	553,106	(210,035)	(1,089,562)	(1,589,985)
Total Assets	3,209,699	3,043,593	3,543,383	4,518,445	4,993,032	6,248,642	6,840,055	7,889,496	8,384,143	7,548,406	7,038,421
Total Liabilities	2,107,354	1,676,754	1,882,603	1,882,603	2,272,136	2,719,200	3,323,583	3,773,517	4,797,619	4,991,997	5,159,619
Retained Earnings	566,335	958,577	962,891	1,087,852	1,075,665	1,288,584	1,381,874	1,398,007	711,424	256,699	(309,639)
EBIT	597,486	669,927	526,444	258,645	464,756	753,243	585,400	507,483	(1,087,004)	(810,349)	(926,945)
Market Value of Equity	1,102,345	1,366,839	1,660,780	2,246,309	2,273,832	2,925,029	3,066,538	3,091,877	3,149,987	2,556,409	1,878,802
Sales	3,462,139	3,929,312	2,811,861	3,604,366	4,971,665	4,300,608	4,502,964	5,098,417	3,724,212	3,650,451	2,345,086
WC/TA	0.2470	0.2578	0.1276	0.0877	0.0667	0.0799	0.1224	0.0701	(0.0251)	(0.1443)	(0.2259)
RE/TA	0.1764	0.3149	0.2717	0.2408	0.2154	0.2062	0.2020	0.1772	0.0849	0.0340	(0.0440)
EBIT/TA	0.1862	0.2201	0.1486	0.0572	0.0931	0.1205	0.0856	0.0643	(0.1296)	(0.1074)	(0.1317)
MVE/TL	0.5231	0.8152	0.8822	1.1932	1.0007	1.0757	0.9227	0.8194	0.6566	0.5121	0.3641
Sales/TA	1.0786	1.2910	0.7936	0.7977	0.9957	0.6882	0.6583	0.6462	0.4442	0.4836	0.3332
Z-Score	2.5492	3.2555	2.3459	2.1440	2.2840	2.1153	1.9234	1.6817	0.4986	0.3105	(0.2159)
2. Establishing the relationship between market anomalies and financial distress of listed firms in NSE, Kenya.											
a) Fundamental Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Dividend Per Share	0.90	1.00	1.00	1.00	0.80	1.00	1.00	1.00	-	-	-
Earnings Per Share	1.85	1.55	1.52	1.12	1.15	1.74	1.37	1.16	(2.21)	(1.80)	(2.24)
Price Per Share	42.00	26.25	20.25	16.25	10.55	11.70	16.75	16.20	10.60	5.59	5.45
D/P	0.02	0.04	0.05	0.06	0.08	0.09	0.06	0.06	-	-	-
E/P	0.04	0.06	0.08	0.07	0.11	0.15	0.08	0.07	(0.21)	(0.32)	(0.41)
b) Technical Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Low	30.00	23.00	13.25	15.00	9.80	9.05	10.55	12.45	9.00	5.60	4.70
High	56.00	47.00	30.25	25.00	21.50	12.50	12.20	17.00	17.00	10.90	7.20
b) Seasonal Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
January							8			3	
March	2										1
June								2			
July											1
August											12
September											2
October											4
December						6					
Total	**2**	**0**	**0**	**0**	**0**	**6**	**8**	**2**	**0**	**3**	**20**
b) Size Effect Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Total Sales ('000)	3,462,139	3,929,312	2,811,861	3,604,366	4,971,665	4,300,608	4,502,964	5,098,417	3,724,212	3,650,451	2,345,086
Total Assets ('000)	3,209,699	3,043,593	3,543,383	4,518,445	4,993,032	6,248,642	6,840,055	7,889,496	8,384,143	7,548,406	7,038,421
Par Value	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Share Capital ('000)	101,250	101,250	101,250	101,250	126,563	126,563	126,563	126,563	126,563	126,563	126,563
Oustanding Shares ('000)	202,500	202,500	202,500	202,500	253,126	253,126	253,126	253,126	253,126	253,126	253,126
Market Cap ('000)	8,505,000	5,315,625	4,100,625	3,290,625	2,670,479	2,961,574	4,239,861	4,100,641	2,683,136	1,414,974	1,379,537
Profitability ('000)	417,125	462,760	296,033	183,850	314,730	522,060	398,202	341,149	(741,204)	(582,602)	(662,835)

E.A. PORTLAND CEMENT CO. LTD											
1. Financial Distress ('000)											
Year	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Current Assets	3,170,375	2,661,737	3,131,045	2,911,680	3,172,070	2,570,423	3,602,063	3,324,061	3,157,336	2,114,848	1,949,095
Current Liabilities	1,435,255	1,176,375	1,512,392	1,836,650	2,100,179	2,275,422	3,319,478	3,512,289	3,765,371	4,962,120	6,196,213
Working Capital	1,735,120	1,485,362	1,618,653	1,075,030	1,071,891	295,001	282,585	(188,228)	(608,035)	(2,847,272)	(4,247,118)
Total Assets	8,938,572	9,073,345	12,035,963	12,037,565	13,530,871	14,091,006	16,133,703	15,717,257	23,112,582	27,842,120	27,357,388
Total Liabilities	7,503,317	5,046,596	5,933,711	6,336,364	3,936,829	9,251,616	9,043,446	9,012,582	9,302,989	9,895,360	10,466,405
Retained Earnings	1,362,100	1,836,435	3,723,005	3,341,441	3,923,685	2,370,192	4,135,404	3,798,332	11,024,102	15,370,759	14,115,692
EBIT	1,112,625	715,889	1,881,678	(338,571)	(119,059)	(849,679)	1,419,478	(373,700)	7,342,071	3,734,752	(1,712,903)
Market Value of Equity	3,607,097	4,026,749	6,114,862	5,701,201	6,262,456	4,678,476	7,090,257	6,704,675	13,809,593	17,946,760	16,890,983
Sales	6,402,736	7,204,479	8,101,377	9,408,711	10,172,140	8,614,806	9,211,462	9,057,292	8,417,621	8,871,456	6,928,307
WC/TA	0.1941	0.1637	0.1345	0.0893	0.0792	0.0209	0.0175	(0.0120)	(0.0263)	(0.1023)	(0.1552)
RE/TA	0.1524	0.2024	0.3093	0.2776	0.2900	0.1682	0.2563	0.2417	0.4770	0.5521	0.5160
EBIT/TA	0.1245	0.0789	0.1563	(0.0281)	(0.0088)	(0.0603)	0.0880	(0.0238)	0.3177	0.1341	(0.0626)
MVE/TL	0.4807	0.7979	1.0305	0.8998	1.5907	0.5057	0.7840	0.7439	1.4844	1.8137	1.6138
Sales/TA	0.7163	0.7940	0.6731	0.7816	0.7518	0.6114	0.5709	0.5763	0.3642	0.3186	0.2533
Z-Score	1.8611	2.0122	2.4011	1.7237	2.1775	0.9758	1.7110	1.2675	2.9390	2.4993	1.5507
2. Establishing the relationship between market anomalies and financial distress of listed firms in NSE, Kenya.											
a) Fundamental Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Dividend Per Share	2.60	-	1.30	-	0.50	-	0.75	-	-	-	-
Earnings Per Share	8.49	5.96	20.38	(3.25)	6.24	9.92	19.73	(4.26)	79.52	46.06	(16.35)
Price Per Share	140.00	80.00	80.00	80.00	56.00	60.00	57.50	80.00	57.50	35.75	27.00
D/P	0.02	-	0.02	-	0.01	-	0.01	-	-	-	-
E/P	0.06	0.07	0.25	(0.04)	0.11	0.17	0.34	(0.05)	1.38	1.29	(0.61)
b) Technical Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Low	105.00	40.00	40.00	80.00	51.00	32.00	39.00	56.50	38.25	20.00	20.00
High	150.00	142.00	115.00	133.00	119.00	64.00	92.00	110.00	70.00	56.00	35.00
b) Seasonal Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
January		2					1				
March								5			
April								2			
September		2									
October		2									
November		3					10				
December		4					13				
Toatal	**0**	**13**	**0**	**0**	**0**	**0**	**24**	**7**	**0**	**0**	**0**
b) Size Effect Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Total Sales ('000)	6,402,736	7,204,479	8,101,377	9,408,711	10,172,140	8,614,806	9,211,462	9,057,292	8,417,621	8,871,456	6,928,307
Total Assets ('000)	8,938,572	9,073,345	12,035,963	12,037,565	13,530,871	14,091,006	16,133,703	15,717,257	23,112,582	27,842,120	27,357,388
Par Value	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Share Capital ('000)	450,000	450,000	450,000	450,000	450,000	450,000	450,000	450,000	450,000	450,000	450,000
Oustanding Shares ('000)	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000
Market Cap ('000)	12,600,000	7,200,000	7,200,000	7,200,000	5,040,000	5,400,000	5,175,000	7,200,000	5,175,000	3,217,500	2,430,000
Profitability ('000)	764,164	536,652	1,834,054	(284,051)	1,717	(871,486)	1,775,383	(383,631)	7,157,070	4,145,755	(1,471,361)

KENGEN CO. LTD											
1. Financial Distress (000)											
Year	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Current Assets	9,824,245	10,655,138	12,748,759	32,599,036	19,539,034	22,288,066	25,127,810	27,630,643	21,368,973	21,916,420	29,639,369
Current Liabilities	7,234,189	7,924,944	5,867,743	6,969,815	11,256,593	15,000,957	17,672,629	25,196,229	22,479,973	18,190,059	20,093,197
Working Capital	2,590,056	2,730,194	6,881,016	25,629,221	8,282,441	7,287,109	7,455,181	2,434,414	(1,111,000)	3,726,361	9,546,172
Total Assets	101,966,861	106,993,551	108,603,879	143,611,431	160,993,290	163,144,873	188,673,282	250,205,524	342,519,995	367,248,796	377,196,543
Total Liabilities	38,328,592	38,868,377	45,290,651	80,296,903	91,574,703	92,965,319	114,544,543	173,495,851	200,925,904	194,506,114	194,033,758
Retained Earnings	18,514,656	22,920,949	24,635,834	27,069,388	30,513,173	33,319,646	37,898,949	41,071,239	52,482,236	58,536,054	69,724,767
EBIT	4,719,279	1,628,854	4,556,281	2,413,753	3,651,307	4,045,190	4,093,074	4,157,948	8,690,012	11,264,044	11,533,924
Market Value of Equity	63,638,189	68,125,174	63,313,228	63,314,528	69,418,587	70,179,554	74,128,739	76,709,673	141,594,091	172,742,682	183,162,785
Sales	14,551,767	16,091,563	13,559,599	11,786,072	15,222,096	17,436,331	17,722,192	18,490,821	26,585,705	38,609,556	35,440,067
WC/TA	0.0254	0.0255	0.0634	0.1785	0.0514	0.0447	0.0395	0.0097	(0.0032)	0.0101	0.0253
RE/TA	0.1816	0.2142	0.2268	0.1885	0.1895	0.2042	0.2009	0.1642	0.1532	0.1594	0.1848
EBIT/TA	0.0463	0.0152	0.0420	0.0168	0.0227	0.0248	0.0217	0.0166	0.0254	0.0307	0.0306
MVE/TL	1.6603	1.7527	1.3979	0.7885	0.7581	0.7549	0.6472	0.4421	0.7047	0.8881	0.9440
Sales/TA	0.1427	0.1504	0.1249	0.0821	0.0946	0.1069	0.0939	0.0739	0.0776	0.1051	0.0940
Z-Score	1.5762	1.5827	1.4955	1.0886	0.9512	0.9811	0.8824	0.6354	0.7947	0.9744	1.0503
2. Establishing the relationship between market anomalies and financial distress of listed firms in NSE, Kenya.											
a) Fundamental Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Dividend Per Share	0.80	0.90	0.50	0.50	0.50	0.60	0.60	0.40	0.65	0.40	0.65
Earnings Per Share	1.11	2.19	0.94	0.89	0.94	1.28	2.39	1.29	5.24	4.15	5.49
Price Per Share	27.75	24.50	14.55	17.10	13.55	8.60	15.15	10.90	9.25	6.55	6.55
D/P	0.03	0.04	0.03	0.03	0.04	0.07	0.04	0.04	0.07	0.06	0.10
E/P	0.04	0.09	0.06	0.05	0.07	0.15	0.16	0.12	0.57	0.63	0.84
b) Technical Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Low	10.00	11.75	8.25	11.85	7.20	6.50	8.00	8.10	6.00	5.40	4.95
High	37.00	29.75	17.50	19.30	17.50	10.10	17.90	14.50	13.00	9.00	10.20
b) Seasonal Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
January	14						9				
February							1				
March									4	1	
April	7									7	
May										3	
August	1										
September	7										
November						15					
December						3					
Total	**29**	**0**	**0**	**0**	**0**	**18**	**10**	**0**	**4**	**11**	**0**
b) Size Effect Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Total Sales ('000)	14,551,767	16,091,563	13,559,599	11,786,072	15,222,096	17,436,331	17,722,192	18,490,821	26,585,705	38,609,556	35,440,067
Total Assets ('000)	101,966,861	106,993,551	108,603,879	143,611,431	160,993,290	163,144,873	188,673,282	250,205,524	342,519,995	367,248,796	377,196,543
Par Value	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50
Share Capital ('000)	9,495,904	5,495,904	5,495,904	5,495,904	5,495,904	5,495,904	5,495,904	5,495,904	5,495,904	15,609,684	16,487,710
Oustanding Shares ('000)	3,798,362	2,198,362	2,198,362	2,198,362	2,198,362	2,198,362	2,198,362	2,198,362	2,198,362	6,243,874	6,595,084
Market Cap ('000)	105,404,534	53,859,859	31,986,161	37,591,983	29,787,800	18,905,910	33,305,178	23,962,141	20,334,845	40,897,372	43,197,800
Profitability ('000)	2,445,666	4,809,445	2,070,913	1,957,362	2,080,121	2,822,600	5,250,136	2,826,323	11,517,327	6,743,492	9,057,131

