African Journal Of Business And Management
Volume 6, Issue 1, November 2020 http://aibumaorg.uonbi.ac.ke/content/journal
Pgs 16-41

University of Nairobi
School of Business

AFRICAN JOURNAL OF BUSINESS AND MANAGEMENT

(AJBUMA)

ISSN 2079-410X

TECHNICAL ANOMALIES AND FIRMS' FINANCIAL DISTRESS; EVIDENCE FROM NAIROBI SECURITIES EXCHANGE, KENYA

Roche Charles[1], Nasieku Tabitha[2] and Olweny Tobias[3]

[1] Department of Economics, Accounting and Finance, School of Business, Jomo Kenyatta University of Agriculture and Technology, Kenya. *charlesjumaroche@gmail.com*

[2]Chair, Department of Economics, Accounting and Finance, School of Business, Jomo Kenyatta University of Agriculture and Technology, Kenya.

[3]Post Graduate Coordinator, Department of Economics, Accounting and Finance, School of Business, Jomo Kenyatta University of Agriculture and Technology, Kenya.

Abstract

The stock market, broadly referred to as securities exchange consists of directional prices trends which can be either upwards or downwards. In this study, Nairobi Securities Exchange, being an emerging stock market, favoured stock price volatility anomaly as a type of technical anomaly. It considered the utilization of trade range technique through the application of high and low prices as the measurements of the stock price volatility anomaly. This anomaly contributed to firms experiencing financial distress. Financial distress takes a big chunk of the share of challenges which listed firms are exposed to in their day to day operations. The preferred measurement of financial distress is Z-Score model. This study takes flight from the previous studies and assesses listed firms which are trading, under suspension or delisted from the stock markets while relating technical anomalies to financial distress which created a scholarly gap. The study embraced descriptive research design. Also it adopted secondary data which was collected between 2007 and 2017 from a target population of 67 listed firms which had been duly licensed by the Capital Market Authority. It was determined that there was indeed a relationship between the technical anomalies and firms' financial distress in the Nairobi Securities Exchange which is the study's main objective. The recommendations will assist the management in the implementation of business strategies while at the same time foreseeing early signs of financial distress. They should also be keen on advising the investors on long term investment strategy against short term one. For policy makers and regulators, they must have in place proper measures and controls in cushioning investors against the bear market while encouraging the existence and sustenance of the bullish market so as appeal to the investors and all other stakeholders that this is the stock market of choice.

Keywords: *Securities Exchange, Financial distress, Technical anomalies.*

1.0 Introduction

Trading in stocks of listed firms takes place in a stock market. Stocks are one type of security which are tradeable financial assets. Securities are grouped into equity (stocks), debts (bonds) and derivatives securities. Securities are tradeable financial assets which can be traded on an exchange or over the counter. This thereby gives the stock market an extremely important role in the development of an economy, (Olweny & Kimani, 2011).

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 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 include directional prices trends and historical price patterns, (Han, Yang & Zhou, 2013). The directional price trend can be either upwards or downwards which informs the focus of this study. This choice was favoured as the Kenyan stock market, Nairobi Securities Exchange is considered to be a developing or an emerging stock market.

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 & Zervous, 1998).

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 as there is the presence of downward trend of the stock prices. According to Marcus, Yves-Michel and Ching-Hwa, (2015), falling of stock prices is commonly known as the bear market 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 in stocks as

the returns may not seem to be attractive, (Olweny & Kimani, 2011).

The bear market has directional price trends which show a down ward 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).

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). Market anomalies are considered to be cross-sectional and time series designs in assets or stocks yields which are unpredictable by a principal view as much as there are different types of market anomalies such as fundamental, technical, seasonal and size effect anomalies, this study focuses on the technical anomalies. Technical anomalies is 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).

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 winners 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).

There are various types of technical anomalies which include short-term momentum, long-run return reversals and stock price volatility, (Chinga, Munira & Bahrona, 2014). Due to the nature of the Kenyan stock market, an emerging stock market, stock price volatility anomaly will form the main focus of this study as far as the types of technical anomalies are 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 come 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.

The trading range is the main technique in the stock price volatility clustering. It 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 rises above last peak and sell the stocks when the prices fall beneath last trough, (Hons & Tonks, 2003).

