



**THE RELATIONSHIP BETWEEN EQUITY PRICES AND FINANCIAL
PERFORMANCE OF COMPANIES QUOTED ON THE JOHANNESBURG STOCK
EXCHANGE**

by

MUSA WISANI MACEKE

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Supervisor: Dr Mokoaleli-Mokoteli

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Abstract

Investors maximize their wealth by investing in the stock market. The maximization of wealth occurs when the price of a share increases overtime and gets higher than the original price that the investor paid for a share. The objective of this study is to determine the impact of the firm's operating performance and macroeconomic factors on the share price of companies listed at Johannesburg Stock Exchange (JSE) over the period 2013 to 2017. The study use companies' financial indicators and macroeconomic factors to determine their influence on share price. Multiple regression analysis was used to test the relationship between dependent variable and independent variables. Regression diagnostic tests were performed to check for multicollinearity and heteroscedasticity in the model.

The empirical results show that there is a positive relationship between a JSE share price and return on asset, dividend per share, turnover, liquidity and earnings per share. Therefore, when these variables increase the share price also increases and vice versa. However, research also show that the share price has no significant influence on gross domestic product.

The results of the study also show that there is a negative relationship between the share price and consumer price index on the JSE. Thus, when consumer price index increases, the JSE share prices decrease.

Declaration

I, Musa Wisani Maceke declare that this research report is my own work except as indicated in the references and acknowledgements. It is submitted in partial fulfilment of the requirements for the degree of Master of Management in Finance and Investment at the University of the Witwatersrand, Johannesburg.

It has not been submitted before for any degree or examination in this or any other university.

Musa Wisani Maceke

Signed at On the day
of..... 2018

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LIST OF ACRONYMS

CAPM	Capital Asset Pricing Model
GDP	Gross Domestic Product
CPI	Consumer Price Index
DEA	Data Envelopment Analysis
DPS	Dividend Per Share
EMH	Efficient Market Hypothesis
EPS	Earnings Per Share
JSE	Johannesburg Stock Exchange
INT	Interest Rate
LIQ	Liquidity Ratio
SP	Share Price
ROA	Return on Asset
TOR	Turnover

Table of Contents

Abstract	i
Declaration	ii
Acknowledgment	iii
List of acronyms	iv
List of tables	viii
Chapter one	1
1.1 Introduction	1
1.2 Background to the study	1
1.3 Statement of the problem	3
1.4 Research questions and hypotheses	4
1.5 Significance of the study	4
1.6 Benefits of the study	5
1.7 Outline of the study	5
1.7 Limitations of the study	5
1.8 Chapter summary	6
Chapter two	7
2 Literature review	7
2.1 Introduction	7
2.2 Theories underpinning share prices	7
2.2.1 Efficient market hypothesis	7
2.2.2 Capital asset pricing model	8
2.3 Empirical research	10
2.3.1 Method to determine the share price	10
2.3.1.1 Fundamental analysis	10
2.3.1.2 Technical analysis	12
2.3.2 Factors that influence the share price	13
2.3.2.1 Dividends	14
2.3.2.2 Earnings	14

2.3.2.3 Return on assets	15
2.3.2.4 Liquidity	15
2.3.2.5 Other companies specific factors	15
2.3.2.6 Macroeconomic factors	16
2.3.3 Financial performance measurement	17
2.3.4 Relationship between operating performance and share price	18
2.3.5 Market reaction to earnings announcement	19
2.3.6 Chapter summary	22
 Chapter three	 23
3. Data and methodology	23
3.1 Introduction	23
3.2 Data and data sources	23
3.3 Research design	23
3.4 Chapter summary	25
 Chapter four	 26
4 Presentation of the results	26
4.1 Introduction	26
4.2 Descriptive statistics summary	26
4.3 Correlation matrix	27
4.4 Regression diagnostic test	29
4.4.1 Multicollinearity test	29
4.4.2 Heteroscedasticity test	29
4.5 Factors that influence the share price	31
4.6 Chapter Summary	32

Chapter five	33
5.1 Discussion and conclusion	33
5.1 Introduction	33
5.2 Discussion	35
5.3 Conclusion	35
5.3 Future direction of the study	36
References	37

List of tables

Table 4.1: Summary statistics	26
Table 4.2: Correlation matrix	27
Table 4.3: Variance inflation ratio	29
Table 4.4: Breusch-Pagan Heteroscedasticity test	29
Table 4.5: Regression results.....	30
Table 4.6: Financial operating variables regression	31
Table 4.7: Macroeconomic variables regression	31

Chapter 1: Introduction

1.1. Introduction

The purpose of the study is to determine the impact of the firm's operating performance and macroeconomic factors on the share price. This chapter is structured as follows: section 1.2 presents the background to the study. Section 1.3 discusses the statement of the research problem to be examined. Section 1.4 presents the research questions formulated for this study. Section 1.5 outlines the significance of conducting this study. Section 1.6 presents the benefits for undertaking the study. Section 1.7 outlines how the final research report is structured and section 1.8 presents the limitations of the study.

1.2. Background to the study

Investors maximize their wealth by investing in the stock market. The maximization of wealth happens if the price of a share increases overtime and gets higher than the original price that the investor paid for a share. The reverse spells value destruction. It is paramount for investors to understand the factors that influence the movement of a share to enhance the models used to predict future performances. This implies that shareholders and investors should have a thorough understanding of the relationship between stock and overall financial performance of the company (Ebrahimi & Chadegani, 2011).

Balke and Wohar (2006) state that there is a major challenge in finding the sources of share price fluctuation. Carlson (2016) points out that the greatest challenge in stock market is that the people tend to make proclamation without evidence to back it up and when the stock prices fall, the financial performance of the companies will also follow suit by declining. However, contrary to this view, the results of S&P 500 indicates that companies still generated profit during the recession periods. According to Pirie and Smith (2005), investors analyse the financial statements of the companies to enable them to make proper investment decision in selecting stocks. Therefore, understanding the relationships between the share prices and financial performance of the companies are of high interest.

Al Hanai and Al Kaibani (2013) state that there are various determinants of stock market price movement which include external and internal determinants. The external factors include competition and economic conditions of the country. The internal factors include financial position of the company, the quality of the management team, the dividend policy and the size of the company. The stock price of the company mainly shows its market performance. For example, the demand for stocks picks when the company generate more profit which reflects the relationship between the share price and financial performance.

Although there are several studies on the determinants of stock prices by Aurangzeb (2012), Sharma (2011), Hanai & Kaibani (2013), Odhiambo (2009) and Malhotra & Tandon (2013), these studies were mainly conducted in other countries.

Some studies that were conducted in the United Kingdom by Fisher (1961) and Lonie *et al*, (1996) found that declared dividend and earning per share have significant influence on share prices. In contrast, studies that were conducted in South Africa, Pakistan and India by Enow and Brijlal (2016), Ghauri (2014) and Sharma (2011) respectively indicate that there is no significant relationship between declared dividend per share and stock price.