KENOLKOBIL LTD											
1. Financial Distress (000)											
Year	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Current Assets	9,983,495	21,111,387	25,124,066	26,013,480	40,145,862	24,540,381	19,381,669	15,488,019	10,654,809	17,637,220	18,167,834
Current Liabilities	7,700,702	16,301,749	19,293,187	18,879,407	32,794,177	25,340,816	20,738,754	16,298,922	8,610,667	14,024,300	12,613,183
Working Capital	2,282,793	4,809,638	5,830,879	7,134,073	7,351,685	(800,435)	(1,357,085)	(810,903)	2,044,142	3,612,920	5,554,651
Total Assets	13,269,441	27,708,592	31,288,857	32,216,630	45,974,304	32,484,166	28,121,673	23,915,166	17,377,103	24,201,705	24,099,030
Total Liabilities	8,285,007	16,792,732	19,470,920	19,164,791	34,323,843	26,238,441	21,455,379	16,584,670	8,821,464	14,336,554	12,884,195
Retained Earnings	4,638,905	4,578,815	4,299,182	5,301,831	7,144,141	859,568	1,270,811	2,067,743	3,567,610	5,318,524	6,900,171
EBIT	876,390	1,879,811	1,933,456	2,697,823	4,933,783	(8,964,664)	563,918	1,994,716	2,782,421	3,538,256	3,680,466
Market Value of Equity	4,984,434	10,915,860	9,964,417	11,208,119	11,650,461	6,445,725	6,666,294	7,330,496	8,555,639	9,865,151	11,214,835
Sales	51,620,197	134,518,341	96,692,834	101,649,560	222,440,715	192,527,486	109,687,453	90,209,977	86,557,936	103,493,925	158,710,185
WC/TA	0.1720	0.1736	0.1864	0.2214	0.1599	(0.0246)	(0.0483)	(0.0339)	0.1176	0.1493	0.2305
RE/TA	0.3496	0.1652	0.1374	0.1646	0.1554	0.0265	0.0452	0.0865	0.2053	0.2198	0.2863
EBIT/TA	0.0660	0.0678	0.0618	0.0837	0.1073	(0.2760)	0.0201	0.0834	0.1601	0.1462	0.1527
MVE/TL	0.6016	0.6500	0.5118	0.5848	0.3394	0.2457	0.3107	0.4420	0.9699	0.6881	0.8704
Sales/TA	3.8902	4.8548	3.0903	3.1552	4.8384	5.9268	3.9005	3.7721	4.9811	4.2763	6.5857
Z-Score	5.1611	5.9034	4.0142	4.2754	5.8008	5.1651	4.1545	4.3891	6.5151	5.6542	8.2829
2. Establishing the relationship between market anomalies and financial distress of listed firms in NSE, Kenya.											
a) Fundamental Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Dividend Per Share	-	3.50	3.25	0.52	1.00	-	0.10	0.20	0.25	0.45	0.60
Earnings Per Share	5.83	8.37	0.88	1.21	2.22	(4.27)	0.38	0.74	1.37	1.64	1.67
Price Per Share	115.00	66.00	50.00	10.00	9.95	13.55	9.45	8.80	9.60	14.90	14.00
D/P	-	0.05	0.07	0.05	0.10	-	0.01	0.02	0.03	0.03	0.04
E/P	0.05	0.13	0.02	0.12	0.22	(0.32)	0.04	0.08	0.14	0.11	0.12
b) Technical Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Low	24.00	59.50	36.00	8.40	8.50	9.05	7.60	7.25	7.30	8.50	11.55
High	130.00	112.00	70.00	110.00	12.30	16.95	14.20	10.50	10.50	15.70	17.00
b) Seasonal Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
January		3					8		5	6	
February							12		3		
March	1										
June					1						
July					12						
August					6						
September		2									
October		7									
November		5								7	
December	8	16								19	
Total	**9**	**33**	**0**	**0**	**19**	**0**	**20**	**0**	**8**	**32**	**0**
b) Size Effect Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Total Sales ('000)	51,620,197	134,518,341	96,692,834	101,649,560	222,440,715	192,527,486	109,687,453	90,209,977	86,557,936	103,493,925	158,710,185
Total Assets ('000)	13,269,441	27,708,592	31,288,857	32,216,630	45,974,304	32,484,166	28,121,673	23,915,166	17,377,103	24,201,705	24,099,030
Par Value	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Share Capital ('000)	73,588	73,588	73,588	73,588	73,588	73,588	73,588	73,588	73,588	73,588	73,588
Oustanding Shares ('000)	1,471,760	1,471,760	1,471,760	1,471,760	1,471,760	1,471,760	1,471,760	1,471,760	1,471,760	1,471,760	1,471,760
Market Cap ('000)	169,252,400	97,136,160	73,588,000	14,717,600	14,644,012	19,942,348	13,908,132	12,951,488	14,128,896	21,929,224	20,604,640
Profitability ('000)	593,434	1,155,319	1,294,505	1,915,045	3,273,831	(6,284,575)	558,419	1,091,284	2,014,974	1,381,720	2,210,481

KENYA POWER & LIGHTING CO. LTD											
1. Financial Distress (000)											
Year	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Current Assets	47,321,864	18,517,743	21,257,075	19,610,148	35,150,676	28,159,384	36,577,986	50,518,769	66,062,475	50,069,817	65,286,094
Current Liabilities	17,846,004	23,339,345	18,555,066	18,715,246	28,130,511	31,383,138	39,646,409	48,847,728	40,197,934	50,914,903	75,257,967
Working Capital	29,475,860	(4,821,602)	2,702,009	894,902	7,020,165	(3,223,754)	(3,068,423)	1,671,041	25,864,541	(845,086)	(9,971,873)
Total Assets	47,321,864	59,812,122	71,563,808	80,213,470	121,171,515	134,131,983	177,157,755	220,926,514	275,493,150	297,542,180	341,653,227
Total Liabilities	25,072,464	35,930,200	43,802,362	51,472,593	74,092,227	80,623,788	120,974,981	147,223,069	214,316,426	233,520,367	271,701,572
Retained Earnings	1,862,443	3,766,427	5,566,032	7,856,913	13,277,779	16,739,064	20,505,789	27,843,936	34,549,142	37,121,927	43,061,769
EBIT	2,648,691	2,738,309	4,782,433	5,632,957	6,254,751	8,506,693	6,424,340	11,015,850	12,253,574	12,082,397	10,912,442
Market Value of Equity	22,249,400	23,881,922	26,848,063	28,740,877	39,606,376	43,511,553	47,405,675	54,743,822	61,449,028	64,021,813	69,961,655
Sales	24,436,491	41,766,966	65,208,529	73,166,794	73,154,021	95,662,427	88,909,626	105,395,714	106,763,525	108,374,612	120,742,270
WC/TA	0.6229	(0.0806)	0.0378	0.0112	0.0579	(0.0240)	(0.0173)	0.0076	0.0939	(0.0028)	(0.0292)
RE/TA	0.0394	0.0630	0.0778	0.0980	0.1096	0.1248	0.1157	0.1260	0.1254	0.1248	0.1260
EBIT/TA	0.0560	0.0458	0.0668	0.0702	0.0516	0.0634	0.0363	0.0499	0.0445	0.0406	0.0319
MVE/TL	0.8874	0.6647	0.6129	0.5584	0.5346	0.5397	0.3919	0.3718	0.2867	0.2742	0.2575
Sales/TA	0.5164	0.6983	0.9112	0.9122	0.6037	0.7132	0.5019	0.4771	0.3875	0.3642	0.3534
Z-Score	2.0356	1.2389	1.6528	1.6285	1.3171	1.3915	0.9974	1.0498	0.9942	0.8336	0.7544
2. Establishing the relationship between market anomalies and financial distress of listed firms in NSE, Kenya.											
a) Fundamental Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Dividend Per Share	3.00	4.00	8.00	8.00	0.45	0.50	-	0.30	0.30	0.30	0.50
Earnings Per Share	21.72	22.30	40.76	3.00	2.16	2.36	1.76	3.58	3.81	3.69	3.72
Price Per Share	217.00	136.00	140.00	24.00	17.55	17.10	14.50	13.45	18.35	9.85	7.95
D/P	0.01	0.03	0.06	0.33	0.03	0.03	-	0.02	0.02	0.03	0.06
E/P	0.10	0.16	0.29	0.13	0.12	0.14	0.12	0.27	0.21	0.37	0.47
b) Technical Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Low	146.00	120.00	91.00	0.05	14.75	12.70	12.50	11.70	11.80	7.75	6.00
High	360.00	240.00	186.00	266.00	26.25	19.30	20.75	18.00	18.50	14.00	12.00
b) Seasonal Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
January	21										
February	18										
March	3										
July								1			
September	4			7							
October								7			
November				22				5			
December											
Total	**46**	**0**	**0**	**29**	**0**	**0**	**0**	**13**	**0**	**0**	**0**
b) Size Effect Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Total Sales ('000)	24,436,491	41,766,966	65,208,529	73,166,794	73,154,021	95,662,427	88,909,626	105,395,714	106,763,525	108,374,612	120,742,270
Total Assets ('000)	47,321,864	59,812,122	71,563,808	80,213,470	121,171,515	134,131,983	177,157,755	220,926,514	275,493,150	297,542,180	341,653,227
Par Value	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50
Share Capital ('000)	1,582,560	1,582,560	1,582,560	1,582,560	4,336,593	4,878,667	4,878,667	4,878,667	4,878,667	4,878,667	4,878,667
Oustanding Shares ('000)	633,024	633,024	633,024	633,024	1,734,637	1,951,467	1,951,467	1,951,467	1,951,467	1,951,467	1,951,467
Market Cap ('000)	137,366,208	86,091,264	88,623,360	15,192,576	30,442,883	33,370,082	28,296,269	26,247,228	35,809,416	19,221,948	15,514,161
Profitability ('000)	1,718,477	1,764,870	3,225,094	3,716,370	4,219,566	4,617,116	4,352,165	6,994,487	7,431,957	7,266,131	7,196,563