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. 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 a grievous liquidity difficulties which are incapable of being settled without reduction of the firm's performance or form, (Foster, 2005). However for this study, financial distress is whereby firms are exhibiting unhealthy financial status and is operationalized through the adoption of the Z-Score Model.

As the stock markets in the world have gained so much interests, Kenya being no exception to this, its stock market, the Nairobi Securities Exchange has equally 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 Nairobi Securities Exchange 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).

1.1 Statement of the Problem

Financial distress takes a big chunk of the share of challenges which firms listed in NSE are exposed to in their day to day operations. Financially distressed firms' market value

substantially decline and so their stock prices equally reduce (Warner, 1977). In Kenya, about 53% of the firms listed in NSE are financially distressed, (Maina & Sakwa, 2012). It is also evident that in the local front, 21 listed firms had undertaken financial restructure, put under receivership or delisted from NSE due to financial distress since independence (CMA, 2014). This study attempts to ascertain if the technical anomalies comprising of low and high prices have a significant relationship with financial distress, (Chinga *et al.*, 2014). These are temporary occurrences and could be having the ramifications on the status of firms in form of financial distress, (Altman, 2000).

1.2 Objectives of the Research

The main objective of this study is to determine the relationship between technical anomalies and firms' financial distress; evidence from Nairobi Securities Exchange, Kenya.

The specific objectives of this study are:

i. To explore the relationship between stock price volatility anomaly, low prices and firms' financial distress; evidence from Nairobi Securities Exchange, Kenya.

ii. To examine the relationship between stock price volatility anomaly, high prices and firms' financial distress; evidence from Nairobi Securities Exchange, Kenya.

1.3 Research Hypotheses Testing

The research will test the following null hypotheses:

H_{01}: Stock price volatility anomaly, low prices have no significant relationship with the firms' financial distress; evidence from Nairobi Securities Exchange, Kenya.

H_{02}: Stock price volatility anomaly, high prices have no significant relationship with the firms' financial distress; evidence from Nairobi Securities Exchange, Kenya.

2.0 Literature Review

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, Alx & Allan, 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.

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 random walk theory 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 not 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).

The opponents of the results' accuracy obtained using technical analysis bring as an explanation the random walk theory and the theory of confirmed projection. The random walk theory was first discussed in the research filed by Jules Regnault, a French broker in 1863. Later has been approached by Cootner Paul, Burton Malkiel and Francis Eugene Fama, (Cootner, 1964; Malkiel, 1973 and Fama, 1965). Random walk theory states that the future prices of listed financial securities cannot be determined or predicted, because they have a random evolution to their intrinsic value.

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 like 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 Efficient Market Hypothesis (EMH) which was carried out by the validation of the weak-form EMH which depends on Random Walk Hypothesis (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) is that some economists argue that anomalies do not persist over long-period horizon, thereby are not reliably exploitable for above-normal returns in the long-run, Fama and French (1998); Timmermann and Granger (2004). The argument reflects strong believe in the validity of EMH which implies that stock series are characterized by a random walk process. Nonetheless, it is unavoidable to take into account the presence of technical anomalies when validate the weak-form EMH. When a stock series shows predictable pattern which can be reliably exploited for earning above-normal returns, the weak-form EMH can be rejected. In that sense, it is important to assess the practical reliability of the forecast power of technical analysis. An anomaly may disappear once it is known to public. Arbitrageurs may bring stocks back to their intrinsic values. In that case, the value of technical analysis is neglected.

Han, Yang and Zhou (2013) study focused on portfolios sorted by volatility because stock volatility is a simple proxy of information uncertainty. The more uncertain the future information about a stock is, the more volatile the stock price is. The data are constructed based on the New York Securities Exchange (NYSE)/American Stock Exchange (AMEX) stocks sorted into 10 groups (deciles) by their annual standard deviations estimated using the daily returns within the previous year. The sample period for the volatility decile portfolios, is from July 1, 1963, to Dec. 31, 2009, to coincide with the Fama-French (1993) factors. The research design applied are the Capital Asset Pricing Model (CAPM) and the Fama and French 3-factor models. The findings are that a standard moving average (MA) of technical analysis, when applied to portfolios sorted by volatility, can generate investment timing portfolios that greatly outperform the buy-and-hold strategy. In addition, the differences in the two returns have negative or little risk exposures to the market factor and the Fama-French (1993) Small Minus Big (SMB) and High Minus Low (HML) factors.