The studies conducted in South Africa on determinants of share prices by Enow and Brijal (2016) only focused on 14 companies listed at JSE and Odhiambo (2009) focused only on macroeconomic factors.

As is evident whilst there are some studies on the determinants of share prices, there are very limited studies conducted to determine the relationship between equity prices and financial performance especially from the South African perspective. Hence this study will examines the relationship between equity prices and financial performance of all companies quoted on the Johannesburg Stock Exchange (JSE).

1.3. Statement of the Problem

Financial information such as earnings and dividends per share is deemed to impact on the company's share price. For example, Almumani (2014) found that book value per share, size of the total asset, earning per share and price earnings ratio were significant determinants of stock prices for all the banking institutions. Balke and Wohar (2006) state that real dividend growth has a major impact on the share price movement in a situation when the excess stock returns are having transitory component as compared to excess stock return. In addition to this, research by Foster (1973), Firth (1976), Fisher (1961) and Lonie, Abeyratna, Power & Sinclair (1996) show that the market does react to earnings announcement because there is a widely held perception that managers tend to manipulate their earnings to paint a glossy picture about the company. For instance, in South Africa, a big retail company, Steinhoff was recently found to have manipulated the earnings (Jordan, G. 2018). In 2013, African Bank went into a business rescue, which according to anecdotal evidence, suggests that they may not have honestly presented their operating performance information. On 9 January 2018 the share price of Aspen, a pharmaceutical company in South Africa lost 10% of its value because of the rumors that they too may have manipulated their financial information (Omarjee, L. 2018).

All these cases show that increasingly investors need to understand better the relationship between companies' performance and share price. This knowledge assist investors to consider the dynamics that influences this relation in their share price prediction models. Through an understanding of these factors, investors will also appreciate the impact of distorted financial information on the share price as is evident in the cases mentioned above.

Malhotra and Tandon (2013) conducted a study on the determinants of share prices among 100 companies that are listed on the New York Stock Exchange and found that approximately 48% of share prices movement remain unexplained. Kurihara (2006) points out that in Japan the factors that influence share prices movement have been

changing over time. Inflation rate was used to influence share prices in the 1970s and early 1980s. However, in recent times, interest rates have taken over as the major influence of share price (Kurihara, 2006). The unexplained 48% of factors that influence the share price movement and constant change of determinants of stock price as revealed by the Japanese study makes it necessary to investigate the influence of operating performance on the share price movement in an emerging market such as South Africa.

1.4. Research questions and hypotheses

The overall hypotheses are as follows:

H₁ Turnover significantly influences the share price of companies listed on JSE.

H₂ Return on asset significantly influences the share price of companies listed on JSE.

H₃ Dividend per share significantly influences the share price of companies listed on JSE.

H₄ Liquidity ratio significantly influences the share price of companies listed on JSE.

H₅ Earning per share significantly influences the share price of companies listed on JSE.

H₆ Gross domestic product significantly influences the share price of companies listed on JSE.

H₇ Consumer price index significantly influences the share price of companies listed on JSE.

H₈ Interest rate significantly influences the share price of companies listed on JSE.

The research questions are formulated as follows:

- What financial operating performance factors significantly influence the share price of companies listed on the JSE?
- Do macroeconomic factors significantly influence the share price?

1.5. Significance of the study

The study will provide investors, policy makers, asset managers, managers and other stakeholders with an understanding of the relationship between equity prices and

financial performance of the companies listed at JSE. The study will enable investors at JSE to make investment decisions by checking the relationship between the stock prices and financial performance of the companies. Policy makers such as National Treasury will also gain an understanding of the impact of financial performance on equity prices in South Africa.

1.6. Benefits of the study

The study will benefit investors as they will have a better understanding of how the financial operating performance influence the share price at JSE. The study will enable the investors to incorporate those factors in the models that they use to predict the future performance of a share price during the stock selection process. Thus, the study will also enable investors to select the right stock on their investment portfolio. The National Treasury will have an understanding of stock market behavior which will enable them to make informed decision during the policy review process. The managers of the companies will have insights with regard to the benefit of the good financial operating performance of their company and its impact on share price. It will therefore enable managers to strategize which financial indicators to focus on in order to increase the company's stock return and add value for their shareholders.

1.7. Outline of the study

The final report is structured as follows:

Chapter 2 provides a review of relevant literature related to share price movement. Chapter 3 describes the research methodology used to answer the research questions stated above. Chapter 4 outlines and illustrates the outcomes of the study. Chapter 5 discusses the results in relation to the literature review and concludes the study as well as make suggestion for further research.

1.8. Limitations

- The study will only focus on the companies listed on JSE.
- The study will only covers a period of 5 years from 2013 to 2017

- The study will only use five financial indicators and three macroeconomic factors

Chapter summary

The chapter presented the significance of understanding the share price behavior and its determinants to enable investors to make informed investment decisions. The chapter also outlined the context of the study, research problems and limitations of the study. The next chapter reviews the studies on theories underpinning share prices and methods used to determine the true value of a share.

Chapter 2: Literature Review

2.1 Introduction

This chapter provides a review of theories related to share prices with a particular focus on efficient market hypothesis and capital asset pricing model. It also covers the review of common methods used in determining the intrinsic value of a share. The chapter is structured as follows: Section 2.2 discusses theories underpinning share prices including efficient market hypothesis and capital asset pricing model. Section 2.3 discusses the methods used to determine the true value of a share. Section 2.4 presents the literature on the relationship between share prices and operating performance of companies. The chapter summary concludes the paper and derives the hypotheses.

2.2 Theories underpinning share prices

There are various theories in the literature that underpin the share prices and prediction, with a particular focus on Efficient Market Hypothesis (EMH) and Capital Asset Pricing Model (CAPM).

2.2.1 Efficient market hypothesis (EMH)

According to Fama (1970) and Vasicek & McQuown (1972), an efficient market is represented by a scenario where stock prices completely reflect all available information about the company. In this instance, the stock is fairly priced at all times and does not allow for an investor to yield abnormal returns. It is therefore not possible for the investor to yield abnormal returns in an efficient market. Zingales (2010) points out that the early formulation of the EMH showed that the stock prices should be unpredictable if the prices adjust quickly to the new information. This was latter modified to indicate that there is some predictability in the future price movement in the short and long period. There were further changes to EMH which was necessitated by questions that there is

no incentives to participants in the market to gather information if the stock prices reflect all the available information. The question was how a share price can reflect the available information if no one is interested in gathering the information. This led to EMH changes to reflect the information up to the stage where the anticipated profit is not more than the marginal cost of gathering the information (Zingales, 2010).

Vasicek and McQuown (1972), point out that efficient market model proposes that the higher the risk taken, the higher the return to be derived from it. Therefore, if the expected return was not higher, investors would not hold those investments given the higher risk to be borne. The principle of efficiency means that today's price is an impartial estimate of the following day's price discounted by the anticipated future growth. EMH indicates that the price movement is due to the economic changes or perception and characteristics of the company as well as how the investors assess the perception and characteristics. According to Sappideen (2009), EMH discards both technical and fundamental analysis as well as all methods of analysis which claims to be consistently capable of achieving abnormal profits. Kraft and Kraft (1976) show that there is no influence of stock price movement by historical and current movement of the money supply which is in line with the EMH.