TOTAL KENYA LTD											
1. Financial Distress (000)											
Year	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Current Assets	9,775,124	11,763,581	20,745,441	20,114,577	25,338,951	23,306,880	30,004,596	22,210,568	23,433,827	25,355,086	26,454,162
Current Liabilities	7,761,162	9,508,962	17,886,005	17,090,899	22,982,764	17,933,163	23,488,077	14,924,210	15,380,662	15,409,648	15,255,690
Working Capital	2,013,962	2,254,619	2,859,436	3,023,678	2,356,187	5,373,717	6,516,519	7,286,358	8,053,165	9,945,438	11,198,472
Total Assets	12,512,753	14,526,784	31,528,196	30,375,677	35,198,166	32,980,604	39,984,165	32,541,800	34,225,035	36,185,372	38,012,115
Total Liabilities	7,761,162	9,508,962	22,566,005	20,795,824	26,003,348	18,787,928	24,605,105	16,116,377	16,625,289	16,836,082	16,594,896
Retained Earnings	1,908,747	2,174,978	2,219,900	2,837,562	2,452,527	2,250,385	3,436,769	4,483,132	5,657,455	7,406,999	9,474,928
EBIT	781,935	1,031,368	733,699	1,388,425	57,850	(64,301)	2,084,517	2,276,005	2,618,696	3,935,363	4,131,616
Market Value of Equity	4,751,591	5,017,822	8,962,191	9,579,853	9,194,818	14,192,676	15,379,060	16,425,423	17,599,746	19,349,290	21,417,219
Sales	44,109,728	54,807,521	41,311,598	79,206,640	105,590,360	119,788,989	154,626,092	170,726,560	138,027,279	110,582,420	137,096,919
WC/TA	0.1610	0.1552	0.0907	0.0995	0.0669	0.1629	0.1630	0.2239	0.2353	0.2748	0.2946
RE/TA	0.1525	0.1497	0.0704	0.0934	0.0697	0.0682	0.0860	0.1378	0.1653	0.2047	0.2493
EBIT/TA	0.0625	0.0710	0.0233	0.0457	0.0016	(0.0019)	0.0521	0.0699	0.0765	0.1088	0.1087
MVE/TL	0.6122	0.5277	0.3972	0.4607	0.3536	0.7554	0.6250	1.0192	1.0586	1.1493	1.2906
Sales/TA	3.5252	3.7729	1.3103	2.6076	2.9999	3.6321	3.8672	5.2464	4.0329	3.0560	3.6067
Z-Score	4.5019	4.7159	1.8315	3.2824	3.3923	4.3663	4.7263	6.5450	5.4303	4.7178	5.4386
2. Establishing the relationship between market anomalies and financial distress of listed firms in NSE, Kenya.											
a) Fundamental Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Dividend Per Share	2.50	2.50	1.00	1.05	1.05	0.20	0.60	0.70	0.77	1.06	1.30
Earnings Per Share	2.99	4.02	2.79	5.30	(0.41)	(1.15)	2.08	2.26	2.57	3.55	4.35
Price Per Share	33.75	32.00	29.75	29.00	14.75	13.85	24.37	24.00	18.25	18.25	23.50
D/P	0.07	0.08	0.03	0.04	0.07	0.01	0.02	0.03	0.04	0.06	0.06
E/P	0.09	0.13	0.09	0.18	(0.03)	(0.08)	0.09	0.09	0.14	0.19	0.19
b) Technical Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Low	26.00	23.25	25.75	26.50	13.70	12.35	12.60	20.00	17.00	15.00	16.00
High	39.00	35.50	35.50	33.00	30.00	18.50	28.75	32.00	29.25	19.45	26.75
b) Seasonal Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
January	4										
February											
April				1							
June				1							
July				2							
August				2							
October		4					16	2			
November				1			21				
December							13				
Total	**4**	**4**	**0**	**7**	**0**	**0**	**50**	**2**	**0**	**0**	**0**
b) Size Effect Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Total Sales ('000)	44,109,728	54,807,521	41,311,598	78,206,840	105,590,360	119,788,989	154,626,092	170,726,560	138,027,279	110,582,420	137,096,919
Total Assets ('000)	12,512,753	14,526,784	31,528,196	30,375,677	35,198,166	32,980,604	39,984,165	32,541,800	34,225,035	36,185,372	38,012,115
Par Value	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Share Capital ('000)	875,324	875,324	4,774,771	4,774,771	4,774,771	9,974,771	9,974,771	9,974,771	9,974,771	9,974,771	9,974,771
Oustanding Shares ('000)	175,065	175,065	954,954	954,954	954,954	1,994,954	1,994,954	1,994,954	9,974,771	1,994,954	1,994,954
Market Cap ('000)	5,908,437	5,602,074	28,409,887	27,693,672	14,085,574	27,630,116	48,617,034	47,878,901	182,039,571	36,407,914	46,881,424
Profitability ('000)	524,190	1,031,368	733,699	916,205	(71,436)	(202,142)	1,312,277	1,424,088	1,615,003	2,234,292	2,738,216

B.O.C KENYA LTD											
1. Financial Distress (000)											
Year	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Current Assets	1,026,526	1,137,269	970,458	864,695	890,082	1,087,971	1,211,504	1,183,157	1,252,252	1,209,597	1,206,161
Current Liabilities	396,672	547,100	367,524	402,014	458,790	523,229	544,011	553,132	606,850	534,389	617,322
Working Capital	629,854	590,169	602,934	462,681	431,292	564,742	667,493	630,025	645,402	675,208	588,839
Total Assets	1,859,335	2,057,227	1,986,401	1,904,995	1,816,740	1,994,865	2,633,093	2,300,320	2,320,956	2,223,838	2,228,669
Total Liabilities	459,203	603,119	454607	498,425	488,252	534,530	557,033	553,132	606,850	534,389	617,587
Retained Earnings	1,063,626	1,142,888	1,099,853	1,164,454	1,137,139	1,147,418	1,239,735	1,375,638	1,422,706	1,447,497	1,385,344
EBIT	399,769	295,179	231,682	83,488	189,454	286,692	308,392	277,984	221,721	190,682	83,613
Market Value of Equity	1,400,132	1,454,108	1,533,794	1,406,570	1,328,488	1,454,811	2,076,060	1,747,188	1,714,106	1,689,449	1,611,082
Sales	1,312,312	1,283,832	1,285,373	1,155,379	1,205,372	1,420,578	1,437,640	1,378,246	1,263,991	1,150,323	1,050,547
WC/TA	0.3388	0.2869	0.3035	0.2429	0.2374	0.2831	0.2535	0.2739	0.2781	0.3036	0.2642
RE/TA	0.5720	0.5555	0.5537	0.6113	0.6259	0.5752	0.4708	0.5980	0.6130	0.6509	0.6216
EBIT/TA	0.2150	0.1435	0.1166	0.0438	0.1043	0.1437	0.1171	0.1208	0.0955	0.0857	0.0375
MVE/TL	3.0490	2.4110	3.3739	2.8220	2.7209	2.7217	3.7270	3.1587	2.8246	3.1615	2.6087
Sales/TA	0.7058	0.6241	0.6471	0.6065	0.6635	0.7121	0.5460	0.5992	0.5446	0.5173	0.4714
Z-Score	4.4514	3.6655	4.1951	3.5910	3.8007	3.9636	4.1315	4.0585	3.7459	3.9722	3.3472
2. Establishing the relationship between market anomalies and financial distress of listed firms in NSE, Kenya.											
a) Fundamental Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Dividend Per Share	11.30	4.80	4.80	9.40	6.80	2.00	2.60	5.20	5.20	5.20	5.20
Earnings Per Share	13.70	10.26	7.88	4.06	7.71	10.11	10.38	11.76	7.61	6.47	2.02
Price Per Share	155.00	160.00	150.00	132.00	100.00	99.50	125.00	125.00	102.00	82.00	107.00
D/P	0.09	0.06	0.05	0.03	0.08	0.10	0.08	0.09	0.07	0.08	0.02
E/P	0.07	0.03	0.03	0.07	0.07	0.02	0.02	0.04	0.05	0.06	0.05
b) Technical Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Low			145.00	125.00	89.00	90.00	90.00	118.00	90.00	75.00	81.00
High			161.00	160.00	155.00	130.00	127.00	190.00	160.00	110.00	110.00
b) Seasonal Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
January								8			
February								5			
November	11										
December	2										
Total	**13**	**0**	**0**	**0**	**0**	**0**	**0**	**13**	**0**	**0**	**0**
b) Size Effect Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Total Sales ('000)	1,312,312	1,283,832	1,285,373	1,155,379	1,205,372	1,420,578	1,437,640	1,378,246	1,263,991	1,150,323	1,050,547
Total Assets ('000)	1,859,335	2,057,227	1,986,401	1,904,995	1,816,740	1,994,865	2,633,093	2,300,320	2,320,956	2,223,838	2,228,669
Par Value	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Share Capital ('000)	97,627	97,627	97,627	97,627	97,627	97,627	97,627	97,627	97,627	97,627	97,627
Oustanding Shares ('000)	19,525	19,525	19,525	19,525	19,525	19,525	19,525	19,525	19,525	19,525	19,525
Market Cap ('000)	3,026,437	3,124,064	2,928,810	2,577,353	1,952,540	1,942,777	2,440,675	2,440,675	1,991,591	1,601,083	2,089,218
Profitability ('000)	267,556	200,409	153,907	79,337	150,604	197,374	202,636	229,625	148,600	126,323	39,379

CIC INSURANCE GROUP LTD											
1. Financial Distress (000)											
Year	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Current Assets	2,024,101	2,405,434	2,826,760	6,201,009	9,344,012	11,038,962	12,061,686	17,490,320	17,449,752	18,867,433	21,665,359
Current Liabilities	1,866,584	2,271,108	2,500,387	4,886,562	6,826,654	8,598,591	10,348,916	16,482,947	17,089,752	19,347,223	22,868,268
Working Capital	157,517	134,326	326,373	1,314,447	2,517,358	2,440,371	1,712,770	1,007,373	360,000	(479,790)	(1,202,909)
Total Assets	2,438,669	3,028,649	3,490,495	7,495,709	11,120,796	14,069,551	17,035,817	23,690,387	24,920,235	26,826,686	30,505,376
Retained Earnings	56,841	131,327	222,184	413,549	795,148	1,759,487	2,595,654	3,424,706	4,110,156	4,012,652	4,227,821
EBIT	140,233	219,442	277,726	605,324	787,214	1,649,591	1,671,095	1,390,314	1,339,086	114,388	519,156
Market Value of Equity	572,085	757,541	990,108	2,609,147	4,294,142	5,470,960	6,686,901	7,207,440	7,830,483	7,479,463	7,637,108
Sales	2,129,646	1,332,105	1,690,921	4,949,157	7,424,330	10,623,706	12,792,700	15,930,927	14,537,167	15,352,378	18,293,152
WC/TA	0.0646	0.0444	0.0935	0.1754	0.2264	0.1735	0.1005	0.0425	0.0144	(0.0179)	(0.0394)
RE/TA	0.0233	0.0434	0.0637	0.0552	0.0715	0.1251	0.1524	0.1446	0.1649	0.1496	0.1386
EBIT/TA	0.0575	0.0725	0.0796	0.0808	0.0708	0.1172	0.0981	0.0587	0.0537	0.0043	0.0170
MVE/TA	0.2346	0.2501	0.2837	0.3481	0.3861	0.3889	0.3925	0.3042	0.3142	0.2788	0.2504
Z-Score	1.1324	1.1818	1.6534	2.2384	2.5992	2.7417	2.2276	1.4640	1.3235	0.6917	0.5704
2. Establishing the relationship between market anomalies and financial distress of listed firms in NSE, Kenya.											
a) Fundamental Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Dividend Per Share	1.40	1.40	1.60	0.16	1.80	0.10	0.10	0.10	0.11	0.11	0.12
Earnings Per Share		8.94	11.48	16.75	5.48	0.64	0.65	0.42	0.43	0.07	0.18
Price Per Share						3.55	5.95	9.60	6.20	3.80	5.60
D/P	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.03	0.02	0.01	0.02	0.03	0.02
E/P	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.18	0.11	0.04	0.07	0.02	0.03
b) Technical Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Low		2.95	2.95	2.95	2.95	3.00	3.40	5.25	5.55	3.55	3.10
High		8.94	11.48	16.75	5.48	7.00	6.20	12.40	11.95	6.50	7.10
b) Seasonal Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
January							5				
July						4					
August						5					
Total		0	0	0	0	9	0	0	0	0	0
b) Size Effect Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Total Sales	2,129,646	1,332,105	1,690,921	4,949,157	7,424,330	10,623,706	12,792,700	15,930,927	14,537,167	15,352,378	18,293,152
Total Assets	2,438,669	3,028,649	3,490,495	7,495,709	11,120,796	14,069,551	17,035,817	23,690,387	24,920,235	26,826,686	30,505,376
Par Value	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Share Capital	388,847	413,785	427,980	611,413	2,179,655	2,179,655	2,179,655	2,615,578	2,615,578	2,615,578	2,615,578
Oustanding Shares	388,847	413,785	427,980	611,413	2,179,655	2,179,655	2,179,655	2,615,578	2,615,578	2,615,578	2,615,578
Market Cap	-	-	-	-	-	7,737,775	12,968,947	25,109,549	16,216,584	9,939,196	14,647,237
Profitability	124,436	175,947	236,086	486,487	584,214	1,388,201	1,405,904	1,088,440	1,136,604	188,185	478,473