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, of which momentum, high-frequency and algorithm trading are social issues. According to Han *et al*., (2013), there exists a positive relationship betwixt technical analysis and financial distress in the stock market. Bodie *et al*. (2011), 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.

Technical anomaly is important in our stock market, Nairobi Securities Exchange (NSE), in the sense that if it occurs then it will definitely stir a crisis, financial distress. It 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. It is operationalized either through low or high prices, (Brock *et al*., 1992).

Technical analysis has demonstrated that it has as many advantages as disadvantages. The first documented advantages is that technical analysis may be applied to a vast spectrum of financial instruments listed on all stock markets, thus 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 as 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).

2.1 Theories

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. There are different theories which are used in this study such as efficient market hypothesis, expected utility theory and Z-Score theory, (Fama, 1965; Bernoulli, 1738 and Altman, 1968).

2.1.1 Efficient Market Hypothesis (EMH)

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.

Efficient Market Hypothesis was 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 relied 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 and 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 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 anticipations, in which the supply-induced noise make 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 and 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, then there is a reaction or over-reaction which might bring in extreme price movement. This scenario is well observed in the case of one of the listed firms in NSE. CFC Bank stocks in January 2008, failed to trade for a whole week. This was after the shares price shot from Kes 110 to a high of Kes 900 which implied 718% increase, (Maraga Nyamosi & Onsando 2015).

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). 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. 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 is not assumed to be part and parcel of the stock price.

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 (RWH), (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. This was achieved by him during his doctor of philosophy thesis. Later on this subject of RWH was approached by Cootner, Malkiel and last but not least by Fama, (Cootner, 1964; Malkiel, 1973 and 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 his findings were that after a close observation of price series at reasonably adjacent intervals, the random alterations from one term to the next one are 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 are 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 a 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 and 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 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.

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.

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).

2.1.2 Expected Utility Theory (EUT)

This theory generally means choosing rationally when one is not sure which outcome will result from ones 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 results, in which the utility of a result shows the scope to which that result is considered other choices. The usefulness of every result is weighted depending on the chances that the action will give that result.

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 you act. 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 the assumptions are weakened, the

domain of acts remain unquestionably substantial.

2.1.3 Z-Score Model

Beaver (1967), showed 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 and this was Beaver's main concern. The Z-Score model gave an answer to Beaver's concern. It came into being in 1968 through the works of Edward I. Altman and was regarded as quantitative balance sheet technique of dictating a firm's financial health. Altman uses a multiple discriminant analysis (MDA) technique to solve the ambiguity problem linked to Beaver's univariate analysis and to assess a more complete financial profile of firms, (Wang, Wang & Wang, 2017).

According to Altman (1968), 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 bankruptcy in the years between 1946 and 1965, (Altman, 1968). Altman examined 22 conceivably helpful financial ratios out of which he picked five that when combined provided the best overall forecasting corporate bankruptcy.

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

$$Z - Score = 1.2X_1 + 1.4X_2 + 3.3X_3 + 0.6X_4 + 0.999X_5$$

…….....…… 2.2

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 ratio as this was to minimize the risk in the potential industry. The model is specifications are as follows;

$$Z - Score = 6.56X_1 + 3.26X_2 + 6.72X_3 + 1.05X_4$$

……..……. 2.3

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 difficulty in 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 probability 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 (1999), it was noted to be 80% to 90% reliable in prediction of bankruptcy before its occurrence, Altman (2000). 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.

2.2 Conceptual Framework

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.*

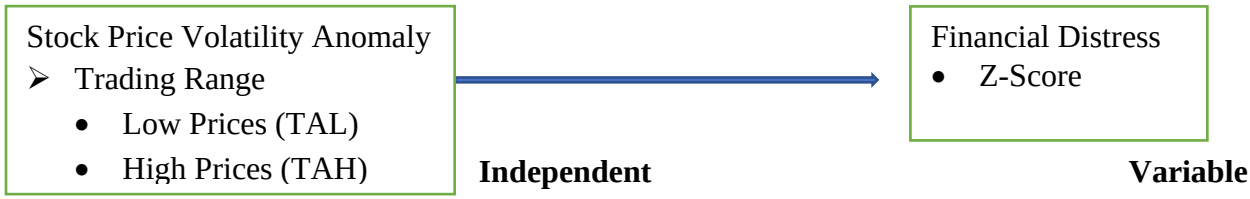

Figure 2.2: Conceptual Framework

3.0 Research Methodology

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. In this study it covers research design, population of the study, scope of the study and sources of data.