Mitchell and Stafford (2000) state that the rejection of EMH by generating long-term abnormal performance return after major corporate events was found to be flawed. The favored approach of using mean buy-hold-abnormal returns and bootstrapping to measure long-term performance is an inadequate methodology as it makes presumptions of many years of abnormal returns for event firms. Sappideen (2009) states that it is not easy to perform a test on EMH directly, since it needs the understanding of the market's all future period expected rates of return and expected net operational cash-flow. Therefore a proxy test is used to test the selected asset pricing model's descriptive validity and the efficiency in which the information get processed.

2.2.2 Capital Asset Pricing Model (CAPM)

Perold (2004) states that CAPM can be derived in an intuitive and direct manner by applying the rules of improving the portfolio's sharp ratio. There are about four assumptions. The first is that the investors evaluate the portfolio of investment only with regard to the standard deviation of return and expected return as they are risk averse. The second assumption is that there are no restrictions of short selling, information is free and accessible to all the people, lending and borrowing can be done at risk-free rate and there are no transaction fees. Therefore, the capital market is perfect. The third assumption suggests that the same level of opportunities are available to all investors, and the last assumption indicates that there is correlation between asset return, standard deviation of return and, separate asset expected returns are estimated at the same level by investors.

According to Fama and French (2004), CAPM is widely applied to measure the managed investment portfolio's performance and for the estimation of the firm's cost of capital. CAPM provides strong and interesting assumptions regarding the relation between risk and anticipated return and how risk can be measured. Perold (2004) states that CAPM plays a significant role in providing an understanding of factors that influences asset prices. It is premised on the notion that the asset prices are not affected by all the risk. The investment portfolio should be diversified in order to protect it against certain risks. Vasicek and McQuown (1972), shows that capital asset pricing model is usually from the notion that there is a riskless asset which is available for investors in the market. The assets expected rate of return is constant rate or risk free return which means that it is not affected by market fluctuations. In CAPM, the beta is the key characteristic in the portfolio as it determine the future rate of return. Beta is referred to as systematic risk with return expectancy which is defined by the equation.

Fama and French (2004) indicate that CAPM model failure of the empirical test is its major weakness as it suggests that some of the applications are not valid. According to Perold (2004), there is a need to check the imperfectness of the correlation on asset returns and its impact before arriving at the CAPM. Therefore, the weighted average of the expected returns of the underlying asset is the investment portfolio's expected

returns. He further indicates that there is no relationship between the future growth rates and the cost of capital.

2.3 Empirical research

2.3.1 Methods to determine the share price

Sharma (2011) shows that there are two different approaches of predicting the stock prices, namely the fundamental approach and the technical approach. The fundamental approach use the managerial, finance and environment factors to forecast the stock prices and the technical approach considers the past movements to predict future stock price.

2.3.1.1 Fundamental Analysis

According to Spooner (1984), fundamental analysis is a process of methodically modeling facts which involve the analysis of the economy, industry and companies with a view of receiving a reasonable explanation. In terms of the economic analysis the financial analyst will look at the macroeconomic factors which include economics trade barriers and protectionism. On industry analysis the focus is on which industries will survive and continue to grow. This is achieved by looking at market, demand, supply and technology innovation. While on the company analysis the financial analyst examines the companies which will survive and grow when the competition is intense. The company assessment also involves the analysis of the financial ratios.

Abad, Thore and Laffarga (2004), state that in fundamental analysis it is required to have an understanding of how the other companies are performing within the industry and how well they generate income. Therefore, it is important to have a holistic picture of the entire industry performance as it is not adequate to only examine the earning generated by the individual company. Levy (1966), points out that a fundamental analyst is of the view that all securities in the market have intrinsic values which is

based on their earning prospect, as a result the actual market prices change in the direction of the intrinsic value.

According to Pirie and Smith (2005), investors analyse the financial statements of the companies to enable them to make proper decision in selecting stocks. Therefore, relationships between the share prices and financial performance of the companies are of high interest. Abad, Thore and Laffarga (2004), apply different technique referred to as Data Envelopment Analysis (DEA) for fundamental analysis. This technique examines the financial fundamentals by calculating the market value of share under a thorough optimal market valuation and optimal management. This is done by the calculation of the efficient frontier using a DEA. The optimal priced stocks in the market will be at the frontier and the less managed stocks will be falling behind the frontier.

Abarbanell and Bushee (1998) explore whether the use of fundamental analysis can enable an investor to achieve higher returns. The changes in financial information such as audit results, selling expenses, account receivables, gross margin, capital expenditure, inventory, labour force sales productivity and effective tax rates are collection signals used to forecast the future performance of a company. The results show that around subsequent earnings announcements there is an uncommon concentration of abnormal returns. The second finding is that the one year ahead earning news has resulted in the higher proportion of the abnormal returns to the fundamental strategy. The third finding is that the firm size or book to market variables related abnormal returns do not seem to be closely associated with the returns to the strategy. Lastly, after one year of the disclosure the accumulated returns to the fundamental strategy level off. Therefore, the study find that there is confirmation that the fundamental signals do give an estimation of expected return which is related to news about the expected earnings.

However, according to Levy (1966) the technical analyst opposes the fundamental analysis method indicating that the financial information comes too late to enable investors to make maximum gain. The fundamental analyst has to wait for the

publishing of the financial reports in order to have sight of financial indicators such as dividends, revenue, earnings and orders. The disadvantage is that by the time of publishing the financial reports, the market has already factored its effects and begun a significant shift. However, when it comes to the technical analysis action that can be taken immediately on any movement in shares prices regardless of whether or not the news necessitating a movement has been publicized (Levy, 1966).

2.3.1.2 Technical Analysis

The view of technical theorists is that history has a tendency of repeating itself. In other words, the historical trends of price movement may be used or applied to forecast the future stock movement. Technical analysis is a method that involves the tracking of the actual past trading data which is comprised of the volumes of transactions and price movement for single security stock or collection of shares and using the past analysis to determine the expected future prices (Levy, 1966). According to Kavajecz and Odders-White (2004), the technical analysis method uses specific frequency charts which could either be intraday, daily or weekly display of low, high, opening and closing prices as well as the volume of trades. The study focuses on two technical analysis rules which are moving average forecasts and resistance levels. It finds that the state of liquidity on the limit order book is significantly related to moving average indicators and resistance levels.

Levy (1966) points out that in terms of technical theory, the changes in demand and supply are the only determining factor of the market value. There are numerous factors which governed supply and demand which are logical and illogical. The fundamental analyst uses these factors such as guesses and moods. These factors are constantly and automatically weighed by the market. In terms of the technical theory discounting the slight market movement, the share prices have tendency of moving in patterns which continues for a long period. The change of supply and demand interactions result in the change of the patterns. The changes could be noticed in the movement of the market. Kavajecz and Odders-White (2004) point out that there are methodological

difficulties created by the fact that the technical analysis is an art and not a science. Thus, due to the lack of clear guidelines for the construction of the rules, different technicians utilizing the same data could arrive at different forecast.

