

**RELATIONSHIP BETWEEN FREE CASH FLOWS AND STOCK PRICES OF NON
FINANCIAL FIRMS LISTED AT THE NAIROBI SECURITIES EXCHANGE**

WEBSTER ISRAEL MUNDIA

D61/74218/2014

**A RESEARCH PROJECT PRESENTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE OF MASTER OF BUSINESS
ADMINISTRATION OF THE UNIVERSITY OF NAIROBI**

OCTOBER 2016

DECLARATION

I declare that this research project is my original work and it has not been presented in any other institution or university for academic credit.

Signed.....

Date.....

Webster Israel Mundia

Reg No D61/74218/2014

This research project is submitted for examination with approval as the University Supervisor

Signed.....

Date.....

Supervisor

Mr Karanja James Mwangi

Lecturer, Department of Finance and Accounting

School of Business, University of Nairobi

ACKNOWLEDEMENT

I thank God Almighty for the far he has brought me and it is through his Grace that I was able to complete this research project I acknowledge the support of my family and classmates who stood by me throughout my studies. I am heartily thankful to my Supervisor Mr James Mwangi Karanja whose guidance and support enabled me to develop an understanding of the subject.

DEDICATION

This research project is dedicated to my son Calvin, my wife Belinda and my entire family for their encouragement and support towards the completion of my studies.

TABLE OF CONTENTS

DECLARATION.....	ii
ACKNOWLEDEMENT.....	iii
DEDICATION.....	iv
LIST OF TABLES	viii
LIST OF ABBREVIATIONS	ix
ABSTRACT.....	x
CHAPTER ONE	1
INTRODUCTION.....	1
1.1 Background of the Study	1
1.1.1 Free Cash Flows	2
1.1.2 Stock Prices	3
1.1.3 Effect of free cash flows on stock prices	3
1.1.4 Nairobi Securities Exchange	4
1.2 Research Problem.....	4
1.3 Research Objective.....	6
1.4 Value of the Study.....	6
CHAPTER TWO:.....	7
LITERATURE REVIEW	7
2.1 Introduction	7
2.2 Theoretical review	7
2.2.1 Free Cash Flow Theory	7

2.2.2 Agency Theory	8
2.3 Determinants of Stock prices of listed firms	9
2.3.5 Interest Rates	11
2.3.6 Economic Growth	11
2.3.7 Inflation Rates	12
2.3.8 Exchange Rates	12
2.4 Empirical Review	13
2.5 Summary of Literature review	15
CHAPTER THREE	17
RESEARCH DESIGN AND METHODOLOGY	17
3.1 Introduction	17
3.2 Study Design	17
3.3 Population	17
3.4 Sample design and sample techniques	17
3.5 Data collection Procedures	18
3.6 Data analysis	18
3.7 Research Model	18
3.7.1 Measurement of variables	19
CHAPTER FOUR	21
RESEARCH FINDINGS AND DISCUSSION	21
4.1 Introduction	21
4.2 Descriptive Statistics	21

4.3.1 Characteristics of firms listed in NSE-market wide results.....	22
4.4: Pairwise correlation matrix for variables	23
4.5: Inferential statistics	25
4.5.1 Regression Diagnostics	25
4.5.2 Regression analysis	28
CHAPTER FIVE	32
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS	32
5.1 Introduction	32
5.1 Summary	32
5.2 Conclusions	33
5.3 Recommendations	33
5.3 Areas for further research.....	34
REFERENCES.....	36

LIST OF TABLES

Table 4.1: Interpreting correlation coefficient $\rho(\rho)$	23
Table 4.2 Correlation matrix for variables.....	24
Table 4.3: Studentised residues (r) for outlier detection.....	26
Table 4.4: Diagnostic Tests.....	28
Table 4.5: Model Summary	29
Table 4.6: Analysis of Variance (ANOVA)	29
Table 4.7: Regression Coefficients	31

LIST OF ABBREVIATIONS

ANOVA	-	Analysis of Variance
FCF	-	Free Cash Flows
NSE	-	Nairobi Securities Exchange
SPSS	-	Software Package for Statistical Analysis
NPV	-	Net Present Value

ABSTRACT

The motive of this study was to investigate the relationship between free cash flows and stock prices of non-financial firms listed at the Nairobi Securities Exchange. There exists various arguments concerning free cash flow and whether it is a good value driver when it comes to explaining the volatility of stock prices as compared to different value drivers such as dividends or earnings which are vital factors for investors seeking stocks in various companies however, when a firm is able to generate cash it shall increase the growth of these factors. A firm having strong free cash flows is able to develop new products, increase its dividends, venture into new markets, and pay off its liabilities. Analyzing a firm's free cash flow brings to light proper management of the overall firm operations such as production, inventory control, sales, accounts receivables management and capital expenditures. Screening for firms having attractive levels of stock price to free cash flows provides a vital technique to portray mature stock values. The study focused at determining the relationship between levels of free cash flows and stock price that measure the value of stocks of non-financial financial firms listed at the Nairobi securities exchange. The population of the study focused on all forty two non-financial firms listed at the NSE in the years 2011 to 2015. Data was obtained from annual statements of non-financial listed firms, journal articles, publications and reports published by the institution under study (Nairobi Security Exchange). Multiple linear regression was used to identify the existence of the relationship. The regression model portrayed that Free cash flow has a positive effect on stock prices. This study used eight variables as the measures of ascertaining the relationship between free cash flows and stock prices.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Increasing shareholders wealth over a long term period remains the most pivotal objective that a firm pursues and improving its success will depend on whether a firm will be able to achieve favorable performance. Various methods have been used to measure the performance of firms and free cash flow has emerged as one of the newest methods. Jensen introduced this method in 2006 and according to him, free cash flows is in excess of what is required for projects that portray positive NPVs when they are discounted at the relevant cost of capital. These projects represent long term investment plans that the present value of cash inflows is expected to be higher than the present value of cash outflows (Jensen, 2006).

Positive free cash flows are usually an indicator that a firm will have cash surplus upon payments of its costs and investments. However a firm can have negative free cash flows which may be due to a mismatch of expenditure and income which is not always bad but its negative reasons should be analyzed. Capital markets usually react to the level of cash holdings in joint stock companies. Companies that regularly have excess cash earn lower returns to their shareholders as compared to companies that are randomly and periodically challenged with this issue (Lee and Powel, 2010). This is evident with the assumptions of free cash flows by Jensen (2006) in which he proposed that excess cash flow portrays a negative effect on the efficiency of investment decisions.

Stock price is the cost of purchasing securities on an exchange. The price of a company's shares is often used as a sign of portraying the overall strength and well-being of a company. Note that stock represents a form of security that portrays ownership in a firm and it represents a claim on part of the firm's earnings and assets. There are other criteria for measuring and evaluating the performance of a firm such as income, dividends and earnings per share but incorporating free cash flows is a the best convenient method for evaluating a company's performance. Free cash flow is a sign that a firm is able to pay dividends, repay debt, sell and repurchase shares and

these will accelerate a company's development which is vital for investors. These are among the reasons that lead investors to be aware that increasing free cash flows is one of the measures of improving the value of a firm (Rahimian and Akhoondzadeh, 2010)

1.1.1 Free Cash Flows

Free cash flows are the cash that are ready to be distributed to the shareholders immediately after taking into account all the cash taxes and planned capital expenditures (Christy, 2009). Free cash flows here in referred to as FCF are the operation profits before accounting for depreciation but after taking into account dividend payments and taxes (Lehn and Poulsen, 1989). Another definition by (Dechow and Ge, 2006) states that FCF are the cash flows originating from operational activities plus adding the cash flows from financial investments. FCF represents resources that managers have at their disposal to invest, but which could have been distributed among the shareholders. Free cash flows are vital as they allow a company to go after opportunities that shall lead to the enhancement of the shareholders' value. This is because in the absence of cash, it's a challenge to manufacture new products, minimize debt, pay dividends, and make acquisitions (Jensen 2006).