3.1 Research Design

Cooper and Schindler (2014), research design empowers a researcher to share scarce resources by making sure that an appropriate methodology is applied. This study adopts the descriptive research design. 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.

3.2 Population of the Study

It is the entire group of people, happenings or things of concern that the researcher is investigating, (Sekaran & Bougie, 2011). Parahoo (2014), states that population is the total units from which data is to be collected. 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. Census is more advantageous as it solves the problem of accuracy which is associated with sampling, (Saunders, Lewis & Thornhill, 2012). Therefore all the firms, 67 in total which were listed in NSE by 1st January, 2017 were considered.

3.3 Scope of Study

The study covers a period of 11 years from 1st January 2007 to 31st December 2017.

3.4 Sources of 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. Data for this study were collected from the NSE and annual financial statements and reports. The study used panel data technique for an eleven-year period (2007 to 2017) to establish the relationship between market anomalies and financial distress; evidence from Nairobi Securities Exchange, Kenya. Annual data encompassing the entire period of study were considered as this was to ensure that there was enough degrees of freedom estimations in the models. The secondary data was acquired from published annual financial reports of all firms in the Nairobi Securities Exchange. Also admissible literature in magazines, websites and other relevant secondary sources formed part of the secondary data.

4.0 Results

The results were presented with various statistical tools for different constructs and variables in the study. This section begins with the descriptive statistics, correlation analysis, unit root tests and panel regression equation. The interpretation of the regression coefficients were modeled by the utilization of the E-views software output.

4.1 Descriptive Statistics

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. In this study, the data was converted to their natural logs to deal with the problem of large numbers and eliminate heteroscedasticity. This study seeks to determine the spread of data which consisted the calculations of mean, median, standard deviations, maximum and minimum values of the variables over time. It further involved the normality tests which are in the form of skewness, kurtosis and Jarque-Bera, (Jarque & Bera, 1987).

	LN_Z	LN_TAL	LN_TAH
Mean	0.919192	3.190268	4.151054
Median	0.917689	3.151653	4.123086
Maximum	1.942604	6.052089	6.802395
Minimum	-0.580257	-2.995732	1.536867
Std. Dev.	0.574154	1.636430	1.215468
Skewness	-0.030158	-1.225874	-0.000890
Kurtosis	2.264766	6.119170	1.961656
Jarque-Bera	2.947791	85.25993	5.840042
Probability	0.229032	0.000000	0.053933
Sum	119.4950	414.7348	539.6371
Sum Sq. Dev.	42.52527	345.4494	190.5798
Observations	130	130	130

Table 4.1 Descriptive statistics

Notations:

LN_ - Natural log of

LN_Z - Natural log of z-score

LN_TAL - Natural Log of Low Prices

LN_TAH - Natural Log of High Prices

Low Prices (TAL)

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 is a kleptokurtic curve which meant that the data are not normally distributed. Jarque-Bera value of 85.25993 was not close to zero, thus this is not a normally distributed curve. When considering the normality tests in this study, the data in TAL proved to be not normal.

High Prices (TAH)

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 this curve is mesokurtic as the value is less than three. Jarque-Bera value of 5.8400, meant that the data is not normally distributed as this value was not close to zero. In 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.

Financial Distress

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 mesokurtic 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. Thus the data is not normally distributed.

4.2 Correlation Analysis

	LN_Z	LN_TAL	LN_TAH
LN_Z	1.000000		
LN_TAL	0.090441	1.000000	
LN_TAH	-0.061668	0.655144	1.000000

Table 4.2 Correlation Analysis

Correlation analysis is a means of checking the variables which are highly correlated with the sole aim of reducing the problem of multicollinearity which is very common in time series data. In this, technical anomalies low prices had a correlation coefficient value of 0.0904 which meant 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 increased by 0.0904 per year then financial distress increased by one percent in the subsequent year. 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 is decreased by -0.0617 per year then the financial distress is decreased by one percent in the subsequent year.