Hilliard, Schwartz and Squire (2013) show that the target and twin are significantly related when patterns and data evaluation is performed using the monthly data. The reason for this is that the chart based on the possibly noisy daily data are less informative as compared to the chart based on monthly data which is more informative. The test was performed on the large number of possible share price using a twin-target methodology. The twin refers to the best matching pattern between interval and stock. According to Brown and Jennings (1989) there is value on technical analysis and the view that, in weak-form of efficiency market, the technical analysis does not add value is not correct. This is due to the fact that it is not clear whether the discussions are based on the definition of characteristics of weak-form efficiency or the rational conjecture that the market is a weak-form efficiency. They point out that, if it is based on the definition, then the definition on noisy logical expectations equilibrium is efficient which render this view that technical analysis has no value and is unjustified.

The financial academics have been challenging the technical analysis methodology, indicating that the information on the past share prices have no value to the investor as a result cannot be used to predict the future expected return. However, the technical analysts have countered this view indicating that the method is still prevalent today and rational companies are using it and pay employees to use this methodology (Hilliard, Schwartz & Squire (2013); Kavajecz & Odders-White (2004)).

Brown and Jennings (1989) show that current stock prices alone do not provide accurate interpretations of signal of the future stock movement, while the past stock prices together with current stock prices provide a much correct assumption of the future stock movement. The present stock prices are not fully reflecting future price movement as compared to technical analysis which used historical stock prices to infer private information. This is due to the fact that it is impossible for the current stock price

to reflect the private information from earlier period due to the noise in the current equilibrium spot price.

2.3.2 Factors that influence the share price

Factors that influence the firm's share price can be divided into company specific factors and macroeconomic factors. Balke and Wohar (2006) state that there is a major challenge in finding the sources of share price fluctuation. Aurangzeb (2012) highlights that the performance of the company is influenced by government actions and changes in key macroeconomic variables such as inflation, Gross Domestic Product (GDP), interest rate and exchange rate. As a result whenever there are changes in these fundamentals, the investors are interested in finding out whether it is the right time to sell or buy stock in the market.

2.3.2.1 Dividends

Fisher (1961) and Lonie *et al*, (1996), show that the declared dividend has significant influence on share prices. These studies were conducted using the share prices obtained in the London stock exchange. Fisher (1961) further states that the rate of growth in dividend per share has an insignificant influence on share prices and the influence by unit size was stable. Enow and Brijlal (2016), Ghauri (2014) and Sharma (2011) conducted studies which differed with the above authors. Their studies revealed that there is no significant relationship between dividend per share and stock price.

Balke and Wohar (2006) highlight that there is challenge of finding the source of the share price movement. The challenge is that the share prices or price dividend ratios are highly persistent while excess returns and real dividend growth are not persistent. They further indicated that it was impossible to find out which of these play a major role in triggering price-dividend ratio long swings, due to discernable absence of low-frequency variations in both real-dividend growth and excess returns. Balke and Wohar (2006) state that real dividend growth, as compared with excess stock return, has a major influence on the share price movement in a situation where the excess stock

returns are having transitory component and real dividend growth is having permanent component.

2.3.2.2 Earnings

The studies conducted by Foster (1973), Firth (1976), Fisher (1961) and Lonie *et al*, (1996) show that the earning per share have significant influence on share prices in the United Kingdom and United States of America. Almunani (2014) also highlighted that the earning per share is the determinants of share prices. According to Inyama (2015) there is a significant and positive influence of earning per share movement on market price of share in the Nigerian banking sector. In order to increase the stock price, the banking institutions should embark on aggressive marketing campaign, cost containment measures and diversify its strategies to improve earnings.

2.3.2.3 Return on Asset

Inyama (2015) shows that the market price of ordinary shares is positively influenced by return on assets. As a result when the company records an increase in return on assets, its stock price increases. A study of determinants of change in stock prices was conducted in Pakistan and it shows that there was no significant relationship between stock price and return on asset (Ghauri, 2014). Shamsudin, Mahmood and Ismail (2013), points out that a higher return on assets of the company can be used as the rational for a stock selection since the return on assets influence the stock price.

2.3.2.4 Liquidity

Basarir and Ulker (2015) state that there is a significant positive influence of liquidity ratio on stock return of the banking institutions which are trading in Borsa Istanbul. The higher liquidity ratio of the company will result in an increase in stock price. Kamonye (2009) uses Pearson correlation coefficient to conclude that liquidity has an insignificant influence on stock prices in Nairobi stock exchange. Gopalan, Kadan and Perzner (2012) contends that the higher asset liquidity eliminate uncertainties on future possible investment to be undertaken, as a result of increasing future possible investment in the company.

2.3.2.5 Other company specific factors

On the firm specific factors, Almumani (2014) shows in the study of determinants of share prices of the listed banks in Amman stock exchange, the possible determining factors of stock prices such as book value per share and the size of the total assets. Almumani (2014) found that book value per share and the size of the total asset were significant determinants of stock prices for all the banking institutions. Al Hanai & Al Kaibani (2013) point out that the internal factors include financial position of the company, the quality of the management team, the dividend policy and the size of the company. Ghauri (2014) shows that the size of the company has significant relationship in stock price of the banking institutions. Shamsudin, Mahmood and Ismail (2013) indicate that the asset turnover has influence on stock price.

Bacidore, Boquist, Milbourn and Thakor (1997) also show that the stock price alone cannot be an appropriate measure of the performance of the companies, as a result managers' performance contracts cannot be tied to the stock price. This will be unfair to lower level managers as they have less influence on stock price. The positive return indicates that shareholders have covered the risk adjusted opportunity cost of capital. A highly abnormal stock price should correlate with a good financial performance measure.

2.3.2.6 Macroeconomic factors

Al Hanai and Al Kaibani (2013) state that there are various determinants of stock market price movement which include external and internal determinants. The external factors include competition and economic condition of the country. The stock price of the company mainly shows its financial performance. For example, the demand for stocks, picks when the company generate more profit which reflects the relationship between the share price and financial performance. In the study that covered United Kingdom, Germany and France, Peiro (2016) asserted that the macroeconomic activities such as changes in interest rates and production have an influence in share prices. Sadorsky

(2016) shows that consumer price index, oil price and term premium are major determinants of share price in the technology sector.

Mateev and Videv (2008) mention that macroeconomic factors such as unexpected inflation, trade deficit and country risk premium have a limited influence in ameliorating the fluctuation of surplus stock returns in Bulgarian stock exchange. The study found that the lack of satisfactory corporate governance mechanism and conducive institutional environment have significant influence on stock market in developing markets. Kurihara (2006) points to the changing nature of factors that influences share prices movement in Japan. For instance, in the 1970s and early 1980s inflation rate was the dominant factor that influences share prices, however has since stabilized in recent times. Interest rate has taken over and is currently the major influence of share price.

