ECONOMIC VALUE ADDED (EVA) AND STOCK PRICE OF FIRMS IN INDIAN STOCK MARKET: AN EMPIRICAL STUDY

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C. VANLALZAWNA

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BY

C. Vanlalzawna

Department of Management

Supervisor

Dr. R.K. Giridhari Singh

Assistant Professor, Department of Management

Mizoram University

Submitted

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MIZORAM UNIVERSITY

A Central University (Graded 'A' by NAAC)

Dr. Rajkumar Giridhari Singh
Assistant Professor

Department of Management
School of EMIS, Aizawl-796009, India
Tel: (91)9862568266(M)/9366225636
Email id: rkgiridhari@gmail.com

Ref: 6/4/DOM/08-

CERTIFICATE

This is to certify that the thesis work done on "Economic Value Added (EVA) and Stock Price of Firms in Indian Stock Market: An Empirical Study" is a bonafide work carried out by Mr. C. Vanlalzawna under my supervision and guidance. The thesis is submitted towards the partial fulfillment of the award of Degree of Doctor of Philosophy in Management, Mizoram University.

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(**Dr. R.K. Giridhari Singh**)

Date: 2.06.2021   Supervisor

DECLARATION

I, C. Vanlalzawna, hereby declare that the subject matter of this thesis is the record of work done by me, that the contents of this thesis did not form basis of the award of any previous degree to me or to do the best of my knowledge to anybody else, and that the thesis has not been submitted by me for any research degree in any other University/Institute.

This is being submitted to the Mizoram University for the degree of Doctor of Philosophy in Management.

(C. VANLALZAWNA)

Candidate

(Dr. AMIT KUMAR SINGH)   **(Dr. R.K. GIRIDHARI SINGH)**

Head   **Supervisor**

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(C. Vanlalzawna)

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ABBREVIATIONS

ABS	Assets-Backed Securities
AGSM	Australian Graduate School of Management
APT	Arbitrage Pricing Model
ARD	Action Rated Debenture
AXS	Australian stock exchange
BRLM	Book Running Lead Manager
BSE	Bombay Stock Exchange
BVPS	Book Value per Share
CAPM	Capital Assets Pricing Model
CBs	Commercial Bills
CDs	Commercial Deposits
CDSL	Central Depository Services (India) Limited
CFO	Cash flow from operations
CFROI	Cash Flow Return on Investment
CMIE	Centre for Monitoring Indian Economy
COC	Cost of Capital
CRR	Cash Reserve Ratio
CSE	Calcutta Stock Exchange
CSV	Created Shareholders Value
DCA	Department of Company Affairs
DDB	Deep Discount Bonds
DEA	Department of Economic Affairs
DFI	Developmental Financial Institutions
DPS	Dividend per Share
DSE	Dhaka Stock Exchange
ECFIN	Economic and Financial Research
EPS	Earning per Share
EVA	Economic Value Added
FCD	Fully Convertible Debentures

FII	Foreign Institutional Investors
GIC	General Insurance Corporation
HDFC	Housing Development and Financial Corporation
IBULFIN	Indiabulls Housing Finance Ltd.
IC	Invest Capital
ICEX	Indian Commodity Exchange
ICMD	Indonesian Capital Market Directory
ICICI	Industrial Credit and Investment Corporation of India
IDBI	Industrial Development Bank of India
IMSS	Integrated Market Surveillance System
IPO	Initial Public Offer
IRDA	Insurance Regulatory Agency
JSE	Johannesburg Stock Exchange
KSE	Karachi Stock Exchange
LIC	Life Insurance Corporation
LLP	Limited Liability Partnership
MCX	Multi Commodity Exchange
MoF	Ministry of Finance
M & M	Mahindra & Mahindra
MRTP	Monopolies and Restrictive Trade Practices
MV	Market Value
MVA	Market Value Added
PBVPS	Price to Book Value per Share
NABARD	National Bank for Agricultural and Rural Development
NBFC	Non-banking financial institutions
NCD	Non-convertible Debentures
NCDEX	National Commodity and Derivatives Exchange Limited
NPV	Net Present Value
NSE	National Stock Exchange
NSDL	National Securities Depositories Limited
NOPAT	Net Operating Profit After Tax
OIAE	Office of Investigator and Education
ONGC	Oil and Natural Gas Limited

OPM	Operating Profit Margin
OTC	Over-The-Counter
OTCEI	Over the Counter Exchange of India
PAT	Profit after Tax
PE	Price to Earning
QIP	Qualified Institutional Placement
RBI	Reserve Bank of India
Repos	Re-purchase Agreements
RI	Residual Income
ROA	Return on Assets
ROCE	Return on Capital Employed
ROE	Return on Equity
ROIC	Return on Invest Capital
RoNW	Return on Net Worth
RUFF	Revolving Underwriting Finance Facility
SCRA	Securities Contracts Regulation Act
SEBI	Securities and Exchange Board of India
SEC	Securities and Exchange Commission
SIB	Securities and Investment Board
SLR	Statutory Liquidity Ratio
SPN	Secured Premium Notes
SROs	Self-Regulatory Organizations
SSIT	Special Surveillance Inspection Team
STCI	Securities and Trading Corporations of India
TBs	Treasury Bills
TCS	Tata Consultancy Services
TSE	Tehran Stock Exchanges
VAIC	Value Added Intellectual
VEDL	Vedanta Limited
WACC	Weighted Average Cost of Capital

CHAPTER - 1
INTRODUCTION

1.1   INTRODUCTION

The capital market is an important constituent of the financial system. Financial systems are of crucial significance to capital formation. The role played by financial markets in the growth of an economy is tremendous. Indian financial markets have been playing a significant role in the growth of economy. Financial markets are a mechanism enabling participants to deal in financial claim. The market also provides a facility in which their demands and their requirements interact to set a price for such claims. The financial sector in the Indian economy is undergoing a transformation towards a vibrant, competitive and diversified system with a multiplicity of financial institutions having different risk profiles (Geeta and Swaminathan, 2015).An efficient, articulate and developed financial system is indispensable for the rapid economic growth of any economy. The process of economic development is invariably accompanied by a corresponding and parallel growth of financial organizations. However, the institutional structures, operating policies, regulatory and legal framework differs widely, and are largely influenced by the prevailing political-economic environment. The Government of India initiated a comprehensive financial sector liberalization programme for the growth of the Indian financial system (Dhanabhakyam, 2012).

The aim of a firm is to maximize its wealth and wealth is represented by the value of a firm. It is apparently becoming important for every firm to maximize its value rather than profits. Value of a firm is represented by share price of a firm. There have been growing concern about firm's performance and efficiency, and companies have started moving away from wealth maximization concept to shareholders value creation concept to prove their edge over their competitors. With the rapidly growing knowledge of capital markets among the Indian public, there have been a surge in the operations of the Indian stock markets, through both National Stock Exchange (NSE) and BSE in India. With the launch of commodities market in various segments, ordinary households have also started making

investments in stocks, bonds, futures and options. Lot many, small to medium-sized companies; have also entered the trading floor to sell their product through the stock markets. They too have started their transactions in future and options market (Prasad and Madhavi, 2015).

Maximizing the profits from investment firms is the major target of shareholders. Earlier, traditional performance tools like Earning per share (EPS), Return on Investment (ROI),Return on Capital Employed (ROCE), etc., have been employed by the investors to measure the stockholder value creation in companies, but according to the potential weaknesses of traditional performance measure, they have gravitated to use value based measure of performance which focus on changes in value. The value based measure of performance was diverse and there is no consensus about their competence in evaluating financial performance of companies (Panahi, 2014). To evaluate the company's ability in creating stockholders value, investors want to focus on their financial performance and consider the stock price of companies as the usher of that. Different measurement tools have been evolved for measuring a firm performance and shareholders' value. Failures to use appropriate criteria for measuring corporate performance and shareholders' value may cause company's real value, and may affect the group of buyers and stock profits. The increasing trend for value creation has made to find a trademark measure of the firm's financial performance. In order to ensure optimal allocation of limited resources, evaluating the company's performance is important (Thakor, 1997).

Economic Value Added (EVA) and Market Value Added (MVA) are the two important tools of financial performance measurements of firms. EVA as defined by Stern Steward & Co. is an internal management performance measure that compares net operating profit to total cost of capital. In corporate finance, EVA is an estimate of firm's economic profit, or the value created in excess of the required return of the company's shareholders. EVA indicates how profitable company's projects are as a sign of management performance. Market Value Added (MVA) is the calculation that shows the difference between the market value of the company and the capital contributed by investors, both bondholders and shareholders. It is an external performance measure to compare the market value of the company's debt and equity

with the total capital invested in the firm. Steward (1991) defined it as the sum of all capital claims held against the company plus the market value of debt and equity.

Investors in stock markets want to maximize their investment received. In fact, they are interested to buy kinds of stock which have the most profits and efficiency. In this decision making process, stocks price plays an important role in buying decisions of a particular stock. Investors are concerned about the stock price fluctuations and they prefer to invest on the stocks which show a growth of price during the time (Lehn and Makhija, 1997).

Stock market investors always seek to achieve high profits. They purchase the stock which is best in their own view and retain it in order to get highest output as well as its associated relative profit. Maximizing shareholders value is the modern corporate and business paradigm. Corporations will ultimately decline from the phase, if the preference is not given to the curiosity of shareholders (Tease, 1993). Value of shareholders increase in terms of returns they achieve from their investment in the market. The returns can have two forms; the return can be in the form of dividends or as capital appreciations. Capital appreciations depend upon the fluctuations within the value of the stock in the market. These fluctuations in the market value of stocks depend on number of associated factors which range from company's internal to external specific factors. Stakeholders use financial information available in public publications to be able to assess the firm's current performances and forecast the future returns while investing (Sharma and Kumar, 2010).

1.2   SIGNIFICANCE AND SCOPE OF THE STUDY

Stock price maximization is the most widely accepted objective of listed firms worldwide. The entire corporate decision making framework revolves around this comprehensive framework. The metrics of financial performance are important in the corporate and investors decision-making to the extent they influence the stock prices. The studies of particular stock price and its relationship with Economic value added are very important for stakeholders and many other who are reliant on the Indian financial markets. Wealth maximization of shareholders is the basic purpose

of every company's objectives and performance evaluation of a company is the most important subject that is considered by investors, managers and government. Recently, activity of stockholders has reached unparalleled levels and led to raised needs on companies to maximize stockholders. In order to ensure optimal allocation of limited resources, evaluating the company's performance is vital. Variation of price in the stock movements help to determine the stock price in the oncoming days and thereby facilitate in taking well informed decisions. Developing competent knowledge about the market sphere and study of market trends of a stock price in relation with its value added gives the investors insight knowledge of stock market.

The overall scope of the present study is focused on companies listed in National Stock Exchange (NSE, Nifty 50 INDEX) for a period of recent 12 twelve years from 2007-08 to 2018-19 in India.

1.3   LITERATURE REVIEW

There have been many studies conducted to prove EVA as a superior performance measure as compared to traditional accounting measures. Some academic literature has proved EVA to be a superior measure while some studies reject the superiority of EVA.

Various articles dealing with the study of EVA have been published over the last two decades since Steward & Co. (1991). However, the concept of EVA is still under development and debate. Literature on EVA can be discussed broadly as many sub-themes. However, EVA and stock return is one of the most widely covered aspects followed by literature on relationship between EVA and firm performances; comparison of EVA and other accounting measures.

In this section, selective literature review related to the relationship between accounting ratios and shares price of the companies; relationship between EVA and accounting measures; EVA and shares price are presented.

Basana, Julio and Soehono (2020) investigated the effect of economic value added and profitability on created shareholders value Fernandez model and market value added model in manufacturing companies listed on the Indonesia Stock Exchange period year 2013 to 2018. The samples are fifty Manufacturing companies enterprises listed on the IDX period year 2013 to 2018. Methods of data analysis were performed using panel data regression with pooled OLS model. The results showed profitability has a significant effect on created shareholders value Fernandez model and market value-added model in manufacturing companies listed on the IDX period 2013 to 2018.

Shyshani, Omush and Guermat (2020) examine whether the adoption of EVA framework enhances the firms performances and gauge long-term effects such as adoption on the firm value. The study sample consists of 89 US firms EVA adopters on NASDAQ, NYSE and American Stock Exchange Markets. It compares the performance of adopting firms to that of selected matching firms and to the market indexes, particularly, the S&P500 portfolio. The price and return data of both adopting and control firms were collected from CRSP database. Then it uses two common aggregating methods to test the event of adopting EVA by different US firms namely the CAR and BHAR methods. The results obtained however, showed a slight improvement in the performance of companies adopting EVA within five years from the date of adoption.

Behera (2020) explored whether the EVA valuation model could be implemented under changing required return by making any changes in the model and found that it could be implemented under the scenario of changing required return by replacing the book value of the equity of the existing model with the present value of required earnings or normal market earnings. The study further examined whether the explanatory ability of the EVA valuation model under the assumption of changing required return is better than that of the valuation model under the assumption of constant required return. Relative information content analyses were conducted by considering sample of the intrinsic value of equities determined by valuation models and the market value of equities of 69 large-cap, 88 mid-cap, and 79 small-cap companies. The results showed that the EVA-based

valuation model with changing normal market return outperformed the EVA-based valuation model with constant required return.

Pasha and Ramzan (2019) in their study on impact of economic value-added dynamics on market value of stocks in Pakistan stock exchange, a new evidence from panel cointegration, FMOLS and DOL, they found that EVA has a negative weak but significant relation with stock return in long run by employing panel cointegration, panel FMOLS and panel DOLS for 70 nonfinancial Pakistan Stock Exchange listed firms from 13 industries for a study period of 2006–2015. The study also found the long-run relationship of EVA with stock returns to deduce if any opportunity of realizing excess return exists in the Pakistani capital market by using EVA, a value-based performance measure, to take investment decisions.

Purswani and Anuradha (2017) conducted a study to examine the impact of EPS, DPS, BVPS, PBVPS, ATR, CFO and NW on market price of the share of real-estate companies listed on BSE. The study coversthe top 20 companies based on their market capitalization for a period of five years from 2011-12 to 2015-16. Secondary data were employed including accounting information sourced from annual reports of construction companies listed on BSE and data related to market share price sourced from the website of BSE. The study found that earning per share and price-to-book value per share is reported to have positive and statistically significant relationship with share price.

Examining the effect of Economic Value Added (EVA) and Earning per Share (EPS) on stock return, Amyalianthy and Rotonga (2016) in their study mentioned that EVA and EPS have a positive significant effect on stock return. The data used in their study covers a period from 2013 to 2014 from annual reports, company's websites and financial data from the Indonesian Capital Market Directory (ICMD) published by the Institute for Economic and Financial Research (ECFIN). Twenty one companies listed in LQ 45 Index from Indonesia Stock were taken as the sample of the study. The study revealed that EVA and EPS are the important variables that determine the return of the companies in Indonesia.

Examining whether EVA is a better predictor in Tehran Stock Exchanges (TSE) and to present a model to predict the status of economic value added of TSE

by using Genetic Algorithms, Hajabedi, Mousdakhani and Orooji (2016) analyzed data from a period of 2006 to 2012 by taking a sample size of 500 from TSE. The study found that companies' EVA in Iran is predictable with reasonable accuracy and created model by the generic algorithm have high capable of EVA forecast.

Identifying and analyzing determinants influencing EVA, Kijewska (2016) conducted a study to explain the impact of various factors on the change of EVA. The analysis was carried out from the sample of companies from mining and metallurgy industry- KGHM Polska Miedz S. listed in Warsaw Stock Exchange taking the data for the years 2011- 2014 from annual reports. The study observed that present method can be used to analyze economic indicator of a firm, however, the equity cost, debt cost and capital structure shall be considered instead of Weighted Average Cost of Capital (WACC) and hence more factors would be taken into account in the existing EVA Model.

Focusing on the review of the irrelevance theory of Modigliani and Miller's hypotheses and also to statistically test the influence of firm's specific factors on the value of BSE listed firms, Shalini and Biswas (2016) conducted a study by taking non financial companies listed in the S&P BSE 100. Seventy four companies from 16 industrial sectors are qualified to include in the study sample. The data for the empirical analysis is derived from the financial statements of these firms during the period from 1011-2015. Multiple regression models is used to arrive empirical results with firms value as criterion variable and firms specific factors like profitability, tangibility, liquidity, size and growth as per predictor variables. The study concluded that the irrelevance of MM hypotheses has been criticized due to the fact that it does not take into account transaction cost, bankruptcy costs, growth rate, tax rate, risk and asymmetric information. It is not possible for the investors as well the companies to have equal access to the market and symmetric information. The study showed that the value of the firms is not independent of capital structure decisions. The values of the firms are depended significantly on the factors like firm's size and tangibility and not so significantly on profitability, liquidity and growth factors.

To explore the correlation between selected performance measurement tools; Return on Equity (ROE), Economic Value Added (EVA) and the share price of

companies listed in Johannesburg Stock Exchange (JSE), Totowa (2015) conducted a studies taking a sample of 100 companies listed in JSE for a period of two years i.e. 2010 to 2012. Data were extracted from McGregor BFA Database to investigate the relationship between Equity (ROE), Economic Value Added (EVA) and the share price of companies. The study found that there is a synergy in using ROE and EVA as performance measurement tools and their interaction explains a positive movement in the share price of listed companies.

In a study conducted by Geeta and Swaminathan (2015) found existence of a significant difference in market price of a company and the traditional measurement tools like EPS, book value and DPS. Hero Honda, Maruti, Tata Motors and Mahindra & Mahindra from automobile sectors and Infosys, TCS, WIPRO and Oracle financial services from IT sectors which are listed in the NSE have been selected for the study. Secondary data for four years i.e., 2010 to 2014 were collected of these automobile and IT companies in India for the study. Financial analysis techniques like Ratio analysis, EPS, Dividend per share, book value per share and price earnings ratio has been used. The study found that the dividend per share does not have positive or negative effects towards the market price.

Awan, Siddique and Sarwar (2014) found value of stock to be significantly affected by Economic Value Added (EVA). They had conducted taking data on annual basis for the year 2006-2010 of 59 non-financial companies consisting of six industries listed in KSE-100 indexes in Pakistan. The study observed that EVA is a key performance index that initiates or motivate companies to find out how to increase efficiency of capital utilization and consequently produce superior operating performance, and therefore should reflect a stock's intrinsic value.

Panahi, Preece, Zakaria and Rogers (2014) found that there is a positive interdependence of EVA and MVA with stock price. The study had analyzed the correlation of EVA and MVA with stock price of 567 companies in Tehran Stock Exchange for the period of year 2010-2012. Data were based on secondary data collected from respective financial statement of each company and official database of Tehran Stock market. Pearson correlation coefficient, t-test and regression method was employed to analyze the secondary data. They have observed that both EVA and MVA are appropriate measures which should be considered by investors when they

want to make decision about their stocks in comparison with traditional measure of performance.

Evaluating dividend policy and its impact on stock price of commercial banks listed in Dhaka Stock Exchange, Masum (2014) had analyzed the correlation between the share market price and the dividend policy of banks and the factors affecting the market price of the banks. Data were based on secondary data collected from thirty commercial banks listed in DSE covering a period from 2007 to 2011. Pearson correlation coefficients were utilized to meet the objectives. The study found that dividend policy has significant positive effects on stock price.

Ray (2014) has empirically conducted studies on EVA and its relationship with stock market price. The study investigated 36 Nifty stocks and covers a period of 6 years from 2006 to 2012. In order to assess the superiority of EVA metric compared to other common performance measures, data were also collected for ROA, ROE, and ROS for 2009 as well as the last 3 years average (2006 -2009) from CMIE Prowess Database. Each company was then ranked from 1 through 36 on each measure. Pearson Correlation coefficient and regression method was employed to analyze the secondary data. The study found that there is no sufficient confirmation about high-EVA firms will consistently lead to higher book of ROA, ROE and ROS and therefore no guarantee that higher EVA get translated into higher accounting returns. The study also found that there is absolutely no relationship between EVA and stock market performance.

Bani, Tajik, Nourizadeh, Asadi and Bani (2013) had done studies on the relationship between EVA and EPS and DPS of companies listed in Tehran Stock Exchange. The study covers a period of 3 years from 2009 to 2012. The EPS and DPS of 21 companies among top 50 companies in Tehran Stock Exchange were selected randomly based on the availability of data. The study found that there is no significant correlation between EPS and DPS with economic value.

Haque and Faruquee (2013) had done a study on Impact of fundamental factors on stock price on pharmaceutical companies listed in Dhaka Stock Exchange (DSE). The study was undertaken to find out the influence of different information in determining the stock price. The study considers 14 Pharmaceuticals companies

listed in DSE, which comprises 70 percent (14 out of 20) of the total listed companies with DSE under pharmaceutical and chemical industry. For the purpose of analysis, secondary data have been considered from 2005 to 2011. Data were analyzed using multiple regressions. The study considered five performance criterions (EPS, DPS, FA/TA, ROA and ROE) to determine correlation with stock price, but it was found that there is no significant correlation between stock price and these variables. The study concludes that the price of stock at DSE is influenced more by factors other than company fundamentals.

Hasan, Asaduzzaman and Karim (2013) evaluated the effect of dividend policy on share price in Bangladesh. The study was based on secondary data annual reports of the companies and covers four industries-Automobile, Cement, Textile and Pharmacy. Data of 28 companies comprising seven companies from each industry for a period of 2005 to 2009 were analyzed using correlation and linear regression. The study found that there is a positive relationship between dividend policy and market price per share. The study also found that the effect of dividend payout is more on market price than retention.

Nakhaei and Hamid (2013) had empirically analyzed the relationship between EVA and accounting variables with share market value in Tehran stock exchange. The purpose of the study is to examine the relative explanatory power of the Economic Value Added (EVA) model with respect to share market value (SMV) compared to the recognized accounting variables i.e. Net profit and Operating profit in the context of Tehran Stock Exchange (TSE).The study have taken a sample of 87 non- financial companies listed in Tehran Stock Exchange (TSE) over a period of 4 years from 2004-2008. Pearson correlation coefficient and regression method was employed to analyze the secondary data. The study found that there is significant and direct relationship between net profit and market share value. There is also significant relationship between operating profit and share market value. The study also found that there is a significant relationship between Economic Value Added (EVA) and Market Value (MV).The study found that the relationship between net profit and operating profit with share market value is more significant than the relationship between net profit and operating profit with Economic value added.

The study of Khan, Shah and Rehman (2013) revealed that correlation among all the variables are positively correlated except EVA which is negatively correlated with net income. There is a negative correlation between stock return and EVA which means that EVA is not contributing to the stock return as the investor's reliance and beliefs is on the provisions of dividends to the shareholders rather than increasing worth of the business. The study try to exhibit the relationship between stock return and EVA compared to Net Income and Operating Cash flows of Karachi Stock exchange. The study size consists of 60 firms out of 634 listed companies in KSE -100 Index for the period of seven years from 2004 to 2010. The study concluded that contribution of operating cash flows is higher as compared to EVA and net income.

Study conducted by Oloo (2013) found a significant positive relationship between return on equity and economic value added and a significant positive relationship between return on assets and economic value added. The study further observed a significant positive relationship between earnings per share and economic value added. The study was undertaken to determine the relationship between accounting value and economic value among commercial Banks in Kenya by taking a sample of 30 Banks for a period of 2008 to 2012. Data were collected from respective company's annual reports and NSE and CBK sites. The study recommend that to achieve a proper measure of economic value, Kenyan commercial banks need to integrate emphasis on ROE, ROA, and EPS as the measure of accounting.

Analyzing and measuring value added in South African banking sector, Fouche (2012) conducted a study by taking a list of Banks listed in Johannesburg stock exchange (JSE). Data were obtained from the McGregor database. The study covers a period of ten years from 2001 to 2010 to determine which value based management measure correlate best with the value creation and to see the impact of specified metrics on value creation in selected sample banks. The study found that the growth in EVA performed best as indicator for value creation.

Though value based management has gained attention in the developed economies, it is said that the developing economies are still lacking behind in value based performance measures as a firm performance measurement tools. Mamun and Mansor (2012) intended to identify why EVA should be used as financial

performance measure over the conventional measures and compare EVA with conventional methods. The study aims to evaluate the applicability of EVA in Malaysia. They concluded that EVA has gained attention of corporate giants based on what EVA can be acclaimed to be the most exiting innovation in company's performance measures. The study claimed that EVA is a better performance measurement tools in shareholders' value than conventional tools and companies should also try to implement which will help to test the viability of the concept on the context of Malaysian business.