For Bhundia (2012) and Jensen (2006), allocation of free cash flows represents the greatest agency challenges. According to Jensen (2006), when an organization is able to generate huge volumes of FCF, then there will be a conflict of interest between managers and shareholders in regards to the dividend payout policy. Managers will make a promise that the future cash flows will be used to increase dividends but these promises shall not be adhered to as nothing will be present to prevent reducing dividends in the future.

FCF have a direct impact on the general worth of a firm therefore investors will be on the lookout for firms that have improving or high free cash flows. Strong/huge cash flows gives a company more flexibility whereas weak/low cash flows puts a company on the defensive by discouraging it in engaging in risk taking and aggressive exploitation of market opportunities (Christy, 2009) . High FCF lead to high stock prices. The ratio of stock price to free cash flow per share is a method of measuring the value of a firm. Firms that portray low prices in regards to free cash flow ratios represents firms that have been neglected at attractive prices.

1.1.2 Stock Prices

Stock price is the cost of purchasing securities on an exchange. Stock price which is also known as share price fluctuates on a daily basis depending on the market forces of demand and supply. If shares of a company are in high demand due to the company performing well, then the price per share would increase. If there is a surplus of shares and little demand due to the company performing below par, then the price per share would decrease (Callahan and Iyer 2010).

The stock price of a company in equilibrium is usually its value at that particular moment of its future cash flows. Share prices are always driven by index, a company's financial health, economic trends and world news. The higher the cash flows taking into consideration revenues and collection of account receivables then the higher the stock price. This is because investors put more value in the cash flows and what those flows portray to them. Cash flows represents a vital factor in determination of stock prices because the ability to pay dividends depend on it as much as on the bottom line of the company (Byun and Rozeff 2003).

1.1.3 Effect of free cash flows on stock prices

Generation of cash is the main factor point for potential investors seeking various stocks. Asset values, dividends and earnings may be vital factors but a firm that is able to generate cash will fuel the growth of these factors. Higher free cash flows should be an indicator of rising or increasing stock prices. One method of determining the value of stocks is taking into consideration the ratio of stock price to FCF per share. Having a comparison of a firm's ratio of price to FCF with those of other companies provides an analysis for relative value compared to the traditional price earnings ratio. Firms that have a low price to free cash flows ratio represent firms that have been neglected at attractive prices (Bajkowski, 1996)

A firm's share price which is low and FCF is increasing implies that its earnings and share value/price will increase. However if a firm has insufficient free cash flows, it shall be unable to sustain its growth rate thereby negatively affecting its stock price and this can lead to liquidation of the firm. Measuring a firm's free cash flows portrays the appropriate management of the overall firm's operations which includes various factors such as production, capital expenditures employee costs, inventory control, sales and employee costs. Screening of corporations which

have effective and attractive levels of price to FCF leads to a vital method to shine light upon the more mature stock values.

1.1.4 Nairobi Securities Exchange

The Nairobi Securities Exchange (NSE) began its operations in 1920 and incorporated in 1954 and tasked with developing the securities market and ensuring there is regulation in the trading activities. Securities are the products that are traded at the NSE and they include, shares/equities, and bond/debt investment. The NSE has grown tremendously and the companies that have registered in Kenya over the last five years have doubled thus signaling an improving business environment.

Shares of 67 companies listed at the NSE trade in 12 sectors as a new sector (Real Estate investment trust) was introduced just recently in 2015 and these sectors include; agriculture, automobiles and accessories, banking, commercial and services, construction, energy and petroleum, insurance, investment, investment services manufacturing and allied, telecommunication and technology and real estate investment trust (NSE, 2015).

1.2 Research Problem

In finance literature, some observers have noted that FCF and stock prices do have a relationship. However there exists various differences on whether FCF is an effective value driver when volatility of stock prices is explained when comparing to different value drivers such as dividends or earnings. Studies on the relationship between free cash flows and stock prices have produces diverse results. Liu, Nissim *et al* (2007) found out from their research that when explaining the stock prices by use of the U.S marker data, earnings are better than free cash flows. Walker and Yost (2008) found out that as long as companies are using operating cash flows of financial resources to invest in new projects, then it will encounter favorable response in the capital market thereby increasing the company's stock price and market value hence portraying FCF and stock prices having a positive relationship.

The problem related to FCF took center stage when it was noted that usually managers do not prioritize the benefits of the shareholders but they prefer to hold cash and prioritize their benefits

hence the FCF hypothesis that was proposed by Jensen (2011) which says that managers who are tasked with possession of FCF will most likely invest in negative net present value projects instead of paying it out to shareholders.

Wang (2010), found out that there exists a positive meaningful relationship between FCF, company performance and stock prices of firms listed at the Teheran Stock exchange. Thus these studies portray that FCF and stock price have a relationship that vary across different capital markets.

In contrast to the above, Khraywesh (2001) research explains that in a favorable financial markets, net cash flows of a firm are linked to the short and long term obligations on one side, and ownership rights on the other side. Hence no significant relationship between a firm's stock's market value and net cash flows.

Lang *et al* (2001) found that firms with high FCF and poor quality investment opportunities suffered abnormally low stock returns and low stock prices during periods of successful takeover activity whereas favorable stock returns lead to increased share repurchases hence high stock prices due to diverse profitable investments.

According to Vogt (1997) firm's that have strong availability of FCF will have more profitable expenditures to undertake. However for shareholders who value higher dividends in the future, they will have positive reactions to the capital expenditures as compared to shareholders who prefer FCF to be distributed in form of dividends. Sometimes a firm can have negative FCF but that does not indicate that it is underperforming. Free cash flows does not receive great attention as compared to earnings as it should while determining the strength or health of a company but some financial experts consider FCF as a better indicator of a firm's financial health.

In relation to previous studies, stock price and free cash flow are significantly related, even though there still remains a huge debate on the strength of the relationship. There still remains disagreements on whether FCF and stock prices portray a negative or positive relationship thus this research study shall answer the research question, does the relationship between free cash

flows and stock prices of non-financial firms listed at the Nairobi securities Exchange (NSE) exist in Kenya?

1.3 Research Objective

The objective of this study was to determine the relationship between free cash flow and stock prices of non-financial firms listed at the NSE.

1.4 Value of the Study

Non-financial firms will be able to know whether increase or decrease of free cash flow will lead to either increase or decrease of their stock prices.

This research study will add more knowledge to academicians and researchers who will intend to use the finding of this study as a basis of their research to either fill research gaps or contribute to their learning process.

This study will enable both local and international investors to have more insight on the relationship between FCF and stock prices hence make sound investment decisions on which stocks to purchase so as to achieve profitable returns on their investments.

Financial consultants and analysts will benefit from this study in that they will be able to identify firms which are performing well thus advise their potential clients on firms having high stock prices and returns which are good for investment.

CHAPTER TWO:

LITERATURE REVIEW

2.1 Introduction

This chapter shall review theoretical and empirical literature relevant to the study that are presented by various researchers, scholars and authors. This chapter shall review various theories on free cash flows, stock prices theories and also ascertain the relationship between FCF and stock prices. The literature shall be obtained from journal articles, textbooks and websites.

2.2 Theoretical review

2.2.1 Free Cash Flow Theory

Jensen (2006), defined FCF theory as a situation whereby managers endowed with FCF shall invest it in negative net present value (NPV) projects instead of paying it out to shareholders. This theory is based on various viewpoints that shareholders and managers will have a conflict of interest because of the payout policies in existence (Jensen, 2006). This therefore means that the various payouts to shareholders shall minimize the benefits which the managers' control thus reducing their powers. Thantawee (2011) found that managers' self-centered behavior can include the following; expensive expenditure on luxurious leasing space and involving themselves in unjustifiable mergers and acquisitions. Thus excessive free cash flow can lead to over investment problems because the FCF can be used to fund NPV projects. So as to address this issue of managers retaining earnings and investing in negative NPV projects, Jensen (2006) proposed that companies should return excessive cash to shareholders by paying dividends or repurchasing stocks/shares.