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

In the panel unit root test framework, various tests have been developed. These tests are: Levin, Lin and Chu (LLC) test; Im, Pesaran and Shin (IPS) test; Augmented Dickey-Fuller (ADF) and Plackett and Pearson (PP), (Levin *at el*., 2002 and Im *et al.*, 2003). The main limitation of these tests is the assumption of cross-sectional independence across variables. In this section, the study critically analyses the dependent variable, financial distress and the independent variable technical anomaly independently with their measures in determination whether the variables possess the unit root or not.

4.3.1 Low Prices (TAL)

Table 4.3 indicates the results of the probability values for the tests under consideration. The Levin, Lin and Chu test statistic, Im, Pesaran and Shin test, Augmented Dickey-Fuller and Plackett and

Pearson (PP) were found to be having probability values of 0.0000 which is significant at one percent level of significance. This is 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. Thus TAL was found to be stationary at intercept and level I (0).

Panel unit root test: Summary

Series: LN_TAL

Method	Statistic	Prob.	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu	-8.93484	0.0000	49	473
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin	-4.10378	0.0000	49	473
ADF - Fisher Chi-square	169.319	0.0000	49	473
PP - Fisher Chi-square	180.082	0.0000	49	483

Table 4.3 Panel Root Test for TAL

4.3.2 High Prices (TAH)

According to table 4.4, the Levin, Lin and Chu test statistic for TAH had a probability value of 0.0000 which is significant at one 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 is significant at five percent level of significance. It meant that we fail to accept the null hypothesis that TAH has a unit root. Augmented Dickey Fuller had a value of 0.0144 which is significant at five percent level of significance. Plackett and Pearson (PP) had a value of 0.0000 which is significant at one 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).

Table 4.4 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)				
Levin, Lin & Chu	-7.11633	0.0000	49	468
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-2.15194	0.0157	49	468
ADF - Fisher Chi-square	131.069	0.0144	49	468
PP - Fisher Chi-square	166.628	0.0000	49	483

4.3.3 Financial Distress (FD)

Financial distress was found to be stationary at intercept and level I (0) because the Levin, Lin and Chu test statistic, Im, Pesaran and Shin (IPS) test, Augmented Dickey-Fuller (ADF) - Fisher Chi-square and Plackett and Pearson (PP) - Fisher Chi-square had probability values of 0.0000 which were significant at one percent level of significance. Therefore, we fail to accept the null hypothesis that dependent variable, financial distress has a unit root.

Table 4.5 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)				
Levin, Lin & Chu t*	-23.2433	0.0000	48	446
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-5.75092	0.0000	48	446
ADF - Fisher Chi-square	170.348	0.0000	48	446
PP - Fisher Chi-square	188.212	0.0000	48	454

4.4 Panel Regression Equation

The data was lagged by one period since technical 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).

$$\gamma_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \epsilon_{it} \ldots\ldots\ldots\ldots\ldots 4.1$$

Where X is the independent variables; X_1 is stock volatility, low prices, X_2 is stock volatility , high prices, 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 variables.

4.4.1 Hausman Test

In Hausman test, Chi-square test statistic was considered in determination of the level of significance. It was used to determine the most suitable model to be used in this study which is between fixed effects model and random effects model. In table 4.6 the Chi-square test statistic was 18.4369 with a significant probability value of 0.0052 which was significant at one 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 fixed model becomes applicable. Table 4.6 gave a probability value is 0.0052 which is less than 0.05 and thus the adoption of the fixed effects model, (Hauman, 1978).

This therefore meant that the null hypothesis was not accepted in favor of the fixed effects model. Therefore, we accept the fixed effects model as suitable for this study. This is also supported by the fact that there is large *t* with small *n*, there is likely to be little difference, fixed effects is preferred. This reasoning is furthered by the fact that the population, *n*, is definite as in this study census has been applied, (Green & Tukey, 1960).

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.
DTAL	0.143879	0.077409	0.002277	0.1636
DTAH	-0.130841	-0.154396	0.000700	0.3734

Table 4.6 Correlated Random Effects - Hausman Test

Notations;
D - First Difference of
DTAH - First Difference of High Prices
DTAL - First Difference of Low Prices
DZ - First Difference of Z-Score

The low prices measure (TAL) had a coefficient of 0.1439 and a significant probability value of 0.0347 which is significant at five percent level of significance. This means that when the low prices 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 the measure, low prices had no significant relationship with the financial distress; evidence from Nairobi Securities Exchange, Kenya. We thereby conclude that low prices indeed has a relationship with the financial distress.