JUBILEE HOLDINGS LTD											
1. Financial Distress (000)											
Year	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Current Assets	15,942,366	17,686,697	21,142,162	27,347,269	34,360,288	43,370,238	56,550,265	69,224,552	76,551,389	84,174,783	98,257,062
Current Liabilities	14,079,690	16,998,236	19,942,274	25,114,019	31,328,181	38,557,851	49,559,603	58,026,343	61,996,803	69,146,074	79,736,880
Working Capital	1,862,676	688,461	1,199,888	2,233,250	3,032,107	4,812,387	6,990,662	11,198,209	14,554,586	15,028,709	18,520,182
Total Assets	17,942,462	20,202,824	23,736,372	30,691,382	38,039,832	47,257,540	61,159,185	74,505,374	82,378,010	90,567,743	104,967,530
Total Liabilities	14,079,690	16,998,236	19,942,274	25,114,019	31,328,181	38,557,851	49,559,603	58,026,343	61,996,803	69,146,074	79,736,880
Retained Earnings	2,612,923	2,742,884	3,142,327	4,431,484	5,861,745	7,480,077	9,212,032	11,484,875	13,759,189	16,352,839	19,512,980
EBIT	809,566	900,692	1,115,776	2,053,287	2,143,891	2,693,303	3,151,188	3,949,285	4,145,139	4,562,705	5,160,970
Market Value of Equity	3,862,772	3,204,588	3,794,098	5,577,363	6,711,651	8,699,689	11,599,582	16,479,031	20,381,207	21,421,669	25,230,650
Sales	6,068,616	8,024,637	8,845,756	11,269,484	15,614,847	19,909,343	23,469,323	34,591,940	30,961,183	35,918,531	37,707,661
WC/TA	0.1038	0.0341	0.0506	0.0728	0.0797	0.1018	0.1143	0.1503	0.1767	0.1659	0.1764
RE/TA	0.1456	0.1358	0.1324	0.1444	0.1541	0.1583	0.1506	0.1541	0.1670	0.1806	0.1859
EBIT/TA	0.0451	0.0446	0.0470	0.0669	0.0564	0.0570	0.0515	0.0530	0.0503	0.0504	0.0492
MVE/TL	0.2744	0.1885	0.1903	0.2221	0.2142	0.2256	0.2341	0.2840	0.3287	0.3098	0.3164
Z-Score	1.7470	1.1637	1.2788	1.6308	1.6289	1.8039	1.8329	2.1429	2.3868	2.3410	2.4261
2. Establishing the relationship between market anomalies and financial distress of listed firms in NSE, Kenya.											
a) Fundamental Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Dividend Per Share	4.25	4.25	4.50	5.50	5.50	7.00	7.00	8.50	8.50	8.50	9.00
Earnings Per Share	13.71	14.14	18.33	32.00	33.00	35.00	38.00	43.70	42.70	45.49	54.26
Price Per Share	213.00	123.00	115.00	184.00	155.00	173.00	322.97	450.00	484.00	490.00	499.00
D/P	0.06	0.11	0.16	0.17	0.21	0.20	0.12	0.10	0.09	0.09	0.11
E/P	0.02	0.03	0.04	0.03	0.04	0.04	0.02	0.02	0.02	0.02	0.02
b) Technical Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Low	174.00	90.00	75.00	108.00	141.00	140.00	165.00	277.00	350.00	425.00	400.00
High	360.00	225.00	140.00	210.00	225.00	188.00	320.00	500.00	600.00	510.00	500.00
b) Seasonal Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Jabuary	12			1		2					
February						4				1	
March						5					
April						1					
May						2					
Ocober		3									
November		1									
December		1								1	
Total	**12**	**5**	**0**	**1**	**0**	**14**	**0**	**0**	**0**	**2**	**0**
b) Size Effect Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Total Sales ('000)	6,068,616	8,024,637	8,845,756	11,269,484	15,614,847	19,909,343	23,469,323	34,591,940	30,961,183	35,918,531	37,707,661
Total Assets ('000)	17,942,462	20,202,824	23,736,372	30,691,382	38,039,832	47,257,540	61,159,185	74,505,374	82,378,010	90,567,743	104,967,530
Par Value	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Share Capital ('000)	225,000	225,000	225,000	247,500	272,250	299,475	299,475	299,475	329,423	329,423	362,365
Oustanding Shares ('000)	45,000	45,000	45,000	49,500	54,450	59,895	59,895	59,895	65,885	65,885	72,473
Market Cap ('000)	9,585,000	5,535,000	5,175,000	9,108,000	8,439,750	10,361,835	19,344,288	26,952,750	31,888,146	32,283,454	36,164,027
Profitability ('000)	663,071	713,235	913,673	1,839,124	1,910,390	2,284,501	2,502,817	3,103,653	3,121,093	3,675,947	4,230,310

KENYA RE INSURANCE CORPORATION LTD											
1. Financial Distress (000)											
Year	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Current Assets	8,505,141	8,648,367	9,377,655	11,256,086	12,983,148	16,633,594	20,257,397	24,078,042	25,837,675	28,440,264	31,815,561
Current Liabilities	3,651,169	3,735,360	3,846,214	4,516,787	5,256,048	9,102,341	7,029,309	12,182,847	10,937,315	17,441,172	12,190,173
Working Capital	4,853,972	4,913,007	5,531,441	6,739,299	7,727,100	7,531,253	13,228,088	11,895,195	14,900,360	10,999,092	13,926,683
Total Assets	12,962,495	13,941,110	15,000,633	17,240,929	19,096,441	23,787,957	28,222,587	32,174,251	35,954,134	38,494,310	42,732,667
Total Liabilities	5,735,240	5,661,714	5,900,708	6,667,427	7,541,757	9,102,341	10,300,205	12,182,847	14,021,269	14,361,013	15,527,583
Retained Earnings	3,213,352	4,475,854	5,273,363	6,345,426	7,636,823	9,072,559	11,098,665	13,441,918	15,880,375	18,250,893	20,794,033
EBIT	1,074,431	1,777,026	1,463,862	1,660,016	2,036,777	2,944,635	3,268,803	3,919,732	4,514,136	4,218,046	4,558,551
Market Value of Equity	7,227,255	8,279,396	9,099,925	10,573,502	11,554,684	14,685,616	17,922,382	19,991,404	21,932,865	24,133,297	27,205,084
Sales	4,457,208	5,047,044	5,171,752	6,788,625	8,492,080	11,488,995	12,724,926	14,582,840	17,455,389	17,635,960	18,737,215
WC/TA	0.3745	0.3524	0.3687	0.3909	0.4046	0.3166	0.4687	0.3697	0.4144	0.2857	0.3259
RE/TA	0.2479	0.3211	0.3515	0.3680	0.3999	0.3814	0.3933	0.4178	0.4417	0.4741	0.4866
EBIT/TA	0.0829	0.1275	0.0976	0.0963	0.1067	0.1238	0.1158	0.1218	0.1256	0.1096	0.1067
MVE/TL	1.2601	1.4623	1.5422	1.5858	1.5321	1.6134	1.7400	1.6409	1.5643	1.6805	1.7520
Z-Score	5.1448	5.7505	5.8401	6.0762	6.2835	5.8461	6.9620	6.3290	6.6447	5.9209	6.2808
2. Establishing the relationship between market anomalies and financial distress of listed firms in NSE, Kenya.											
a) Fundamental Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Dividend Per Share	0.35	0.50	0.50	0.35	0.35	0.40	0.60	0.70	0.75	0.80	0.85
Earnings Per Share	1.05	2.50	2.21	2.57	3.19	4.00	4.29	4.48	5.10	4.70	5.11
Price Per Share	16.95	12.75	11.70	11.05	7.30	10.70	13.80	17.20	21.00	22.50	18.10
D/P	0.06	0.20	0.19	0.23	0.44	0.37	0.31	0.26	0.24	0.21	0.28
E/P	0.02	0.04	0.04	0.03	0.05	0.04	0.04	0.04	0.04	0.04	0.05
b) Technical Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Low	10.00	9.10	7.20	9.00	6.30	6.50	9.90	14.20	15.00	18.00	17.50
High	19.35	18.50	17.00	14.80	12.00	13.40	18.50	21.00	22.75	23.00	24.50
b) Seasonal Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
January							8	3			8
September	3										
October		3							2		
November									5	1	
December									20		
Total	**3**	**3**	**0**	**0**	**0**	**0**	**8**	**3**	**27**	**1**	**8**
b) Size Effect Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Total Sales ('000)	4,457,208	5,047,044	5,171,752	6,788,625	8,492,080	11,488,995	12,724,926	14,582,840	17,455,389	17,635,960	18,737,215
Total Assets ('000)	12,962,495	13,941,110	15,000,633	17,240,929	19,096,441	23,787,957	28,222,587	32,174,251	35,954,134	38,494,310	42,732,667
Par Value	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50
Share Capital ('000)	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000	1,749,873	1,749,873	1,749,873	1,749,873	1,749,873	1,749,873
Oustanding Shares ('000)	600,000	600,000	600,000	600,000	600,000	699,949	699,949	699,949	699,949	699,949	699,949
Market Cap ('000)	10,170,000	7,650,000	7,020,000	6,630,000	4,380,000	7,489,456	9,659,299	12,039,126	14,698,933	15,748,857	12,669,081
Profitability ('000)	837,949	1,499,111	1,328,904	1,541,391	1,914,584	2,801,892	3,000,431	3,137,172	3,554,250	3,287,284	3,577,340