Jensen (2006), proposed an argument that excess FCF would lead to internal inefficiency and wastage of a firm's resources therefore creating agency costs which will be a problem to stockholders wealth. He further proposed that the self-interest motives of managers was a vital factor that lead to agency costs. This took place when stockholders and managers interest were in conflict and consequently stockholders interests were always led by managers. (Brush *et al.*, 1998) stated that the weak corporate governance causes inefficiency when allocating FCF

because the corporate board of directors was directed at the policies that favor managers' interest at the expense of shareholders wealth.

Sales growth are usually advantageous to firms lacking FCF but this benefit is not confined to firms having excess FCF thus supporting the theory (Brush *et al.*, 1998).

The FCF theory suggested by Jensen states that when a firm has abundant internal cash, the managers are able to prevent market controlling, in that they are free to decide on the investments that they will make on behalf of the company and thus they do not need shareholders agreement to do so hence managers will have the motivation to invest even when there are zero investments with positive net present values (Drobetz *et al.*, 2010). Based on this theory, the managers will have the motivation to collect the funds in order for them to improve their under controlled resources and also to have the judgmental powers of a firm's investment decisions. Hence they use funds from the firm in order to prevent giving out their detailed information to the capital market but it is also possible that the same managers will invest in projects that will lead to negative effects on the shareholders wealth (Ferreira *et al.*, 2004).

2.2.2 Agency Theory

(Griffin *et al.*, 2010) defined agency theory as a situation that exists when managers have different goals as compared to those of shareholders and when a firm's control mechanism is strong enough, managers will ensure that they achieve their goals which are not the same as those of the shareholders. From the perspective of an agency theory, Jensen (1986) argued that most managers are likely to misuse free cash flows due to them having different objectives as compared to the objectives of shareholders thus leading to agency problems. The FCF agency problem is most common in firms that have low growth opportunities. When there is absence of effective monitoring by shareholders of the activities of the managers in their usual running of a firm, the managers of the firms having positive FCF but low growth opportunities will more likely invest in marginal or negative net present value (NPV) projects thus maximizing their own personal motives instead of focusing on maximizing the shareholders wealth which is their main objective in a firm. This negative value investment activity leads to lower stock prices and may lead to shareholders to remove senior executives and directors from the firm (Jensen, 1986)

(De Angelo et al., 2004) proposed that in order to prevent the agency problems, dividends should be paid out to shareholders. They believed that when earnings are retained, the managers will be able to have more control of investment opportunities without being monitored by the shareholders.

Jensen (1986) mentioned the various factors that balance the agency problems of free cash flows which are as follows; balancing the role of debt distribution, dividend payment to the shareholders and share redemption.

2.3 Determinants of Stock prices of listed firms

Fluctuations in stock prices is observed on a day to day basis in the stock market. However, during various specific times of the year, stock prices usually appreciate every morning and this may happen to a variety of stocks for longer periods during the day. Thus this indicates the force of supply and demand determine stock prices (Mehur-un-Nisa and Nishat, 2011).

Fama (2010) stated that common stock returns are correlated with different macroeconomic variables of a country, which are inflation, money supply interest rate, and capital expenditure. The vital implication of his findings was that changes in stock prices can be predicted by the changes in the micro economic variables. The determinants of stock prices can be categorized from a different points of view which can be either internal (micro economic) or external (macroeconomic)

2.3.1 Dividend Policy

Dividend policy is a vital financial decision that involves payment of shareholders on their return on investments. The dividend payout ratio which is calculated as dividend as a percentage of earnings is a critical factor of dividend policy. A firm can decide to have a low or high payout ratio. A low payout ratio results in less dividends paid out to shareholders which results in more retained earnings, increased free cash flows, high capital gains but low stock prices as few investors will be willing to invest in firms paying low dividends whereas a high payout ratio will lead to reduced free cash flows, less retained earnings but high stock prices as more investors will be willing to invest in firms paying high dividends due to the attractiveness of the stocks to

potential buyers thus demand for stock will increase leading to increase in stock prices (Miller *et al.*,1961).

2.3.2 Earnings per Share

Earnings per share represents that portion of a firm's profit that is distributable and allocated to each outstanding equity share and is used to measure a firm's profitability per unit of shareholder ownership. Majority of investors make their investment decision based on the earnings per share of a firm thus it's a key factor in determining stock/share prices. Earnings per share is derived by subtracting the preferred dividends from the net income of a firm and dividing by the weighted average of shares that are outstanding. Earnings per share is a vital driver of stock/share prices. A firm that has strong earnings per share will see its stock prices rise significantly as the higher stock prices will lead to a positive impression of the firm's products in the mind of their customers thus leading to great demand, increase in sales and higher earnings. However when a firm has a lower earnings per share it will experience low stock prices that shall result in low sales thus lower earnings (Besley 2006)

2.3.3 Director's influences

Directors of a firm usually have an effect on stock prices. When an influential director decides to step down from the board of directors, it may create an atmosphere of doubts in the minds of the public regarding the financial stability of the firm thus can create a slump in the stock prices of the firm as investors may shun investing in the firm (Goasse 2005) The decisions that directors of a firm execute in various areas of the business shall have an impact on investors and stock prices. Incorporating a new growth strategy perspective, expanding into new markets and introduction of new products will positively affect the stock prices of a firm as investors interpret the implemented strategies of director's positively thereby increasing the stock price of the firm leading to improved profitability of the firm.

2.3.4 Insider Trading

This is a vital factor that affects stock prices of firms. It mostly benefits a small portion of investors who are either firm employees or individuals closely related to the firm's management.

Thus insiders shall buy and accumulate a firm's stock before an important corporate announcement is made and sell their stocks after the announcement is done hence registering huge profits at the expense of other investors as the price of company stock increases. However engaging in insider trading is unethical and unfair because few investors will have unfair advantage over others as they have at their disposal information about the firm which is price sensitive (Madura, 2006)

2.3.5 Interest Rates

Interest rate is explained as a measurement of time value of money that is one of vital determinants of stock prices. Various changes in interest rates can lead to difficulties for investors and affect a firm's profitability thus lead to fluctuations in stock prices. Lynge and Zumwalt (1980) argued that the sensitivity of interest rate varies according to the term of interest rates which are usually long and short term interest rates. Through their findings they concluded that banks have stock returns that have a higher sensitivity as compared to non-financial stock returns. Flannery and James (1984) further argued that the important factor in explaining the sensitivity of stock returns to the unexpected interest rates is the combination of assets and liabilities with respect to maturity.

2.3.6 Economic Growth

Economic growth represents a positive change in the output or production of a country's economy in regards to inflation. It is calculated as a percentage increase in the gross domestic product (GDP) of a given economy and inflation is also considered in its calculations. Positive economic growth is an indication of a wealthier economy whereby there is increased production of goods and services thus leading to increase of stock prices of firms which results in increased profits for the firms thereby translating to reduction in unemployment and increased prosperity of an economy.

Mauro (2003) suggested that various developments in stock prices should be considered when forecasting output. However, it should also take into account that the relationship between stock returns and economic growth has not always been stable over time (Stock and Watson 2010). For example, Cheng (2015) argued that a certain number of systematic economic factors

significantly influenced the U.K stock returns. This result contradicted that of Poon and Taylor (2001) who observed the interrelationship between macroeconomic factors and stock prices in the U.K.

2.3.7 Inflation Rates

Inflation occurs due to a steady increase in the prices of goods and services against the normal standard level of purchasing power and as this occur, the supply of goods and services declines along with the devaluation of money. High levels of inflation rates predicts a financial crisis which leads to companies auctioning their stocks thereby leading to increment in supply of stocks hence reducing the stock prices because the companies will be compelled to sell their stocks at low prices due to the high inflation rates (Chakravarty *et al.*, 2010)

2.3.8 Exchange Rates

Exchange rate refers to the rate at which a nation's currency can be converted into another currency of a different nation. Various factors such as inflation, interest rates stability of a country can influence the exchange rate. Depreciation may increase the cost of imports leading to increase in domestic price levels, which would lead to stock prices having a negative impact (Johnson and Soenen 2008).Exchange rates and stock markets are linked through a common cyclical pattern rather than a common trend (Morley and Pentecost 2000).