Abdoli, Shurvarzi and Farokhad (2012) found that Economic Value Added (EVA) and Residual Income (RI) have significant relationship with created shareholder's wealth. The study was undertaken with the objectives of finding which one is a better measurement tools in creating shareholders wealth, EVA vs. RI. The studied statistical population consists of 85 companies listed in Tehran Stock Exchange (TSE) during 2006 to 2009 whose data were obtained from Rahavard Novin information Software, Tadbir Pardaz as well as the website of Islamic Research development Centre of Tehran Stocks and Securities Organization. The result further indicates that the relationship between Residual Income (RI) and Created Shareholders Value (CSV) is more significant than relationship between EVA and CSV and hence it is considered as better criterion for performance evaluation and increase in shareholders' value.

Many researchers have been done internationally which asserts the view that EVA and MVA have more correlation than other traditional financial performance measurement in stock price. Kangarlouei, Azizi, Farahani and Motavassel (2012) conducted a study to make clear the theoretical indices of financial performance measurement to test these indices and offer necessary evidence in order to help the Iranian capital market participants to make sound decisions in investment process. The study was based on secondary data. A total of 91 firms listed in Tehran Stock Exchange (TSE) whose data are available only for the past seven years are taken for the study. The study found that EVA and MVA have more correlation than EVA and other indices of traditional financial performance measurement during the observed period. They further observed that traditional system and measure used up

to now are inadequate and will not tolerate increasingly challenging environment of the capital market in TSE.

Patel and Patel (2012) had empirically evaluated the impact of EVA on share price of Indian private sector banks. Different variables such as NOPAT, Invested Capital, ROIC, Cost of Equity, WACC, EVA and MVA has been used for the study. The study covers a period of five years from 2005 to 2010 and data were based on secondary data of annual reports and share price in the stock market collected for the sampled banks viz. Axis bank, HDFC bank, ICICI bank, Kotak Mahindra bank, Karnataka bank, IndusInd bank, and INGVyasya bank. The study found that the correlation between EVA and stock price of Kotak Bank is positive whereas the correlation between EVA and stock price of Axis, HDFC, ICICI, ING Vyasya, Indusland and Karnataka banks were negative. The highest coefficient of determination was found for HDFC Bank with 0.374 which indicated that 37 percent of the variation in stock price of HDFC Bank is explained by EVA of the HDFC Bank. Rest of Banks' coefficient of determination was found to be low ranging from the study found the coefficient of determination for all banks ranging from 0.089 percent to 1.7 percent which indicated that EVA is not a good predictor of the share price of the bank.

Investors in developing countries shifted their attention from traditional mandated corporate performance measures like NOPAT, EPS to value based mainly EVA while analyzing the performance of companies and making investment strategy. Sharma and Kumar (2012) conducted studies to examine whether EVA can be used as a tool of performance measures while investing in Indian market and provide evidence about its superiority as a financial performance measure as compared to conventional performance measure in Indian companies. The study employed secondary data obtained from *Prowess* and *Capitaline Plus* database for the periods from 2000 to 2009 whose economic profit figures are available in BT- SS Survey about Indian companies. The study revealed that investors should use EVA along with traditional measurers in firm valuation and making investment strategy. The study further indicates that EVA is significantly associated with MVA of Indian companies and hence there is a positive relationship between EVA and MVA of

Indian companies. Therefore, investors should try to use EVA as a tool for analyzing investment alternatives.

Negative results have been found by many studies including Pataky (2012) who found selecting stock using EVA does not offer less risk or higher returns for an investor. He mentioned that no strong evidence has been found to show that EVA is a better performance tools than other accounting measures for measuring company performances. By using top fifty firms and lowest fifty firms from S&P 500 Index for a period of ten years from 2002 to 2011, he found that EVA is a difficult performance metric to calculate, with several complex components that can be calculated in several different ways such as NOPAT, cost of equity and cost of debt. Traditional performance metrics, on the other hand, such as ROA, ROE, and E/P, are simple to calculate with few components and offer only one way to calculate them.

Mutuku (2011) argued that there exist a negative relationship between cash conversion cycle and financial performance of firms listed in the Nairobi stock exchange (NSE). This support previous studies such as Pataky (2012) and Barners (1999, 2001). The study examined cash conversion cycle and financial performance of firms listed at the NSE for the period of 2006 to 2010. A sample of 30 companies selected from the agricultural, commercial and services, and industrial and allied sector were studied. The findings suggest that firms with short cash conversion cycle are likely to perform better than those with long cash cycles. The study therefore encourages firms to shorten their cash cycles as much as possible.

EVA is a well-accepted method in line with especially firm value maximization in all over the world and a method for which many studies have been conducted in finance literature and EVA is considered to be a method that needs to be thought over especially by not only big firms but also by small and medium scaled firms (Mustafa, 2010). By analyzing 50 different journals and publications on EVA from 1999 to 2013, he concluded that EVA methods gives analysis of the firm opportunity for figuring out the value parameters of the firm and it also enables analysis to head for longer term elements such as specific and systematic risks and the provision of capital income. EVA also provides benefits for the investors in the issues like capital efficiency and provisions of competition superiority in long term.

Proponents of EVA claim that EVA is a better predictor for company's performance than traditional measures. Sharma and Kumar (2010) analyzed a total of 112 papers, 61 from referred journals and 51 from international conferences on EVA from 1994 to 2008. The study tries to identify the gaps in the existing literature and suggest the direction for future research on EVA. The literature review on EVA was done on classification of seven sub themes: EVA and MVA relationship; EVA and stock return; managerial behavior and performance measurement; concept, critics, application and strategy; value management; discounting approach and literature survey on EVA. They concluded that EVA is considered an important tool of performance measurement and management all over the world and is more superior to other traditional measures like EPS, ROCE, RoNW and NOPAT.

To investigate and find empirical support of the relationship between Economic Value Added (EVA) and stock price/ returns in Pakistani firms, Akbar, Khan and Ali (2010) conducted study using samples consisted of 16 companies of fuels and energy sector traded in Karachi Stock Exchange (KSE) from a period of 2001 to 2008 and stock price were collected from the website of KSE and the daily Business Recorder. Data were also extracted from State Bank of Pakistan publications balance sheet analysis of Joint stock companies. The study observed that the stock return and stock price are positively related with EVA. However the study finds no significant relationship between stock returns and changes in EVA.

Shil (2009) had attempted to analyze the economic value added on financial performance of companies. The objective of the study is to compare the traditional measurement tools with the modern financial performance tool EVA and find out best appropriate for measuring financial companies. The methodology used is a type of theoretical mining of logics resulting step-by-step process required for EVA implementation. The study find that as a corporate house moved from traditional value based performance measure; EVA would yield better results and will become helpful for them to comprehend the methodology.

There are a growing number of studies examining which performance measure is the most compatible with shareholder's value maximization. An attempt has been done by Withera (2008) examining both relative and incremental information content focusing on the Kenyan banking industry, and to find out the

information content of EVA performance indicator in the light of creating shareholder's value within the banking industry. Data were based on secondary data covering five years from 2002 to 2006 on quarterly basis; samples consist of seven banks listed in Nairobi Stock Exchange (NSE). The study found that superiority of EVA is not verified in terms of relative information content. The study further observed that there is very little evidence to support EVA's superiority as an indicator of shareholder's value.

Economic Value Added has become increasingly popular as a tool for financial investment decision making. EVA has been adopted rapidly by a number of firms to measure corporate finance. Wainaina (2008) conducted a study to calculate EVA of the companies listed in Nairobi stock exchange and to empirically determine the relationship between EVA and stock return. Data were based on secondary data whose data were listed on Nairobi stock exchange for a period of five years from 2002 to 2006. Samples consist of 42 companies comprising of different segment categories. The study found no evidence to support the contention that EVA is the best measure of market return and therefore, does not fully support the arguments of EVA proponents that it is the best measure of shareholder's return. The results also further indicate that the market seems more focused on profit than EVA.

Predictability and variability are the two measures commonly used in the empirical literature to gauge the quality of earnings. According to Forker and Powell (2008), EVA and other Residual income metrics consistently give rise to lower average valuation errors and thus have higher predictability a cross variety of windows and terminal dates. This does not support earlier studies conducted by Biddle, Bowen and Wallace (1997) who found that mandated earnings were superior to EVA and residual income. Data were extracted from both US and UK datasets which contains 1,000 firms for a period of sixteen years from 1986 to 2001. The UK dataset contains 500 firms for a period of twelve years and US dataset contains 500 firms for the same year. The study strongly indicates that differences between Residual Income construct, including EVA, are generally small but that earnings quality will be improved by recognition of cost of equity capital in measuring reported income.

Iswati and Anshori (2007) conducted a study to investigate and examine the influence of intellectual on Insurance Company's performance. The study employed data from Indonesia Capital Market Directory 2005 that are issued by Jakarta Stock Exchange (JSE). The population of the study was 10 insurance companies listed in JSE. The study found that intellectual capital has a positive influence on insurance financial performance in JSE.

Wet and Toit (2006) analyzed the impact of popular financial performance measurers on shareholder's wealth. It tests the strength of linear relationships between dividends and changes in share price. The return on equity (ROE) is weight up against the present economic value added. The study employed secondary data from JSE for the period 1995 to 2005 from 83 sampled companies listed in JSE stock market. The statistical test found ROE is more superior to EVA in explaining changes in shareholders return. The result further found weak linear relationship between all the performance measures relatively to shareholder's fund.

Najibullah (2005) examines the relationship between corporate value creation efficiency and firm's market-to-book-value ratios, and explores the relation between intellectual capital and firm's financial performance. By taking a sample of 22 banks enlisted in Dhaka stock exchange (DSE) for a period of one year i.e., 2004 and data were extracted from respective company annual reports and DSE. The study found that no strong relationship between market to book value and Value Added Intellectual (VAIC).

In a study to understand and explain the discount rate in the stock market conditions and to provide insight on the possible future direction of the stock price, Grant, Albate and Rowberry (2005) examine the pricing role of discount rate using empirical inputs over December 1999 to March 2005 period. The assessment includes a period of falling interest rates from December 1999 to June 2003 to a period of rising interest rate from July 2003 to March 2005. Examination is also taken of the pricing role of the equity risk premium over the period of five years from December 1999 to March 2005 and how it has behaved relative to the risk free rate over longer time frame. The study found that EVA approach is fully recognized as one of the three key drivers of stock price.

Medeiros (2004) had done an empirical study on the relationship between share price and economic value added in Brazil. The six Brazilian companies operating in Brazil and traded in the top Brazilian share exchange were taken as sample for the empirical analysis of companies. The study covers a period of four years from 1996-1999. Secondary data were collected from economatica's database. Data were analyzed using Pearson correlation coefficient and regression method. The study found that EVA affects share price and more specifically, changes in share price are significantly influenced by changes in EVA.

Wet (2004) had conducted a study to find out how EVA and MVA adjustments to financial statements reflect value creation. He found that although EVA and MVA cannot be regarded as the final answer to the challenge posed by the guest to evaluate and manage company performance objectivity, it is acknowledge that no better alternative measurers exist at the moment.

Turner and Morrell (2003) paper focus on the calculation of cost of equity capital in a sample of airlines, in comparison to industry-calculated values, taking ten airlines which covers Europe, America, Asia and Australia for a period of five years from 2007 to 2012 and data were extracted from stock price from different markets and respective company's annual reports. The approach usually taken is to apply CAPM to airlines stock prices and market indices. The study found that the calculated β values are sensitive to the precise methodology and calculations used. Further, he found that low regression model fits indicate CAPM may not be the most suitable model for β value calculations.

Worthington and West (2001) analyzed 110 Australian companies over a periods of 1992 to 1998 to find out and to examine whether EVA is more highly correlated with stock return than conventional accounting based measures: namely earnings before extraordinary items, net cash flow from operations and residual income. Financial statements were collected from the Australian stock exchange (AXS) data disk database and Annual report collection database. Share price data was obtained from the Australian Graduate School of Management (AGSM) Share Price and Price Relative database. The study claimed that EVA is a better performance measurement tools in shareholders' value than conventional tools and

companies should also try to implement which will help to test the viability of the concept on the context of Australian stock exchange.

Dissatisfaction with traditional accounting based performance measures has spawned a number of alternatives. To find out which is a better predictor and more correlated with stock return, Garvey and Milbourn (2000) conducted a study on EVA vs. Earnings. The study was based on secondary data from 1986 to 1997. Stock price data were collected from Standard and Poor's compustat and CRSP and samples size is just under 6800. These data were augmented with estimates of EVA secured from Stern Steward Performance 1000. The study found a positive correlation between stock price and EVA than earnings. The study further found that EVA has got a better predictive power in analyzing the stock returns of a company than traditional measures i.e. earnings.

According to Young and Byrne (2000) EVA is highly accurate because it includes the cost of debt financing and equity financing. He found that traditional income measures including net income and earnings per share can be easily manipulated, and they do not account for the cost of equity. Cash flow measures like Cash flow from operations (CFO) and Cash Flow Return on Investment (CFROI) include neither the cost of equity nor the cost of debt. He found that Economic Value Added (EVA) is the best available metric for measuring value.

An attempt has been made to find the relevance of Stewart's claim that market value of the firm is largely driven by its EVA generating capacity in the Indian context and examining linkage between Economic Value Added (EVA) and Market Value Added (MVA) in the Indian context. By taking a samples size of 200 firms comprising of different industries over a period of five years from 1993 to 1998, Banerjee (2000) found that market value of a firm can be well predicted by estimated future EVA streams. The study has also found that market value of most of the firms in the sample is explained more by current operational value than future growth value of firms.

Analyzing earnings volatility and market valuation, Barners (1999, 2001) conducted study to investigate whether there is a systematic relationship between firm's market value and the variability of its quarterly earnings stream. Using the

data from the *Compustat* full coverage, industrial and research quarterly files from 1973 to 1998 and the sample consisting of 283,489 observations relating to 11,662 firms and the number of observations per firm ranged from 1 to 92 with a mean of 43. The study observed that there is significantly negative relationship between the market to book ratio and earnings volatility. The study further found that negative relationship remained even after controlling for operating cash flow volatility, which indicated 'accounting driven' earnings volatility does not indeed have an economic impact.

1.4   RESEARCH GAP

After a critical review of the above literature of stock price and its value measurement, some of the research issues were identified. Most of the studies concluded that stock price of a particular firm are positively influenced by EVA and is more superior to other traditional accounting measures (Risbud and Kulkarni, 2016; Prasad and Madhavi, 2015; Awan, Siddique and Sarwar, 2014; Masum, 2014; Panahi, Preece, Zakaria and Rogers, 2014; Hasan, Asaduzzaman and Karim, 2013; Nakhaei and Hamid, 2013; Sharma and Kumar, 2010; Shil, 2009; Ramana, 2007; Medeiros, 2004). However, findings of some studies have contradicted the positive relationship between EVA and share price (Mengi and Bhatia, 2015; Reddy, Narayan and Poornima, 2015; Ray, 2014; Bani, Tajik, Nourizadeh, Asadi andBani, 2013; Haque and Faruquee, 2013; Patel and Patel, 2012).Thus there is inconclusive evidence of influencing share price by the EVA. Again, earlier studies utilized Price Earnings (PE) and Earnings per Share (EPS) to measure the relationship of EVA with stock price. However, these measures are found to be insufficient because these do not fully covered the company real picture and these measures fail to capture the shareholders' value creation actions. From the literature it can also be drawn that the study of relationship between stock price and other variables like Dividend per Share (DPS) based on the industry wise is found to be scanty. Further analyzing the data of more than 10 years of stock price and its relationship with EVA on industry and sector wise is expected to reveal broader past and future trends in Indian stock market.

1.5 RESEARCH DESIGN

1.5.1 STATEMENT OF THE PROBLEM

Indian financial market had vastly contributed in the growth of economy and plays a significant role. Stock market plays an important role in Indian economy and it has direct impact on the entire economy of a country. The traditional measures like, Earning per Share (EPS), Return on Assets (ROA), Return on Invest Capital, Return on Capital Employed (ROCE), Return On Net Worth (RONW), Dividend per share (DPS), etc. failed to measure the economic performance as it does not take into account company cost of capital, but the value based measure i.e., EVA on the other hand consider company cost of capital and is becoming popular in measuring financial performance in today's world.

The major backdrop is that most of the company were using traditional financial measure but not using the value based measure to analyze the financial performance. The value based methods are quite useful in valuing company because most of these are highly levered entity. As the financial leverage increases financial risks, equity shareholders will require higher rate of return in order to be compensated for assuming higher degree of risks. Therefore, EVA is quite useful method in valuing company to measure the return earned by the firms more than return required by equity shareholders. For investment decision, it is important to examine the superiority of EVA over traditional accounting measures. EVA is considered as superior as it accounts for the cost of capital and measure the true economic profits of the firms. The present study thus aimed to analyze the relationship between EVA and stock price of a firm in the Indian stock market.

1.5.2 OBJECTIVES OF THE STUDY

The following objectives have been undertaken for the present study:

a) To rank selected companies based on average performance on Economic Value Added (EVA)

b) To identify the relationship between the stock return and EVA

c) To examine the temporal and sectoral trends in value added in Indian economy

d) To analyze whether a significant correlation exists between values added of a firm and market value of a firm

e) To analyze the descriptive and predictive power of value added as an indicator of stock market performance i.e., Price to Earnings (PE), Earning per Shares (EPS) and Dividend per Share (DPS)

1.5.3 RESEARCH HYPOTHESIS

The following are the hypothesis of the study:

$H1_0$: There is no significant relationship between EVA and stock price

$H1_A$: There is a significant relationship between EVA and stock price

$H2_0$: There is no significant relationship between EVA and MVA

$H2_A$: There is a significant relationship between EVA and MVA

1.6 RESEARCH METHODOLOGY
1.6.1 Population

The population was drawn from the companies listed in the National Stock Exchange (NSE). The Nifty 50 companies listed in the NSE as on 1st April 2017 were taken for the study. The period of twelve years data i.e. 2007-08 to 2018-19 were considered for the study.

1.6.2 Sample

The sample consisted of all fifty companies which were listed in NSE and included in Nifty 50 index. These fifty companies belong to 13 different sectors viz. Information Technology, Media, metal, pharma, services, telecom, auto, financial, energy, consumer goods, cement and constructions. The sampled companies are listed in the Table 1.1.

Table 1.1: List of 50 companies selected for the study

Sl.No	Company	Sector	Sl.No	Company	Sector
1	HCL		26	AXISBANK	
2	INFOSYS		27	BAJAJFINSERVE	
3	TCS	IT	28	BAJAJFIN	
4	TECH MAHINDRA		29	HDFC	
5	WIPRO		30	HDFC BANK	
6	ZEE	Media	31	IBULFIN	Financial
7	COAL INDIA		32	ICICIBANK	
8	HINDALCO		33	INDSBANK	
9	TATA STEL	Metal	34	KOTAKBNK	
10	VEDL		35	SBI	
11	CIPLA		36	YESBANK	
12	DRREDDY		37	UPL	Fertilizer
13	LUPIN	Pharma	38	BPCL	
14	SUNPHARMA		39	GAIL	
15	ADANIPORTS	Services	40	HINPEDRO	
16	BHRATIARTL		41	IOC	Energy
17	INFRATEL	Telecom	42	NTPC	
18	BAJAJAUTO		43	ONGC	
19	EICHER		44	POWERGRID	
20	HEROMOTOCO		45	RELIANCE	
21	M & M	Auto	46	ASIANPAINT	
22	MARUTI		47	HINDUSTANLEVER	Consumer goods
23	TATAMOTOR		48	ITC	
24	GRASIM	Cement	49	TITAN	
25	ULTRATECH		50	LARSEN &TURBO	Construction

1.6.3 Data Collection

The study employed secondary data. The annual published reports and financial statements of quoted companies and information from the National Stock Exchange were analyzed. The financial statements were obtained from the annual

reports of the companies. The annual reports were downloaded from the companies' websites. The closing price of the Nifty 50 as market index was downloaded from the NSE website.

1.6.4 Period of Study

The study covered a period of 12 years from 2007-08 to 2018-19.

1.6.5 Data Analysis

Ranking was done based on mean value of EVA for each sector and all the selected 50 companies are again rank on the basis of mean value of EVA. For the purpose of inferential analysis, statistical methods of correlation have been employed. Correlation matrix is used to illustrate the relationship between Stock price, stock return, EVA, MVA, EPS, DPS, PE Ratio, ROA, RoIC and RoNW.

1.6.6 Model and Variables
1.6.6.1 Calculation of EVA of Sample Companies

EVA seeks to determine a company's true economic profit. EVA is an independent variable which represents the company profits after distributing company cost of capital.

EVA value has been obtained by applying (1)

$$EVA = NOPAT - InvestCapital \times WACC \ldots\ldots\ldots\ldots (1)$$

Where, NOPAT= Profit after Taxes $\times$(1-t)

$$InvestCapital = TotalAssets - NonInterestbearingCurrentLiabilities$$

$$WACC = Costofdebt + Costofequity$$

and, $WACC = \frac{D}{v} \times (R_d)(1-t) + \frac{E}{v} \times (R_e)$

Where,

$\frac{D}{v}$ = % of debt,

R_d = Cost of debt,

$1 - t$ = Tax rate,

$\frac{E}{v}$ =% of Equity,

R_e= Cost of equity

Cost of Equity: The CAPM model was employed for finding cost of equity of a particular firm and under CAPM model; Cost of Equity is represented by:

$$E(R_i) = R_f + \beta_i (R_m - R_f)$$

Where,

$E(R_i)$= Expected return;

R_f= Risk free rate of return;

β_i= Beta of assets;

(R_m)= Market return.

Cost of debt: It is the interest payment on its borrowing. It is represented as:

$$K_d = Total\ cost\ of\ debt\ (1 - t)$$

Where,
K_d = Cost of debt,
t= Corporate Tax rate.

1.6.6.2 Calculation of return of the stock prices of the companies

The daily average return of the selected stock price are calculated by using the (2)

$$R_i = (P_t - P_{t-1}/P_{t-1}) \times 100 \qquad \ldots\ldots \ldots\ldots\ldots (2)$$

The beta of the stock return was calculated using the following model (3)

$$R_i = \alpha_i + R_m \beta i + e_i \qquad \ldots\ldots \ldots\ldots\ldots (3)$$

Where,
$R_i = Return of the stock$;
$R_m = Return of the Nifty\ 50$;

$\beta = beta\ of\ the\ stock$;

$\alpha = intercept$

1.6.6.3 EPS, ROA, RoIC, RoNW, PE ratios, DPS, MVA

The Earning per Share, Return on Assets, Return on Invest Capital, Return on Net Worth, Price to Earnings ratios, Dividend per share and Market value added calculated from the data obtained from the company's annual reports.

Earnings per Share (EPS): It is the proportion of a company's profit allocated to each outstanding share of common stock. It is represented as;

$$Earning\ per\ share = \frac{NetIncome - PreferredDividends}{WeightedAverageSharesOutstanding}$$

Return on Assets (ROA): Return on Assets is an indicator of how profitable a company relatively to its total assets.

$$Return\ on\ Assets = \frac{NetIncome}{TotalAssets}$$

Return on Invest Capital (RoIC): Return on Invest Capital is a profitability measure that aims to measure percentage return that investors in company are earning from their invest capital.

$$Return\ on\ Invest\ Capital\ (RoIC) = \frac{NetOpertatingProfitafterTax\ (NOPAT)}{InvestCapital\ (IC)}$$

Return on Net worth (RoNW): Return on Net Worth explains the efficiency of the shareholder's capital to generate profit.

$$Return\ on\ NetWorth = \frac{NetIncome}{EquityShareholders}$$

Price to Earning (PE) ratio: Price to Earning (PE) ratio explains the ratio of a company's share price to the company's earnings per share. It is used for valuing the companies and to find out whether they are overvalued or undervalued.

$$PEratio = \frac{Average\,share\,price}{Earning\,per\,share}$$

Dividend per Share (EPS): Dividend Per Share (DPS) is the total amount of dividend attributed to each individual share outstanding of the company. It represents all the dividends that a company has paid out for each of its outstanding shares during a certain period of time.

$$Dividend\ per\ Share = \frac{Total\ Dividends\ paid}{Shares\ outstanding}$$

Market Value Added (MVA): Market Value Added (MVA) is a calculation that shows the difference between the market value of a company and the capital contributed by all investors, both bondholders and shareholders. In other words, it the sum of all capital claims held against the company plus the market value of debt and equity.

$$Market\ Value\ Added\ (MVA) = V - K$$

Market value is obtained by multiplying market value of shares prices with total number of shares.

Where,

$V = $ Market value of a firm

$K = $ Invest capital/ Book value of equity

1.6.6.4 Correlation

Correlation matrix is used to illustrate the relationship between stock return, EVA, EPS, ROA, RoIC, RoNW, PE ratio, DPS, MVA, Market price per share and market value of company.