Bacidore *et al* (1997) found that there is a positive relationship between foreign direct investment and stock market performance. In addition, there was a negative relationship between the interest rate, inflation and the performance of stock market in South Asia. Tsoulalas (2003) used Granger's causality tests to show that exchange rates, industrial production, growth rate of the money supply and consumer price index have a significant relationship with stock price in the Cyprus stock exchange.

Kraft and Kraft (1976) show that money supply, corporate bond rate and percentage change in the money supply have no causal influence on movement of common stock price. Thus these variables are unable to make prediction of future stock price movement. They further indicate that if one views the market as efficient, then the use of historical and current information for the explanation of the share prices will be a futile exercise. Olowe (2007) explored the relationship between stock price and macroeconomic variables and found that money supply influences the changes in stock price.

2.3.3 Financial Performance measurement

A highly abnormal stock price should correlate with a good financial performance measure (Kurihara, 2006). Barker (1995) points out that financial performance measurement, when applied in isolation is not effective as it does not cover all key areas such as the growth potential of the company. Jordan, Carlson and Wilson (1997), consider the return on assets as one of the key financial indicators used to determine the financial health of a firm. The risks pertaining to the management of finances and cost of capital expenditure should be covered by an adequate return on assets. The profitability ratios are financial indicators which are used to measure the overall financial performance of a firm. Profitability ratios are also used to measure the company's efficiencies in managing the utilization of the assets, equities and liabilities.

Mitchell and Stafford (2000) are of the view that using mean Buy-hold-Abnormal Returns (BHAR), and bootstrapping to measure long-term performance, is an inadequate methodology as it makes presumptions of many years of abnormal returns for event firms. It is a challenge for a long-term abnormal performance methodology to assume impartiality, as major corporate events taken management are not random such as mergers and share repurchases. Therefore, a calendar-time portfolio approach is supported as a methodology that factor in the dependence of abnormal return for event firms. There was nearly no proof of reliable abnormal return after accounting for the positive cross-correlations of abnormal returns for event firms.

Gentry and Shen (2010), state that even though the covariance is less than 10%, relationship exist between market performance and accounting profitability measures of the companies. Abarbanell and Bushee (1998) point out that changes in financial information such as audit results, selling expenses, account receivables, gross margin, capital expenditure, inventory, labour force sales productivity and effective tax rates are collection signals used to forecast the future performance of a company. The studies conducted by Sharma (2011), Enow and Brijlal (2016), Kamonye (2012) and Inyama (2015) identified common financial performance indicators used to measure the performance companies such as profitability ratios, return on asset, earnings, turnover, book value and liquidity ratios.

2.3.4 Relationship between operating performance and share price

According to Pirie and Smith (2005), the investors analyse the financial statements of the companies, to enable them to make proper decisions in selecting stocks. Therefore, relationships between the share prices and financial performance of the companies are of high interest. The company's performance is reflected in its share price. The excellent performance of a company would result in a higher demand on its share, which will then trigger an increase in its price. Shamasudin, Wan Mahmood & Ismail (2013), state that there is a positive relationship between share price and return on asset, total assets turnover, and price earning. Thus, the higher return on asset, the higher total assets turnover and lower price earning ratio signify better stock performance.

Inyiama (2015) conducted a study in the Nigeria banking sector to determine the impact, causalities, cointegration, magnitude and strength of the association between stock prices and financial performance indicators. The study found that the earning per share was positively and significantly influencing the market share price of the banking sector in Nigeria. The bank age and return on assets also had positive influence on ordinary share price. According to Kamonye (2012), the share prices were positively and significantly influenced by dividend per share in the Nairobi Securities exchange in the study conducted to examine the relationship between stock prices and financial performance of the banking institutions.

Enow and Brijlal (2016) used earning per share, dividend per share and price earning ratios to determine the movement of share prices, in conducting a study on 16 listed firms at Johannesburg Stock Exchange from 2009 to 2013. The earnings per share and price earnings had a significant and positive relationship with the movement in share prices whereas there was no positive correlation on dividend per share. Earlier, Sharma (2011) conducted a study in India to explore the relationship between the share price and financial performance variables such as a price earning ratio, dividend payout, book value per share, dividend per share, earning per share and net worth. It was found that book value per share and earning per share have a significant effect on the stock price.

Dividend per share, dividend payout and net worth had no significant effect on the stock price.

2.3.5 Market reaction to earnings announcement

The dividend and earning announcements are determinants of the stock market returns in the UK (Lonie *et al*, 1996). Foster (1973) shows that when the earning per share results are made public, the stock price quickly adjust, resulting in the trading strategy which is based on the information yields, reduces the abnormal returns. The adjustment's operational measure is trading strategies' ability which was premised on earning per share estimates to earn abnormal returns. Louhichi (2008) states that the publishing of earning results is followed by an increase in trading volume and which continues even after the price reached the equilibrium level.

Foster (1973) states that the opportunity for abnormal return was still there up to the point when the earning per share estimate is made public. When based on information of earning per share estimate five days prior to the result being made public, the abnormal return's average return is 1.6 percent for the 10 annual expectation model. Sharma (2011) concurs that up to the time the company official announces the earning per share estimate, there is still opportunity for an abnormal return. The average abnormal return for the trading strategy, based on knowledge of earning per share estimate five days before it is publicly released, is 1.61 percent for the 10 annual expectations models and 1.48 percent for the 10 quarterly expectations models.

According to Louhichi (2008), investors react in a different manner to the release of bad and good news. The investors react in a negative way to bad news and positive to good news. The stock prices converge faster to the equilibrium in comparison to the bad news. In addition, it takes 15 minutes for the abnormal returns to disperse and 30 minutes for the reversal of price, after the announcement of bad news. Mun, Fleak and Morgan (2010), state that there is no indication of post earning announcement shift in the stock market response to the publicized earnings, neither on bad or good news in the period before accounting irregularity. Raymond and Weirich (2002) show that there

is a significant stock market reaction to fraudulent financial announcement. The market overreaction correction normally takes place 2 days after the event in the New York stock exchange. Whilst NASDAQ and over the counter market could not show this occurrence.

The stock market reaction to good news of dividend yield and earnings results in large positive abnormal returns. The bad news of dividend yield and earnings resulted in large negative abnormal returns (Lonie *et al*, 1996). In the study conducted in Italian stock exchange, Ianniello and Galloppo (2015) says that stock market tend to react positively to the release of unqualified audit opinion and negatively to the qualified audit opinion. The stock price rises when the company receives an unqualified audit report and drops when it receives a qualified report. Mun, Fleak and Morgan (2010), state that when allegation of accounting irregularity surfaces, there is expectation of good news from the stock market with insignificant market response after those good news are made to the public. The response to the bad news is considerably delayed. The stock market react quickly to good news while the response to bad news is slow.