2.4 Empirical Review

This section shall discuss previous studies which have been done locally and internationally, which examines the relationship between FCF and stock prices.

The relationship between free cash flows and stock price have been studied extensively since the late 1960's. The study on the relationship between FCF and stock price opened doors for other researchers to investigate this correlation by considering characteristics, significance, stability and strength thus embraced applied research on stock markets which came up as a new field of accounting research.

Rayburn, (1986) examined the relationship between the stocks market return in the American environment for the periods 1962 and 1982 and the operating cash flows thereby concluded that there was an existence of a statistically significant relationship between the two.

Al-Khalaileh, (1988) focused on the relationship between stock returns which are long term in nature and cash flows by including 31 industrial firms listed at the Amman stock exchange which are public shareholding firms taken into consideration for the period between 1985 to 1994. He examined the relationship between the variables by applying correlation analysis methodology and linear regression in testing the hypotheses of the study. The results portrayed that a low statistical insignificance relationship existed between the stock returns and cash flows and that relationship would not have a significant change when prolonging the return period. Therefore it concluded that the results study did not in any way back up its hypotheses.

Livant and Zarowin (1990) examined the content of cash flows information by studying its connection with the high returns on stocks in the United States. The study was able to show that

changing the power of the affected contents would be affected by dividing accounting income into accounting accruals and operational cash flows. It portrayed there existed a positive relationship between stock returns and operational cash flows, while a negative relationship existed between cash flows and financing.

Charitou and Ketz (1991) looked at the correlation between cash flows and stock prices that could enable them to evaluate the financial position of a firm. The study focused on a sample of 403 firms in the United States for the periods between 1976 and 1985. The results portrayed that for each of the cash flows from investing, financing and operating activities, there existed an information content.

Haddad, (2001) examined the relationship between cash flows and high returns on stocks by applying multiple and simple regression analysis. In accordance with IAS 7, Jordan's companies Law requirements and Jordan securities commission's regulations from Amman Stock Exchange the study sample measured cash flows. It sampled 44 industrial and services companies listed on the Amman Stock Exchange between the periods 1993 to 1998. The results portrayed that there existed no relationship or correlation between cash flows from financing, operating, or investing activities and high returns.

Khraywesh, (2001) examined the effect of cash flows on the market values of the stocks of Jordanian banks and public shareholding companies and the relationship between cash flows and stocks of banks and the effect that cash flows had on the financial position of the mentioned firms and their achievements. The study sampled 16 public shareholding financial corporations listed on the Amman Stock Exchange in 2002, that were in existence before 1988 and which had stocks that were traded for a period of four years from 1998 to 2001. The study applied the multiple regression analysis model in measuring the variables and concluded no significant relationship existed between the net cash flows and stock's market value and that net cash flows came into effect due to long and short term obligations on one side, and ownership rights on the other side.

Abulrub, Al Dhaher *et al* (2006) conducted a study on the impact of distribution of dividends based on stock prices and the trading volumes of firms listed on the Palestine Stock exchange for

the period between 1997 and 2004. The study sampled eleven listed companies and studied vital changes in trading prices and volumes one month ahead and two months ahead after announcing dividends. The study came to a conclusion that a relationship that is statistically in nature exists between trading volume and the profit distribution decision, while there was no relationship with the stocks market value.

Al- abini, (2008) examined the impact and behavior of operating cash flows on the financial rates which are common and the ones that are mostly affected by the operating cash flows. For the period between 2000 and 2006 the study sampled 49 industrial firms and used a uniform model when testing all firms. By using the method of simple regression analysis, the study found that there existed a statistically significant relationship between the operating cash flows and returns per share, book value per share and dividends, and found out that there existed a negative relationship between operating cash flows and stock turnover rate.

Njuguna and Moronge (2013) examined the impact of the managerial behavior of agency cost in regards to the performance of firms listed at the NSE. The study used multiple regression analysis on the contents of agency cost namely managerial ownership, debt ratio, information asymmetry, and board composition on the performance of listed firms. The study findings revealed that non-conforming information is another source of agency problems that the firm's good performance depends on the importance of knowledge that a decision maker has. Further findings showed that free cash flow and information asymmetric problems are related to agency problems in a firm and short term debt bank debt are expected to portray vital corporate governance.

Musau, (2007) observed a strong trend in the NSE in the year 2006. He examined that increase in the earnings tend to lead to increase in the demand of shares all together. Thus the price appreciation resulted in stock splits. Various companies in Kenya such as Centum Investment Company, Kenol Kobil usually split their highly priced stock in order to make them affordable to the general public and also to benefit the investors as well as the company itself.

2.5 Summary of Literature review

Free cash flow, among various criteria of performance evaluation enables shareholders and

investors to measure the financial well-being of the firm and the performance of the managers. Free cash flow is a vital aspect in that it allows managers to search for opportunities that can lead to increase of shareholder value. Conducting business activities in a firm, developing new products, paying cash dividends to shareholders are all not possible without having cash thus portraying the importance of maintaining positive free cash flows.

FCF per share portrays that a firm is able to pay debt, dividends, redemption of shares and ability to carry out business development. Majority of investors choose firms to invest in by taking into consideration the earnings of a firm while ignoring other fundamental factors that influence the stock prices of firms such as availability of free cash flows. Investors are usually very sensitive in regards to the negative earnings of a firm even in situations whereby firms increase their earnings. Hence this lead to majority of listed firms to be present their earnings in the best possible way. Therefore few research have been carried out to explain clearly the vital factors that affect stock prices of firms. In Kenya, research studies explaining the relationship between FCF and stock prices have not been carried out clearly and thus this research shall aim to fill this gap by doing this research study on all non-financial firms listed at the Nairobi Securities exchange.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

This chapter portrayed a systematic description of the procedures and methods to be applied by the researcher to in order to meet the research objectives. It breaks down the design of the study, the population, the sample design and techniques and the methods of data collection. The chapter also stated how the researcher intended to analyze data, the instruments that were used and how the reports are to be presented and research findings.

3.2 Study Design

The research design represents the conceptual gateway within which research is conducted and it is made up of the model for collection, measurement and analysis of data (Jwan and Ong'ondo, 2011). This research study used descriptive and inferential design.

3.3 Population

A population represents a set of objectives, cases or individuals that have the same characteristics which are observable. To add also, the target population is defined as that one to which a particular research intends to normalize the results of his or her study (Mugenda and Mugenda 2003). The population of the study covered non-financial firms listed at the NSE. There are a total of forty two non-financial listed companies, therefore our population was forty two listed companies.

3.4 Sample design and sample techniques

A sample is defined as a subset of a population that is in question and it usually made up of a selected members from a particular population (Kothari, 2004). A sample of forty two companies that have been quoted for five years (2011-2015) were considered for the population. In this study the researcher used the stratified quota random technique.

3.5 Data collection Procedures

This study used secondary sources of data. The Secondary data was obtained from audited financial statements and annual reports of the non-financial firms. The secondary sources of data include books, annual statements of non-financial listed firms, journal articles, publications and reports published by the institution under study (Nairobi Security Exchange). The type of data collection procedure employed is convenient and effective as it saved time and money.

3.6 Data analysis

In this study, the data was sorted, cleaned, coded and then entered into statistical package for social science (SPSS) software. The quantitative data was analyzed by use of both descriptive and inferential statistics. The descriptive statistics allowed the researcher to organize, describe, and present the information effectively by using graphics, tables and pie charts. The researcher constructed a regression model to analyze the reliance of stock prices (the dependent variables) on the independent variable outlined below.

3.7 Research Model

This study adopted the multiple linear regression model so as to establish the relationship between FCF and stock prices. Further multiple regressions and correlation analysis was used to explain the nature and significance of relationship between the changes in response variables (stock prices) and change in the prediction variables (determinants) identified in the study. The regression model used is portrayed below:

$$Y=B_0+B_1X_1+B_2X_2+B_3X_3+e_t$$

Where:

Y= Stock price

B₀= Constant

$B_1 B_2 B_3 B_4 B_5 B_6 B_7 B_8$ = regression coefficients

X_1 = Dividend Policy

X_2 = Earnings per Share

X_3 = Director's influences

X_4 = Insider Trading

X_5 = Interest Rates

X_6 = Economic Growth

X_7 = Inflation Rates

X_8 = Exchange Rates

e_t = Error term/ disturbance term

The Hypothesis of the study shall be:

H0: Free cash flow has no relationship with stock price.