1.7 LIMITATION OF THE STUDY

There were some limitations inherent in the study. The traditional performance measurement tools employed in the study was completely done on the basis of ratios calculated from the Balance sheet and Profit and Loss Account. There are many other ratios that could have been used to assess the performances of the company; however, due to unavailability of required information and data on annual reports, few selective ratios have been taken to analyze the performance of selected company. The findings of the study is based on NIFTY 50 companies only. Therefore, the finding and conclusion may not therefore be generalized to all other companies.

1.8 CHAPTERS DESIGN

The study is divided into six chapters

Chapter 1: INTRODUCTION

The Chapter introduces the importance of capital markets in Indian financial system. Significance and scope of the study, review of literature on different studies in Economic Value Added (EVA) and stock price relationship, research gap, statement of the problem, objectives of the study, research hypotheses, research methodology used, Models and variables and limitations of the study are the components of this chapter.

Chapter 2:   OVERVIEW OF INDIAN STOCK MARKET

Structure, functions and regulatory bodies of Indian financial markets have been discussed in this chapter. Different kinds of financial markets and financial instruments, history of stock market in India, problems and prospects of Indian stock market, challenge of Indian stock market and Government policy on Indian financial market are the main components of this chapter. Investment in securities, different kinds of investment alternatives that prevail in the present market have also been overviewed.

Chapter 3:   EVA: CONCEPTUAL AND THEORETICAL FRAMEWORK

Chapter 3 introduces the EVA Model theoretical framework, concept, importance and implementation of EVA. Main theory of EVA and its usefulness of EVA over traditional performance measurement tools have also been discussed. EVA as a performance tool in management and its advantages over traditional performance measurement tools to make decision about the stock in comparison with traditional measure of performance have also been covered in this chapter.

Chapter 4:   FINANCIAL PERFORMANCES OF THE SELECTED NIFTY 50 COMPANIES

Appraisal of all the companies listed in NSE 50 is conducted in chapter four by analyzing data obtained from respective annual reports. The analysis of data is carried into three different phase. At first, daily average return of the selected stock price are calculated. In the second phase, EPS, ROA, RoIC and RoNW, PE ratio and DPS were calculated from the company's annual reports. EVA, MVA and stock return have also been calculated. In the third phase, mean and rank of each different company are calculated and have been

analyzed. Analysis of sectoral trend of EVA of the selected companies is also included in chapter 4.

Chapter 5:   RELATIONSHP BETWEEN STOCK PRICE, EVA, MVA AND OTHER ACCOUNTING VARIABLES

In chapter 5, for purpose of the inferential analysis, the statistical methods of correlation and Correlation matrix is used to illustrate the relationship between Stock price, stock return, EVA, MVA, EPS, DPS, PE Ratio, ROA, RoIC and RoNW. Hypothesis testing conducted to find the relationship among the variables is also presented in the chapter.

Chapter 6:   FINDINGS, CONCLUSION AND SUGGESTIONS

In chapter 6, summary of the research findings are given. Findings relating to ranking of different companies based on EVA, MVA and accounting ratios, correlations among Stock price, stock return, EVA, MVA and accounting ratios of the companies are presented. Conclusions drawn from the study are given in the chapter. Finally suggestions related to EVA as measure of performance of the companies are presented in this chapter.

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CHAPTER-2

OVERVIEW OF INDIAN STOCK MARKET

2.1 INTRODUCTION

A well-developed financial system is vital for the economic growth and development of a country. The financial system provides a mechanism by which savings are transformed into investment. Serving as a link between the savers and the investors, the financial system promotes the process of capital formation by matching the supply of savings and demand for investible funds. The financial system comprises of a set of sub-systems of financial institutions, financial markets, financial instruments, and financial services which help in the formation of capital. One important and significant component of the financial system is "India's security market which has come a long way since economic reforms began in the early 1980s. A good investor needs to have an understanding of the functioning of the security market. This chapter discusses an overview of the structure of Indian financial system and developments in the Indian stock market.

2.2 STRUCTURE OF INDIAN FINANCIAL SYSTEM

Financial system is a set of complex and closely connected or intermixed institutions, agents, practices, markets, claims, etc. in the economy. The Indian financial system can be broadly classified into the formal (organized) financial system and the informal (unorganized) financial system. The formal financial system comes under the purview of Ministry of Finance (MoF), the Reserve Bank of India (RBI), Securities and Exchange Board of India (SEBI) and other regulatory bodies. The informal financial system consists of: (a) Individual money lenders such as neighbours, relatives, landlords, traders and storeowners; (b) Group of persons operating as 'funds' or 'associations'. These groups functioned under system of their own rules and uses names such as 'fixed funds', association', and 'saving club'; (c) Partnership firms consisting of local brokers, non-bank financial intermediaries such as finance, investments, and chit- funds companies (Khan, 2011).

The formal financial system in India comprises of financial intermediaries, financial regulators, financial markets, financial instruments and financial services. These broad-based organisational structures of the financial system have emerged in response to the requirements of the emerging industrial and economic environment of the country.

Financial Intermediaries: Financial intermediaries are the financial institutions that act as mobilize and depositories of savings, and of credit or finance. They provide various financial services to the community. They play an important role in the mobilization of deposits and disbursements of credit to various sectors of the economy. Financial institutions can be classified into banking institutions and non-banking financial institutions (NBFCs). Banking institutions are creators and providers of credit. The banking system reflects the economic health of the country. The strength of economy of any country basically hinges on the strength and efficiency of the financial banking system. Banking sector is dominant in India as it accounts for more than half the assets of the financial sector. Non-banking institutions/ companies constitute important segments of the financial system. NBFCs are the financial intermediaries engaged primarily in the business of accepting deposits and delivering credit. They play an important role in channelizing the scarce financial resources to capital formation. NBFCs supplement the role of the banking sector in meeting the increasing financial needs of the corporate sector, delivering credit to the unorganized sector and to small local borrowers (Bhalla, 2010). They provide a wide range of services such as hire purchase finance, equipment lease finance, loans, and investments. In India, non-banking financial institutions are Developmental Financial Institutions (DFIs) and include insurance firm, venture capitalists, currency exchanges, etc.

Financial Market: A significant component of Indian financial system is the financial markets .Financial markets provides a medium through which the mobilization of funds- from surplus investors (i.e. investors/ lenders) to deficit sectors (i.e. business enterprise) –are being facilitated. Financial markets are the mechanism enabling participants to deal in financial claims. Financial markets can be grouped either as capital market or money market. While the money market is a market for short-term funds, the capital market involves medium and long-term

funds. Major participants in the money market are the RBI and commercial Banks. The financial markets in India can also be categorised as: (i) the money market, (ii) government securities market, (iii) foreign exchange market, (iii) the capital market, and (iv) derivative market. Financial markets can also be classified as primary market and secondary markets. Primary markets deal in new financial claims or new securities, and therefore, they are also known as the new issue market. On the other hand, secondary markets deal in securities already issued or existing or outstanding.

Financial regulators: Financial regulator in India may include (i) Department of Economic Affairs (DEA), (ii) Department of Company Affairs, (iii) Securities and Exchange Board of India (SEBI), (iv) Reserve Bank of India (RBI), (v) Insurance Regulatory Agency (IRDA), etc.

Financial instruments: A financial instrument is a claim against a person or an instrument for payment, at a future date, or a periodic payment in the form of interest or dividend. Call money, treasury bills, commercial papers, certificate of deposits, and money market mutual funds are some of the financial instruments in the money market. The financial instruments that are traded in the capital market include shares, debentures, preference shares, derivatives (futures and options) and various other innovative financial instruments. Financial instruments differ in terms of marketability, liquidity, reversibility, type of options, return, risk, and transaction costs. Financial instruments help financial markets and financial intermediaries to perform the important role of channelizing fund from lenders to borrowers.

Financial services: Financial services tend to give a fillip to the functioning of various intermediaries and the financial market. Financial services are the services provided by the financial intermediaries. These activities broadly include services of depositories and custodial functions, credit-rating, factoring and forfeiting, merchant banking, etc. Depositories and custodian help in the issue of securities. Credit-rating agencies rate the performance and financial soundness of the companies. Factoring and forfeiting are concentrated on trade financing. Merchant banking services are related to floatation of new companies, planning and execution of new projects, drafting of prospectus, managing and underwriting of issue of securities, etc. The efficiency of a financial system depends upon the quality and variety of financial services provided by financial intermediaries (Goel, 2012).

Figure No: 2.1- Structure of Indian Financial System

Structure of Indian Financial System

- Financial institutions/ intermediaries
  - Banking
    - Commercial banks
    - Cooperative banks
      - Public sector banks
      - Private sector banks
      - Foreign banks
      - Regional rural banks
  - Non-Bankin
    - NBFC
      Loan Company
      Hire purchase
      Investment
      Mutual benefit, etc.
  - Others
    - Mutual funds
      Insurance companies
      Merchant bankers
      Depositories

- Financial Services
  - Credit rating
    Factoring
    Leasing
    Underwriting

- Financial Instruments
  - Primary
    - Equity Preference
    - Others
      - Forward
        Futures
        Options
        Swaps
  - Secondary
    - Insurance Mutual funds, etc

- Financial Markets
  - Money market
    - Call market
      T-Bills market
      Commercial Bill
      Commercial Paper
      Certificate of deposits
      Re-purchase agreement
  - Foreign exchange market
  - Capital
    - Equity market
      Long-term debt market
      Corporate debt market
      Government debt market
      - Primary market
        - Public Issue
          Private placement
          - Domestic
          - International
      - Secondary market
        - BSE
          NSE
          Regional stock
  - Derivatives Market
    - Forward
      Options
      Futures
      Swaps

Source: Authors compilation

2.3 FINANCIAL MARKET

A significant component of Indian financial system is the financial markets. The short-term funds as well as long-term funds that corporate sectors required to meet working capital as well as fixed capital requirements are raised from financial markets. These funds, because they are not readily available, are mobilized- from the providers or lenders of funds (i.e. investors) to the borrowers or users of funds (i.e. business enterprise) through a transmission mechanism (i.e. financial markets). Financial markets provides a medium through which the mobilization of funds from surplus investors (i.e. investors/ lenders) to deficit sectors (i.e. business enterprise) - is adequately facilitated. These two groups meet and transact with each other through the mechanism of financial markets. Financial markets basically operate as a link between the lenders and borrowers or users of funds. Therefore financial markets refer to transmission mechanism between investors and the borrowers through which mobilization of funds is facilitated. Financial market functions as facilitating organizations in savings-investments process (Alexander, Sharpe and Bailey, 2012). The financial markets comprise capital or securities markets and money markets. The capital market segments of the financial markets represent the institutional source of long-term funds. The structure of securities market consists of primary and the secondary market. The money markets also form an important constituent of the financial markets and are the source of short-term funds. It also facilitates the adjustment of liquidity amongst the participants in the market. The major institutional players in the money market are the commercial banks, which act as a nerve centre of the monetary and credit system in the country and non-banking entities.

A financial market is as vital to the economy as blood is to the body. Financial markets have different roles to play which includes price determination, funds mobilization, risk sharing, easy access, liquidity, capital formation and reduction in the transaction costs and provision of the required information, etc. It is a platform that facilitates traders to buy and sell financial instruments and securities (Khan, 2011). Financial markets in India comprise a set of regulatory bodies, money markets, capital markets and foreign exchange markets. Policy formulation and the regulation of financial markets are made available under the guidance of the Ministry

of Finance (MoF) and the Reserve Bank of India (RBI). The Securities and Exchange Board of India (SEBI) regulates and supervise the securities market. The SEBI is the apex regulatory body for the securities market.

2.3.1 MONEY MARKET

The money market is an integral part of financial markets in India. It helps strike a balance between the surplus funds of lenders and the requirements of borrowers for short period of time. The money market provides a focal point for RBI intervention in influencing the liquidity in the Indian financial system. Money market is a market for lending and borrowing of short-term funds. It deals with monetary assets whose period of maturity is less than or up to one year. It meets the short-term requirements of borrowers and provides short-term returns to lenders.

According to RBI, the money market is "the Centre's for dealing, mainly short-term character, in monetary assets; it meets the short-term requirements of borrowers and provides liquidity or cash to the lenders. It is the place where short-term surplus investable funds at the disposal of financial and other institutions and individuals are bid by borrowers, again compromising institutions and individuals and also governments itself". Money market is the market for short-term funds normally ranging from overnight funds to a year and the main objectives of a money market are as follows:

a) To make available and opportunity for investing short-term surplus funds

b) To provide scope for removing short-term deficits

c) To enable the RBI as the central bank in regulating the liquidity in the Indian economy

d) To offer a reasonable access to users of short-term funds in meeting requirements promptly and at realistic costs.

2.3.1.1 Functions of Money Market

The development of the money market is a prerequisite for the growth of economy of a country. Truly speaking, a developed money market provides short-term funds adequately and quickly to trade and industry. It has been playing an important role in the financial system of the nation (Saha, 2013). The functions of the money market can be highlighted as follows:

(i) *Expansion of Trade and Industry:* Money market is recognized as a significant source of financing in trade and industry. It helps finance the short-term working capital requirements and assists the expansion of trade and industry at the national as well as international levels.

(ii) *Expansion of Capital markets:* The long-term interest as well as resource mobilization in the capital market is influenced indirectly by the short-term rate of interest and the money market conditions. Therefore, the expansion of the capital markets depends to some extent, upon the growth of the money market.

(iii) *Efficient functioning of Central bank:* The effective functioning of the central bank always requires a developed money market. The reason is that it supports the efficient implementation of the monetary policy of the RBI as central bank. The RBI forces fresh money into the economy with the help of money market. Thus the RBI regulates the flow of money in promoting economic growth with stability in India.

(iv) *Formulation of an appropriate monetary policy:* Conditions prevailing in the money market are a true indicator of the monetary state of an economy. Thus, it serves as a guide to the government in formulating and revising the monetary policy in the market.

(v) *Smooth operation of Commercial banks:* Commercial banks employ surplus funds temporarily in easily realizable assets through the money market. Banks can also get the funds back as promptly as the requirement demands. The money markets also help commercial

banks to meet the statutory requirements of Cash Reserve Ratio (CRR) and Statutory Liquidity Ratio (SLR).

(vi) *Source of finance to the Government:* The government may raise short-term funds from money market with the help of treasury bills floated in the market. It is to be noted that in the absence of a developed money market, the Government can print and issue more money or borrow from the central bank. This leads to price rise and inflation in the economy.

2.3.1.2 Money markets instruments in India

The money market in India is divided into two components: (i) the organized money market; and (ii) the unorganized or unauthorized money market. The main instruments of organized money markets are (i) call money, (ii) commercial paper, (iii) treasury bills, (iv) certificate of deposits, and (v) commercial papers. There is an exorbitant rate of interest in the unorganized money market which consists of indigenous bankers, money lenders, and other unregulated non- banking financial intermediaries like chit- funds, etc. The main instruments of unorganized money market are Hundi, which is an indigenous bill of exchange.

The money market consists of number of instruments which collectively constitute the money market. Some important instruments are as follows.

Figure No: 2.2 showing different sources of money markets instruments
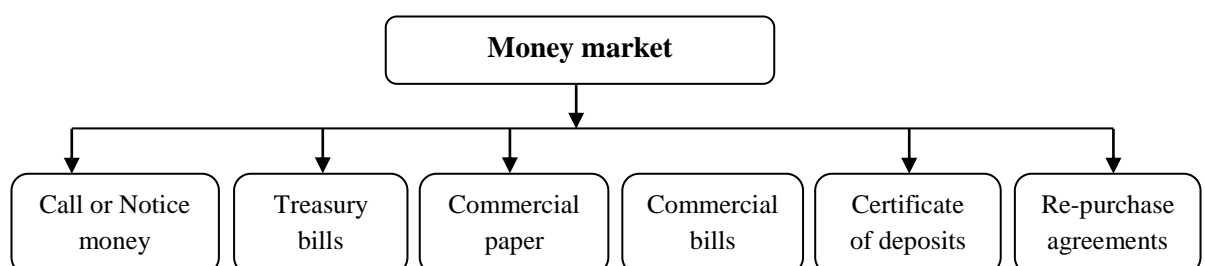
Source: Authors compilation

(i) *Call or Notice money:* Call or notice money refers to the market for extremely short period of loans (i.e. 1 day to 14 days) which are repayable on demand at the option of either the lender or the borrower. These loans are provided to a brokers and dealers in stock exchange. Likewise, banks having surplus funds lend to other banks having deficit funds in the call or notice money market. Thus, it provides an equilibrating mechanism for striking a balance between short-term surpluses and deficits. Commercial banks can promptly borrow fund from the call, or notice money market to meet their statutory liquidity requirements. In case of high call rates, they can also enhance their profits by investing surplus funds in the call or notice money market. Money borrowed on a day and repaid on the next morning day is called Call money. When money is borrowed or loaned out for more than 1 day and up to 14 days it is called Notice money. There is no need for collateral security to cover these transactions. The participants in this market include all commercial banks, co-operative banks, DFHI, Securities and Trading Corporations of India (STCI), LIC, GIC, IDBI, NABARD and specified mutual funds.

(ii) *Treasury Bills (TBs):* Treasury Bills (TBs) are a promissory note issued under discount for a specified period by the Government which promises to pay the specified amount mentioned therein to the holders of the instrument on the due date. Normally, the period is 1 year or less. There is no scope for any endorsement or acceptance of such instruments as it basically claims against the central government. Practically the RBI on behalf of the government issues treasury bills for meeting temporary government deficits. Treasury bills play a vital role in cash management of the Government. It is significant to note that while revenue in the form of taxes is not received by the government on a daily or monthly basis, the government has to meet its expenditure on a daily or monthly basis. Therefore, the need for issuing treasury bills is to bridge the gap between the timings of the government receipts and expenditure. In India, treasury bills are two types (i) ordinary or regular treasury bills which are issued to the public and to other financial institutions for meeting the short-term financial requirements of the central government and (ii) adhoc treasury

bills which are always issued in favour of the RBI alone and are not sold through tender or auction. The RBI purchases these bills on top and issues currencies note against them. It provides a medium for investing the temporary surpluses of the State government, semi government departments and foreign central banks. Treasury bills on the basis of periodicity are classified into three categories. These are (i) 91- T Bills, (ii) 182- T bills, and (iii) 364- T bills.

(iii) *Commercial Papers (CPs):* A company may issue a commercial paper approved by the RBI which is an unsecured promissory note with a fixed maturity. It is a certificate indicating an unsecured corporate debt for short-term maturity and can be issued at a discount to face value basis along with interest bearing form. It is negotiable by endorsement and delivery and issued in bearer form. Commercial paper is issued at such discount on the face value as may be determined by the issuing company. The issue of commercial paper is a significant step in dis-intermediation which brings a large number of borrowers as well as investors together without the intervention of the banking system as a financial intermediary. It is important to note that there is no lock-in period for commercial paper. Commercial paper can be issued for a minimum maturity period of 7 days and a maximum period up to 1 year from the date of issue.

(iv) *Commercial bills (CBs):* As soon as business transactions are made on credit, there is a need for commercial bill which is drawn by the seller on the buyer for the amount due. Ultimately, commercial bills are accepted by the buyer who immediately agrees to pay the amount mentioned therein after a certain specified date. Thus, bills of exchange contain a written order to pay a certain sum to a certain person after a certain period. A commercial bill is a self- liquidating paper as well as is negotiable and it is drawn always for a short period ranging between 3 to 6 months. According to Section 5 of the Negotiable Instruments Act, a bill of exchange can be defined as " an instrument in writing containing an unconditional order, signed by the maker, directing a certain person to

pay a certain sum of money only to, or to the order of a certain person or to the bearer of the instrument". Commercial bills traded by offering bills for re-discounting and banks customers are provided credit by discounting commercial bills and the customers are supposed to repay this credit on maturity of the bill. There are various types of bills in a bill market. These are (i) demand and usance bills, (ii) clean and documentary bills, (iii) inland and foreign bills, (iv) export and import bills, (v) indigenous bills, and (vi) accommodation and supply bills.

(v)   *Certificate of deposits (CDs):* Certificate of Deposits are negotiable money market instruments issued in dematerialized form or as a Usance promissory note. It is issued for funds deposited at a bank, or other eligible financial institutions, for a specified time period. Certificate of deposits differ from a fixed deposits as the latter is issued for a large amount and the former is freely negotiable. The RBI announced the scheme of certificate of deposits in March 1989 and can be issued by the Scheduled Commercial Banks (excluding Regional Rural Banks) and specified All India Financial institutions. CDs are to be issued at a discount to the face value and can be issued to individuals, associations, companies and trust funds. The maturity period of CDs issued by the banks may range from 3 to 12 months. Those issued by specified financial institutions may range from 1 to 3 years.

(vi)   *Re-purchase Agreements (Repos):* A re-purchase agreements refer to a transaction in which two parties agree to sell and re-purchase the same security. Repos are a transaction in which a participant acquires immediate funds by selling securities and which he agrees to re-purchase at a specified time and at a given price. The seller sells specified securities with an agreement to re-purchase the same at a maturity decided future date and a price. Likewise, the buyer purchases the securities with an agreement to re-sell the same to the seller on an agreed date in the future at a pre-determined price. It is significant to note that a Repo is viewed from the perspective of the seller securities and a Reverse Repo is described from the point of view of the supplier of funds.

Therefore, a Repo, or a Reverse Repos depends upon the nature of the transactions initiated by the party. There are two types of Repos which are currently in operation in the money market. These are (i) Inter- bank Repos, and (ii) the RBI Repos. Inter-bank Repos are permitted under regulated conditions. The Reserve Bank Repos are exercised for absorption or injection of liquidity in the market. Recently, the Repo rate fixed by the RBI has become a sort of signaling rate along with bank rate. Currently, all government securities have been made eligible for Repos.

2.3.2 SECURITIES MARKET

A segment of the Indian financial market which has witnessed the most profound transaction is the capital market or the securities market. Securities market has emerged as the most important mechanism for allocating resources in the economy. The rapid expansion in terms of the quantum of funds raised and the number of investors in the securities market; the increase in the number of listed stocks in stock exchanges; speedy rise in market capitalisation and the volume of trade; entry of large number of the foreign institutional investors (FIIs); mutual funds, indicate the significance of the security market (Singh, 2015). The significant changes have been witnessed in the structure of both the primary and secondary market segments.

The meaning of security according to the Securities Contracts (Regulation) Act, (SCRA) 1956, means Shares, Scrips, Stocks, Bonds, Debentures and Marketable securities of any incorporated body. The primary market and the secondary market are the two interdependent and inseparable segments of the securities market. While the former is concerned with rising of funds through the issue of new securities, the latter helps generate liquidity and price level for securities. However, both of them are complementary to each other. The securities issued in the primary market are issued by public limited companies or by government agencies. The resources in the primary market are mobilized either through the public issue or through private placement route. If the issue is made available to a selected group of persons it is termed as private placement whereas it is a public issue if anybody and everybody can subscribe for it. Once the new securities are issued in the primary market they

are traded in the secondary (stock) market. The secondary market operates through two mediums, namely, the over-the-counter (OTC) market and the exchange-traded market. OTC markets are informal markets where trades are negotiated. Most of the trades in the government securities are in the OTC market. All the spot trades where securities are traded for immediate delivery and payment take place in the OTC market. The other option is to trade using the infrastructure provided by the stock exchanges. A variant of the secondary market is the derivative market, where securities are traded for future delivery and payment. The derivative includes the Futures and Options market. It is a product whose value is derived from the value of one or more basic variables called base in a contractual manner. The SCRA was amended in December 1999 to include derivatives within the ambit of 'securities'; and a regulatory framework were developed for governing derivatives trading. This derivative trading commenced in India in June 2000 after the SEBI granted the final approval. It permitted the derivative segments of two stock exchanges, NSE and BSE for derivative trading.

2.3.2.1   FUNCTIONS OF CAPITAL MARKETS

The functions of an efficient capital markets are as follows:

(a)   Mobilize long-term savings to finance long-term investments.

(b)   Provide risk capital in the form of equity to entrepreneurs.

(c)   Encourage broader ownership of productive assets.

(d)   Provide liquidity within a mechanism enabling the investors to sell financial assets.

(e)   Lower the cost of transactions and information.

(f)   Improve the efficiency of capital allocation through a competitive pricing mechanism.

(g)   Disseminate information efficiently for enabling participants to develop an informed opinion about investment, disinvestment, reinvestment, or holding particular financial assets.

(h)   Enable quick valuation of financial instruments both equity and debt.

(i)   Provide insurance against market risk or price risk through derivative trading and default risk through investment protection fund.

(j)   Enable wider participation by enhancing the width of the market by encouraging participation through networking institutions and associating individuals.

(k)   Provide operational efficiency through simplified transaction procedures, lowering settlement timings and lowering transaction costs.

(l)   Develop integration among (i) real and financial sectors, (ii) equity and debt instruments, (iii) long-term and short-term funds, (iv) long-term and short-term interest costs, (v) private and government sectors, and (vi) domestic and external funds.