PAN AFRICA INSURANCE HOLDINGS LTD											
1. Financial Distress (000)											
Year	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Current Assets	4,831,537	5,645,182	7,106,791	9,684,084	10,516,921	15,346,454	19,851,308	23,135,025	24,093,482	25,387,658	26,364,388
Current Liabilities	4,463,278	4,908,180	6,238,952	8,839,100	9,376,589	14,100,258	17,819,064	20,821,777	23,307,231	24,510,346	25,759,534
Working Capital	368,259	737,002	867,839	844,984	1,140,332	1,246,196	2,032,244	2,313,248	786,251	877,312	604,854
Total Assets	5,901,463	6,094,127	7,563,815	10,671,621	11,499,229	16,473,522	21,157,507	24,599,410	27,109,278	28,442,590	29,811,484
Total Liabilities	4,463,278	4,908,180	6,238,952	8,839,100	9,376,589	14,100,258	17,818,064	20,821,777	23,307,231	24,510,346	25,759,534
Retained Earnings	700,968	185,178	361,566	725,746	992,822	916,676	1,459,761	811,364	1,325,159	1,172,154	1,459,314
EBIT	203,608	(16,368)	173,647	665,200	552,435	834,646	1,516,444	1,152,598	54,325	317,053	246,958
Market Value of Equity	1,438,185	1,185,947	1,324,863	1,832,521	2,122,640	2,373,264	3,338,443	3,777,633	3,716,074	3,932,244	4,051,950
Sales	2,595,547	2,892,971	3,500,464	4,449,414	5,094,887	7,355,998	7,595,917	7,582,366	8,258,956	10,412,022	11,043,231
WC/TA	0.0624	0.1209	0.1147	0.0792	0.0992	0.0756	0.0961	0.0940	0.0290	0.0308	0.0203
RE/TA	0.1188	0.0304	0.0478	0.0680	0.0863	0.0556	0.0690	0.0330	0.0489	0.0412	0.0490
EBIT/TA	0.0345	(0.0027)	0.0230	0.0623	0.0480	0.0507	0.0717	0.0469	0.0020	0.0111	0.0083
MVE/TL	0.3222	0.2416	0.2124	0.2073	0.2264	0.1683	0.1874	0.1814	0.1594	0.1604	0.1573
Z-Score	1.3668	1.1281	1.2857	1.3777	1.4925	1.1949	1.5334	1.2298	0.5305	0.5801	0.5135
2. Establishing the relationship between market anomalies and financial distress of listed firms in NSE, Kenya.											
a) Fundamental Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Dividend Per Share	3.00	-	2.00	3.00	2.00	3.00	4.50	-	-	-	-
Earnings Per Share		(1.99)	2.89	6.14	4.62	7.27	13.05	6.05	(0.43)	0.63	0.21
Price Per Share	99.50	62.00	45.00	65.50	20.75	40.25	90.00	120.00	60.00	27.50	27.75
D/P	0.03	-	0.04	0.05	0.10	0.07	0.05	-	-	-	-
E/P	-	(0.03)	0.06	0.09	0.22	0.18	0.15	0.05	(0.01)	0.02	0.01
b) Technical Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Low	80.00	61.50	43.75	44.00	17.40	16.45	39.25	87.00	55.50	26.25	18.00
High	122.00	99.50	62.00	87.00	110.00	42.00	100.00	145.00	141.00	60.00	31.00
b) Seasonal Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
January	2	4	6				20	17		8	1
February							7	5		3	
July										1	
November							10				
December							18				
Total	**2**	**4**	**6**	**0**	**0**	**0**	**55**	**22**	**0**	**12**	**1**
b) Size Effect Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Total Sales ('000)	2,595,547	2,892,971	3,500,464	4,449,414	5,094,887	7,355,998	7,595,917	7,582,366	8,258,956	10,412,022	11,043,231
Total Assets ('000)	5,901,463	6,094,127	7,563,815	10,671,621	11,499,229	16,473,522	21,157,507	24,599,410	27,109,278	28,442,590	29,811,484
Par Value	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Share Capital ('000)	240,000	240,000	240,000	240,000	480,000	480,000	480,000	480,000	720,000	720,000	720,000
Oustanding Shares ('000)	48,000	48,000	48,000	48,000	96,000	96,000	96,000	96,000	144,000	144,000	144,000
Market Cap ('000)	4,776,000	2,976,000	2,160,000	3,144,000	1,992,000	3,864,000	8,640,000	11,520,000	8,640,000	3,960,000	3,996,000
Profitability ('000)	201,072	(95,998)	138,916	589,258	443,405	600,240	1,250,432	871,190	27,350	70,623	53,045

CENTUM INVESTMENT CO. LTD											
1. Financial Distress (000)											
Year	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Current Assets	359,188	109,512	302,128	8,214,546	8,713,338	7,546,554	13,456,198	17,493,101	46,617,772	50,631,289	46,764,434
Current Liabilities	73,226	67,721	253,906	399,804	2,742,199	1,526,459	5,318,811	9,324,383	33,676,874	34,795,287	38,911,404
Working Capital	285,962	41,791	48,222	7,814,742	5,971,139	6,020,095	8,137,387	8,168,718	12,940,898	15,836,002	7,853,030
Total Assets	8,421,656	8,145,850	6,569,939	8,255,971	12,301,576	11,567,701	18,961,552	29,597,220	72,231,387	78,053,536	88,385,608
Total Liabilities	73,226	67,721	253,906	399,804	2,742,199	1,526,459	5,315,811	9,324,383	33,676,874	34,795,267	36,911,404
Retained Earnings	2,892,819	3,513,661	3,579,363	3,958,527	6,223,412	7,382,570	9,891,966	12,912,168	18,555,071	28,245,913	32,771,793
EBIT	1,185,778	985,280	475,653	1,080,790	2,294,429	1,366,675	3,247,973	4,011,451	8,817,159	10,872,693	8,943,203
Market Value of Equity	8,348,430	8,078,129	6,316,033	7,856,167	9,559,377	10,041,242	13,642,741	20,272,837	38,554,513	43,256,249	49,474,204
Sales	804,888	581,514	391,586	1,038,257	2,261,431	1,272,313	3,905,657	4,883,200	11,826,150	8,140,574	9,401,660
WC/TA	0.0340	0.0051	0.0073	0.9466	0.4854	0.5204	0.4292	0.2760	0.1792	0.2029	0.0888
RE/TA	0.3435	0.4313	0.5448	0.4795	0.5059	0.6382	0.5217	0.4363	0.2569	0.3619	0.3708
EBIT/TA	0.1408	0.1210	0.0724	0.1309	0.1865	0.1181	0.1713	0.1355	0.1221	0.1393	0.1012
MVE/TL	0.9913	0.9917	0.9614	0.9516	0.7771	0.8680	0.7195	0.6850	0.5338	0.5542	0.5598
Sales/TA	0.0956	0.0714	0.0596	0.1258	0.1838	0.1100	0.2060	0.1650	0.1637	0.1043	0.1064
Z-Score	1.6765	1.6755	1.6468	2.9357	2.5561	2.5386	2.4481	1.9650	1.4613	1.6465	1.4017
2. Establishing the relationship between market anomalies and financial distress of listed firms in NSE, Kenya.											
a) Fundamental Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Dividend Per Share	0.45	0.45	-	-	-	-	-	-	-	1.20	1.00
Earnings Per Share	2.03	1.58	0.57	1.81	3.79	1.79	3.77	4.54	10.45	11.75	10.93
Price Per Share	29.90	25.00	10.25	15.60	21.50	13.05	19.75	20.00	63.50	63.50	34.50
D/P	0.02	0.02	-	-	-	-	-	-	-	0.02	0.03
E/P	0.07	0.06	0.06	0.12	0.18	0.14	0.19	0.23	0.16	0.19	0.32
b) Technical Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Low	16.00	11.55	8.00	10.50	10.80	10.30	11.20	30.00	38.00	34.25	30.50
High	388.00	30.00	19.25	26.00	24.50	16.50	36.00	84.50	72.00	51.00	46.00
b) Seasonal Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
January	14										
March	3										
August										1	
Total	**17**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**
b) Size Effect Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Total Sales ('000)	804,888	581,514	391,586	1,038,257	2,261,431	1,272,313	3,905,657	4,883,200	11,826,150	8,140,574	9,401,660
Total Assets ('000)	8,421,656	7,836,658	6,460,427	8,255,971	12,301,576	11,567,701	18,961,552	29,597,220	72,231,387	78,053,536	88,385,608
Par Value	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Share Capital ('000)	274,976	274,976	274,976	302,474	332,721	332,721	332,721	332,721	332,721	332,721	332,721
Oustanding Shares ('000)	549,952	549,952	549,952	604,948	665,442	665,442	665,442	665,442	665,442	665,442	665,442
Market Cap ('000)	16,443,565	13,748,800	5,637,008	9,437,189	14,307,003	8,684,018	13,142,480	13,308,840	42,255,567	42,255,567	22,957,749
Profitability ('000)	1,115,060	868,320	313,180	1,093,757	2,292,383	1,189,405	2,509,396	3,055,370	7,942,432	9,947,630	8,310,292

OLYMPIA CAPITAL HOLDINGS LTD											
1. Financial Distress ('000)											
Year	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Current Assets	477,644	588,260	275,810	391,288	378,674	633,110	730,355	354,807	437,441	419,498	354,201
Current Liabilities	492,426	337,503	193,997	263,767	325,788	310,127	303,527	260,928	274,014	204,834	178,309
Working Capital	(14,782)	250,757	81,813	127,521	52,886	322,983	426,828	93,879	163,427	214,664	175,892
Total Assets	799,684	1,089,380	787,577	974,120	1,074,236	1,620,955	1,897,407	1,576,337	1,531,409	1,606,659	1,556,804
Total Liabilities	599,113	414,301	245,952	375,915	426,977	553,727	529,639	396,957	362,852	380,256	291,064
Retained Earnings	77,443	94,738	14,342	14,419	30,026	35,857	44,996	50,319	198,968	209,309	235,507
EBIT	26,009	34,374	66,387	25,481	31,881	60,347	10,850	28,360	1,458	27,281	51,044
Market Value of Equity	130,451	546,661	463,092	473,047	492,993	787,520	791,693	860,903	1,531,409	1,226,403	1,265,740
Sales	396,760	1,366,927	517,357	618,170	666,629	774,286	824,934	500,582	518,528	528,263	537,774
WC/TA	(0.0185)	0.2302	0.1039	0.1309	0.0492	0.1993	0.2250	0.0596	0.1067	0.1336	0.1130
RE/TA	0.0968	0.0870	0.0182	0.0148	0.0280	0.0221	0.0237	0.0319	0.1299	0.1303	0.1513
EBIT/TA	0.0325	0.0316	0.0843	0.0262	0.0297	0.0372	0.0057	0.0180	0.0010	0.0170	0.0328
MVE/TL	0.2177	1.3195	1.8829	1.2584	1.1546	1.4222	1.4948	2.1688	4.2205	3.2252	4.3487
Sales/TA	0.4961	1.2548	0.6569	0.6346	0.6206	0.4777	0.4348	0.3176	0.3386	0.3288	0.3454
Z-Score	0.8470	2.5473	2.2143	1.6531	1.5089	1.7235	1.6532	1.7940	3.1836	2.6623	3.4099
2. Establishing the relationship between market anomalies and financial distress of listed firms in NSE, Kenya.											
a) Fundamental Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Dividend Per Share		0.20	0.10	0.10	-	0.10	-	0.25	-	-	-
Earnings Per Share	1.48	0.51	(1.42)	(0.36)	0.33	0.38	0.15	0.38	(1.04)	0.26	0.65
Price Per Share	14.55	10.00	6.50	5.95	5.05	3.90	4.55	5.20	6.25	4.30	2.90
D/P	-	0.02	0.02	0.02	-	0.03	-	0.05	-	-	-
E/P	0.10	0.05	(0.22)	(0.06)	0.07	0.10	0.03	0.07	(0.17)	0.06	0.22
b) Technical Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Low	0.05	8.95	5.70	5.55	3.15	3.05	3.45	2.50	3.90	2.00	2.10
High	34.00	17.00	11.00	10.80	6.50	4.00	6.00	10.85	8.15	4.90	3.85
b) Seasonal Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
January	21								1		
April							3				
May				10							
July		1									
September	7										
October		12						12			
November		9									
December		14									
Total	**28**	**36**	**0**	**10**	**0**	**0**	**3**	**12**	**1**	**0**	**0**
b) Size Effect Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Total Sales ('000)	396,760	1,366,927	517,357	618,170	666,629	774,286	824,934	500,582	518,528	528,263	537,774
Total Assets ('000)	799,684	1,089,380	787,577	974,120	1,074,236	1,620,955	1,897,407	1,576,337	1,531,409	1,606,659	1,556,804
Par Value	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Share Capital ('000)	50,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000
Oustanding Shares ('000)	10,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000
Market Cap ('000)	145,500	400,000	260,000	238,000	202,000	156,000	182,000	208,000	250,000	172,000	116,000
Profitability ('000)	22,914	34,374	57,707	(11,998)	35,139	24,247	7,884	45,043	(29,551)	14,834	39,835