Chan and Ariff (2002) point out that in Hong Kong share market, the share prices adjust instantaneously to new information. The Hong Kong share market adjustment speed of the coefficient is 6 days. This is in line with the adjustment speed to new information for the Tokyo and New York market. Cready and Gurun (2010), show that aggregate market returns is directly impacted by the announcement of earnings returns. The sudden announcement of low earning triggers the market value to shift to a higher level, while on the other hand unpredictably higher earnings shift the market values to a lower level. The unexpectedly negative earnings result in the discount rate for future cash-flow falling while the unexpectedly positive earning result in the discount rate rising.

Defeo (1986) indicates that the speed of market reaction to earning announcements was related to the type of the report and the size of the firm. The announcements for annual earning reports, larger firms have longer mean adjustment period while the

announcements for interim reports, smaller firms have longer period. Mun, Fleak and Morgan (2010) contends that the speed of market adjustment to published earnings is negatively affected and the impact is considerable lagged after the accounting irregularity allegations. While when there are good news, no effect between the speed of adjustment to earnings announcements and stock volatility. Hotchkiss and Strickland (2003) point out that the degree of market price response to the announcement of the company's earning results is also largely linked to the shareholders characteristics as well as the level of the company's ownership by the shareholders. There is also a relationship between decisions taken by the companies, trading trends and generated returns.

Firth (1976) states that after the announcement of financial performance, investors evaluate the share prices of all companies which are competing with each other, not only the company whose performance is being publicized. When a company which is a competitor publicized its financial performance reports, this process appears to be perform. The announcement of the annual results of companies which are competing, mainly lead to the increase in the annual performance index. Abarbanell and Bushee (1998) show that around subsequent earnings announcements, there is an uncommon concentration of abnormal returns. The second finding is that the one year ahead earning news had resulted in the higher proportion of the abnormal returns to the fundamental strategy.

Chapter summary

This chapter provided reviewed theories underpinning share prices. In the process of assessing available scholarship on determinants of share prices, the focus was on the EMH and CAPM. This review highlighted among others, the limitations of both models. An efficient market is the market where stock prices completely reflect the available information and has been modified to address its weaknesses.

The capital asset pricing model plays a significant role in providing an understanding of what influences asset prices and it is premised on the notion that the asset prices are

not affected by all the risks. The weakness of capital asset pricing model is that it fails the empirical test.

The two different approaches of predicting the stock prices which are fundamental and technical analysis approaches, followed the discussion on theories of underpinning share prices. The financial performance measures were discussed. This was followed by the relationship between the companies operating performance and share prices. The literature review identified various financial indicators and macroeconomic factors such as dividend per share, return on assets, liquidity ratio, earning per share, GDP, inflation and interest. However, there is contention by authors in relation to the factors which influences share price. The following chapter will focus on the research design and the methodology that will be followed to perform the research study.

Chapter 3: Data and Methodology

3.1 Introduction

This chapter presents the research methodology used to answer the research questions outlined in chapter 1. This chapter is structured as follows: Section 3.2 describes the data and sources of the data. Section 3.3 describes the research design and Chapter summary concludes the chapter.

3.2 Data and data sources

In this study, share prices and accounting data for companies that are listed on the JSE main board are analysed. The data was used to determine the relationship between a company's operating performance as measured by the firm's accounting information and the firms share price. The research study covers the period from 2013 to 2017. The data was obtained from *Bloomberg* and from *Statistics South Africa's website*.

Additional data was obtained from *BFA Inet Bridge* and companies' websites. There are nearly 400 companies which are listed on the stock exchange each year. All companies which were continuously listed at JSE between 2013 and 2017, and which had not more than two financial indicators unavailable during the period were considered.

3.3 Research design

The aim of this study is to determine the impact of the firm's operating performance and macroeconomic factors on the share price. Multiple regression analysis was used to test this relationship. This method was also applied by Sharma (2011) to determine the relationship between share price and operating performance of companies such as price earning per share, book value per share, dividend per share and net worth. The multiple regression analysis was used by Almunani (2014) to explore the relationship between financial performance and stock price of listed banks in Amman stock exchange. A study was also conducted in South Africa by Enow and Brijlal (2016) on the determinants of share price using multiple regression analysis.

The dependent variable for this study is Share Price (SP). The independent variables are Earning Per Share (EPS), Dividend Per Share (DPS), Liquidity (LIQ), Turnover (TOR), Return On Asset, Interest rate (INT), Gross Domestic Product (GDP) and Consumer Price Index (CPI). The independent variables were drawn from the literature review conducted. The study uses the multiple regression model which is presented as follows:

$$SP = \beta_0 + \beta_1 ROA_{it} + \beta_2 EPS_{it} + \beta_3 DPS_{it} + \beta_4 LIQ_{it} + \beta_5 TOR_{it} + \beta_6 INT_{it} + \beta_7 GDP_{it} + \beta_8 CPI_{it} + e$$

Where:

SP = Share Price (Dependent variable)

β_0 = Regression constant

ROA= Return on Asset

EPS = Earnings per Share

DPS = Dividend per Share

LIQ = Liquidity Ratio

TOR = Turnover

INT= Interest

GDP= Gross Domestic Product

CPI= Consumer Price Index

e = Stochastic disturbance (error) term

Share Price is the closing stock prices of JSE listed companies at end of each year. β_0 is the constant to be estimated. The ROA compares the income generated with the total assets of the company and was determined by dividing profit after tax with total asset. The ROA is used to measure the company's management's ability and efficiency in utilizing the asset of the company to generate profit.

EPS is used for the comparison of operating performance and for valuation purpose either directly or together with market prices. EPS was determined by deducting the dividends from net profit and then dividing the amount with the number of outstanding shares. DPS referred to dividend paid to shareholders and was arrived at by dividing the total dividends with the number of outstanding shares. LIQ referred to the ability of the companies to meet their short-term financial obligations and was arrived at by dividing current asset with current liabilities. Turnover referred to the inflow of funds generated by the companies through delivery or production of goods or rendering of services or any activities which generated funds from the business. Interest rate is the repurchase rate at which private banking institutions borrow money from the South African Reserve Bank (SARB). GDP is the value of all the goods and services produced in South Africa within a year and it is used to measure the size of the economy. CPI is used to measure fluctuations in price for the range of consumer products. The rate of inflation is measured by changes in prices.

Chapter summary

The chapter presented the research methodology applied in this study. The chapter provided details of the type of data used and where the data was sourced. It further

described how the data was measured and analysed. The next chapter will present the research findings.

Chapter 4 Presentation of the results

4.1 Introduction

The purpose of this study is to determine the impact of the firm's operating performance and macroeconomic factors on the share price of companies quoted on the Johannesburg Stock Exchange (JSE). The study considered companies that were continuous listed at JSE between 2013 and 2017, and had less than two financial indicators which were inaccessible during the period. A total of 225 companies met this requirement and were used in this study.

This chapter is organised as follows: Section 4.2 presents descriptive statistics summary, Section 4.3 presents the correlation matrix which displays the association of the variables, Section 4.4 presents regression diagnostic tests results. Section 4.5

covers the factors that influence the share prices. Chapter summary concludes the paper.