2.3.2.2 CAPITAL MARKET INSTRUMENTS IN INDIA

Financial instruments that are used for raising capital resources in the capital markets are known as capital market instruments. The changes that are sweeping across the Indian capital markets especially in the recent past are something phenomenal. Liberalization, Privatization and Globalization that have been initiated by the government has come to introduce a number of instruments with a view to facilitate borrowings and lending of money in the capital markets by the participants (Khan, 2011). The various capital markets instruments used by corporate entities for raising resources are as follows.

(a) *Equity shares:* Equity shares are commonly referred to common stock or ordinary shares. Even though the word shares and stocks are interchangeably used, there is a difference between them. Share capital of a company is divided into a number of small units of equal value called shares. The term stock is the aggregate of members' fully paid up shares of equal value merged into one fund. It is a set of shares put together in a bundle. The stock is expressed in terms of money and not as many shares.

(b) *Preference shares:* Preference share/ capital is a unique type of long-term capital markets instruments in that it combines some of the features of the equity shares as well as some debentures. It carries a fixed rate of dividend,

normally does not have voting rights and does not have a share in residual earnings/assets. Dividend on preference capital is paid out after tax profits of the company and payment of dividend depends upon the discretion of the management, that is, it is not an obligatory payment and non-payment does not force insolvency/ liquidation.

(c) *Warrants:* A warrant is a bearer document of title to buy specified number of equity shares at a specified price. Warrants are generally offered to make the bond or preferred stock offering more attractive. Bonds may bear low interest rate but warrants offered along with them helps the investors to enjoy the equity appreciation value.

(d) *Debentures or Bonds:* According to Companies Act 1956, Debentures includes debenture stock, bonds and any other of securities of company, whether constituting a charge on the assets of the company or not. Debentures are generally issued by the private sector companies as a long-term promissory note for raising loan capital. The company promise to pay interest and the principal as stipulated. Bond is an alternative form of debenture in India. Public sector companies and financial institutions issue bonds.

(e) *Mutual funds:* Investment companies or investment trusts obtain funds from large number of investors through sale of units. The funds collected from the investors are placed under professional management for the benefit of the investors. It can be classified in to open ended and closed ended scheme.

(f) *Derivatives:* Derivatives are securities contracts which are written between two parties and whose value is derived from the value of underlying assets. It is a contract whose value is derived from the value of another asset, known as the underlying which could be a share, a stock market index, an interest rate, a commodity or a currency. When the price of this underlying changes, the value of the derivative also changes. In recent years, derivatives have become increasingly important in the field of finance. Forwards, Futures and Options are the major types of financial derivatives.

2.3.2.3 NEW FINANCIAL INSTRUMENTS OF THE INDIAN SECURITIES MARKET

A new financial instrument may be one which has some new features in terms of agreements, when compared with the features of presently available instruments. Very few financial instruments are completely new products. Many are just featured added to the conventional financial instruments to make them marketable (Pathak, 2012). Some of the new financial instruments are as follows:

(a) *Floating rate Bonds*: The interest rate of this bond is linked to a benchmark and is not fixed. It is a concept which has been introduced primarily to take care of the falling market or to provide a cushion in times of falling interest rates in the economy. It helps the issuer to hedge the loss arising due to interest rate fluctuations. In India. SBI was the first to introduce bonds with floating rates for retail investors.

(b) *Zero Interest bonds:* Zero interest bonds carry no periodic interest payments and are sold at a huge discount to face value. These bonds benefit both the issuers and investors by limiting funding cost when interest rates are volatile for the issuer and by reducing the reinvestment risk for the investors. Companies such as Mahindra and Mahindra, HB Leasing and Finance have been pioneers in introducing these bonds in the Indian market.

(c) *Deep Discount bonds (DDBs):* A Deep Discount Bonds is a zero coupon bonds whose maturity is very high and is offered at a discount to the face value. The Industrial Development Banks of India (IDBI) was the first financial institution to offer these bonds. Many variations of Deep Discount Bonds and zero interest bonds have come into market such as Zero interest Secured Premium Convertible Bond and Zero Interest fully Convertible Debenture.

(d) *Revolving Underwriting Finance Facility (RUFF):* It is a 91-day debenture which is rolled i.e. will be redeemed and re-auctioned over after its maturity. The Treasury bill rate is the benchmark Rate and a premium is added to it to attract the investors.

(e) *Action Rated Debenture (ARDs):* It is a secured, redeemable, non-convertible instrument with interest determined by the market and placed privately with the bids. ARDs are hybrid of commercial papers and debentures. This is a three years instruments which has a zero coupon rate and is sold at a discount. The company repurchased the ADRs after three months of the issue then re-issued them through the fresh auctions. ADRs are technically short-term instruments but it provides long-term finance for the company.

(f) *Secured Premium Notes (SPNs) with Detachable Warrants:* This instrument is redeemable after a notified period. There is a lock-in period during which no interest is paid. The attached warrants ensure that the holder has the right to apply for and to be allotted equity shares provided the SPNs is fully paid. The SPN holder has an option to sell back the SPN to the company at par value after the lock-in period. If the holder exercises his option, no interest/premium will be paid on redemption.

(g) *Non-convertible Debentures (NCDs) with Detachable Equity Warrants:* The holder of these instruments is given an option to buy a specific number of shares from the company at a pre-determined price and time frame. The warrants attached to the NCDs are issued, subject to full payment of the NCDs value. There is a specific lock-in period after which the detachable warrants holder has to exercise their option to apply for equities.

(h) *Fully Convertible Debentures (FCDs) with interest:* These instruments will not yield any interest for a specified period of time. After this period, FCDs holder have the option to apply for equities at a premium for which no additional amount is payable. This options needs to be indicated in the application form itself. However, interest is payable at a determined rate from the date of conversion to the second/final conversion and equity shares are issued in lieu of the interest.

(i) *Domestic Convertible Bonds:* These are hybrid securities that allow investors to separate the embedded equity portion from the bond and are trade in separately. Because of the option to convert debt into equity, issuer

can raise debt at a lower interest rate. These instruments would help the company's to raise low-cost debt and it also allows the investors to detach the equity components from the instrument and trade on it.

(j) *Differential shares:* Differential shares are shares with differential rights to voting and dividends. They are a class of shares which carry rights with varying rate of dividends. If the voting right of the shareholders is taken away, the shareholders is compensated by higher returns. Companies are now allowed to issue shares with differential voting rights including non-voting shares to the extent of 25 percent of the total shares capital provided they had profits that could be distributed in the preceding three years.

(k) *Securitized paper:* It is a process by which a company raises money by selling off its receivables. These receivables are sold off to cash rich investors by converting them into securities. These receivables are sold at a discount to the investors which represent the yields. In simple terms, securitization is a process through which illiquid assets are packaged and converted into tradable securities known as pass-through certificate. (PTCs). These securities are also referred to as assets-backed securities. (ABSs). If the instrument securitized is a housing loan, the instrument is referred to as mortgage backed securities (MBSs), and in the case of bonds receivables, they are known as collateralized bond obligations (CBOs).

(l) *Inverse Float Bonds:* These bonds are the latest entrants in the Indian capital market. Inverse float bonds are bonds carrying a floating rate of interest that is inversely related to short-term interest rate. These bonds enable the investors to earn high returns in a low interest rate environment. As interest rate is highly volatile, the investors have to observe the rate behavior carefully over the entire bond period. Thus, both the investors and the issuer have to hedge the interest rate risk.

(m) *Perpetual bonds:* They are debt instruments which do not have maturity period. The investor's receive a stream of interest payments for perpetuity. The bonds can be issued to retail investors with market making to ensure liquidity. In case of liquidation, holder of the perpetual bond are paid second

last, after all other depositors and creditors but not before equity shareholders.

(n) Municipal bonds: They are debt securities issued by the municipal corporation of a city to raise funds for financing their growing investment needs for the host of infrastructure projects.

2.3.3 PRIMARY MARKET

The primary market basically renders the important function of transfer of saving of the surplus units to the deficit units. It provides the channel of sale of new securities and empowers various organizations including the issuer of securities, the Government as well as corporate to raise the resources to meet investment requirements and/or discharge obligations. In the primary market, the new issues of securities are presented in the form of public issues, right issues, offers for sale or private placements, etc. The securities which are often taken into consideration for raising funds are equity shares, preference shares, bonds, debentures, etc. The primary market deals in new securities, that is, securities or shares which were not previously available and are offered to the investors for the first time. Capital formation occurs in the new issue market as it supplies the additional funds to the corporate directly. It does not have any organizational set up located in any particular place and is recognized only by the specialist institutional services that it tenders to the lenders/ borrowers of capital funds at the time of any particular operation.

2.3.3.1 FUNCTIONS OF PRIMARY MARKET

Primary market operations are performed efficiently and professionally by financial intermediaries and financial institutions such as merchant bankers, underwriters, brokers and registrars, etc. They basically arrange for the long-term financial requirements by rendering advisory services. The main functions of the primary capital markets are presented as follows.

(a)   It is the segment of the capital market where capital formation occurs.

(b)   Transfer of resources from those with idle resources to others who have productive needs for them is most efficiently achieved through the primary market.

(c)   New issue of securities like shares, debentures, etc. are sold in the primary market and subsequent trading in these securities occurs in the secondary market.

(d)   The primary market is where new long-term equity capital is generated and it performs the crucial function of facilitating capital formation of the economy.

(e)   In primary market, there is a direct relationship between the company and the investors as the company receives the money from the investors to whom new security certificate are issued.

(f)   It is the medium through which primary issues are used by companies for the purpose of setting up business concerns or for expanding or modernizing the exiting business.

(g)   It does not consider certain other sources of new long-term external finance such as loans from financial institutions.

2.3.3.2 DIFFERENT KINDS OF ISSUES OF SECURITIES IN PRIMARY MARKET

When a security is offered for sale for the first time it is known as Initial Public offering (IPO). It is only after an IPO that a security becomes listed and available for trading in the secondary market. The securities can be issued either through public issues or through private placement (Pathak, 2012). The price at which the security is to be issued is decided through book-building mechanism.

Figure No: 2.3 Different kinds of issues of securities in primary market
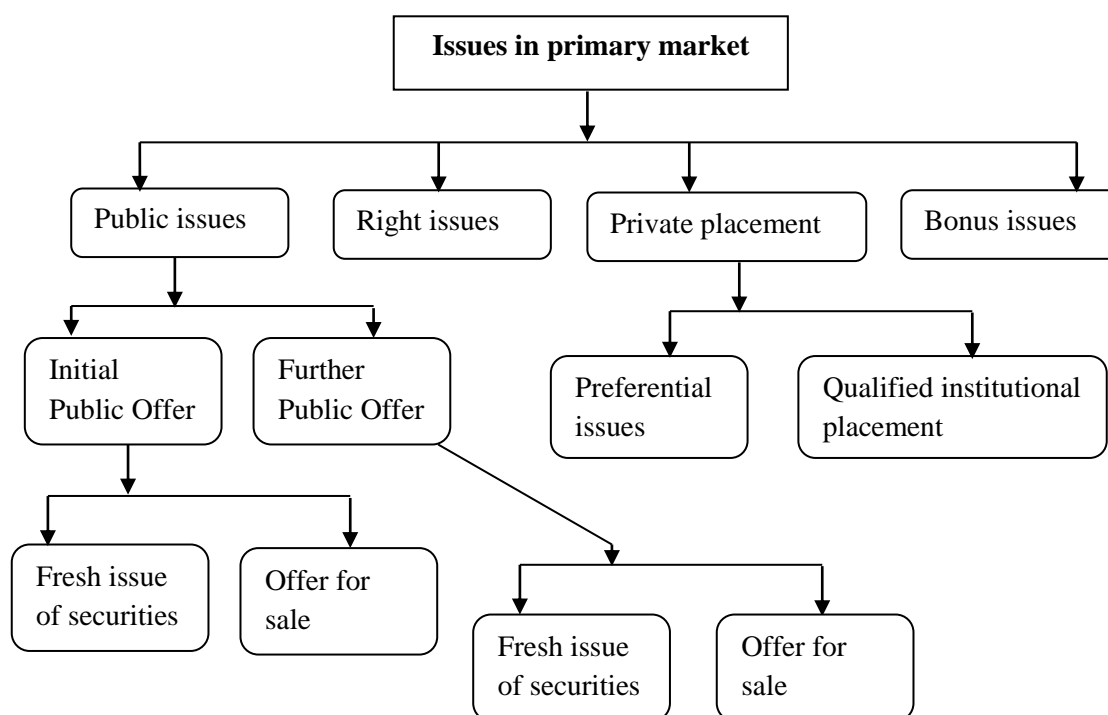
Source: Authors compilation

(a) Public issue:

A public issue is when an issuer company makes a fresh issue to new investors and/ or makes an offer of securities and/ or invites investors to become part of the shareholder's family of the issuer. There are two types of public issues and they are as follows:

(i) *Initial Public Offer (IPO):* IPO basically is applicable to companies which are not listed at stock exchanges. An IPO is when the fresh issue of securities of an unlisted company or its existing securities is offered for sale of the first time to the public. IPO are subsequently listed to the stock exchanges and traded in accordance with the SEBI guidelines. According to SEBI Regulation 2009, IPO means "an offer of specified securities by an unlisted issuer to the public for subscription and includes an offer for sale of specified securities to the public by any existing holders of such securities in an unlisted issuer".

(ii) *Further Public Offer:* FPO or Follow on Offer is applicable to the companies already listed on stock exchanges. An FPO is when a listed company makes either a fresh issue of securities to the public or an offer for sale to the public. According to SEBI Regulations 2009, FPO means "an offer of specified securities by a listed issuer to the public for subscription and includes an offer for dale of specified securities to the public by any existing holders of such securities in a listed issuer".

Pricing in public issues:

SEBI Regulations 2009 state that an issuer may determine the (i) price of specified securities and or (ii) the coupon rate and conversion price of convertible debt instruments in consultation with the lead merchant bankers or through the book-building process. The issuer shall undertake the book building process in a manner specified in the SEBI regulation. The two techniques of pricing in public issues are as flows:

(i) *The fixed price method:* Fix pricing of public issues is one where a company fixes a price in advance. In other words, the price will be set by the issuer in consultation with the merchant bankers prior to the offer and allocation in a fixed-price offer. This method is the most common and popular method of public issue of securities. The securities are offered to investors through a detailed statement of terms and conditions know as prospectus. The issue by prospectus method is adopted when the company desires to issue a fixed number of securities at a fixed-price.

(ii) *Book-building method:* Book building method in the system of capital issues was recognized by SEBI in 1995 as an alternative mechanism of pricing securities. Under this approach, a portion of the issue is reserved for the "qualified institutional buyer". Book building process is a common practice used in most developed countries for marketing a public offer of securities shares. Presently, this method of selling public issues either IPOs or FPOs of a company has become very popular in India. Under this method, final price of securities is fixed by the issuer company along with the merchant Banker performing as Book running Lead Manager (BRLM) on the basis of feedback

received from investors through market intermediaries during a certain period. SEBI Regulations 2009 state that "Book-building means a process undertaken to elicit demand and to assess the price for determination of the quantum or value of specified securities or Indian Depository Receipts, as the case may be, in accordance with these regulations". Therefore, book building method is one where the company and BRLM stipulate a floor- price or a price-band and leave it to a market forces to determine the final price.

Fresh Issue of securities vs. Offer for sale:

In case of IPO as well as FPO, company makes a fresh issue of securities to the public or an offer for sale to the public. To define "offer for sale", SEBI stated that "offer for sale means offer of securities by existing shareholders of a company to the public for subscription, through an offer document". In case of public issues (either IPOs or FPOs) the company makes only: (i) fresh issue of securities to the public trough offer document; or (ii) make issue of securities to the public along with offer for sale through offer document. This offer for sale is made by the existing shareholders of a company.

(b) *Right Issue:* When an issuer makes an issue of securities to its shareholders existing as on a particular date fixed by the issuer, it is called a right issue. The rights are offered to the existing shareholders in a particular ratio to the number of securities held as on the record date. The following are the important features of right issue.

(i) In a right issue, a company offer existing shareholders rights to purchase additional shares of a company at a given price which is at a discount to the prevailing market price of the stock to encourage the shareholders and to ensure that the rights offer is fully subscribed to.

(ii) A shareholder has an option of applying for additional shares (i.e. over and above what he is entitled to). It is up to the Board of Directors to accept or to reject an application for additional shares.

(iii) Additional capital in the form of rights issue provides the company better leveraging opportunities. The reason is that a higher equity capital base assists the company in raising higher debt as debt-to-equity ratio of a company would stand reduced, putting the company in a comfortable position to raise further debt from the market.

(iv) Since the issuing company's equity base rises to the extent of the issue, there is possibility of proportionate fall in the stock price of the company which in turn, reflects the new adjusted Earnings per Share (EPS).

(v) Rights of issue lead to increased liquidity and affordability of the stock due to reduced stock price and higher equity base.

(c) *Private placement:* Private placement of shares refers to the issue of shares made by a company to select group of investors, instead of inviting the public at large. It is neither the category of the public issue, nor right issue. SEBI guidelines stated that when an issuer makes an issue of securities to a select group of persons not exceeding 49 and which is neither a rights nor a public issue, it is called private placement. Therefore, in this case, the issuing company does not offer securities to investors in general. It is a faster way of raising capital as a company has not to comply with details requirements as per SEBI guidelines. Private placement of shares or convertible securities by a listed issuer can be of two types such as:

(i) *Preferential allotment:* SEBI Regulations 2009 state that, "preferential issue means an issue of specified securities by a listed issuer to any selected person or group of persons on a private placements basis and does not include an offer of specified securities made through a public issue, right issue, bonus issue, employee stock option scheme, employee stock purchase scheme or qualified institutions placement or an issue of sweat equity shares or depository receipts issued in a country outside India or foreign countries". A preferential allotment is when shares or convertible securities are

issued by a listed issuer to a select group of persons in accordance with the provisions of Chapter XIII of SEBI guidelines. In short, a fresh allotment of shares to promoters, their friends and relatives on a preferential basis is called preferential allotment.

(ii) *Qualified Institutional Placement (QIP):* When a listed issuer issues eligible securities to Qualified Institutional Buyers (QIBs) on private placement basis in terms of the provisions of Chapter VIII of the SEBI Regulations 2009, it is called QIP. "Eligible securities" includes equity shares, non-convertible debt instruments along with warrants and convertible securities other than warrants. "Qualified Institutional Buyers (QIBs) means (i) a mutual fund, venture capital fund and foreign venture capital investors registered with the board, (ii) a foreign institutional investors and sub-account registered with the board, (iii) a public financial institutions as defined in Section 4A of the companies Act 1956, (iv) scheduled commercial banks, (v) state industrial development corporation, (vi) multi and bilateral developmental financial institutions, (vii) an insurance company registered with the Insurance Regulatory and Development Authority.

(d) *Bonus issue:* Bonus issue is an issue of securities to existing shareholders made by an issuer on a record date, without any consideration from the shareholders. The shares are issued out of the free reserve or share premium account of a company in a particular ratio to the number of securities held on the record date. The following are the important features of bonus issue.

(i) It is a conversion of one form of capital to another.

(ii) Total resource base of the company does not alter due to issue of bonus shares.

(iii) There is no scope of money mobilization from investors in to the capital structure of the company in the primary capital market.

(iv) It is issued by converting the reserves of the company into equity shares capital (i.e. capitalization of the reserves of the company).

(v) It can be issued by a company only if the Articles of Association of the company authorizes it.

2.3.4 SECONDARY MARKET

The secondary market or stock exchange is where the sale and purchase of existing securities is made between the buyers and sellers of securities with the help of brokers. Basically, it enables investors to purchase/sell securities according to changes in risk and return in the market. It also allows the holder of securities to sell them for cash to meet the liquidity need of the holders. The operation in stock market is made through the stock exchanges which provide a platform for trading of securities. In the stock market, securities are traded, cleared and settled as per the prescribed regulatory framework under the supervision of the exchanges and SEBI. Therefore, the stock market refers to a market where securities are traded after being offered to the public in the primary market and listed on the stock exchange which comprises equity markets and debt markets (Pandian, 2011).

Once the new securities are issued in the primary market, they are traded in the stock market through listing. There are two mediums in the stock markets such as the Over-the-Counter (OTC) market and the Exchange-Traded market. OTC markets are informal markets where most of the trades in the government securities are negotiated. It is basically a market where all the spot trades are taken place in order to trade securities for immediately delivery and payment. On the other hand, though the Exchange- Traded market does not provide facility for spot trades, settlement takes place after sometime. All the stock exchanges in India follow a systematic settlement period.

The two most important stock exchanges in India the Bombay Stock Exchange (BSE) and the National Stock Exchange (NSE) are headquarters at Mumbai. The legislative jurisdiction over stock exchanges is vested in the Union Government by the Constitution of India. The Government of India enacted the

Securities Contracts Regulations Act 1956, in order to regulate the functioning and trading of the stock exchanges. Securities Contracts Regulations Act and the Securities Contract Regulation Rules 1957 together constitute the legal framework which not only regulates the stock exchanges but also protects the interest of investors. The Securities contract Regulation Act (SCRA) provides for (i) recognition of stock exchanges and regulation of their functioning (ii) licensing dealers (iii) recognition of contracts (iv) controlling regulations (v) restricting rights of equitable holders of sharers, and (vi) empowering the government to compel any limited company to gets its shares listed.

2.3.4.1 FEATURES OF THE SECONDARY MARKET

The following are the features of the stock market.

(i)   Stock market is basically market place for dealing securities where buyers and sellers transact through brokers.

(ii)   Stock exchanges are often referred to as a stock or shares or secondary market and it is an institution of paramount importance in the economic life the country.

(iii)   A stock exchange is an organized market for sale and purchase of second-hand listed and permitted corporate and government securities.

(iv)   Securities traded here are called second-hand securities because they are brand new when issued through the primary market. Thereafter, they are listed and traded on the stock exchanges by the original allottees.

(v)   Securities which are issued in the primary market are subsequently listed in the stock exchanges to enable buyers and seller to affect their transactions.

(vi)   Transactions in the existing securities represent a shift among owners which always cancels out in aggregate.

(vii)   Transactions in the existing securities do not provide additional funds to make capital formation.

2.4   HISTORY OF SECURITY MARKET IN INDIA

The history of the Indian securities market dates back to the eighteenth century, when the securities of the East India Company were traded in Mumbai and Kolkata. Its origin is traced back to 1875 when 22 brokers organised an association in Mumbai named "The Native Stock and Share Brokers Association". Later on it was renamed as the Bombay Stock Exchange (BSE). It was recognised on a permanent basis in 1957 after India got independence. It is the oldest stock exchange in Asia. Increased activity in trade and commerce during the two World Wars resulted in an increase in the stock trading. Ahmadabad stock exchange was started in 1894. Stock exchanges were established in different centres like Chennai, Delhi, Nagpur, Kanpur, Hyderabad and Bangalore. However, the growth of stock exchanges suffered a setback after the end of World War and a consequent worldwide depression affected them.

2.4.1   STOCK EXCHANGES IN INDIA

In India, the first stock exchange started operation in Bombay in 1875. Gradually, stock exchanges have been established at other place and start operating in India. The establishment of Over the Counter Exchange of India (OTCEI) and the National Stock Exchange (NSE) brought into buoyancy the secondary market in India.

Stock exchanges are granted recognition for their operations in the securities market by SEBI under Section 4 of the Securities Contracts (Regulation) Act (SCRA), 1956. As on March 31, 2020 there were three stock exchanges in India which had permanent recognition. The permanent recognized exchange are BSE Ltd

(BSE), Calcutta Stock Exchange Ltd (CSE), and National Stock Exchange of India Ltd (NSE). The other three stock exchanges viz. Metropolitan Stock Exchange of India Ltd, India International Exchange Ltd, and NSE IFSC LTD (NSE IFSC) were granted recognition of one year during the year 2019-20.