BRITISH AMERICAN TOBACCO KENYA LTD											
1. Financial Distress ('000)											
Year	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Current Assets	4,002,785	4,445,930	4,244,326	4,804,289	6,979,714	7,130,000	8,518,000	8,703,127	8,891,236	8,968,350	8,665,252
Current Liabilities	3,563,925	4,231,755	4,633,075	4,106,653	5,340,629	6,053,000	6,781,000	6,918,380	5,910,678	6,345,960	6,574,643
Working Capital	438,860	214,175	(388,749)	697,636	1,639,085	1,077,000	1,737,000	1,784,747	2,980,558	2,622,390	2,090,609
Total Assets	5,727,493	5,910,509	5,910,923	11,121,561	13,750,545	15,177,000	16,986,000	11,070,605	12,080,481	12,153,840	11,230,945
Total Liabilities	4,598,168	5,413,957	5,871,922	7,712,544	7,338,478	8,078,578	9,414,315	17,671,308	18,681,184	18,499,800	17,805,588
Retained Earnings	1,420,117	1,455,814	2,519,187	1,555,867	1,648,066	4,569,000	5,084,000	1,780,466	1,836,936	1,944,636	2,721,337
EBIT	2,049,596	2,416,913	2,108,964	2,722,572	4,484,116	4,754,000	5,470,000	6,095,419	7,138,902	5,911,310	4,866,943
Market Value of Equity	4,693,250	4,893,645	4,672,076	5,114,312	6,412,067	7,098,000	7,572,000	8,126,922	8,853,178	8,796,789	7,840,223
Sales	15,770,234	17,435,970	18,719,542	13,739,499	20,437,007	30,504,000	31,916,000	21,303,363	22,594,687	37,172,856	34,944,527
WC/TA	0.0766	0.0362	(0.0658)	0.0627	0.1192	0.0710	0.1023	0.1612	0.2467	0.2158	0.1861
RE/TA	0.2479	0.2463	0.4262	0.1399	0.1199	0.3010	0.2993	0.1608	0.1521	0.1600	0.2423
EBIT/TA	0.3579	0.4089	0.3568	0.2448	0.3261	0.3132	0.3220	0.5506	0.5909	0.4864	0.4334
MVE/TL	1.0207	0.9039	0.7957	0.6631	0.8738	0.8786	0.8043	0.4599	0.4739	0.4755	0.4403
Sales/TA	2.7534	2.9500	3.1669	1.2354	1.4863	2.0099	1.8790	1.9243	1.8703	3.0585	3.1115
Z-Score	4.9831	5.2271	5.3363	2.7110	3.3960	4.0753	3.9641	4.4339	4.6119	5.4287	5.3652
2. Establishing the relationship between market anomalies and financial distress of listed firms in NSE, Kenya.											
a) Fundamental Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Dividend Per Share	17.00	17.00	14.75	17.50	30.50	32.50	37.00	42.50	49.50	43.00	26.00
Earnings Per Share	13.86	17.00	14.78	17.67	30.98	32.71	37.24	42.55	49.76	42.34	33.36
Price Per Share	139.00	131.00	178.00	270.00	246.00	493.00	595.00	900.00	785.00	909.00	760.00
D/P	0.12	0.13	0.08	0.06	0.12	0.07	0.06	0.05	0.06	0.05	0.03
E/P	0.10	0.13	0.08	0.07	0.13	0.07	0.06	0.05	0.06	0.05	0.04
b) Technical Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Low	80.00	120.00	120.00	158.00	204.00	230.00	450.00	490.00	650.00	765.00	750.00
High	264.00	180.00	192.00	300.00	295.00	495.00	600.00	1,050.00	910.00	910.00	920.00
b) Seasonal Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
January	2										
Total	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
b) Size Effect Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Total Sales ('000)	15,770,234	17,435,970	18,719,542	13,539,233	20,138,122	30,504,000	31,916,000	21,032,333	22,257,182	36,676,249	34,467,704
Total Assets ('000)	5,727,493	5,910,509	5,910,923	11,121,561	13,750,545	15,177,000	16,986,000	11,070,605	12,080,481	18,492,149	17,805,588
Par Value	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Share Capital ('000)	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Oustanding Shares ('000)	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Market Cap ('000)	139,000,000	131,000,000	178,000,000	270,000,000	246,000,000	493,000,000	595,000,000	900,000,000	785,000,000	909,000,000	760,000,000
Profitability ('000)	1,385,697	1,700,395	1,478,431	1,767,236	3,097,755	3,271,000	3,724,000	4,255,314	4,976,256	4,234,334	3,336,006

CARBACID INVESTMENTS LTD											
1. Financial Distress ('000)											
Year	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Current Assets	515,904	545,165	707,107	385,105	404,113	639,388	892,067	1,552,475	1,854,036	1,188,255	1,008,052
Current Liabilities	39,875	38,309	66,549	66,558	150,166	150,166	88,417	155,757	247,126	167,632	148,192
Working Capital	476,029	506,856	640,558	318,547	253,947	489,222	803,650	1,396,718	1,606,910	1,020,623	859,860
Total Assets	1,091,017	1,209,543	1,376,380	1,512,166	1,739,985	2,012,816	2,204,399	2,533,163	2,968,727	3,081,768	3,306,974
Total Liabilities	167,826	185,059	208786	218,409	272,620	360,046	279,970	372,997	491,701	407,570	382,890
Retained Earnings	623,518	698,169	854,271	895,794	1,041,783	1,245,458	1,545,035	1,784,246	2,118,508	2,326,701	2,509,157
EBIT	226,796	241,940	367,027	438,041	374,210	535,444	634,686	597,262	839,585	547,748	456,656
Market Value of Equity	465,650	397,769	1,167,594	1,293,757	1,467,365	1,652,770	1,924,429	2,160,166	2,477,026	2,674,198	2,924,084
Sales	410,298	421,070	600,549	696,909	644,309	1,014,824	1,067,619	854,445	809,719	872,566	625,969
WC/TA	0.4363	0.4190	0.4654	0.2107	0.1459	0.2431	0.3646	0.5514	0.5413	0.3312	0.2600
RE/TA	0.5715	0.5772	0.6207	0.5924	0.5987	0.6188	0.7009	0.7044	0.7136	0.7550	0.7587
EBIT/TA	0.2079	0.2000	0.2667	0.2897	0.2151	0.2660	0.2879	0.2358	0.2828	0.1777	0.1381
MVE/TL	2.7746	2.1494	5.5923	5.9236	5.3825	4.5904	6.8737	5.7914	5.0377	6.5613	7.6369
Sales/TA	0.3761	0.3481	0.4363	0.4609	0.3703	0.5042	0.4843	0.3373	0.2727	0.2831	0.1893
Z-Score	4.0501	3.6085	6.0987	6.0526	5.3225	5.2937	6.9769	6.2376	5.8769	6.2606	6.6012
2. Establishing the relationship between market anomalies and financial distress of listed firms in NSE, Kenya.											
a) Fundamental Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Dividend Per Share	10.00	10.00	15.00	5.00	5.00	6.00	6.00	0.70	0.70	0.70	0.70
Earnings Per Share	13.70	14.72	7.54	9.05	8.89	11.46	13.99	1.93	1.55	1.47	1.38
Price Per Share	123.00	137.00	103.00	156.00	91.50	125.00	51.50	21.75	16.30	13.40	12.10
D/P	0.08	0.07	0.15	0.03	0.05	0.05	0.12	0.03	0.04	0.05	0.06
E/P	0.11	0.11	0.07	0.06	0.10	0.09	0.27	0.09	0.10	0.11	0.11
b) Technical Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Low			85.00	90.00	86.00	85.00	36.00	19.00	13.25	12.50	11.70
High			311.00	185.00	155.00	131.00	260.00	61.50	28.00	16.50	14.40
b) Seasonal Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
January			0					6		4	5
February										1	3
March											1
April										1	
June											1
August										2	
October							6				
November							21			1	1
December							18			11	2
Total	**0**	**0**	**0**	**0**	**0**	**0**	**45**	**6**	**0**	**20**	**13**
b) Size Effect Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Total Sales ('000)	410,298	421,070	600,549	696,909	644,309	1,014,824	1,067,619	854,445	809,719	872,566	625,969
Total Assets ('000)	1,091,017	1,209,543	1,376,380	1,512,166	1,739,985	2,012,816	2,204,399	2,533,163	2,968,727	3,081,768	3,306,974
Par Value	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Share Capital ('000)	56,634	56,634	56,634	169,902	169,902	169,902	169,902	254,852	254,852	254,852	254,852
Oustanding Shares ('000)	56,634	56,634	56,634	169,902	169,902	169,902	169,902	254,852	254,852	254,852	254,852
Market Cap ('000)	6,965,982	7,758,858	5,833,302	26,504,712	15,546,033	21,237,750	8,749,953	5,543,031	4,154,088	3,415,017	3,083,709
Profitability ('000)	155,234	166,760	256,377	307,392	302,195	389,287	475,541	597,262	580,467	375,568	352,300

EAST AFRICAN BREWERIES LTD											
1. Financial Distress ('000)											
Year	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Current Assets	18,103,247	17,534,514	18,941,137	17,358,873	13,855,244	18,057,773	18,593,102	19,807,154	25,491,155	21,556,281	22,134,600
Current Liabilities	8,203,822	8,867,918	9,432,296	11,684,390	15,509,186	22,483,782	26,606,846	27,460,650	24,930,769	27,969,422	21,983,714
Working Capital	9,899,425	8,666,596	9,508,841	5,674,483	(1,653,942)	(4,426,009)	(8,013,744)	(7,653,496)	560,386	(6,413,141)	150,886
Total Assets	31,106,195	33,254,248	35,832,389	38,420,691	49,712,130	54,584,316	58,556,053	62,865,943	66,939,778	65,683,608	66,666,312
Total Liabilities	10,255,419	11,137,405	12,464,145	14,405,245	22,764,183	45,868,436	50,121,863	41,014,198	38,370,596	42,065,845	40,482,674
Retained Earnings	9,294,786	10,509,910	11,332,702	10,768,656	11,202,570	19,962,019	20,773,624	22,501,939	27,105,032	5,588,475	7,334,700
EBIT	10,635,771	12,316,332	11,989,258	11,424,089	12,249,504	15,253,049	11,114,919	10,389,673	14,151,244	13,618,940	13,307,333
Market Value of Equity	20,850,776	22,116,843	23,368,244	23,952,626	26,888,127	8,715,880	8,434,190	9,100,848	13,353,183	10,867,246	11,988,170
Sales	27,328,764	32,488,112	34,407,715	38,679,196	44,895,037	55,522,166	59,061,875	60,748,887	64,420,458	65,322,220	70,247,065
WC/TA	0.3182	0.2606	0.2654	0.1477	(0.0333)	(0.0811)	(0.1369)	(0.1217)	0.0084	(0.0976)	0.0023
RE/TA	0.2988	0.3160	0.3163	0.2803	0.2253	0.3657	0.3548	0.3579	0.4049	0.0851	0.1100
EBIT/TA	0.3419	0.3704	0.3346	0.2973	0.2464	0.2794	0.1898	0.1653	0.2114	0.2073	0.1996
MVE/TL	2.0331	1.9858	1.8748	1.6628	1.1812	0.1900	0.1683	0.2219	0.3480	0.2583	0.2961
Sales/TA	0.8786	0.9770	0.9602	1.0067	0.9031	1.0172	1.0086	0.9663	0.9624	0.9945	1.0537
Z-Score	4.0261	4.1449	3.9496	3.5542	2.6996	2.4670	2.0674	1.9989	2.4448	1.8347	2.0458
2. Establishing the relationship between market anomalies and financial distress of listed firms in NSE, Kenya.											
a) Fundamental Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Dividend Per Share	9.31	8.05	8.05	8.75	8.75	8.75	5.50	5.50	7.50	12.00	7.50
Earnings Per Share	7.76	9.55	9.09	9.08	9.30	13.46	8.83	8.22	11.32	9.36	9.71
Price Per Share	168.00	199.00	151.00	181.00	193.00	227.00	320.00	289.00	304.00	278.00	259.00
D/P	0.06	0.04	0.05	0.05	0.05	0.04	0.02	0.02	0.02	0.04	0.03
E/P	0.05	0.05	0.06	0.05	0.05	0.06	0.03	0.03	0.04	0.03	0.04
b) Technical Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Low	100.00	100.00	87.50	133.00	140.00	148.00	246.00	208.00	228.00	226.00	200.00
High	185.00	220.00	155.00	226.00	230.00	266.00	426.00	329.00	355.00	325.00	272.00
b) Seasonal Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
March	1										
February								4			
March											
May							5				
September	16										
October	6										
December	1									9	
Total	**24**	**0**	**0**	**0**	**0**	**0**	**5**	**4**	**0**	**9**	**0**
b) Size Effect Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Total Sales ('000)	27,328,764	32,488,112	34,407,715	38,679,196	44,895,037	55,522,166	59,061,875	60,748,887	64,420,458	65,322,220	70,247,065
Total Assets ('000)	31,106,195	33,254,248	35,832,389	38,420,691	49,712,130	54,584,316	58,556,053	62,865,943	66,939,778	65,683,608	66,666,312
Par Value	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Share Capital ('000)	1,317,957	1,581,547	1,581,547	1,581,547	1,581,547	1,581,547	1,581,547	1,581,457	1,581,547	1,581,547	1,581,547
Oustanding Shares ('000)	658,979	790,774	790,774	790,774	790,774	790,774	790,774	790,729	790,774	790,774	790,774
Market Cap ('000)	110,708,388	157,363,927	119,406,799	143,130,004	152,619,286	179,505,585	253,047,520	228,520,537	240,395,144	219,835,033	204,810,337
Profitability ('000)	7,528,891	9,184,385	8,609,185	8,837,560	9,014,175	11,186,113	6,944,745	6,858,608	9,574,905	10,270,813	8,514,568