4.2 Descriptive statistics

The table below presents the descriptive statistics summary of the variables.

Table 4.1: Descriptive statistics summary

	Mean	Median	Maximum	Minimum	Standard deviation	Skewness	Kurtosis	Observations
DPS	0.879629	0.091	26.6061	0	1.990984	5.859966	56.54931	1125
EPS	-0.04093	0.4706	74.0368	-758.4	36.71512	-19.08302	377.6782	1125
GDP	1.621422	0.4	4.2	-0.3	1.960058	0.381319	1.214155	1125
CPI	5.458222	5.5	6.4	4.4	0.647289	0.141439	1.53516	1125
INT	6.098889	6	7	5	0.717527	-0.198474	1.745551	1125
LIQ	2.027579	1.3575	147.1375	0	7.098578	16.76329	312.0402	1125
ROA	4.925463	5.078	75.8857	-56.87	10.5088	-0.842715	12.59488	1125
SP	68.64369	18.24	3451.00	1	173.1744	9.960575	155.9057	1125
TOR	0.988225	0.8242	4.8153	-0.348	0.864317	1.512277	6.141654	1125

The mean indicates the averages of the variables and stands at 18.24 for the share price as reflected in table 4.1. Median, which shows the middle number of each variable, is 6 for interest rate. Minimum indicates the lowest number and maximum is the highest number of the variables. Standard deviation measures the spread of the data from the mean. Inflation has the lowest standard deviation of 0.64 and share price has the highest standard deviation of 173.17.

Skewness and Kurtosis measure the asymmetry of the distribution of variable. Dividend per share, gross domestic product, liquidity, inflation, share price and turnover are positively skewed. Gross domestic product, inflation and interest have lighter tails than a normal distribution as the kurtosis is less than 3.

4.3 Correlation matrix

The table 4.2 below indicates the correlation matrix of the variables.

Table 4.2: Correlation matrix

Correlation Probability	CPI	DPS	EPS	GDP	INT	LIQ	ROA	SP	TOR
CPI	1.0000 -----								
DPS	-0.0124 0.6771	1.0000 -----							
EPS	0.0140 0.6398	0.0991 0.0009	1.0000 -----						
GDP	0.2246 0.0000	0.0087 0.7718	0.0494 0.0980	1.0000 -----					
INT	0.1262 0.0000	0.0127 0.6693	-0.0431 0.1486	-0.8471 0.0000	1.0000 -----				
LIQ	-0.0037 0.9022	-0.0493 0.0983	0.0012 0.9688	0.0260 0.3842	-0.0313 0.2940	1.0000 -----			
ROA	0.0178 0.5510	0.1625 0.0000	0.1962 0.0000	0.0968 0.0012	-0.1032 0.0005	0.1082 0.0003	1.0000 -----		
SP	-0.0045 0.8791	0.4118 0.0000	0.0545 0.0675	-0.0188 0.5296	0.0284 0.3408	-0.0372 0.2126	0.1210 0.0000	1.0000 -----	
TOR	0.0052 0.8622	-0.0370 0.2147	0.0126 0.6734	0.0288 0.3344	-0.0297 0.3188	-0.0556 0.0625	0.1161 0.0001	0.0744 0.0126	1.0000 -----

Table 4.2, presents the cross correlation between the variables. The table shows that, consumer price index is positively but weakly correlated with earning per share, the gross domestic product, the return on asset, interest and turnover. On the other hand, it is negatively and also weakly correlated with dividend per share, liquidity, and share price. The absolute of all coefficients of correlation with respect to consumer price index are below 0.5.

Dividend per share is positively but weakly correlated with earning per share, liquidity, return on asset and share price. Earnings per share is positively correlated with gross domestic product, liquidity, return on asset, share prices and turnover, but negatively correlated with interest rate. The absolute of all coefficients of correlation with respect to earnings per share are below 0.2. This implies that, earnings per share exhibits a very

low correlation with others variables. The gross domestic product (GDP) is positively correlated with liquidity, return on asset and turnover, but negatively correlated with interest rate and share prices.

Interest rate is negatively correlated with liquidity, return on asset and turnover, but positively correlated with share prices. The absolute value of the coefficients of correlation is below 0.2. This implies that, liquidity is weakly correlated with other variables in the models. The same weak correlation is observed with return on asset and share prices.

The highest correlation coefficient is observed between interest and the gross domestic product. The coefficient of correlation is negative and is 0.847. In running the regression, gross domestic product was dropped due to the high correlation relationship that exists between interest rate and the gross domestic product.

4.4 Regression diagnostic test

Two diagnostic tests were performed which are multicollinearity and heteroscedasticity tests.

4.4.1 Multicollinearity test

For the multicollinearity test, a variance inflation ratio (VIF) is presented in table 4.4 below.

Table 4.3 Variance inflation ratio

Variables	VIF	1/VIF
ROA	1.12	0.89

DPS	2.88	0.34
TOR	1.04	0.96
LIQ	1.04	0.96
EPS	2.97	0.34
INT	1.03	0.97
CPI	1.01	0.99

The variance inflation ratio for all the independent variables as presented in table 4.3 is less than ten (10). This indicates that there is no multicollinearity among the variables.

4.4.2 Heteroscedasticity test

For the heteroscedasticity test, the Breusch-Pagan heteroscedasticity test is presented in the table 4.4 below;

Table 4.4: Breusch-Pagan Heteroscedasticity test

chi2(1)	17.81
Prob > chi2	0.000

The probability of the Breusch-Pagan heteroscedasticity test is less than five percent (5%). This indicates the presence of heteroscedasticity in the model and need to be corrected.

In order to correct for heteroscedasticity, the following steps are taken: Firstly, we transform some variables in the regression model. Share price and consumer price index were transformed into log forms. Secondly, a robust standard errors estimation was applied when running the regression.

The results are presented in table 4.5 below with logshare price as dependent variable:

Table 4.5: Regression results

Variable	Coefficient	Std. Error	t-Statistic	Probability	R-square
----------	-------------	------------	-------------	-------------	----------

C	6.3200	0.8270	7.64	0.0000
DPS	0.4523	0.0263	17.18	0.0000
EPS	0.0026	0.0014	1.84	0.0360
INT	0.0225	0.0724	0.31	0.7561
LIQ	0.0226	0.0073	3.08	0.0021
LOGCPI	-0.2850	0.4354	-4.65	0.0413
TOR	0.2532	0.0601	4.21	0.0000
ROA	0.0512	0.0051	9.96	0.0000
				0.5982

The results in table 4.5 show that dividend per share, earning per share, liquidity and turnover and return on asset are positive and significant at 5% level. Consumer price index is negative and is significant at 5% level. Interest rate is positive but is insignificant with a probability value of more than 5%. The measurement of how suitable the regression fits the data is indicated by r-square of 60%.