Table 2.1: Stock Exchanges which have Already Exited (as on March 31, 2020)

Sl. No	Name of the stock exchange	Date of exit order
1	Hyderabad Stock Exchange Ltd (HySE)	January 25, 2013
2	Coimbatore Stock Exchange Ltd (CSX	April 03, 2013
3	Saurashtra Kutch Stock Exchange Ltd (SKSE)	April 05, 2013
4	Mangalore Stock Exchange Ltd (MgSE)	March 03, 2014
5	Inter-Connected Stock Exchange of India Ltd (ISE)	December 08, 2014
6	Cochin Stock Exchange Ltd (CoSE)	December 23, 2014
7	Bangalore Stock Exchange Ltd (BgSE)	December 26, 2014
8	Ludhiana Stock exchange Ltd (LSE)	December 30, 2014
9	Gauhati Stock Exchange Ltd (GSE)	January 27, 2015
10	Bhubaneswar Stock Exchange Ltd (BhSE)	February 09, 2015
11	Jaipur Stock Exchange Ltd (JSE)	March 23, 2015
12	OTC Exchange of India (OTCEI)	March 31, 2015
13	Pune Stock Exchange (PSE)	April 13, 2015
14	Madras Stock Exchange (MSE)	May 14, 2015
15	Uttar Pradesh Stock Exchange (UPSE)	June 09, 2015
16	Madhya Pradesh Stock Exchange (MPSE)	June 09, 2015
17	Vadodara Stock Exchange Ltd (VSEL)	November 09, 2015
18	Delhi Stock Exchange Ltd (DSE)	January 23, 2017
19	Ahmedabad Stock Exchange Ltd (ASE)	April 02, 2018
20	Magadh Stock Exchange	May 08, 2019

Source: SEBI Annual report 2019-20

SEBI formulated the exit policy for de-recognized/non-operational stock exchanges in 2012. Subsequent to this, SEBI received applications from de-recognized/non-operational stock exchanges seeking voluntary exit as stock exchanges. Pursuant to the exit policy for de-recognized/non-operational stock exchanges notified by SEBI in 2012, 20 stock exchanges have exited so far. During 2019-20, Magadh Stock Exchanges got exited. As per SBI annual report it is reported that Calcutta Stock Exchange is under process of compulsory exit. Calcutta Stock Exchange Ltd (CSE) did not apply for voluntary exit and compulsory exit process has been initiated against the stock exchange. However, the matter is

subjudice before Hon'ble Kolkata High Court. Stock Exchanges which have already exited (as on March 31, 2020) is given in the Table 2.1

MAJOR STOCK MARKET INDICES IN INDIA:

The performance of the stock market is measured with the help of market or stock indices. Generally, an index refers to a number which determines any changes in a set of values over a period of time. Stock market indices are the barometers of the stock market. They mirror the stock market behavior. It is not possible to look at the prices of every stock to find out whether the market movement is upward or downward. The indices give a broad outline of the market movement and represent the market. In India, BSE and NSE are the main stock markets with specialized indices (Pandian, 2011). BSE constructed and launched BSE Sensex/BSE-30 Index, BSE 100 Index, BSE 200 Index, BSE 500 Index etc. On the other hand, NSE launched major indices like S&P CNX Nifty, CNX Nifty Junior, CNX 100, S&P CNX 500, CNX Midcap, etc. Two most referred broad market stock indices in India are the BSE Sensitive index and the S&P CNX Nifty (Nifty).

(i) **The BSE SENSEX:** The BSE Sensitive index of equity share prices was launched in 1986. Using 1978-79 as base year it comprises 30 shares. These company stocks account for around 50 percent of the market capitalization of the BSE. The major criterion for selection of scrip in the Sensex is large market capitalization. The base value of the Sensex is 100 on April, 1979. Since September 1, 2003, the index has been calculated on the basis of the "free-float capitalization" method.

(ii) **THE NSE NIFTY:** NSE began equity trading in November 1994 and S&P CNX Nifty (Nifty) is the most popular and widely used indicator of the stock market in the country. It is a well diversified 50 stock index accounting 13 sectors of the Indian economy. Market capitalization weighted method is used in calculating Nifty reflecting the total market value of all stocks in the index relative to a particular base period. The base periods selected for Nifty index is the close price on November 3, 1995. The base value of the index has been set at 1000 and base capital of Rupees 2.6 trillion.

2.5 REGULATION OF THE SECURITY/STOCK MARKETS

Since the savings of the investing community namely, public, needs to be protected from various kinds of malpractices, frauds, default etc., it is obligatory on the part of the governing system to establish regulatory bodies. Again, the absence of conditions of perfect competition in the securities market makes the role of regulator extremely important. The operations of these securities market are largely conditioned by the basic regulatory framework. All around the world there are regulatory boards which regulate the functioning of the security market. The UK and USA had long back created separate boards for the regulation of the securities market. U.K has the Securities and Investment Board (SIB) and U.S. has the Securities and Exchange Commission (SEC).

Historically in India, the first legislative measure providing for the regulation of stock exchanges was enacted in 1925 in the name of Bombay Securities Contracts Control Act, 1925. It was to regulate and control certain contracts for the purchase and sale of securities in the city of Bombay and elsewhere in the Bombay Residency. However the impact of the Act on the regulation of securities trading was insignificant. Another regulation of securities market in India can be traced back to 1943 when the capital issues control was introduced for the first time in May, 1943, by a rule framed under the Defence of India Act, 1939. After the cessation of the World War, it was continued from time to time by an Act of Parliament, viz., the Capital Issues (Continuous of Control) Act, 1947. The Act was placed permanently on the Statute Book in 1956. The control was administered by the Ministry of Finance (Department of Economic Affairs) through the Controller of Capital Issues. The objective of the control of capital issues was the fostering of a rational and healthy growth of corporate sector by ensuring:

- that investment does not go into wasteful channels which are not in accordance with the objectives of the plan;
- that companies have capital statute which is sound and conducive to the public interest; and
- that there is no undue congestion of offers for public subscription during a part of the year.

In spite of the above mentioned objectives, the Capital Issues Control Act was found insufficient to monitor or check malpractices of the stock markets. It has been criticised on various accounts. During the 1980s and in many cases the investors were cheated by being presented with rosy pictures about the security of investments, high dividends and capital appreciation which were not actually true. This emphasised the need for properly regulating securities market in India. There was a need to check the malpractices, insider trading and market pricing, etc., on the one hand, and to regulate the mutual funds and venture capital on the other. In view of the above, the Government of India, through a resolution constituted the SEBI to promote and regulate a healthy and growth oriented securities market in the country.

The Indian Government's intention to set up a separate board for the regulation and orderly functioning of the capital market was first declared in the Budget speech by Shri. Rajiv Gandhi, the then Prime Minister of India (who also was the Finance Minister), while presenting the Budget for the year 1987-88. He stated: "The Capital Markets in India have shown tremendous growth in the last few years. Approvals for capital issues have exceeded Rs. 5,000 crores in 1986-87. They were only about Rs.500 crores in 1980-81. For a healthy growth of capital markets, investors must be fully protected. Trading malpractices must be prevented. Government have decided to set up a separate board for the regulation and orderly functioning of stock exchange and the securities industry"

By a notification issued on 12th April, 1988, Securities and Exchange Board of India (SEBI) was constituted as an interim administrative body to function under the overall administrative control of the Ministry of Finance of the Government of India. In July 1988, the SEBI published an approach paper on comprehensive legislation for securities market. The SEBI was given a statutory status on 30th January, 1992 by an Ordinance to provide for the establishment of SEBI. A Bill to replace the Ordinance was introduced in Parliament on 3rd March, 1992 and was passed by both houses of Parliament on 1st April; 1992.The Bill became an Act on 4th April, 1992 the date on which it received the President's assent. However, as provided for in Section 1(3), this Act is to be deemed to have come into force on 30th January, 1992, i.e. the date on which the SEBI ordinance was promulgated.

2.5.1 REGULATORY FRAMEWORK OF SECURITIES MARKET

The financial system in India is regulated by independent regulators in banking, insurance and capital markets. Apart from that, Central Government plays the role of a regulator in a number of sectors (Pandian, 2011). These regulators ensure that market participants behave in a desired manner and the securities market continues to be a major source of finance for corporate and the government. Policy formulation and the regulation of the Indian financial markets are made under the guidance of the Ministry of Finance (MoF) and the Reserve Bank of India (RBI). The SEBI regulates and supervises the securities market; the Insurance Development and Regulatory Authority (IRDA) regulate the insurance market. The SEBI is the apex regulatory body for the securities market. Besides regulation, The SEBIs mandate includes responsibilities for investor's protection and for promoting the organized growth of securities market (Bhole and Mahakud, 2011).

The RBI as the central bank plays its role on banking supervision by an enactment in 1949. The RBI on the other hand, is responsible for the regulation of certain well-defined segment on the securities market. The RBI is responsible for primary issue of Government securities. The RBI mandate also includes the regulation of all the contracts in Government Gold related and money market securities. The RBI exercises a tight regime of exchange control under the Foreign Exchange Management Act in June 2000, which replaced the earlier Foreign Exchange Regulation Act of 1973 (Saha, 2013). Currently, the responsibilities of regulating the securities primarily rests with SEBI, but is shared by the Department of Economic Affairs, Department of Company Affairs, and the RBI. The Capital market division of the Department of Economic Affairs, under the Ministry of Finance is entrusted with the responsibility of formulating policies for the development of the capital market in consultation with the SEBI, the RBI and other agencies.

It is therefore evident that the responsibility for regulating the securities market is discharged by the following regulatory bodies:

(i)   Department of Economic Affairs (DEA).

(ii)   Department of Company Affairs (DCA).

(iii)   Reserve Bank of India (RBI).

(iv)   Securities and Exchange Board of India (SEBI).

(v)   Insurance Development and Regulatory Authority (IRDA).

The government has also framed certain legislative and regulatory provisions for investor's protection. Self-Regulatory Organizations (SROs) like stock exchanges have also laid down certain rules. The following are the main legislations governing the securities market:

(i)   The Securities Contracts (Regulation) Act 1956.

(ii)   Securities Contract (Regulation) Rules 1957.

(iii)   Companies Act 1956, now the Companies Act 2013

(iv)   SEBI Act 1992.

(v)   SEBI (Prohibition of Insider Trading) Regulations 1992.

(vi)   The SEBI (Prohibition of Fraudulent and Unfair Trade Practices Relating to Securities Markets) Regulations 2003.

(vii)   The Securities and Exchange Board of India (Investors Protection and Education Fund) Regulations 2009.

(viii)   The Depositories Act 1996.

The Securities Contract (Regulation) Act 1956: The Securities Contracts (Regulations) Act 1956 provides for direct and indirect control off virtually all aspects of securities trading and the running of stock exchanges and aims to prevent undesirable transactions. It gives the Central Government regulatory jurisdictions over (i) stock exchanges through a process of recognition and continued supervision (ii) contracts in securities, and (iii) the listing of securities in stock exchanges. This is the Principal Act, which governs the trading of securities in India. As a condition of recognitions, a stock exchange complies with conditions prescribed by the Central Government. Organized trading activity in securities takes place on a recognized stock exchange.

The Securities Contract (Regulation) Rules 1957: The Central Government has made Securities Contracts (Regulations) Rules 1957 as required by sub-section (3) of the section 30 of the Securities Contracts (Regulation) Act 1956 for carrying out the purpose of the Act. The Securities Contracts (Regulation) Rules 1957 provides for the requirements which have to be satisfied by companies for the purpose of getting their securities listed on any stock exchanges in India. A dispersed shareholding structure is essential for the sustenance of a continuous market for listed securities to provide liquidity to the investors and to discover fair prices.

The Companies Act 2013: Companies play very vital role in any economy. In India, the Companies Act 2013and its predecessor Companies Act 1956 primarily regulates the formation, financing, functioning and winding up of companies. The Act prescribes a regulatory mechanism regarding the organizational, financial and managerial aspects of companies. Regulation of the financial and management aspects continues the main focus of the Act. The Companies Act plays the balancing role between management autonomy and investors protection. The main objectives of this Act includes (i) to protect the interest of large number of shareholders (ii) to safeguard the interests of creditors (iii) to help in the attainment of the social and economic policies of the Government, etc.

The SEBI Act 1992: The SEBI was established on 12th April 1988 through an administrative order, but it became a statutory organization only since 1992. The SEBI was setup as a statutory body on February 21, 1992 through an ordinance issued on January 30, 1992. Since its formation, the SEBI, a vigilant watchdog, has been instrumental in bringing greater transparency in the capital issue management of corporate securities. The overall objectives of SEBI as enshrined in the Preamble of the SEBI Act 1992 are 'to protect the interest of investors in securities and to promote the development of, and to regulate the securities market and for matters connected therewith or incidental there to'. To elaborate, the SEBI regulates stock exchanges and the security industry. It protects the rights and interests of investors, particularly individual investors, and guides them. It prevents trading malpractices and aims at achieving a balance between self-regulation by securities industry and its statutory regulations. It provides a market place in which issuers can confidently look forward to raise finance in an easy, efficient and fair manner. It offers a competitive,

professionalized and expanding market, with an adequate and efficient infrastructure to market intermediaries.

According to section 11 (1) of the SEBI Act 1992, the SEBI is empowered to:

(a) Regulate the business in stock exchange and in any other securities market.

(b) Register and regulate the working of: (i) stock brokers (ii) sub-brokers (iii) share transfer agents (iv) bankers to an issue (v) trustees of trust deeds (vi) registrars to an issue (vii) merchant bankers (viii) underwriters (ix) portfolio managers, and (x) investment advisers and other intermediaries who may associated with the securities markets in any manner.

(c) Register and regulate the workings of collective investment schemes including mutual funds.

(d) Promote and regulate self- regulatory organizations.

(e) Prohibit fraudulent and unfair trade practices in the securities market.

(f) Educate investors and train intermediaries in the securities market.

(g) Prohibits insider trading in securities.

(h) Regulate substantial acquisition of shares and takeovers of companies.

(i) Perform such functions and exercise such powers under the supervision of the Capital Issues (Control) Act 1947 and the Securities Contracts (Regulations) Act 1956.

(j) Levy a fee or other charge for purposes levied under section 11 of the Act.

(k) Perform such other functions as may be prescribed by the Government from time to time.

SEBI (Prohibition of Insider Trading) Regulations 1992: Insider trading is prohibited as per SEBI (Prohibition of Insider Trading) Regulations 1992. The same was amended in the year 2003. 'Insider' means any person who is, or was connected with the company, or is deemed to have been connected with the company and who is reasonably expected to have access, connection to unpublished price-sensitive information with respect to the securities of a company, or who has received, or has had access to such unpublished price-sensitive information. Regulation 3 states that no insider should either on his own behalf, or on behalf of any person deals insecurities of a company on any stock exchanges when in position of any unpublished price-sensitive information and communicate, counsel or procure directly or indirectly any unpublished price-sensitive information to any person who while in possession of such unpublished price-sensitive information should not deal in securities provided that nothing contained above shall be applicable to any communication required in the ordinary course of business or profession or employment or under any law.

The SEBI (Prohibition of Fraudulent and Unfair Trade Practices Relating to Securities Markets) Regulations 2003: The SEBI (Prohibition of Fraudulent and Unfair Trade Practices Relating to Securities Markets) Regulations 2003 enable the SEBI to investigate cases of market manipulation and fraudulent and unfair trade practices. The regulations specially prohibit (i) fraudulent dealings (ii) market manipulation (iii) misleading statements to induce sale or purchase of securities, and (iv) unfair trade practices relying to securities. SEBI can conduct investigation in respect of the conduct and affairs of any person buying, selling and otherwise dealing in securities. A person shall not buy sale or otherwise deals in securities in a fraudulent manner and use or employ in connection with the issue, purchase, or sale of any security listed or proposed to be listed in a recognized stock exchanges.

The Securities and Exchange Board of India (Investors Protection and Education Fund) Regulations 2009: SEBI (Investors Protection and Education Fund) Regulations 2009 were notified on May 19, 2009 to establish Investors Protection

and Education Fund. In terms of regulations, the amounts may be credited to the fund, which includes (i) contributions as may be made by the SEBI to the fund (ii) grants and donations given to the fund by the Central or State Governments or any other entity approved by the SEBI for this purposes (iii) the entire amount to the merchant bankers in the event of forfeiture for non-fulfillment of any of the obligations under the regulations (iv) security deposits, if any, held by the stock exchanges in respect of public and rights issue in the event of de-recognition of such stock exchanges (v) amount in the Investors Protection Fund and Investors Services Fund of a stock exchanges in the event of the de-recognition of a stock exchange (vi) interest, other income, received from investments made from the fund, and (vii) such other amount as the SEBI may specify in the interest of investors. The regulation provides that the fund shall be used for protection of investors and promotion of investor's education and awareness.

The Depositories Act 1996: India has adopted the Depository system for securities trading in which book entry is done electronically and no paper work is involved. The physical form of securities is extinguished and shares or securities are held in electronic form. The Depository Act 1996 was enacted to provide for regulation of depositories in securities and for matters connected therewith or incidental thereto. It came into force on September 20, 1995. 'Depository' means a company formed and registered under the Companies Act 1956 and which has been granted a certificate under subsection (1A) of the section 12 of the SEBI Act 1992. Any person who has entered into an agreement with a depository shall surrender the certificate of security for which he seeks to avail the services of a depository to the issuer in such manner as may be specified by the regulation. The issuer, on receipt of certificate of security shall cancel the certificate of security and substitute in its records the name of the depository as a registered owner. A depository shall, on receipt of information, enter the name of person, in its records, as the beneficial owner. Every depository shall furnish, to the issuer, information about the transfer of securities in the name of beneficial owners at such intervals and in such manner as may be specified by the bye-laws. Every issuer shall make available, to the depository, copies of the relevant records. The depository shall indemnify a beneficial owner if any loss is caused to the beneficial owner due to the negligence of the depository or the participants.

MARKET REGULATORS

Department of Economic Affairs (DEA): The Department of Economic Affairs in India under the Ministry of Finance formulates and monitors the economic policies and programmes that have a bearing on the domestic and international aspect of economic management. A principal responsibility of this department is that of preparing the Union budget. Other main functions include the following:

(i) The formulation and monitoring of macro-economic policies including important issues like (a) fiscal policy and public finance (b) inflation, and (c) public debt management and the functioning of the capital market including stock exchanges.

(ii) The monitoring and raising of external resources through (a) multi and bilateral official development assistance (b) sovereign borrowings aboard (c) foreign investment, and (d) monitoring of foreign exchanges resources including balance of payments.

(iii) The production of (a) bank notes and coins of various denominations (b) postal stationery (c) postal stamp (d) cadre management (e) career planning, and (f) training of the Indian Economic Services personnel.

Ministry of Corporate Affairs: The Ministry of Corporate affairs earlier known as the Department of Company Affairs under the Ministry of Finance were designated as a separate Ministry under the Ministry of State with independent charge. It administered several statutes relating to corporate sector including the Companies Act 1956. It also administers various Act including (a) the Chartered Accountants Act 1949 (b) Cost and Works Accountants Act 1959 (c) Companies Secretaries Act 1980 (d) Partnership Act 1932 (e) Societies Registration Act 1860 (f) Companies (Donation to National Fund) Act 1951 (g) the Monopolies and Restrictive Trade Practices (MRTP) Act 1969 (h) the Competition Act 2002 as amended by the Competition (Amendment) Act 2007, and (i) the Limited Liability Partnership (LLP) Act 2008. The ministry has a 3-tier organizational set-up for the administration of the Companies Act 1956.

Reserve Bank of India (RBI): The Reserve Bank of India was established on April 1, 1935 in accordance with the provisions of the Reserve Bank of India Act 1934. The Centre Office of the Reserve Bank was initially established in Calcutta but was permanently moved in Mumbai in 1937. The Central Office is where the Governor sits and where policies are formulated. The Reserve Bank originally privately owned is now since its nationalization in 1949 fully owned by the Government of India. The RBI performs this function under the guidance of the Board of Financial Supervision (BFS). The Board was constituted in November 1994 as a committee of the Central Board of Directors of the RBI. The primary objectives of the BFS are the consolidated supervision of the financial sector comprising of commercial banks, financial institutions and non-banking finance companies.

Securities and Exchange Board of India (SEBI): The SEBI was established in 1988 as an administrative body and was given statutory recognition under the SEBI Act 1992 which came into force on January 30, 1992. Before that, the Capital Issues (Control) Act 1947 was repealed. The Act empowered the SEBI to regulate activities connected with (i) the marketing of securities and investment of stock exchanges (ii) portfolio management (iii) stock brokers (iv) merchant banking. SEBI has been constituted on the lines of the Securities and Exchange Commission of USA. Some of the major initiatives of the SEBI are discussed in the following:

(a) **Establishment of the Integrated Surveillance Department in SEBI:** Effective surveillance mechanism is one of the prime requirements of a functional securities market. The Integrated Surveillance Department of SEBI is in charge of many activities including (i) monitoring markets movements and detecting any potential breach of regulations, and (ii) analyzing the trading in securities and initiation of an appropriate line of action wherever warranted. The SEBI, to enhance the efficacy of surveillance has put into place a comprehensive Integrated Market Surveillance System (IMSS) which provides an alert on unusual market movements. The integrated Surveillance Department of SEBI keeps a tap on the news appearing in print and in other electronic media. News and rumors are discussed in the weekly surveillance meetings with stock exchanges and necessary course of actions is initiated. Apart from the above, the department generates a daily detailed report on

major market players, scrip's, clients and brokers in the cash and F&O segments on the stock exchanges. A major initiative of the SEBI consists of taking pre-emptive action is the weekly surveillance meetings. These meetings have helped in better stock exchanges coordination and have ensured uniformity in the surveillance measures taken by stock exchanges. SEBI has established the standard for effective surveillance in line with global standard. SEBI has also established cooperation among overseas regulators of securities and futures market to strengthen surveillance on cross-border transactions. An inter-regulatory alert system between the SEBI and the RBI was setup keeping the securities market and banking system linkage in mind. Towards this end, SEBI-RBI Groups on Integrated System of Alert has been setup. The SEBI as part of its surveillance measures has asked stock exchanges to prepare a suspect list of entities/brokers/clients that have a noticeable trading pattern across scrip's. Special Surveillance Inspection Team (SSIT) consisting of both surveillance and inspection officials has been constituted to conduct surprise and special inspections at the premises of suspect entities.

(b) **Supervision of Investors protection:** SEBI inspection has different stages (a) inspection of market intermediaries including stock brokers/sub-brokers and other market intermediaries, and (b) inspection of stock exchanges. SEBI has taken a number of steps to expedite the inspection process and to improve the quality of inspection report and follow-up action. Inspection of stock exchanges are made to review the market operations, organizational structure and administrative control of the stock exchanges with the objectives to provide fair, equitable, transparent and growing market to investors and to ensure that it has implemented the directions, guidelines and instructions issued by SEBI/ Government of India from time to time.

(c) **Redressal of investor's grievances:** The SEBI has made a comprehensive mechanism to facilitate redressal of grievances against intermediaries registered by investors and against companies whose securities are listed or proposed to be listed in stock exchanges. The Office of investigator and Education (OIAE) plays an active role in interacting with investors seeking

the assistance of the SEBI. The SEBI takes up grievances, lodges by investors with the respective listed companies and monitor it.

2.6 TRENDS IN THE SECURITY MARKET

Over the period, the Indian securities market has evolved continuously to become one of the most dynamic, modern and efficient securities markets in the world. The various intermediaries' regulations have been framed under the SEBI Act, 1992 and the Depositories Act, 1996 for registration and regulation of all market intermediaries. Under these Acts, the government and SEBI issue notifications, guidelines and circulars that market intermediaries need to comply with. As per these acts the cancellation or surrender of membership as well as fresh membership of intermediaries across the exchanges are granted by the market regulator-SEBI. The details of registered stock brokers and clearing members, as on March 31, 2020 in stock exchanges and clearing corporations are given in Table 2.2. The list of registered brokers given in the Table 2.2 is those stock brokers who are registered brokers of the three stock exchanges viz. BSE, NSE and MSEI. The registered clearing members for cash segment are of the clearing houses viz. ICCL, NSECL and MCCIL. For the commodity derivative brokers the exchanges are Multi Commodity Exchange (MCX), National Commodity and Derivatives Exchange Limited (NCDEX), Indian Commodity Exchange (ICEX), BSE and NSE. Regarding the clearing members of commodities derivative, members are of the MCXCCL, NCCL, NSECL, ICCL and MCCIL.

Table 2.2: SEBI Registered Market Intermediaries/Institutions the Stock Brokers and Clearing members

Sl. No.	Market Intermediaries	2018-19	2019-20
1	Registered Brokers (Cash segment)*	3039	2978
2	Registered Corporate Brokers (Cash segment) *	-	2597
3	Registered Clearing Members – Cash Segment#	3022	2997
4	Registered Corporate Clearing Members – Cash Segment#	-	2623
5	Brokers (Equity Derivatives)*	2572	2479
6	Corporate Brokers (Equity Derivative segment)	-	2241
7	Registered Clearing Members – Equity Derivatives#	644	707

8	Registered Corporate Clearing Members – Equity Derivatives#	-	679
9	Brokers (Currency Derivatives)*	1974	1930
10	Brokers Corporate (Currency Derivatives)*	-	1734
11	Registered Clearing Members – Currency Derivatives#	352	359
12	Registered Corporate Clearing Members – Currency Derivatives#	-	346
13	Registered Stock Brokers - Debt Segment	423	427
14	Registered Corporate Stock Brokers - Debt Segment	-	411
15	Registered Clearing Members - Debt Segment	147	156
16	Registered Corporate Clearing Members - Debt Segment	-	155
17	Registered Stock Brokers - Commodity Derivatives Segment@	1721	1745
18	Registered Corporate Stock Brokers - Commodity Derivatives Segment@	-	1543
19	Registered Clearing Members - Commodity Derivatives Segment^	478	477
20	Registered Corporate Clearing Members - Commodity Derivatives Segment^	-	430

*BSE, NSE and MSEI
#ICCL, NSECL, MSEICCL
@MCX, NCDEX, ICEX, BSE, NSE
^MCXLL, NCCL,MCCIL,NSECL,ICCL
Source: *Adapted from SEBI Annual report 2019-20*

As can be seen in the Table 2.2, the total number of registered stock brokers in cash segment in three stock exchanges of BSE, NSE and MSEI as on 31 March 2020 is 2978 out of which 2597 are corporate brokers. The registered Clearing Members as on 31 March 2020 is 2997 out of which 2623 are corporate learning members. Likewise details of number of stock brokers and clearing members of the various segments of the stock exchanges are given in the Table 2.2.