4.4.2 Fixed Effects Model

This is analyzed in all the independent variables with their measures.

Dependent Variable: FD

Method: Panel Least Squares

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DTAL	0.143879	0.056626	2.540866	0.0347
DTAH	-0.130841	0.062248	-2.101923	0.0687
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			

Table 4.7: Fixed Effects Model

R-squared had a value of 0.964596 which is 96%. This meant that 96% explains the technical 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 technical anomalies variables affected the financial distress. 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. The probability F-statistic was 0.0023 which is significant at five percent level of significance, means that there is a great stability in the model, thus the model is stable as the value is less than 0.05, (Gujarati & Porter, 2010).

5.0 Findings

All the measures of normality tests indicated that the data for measures of low prices and high prices are not normally distributed. This finding concurs 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 extremes ends, (Adams *et al*., 2018).

Another finding was that low prices measure had a moderate positive significant relationship with the financial distress. Also found was that high prices measure had a weak negative significant relationship with financial distress. In both cases, it can be deduced that there was a relationship with financial distress further meaning that in case of a slight movement in dividend yield anomaly and price to earnings anomaly, there would be a similar change in the financial distress which agree with Chinga, Munira and Bahrona (2014) findings.

In the panel unit root tests, both the measures, low prices and high prices were stationary at a one percent level of significance. This was due to the fact that in both measures, the null hypotheses were failed to be rejected. This meant that there was an evidence of relationship between technical anomalies and financial distress which is in concurrence with the Chinga, Munira and Bahrona (2014) findings.

6.0 Conclusions

Since we have failed to accept that the two measures have no significant relationship with the financial distress; evidence from Nairobi Securities Exchange, Kenya. We therefore conclude that we fail to accept the null hypotheses, $H_{01}$and H_{02}, and agree that indeed we have determined that there exists a relationship between technical anomalies and financial distress, evidence from Nairobi Securities Exchange, Kenya. This conclusion concurs with the conclusions of Chinga *et al*., (2014), which stated that there is a positive relationship between bankruptcy risk and stock returns. The findings of *Avramov et al.*, (2013), also state that financial distress leads to sharp responses in stock and bond prices and this pattern could potentially be related to the dynamics of technical anomalies.

7.0 Recommendations

The study 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 with technical know-how on how to act best when the share prices at troughs and peaks.

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 uncertainty about the future of the economy. People tend to hold back on their spending which slows down the economic growth. The policy makers and regulators should also 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.

As it has been evident that for any slight change in technical anomalies causes a similar change in financial distress, this acts as a wake-up call for the regulators and policy makers, Capital Market Authority (CMA) and Nairobi Security Exchange (NSE). They have to put in place measures that will make sure that the stock prices are not easily manipulated. If this is not checked, then there might be challenges in the stock market in which the confidence of all the stakeholders might be eroded as they will not have access to the right information, (FFJR, 1969).

Public and private pension trusts are likely to be affected by a bear market. Pension fund managers invest significant part of their funds in the stock market. In case there exists a prolonged fall in share prices, then this erodes the value 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 the Retirement Benefits Authority (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 Nairobi Securities Exchange. This also calls for the pension fund managers to do due diligence in determination of the financial health of a firm before investment decisions are made.

References

Adams, John C., Hayunga, Darren K., Mansi, S., Reeb, David M. and Verardi, Vincenzo, (2018). Identifying and Treating Outliers in Finance. *Financial Management.*

Adjasi, K. and Biekepe, B. (2006). Stock Exchange and Economic Growth: The Case of Selected African Countries, University of Stellenbosch Business School, Cape Town, South Africa.

Altman, E., (1968). "Financial Ratios, Discriminant Analysis and the Prediction of Corporate Bankruptcy," *Journal of Finance*, Vol. 23(4), pp 589-609.

Altman, E., Hartzell, J. and Peck, M. (1995). Emerging Markets Corporate Bonds: *A Scoring System*, Salomon Brothers Inc, New York, USA.

Altman, Edward I. (2000). Predicting Financial Distress of Companies: Revisiting the Z-Score and Zeta models, New York University.