EVEREADY EAST AFRICA LTD											
1. Financial Distress ('000)											
Year	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Current Assets	1,005,279	638,114	795,254	943,397	727,864	876,043	683,971	763,357	640,620	266,553	577,860
Current Liabilities	644,475	384,139	528,176	668,833	852,383	695,764	444,019	572,291	651,306	587,381	214,435
Working Capital	360,804	253,975	267,078	274,564	(124,519)	180,279	239,952	191,066	(10,686)	(320,828)	363,425
Total Assets	1,550,121	1,091,304	1,264,750	1,195,824	1,010,884	1,150,729	940,652	930,057	1,511,665	1,082,806	772,652
Total Liabilities	746,232	470,904	602,976	801,240	737,503	540,094	545,882	711,592	705,377	801,816	223,282
Retained Earnings	138,535	156,425	184,696	183,399	69,405	139,489	184,900	6,994	(70,716)	(388,343)	325,903
EBIT	179,505	27,855	41,568	14,746	(173,208)	68,914	60,432	(248,014)	(98,912)	(218,962)	249,134
Market Value of Equity	443,085	366,425	394,696	403,399	279,405	349,489	394,770	218,465	806,288	486,578	549,370
Sales	2,232,143	1,774,675	1,645,193	1,635,108	1,374,847	1,374,769	1,428,278	1,216,580	1,132,136	553,311	338,931
WC/TA	0.2328	0.2327	0.2112	0.2296	(0.1232)	0.1567	0.2551	0.2054	(0.0071)	(0.2963)	0.4704
RE/TA	0.0894	0.1433	0.1460	0.1534	0.0687	0.1212	0.1966	0.0075	(0.0468)	(0.3586)	0.4218
EBIT/TA	0.1158	0.0255	0.0329	0.0123	(0.1713)	0.0599	0.0642	(0.2667)	(0.0654)	(0.2022)	0.3224
MVE/TL	0.5938	0.7781	0.6546	0.5035	0.3789	0.6471	0.7232	0.3070	1.1431	0.6068	2.4604
Sales/TA	1.4400	1.6262	1.3008	1.3673	1.3600	1.1947	1.5184	1.3081	0.7489	0.5110	0.4387
Z-Score	2.5814	2.6556	2.2586	2.1990	0.9689	2.1371	2.7441	0.8680	1.1441	(0.6504)	4.1335
2. Establishing the relationship between market anomalies and financial distress of listed firms in NSE, Kenya.											
a) Fundamental Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Dividend Per Share		-	-	-	-	-	-	-	-	-	1.00
Earnings Per Share	0.60	0.09	0.14	0.04	(0.59)	0.33	0.22	(0.85)	2.80	(0.98)	1.27
Price Per Share	7.95	3.50	2.90	3.00	1.70	2.05	2.70	3.65	3.05	1.95	2.30
D/P	-	-	-	-	-	-	-	-	-	-	0.43
E/P	0.08	0.02	0.05	0.01	(0.35)	0.16	0.08	(0.23)	0.92	(0.50)	0.55
b) Technical Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Low	6.30	3.30	2.35	1.00	1.40	1.35	1.75	2.65	2.35	1.80	2.10
High	18.90	9.30	3.80	5.60	3.30	2.50	3.70	5.35	5.00	3.15	4.65
b) Seasonal Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
January	22		1		9						
February	20										
April											4
May											15
June											1
September								1			
October								2			
Total	**42**	**0**	**1**	**0**	**9**	**0**	**0**	**3**	**0**	**0**	**20**
b) Size Effect Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Total Sales ('000)	2,232,143	1,774,675	1,645,193	1,635,108	1,374,847	1,374,769	1,428,278	1,216,580	1,132,136	553,311	338,931
Total Assets ('000)	1,550,121	1,091,304	1,264,750	1,195,824	1,010,884	1,150,729	940,652	930,057	1,511,665	1,082,806	772,652
Par Value	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Share Capital ('000)	210,000	210,000	210,000	210,000	210,000	210,000	210,000	210,000	210,000	210,000	210,000
Oustanding Shares ('000)	210,000	210,000	210,000	210,000	210,000	210,000	210,000	210,000	210,000	210,000	210,000
Market Cap ('000)	1,669,500	735,000	609,000	630,000	357,000	430,500	567,000	766,500	640,500	409,500	483,000
Profitability ('000)	126,408	17,840	28,271	8,703	(123,994)	70,084	45,411	(177,590)	(77,710)	(171,824)	266,081

KENYA ORCHADS LTD											
1. Financial Distress											
Year	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Current Assets	22,666,974	23,972,041	27,167,922	24,465,857	21,867,275	21,682,330	22,812,359	29,197,374	34,111,879	46,969,847	62,692,135
Current Liabilities	40,435,667	29,232,571	23,664,971	18,945,309	14,169,411	12,543,235	11,843,923	16,460,677	16,433,745	23,236,041	36,593,026
Working Capital	(17,768,693)	(5,260,530)	3,502,951	5,520,548	7,697,864	9,139,095	10,968,436	12,736,697	17,678,134	23,733,806	26,099,109
Total Assets	91,310,116	82,706,986	78,703,987	74,491,123	70,372,491	68,936,272	70,597,300	50,202,177	78,731,223	89,241,627	108,278,261
Total Liabilities	81,707,593	80,200,432	79,936,897	75,217,235	70,441,337	68,815,161	68,115,849	73,037,273	72,705,671	79,507,967	92,864,852
Retained Earnings	(49,059,655)	(59,625,490)	(59,572,018)	(58,933,300)	(58,152,359)	(57,854,186)	(55,365,341)	(80,612,264)	(51,672,631)	(47,912,718)	(42,187,740)
EBIT	(2,824,770)	125,640	232,797	620,520	1,246,812	757,201	966,022	1,471,448	4,328,873	5,295,028	7,563,669
Market Value of Equity	9,603,523	5,210,510	(1,232,910)	(726,112)	(68,846)	121,111	2,481,451	(22,835,096)	6,025,552	9,733,660	15,413,309
Sales	23,957,903	21,452,271	22,412,415	23,194,113	26,894,182	29,684,494	47,090,526	58,062,204	60,974,312	64,586,481	73,691,426
WC/TA	(0.1946)	(0.0636)	0.0445	0.0741	0.1094	0.1326	0.1554	0.2537	0.2245	0.2659	0.2410
RE/TA	(0.5373)	(0.7209)	(0.7569)	(0.7911)	(0.8264)	(0.8392)	(0.7842)	(1.6058)	(0.6563)	(0.5369)	(0.3896)
EBIT/TA	(0.0309)	0.0015	0.0030	0.0083	0.0177	0.0110	0.0137	0.0293	0.0550	0.0593	0.0699
MVE/TL	0.1175	0.0650	(0.0154)	(0.0097)	(0.0010)	0.0018	0.0364	(0.3126)	0.0829	0.1224	0.1660
Sales/TA	0.2624	0.2594	0.2848	0.3114	0.3822	0.4306	0.6670	1.1566	0.7745	0.7237	0.6806
Z-Score	(0.7552)	(0.7825)	(0.7213)	(0.6859)	(0.5860)	(0.5484)	(0.1781)	(0.8791)	0.3555	0.5598	0.7538
2. Establishing the relationship between market anomalies and financial distress of listed firms in NSE, Kenya.											
a) Fundamental Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Dividend Per Share	0.00427	0.00427	0.00427	0.00427	0.00427	0.00427	0.00427	0.00427	0.00427	0.00427	0.00427
Earnings Per Share							0.99	1.99	2.24	0.29	0.44
Price Per Share	4.50	3.00	3.00	3.00	3.00	3.00	98.00	110.00	100.00	95.00	97.00
D/P	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
E/P	-	-	-	-	-	-	0.01	0.02	0.02	0.00	0.00
b) Technical Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Low	3.00	3.00	3.00	3.00	3.00	3.00	3.00	4.40	98.00	95.00	94.00
High	4.50	3.00	14.00	90.00	90.00	90.00	90.00	19.20	125.00	97.00	97.00
b) Seasonal Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
August	0									1	
November											
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**
b) Size Effect Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Total Sales	23,957,903	21,452,271	22,412,415	23,194,113	26,894,182	29,684,494	47,090,526	58,062,204	60,974,312	64,586,481	73,691,426
Total Assets	91,310,116	82,706,986	78,703,987	74,491,123	70,372,491	68,936,272	70,597,300	50,202,177	78,731,223	89,241,627	108,278,261
Par Value	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Share Capital	57,228,746	57,228,746	57,228,746	57,228,746	57,228,746	57,228,746	57,228,746	57,228,746	57,228,746	57,228,746	57,228,746
Oustanding Shares	11,445,749	11,445,749	11,445,749	11,445,749	11,445,749	11,445,749	11,445,749	11,445,749	11,445,749	11,445,749	11,445,749
Market Cap	51,506	34,337	34,337	34,337	34,337	34,337	1,121,683	1,259,032	1,144,575	1,087,346	1,110,238
Profitability	950,917		(2,875,684)	561,798	712,266	244,957	2,415,340	(25,261,547)	28,915,648	3,763,108	5,734,649