Table 2.3: SEBI Registered Market Intermediaries/Institutions other than Stock Brokers

Sl. No.	Market Intermediaries	2018-19	2019-20
1	Depository	2	2
2	Depository participants	874	878
3	Merchant Bankers	209	215
4	Registrar to Issue and Share Transfer Agent	77	80
5	Underwriters	2	2
6	Credit rating agencies	7	7

7	Bankers to an Issue	65	66
8	Debenture Trustee	32	31
9	KYC (Know Your Client) Registration Agency (KRA)	5	5
10	Venture Capital Funds	195	189
11	Foreign Venture Capital Investors	250	251
12	Alternative Investment Funds	547	649
13	Portfolio managers	321	351
14	Investment Advisers	1149	1292
15	Research Analysis	625	682
16	Public Sector Mutual Funds	8	8
17	Private Sector Mutual Funds	37	48

Source: *Adapted from SEBI Annual report 2019-20*

The other market intermediaries other than brokers and clearing members registered with SEBI are given in the Table 2.3. There are two depositories in India the National Securities Depositories Limited (NSDL)and Central Depository Services (India) Limited (CDSL). Total number of registered depository participants as on March 31, 2020 was 878 of which 279 are at NSDL and 599 are at CDSL. The number of registered merchant bankers is 215 as on 31 March 2020. As on 31 March 2020, the number of registrar to the issue and share transfer agent, underwriters, credit rating agencies, bankers to an issue, debenture trustee, KYC Registration agency are 80, 2,7,66, 31 and 5 respectively.

There were 189 venture capital funds and 251 foreign venture capital investors registered with SEBI as on March 31, 2020. Alternative investment funds (AIFs) registered with SEBI as on March 31, 2020 were 649 as compared to 547 registered as on March 31, 2019. As on March 31, 2020, there were 351 portfolio managers registered with SEBI as compared to 321 as on March 31, 2019. As on March 31, 2020, there were 1,292 investment advisers registered with SEBI as compared to 1,149 as on March 31, 2019.As on March 31, 2020, there were 682 research analysts registered with SEBI as compared to 625 in the previous year. As on March 31, 2020, there were 46 mutual funds, of which 44 were active and two were inactive. Of the 44 active mutual funds, 36 mutual funds were private sector mutual fund and eight mutual funds (including UTI mutual fund) were public sector mutual fund.

2.6.1 TURNOVER IN THE INDIAN STOCK MARKET

Over the years, NSE and BSE have emerged as the nation-wide stock exchanges of the country contributing more than 99 percent of the total turnover. In the cash segment, the turnover at NSE increased by 13.2 per cent during 2019-20 compared to 9.9 per cent growth during 2018-19. The turnover of BSE decreased by 14.8 per cent during 2019-20 as compared to a decline of 28.4 per cent during 201819. MSEI recorded very small volumes in the cash segment.

Table 2.4: Market turnover in equity cash segment (Rs. in crore)

Sl no.	Exchanges	2018-19	2019-20	Percentage variation
1	BSE	7,75,590	6,60,896	-14.79
2	NSE	7949004	8998811	13.21
3	MSEI	30.29	27.99	-7.59
	Total	87,24,624	96,59,735	10.72

Sources: SEBI Annual Report 2019-20

In the equity derivatives segment, the gross turnover at NSE rose by 45.0 per cent during 201920 as compared to 44.0 per cent during 2018-19. The gross turnover in the derivatives segment of BSE increased by 11,555.7 per cent in 2019-20 as against a decline of 31.0 per cent during 2018-19. The significant jump in the derivative segment over previous year in BSE is due to its introduction of Liquidity Enhancement Scheme (LES) in S&P BSE Sensex Futures Monthly Contracts, S&P BSE Sensex Options Monthly Contracts, Single Stock Futures Monthly Contracts, Single Stock Options Monthly Contracts in equity derivatives segment w.e.f. August 26, 2019. No trading was observed in equity derivatives segment of MSEI.

Table 2.5: Market turnover in equity Derivative Segment (Rs. in crore)

Sl no.	Exchanges	2018-19	2019-20	Percentage variation
1	BSE	2,250	2,62,269	11556.40
2	NSE	23,76,00,705	34,45,32,892	45.00
3	MSEI	NA	NA	NA
	Total	23,76,02,955	34,47,95,161	45.11

Sources: SEBI Annual Report 2019-20

Table 2.6: Market turnover in currency Derivative Segment (Rs. in crore)

Sl no.	Exchanges	2018-19	2019-20	Percentage variation
1	BSE	73,52,274	66,83,274	-9.10
2	NSE	85,18,351	96,54,394	13.34
3	MSEI	47,239	45,325	-4.05
	Total	1,59,17,864	1,63,82,993	2.92

Sources: SEBI Annual Report 2019-20

Presently, in Indian markets, currency derivatives are traded on BSE, NSE, and MSEI. The aggregate turnover in the currency derivatives segment at the exchanges increased by 2.9 per cent from Rs.159.2 lakh crore during 201819 to Rs.163.8 lakh crore in 2019-20. The turnover of NSE grew by 13.3 per cent during 2019-20, while the turnover of BSE and MSEI declined by 9.1 per cent and 4.1 per cent, respectively during the period. During 2019-20, the total turnover was the highest at NSE (Rs. 96.5 lakh crore), followed by BSE (Rs. 66.8 lakh crore) and MSEI (Rs. 0.45 lakh crore). NSE accounted for 58.9 per cent of the total turnover in the currency segment followed by BSE (40.8 per cent) and MSEI (0.3 per cent).

Table 2.7: Market turnover in Interest Rate Derivatives Segment (Rs. in crore)

Sl no.	Exchanges	2018-19	2019-20	Percentage variation
1	BSE	1,11,222	1,00,045	-10.05
2	NSE	2,45,407	3,60,811	47.03
3	MSEI	NA	NA	NA
	Total	3,56,629	4,60,856	29.23

Sources: SEBI Annual Report 2019-20

Interest-rate derivatives are often used to hedge risk by institutional investors, banks, companies and individuals to protect themselves against changes in interest rates and they can also be used to increase or refine the holder's risk profile. During 2019-20, the aggregate turnover in the interest rate derivatives (IRD) segment across all exchanges increased by 29.2 per cent. The gross turnover in IRD segment of NSE increased by 47 per cent to Rs. 3,60,811 crore in 2019-20 as compared to Rs. 2,45,407 crore in 2018-19. Whereas, the gross turnover in IRD segment of BSE fell by 10 per cent to Rs.1,00,045 crore in

2019-20 from Rs. 1,11,222 crore in 2018-19. However, there was no trading activity reported in the IRD segment of MSEI during 2018-19 and 2019-20.

Table 2.8: Market turnover in Commodity Derivative Segment (Rs. in crore)

Sl no.	Exchanges	2018-19	2019-20	Percentage variation
1	NCDEX	5,31,588	4,42,009	-16.85
2	MCX	67,72,373	86,89,518	28.31
3	NMCE	13,675	NA	NA
4	ICEX	24,061	40,511	68.37
5	BSE	32,804	46,439	41.57
6	NSE	3,444	6,362	84.73
	Total	73,77,945	92,24,839	25.03

Sources: SEBI Annual Report 2019-20

MARKET CAPITALISATION IN THE INDIAN STOCK MARKET

The market capitalization has grown over the period indicating more companies using the trading platform of the stock exchange. However, during the year 2019-20, the market capitalization of BSE and NSE decreased by 24.9 per cent and 24.7per cent, respectively over the previous year. In terms of number of companies listed there have been slight increased in the listed companies over the previous year.

Table 2.9: Market capitalisation in the stock exchanges (Rs. in crore)

Sl. no.	Exchanges	2018-19	2019-20	Percentage variation
1	BSE	1,51,08,711	1,13,48,757	-24.89
2	NSE	1,49,34,227	1,12,43,112	-24.72
3	MSEI	1,47,51,584	1,10,34,811	-25.20
	Total	4,47,94,522	3,36,26,680	-24.93

Sources: SEBI Annual Report 2019-20

Table 2.10: Number of listed companies in the stock exchanges

Sl no.	Exchanges	2018-19	2019-20	Percentage variation
1	BSE	5,262	5,377	2.19
2	NSE	1,931	1,949	0.93
3	MSEI	287	295	2.79
	Total	7,480	7,621	1.89

Sources: SEBI Annual Report 2019-20

2.7   REFORMS IN SECURITY MARKET

The impact of globalisation has led to the reforms in the financial markets in India. There have been remarkable changes in all segments of the financial markets in the country. It removes the shackles of control and has promoted the free flow of investments. New instruments, state-of-the art technologies and procedures that are in operation in the developed markets have been accommodated in India. Removal of restrictions, freedom to work within the broad government guidelines and supportive policies that are investor friendly were the distinguishing features of the reforms which are mostly initiated from early 1990s by the government (Bhole and Mahakud, 2011). It led to the restoring of both domestic and international confidence in Indian economy.

The capital market in India is going through a process of reforms for the last three decades. Every reform that is proposed and implemented is in the interest of investor protection and market development. Stakeholders of the financial markets would appreciate if the reforms lead to healthy financial markets and protect their interest. Not only these, in order to make securities markets competitive, SEBI has been constantly reviewing various rules and procedures to make issue process simpler, at the same time safer and cost effective. The process of financial reforms is still under way and is likely to bring about more changes to make the market healthier and stronger in the near future.

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CHAPTER - 3

ECONOMIC VALUE ADDED (EVA): A CONCEPTUAL AND A THEORETICAL PERSPECTIVE

3.1   INTRODUCTION

There is little doubt that wealth creation is fundamental to the economic survival of a firm. Firms who fail to recognize the importance of wealth creation is at the peril. Investors are usually in the look-out of the companies who create wealth. Economic Value Added (EVA) as a valuation analytical tool is a revolutionary financial metric in measuring the value creation of the firms. EVA is the most acceptable modern-day measure of corporate success. EVA was developed in 1980's as one of the new financial performance tools. It was commercially developed in 1982 by the team of Joel Stern and G. Bennett Stewart III.

3.2   CONCEPT OF EVA

Economic Value Added (EVA) is basically a management technique which is developed by Stern and Steward Co. which gives a way to calculate the economic value achieved or created by the firms over a particular period of time. The EVA of a company is just a measure of the return that the investment earns over the market rate of return. It acts as an input variable that makes the basis and guide management for their decision making. EVA can be understood as change in the Net Operating Profit After Tax (NOPAT) less the change in the Cost of Capital (COC) invested in an enterprise. It is also referred to as economic profit and it attempts to capture the true economic profit of a company (Mamun, Shazali and Mansor, 2011). Instead of focusing only on profit, it reflects how much does the capital necessary to generate such profit cost.

Stewart (1994) has given the difference of EVA from accounting profit in three principal respects: "First, EVA is the residual income remaining after

subtracting the cost of all the capital that has been employed to produce the operating profit. Second, EVA is charged for capital at a rate that compensates investors for bearing the firm's explicit business risk. The assessment of business risk is based upon the Capital Asset Pricing Model. Third, EVA adjusts reported accounting results to eliminate distortions encountered in measuring true economic performance."

EVA as a value based management system seeks to integrate financial hypothesis with strategic economic philosophy of the corporation. Unlike the traditional accounting –based performance measure EVA takes into account the concept of opportunity cost and risk adjusted rate of return on capital employed in the firm. The popular traditional accounting-based performance measures like Earning per share (EPS), Return on Capital Employed (ROCE), Return on Investment (ROI), Return on Net Worth (RONW), Operating Profit Margin (OPM), Net Profit Margin (NPM), etc. are becoming obsolete as it fails to achieve the objective of value maximization of the shareholders and the firm. EVA aims at encouraging senior managers of the companies to focus about the delivery of shareholders value and to maximize shareholders value whose shares are listed in the stock market. It is designed in such a way that the managers can think more about the amount of capital and the use of capital in each business effectively. It is considered as the single corporate performance measurement tool which provides the basic information for the creation of shareholders value in future. It enables investors to identify investment opportunities and motivate managers to make value added business decisions.

EVA attempts to measure the economic profit as it compares actual rate of return as against the required rate of return. It explains whether a business unit generates return from its assets already in the business and maximizes shareholder's value. It is the most powerful tool to determine whether a firm is value creator or value destroyer. If a company's EVA is positive, the firm is creating shareholder's value and also creates economic value for the firm but if a company's EVA is negative, the firm is destroying shareholder's value even though it may be reporting positive and growing Earnings per Share (EPS) or Return on Capital Employed (ROCE).

3.3 EVOLUTION OF EVA

The evolution of economic profit – economic value added (EVA) can be traced back to the classical economists' notion of residual income. In 1890 the famous British economist, Alfred Marshall, had given the definition of economic profit as "the profit that remains after deducting the interest on capital at the current rate". This economic profit is different from the accounting measures of profit such as EBIT, EBITDA, PAT or net operating income. That is, a key distinction between economic profit and accounting profit lies in the classical economists' notion that a company is not truly profitable unless its revenues have (1) covered the usual production and operating expenses of running a business, and (2) provided a normal return on the owners' invested capital. In a more fundamental sense, this residual view of income is really what today's economic profit movement is really all about. Basically, the theory of economic value added rests on two principle assertions: (1) a company is not truly profitable unless it earns a return on invested capital that exceeds the opportunity cost of capital, and (2) that wealth is created when a firm's managers make positive NPV investment decisions for the shareholders.

3.4 OPERATIONAL DEFINITION OF EVA

Grant (2003) has given the operational definition of EVA from two different perspectives of accounting and finance. From an accounting perspective, EVA is defined as the difference between the firm's net operating profit after tax (NOPAT) and its weighted-average *dollar* cost of capital. As a result, EVA differs from traditional accounting measures of corporate profit including, EBIT (earnings before interest and taxes), EBITDA (EBIT plus depreciation and amortization), net income, and even NOPAT because it fully accounts for the firm's overall capital costs. From the "finance" approach, EVA is viewed as one that rests primarily on a discounting or present value process with the goal of determining market value added, enterprise value, and stock price.

3.4.1 EVA: THE ACCOUNTING INTERPRETATION

The accounting approach of EVA can be expressed as follows:

EVA = NOPAT – $ Cost of Capital

In this expression, the firm's *dollar* cost of capital is calculated by multiplying the *percentage c*ost of capital by the amount of invested capital according to:

$ Cost of capital = [% Cost of capital/100] x Capital

In turn, the percentage cost of capital is obtained by taking a "weighted average" of the firm's after-tax cost of debt and equity capital as shown by:

% Cost of capital = [Debt weight × % After-tax debt cost + Equity weight × % Cost of equity]

3.4.2 EVA: THE FINANCE INTERPRETATION

From a finance perspective, EVA is defined in terms of how it relates to the firm's "market value added." In this context, MVA (or NPV) is equal to the present value of the firm's expected future EVA. Additionally, since MVA is equal to the market value of the firm less the "book capital" employed in the business, it can easily be shown that EVA is related to the *intrinsic value* of the firm and its outstanding debt and equity securities. Stating these concepts in more formal terms yields the familiar value-based relationship between the firm's "market value added (MVA)" and its "economic value added (EVA)" as:

MVA = Firm value – Total capital

MVA = [Debt + Equity value] – Total capital

MVA = PV of expected future EVA

Grant (2003) observes that these general financial definitions have important implications for the firm's owners. Companies having positive EVA momentum should on balance see their stock (and perhaps, bond) prices go up over time as the increasing profits net of the overall capital costs leads to a rise in the firm's "market value added." In contrast, firms with returns on invested capital that fall short of the

weighted-average cost of capital should see share price declines as the adverse EVA outlook lowers the intrinsic (present) value of the firm.

3.5   EVA: A BETTER MEASURE OF CORPORATE PROFIT

EVA is considered as different way to measure corporate profit that is better than all others. Stewart (2013, p. 1) claims that EVA has an application to every facet of corporate performance management. Stewart (2013, p. 3) observed that until a company is covering the full cost of its debt and equity capital, it is really losing money no matter what the accountants may say. The profit measure like EBIT and EBITDA assign no charge for using assets and do not provide protection for the owner's interest. In terms of performance improvement also Stewart (2013, p. 7) opines that no other metric like EVA so succinctly, accurately, and completely captures all of the ways that performance can be improved and wealth created in any business. Stewart (2013, p. 20) observes that a firm can grow by expanding sales, earnings, EBITDA, and margins all it wants; But if they are not growing EVA they are not creating value—they are at best only preserving it. Generating profits in excess of both operating and capital cost (equity and debt) creates EVA

EVA = Net Operating Profit after Taxes (NOPAT) $-$Capital charge (Amount of capital invested **x** cost of capital)

MVA = Market value of the enterprise (NOPAT) $-$ Capital invested

$$MVA = Market\ value - Capital$$

$$Market\ value = Capital + MVA$$

$$MVA = Capital + Present\ Value\ of\ EVA$$

The market value of a company as a going concern business is equal to the book value of the capital that has been put into the business plus a premium, or less a discount, to reflect the quality of capital management Stewart (2013, p.39)

3.6 TRADITIONAL PERFORMANCE MEASUREMENT METHODS VS. EVA

There is a heated debate among practitioners about the superiority of EVA over the traditional accounting based performance measures. Several researchers have argued that Economic Value Added (EVA) is a superior performance measure compared to traditional accounting performance measures in deriving stock market returns while some other researchers confirming that traditional accounting performance measures provide more information on stock returns than EVA. The studies conducted on EVA and traditional accounting performance measure tools in different countries have largely found to be supporting EVA as a betterment tool for corporate performance than traditional tools.

EVA has gained popularity in most of the developed countries like US, UK and European countries since it is consistent with the objectives of shareholders value maximization. Due to its popularity and contents in analyzing the shareholders value, much research has been done in the late 1990's which covers diverse issue on EVA. However, countries like India and other developing countries were using traditional measurement tools than EVA because of its difficulty in calculating and in implementing EVA. Much research has been done in the content of EVA and traditional performance measurement tools in order to prove the two variables in predicting which one is a better measurement tools in valuing the shareholders' value.

The value based measures of performance are diverse and there is no consensus between scholars about their competence in evaluating financial performance of companies perfectly. The technique of Economic Value Added (EVA) as developed by Stern Steward and Co. has gained considereable significance in finance and accounting research. Many researchers have proved EVA to be superior performance measurement technique as compared to the traditional measures like Return on Equity (ROE), Return on Assets (ROA), Return on Invest Capital (ROIC), Dividend per Share (DPS) and Earnings per Share (EPS). A significant amount of research has been done analyzing the better predictor between EVA and traditional measures. Worthington and West (2001) argued that EVA is the financial performance measure that comes closer than any other to capture the true

economic profit of an enterprise. The usefulness of EVA as a new financial performance measure has been widely debated in the academic literature. Gurvey & Milbourn (2000), Sharma & Kumar (2010), Mamun & Mansor (2012) in their studies found EVA to be a better and important tool in analysing financial performance than traditional measures. Mustafa (2010), Abdoli, Shurvarzi & Farokhad (2012) and Rotonga (2016) emphasized that EVA is highly associated with stock return and firm's value than traditional measurement tools. Hajabedi, Mousdakhani & Orooji (2016) found companies EVA in Iran is predictable with reasonable accuracy and created model by the generic algorithm that have high capability of EVA forecast. According to Young & Byrne (2000) EVA is highly accurate because it includes the cost of debt financing and equity financing. He found that traditional income measures including net income and earnings per share can be easily manipulated, and they do not account for the cost of equity. Cash flow measures like Cash flow from operations (CFO) and Cash Flow Return on Investment (CFROI) include neither the cost of equity nor the cost of debt. He found that EVA is the best available metric for measuring value.

Howerver, study conducted by Barners (1999, 2001), Wet & Toit (2006) and Withera (2008), claimed that superiority of EVA was not verified in terms of relative information content. They found ROE and other traditional performance measurement tools were more superior to EVA in explaining changes in shareholders return. Negative results have been found by many studies including Pataky (2012). Pataky (2012) found that selecting stock using EVA, does not offer less risk or higher returns for an investor. EVA is a difficult performance metric to calculate, with several complex components that can be calculated in several different ways such as NOPAT, Cost of equity and debt. Traditional performance tools on the other hand, such as ROE, ROA and P/E are simple to calculate with few components. Mutuku (2011) argued that there exist a negative relationship between cash conversion cycle and financial performance of firms listed in the Nairobi Stock Exchange (NSE).

3.7 ADVANTAGES AND DISADVANTAGE OF EVA

Most financial analysts believe that Economic Value Added (EVA) is the most prominent indicators of true economic value of the firms and companies should focus on high turnover than company's cost of capital. EVA should be used to examine both internal as well as external for valuing company since it gives the true value other than profits and cash from operating activities. EVA indicates how profitable company's projects are as a sign of management performance.

The primary usefulness of EVA is that it takes into account the opportunity cost of the funds used by a company and determining the amount of income value. According to Ray (2012), EVA is the performance measurement tool that could directly be linked to a company performance over time as it contributes in solving agency problems and Shil (2009) in his study mentioned that compensation based on EVA helps achieve goal congruence between a company's management and investors. EVA is the most accurate way of knowing the results of a company and is the indicator that seems to have the closest link to investor value. Stewart (1994) is of the opinion that EVA is superior to other performance measurement tools since:

(i) Good assumptions of managerial decision making and approach to the firms best interest.

(ii) EVA can warn management of the sudden growth of capital cost. This indicates that the assets do not cover their costs.

(iii) Makes managers care about asset and income management and helps to comprehend the relationship between these components.

(iv) Measures how much wealth divisional and corporate managers created for a particular division or for the whole company.

(v) Creates opportunities for senior managers to get engaged mainly with shareholder value creation.

(vi) Return on Investments (ROI) and EVA are highly correlated with each other thus helps for better changes in the stock market.

(vii) Allows management decision to get modeled, communicated, discussed, and monitored.

Since EVA became applicable worldwide critics have proven that it has limitations indeed. One significant fact against EVA is that it is assumed managers have the entire proper information for the decision making and all of the managers are capable to lead EVA procedure. EVA itself disregards the organizational structure of a company and all types of managers can be involved in the improvement process.

Critics have also been made as EVA has a profit-making aspect and it does not have a logical base. It is also argued that EVA by itself is incomplete to resolve market value. According to Ferdanez (2001), high value of EVA does not mean high value. Traditional performance measurement tools such as Return on Investment (ROI), Return on Equity (ROE), Return on Assets (ROA) and Earnings per share (EPS) have been employed since it is more consistent in determining valuation firm's value. Ray (2012) summarizes below some of the most common side effects of EVA as follows:

(i) Calculation could become complex if there is too many adjustments to do.
(ii) The universal suitability concept seems to be "difficult" to accept.
(iii) Short term versus long term.
(iv) The use of some depreciation could have a distorting effect on EVA.

3.8 IMPLEMENTATION OF EVA

Firms that adopt EVA appear to have above the average profitability relative to their peers both before and after the adoption of EVA. Further evidences also state that EVA adopters experience increased profitability relative to their peer after adoption of EVA. Further, firms using EVA exhibit a higher percentage of institutional ownership and a lower percentage of insider ownership than non-adopters. One of the major policies of EVA as well as Value Based Management is to change the behaviorism of managers towards economic value creation. As already

stated EVA as a continuous improvement management tool, it requires to start the EVA implementation procedure from a company's CEO and executive stuff. In order to implement EVA into a firm it requires to make the concept easy to comprehend and accountable. Wallence (2010) stated that EVA should be kept simple and the concept should be understandable not only for managers and executives, but also for other employees of lowest positions who are somehow involved in the process of EVA.