Table 4.6: Regression results for financial operating variables

Variable	Coefficient	Std. Error	T-Statistic	Probability	R-square
DPS	0.4523	0.0263	17.2017	0.0000	0.5967
LIQ	0.0226	0.0073	3.0963	0.0020	
TOR	0.2534	0.0600	4.2214	0.0000	
ROA	0.0511	0.0051	9.9952	0.0000	
EPS	0.0026	0.0014	1.8418	0.0658	

Table 4.7: Regression results for macroeconomic variables

Variable	Coefficient	Std. Error	T-Statistic	Probability	R-square
----------	-------------	------------	-------------	-------------	----------

LOGCPI	-0.0417	0.0724	-4.0275	0.0384	
INT	0.0376	0.0513	0.9797	0.3275	
					0.0014

Table 4.6 and 4.7 indicate separate regression results for macroeconomic and financial operation factors. The financial operating variables are more significant and virtually explain the entire model with r-square of 60%, while consumer price index is significant amongst the macroeconomic factors.

4.5 Factors that influence the share price

The regression model was statistically significant for the return on asset, dividend per share, turnover, liquidity, consumer price index and earnings per share. The Probability value of these variables are less than 5%. While interest is statistically insignificant as the probability is more than 5%. There is a positive relationship between the share price and return on asset, liquidity, dividend per share, turnover and earnings per share. While there is a negative relationship between the share price and consumer price index. There is positive relationship between share price and interest rate but the relationship is statistically insignificant. The model explains 60% of the fluctuation in share price.

Chapter Summary

In this chapter the results of the study was presented. The results show that the variables included in the models exhibit very low cross correlation except between interest rate and gross domestic product. This resulted in gross domestic product variable being dropped from the regression model. A regression diagnostic tests were performed. The variance inflation ratio was used for multicollinearity test and there was no multicollinearity amongst the variables selected in this study. A Breusch-Pagan heteroscedasticity test was performed and the results showed that there was heteroscedasticity in the model.

In order to correct for heteroscedasticity, certain variables were transformed into log forms. A robust standard errors estimation was also applied when running the regression.

The regression results showed that return on asset, dividend per share, turnover, liquidity, earnings per share and consumer price index have significant influence on share price.

Chapter 5: Discussion and Conclusion

5.1 Introduction

This chapter presents a discussion of the findings and concludes the thesis. The chapter is organized as follows: Section 5.2 discusses the results, Section 5.3 presents

the conclusion of the study and section 5.4 presents a recommendation of the future studies.

5.2 Discussion

The aim of this study is to determine the impact of the firm's operating performance and macroeconomic factors on the share price. The regression results show that the return on asset, dividend per share, turnover, liquidity, earnings per share and consumer price index have a significant influence on share price. The probability value of these variables are less than 5%. The share price does not have a significant influence on interest rate as the probability value is more than 5%. There is a positive relationship between the JSE share prices and return on asset, dividend per share, turnover and earnings per share. Therefore, when these variables increase the share price also increases and vice versa. The study also shows that there is a negative relationship between the share price and consumer price index on the JSE. Thus, when consumer price index increase, the JSE share prices decrease.

The current study found that the dividend per share has a significant positive influence on the JSE share. This outcome resonance with Fisher (1961) and Lonie *et al*, (1996)'s findings that the declared dividend has a significant influence on share prices as observed in companies listed on the London Stock Exchange. Conversely, Enow and Brijlal (2016), Ghauri (2014) and Sharma (2011) found that relationship between dividend per share and stock price is insignificant.

The results of this study shows that earning per share and turnover has a significant positive influence on share price. As a result, when the earning per share increase, the share price also increases. The finding is consistent with the studies conducted by Foster (1973), Firth (1976), Fisher (1961) and Lonie *et al*, (1996) which showed that earning per share has a significant influence on share prices in the United Kingdom and United States of America. Inyiama (2015) states that there is a significant and positive influence of earning per share movement on market price of share in the Nigerian banking sector. In order to increase the stock price, the banking institutions should

embark on aggressive marketing campaign, cost containment measures and diversify its strategies to improve earnings. Shamsudin, Mahmood and Ismail (2013) indicate that the asset turnover has influence on stock price.

This study also highlights that the return on asset has a significant influence on share price. This is in line with Inyiama's (2015) study which shows that the market price of ordinary shares is positively influenced by return on assets. As a result when the company records an increase in return on assets, its stock price increases. Shamsudin, Mahmood and Ismail (2013), point out that a higher return on assets of the company can be used as the rational for a stock selection since the return on assets influence the stock price. However, a study of determinants of change in stock prices was conducted in Pakistan and it shows that there was no significant relationship between stock price and return on asset (Ghauri, 2014).

The results also show that there is a positive significant relationship between liquidity and share price. This was consistent with the findings of Basarir and Ulker (2015) that there is a significant positive influence of liquidity ratio on stock return of the banking institutions which are trading in Borsa Istanbul. While Kamonye (2009) uses Pearson correlation coefficient to conclude that liquidity has an insignificant influence on stock prices in Nairobi Stock Exchange.

The study also indicates that interest rate has an insignificant influence on share price. Bacidore *et al* (1997) found that there was a negative relationship between the interest rate, inflation and performance of stock market in South Asia. The study in the United Kingdom, Germany and France by Peiro (2016) found that the macroeconomic activities such as changes in interest rates have an influence in share prices.

In this study, the results also show that consumer price index has a significant negative influence on share price. This is consistent with the study by Sadorsky (2016) which found that the consumer price index is a major determinant of a share price in the technology sector. Tsoulalas (2003) used Granger's causality tests to show that the consumer price index has a significant relationship with stock price in the Cyprus Stock

Exchange. Bacidore *et al* (1997) state that there was negative relationship between the inflation and the performance of stock market in South Asia. Kurihara (2006) states that in the 1970s and early 1980s inflation rate was the dominant factor that influences share prices, but has since stabilized in recent times. Interest rate has taken over and is currently the major influence of share price.

5.3 Conclusion

The objective of this study was to examine the relationship between equity prices and financial performance of companies quoted over a period 2013 to 2017. The empirical results show that return on asset, dividend per share, turnover, liquidity, earnings per share, inflation and interest rate are statistically significant. Therefore, the financial operating performance factors such as return on asset, dividend per share, turnover, liquidity and earnings per share significantly influence the share price of companies listed on the JSE. The study also reveals that macroeconomic factors such as consumer price index has a significant influence on a share price. Therefore, when these variables increase the share price also increases and when these variables decreases the share price follow suit.

Investors maximize their wealth by investing in the stock market. The maximization of wealth happens if the price of a share increases overtime and gets higher than the original price that the investor paid for a share. Therefore, the investors must have an in-depth understanding of how the financial operating performance and macroeconomic factors by performing fundamental analysis before selecting stocks. This will enable the investors to incorporate those factors in the models that they use to predict the future performance of a share price during the stock selection process.

5.4 Future research

The study shows that the financial indicators of the companies and macroeconomic factors have a significant influence on a share price of JSE listed companies. The study only explored eight variables. It is therefore recommended that a study be expanded to include more financial indicators and macroeconomic factors. It is also recommended

that a study that focuses on a specific sector of the South African economy such as banking, mining and retail be conducted.

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