H1: Free cash flow has relationship with stock price.

3.7.1 Measurement of variables

From the Equation:

Dependent variable = independent variable whereby a change in Fixed asset is equals to Free Cash Flow. Thus the control variables in this study were depreciation or dividends payout where:

1. Independent variable = FCF (free cash flow)

2. Dependent variable = Stock price

Free Cash Flow was determined as follows:

FCF = Operating income + Depreciation – Interest Expense – Income taxes – Expected Loan – Dividends

Depreciation = Initial cost of Asset – terminal value/ economic useful life of asset

Dividends payout = Earnings per share/dividends per share

So as to test the significance of the model in measuring the relationship between FCF and stock price the study conducted an analysis of variance (ANOVA) and the tests were conducted at 95% degrees of confidence.

CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSION

4.1 Introduction

In seeking to establish the relationship between FCF and stock prices of non-financial firms listed at the Nairobi Securities Exchange. The study collected secondary data using the methodology set out in chapter three. In this chapter the study represents data analysis and results. The presentations commences by summarising the results of the pilot study.

The basis of interpretation for descriptive statistics was drawn from empirical properties of financial data. Tsay (2005) opines that returns or volatilities are usually expressed in percentages irrespective of the intervals. In addition he has observed that mean stock prices increases with increase in data span for instance smaller mean are expected to be reported if daily data items are available as opposed to monthly, quarterly or annual data. On the other hand financial data characteristic will vary depending on whether they are drawn from individual stocks or are market wide. Again Tsay has indicated that comparatively individual stock depict higher standard deviations and yet smaller excess kurtosis. Skewness is however not remarkably different for both sets of data.

4.2 Descriptive Statistics

To understand the effect of stock prices of the respondent non financial firms in the Nairobi Securities Exchange in respect to the variables of the study, descriptive statistics in the forms of means, standard deviations, maximum and minimum values, skewness and kurtosis were generated and represented in the form of tables both for the whole sample (42 firms) and various categories of interest depicting subsectors of company listing for which analysis could become viable. It should be noted that though the NSE has its own categorization, for the purpose of this study such categorization was not tenable because in some sectors, there are very few companies listed, for instance if telecommunications sector was considered alone, it would be equivalent to describing a single firm which may be patronizing for this study.

4.3.1 Characteristics of firms listed in NSE-market wide results

This study sought to determine the effect of free cash flows in relation to stock prices determinant variables used in this study which are dividend policy; earnings per share; directors influence; insider trading; interest rates, economic growth, inflation rates and exchange rates. Table 4.2 below shows the number of responding firms which are 42 in all instances. The range of the data is given through max and min values. Central tendency is measured through mean, while dispersion is indicated by standard deviation. Skewness and kurtosis also accompany the measures. For all variables, these statistics are presented in relative (percentage) terms except for SIZ which is given in absolute terms being the average gross turnover reported.

Table 4.1 Descriptive statistics for NSE listings market wide results

	Dividen d policy	Earning s per share	Director s influenc e	Insider tradin g	Interes t rates	Economi c growth	Inflatio n rates	Exchang e rates
n	42	42	42	42	42	42	42	42
maximum	.4284	.5368	.6916	.8764	.9505	42.32	14.502	26.51
minimum	.0307	0	.4589	.0837	.4758	.0707	4.510	4.510
mean	15.24	.0547	.3407	.5334	.0338	.4244	2.730	2.730
Stddev	3.766	.0881	.2722	.2435	.1476	.1286	.2252	.2255
skewness	.1154	3.749	.6941	.0986	3.669	3.449	3.428	3.423
kurtosis	3.163	5.654	2.586	1.776	4.197	4.439	12.87	12.87

Regarding dividend policy, the study found out that the maximum volatility was 42.84% while the minimum value for non financial companies listed in NSE for the period under consideration was 3.77%. The mean value was calculated at 15.24% with a standard deviation of 10.77%. Skewness is computed as 1.115 while kurtosis is 3.163. In respect to earnings per share, the maximum rate is 53.68% while the minimum is 0. Its mean is 5.4% with a standard deviation of 8.81% accompanied by 3.74 and 18.65 as measures of Skewness and kurtosis respectively. For Directors influence the mean is 34.08% while for insider trading has a mean is 53.34%. Mean interest rate is 3.38% which indicates that most of the non financial listed companies are had a low interest rate.

From the above results it can be deduced that the average economic growth for the non financial companies listed in NSE is 42.44% the standard deviation means that economic growth would be expected to rise or fall within the range of 12.86%. This compares favorably to the findings by (Baskin, 1989)(Allen & Rachim , 1996) among others which is an interesting observation since these studies represent position of development securities markets as opposed to NSE which is a frontier exchange.

Skewness for dividend policy is noted as near zero (0) which confirms the assumption that the dividend policy follows a normal distribution. Excess kurtosis is 0.16 (3.163-3.0) which indicates that compared to a normal distribution, its central peak is somewhat higher and sharper, and its tails are longer and fatter. Put in perspective, fatter tails represent the likelihood of price jumps though in this case the jumps are more contained which again is favourable to the investors (Damodaran, 2012).

4.4: Pairwise correlation matrix for variables

To empirically assess the associations between the dependent and independent variables and further, the associations between the predictor variables, the study performed Spearman's pairwise correlation analysis. The analysis also presents the sign of the direction of movement of the variables which presents a basis of comparison to the priori. The study thus assessed the degree of association between stock prices and dividend policy, earnings per share, directors' influence, insider trading, interest rates, economic growth, inflation rates and exchange rates. The strength of association (ρ) is interpreted based on yard sticks presented in table 4.2 below as espoused by Qie, (2011) among others.

Table 4.1: Interpreting correlation coefficient ρ (rho)

[ρ]	Interpretation
[0.9, 1]	Very high correlation
[0.7, 89]	High correlation
[0.5, 0.69]	Moderate correlation
[0.3, 0.49]	Low correlation
[0.0, 0.30]	Little if any correlation

Source: Qui, 2011

The findings of the correlation analysis seen in table 4.2 below indicate that very high positive correlation exists between stock prices and insider trading since $p = 0.9341$. High correlation has been witnessed in relation stock prices, dividend policy, earnings per share, directors' influence, economic growth and exchange rate since correlation co-efficient range between 0.7051 and 0.8535, all positive except for interest rates and inflation rates. The correlations between the response and predictor variables are all significant at 5% significant level, which further strengthens the case for association and empirical consideration. Correlations among other predictor variables within the matrix are either low, or depict no correlation at all meaning they do not require further attention.

Table 4.2 Correlation matrix for variables

Variable	Stock prices	Dividend policy	Earnings per share	Directors influence	Insider trading	Interest rates	Economic growth	Inflation rates	Exchange rates
Stock prices	1.000								
Dividend policy	.7472*	1.000							
Earnings per share	.8046*	.6328	1.000						
Directors influence	.7051*	.3750	.0078	1.000					
Insider trading	.9341*	.3542	.2631	.0969	1.000				
Interest rates	-.8792*	.2565	.7038	-.1853	.0060	1.000			
Economic growth	.7353*	.1413	.3248	.2682	.2956	.1415	1.000		
Inflation Rates	-.7156*	.1318	.4215	.2652	.3256	.0315	.2318	1.000	
Exchange Rates	.8535*	.1949	.3265	.2982	.3956	.2415	.2405	.2411	1.000

*significant at $\alpha = 0.05$

The high correlations observed above represent a case of association meaning that causation can be pursued to a logical conclusion as it will happen in a latter section in this chapter. These findings are congruent indications by Allen and Rachim (1996); and Hussainey *et al*, (2011) to some extent. The variable sign test performed agrees somewhat with the priori set by the theoretical framework and the methodology in so far as the predictor variables are concerned.