Young and Byrne (2000) suggested their own questionnaire and answers of implementation of EVA concept such as: (i) how is it possible to find out the centers of EVA metrics? The key is to define the profit centers in order to find the EVA center. This means to conclude EVA with well represented balance sheet and income statement. (ii) Who will be responsible for its identification? Specialized managers with EVA-based experience as well as senior manager with relatively more experience of the company are expected to take the responsibility. (iii) In what organizational divisions of a firm EVA should be implemented? In fact EVA can be initiated in all of the organizational hierarchy of a company; however lots of unsuccessful researches suggest not going deep though. (iv) What method of EVA to calculate? Depending on the company's belonging to economic sectors and the type of business the methods and calculations may differ. (v) What's the frequency of EVA calculation? EVA is usually good for short period measurement, but not for long period as negative EVA can cause managers to wrong conclusions and lead the firm to a wrong direction. Generally EVA can be calculated monthly, seasonal, annual, etc.

3.9   EVA AS A PERFORMANCE MANAGEMENT TOOL

EVA is considered as one of the modern company performance metrics now-days. As a matter of fact, many firms highly evaluate the importance of shareholder's wealth creation as one of the main goals of its activities. Therefore, the precise implementation of EVA can bring prosperity in terms of creation shareholder value as well as in terms of right decision making. On the other hand, EVA in comparison to traditional metrics has significant superiority as the usual financial metric like

profitability, cash flow, earnings, and performance ratios do not take part in terms of shareholders' value creation. Despite the mentioned fact there are several arguments that make EVA superior performance company metric, therefore EVA is:

(i)   Very close in terms of amount to the real cash flow of a firm.

(ii)   Measures an operating performance and its outcome can be used for managerial decision making.

(iii)   Easy to compute and comprehend.

(iv)   A basic component of shareholders' creation

(v)   Easy to communicate to the managers.

(vi)   Is highly correlated to the market values such as the Market Cap and debt.

Therefore, the above mentioned points make EVA more applicable in much entrepreneurship nowadays.

3.10   COMPONENTS AND CALCULATION OF EVA

Firms that adopt EVA appear to have above the average profitability relative to their peers both before and after the adoption of EVA. Implementing EVA is a highly company specific process. The definition given by Stern Value Management showed that EVA is the difference between the net operating profit after tax of the business organization and the cost of the opportunity capital invested in the business organization. According to Stern Steward & Co. more than 150 adjustments are required to be applied to measure the most possibly accurate EVA of a company. On the other hand, the main factors that the most of all these adjustments are not more often being used, depends on company's policy, economic sector, strategic management and etc. Moreover, some companies claim that they use around 12 adjustments, despite the fact that there are some others who are not prone to use them at all. The reasons they don't make any adjustment, because they are sure that these adjustments have insignificant impact on economic profit. The essence of applying

for adjustments is to transform accounting profit into economic profit as EVA is an economic measure itself. Economic Value Added (EVA can be expressed as:

$$EVA = NOPAT - Invest\ Capital \times WACC$$

(i) Net Operating Profit after Tax (NOPAT): NOPAT plays a crucial role on the calculation of EVA and is considered as one of four steps of EVA Measurement. NOPAT is a measure of a company's cash generation capability from recurring business activities and disregarding its capital structure. NOPAT is the profit that remains after subtracting all operating expenses, including depreciation and cash taxes, from sales revenue, but excluding interest on loans. Basically, NOPAT measures the operating profit and it is a company potential cash earnings if the capitalization were unleveraged i.e. if it had no debt. While calculation of NOPAT, the non-operating items like dividend/interest on securities invested outside the business, non-operating expenses etc. will not be considered. The formula for calculating NOPAT is shown below.

$$NOPAT = Profit\ Ater\ Tax \times (1 - t)$$

Profit after Tax (PAT) of the company is determined on the basis of information available in the income statement of the company annual reports. It is calculated by deducting the cost of goods sold and operating expenses from the total revenue of the company. The tax rate of the company is noted from annual reports of the company. The tax adjusted value is calculated by subtracting the tax rate from one.

(ii) Invest capital: Invest capital can be defined as the total money that is raised by a firm by issuing debt to bondholders and securities to equity shareholders. It is the investment made by both shareholders and debt holders in a company. When a company needs capital to expands, it can obtain either by selling stock shares or by issuing bonds. The amount of invest capital is not listed on a company balance sheet as a separate line item. Instead, the amount must be inferred from other information stated in a company accounting records. Invest capital can be calculated in different ways and the most common form of identifying invest capital is Total Assets minus Non interest current liabilities. Formula for finding invests capital is given.

$$Invest\ Capital = Total\ Assets - Non\ Interest\ bearing\ Current\ Liabilities$$

Total assets are defined as the assets owned by the entity that has economic value whose benefit can be derived in the future. Assets include anything a company owns that has a monetary value. It is the sum of non- current and current assets. Non-interest bearing current liabilities is a category of debt that an individual or a company must pay off within a calendar year including taxes and account payable. It is liabilities that a person or company must pay within a year that do not accrue interest. It can be calculated from company annual report.

(iii) Weighted Average Cost of Capital (WACC): The cost of a company's capital depends on the sources of finance used, as well as the combination (or weights) of each source of finance. Typical categories for financial sources are equity (own share capital and reserves), preferred share capital and debt. A firm obtains capital from various sources. The cost of capital of each source of capital is known as components, or specific, cost of capital. The combined cost of all sources of capital is called overall, average, cost of capital. The components costs are combined according to the weight of each component capital to obtain the average costs of capital. Thus, the overall cost is also called the weighted average cost of capital and it is represented as follows:

$$WACC = Cost\ of\ debt + cost\ of\ equity$$

$$\text{And, } WACC = \frac{D}{v} \text{ x } (R_d)(1-t) + \frac{E}{v} \text{ x } (R_e)$$

Where,

$\frac{D}{v}$ = % of debt, R_d= Cost of debt, $1-t$= Tax rate, $\frac{E}{v}$ =% of Equity, R_e= Cost of equity

(iv) Cost of debt: Debt includes all interest bearing borrowings. Its cost is the yield (return) which lenders expect from their investments. A company may raise debt in a variety of ways. It may borrow funds from financial institutions or public either in the form of public deposits or debentures (bonds) for a specified period of time at a certain rate of interest. A debenture or bond may be issued at par or at a discount or a premium as compared to its face value. The contractual rate of interest

or the coupon rate forms the basis for calculating the cost of debt. The cost of debt is relatively simple to calculate, as it is composed of the rate of interest paid. The cost of debt is computed by taking the rate on a risk free bond whose duration matches the term structure of the corporate debt, then adding a default premium. Since in most cases debt expense is a deductible expense, the cost of debt is computed as an after tax cost to make it comparable with the cost of equity. Thus, for profitable firms, debt is discounted by the tax rate as follows:

$$K_d = R_f + (R_m - R_f) \, Total \; cost \; of \; debt \; X \; (1 - t)$$

Where,

K_d = Cost of debt; Rf = Risk free rate of return; t= Tax rate.

(v) Cost of Equity: Firms may raise equity capital internally by retaining earnings. Alternatively, they could distribute the entire earnings to equity shareholders and raise equity capital externally by issuing new shares. In both vases, shareholders are providing funds to the firms to finance their capital expenditures. Therefore, the equity shareholders required rate of return would be the same whether they supply funds by purchasing new shares or by foregoing dividends, which they could have been distributed to them. The cost of equity is more challenging to calculate as equity does not pay a set of known return to its investors. Cost of equity (R_e), also known as common stock's required rate of return, is the specific rate of return that the particular organization must get in order to maintain the price of its common stock. There are different ways of calculating cost of equity such as:

   a) Dividend discount model
   b) Arbitrage Pricing Model (APT)
   c) Capital Assets Pricing Model (CAPM)

(a) **Dividend discount model**

Dividend discount model is based on the assumption that ordinary shareholders only have a residual claim against the company once obligations have been met. Consequently, shareholders value their shares based on their expectations of futures dividend as well as their required rate of return. According to dividend discount

model, the value of an ordinary share is equal to the present value of all expected future cash dividends to be received.

(b) **The Arbitrage Pricing Model (APT)**

The Arbitrage Pricing Theory Model (APM) was developed using the same principles that underlie in CAPM. However, instead of using one factor of risk it uses s multifactor approaches. The basic assumption is that competitive forces quickly eliminate arbitrage opportunities. It means that investors cannot earn a positive expected rate of return on any combination of assets without incurring some risk and without making some net investment. The APT uses different factors that influence the sensitivity of the shares return instead of only one single factor as used by CAPM.

(c) **The Capital Assets Pricing Model**

The Capital Assets Pricing Model (CAPM) was employed for finding cost of Equity of a particular firm and it is the most commonly model employed to find out the company cost of equity. The CAPM was developed using the assumption that shareholders can only expected to be compensated for risk, which cannot be diversified away. Investor is able to hedge against company specific risk by holding a portfolio of shares instead of investing n one kind of shares only. Consequently, shareholders can only expect to be compensated for systematic risk and the rate of return they required should only reflect this kind of risk. Under CAPM Model, Cost of Equity is represented by:

$$E(R_i) = R_f + \beta_i (R_m - R_f)$$

Where,

$E(R_i)$= Expected return;

R_f= Risk free rate of return;

β_i= Beta of assets;

(R_m)= market return.

The risk free rate of return can be estimated by using the rate for government bonds for an appropriate maturity date. The yield on the government treasury securities are used as the risk-free rate. Normally, return on short-term treasury bills are used as the risk free rate. India RBI 91-Treasury bills are usually used. Beta is a numerical measure of a sensitivity of a particular stock relative to the sensitivity of the market. Usually, if the number is bigger than 1, it indicates more volatility and lower number of less volatility of stock. Basically, for nowadays companies the number of beta is between 0.5-1.5. Beta is derived by the usage of weekly bases and historical prices. The market rate of return is the return that an investor expects from an investment in a market portfolio. The market risk premium is measured as the difference between long-term, historical arithmetic averages of market return and the risk free rate.

3.11   CONCLUSION

There is little doubt that EVA has gained popularity in most of the developed countries like US, UK and European countries since it is consistent with the objectives of shareholders value maximization. The primary usefulness of EVA is that it takes into account the opportunity cost of the funds used by a company and determining the amount of income value. Due to its popularity and contents in analyzing the shareholders' value, much research has been done in the late 1990's which covers diverse issue on EVA. EVA is a difficult performance metric to calculate, with several complex components that can be calculated in several different ways such as NOPAT, Cost of equity and debt. However, countries like India and other developing countries were using traditional measurement tools than EVA because of its difficulty in calculating and in implementing EVA. Much research has been done in the content of EVA and traditional performance measurement tools in order to prove the two variables in predicting which one is a better measurement tools in valuing the shareholders' value. Critics have also been made as EVA has a profit-making aspect and it does not have a logical base. It is also argued that EVA by itself is incomplete to resolve market value. Thus, it can be concluded that the value based measures of performance are diverse and there is no consensus between scholars about their competence in evaluating financial

performance of companies perfectly. The concept of EVA is still under development and debate still exist among the practisioners and academic.

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CHAPTER-4

FINANCIAL PERFORMANCES OF THE SELECTED NIFTY 50 COMPANIES

4.1 INTRODUCTION

This chapter deals with the analysis and interpretation of the study conducted. The Nifty 50 companies listed in the NSE as on 1st April 2017 were taken for the study. Data for a period of twelve years i.e. 2007-08 to 2018-19 was considered for the study. These fifty companies belong to 13 different sectors viz. Information Technology, media, metal, pharma, services, telecom, auto, financial, energy, consumer goods, cement and constructions.

4.2 Descriptive statistics of the variables

The descriptive statistics of the variables under study are found out for the entire sampled companies and are given in Table 4.1. There are 595 observations which comprises of the value of the variables of the 50 companies for 12 years except for Infratel Company which has data for seven years only.

Table 4.1: Descriptive Statistics of the Variables of the Entire Period

Variables	N	Minimum	Maximum	Mean	Std. Deviation
Economic Value Added (Rs. in crores)	595	-321.12	32752.66	3648.47	3570.16
Earnings per share (%)	595	-7.67	753.37	53.85	70.41
Return on Assets (%)	595	0.06	150.80	11.63	13.39
Return on Invested Capital (%)	595	-35.03	95.21	13.40	14.57
Return on Net Worth (%)	595	-38.18	104.17	16.75	15.00
PE ratio (%)	595	0.00	58.68	9.62	10.42
Dividend per share (%)	595	0.00	73.00	10.51	10.13
Market Value added (Rs. in crores)	595	1141.98	8401723.77	963866.94	1212464.23
Market cap (Rs. in crores)	595	2752.94	8517060.98	1005494.40	1239755.99
Stock price (in Rs)	595	32.10	28372.65	1135.81	2205.79

Stock return	594	-96.84	429.91	15.38	54.80
Book value of equity (Rs. in crores)	595	445.79	566863.00	41627.46	65137.73

Source: Computed with SPSS Software

Table 4.1 shows descriptive statistics of selected variables of the entire study period of the Nifty 50 Company's viz. EVA, EPS, ROA, RoIC, RoNW, PE ratio, DPS, MVA, Market capitalization, Stock price, stock return and book value of equity. The value of EVA and MVA are given in the Rs. Crores. The mean of EVA, EPS, ROA, RoIC, RoNW, PE ratios, DPS, MVA, Market capitalization, stock price, stock return and book value of equity stand at 3648.47, 53.85, 11.63, 13.40, 16.75, 9.62, 10.51, 963866.94, 1005494.40, 1135.81, 15.38 and 41627.46 respectively. Table 4.1 also shows that among the selected parameter, Market capitalization has the largest mean with value of 1005494.40 whereas PE ratio has the least with mean of 9.62.

4.3   Economic Value Added of the Companies

Economic Value Added (EVA) as a valuation analytical tool is a revolutionary financial metric in measuring the value creation of the firms. It is just a measure of the return that the investment earns over the market rate of return and it acts as an input variable that makes the basis and guide management for their decision making. EVA is considered as the single corporate performance measurement tool which provides the basic information for the creation of shareholders value in future and thus enables investors to identify investment opportunities and motivate managers to make value added business decisions. In the study, almost all the companies are having positive value except for Grasim and Ultratech companies in the year 2008-09 to 2009-10 and for Ultratech Company in the year 2010-11. Therefore, we can conclude that investors are able to create wealth and good returns for the shareholders.

Table 4.2: EVA of the Companies (2007-08 to 2012-13)

Company	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
HCL	640.94	4329.9	4207.27	4171.94	3718.17	3871.86
INFOSYS	2286	3563	4059.37	4488.06	5852.08	6098.28
TCS	3724	3788	5759	6808	7254	9304
TECH MAHINDRA	2947.89	8978.77	3776.09	3383.65	2117.73	1306.67
WIPRO	2387.84	2076.6	3526.49	3270.65	2205.92	3399.71
ZEE	92.12	435.64	2277.33	3273.35	1540.67	2557.11
COAL INDIA	3256.36	4523.14	3256.32	4421.95	6776.51	7296.51
HINDALCO	1706.83	524.08	2834.51	2447.32	1221.79	753.31
TATA STEEL	472.35	2327.11	2068.26	1634.51	5731.68	4144.28
VEDL	377.52	1284.46	2127.63	3036.15	651.59	958.52
CIPLA	404.08	407.37	675.3	438.05	423.38	1161
DRREDDY	856.73	2738.7	5512.49	5508.32	3516.52	6134.99
LUPIN	1716.94	925.3	1484.64	6152.98	2200.45	6167.87
SUNPHARMA	6167.96	6682.92	2402.98	5533.83	3555.99	3444.81
ADANIPORTS	1674.98	4004.57	6218.61	9013.27	1153.54	1570.49
BHRATIARTL	2348.12	5478.23	1845.75	1111.31	2200.29	766.9
INFRATEL	-	-	-	-	-	4216.33
BAJAJAUTO	3256.21	5158.79	1536	2381.34	2287.76	6245.05
EICHER	214.46	573.45	759.14	1203.04	1051.43	3081.23
HEROMOTOCO	575	835	1723	1376	1677	1334
M & M	2070.19	2329.66	2846.71	1759.44	3714.91	4341.9
MARUTI	3352.32	7761.95	1435.97	9214.37	1364.6	984.93
TATAMOTOR	948.3	488.9	823.23	7061.35	1971.11	1125.25
GRASIM	201.94	-10.18	-275.31	1738.01	267.67	3059.29
ULTRATECH	590.3	447.45	510.32	-319.13	2147.43	2301.2
AXISBANK	1368.99	2335.7	3529.19	1572.24	4042.42	4456.38
BAJAJFINSERVE	804.71	1356.41	400.65	738.02	986.36	1442.07
BAJAJFIN	301.47	1462.23	8141.11	1416.29	1400.96	520.13
HDFC	449.39	394.06	379.93	4177.07	3764.95	4520.79
HDFC BANK	1959.09	2920.89	3547	4633.59	6319.39	8206.55
IBULFIN	1523.36	1823.36	1836.25	2186.96	2236.69	2126.35
ICICIBANK	2955.64	4108.8	4125.88	5661.53	804.51	1163.15
INDSBANK	1649.59	2744.45	3849.65	7811.66	4827.2	6540.56
KOTAKBNK	2310.89	2342.25	4900.72	3603.56	4839.39	2908.22
SBI	3681.19	3861.62	1984.99	7378.22	10789.93	13431.84
YESBANK	2257.21	4081.37	7341.03	10352.2	16038.51	2304.41
UPL	1714.27	1586.84	2738.95	2304.16	3982.23	3113.56
BPCL	94.82	137.08	458.51	134.62	1789.9	1477.19
GAIL	3069.71	2988.58	1914.47	9606.48	851.75	357.23

HINPETRO	962.09	339.37	1005.19	1155.15	544.07	626.72
IOC	2057.49	1926.51	3734.34	5551.53	3290.53	2567.71
NTPC	1049.43	205.32	138.16	5542.93	5190.64	4699.26
ONGC	43.02	5435.19	5097.75	3140.04	4566.15	4959.22
POWERGRID	1236.81	1424	1678.94	2178.52	2707.77	3672.28
RELIANCE	9763.04	4645.82	3221.11	6810.71	1090.52	274.8
ASIANPAINT	339.56	629.53	817.09	763.4	443.43	488.65
HINDUSTANLEVER	1314	2194	1791	1750	2250	3147
ITC	2061.27	3132.15	2976.37	3643.04	6477.61	4336.7
TITAN	9774.81	10820.97	19419.53	32752.66	5497.12	6606.95
LARSEN &TOUBRO	2054.2	2013.28	1337.28	3538.54	5956.83	4047.32

In Table 4.2 the Economic Value Added (EVA) of the 50 companies for six years i.e. 2007-08 to 2012-13 is given. From the Table 4.2, it can be observed that the negative EVA were found in only three observation i.e. for Ultratech in the year 2010-11 with a value of -319.13 and for Grasim in the year 2008-09 and 2009-10 with values of -10.18 and -275.31 respectively. For Infratel the EVA value of the year 2012-13 only could be found out as no data was available for the company prior to 2012-13. Table 4.2 also shows that among all the 50 companies, TITAN Company has the largest EVA in the year 2010-11 i.e., 32752.66 followed by YES Bank and State Bank of India with EVA of 16038.51 and 13431.84 respectively. Among positive EVA of the 50 companies, ONGC has the least EVA followed by ZEE Company and BPCL Company with EVA of 43.02, 92.12 and 94.82 respectively.

Table 4.3: EVA of the Companies (2013-14 to 2018-19)

Company	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
HCL	6549.63	4490.46	6057.82	3532.52	4041.71	5132.67
INFOSYS	6451.65	7935.06	10613.05	9093.77	9169.13	8294.8
TCS	1488.03	1541.2	1878.87	1977.54	6868.81	3923.09
TECH MAHINDRA	1738.95	1078.5	1813.36	1408.75	1171.5	3698.31
WIPRO	4548.32	7869.41	3932.78	3447.77	1069.69	3267.6
ZEE	3841.25	3823.91	2178.75	2316.57	5202.62	1659.55

COAL INDIA	7519.72	8471.3	6755.5	6736.16	7012.05	8265.53
HINDALCO	367.92	822.55	185.68	1533.23	1460.87	7607.11
TATA STEL	5368.28	5340.84	2304.18	2247.57	806.19	4635.84
VEDL	510.45	692.09	963.52	7776.85	7946.37	4918.97
CIPLA	402.39	41.7	350.44	828.28	202.37	214.72
DRREDDY	11104.02	6985.59	2051.81	2683.2	5328.77	12461.33
LUPIN	10386.63	13240.93	4177.84	7411.8	4312.85	2973.31
SUNPHARMA	4039.19	6862.46	4217.5	18880.27	15628.54	21327.09
ADANIPORTS	1998.83	1903.53	2475.73	2687.85	2704.28	5364.63
BHRATIARTL	1249.5	1744.53	367.2	935.74	1385.73	1153.32
INFRATEL	4246.26	2288.8	5609.63	7390.02	6568.91	7293.75
BAJAJAUTO	2361.7	1871.52	2536.95	2471.97	1723.29	2490.25
EICHER	3755.82	5774.91	1187.91	1284.68	1341.78	1541.32
HEROMOTOCO	1228	1393	1538.63	2205.73	2634.3	2271.65
M & M	4272.42	2667.71	2506.77	2323.03	4739.38	5035.58
MARUTI	2591.12	2896.53	4701.85	7043.28	6891.65	6922.64
TATAMOTOR	1173.68	911.77	1284.84	3425.72	1588.41	2813.16
GRASIM	4563.08	4155.74	971.08	965.25	507.07	715.45
ULTRATECH	1795.51	1674.7	1985.93	2217.58	1968.83	1886.81
AXISBANK	3664.66	3024.98	2423.75	1868.88	1162.68	269.61
BAJAJFINSERVE	549.01	685.19	1951.15	1915.68	2779.97	2742.91
BAJAJFIN	980.23	1020.54	829.43	1102.15	4403.4	4139.53
HDFC	6509.94	7374.22	6903.24	7336.68	6136.83	5616.73
HDFC BANK	1021.89	1220.22	1689.08	1726.9	1769.33	1733.35
IBULFIN	1345.36	2256.96	2989.68	3215.23	4443.21	2187.94
ICICIBANK	1558.51	1990.24	2190.88	1848.4	1802.1	1745.77
INDSBANK	9320.37	11982.2	1507.3	1796.58	1548.45	1221.23
KOTAKBNK	7768.19	5177.68	3041.41	2199.66	4730.99	2378.44
SBI	9801.15	12221.27	8648.02	8722.74	8393.6	8152.79
YESBANK	3504.11	4373	5921.72	7449.37	5801.34	7350.91
UPL	2588.58	282.62	315.38	397.83	160.27	1242.06
BPCL	3452.93	3626.52	1279.04	2968.69	2271.24	1269.7
GAIL	4220.83	400.4	1450.01	339.68	208.18	3022.03
HINPETRO	1358.54	2277.56	216.3	1650.41	943.05	5575.37
IOC	5759.5	3671.35	3054.73	5346.69	3028.23	749.65
NTPC	10997.21	8491.58	8937.81	9201.1	5212.62	4561.05
ONGC	15474.58	15794.12	9254.07	24993.64	29415.76	11911.34
POWERGRID	3618.05	3718.23	4354.33	6515.95	6353.43	6247.26
RELIANCE	586.99	3961.24	1665.37	9860.84	2593.59	10654.45
ASIANPAINT	678	980.73	895.3	1156.58	1871.05	863.41
HINDUSTANLEVER	3380	3526	3438	3498	4258	5291

ITC	5418.36	5118.54	4609.2	4033.36	2971.73	2085.53
TITAN	9479.97	8599.28	8998.84	7875.73	-321.12	668.81
LARSEN &TOUBRO	3356.23	2987.71	3276.48	3545.44	3260.36	2944.52

In Table 4.3 the Economic Value Added (EVA) of all the selected companies of the fifty companies for six years i.e. 2013-14 to 2018-19 are given. From the Table 4.3, it can be observed that negative EVA were found in only one observation i.e., Titan Company in the year 2017-18 with a value of -321.12. Table 3 also shows that among all the fifty companies during 2013-14 to 2018-19, Sun Pharma Company has the largest EVA in the year 2018-19 i.e., 21327.09 followed by ONGC and DRREDDY with EVA of 15794.12 and 12461.33 respectively. Among positive EVA of the selected fifty companies, CIPLA Company has the least EVA followed by UPL and HINDALCO Company with EVA of 41.70, 160.27 and 185.68 respectively.

As can be observed in Table 4.2 and Table 4.3, other than three observations rest of the EVA value are having positive value indicating that the companies listed in the Nifty 50 are value creators. These companies are creating the shareholder's value.

4.3.1 SECTORAL TREND OF EVA OF THE SELECTED COMPANIES

To familiarize the performance of the individual companies under different sectors, the descriptive statistics of EVA of the companies sector wise are given in the Tables following (Table no. 4.4 to Table 4.16) and also to understand the trend of Economic Value Added of the companies EVA graphs are presented in the Figures 4.1 to Figures 4.13.