MUMIAS SUGAR CO. LTD											
1. Financial Distress ('000)											
Year	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Current Assets	3,676,096	4,574,100	5,099,837	6,495,834	6,511,659	7,171,360	7,048,364	4,353,304	2,568,095	1,956,462	1,860,291
Current Liabilities	1,613,376	3,398,096	3,760,339	3,250,021	2,961,691	5,720,655	8,408,773	10,633,149	13,670,007	10,826,037	17,021,245
Working Capital	2,062,720	1,176,004	1,339,498	3,245,813	3,549,968	1,450,705	(1,360,409)	(6,279,845)	(11,101,912)	(8,869,575)	(15,160,954)
Total Assets	11,916,869	14,152,576	17,475,715	18,334,110	23,176,516	27,400,113	27,148,393	23,563,086	20,572,517	26,801,136	24,091,095
Total Liabilities	3,579,209	5,111,079	7,436,246	7,334,258	8,700,509	11,676,427	13,859,423	12,921,281	14,500,936	19,241,172	23,334,515
Retained Earnings	5,251,866	4,154,154	5,292,218	6,404,006	7,863,551	9,312,806	7,055,538	4,510,363	1,056,001	(2,345,349)	(8,768,408)
EBIT	1,909,894	1,589,204	1,193,161	2,179,874	2,646,575	1,764,029	(2,235,999)	(3,405,046)	(6,307,257)	(6,070,519)	(9,531,178)
Market Value of Equity	8,337,660	9,041,497	10,039,469	10,999,852	14,476,007	15,723,686	13,288,970	10,641,805	6,071,581	7,559,964	756,580
Sales	10,381,190	11,970,101	11,791,708	15,617,738	15,795,300	15,542,686	11,957,823	13,075,912	5,351,357	6,285,917	2,091,751
WC/TA	0.1731	0.0831	0.0766	0.1770	0.1532	0.0529	(0.0501)	(0.2665)	(0.5396)	(0.3309)	(0.6293)
RE/TA	0.4407	0.2935	0.3028	0.3493	0.3393	0.3399	0.2599	0.1914	0.0513	(0.0875)	(0.3640)
EBIT/TA	0.1603	0.1123	0.0683	0.1189	0.1142	0.0644	(0.0824)	(0.1445)	(0.3066)	(0.2265)	(0.3956)
MVE/TL	2.3295	1.7690	1.3501	1.4998	1.6638	1.3466	0.9588	0.8236	0.4187	0.3929	0.0324
Sales/TA	0.8711	0.8458	0.6747	0.8518	0.6815	0.5672	0.4405	0.5549	0.2601	0.2345	0.0868
Z-Score	3.6215	2.7876	2.2254	2.8447	2.7148	2.1265	1.0472	0.5198	(1.0764)	(0.7971)	(2.4641)
2. Establishing the relationship between market anomalies and financial distress of listed firms in NSE, Kenya.											
a) Fundamental Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Dividend Per Share	1.50	0.40	0.40	0.40	0.50	0.50	-	-	-	-	-
Earnings Per Share	2.73	0.79	1.05	1.03	1.26	1.32	(1.09)	(1.77)	(3.04)	(3.11)	(4.43)
Price Per Share	28.58	12.70	6.00	12.85	7.15	6.10	4.20	2.85	2.35	1.25	1.10
D/P	0.05	0.03	0.07	0.03	0.07	0.08	-	-	-	-	-
E/P	0.10	0.06	0.18	0.08	0.18	0.22	(0.26)	(0.62)	(1.29)	(2.49)	(4.03)
b) Technical Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Moving Averages											
Trade Range											
Low	12.00	5.05	3.20	6.55	4.10	4.00	2.50	1.05	1.35	1.00	0.70
High	55.00	15.95	7.40	15.50	10.70	10.40	5.40	4.20	3.85	1.85	1.40
b) Seasonal Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
January					4				4		
February									8		
March									1		
Total	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**13**	**0**	**0**
b) Size Effect Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Total Sales ('000)	10,381,190	11,970,101	11,791,708	15,617,738	15,795,300	15,542,686	11,957,823	13,075,912	5,351,357	6,285,917	2,091,751
Total Assets ('000)	11,916,869	14,152,576	17,475,715	18,334,110	23,176,516	27,400,113	27,148,393	23,563,086	20,572,517	26,801,136	24,091,095
Par Value	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Share Capital ('000)	3,060,000	3,060,000	3,060,000	3,060,000	3,060,000	3,060,000	3,060,000	3,060,000	3,060,000	3,060,000	3,060,000
Oustanding Shares ('000)	612,000	612,000	612,000	612,000	612,000	612,000	612,000	612,000	612,000	612,000	612,000
Market Cap ('000)	17,490,960	7,772,400	3,672,000	7,864,200	4,375,800	3,733,200	2,570,400	1,744,200	1,438,200	765,000	673,200
Profitability ('000)	1,393,611	1,213,837	1,609,972	1,572,383	1,933,225	2,012,679	(1,669,716)	(2,706,593)	(4,644,801)	(4,756,591)	(6,773,934)

UNGA GROUP LTD											
1. Financial Distress ('000)											
Year	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Current Assets	2,110,260	2,938,282	3,828,929	3,415,909	4,082,689	4,640,963	5,820,205	4,934,209	5,425,719	5,819,762	6,599,371
Current Liabilities	1,347,809	1,538,044	2,085,012	1,344,363	1,618,796	3,166,864	4,025,952	2,531,888	2,302,165	2,172,393	3,166,864
Working Capital	762,451	1,400,238	1,743,917	2,071,546	2,463,893	1,474,099	1,794,253	2,402,321	3,123,554	3,647,369	3,432,507
Total Assets	3,717,369	4,761,528	5,565,541	5,064,420	5,708,897	6,399,829	8,108,379	8,026,578	8,621,788	9,199,783	10,267,471
Total Liabilities	1,398,380	1,797,482	2,419,154	1,699,717	1,963,946	2,421,041	3,817,078	3,159,774	3,316,509	3,503,054	4,788,516
Retained Earnings	635,185	892,849	965,179	1,125,853	1,384,192	1,558,405	1,723,590	1,840,932	2,209,594	2,480,889	2,603,644
EBIT	156,665	564,016	260,439	335,101	631,070	512,569	389,458	567,735	635,695	738,084	192,282
Market Value of Equity	2,318,989	2,964,046	3,146,387	3,364,703	3,744,951	3,989,218	4,503,915	4,687,243	5,318,620	5,696,729	5,478,955
Sales	7,675,347	9,450,024	11,643,639	11,524,454	13,214,442	15,976,763	15,142,017	17,002,302	18,723,250	18,947,944	19,528,785
WC/TA	0.2051	0.2941	0.3133	0.4090	0.4316	0.2303	0.2213	0.2993	0.3623	0.3965	0.3343
RE/TA	0.1709	0.1875	0.1734	0.2223	0.2425	0.2435	0.2126	0.2294	0.2563	0.2697	0.2536
EBIT/TA	0.0421	0.1185	0.0468	0.0662	0.1105	0.0801	0.0480	0.0707	0.0737	0.0802	0.0187
MVE/TL	1.6583	1.6490	1.3006	1.9796	1.9069	1.6477	1.1799	1.4834	1.6037	1.6262	1.1442
Sales/TA	2.0647	1.9847	2.0921	2.2756	2.3147	2.4964	1.8675	2.1183	2.1716	2.0596	1.9020
Z-Score	3.6821	3.9784	3.6436	4.4815	4.6786	4.3642	3.2952	3.9198	4.1685	4.1513	3.4046
2. Establishing the relationship between market anomalies and financial distress of listed firms in NSE, Kenya.											
a) Fundamental Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Dividend Per Share	-	-	-	0.50	0.75	0.75	0.75	0.75	1.00	1.00	1.00
Earnings Per Share	1.31	3.67	1.55	1.81	3.57	2.81	2.59	3.65	5.27	4.32	0.28
Price Per Share	14.73	13.75	10.00	12.25	10.00	12.60	39.75	46.75	39.75	46.75	30.25
D/P	-	-	-	0.04	0.08	0.06	0.02	0.02	0.03	0.02	0.03
E/P	0.09	0.27	0.16	0.15	0.36	0.22	0.07	0.08	0.13	0.09	0.01
b) Technical Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Low	11.70	9.20	6.35	8.00	8.05	8.15	12.00	17.35	33.00	30.00	27.00
High	20.50	15.10	13.60	15.00	12.25	15.70	19.50	56.50	51.50	38.75	35.00
b) Seasonal Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
January	22		2				1				
February	9										
June											
September		3									
October	2										
November	3						6				
Total	**36**	**3**	**2**	**0**	**0**	**0**	**7**	**0**	**0**	**0**	**0**
b) Size Effect Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Total Sales ('000)	7,675,347	9,450,024	11,643,639	11,524,454	13,214,442	15,976,763	15,142,017	17,002,302	18,723,250	18,947,944	19,528,785
Total Assets ('000)	3,717,369	4,761,528	5,565,541	5,064,420	5,708,897	6,399,829	8,108,379	8,026,578	8,621,788	9,199,783	10,267,471
Par Value	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Share Capital ('000)	315,454	388,602	451,683	451,683	451,683	451,683	378,535	378,535	378,535	378,535	378,535
Oustanding Shares ('000)	63,091	77,720	90,337	90,337	90,337	90,337	75,707	75,707	75,707	75,707	75,707
Market Cap ('000)	929,327	1,068,656	903,366	1,106,623	903,366	1,138,241	3,009,353	3,539,302	3,009,353	3,539,302	2,290,137
Profitability ('000)	133,610	373,661	185,173	236,173	441,043	348,195	338,196	474,494	621,866	93,070	70,818

SARARICOM LTD											
1. Financial Distress ('000)											
Year	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Current Assets	10,149,744	12,887,438	17,502,526	22,570,645	21,701,296	21,194,195	25,356,024	28,321,468	32,590,553	27,659,390	25,159,823
Current Liabilities	13,183,932	25,243,720	35,760,664	33,819,970	34,117,726	37,615,900	36,591,029	38,262,587	52,190,333	42,443,538	54,197,753
Working Capital	(3,034,188)	(12,356,282)	(18,258,138)	(11,249,325)	(12,416,430)	(16,421,705)	(11,235,005)	(9,941,119)	(19,599,780)	(14,784,148)	(29,037,930)
Total Assets	56,408,239	74,366,313	91,682,324	104,120,850	113,854,762	121,899,677	128,856,157	134,600,946	156,957,626	159,182,579	161,686,996
Total Liabilities	10,435,000	31,723,720	40,535,244	41,825,732	46,400,671	49,817,979	48,591,029	43,364,967	52,681,095	42,443,538	54,197,753
Retained Earnings	24,939,307	36,792,593	43,403,350	50,691,160	56,002,747	59,940,584	64,015,123	68,201,917	74,431,346	82,052,298	64,422,467
EBIT	17,192,739	19,945,160	15,304,027	20,966,670	18,361,363	17,369,400	24,450,565	34,984,430	46,149,545	55,762,505	70,632,073
Market Value of Equity	32,789,307	42,642,593	51,147,080	62,295,118	67,454,091	72,081,698	80,265,128	91,235,979	104,276,531	116,739,041	107,489,243
Sales	47,447,490	61,369,408	70,479,587	83,960,677	94,832,227	106,995,529	124,287,856	144,672,477	163,364,121	195,685,224	212,885,194
WC/TA	(0.05)	(0.17)	(0.20)	(0.11)	(0.11)	(0.13)	(0.09)	(0.07)	(0.12)	(0.0929)	(0.1796)
RE/TA	0.4421	0.4947	0.4734	0.4868	0.4919	0.4917	0.4968	0.5067	0.4742	0.5155	0.3984
EBIT/TA	0.3048	0.2682	0.1669	0.2014	0.1613	0.1425	0.1898	0.2599	0.2940	0.3503	0.4368
MVE/TL	3.1422	1.3442	1.2618	1.4894	1.4537	1.4469	1.6519	2.1039	1.9794	2.7505	1.9833
Sales/TA	0.8411	0.8252	0.7687	0.8064	0.8329	0.8777	0.9645	1.0748	1.0408	1.2293	1.3167
Z-Score	4.2859	3.0092	2.4997	2.9157	2.7943	2.7420	3.1718	3.8146	3.7117	4.6446	4.2892
2. Establishing the relationship between market anomalies and financial distress of listed firms in NSE, Kenya.											
a) Fundamental Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Dividend Per Share	0.10	0.05	0.10	0.20	0.20	0.22	0.31	0.47	0.64	1.44	0.97
Earnings Per Share	0.30	0.35	0.27	0.38	0.33	0.32	0.44	0.57	0.80	0.95	1.21
Price Per Share	3.30	3.60	3.00	5.55	3.80	3.20	6.00	12.30	16.30	16.90	18.00
D/P	0.03	0.01	0.03	0.04	0.05	0.07	0.05	0.04	0.04	0.09	0.05
E/P	0.09	0.10	0.09	0.07	0.09	0.10	0.07	0.05	0.05	0.06	0.07
b) Technical Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Low		3.00	2.50	4.00	2.70	2.70	5.00	9.75	12.15	15.00	15.90
High		8.50	5.20	6.55	4.85	5.30	11.20	15.15	17.90	21.75	28.50
b) Seasonal Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
January								2			
November			1								
December								6			
Total	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**8**	**0**	**0**	**0**
b) Size Effect Anomalies											
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Total Sales ('000)	47,447,490	61,369,408	70,479,587	83,960,677	94,832,227	106,995,529	124,287,856	144,672,477	163,364,121	195,685,224	212,885,194
Total Assets ('000)	56,408,239	74,366,313	91,682,324	104,120,850	113,854,762	121,899,677	128,856,157	134,600,946	156,957,626	159,182,579	161,686,996
Par Value	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Share Capital ('000)	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,003,271	2,003,271	2,003,271	2,003,271
Oustanding Shares ('000)	40,000,000	40,000,000	40,000,000	40,000,000	40,000,000	40,000,000	40,000,000	40,065,420	40,065,420	40,065,420	40,065,420
Market Cap ('000)	132,000,000	144,000,000	120,000,000	222,000,000	152,000,000	128,000,000	240,000,000	492,804,666	653,066,346	677,105,598	721,177,560
Profitability ('000)	12,010,431	13,853,286	10,536,760	15,148,038	13,158,973	12,627,607	17,539,810	23,017,540	31,871,303	38,104,290	48,444,418