Becketti, S., & Sellon, Jr. G. H. (1989). Has Financial Market Volatility Increased? *Economic Review*. Federal Reserve Bank of Kansas City.

Bodie Zvi, Alex Kane and Alan J. Marcus (2014). Investments. New York: McGraw-Hill/ Irwin, 10th Edition.

Brock William, Lakonishok Josef and LeBaron Blake (1992). Simple Technical Trading Rules and Stochastic Properties of Stock Returns. *The Journal of Finance*, Vol. 47(5) pp. 1731-1764.

Chinga Kok Sook, Munira Qaiser and Bahrona Arsiah (2014): Technical Anomalies: A Theoretical Review; Malaysian Journal of Business and Economics Vol. 1(1), pp 103 – 110.

CMA (2014). Capital Markets and Securities Public Offers Listings and Amendment Regulations.

Cootner, P.H. (1964). The Random Character of Stock Prices. MIT Press, Cambridge.

Elena-Dana, Bako and Ioana-Christina, Sechel (2013). Technical and Fundamental Anomalies. Paradoxes of Modern Stock Exchange Markets; Babeș-Bolyai University, Faculty of Economics and Business Administration, Cluj-Napoca, Romania.

Fama, E.K. (1995). Random Walks in Stock Market Prices. *Fianacial Analysts Journal.* Vol. 21, pp. 55-91.

Fama, E.K. and French K.R. (1998). Dividends Yields and Expected Stock Returns. *Journal of Financial Economics*, Vol. 22(1), pp. 3-25.

Foster, G. (2005). *Financial Statement Analysis*, Delhi: Pearson Education, Fourth Edition, pp 535.

Han Yufeng, Yang Ke and Zhou Guofu (2013). A New Anomaly: The Cross-Sectional Profitability of Technical Analysis; *Journal of Financial and Quantitative Analysis*, Vol. 48 (5), pp 1433–1461.

Higgins, Robert C. (2012) "Analysis for Financial Management," 10th Edition. McGraw-Hill Education. Irwin, New York.

Hons, M. T., and Tonks, I. (2003). "Momentum in the UK Stock Market". *Journal of Multinational Financial Management*, Vol. 13(1), pp.43-70.

Karz, G. (2010). Historical Stock Market Anomalies. "Online" http://www.investorhome.com/anomaly.htm (accessed January 2012).

Levine, R. and Zervos S. (1988). Stock Markets, Banks and Economic Growth, *American Economic Review*, Vol. 88, pp. 537-558.

Maina F. G. and Sakwa M. M. (2012): Understanding Financial Distress among Listed Firms in Nairobi Stock Exchange: A Quantitative Approach Using the Z-Score Multi-Discriminant Financial Analysis Model; JKUAT, Nairobi, Kenya.

Malkiel G. Burton, (1973). A Random Walk Down Wall Street. First Edition. New York, Norton

Marcus Schulmerich, Yves-Michel Leporcher and Ching-Hwa Eu (2015). Applied Asset and Risk Management, *Springer Science and Business Media LLC.*

Olweny, T.O. and Kimani, D. (2011). Stock Market Performance and Economic Growth: Empirical Evidence from Kenya Using Causality Test Approach. *Advances in Management & Applied Economics,* Vol. 1 (3), pp 153-196.

Pearson, Karl (1905). "The Problem of the Random Walk", *Nature,* Vol. 72, pp. 342.

Thomsett, M. C. (2006). Using Fundamental and Technical Analysis Together. Getting Started in Fundamental Analysis. New Jersey: John Wiley & Sons, Inc., pp. 6, 187 & 226.

Wang, Y., Wang, W. C., and Wang, J. J. (2017). Credit Risk Management Framework for Rural Commercial Banks in China. *Journal of Financial Risk Management,* Vol. (6), pp. 48-65.

Warner, J.B. (1977). Bankruptcy Costs: Some Evidence. The Journal of Finance, Vol. 32(2), pp 337-347. American Finance Association, Atlantic City, New Jersey.

Westfall, Peter (2014). Kurtosis as Peakedness, 1905 – 2014, RIP. *The American Statistician,* Vol. 68.

Whitaker, R. (1999). The Early Stages of Financial Distress: *Journal of Economics and Finance*, Vol. 23(2), pp. 123-133.