4.5: Inferential statistics

4.5.1 Regression Diagnostics

To assess the relationship between FCF and stock prices of non financial firms listed in the NSE; this study used ordinary least regression (OLS) model whose general form is stated in chapter three above. However before the results of this model are presented, bearing in mind that OLS modeling is based on specific assumptions, it was deemed prudent to determine how well this assumptions were upheld hence the diagnostics. The study thus performed tests for outliers, linearity, homoscedasticity multicollinearity and normality taking remedial action where necessary as presented below.

a) Outliers

Influence occurs when various individual observations exerts undue influence on the coefficients Bruin (2006) as is the case with outliers. In linear regression, an outlier represents an observation with large residual. Meaning that, it is an observation whose dependent-variable value is unusual given its values on the predictor variables. To test for outliers in independent variables, the study employed Studentised residues method. Based on the preliminary model, the study generated Studentized residuals which are a type of standardized residual that can be used to identify outliers. Using the command *list var r* in 1/10 in stata, the study selected 10 of the highest data items based on the residuals. To identify the outliers, Studentized residuals that exceed +2 or -2 were observed. This data is presented in table 4.4 below.

Table 4.3: Studentised residues (r) for outlier detection

List	State	Obs	R
1	Dividend policy	44	3.7511
2	Earnings per share	22	2.994
3	Directors' influence	42	0.8223
4	Interest rates	42	.8455
4	Insider trading	36	0.6341
5	Economic growth	41	0.4243
6	Inflation rates	37	0.2112
7	Exchange rates	42	0.3894

b) Normality

Empirically, normality though it is one of the assumptions of ordinary least regression, it is not a precondition for such modeling. Indeed, according to Rawlings, Pantuleand Dickey (2001) normality is needed for tests of significance and construction of confidence interval estimates of the parameters. This is so because the t-tests and F-test expected to be conducted for hypothesis testing are assumed to follow normal distributions. To test for normality, this study applied skewness/kurtosis test of normality (Sktest).

Sktest shows the probability of skewness and kurtosis given as Pr (skewness) and Pr (kurtosis) and the joint probability chi square test with accompanying p values. Sktest implements the test as described by D'Agostino, Belanger, and D'Agostino (1990), the result of which are presented in table 4.14 below.

Table 4.2: Skewness/kurtosis test (Sktest) results

Variable	Obs	Pr (skewness)	Pr (Kurtosis)	Joint Adj. chi ²	Prob > chi ²
Dividend policy	42	0.0070	0.3024	8.05	0.0652
Earnings per share	42	0.0118	0.0015	6.72	0.0702
Directors' influence	42	0.0000	0.0000	10.19	0.0620
Insider trading	42	0.0053	0.0000	13.51	0.1120
Interest Rates	42	0.0008	0.0001	9.56	0.0620
Economic growth	42	0.0000	0.0021	7.71	0.0639
Inflation Rates	42	0.0011	0.0029	6.05	0.0840
Exchange rate	42	0.0013	0.0023	6.15	0.0841

From the results above, there is some evidence of non-normality for example given the probability of kurtosis and or skewness for most of the variables is not zero, the most noticeable being for Dividend policy is 30.24%. Probability of skewness and kurtosis for exchange rates is also much lower compared to figures in descriptive data above especially after the natural logarithmic transformation occurring to deal with outliers. However, with the joint probability and attendant p values, taking $\alpha=5\%$, none of the joint skewness/kurtosis probability is insignificant meaning that normality can be assumed. Of course with a higher α the converse would be true. Nonetheless, even if evidence of non-normality were to be obtained, the advice by Brook (2014) that when sample sizes that are sufficiently large like is the case in this study, violation of the normality assumption is virtually inconsequential would suffice. He goes on to explain that appealing to a central limit theorem, the test statistics will asymptotically follow the appropriate distributions even in the absence of error normality. This cannot be gainsaid.

Other diagnostic tests included: Breusch-Pagan test for heteroskedasticity and White Heteroskedasticity Test (LM) for constant variance of residual over time, the ARCH (Autoregressive conditional heteroscedasticity) test which detects the problem of heteroscedasticity and Ramsey RESET test for the specification of the regression. The results were presented in Table 4.1 below.

Table 4.4: Diagnostic Tests

Test	F-statistics	Probability
Ramsey RESET Test:	1.76	0.16
White Heteroskedasticity Test:	2.12	0.079
ARCH Test:	1.18	0.32
Breusch-Pagan Test for Heteroskedasticity LM Test:	1.12	0.57

The Ramsey RESET Test for model specification, ARCH Test and White Heteroskedasticity Test for constant variance of residuals and Breusch-Godfrey Serial Correlation LM Test for serially correlated residuals used the null hypothesis of good fit (specification, heteroskedasticity, and non-autocorrelated against the alternative hypothesis of model mis-specification, homoskedasticity, and autocorrelated respectively. All the probability values were less than F-statistics coefficients at 95% confidence level and therefore the null hypothesis was not rejected. The diagnostic test outcomes were therefore satisfactory.

4.5.2 Regression analysis

Multiple regression analysis was employed to measure the relationship between free cash flows (Dividend policy, earnings per share, directors' share, insider trading, Interest rates, economic growth, Inflation rates and exchange rates) and stock prices. The regression model's goodness of fit was determined using overall correlation and the coefficient of determination between the independent variables and stock prices; that is, the strength of the relationship.

Table 4.5 presents a correlation coefficient of 0.889 and determination coefficients of 0.790. This depicts a strong relationship between stock prices and free cash flows. Thus, Dividend policy, earnings per share, directors' share, insider trading, Interest rates, economic growth, Inflation rates and exchange rates account for 79% of the variations in stock prices.

Durbin Watson (DW) test which check if the residuals of the models were not autocorrelated in order to determine the independence of the residuals produced a value of 2.029. It can, thus, be concluded that there was no autocorrelation.

Table 4.5: Model Summary

R	R Square	Adjusted Square	R	Std. Error of the Estimate	Durbin-Watson
.889 ^a	.790	.788		.0073998	2.029

a. Predictors: (Constant), Dividend policy, earnings per share, directors' share, insider trading, Interest rates, economic growth, Inflation rates and exchange rates

b. Dependent Variable: Stock prices

Analysis of Variance (ANOVA) was used to test the significance of relation exists between variables; thus, model's significance. The ANOVA results presented in Table 4.6 shows that the regression model has a p value < .001. This indicates that the model has a probability of less than 0.1 of giving false prediction; this point to the significance of the model.

Table 4.6: Analysis of Variance (ANOVA)

	Sum of Squares	df	Mean Square	F	Sig.
Regression	1.832	8	.229	38.17	.000b
Residual	.198	33	.006		
Total	2.03	41			

a. Dependent Variable: Stock prices

b. Predictors: (Constant), Dividend policy, earnings per share, directors' influence, insider trading, Interest rates, economic growth, Inflation rates, exchange rates

Table 4.7 shows that the regression coefficients of independent variables. The following regression model was established:

Stock prices = 1.022 + .839*Dividend policy + 0.959*Earnings per share + 1.002*Directors' Influence + .939*Insider trading - .349*Interest rates + .902*economic growth - .639*Inflation rates + .829*Exchange rates

From the equation, the study found that holding dividend policy, earnings per share, directors' share, insider trading, Interest rates, economic growth, Inflation rates and exchange rates at zero

stock prices are estimated at 1.022. Additionally, when earnings per share, directors' share, insider trading, Interest rates, economic growth, Inflation rates, exchange rates are constant, a unit increase in dividend policy would lead to a .839 increase in the stock prices.

When Dividend policy, directors' share, insider trading, Interest rates, economic growth, Inflation rates, exchange rates are constant, a unit increase in earnings per share would lead to a 0.959 increase in the stock prices. Holding Dividend policy, earnings per share, insider trading, Interest rates, economic growth, Inflation rates, exchange rates constant, a unit increase in directors' influence would lead to a 1.002 increase in stock prices.

When Dividend policy, earnings per share, directors' influence, Interest rates, economic growth, Inflation rates, and exchange rates are constant, a unit increase in insider trading would lead to a 0.939 increase in the stock prices. Holding Dividend policy, earnings per share, directors' influence, insider trading, economic growth, Inflation rates, exchange rates constant, a unit increase in Interest rates would lead to a .349 decrease in stock prices.

Additionally, when dividend policy, earnings per share, directors' influence, insider trading, Interest rates, Inflation rates, and exchange rates are constant, a unit increase in economic growth would lead to a 0.902 increase in the stock prices. Holding Dividend policy, earnings per share, directors' influence, insider trading, Interest rates, economic growth, exchange rates constant, a unit increase in Inflation rates would lead to a .639 decrease in stock prices. Lastly, it is noted that holding Dividend policy, earnings per share, directors' influence, insider trading, Interest rates and economic growth constant, a unit increase in exchange rates would lead to a .829 increase in stock prices.

Table 4.7: Regression Coefficients

	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	1.022	.061		.635	.528
Dividend policy	.839	.032	.822	26.22	.000
Earnings per share	.959	.115	.694	8.339	.000
Director's influence	1.002	.113	.944	8.867	.000
Insider trading	.939	.111	.884	8.459	.000
Interest rates	-.349	.103	-.241	-3.388	.023
Economic growth	.902	.205	.701	4.400	.013
Inflation rates	-.639	.101	-.524	-6.327	.006
Exchange rates	.829	.112	.698	7.402	.001

a. Dependent Variable: Stock prices

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The primary purpose of this thesis is to identify the relationship between FCF and stock prices of non financial firms listed at the Nairobi Securities exchanges. The study has been anchored around a fundamental analysis which posits that stock prices movement is explained by changes in firm's financial performance.

5.1 Summary

Based on theoretical underpinnings and empirical evidence, the study has studied the association between stock prices and predictor variables as recognized in this study which are dividend policy; earnings per share; Directors influence; Insider trading; interest rates, Economic growth, inflation rates and exchange rates. The study therefore set to test whether there is significant association between stock price volatility and each of the predictors both jointly and singularly.

Suffice it to say, the study being largely quantitative applied ordinary least squares regression to model the relationship between the said variables, results of which are detailed in the preceding chapter. The high correlations observed above represent a case of association meaning that causation can be pursued to a logical conclusion as it will happen in a latter section in this chapter. These findings are congruent indications by Allen and Rachim (1996); and Hussainey *et al*, (2011) to some extent. The variable sign test performed agrees somewhat with the priori set by the theoretical framework and the methodology in so far as the predictor variables are concerned. The study established a correlation coefficient of 0.889 and determination coefficients of 0.790. This indicated a strong relationship between stock prices and free cash flows. Thus, Dividend policy, earnings per share, directors' share, insider trading, Interest rates, economic growth, Inflation rates and exchange rates accounts for 79% of the variations in stock prices.

5.2 Conclusions

The study concludes that high correlations are represent between share price volatility and dividend policy, earnings per share, directors influence, insider trading, economic growth and exchange rates are congruent indications by Allen and Rachim (1996);andHussainey *et al*, (2011).

Regarding association between dividend policy and share price volatility, this study concludes the association is positive. It also rejects the hypothesis that there is no association meaning that a significant association between dividend policy and share price volatility is deduced. Because of this association, this study further concludes that NSE investors consider dividends to be relevant in determining the value of the firm and while dividend is operationalized as dividend policy then the clientele effect is confirmed similar to conclusions by Asquith and Mullins (1986) Pettit (1977) and Jensen *et al*. (1992) .

The study concludes that if any form of market efficiency exists it can only be termed as weak. Concerning association between inflation rates and stock price, the study concludes that there is a negative association. It also rejects the hypothesis that there is no association meaning that a significant association between inflation and stock price price volatility is deduced. Pertaining to association between economic growth and share price volatility, the study concludes that there is a positive association. It also rejects the hypothesis that there is no association meaning that a significant association between economic growth and stoxx price is presumed.

Generally, the study concludes that variable sign test performed agrees somewhat with the priori set by the theoretical framework and the methodology in so far as dividend policy, earnings per share, directors influence, insider trading, interest rates, economic growth, inflation rates and exchange rates on stock prices of the non financial firms listed in the NSE.

5.3 Recommendations

In relation to impacting management decision, policy and industry alike, the study makes the following recommendations.

With the recognition that NSE investors are sensitive to dividend payments as showed above, this study recommends that companies consider their dividend policy seriously since they have a great impact on the share price volatility. Stable dividends payment will go a long way in reducing share price volatility which is fairly practical to suggest since the study has revealed that most firms in NSE are low growth firms.

Over reliance on debt financing should be reduced while encouraging firms to venture into capital market debt instruments such as bonds whose yield to maturity (YTM)s perform to moderate equity risk especially in a portfolio environment which encourages build up modelling. Earnings management is now being appreciated as an effort that enhances quality of information transmitted by earnings towards achieving an efficient market. It is expected therefore that managers in these firms' will enhance earnings management efforts in order to improve earnings quality.

In relation to small sized firms and their influence on the stock prices, the capital market environment should encourage strategies that improve the capitalization of such firms such as mergers and acquisitions and cross boarder listing. General economic policies should encourage growth opportunities for existing enterprises while watching against unfair competition.

A vehicle for enhancing the transmission of risk premia such a derivatives counter would enhance and encourage long holding periods for stocks among institutional and individual investors alike since risk would be borne by two parties, the stockholder and the derivative holder. This would counter balance the effect of the stock prices.

5.3 Areas for further research

From a scholar stand point, several enhancements can be made to these findings regarding methodology and empirical evidence some of which are suggested below.

Only a single NSE share listing segment- the main investment was considered in this study. While generalization of this findings are not put to doubt, financial innovation at NSE has introduced other segments such as Alternative Investment Market Segment (AIMS) which if incorporated in future studies may yield varying results. This is therefore recommended.

The estimated model was able to deliver about 79% of the explanation between stock prices and proposed exponents. What this portends is that there is still an opportunity to explain the remaining 21% especially considering the inclusion of market characteristics such as micro-structure and liquidity.

This study measured stock prices volatility using Parkinson's (1980), there are other possible measures of volatility with varying efficiency. Other scholars may want to use to determine whether interactions will be different. In addition, this study has exhaustively described the volatility position of a single segment listing of the non financial firms in NSE which is a frontier exchange. It remains to be seen what perspectives would be drawn if all segment were considered. Alternatively future studies can compare perspectives across several exchange of the same nature or across emerging or developed markets. Finally, future studies may want to replicate this study while adjusting dividends for displacement property to see whether the results would remain similar.

REFERENCES

- Allan, F. Rachin, C. (1996). Management responsibilities in a complex world. *Harvard Business Review*, 29 (5), 29–34
- Abulrub, AL-Dhaher, Noor and Moufeed. (2006). impact of the dividend decision on the market price and the trade volume of the traded corporate shares.
- AL-abini, Muhannad (2008), "The effect of operating cash flows on financial ratios at industrial corporations in Jordan," Unpublished master Thesis, Al al-Bayt University, Jordan.
- AL- Khalaileh, Mahmoud (1998),The relationship between cash flows and stock returns in the longer-term", *Dirasat Journal* ,University of Jordan, Volume 25, Issue 1.
- Argun J. and Mullin R, (1990). A weighted cash conversion cycle financial management.10th edn prentice –hall internal inc new jersy ISBN 0.13-8898820
- Baskin, J. (1989). The basis of cash flow analysis in the stock selection process. *AAII Journal*, 17-20.
- Besley, S. and Brigham, F. (2006) Essential of Managerial Finance. THOSON:South-Western
- Bhundia, A. (2012). A comparative study between free cash flows and earnings management. *Business Intelligence Journal*, 5(1), 123-29.
- Bruin, A., (2006). *How reliable are earnings? A study about real activities manipulation and accrual-based management in Europe*. Unpublished Doctoral Thesis, Umeå School of Business
- Brush, T. H., Bromiley, P., & Hendrickx, M. (1998). *The free cash flow hypothesis for sales growth and firm performance* (No. 1117). Krannert Graduate School of Management, Purdue University.
- Byun, J., & Rozeff, M. S. (2003). Long-run Performance after Stock Splits: 1927 to 1996. *The Journal of Finance*, 58(3), 1063-1085.
- Callahan, T & Iyer, N (2010). Stock Market Simulation and Analysis. *Unpublished Bachelor of Science Project, Worcester Polytechnic Institute*.
- Cai, J., & Zhang, Z. (2010). Leverage change, debt overhang, and stock prices. *Journal of Corporate Finance*.

- Chakravarty, S., & Mitra, A. (2010). Growth, Prices and Poverty. *Journal of Modelling & Simulation of Systems*, 1(4), 235-251
- Charitou, A., & Ketz, E. (1991). An empirical examination of cash flow measures. *Abacus*, 27(1), 51-64.
- Christy, G. C. (2009). *Free cash flow: seeing through the accounting fog machine to find great stocks* (Vol. 540). John Wiley & Sons.
- Cooper, D. R., & Schindler, P. S. (2008). International Edition: Business Research Methods.
- D' Agostino W., and Belanger N., (1990). The Relationship between Development and Economic growth and the Asian financial crisis an empirical analysis in *J. Eco ris* 2011 2 (3) 88 – 10
- DeAngelo, H., DeAngelo, L., & Skinner, D. J. (2004). Are dividends disappearing? Dividend concentration and the consolidation of earnings. *Journal of Financial Economics*, 72(3), 425-456.
- Dechow, P. M., & Ge, W. (2006). The persistence of earnings and cash flows and the role of special items: Implications for the accrual anomaly. *Review of Accounting Studies*, 11(2-3), 253-296.
- Drobetz, W., Grüninger, M. C., & Hirschvogl, S. (2010). Information asymmetry and the value of cash. *Journal of Banking & Finance*, 34(9), 2168-2184.
- Faccio, M., Lang, L. H., & Young, L. (2001). Dividends and expropriation. *American Economic Review*, 54-78.
- Fama, E.F., 2010. Efficient Capital Markets: A Review of Theory and Empirical Work. *Journal of Finance*, 25, p. 383-417.
- Fama, E.F., 2010, Stock Returns, Real Activity, Inflation, and Money. *American Economic Review*, 71, p. 545-65
- Flannery, M. J., & James, C. M. (1984). The effect of interest rate changes on the common stock returns of financial institutions. *The Journal of Finance*, 39(4), 1141-1153.
- Ferreira, M. A., & Vilela, A. S. (2004). Why do firms hold cash? Evidence from EMU

- countries. *European Financial Management*, 10(2), 295-319.
- Gorard, S. (2003). *Quantitative methods in social science research*. A&C Black.
- Griffin, P. A., Lont, D. H., & Sun, Y. (2010). Agency problems and audit fees: further tests of the free cash flow hypothesis. *Accounting & Finance*, 50(2), 321-350.
- Haddad, Faiz (2001) The relationship between cash flows from operating, investing, financing and extraordinary returns, *Dirasat Journal*, University of Jordan, Volume 28, Issue 1, pp. 1-13.
- Hussein, V. E., Khurana, I. K., & Reynolds, J. K. (2002). Audit-firm tenure and the quality of financial reports. *Contemporary Accounting Research*, 19(4), 637–660.
- Jensen, M., C., (1992) "Agency Cost of Free Cash Flow, Corporate Finance and Takeovers", *The Accounting Review*, Volume 76, Issue2, pp: 323-329.
- Jensen M.C. and Meckling w.h. 1976. Theory of the firm: managerial behavior, agency costs and ownership structure. *Journal of financial economics*, vol. 3, no. 4, pp. 305–360.
- Khraywesh, Hosni (2001),The impact of cash flows on the market value of the shares of Jordanian companies and banks, *Arab Journal of Administrative Sciences*, Kuwait University, Volume 10, Number 1, pp. 37-52.
- Kothari, C. R. (2004). *Research methodology: Methods and techniques*. New Age International.
- Lee, E., & Powell, R. (2011). Excess cash holdings and shareholder value. *Accounting & Finance*, 51(2), 549-574.
- Lehn, K., & Poulsen, A. (1989). Free cash flow and stockholder gains in going private transactions. *The Journal of Finance*, 44(3), 771-787.
- Levant j & Zarowin (1990) the incremental information content of Cash Flow Components. *Journal of accounting and Economics*. Vol. 13. (May) 25-46.
- Liu, J., Nissim, D., & Thomas, J. (2007). Is cash flow king in valuations? *Financial Analysts Journal*, 63(2), 56-68.
- Lynge, M. J., & Zumwalt, J. K. (1980). An empirical study of the interest rate sensitivity of commercial bank returns: A multi-index approach. *Journal of Financial and Quantitative*

analysis, 15(03), 731-742.

Madura, J 2006, Financial Market and Institutions. THOMSON:USA

Mauro, P. (2003). Stock returns and output growth in emerging and advanced economies. *Journal of Development Economics*, 71(1), 129-153.

McLean, R. D. (2011). Share issuance and cash savings. *Journal of Financial Economics*, 99(3), 693-715.

Mehr-un-Nisa, Mohammad Nishat (2011): "The Determinants of Stock Prices in Pakistan" Asian Economic and Financial Review Vol.1, No.4, pp.276-291.

Morley, B., & Pentecost, E. J. (2000). Common trends and cycles in G-7 countries exchange rates and stock prices. *Applied Economics Letters*, 7(1), 7-10.

Mugenda, O. M. & Mugenda AG (2003). *Research Methods, Qualitative and Quantitative Approaches*.

Musau, M. (2007). Stock Splits: The Hidden Flaws. *The African Executive* 14th-21st March 2007.

Njuguna, L., & Moronge, M. (2013). Influence of the managerial behaviour of agency cost on the performance of listed firms on NSE. *International Journal of Social Sciences and Entrepreneurship*, 1(7), 397-410.

Parkinson I,T and Soenen L (1998). efficiency of working financing practice and education 1998 vol & no.2 .richard V.and langllin E. (1980). a laohs conversion cycle approach to hymidity analysis.finance manager 9-32-38

Petit J.A and Stickney CP (1977). Cash Flows Ratio Analysis and the W.T grant company bankruptcy ,financial analysis found 36:51-54.

Poon, S. & Taylor, S.J., 2001, Macroeconomic Factors and the U.K Stock Market, *Journal of Business Finance and Accounting*, 18(5).

Qui, M., (1988). Principles of Corporate Finance NY MC grawhill

Rawkings J., Pantule N, and Diskey R, (1990). A weighted cash conversion cycle financial management.10th edn prentice –hall internal inc new jersy ISBN 0.13-8898820

Rayburn, J. (1986). The association of operating cash flow and accruals with security returns. *Journal of Accounting Research*, 112-133.

- Soenen, L., & Johnson, R. (2008). The Equity Market Risk Premium and the Valuation of Overseas Investments. *Journal of Applied Corporate Finance*, 20(2), 113-121.
- Stock, J. H., & Watson, M. W. (2010). *Modeling inflation after the crisis* (No. w16488). National Bureau of Economic Research.
- Thomas H. Brush 1, P. B. (2000). The Free Cash Flow Hypothesis for sales growth and firm performance. *Strategic Management Journal*.
- Tsay, (2005). Cash flow and capital spending: evidence from capital expenditure announcements. *Financial management*, vol. 26, no. 2, pp. 44-57.
- Walker, M. D., & Yost, K. (2008). Seasoned equity offerings: What firms say, do, and how the market reacts. *Journal of Corporate Finance*, 14(4), 376-386.
- Wang, G. Y. (2010). The impacts of free cash flows and agency costs on firm performance. *Journal of service science and management*, 3(04), 408.
- Yousefi, M., Fakhari, H., & Bakhshi, M. The Effect of Free Cash Flow on Stock Price Synchronicity of the Listed Companies on Tehran Stock Exchange.