Figure 4.1: Trend of EVA for companies under IT sector
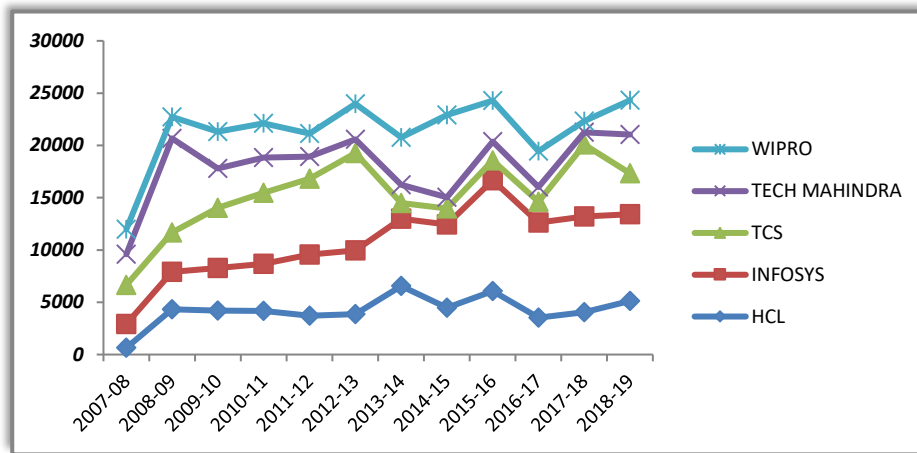
In the Figure 4.1 the EVA of IT companies are presented. There are five companies under IT sector and as can be seen from the Figure 4.1, it can be observed that EVA of Infosys and TCS company has continuously increased from 2007-08 to 2013-14 and start declining during 2016-17 to 2018-19. EVA of HCL Company has also increased during the first two years however; start declining in the year 2009-10 to 2011-12. Figure 4.1 also shows that highest EVA is obtained by Infosys Company in the year 2015-16 followed by Tech Mahindra and HCL Company in the year 2008-09 and 2013-14 respectively.

Figure 4.2: Trend of EVA for companies under Media sector
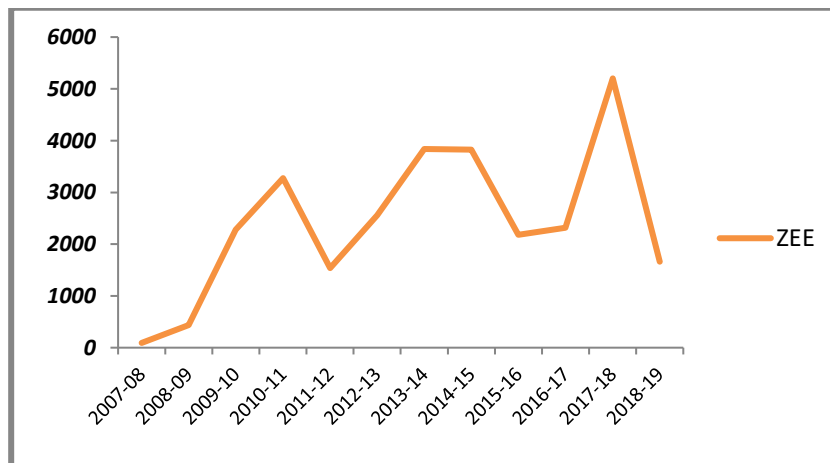
Figure 4.2 represents trends of EVA for the companies under Media sector and there is only one company under media sector i.e., ZEE company. As can be seen from the Figure 4.2, it can be observed that EVA has been constantly increased during the first four years and declined in the year 2011-12. Figure 4.2 also shows that EVA has constantly decreased from 2017-2018 to 2018-19.

Figure 4.3: Trend of EVA for companies under Metal sector
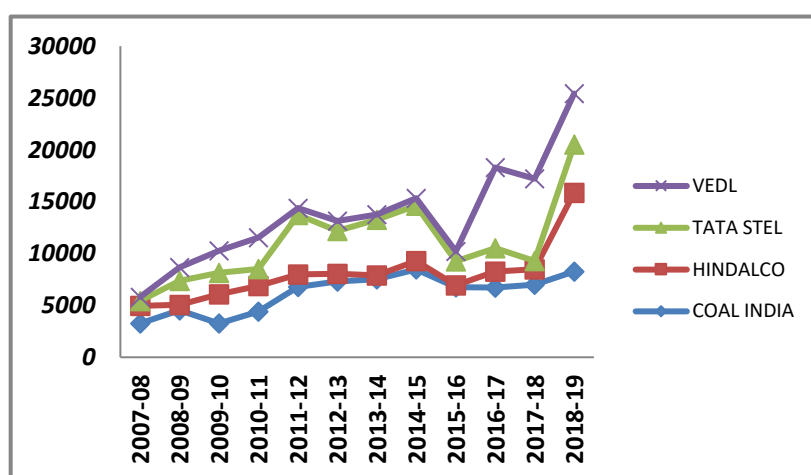
There are four companies such as TATA Steel, HINDALCO, Coal India and Vedanta under Metal sector. As can be seen from the Figure 4.3, EVA of Vedanta, Tata steel and Coal India has increased during the first three years i.e., 2007-08 to 2009-10 however, EVA of Tata steel and Hindalco has decreased during the next three years. Figure 4.3 also shows that Coal India has highest EVA in the year 2018-19 whereas Hindalco has the lowest EVA in the year 2015-16.

Figure 4.4: Trend of EVA for companies under Pharma sector
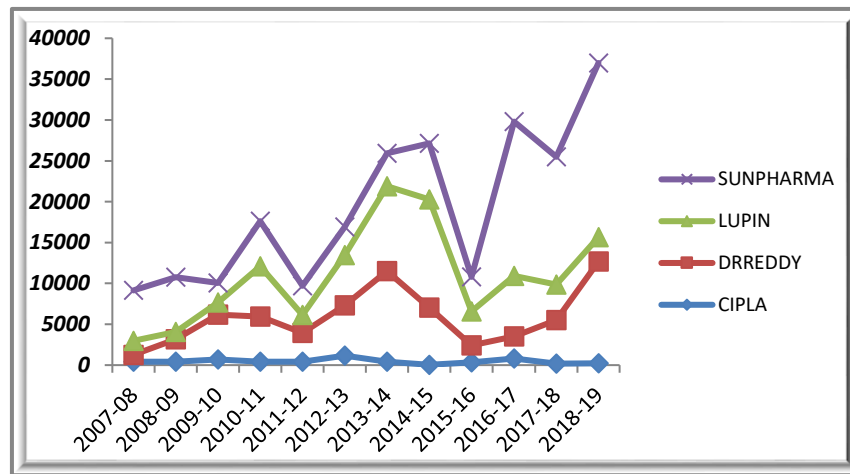
There are four companies under Pharma sector and as can be seen from the Figure 4.4, EVA of CIPLA, DR.REDDY and Sunpharma has increased during the first three years from 2007-08 to 2009-10 whereas EVA of Lupin has decreased in the first two years from 2007-08 to 2009-10. Figure 4.4 also shows that EVA of CIPLA and DR. REDDY has almost 60% decreased in EVA from 2013-14 to 2014-15 whereas EVA of Lupin and Sunpharma has almost an increase in 50% of EVA from 2009-10 to 2010-11.

Figure 4.5: Trend of EVA for companies under Services sector
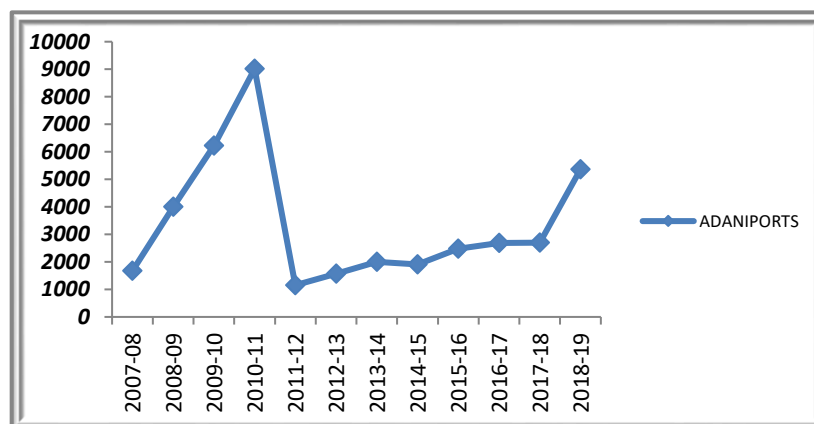
Figure 4.5 represents trends of EVA for companies under services sector and there is only one company under service sector i.e., Adaniports. As can be seen from the Figure 4.5, there is a constant increased in EVA from 2007-08 to 2010-11 and however decreased in the year 2011-2012 and start increased from the year 2011-12 to 2018-19. Figure 4.5 also shows that highest EVA is found in the year 2010-11 whereas lowest is found in the year 2011-12.

Figure 4.6: Trend of EVA for companies under Telecom sector
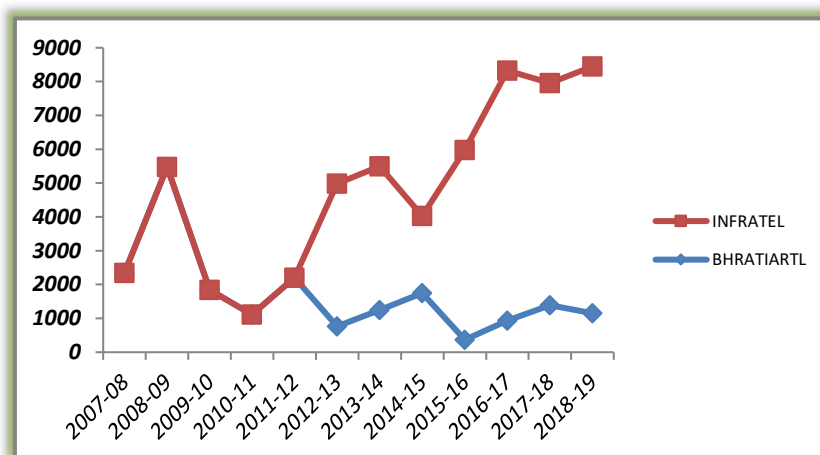
Figure 4.6 shows trend of EVA for the companies under telecom sector and there are two companies under telecom sector i.e. Bharti Airtel Company and Infratrel Company. EVA of Infratel Company for the first consecutive five years i.e. 2007-08 to 2011-12 could not be generated since annual reports are not available during the period and hence trend of EVA for the year 2012-13 to 2018-19 can be presented only. As can be seen from the Figure 4.6, EVA of Bharti Airtel have increased during the first year however, start decline in the next consecutive two years. Figure 4.6 also shows that EVA of Infratel Company has increased during the first year and decline in the third year i.e., 2014-15.

Figure 4.7: Trend of EVA for companies under Automobile sector
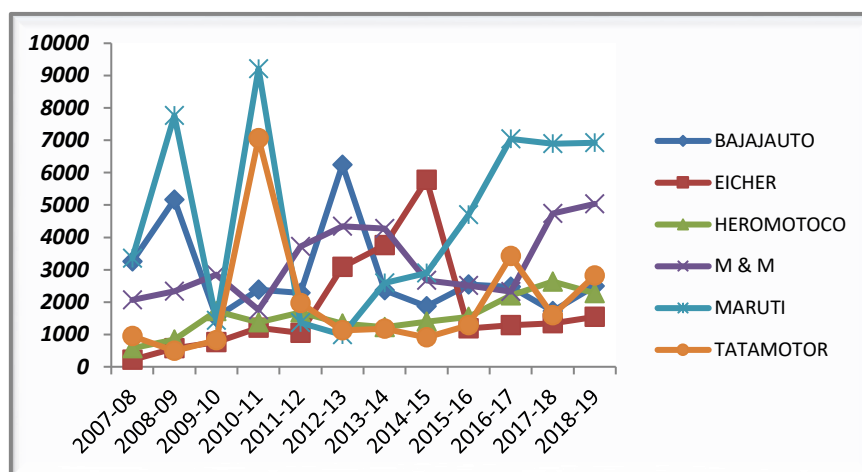
Figure 4.7 shows trend of EVA for the companies under automobile sector and as can be seen from the Figure 4.7, among the six companies, Maruti has the highest EVA in the year 2010-11 whereas Heromotoco has the lowest EVA in the year 2007-08. EVA of Bajaj auto, Heromotoco, M & M and Maruti have increased in the first two years from 2007-08 to 2008-19. Figure 4.7 also shows that EVA of Maruti, Eicher and Tata motor have almost 50% an increased in EVA from 2009-10 to 2010-11 and EVA of Maruti has constantly increase from 2012-13 to 2016-17.

Figure 4.8: Trend of EVA for companies under Cement sector
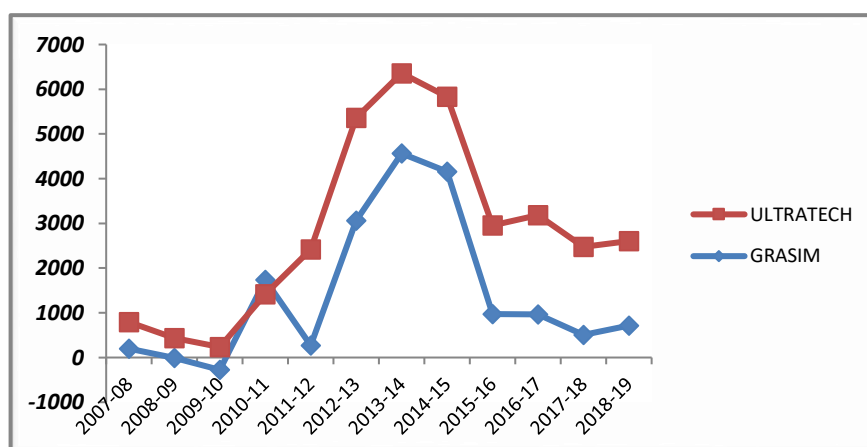
Trend of EVA for the companies under cement sector are presented in Figure 4.8 and there are only two companies under cement sector. As can be seen from the Figure 4.8, negative EVA are found in the year 2008-19 and 2009-10 for Grasim company and for Ultratech company in the year 2010-11. Figure 4.8 also shows that EVA of Grasim have increased from 2011-12 to 2014-15 and start declined in the next three years and EVA of Ultratech have also decreased from 2012-13 to 2014-15 and start increased in the year in the next two years.

Figure 4.9: Trend of EVA for companies under Finance sector
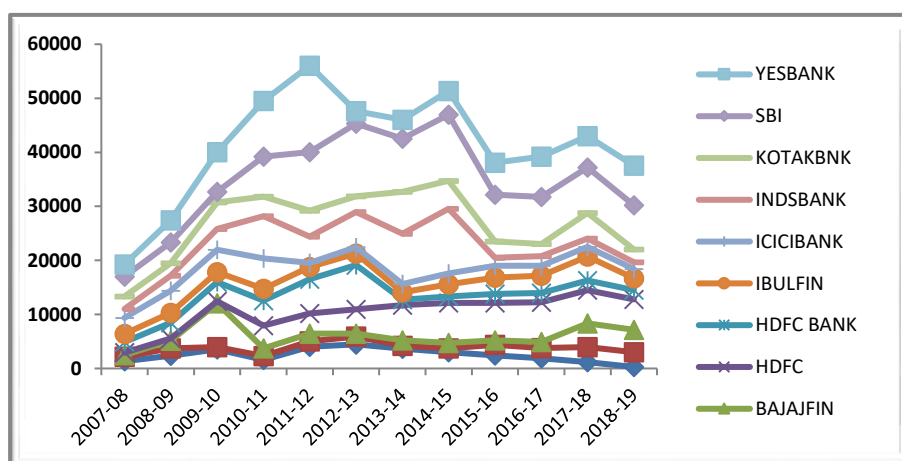
Figure 4.9 represents trends of EVA for the companies under finance sector. As can be seen from the Figure 4.9, EVA for Axis bank, Bajaj Finance, HDFC bank, IBULFIN, ICICI bank, Indusbank, Kotak bank and Yes bank have increased during the first three years from 2007-08 to 2009-10 whereas HDFC have decreased in EVA in the first three years i.e., 2007-08 to 2009-10. Figure 4.9 also shows that EVA for Axis bank have constantly decreased from 2012-13 to 2018-19. EVA of Bajaj finserve, HDFC bank, IBULFIN and SBI have decreased in the year 2011-12 to 2012-13 however started increased in the next three consecutive years. Among the finance company, highest EVA is

obtained by Yes bank in the year 2011-12 whereas lowest EVA is obtained by Bajajfinserve in the year 2007-08.

Figure 4.10: Trend of EVA for companies under Fertilizer sector
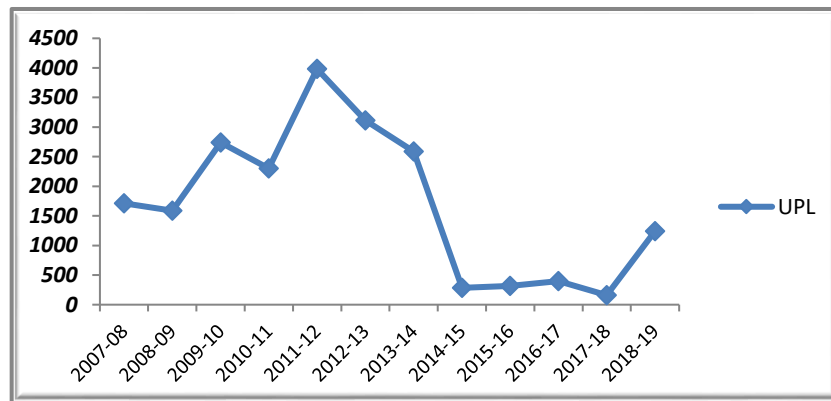
Trend of EVA for the companies under fertilizer sector is presented in the figure 4.10 and there is only one company under fertilizer sector i.e., UPL. As can be seen from the figure 4.10, it can be witnessed that EVA has decreased in the first year from 2007-08 to 2008-09 and started increased in the next third year i.e., 2009-10. However, EVA has decreased continuously in the year from 2011-12 to 2014-15. Highest EVA is found in the year 2011-12 whereas lowest is found in the year 2017-18.

Figure 4.11: Trend of EVA for companies under energy sector
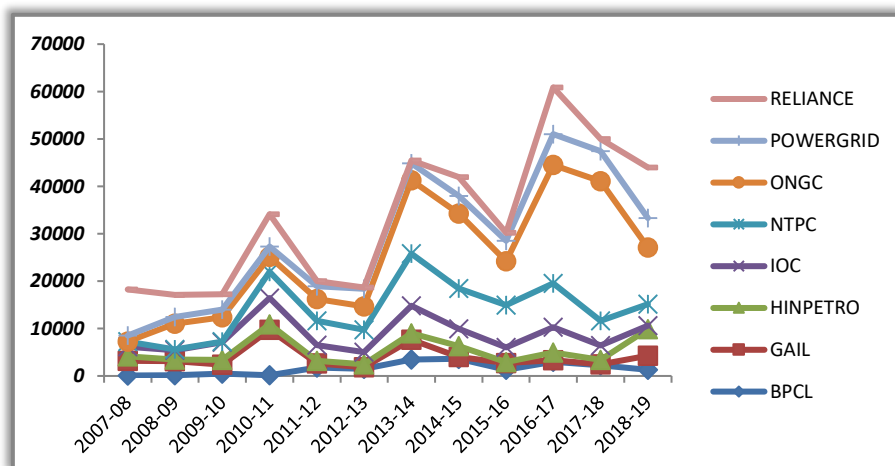
Figure 4.11 shows trend of EVA for the companies under energy sector and there are eight companies under energy sector. As can be seen from the figure 4.11, highest EVA is obtained by ONGC in the year 2017-18 and lowest is obtained by NTPC in the year 2009-10. EVA of BPCL and Powergrid has increased in the first three years from 2007-08 to 2009-10 whereas EVA of GAIL, Hinpetro, NTPC and Reliance has decreased in the first three years. Figure 4.11 also shows that EVA of BPCL, Gail, Hinpetro, IOC, NTPC, Powegrid and Reliance have decreased from 2011-12 to 2012-13 however increased in the next two years from 2013-14 to 2014-15.

Figure 4.12: Trend of EVA for companies under consumer goods sector
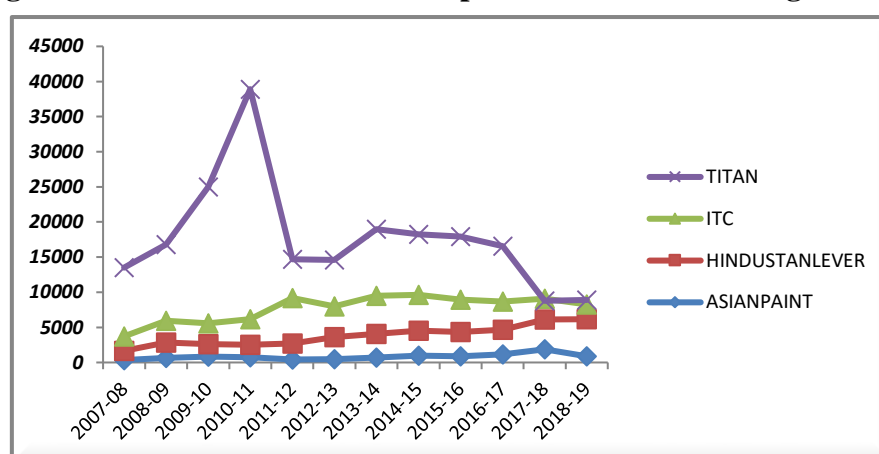
Trend of EVA for the companies under consumer goods sector is presented in the Figure 4.12 and as can be seen from the Figure 4.12, positive EVA is found in almost all the years except for TITAN whose EVA is found to be negative in the year 2017-18. EVA of Asian paint and TITAN companies have increased constantly in the first three years from 2007-08 to 2009-10 whereas EVA of Hindustanlever and ITC has decreased in the next second year i.e., 2008-09 to 2009-10. Hindustanlever is the only company whose EVA have increased in the last four years from 2015-16 to 2018-19. Among

all the four positive EVA of companies, TITAN has the highest EVA in the year 2009-10 whereas Asianpaint has the lowest in the year 2007-08.

Figure 4.13: Trend of EVA for companies under construction sector
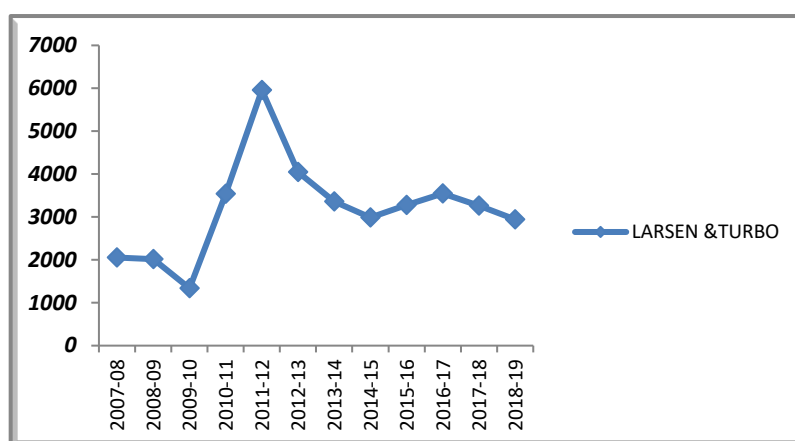
As can be seen from the Figure 4.13, Larsen & Toubro is the only company under construction sector and as can be seen from the Figure 4.13, Highest EVA is found in the year 2011-12 whereas lowest is found in the year 2009-10. Figure 4.13 also shows that EVA of the companies have decreased in the first three years from 20007-08 to 2009-10 as well as in the last three years from 2016-17 to 2018-19.

4.3.2   DESCRIPTIVE STATISTICS OF EVA OF THE COMPANIES

Table no. 4.4 to Table 4.16 shows descriptive statistics of EVA of all the Nifty 50 companies based on sectors wise.

Table 4.4: Descriptive statistics of EVA of the Companies under IT sectors

Sl. No.	Company	Min	Max	Mean	S.D.	Rank
1	HCL	640.94	6549.63	4228.74	1458.88	17
2	Infosys	2286.00	10613.05	6492.02	2576.48	5
3	TCS	1488.03	9304.00	4526.21	2622.97	15

| 4 | Tech Mahindra | 1078.50 | 8978.77 | 2785.01 | 2187.62 | 30 |
| 5 | Wipro | 1069.69 | 7869.41 | 3416.90 | 1685.75 | 21 |

Source: Author's calculation

Table 4.4 shows the descriptive statistics of EVA of the companies under IT sector. There are five companies under IT sector and as can be seen from the Table 4.4, Infosys stands highest among IT companies with overall rank of 5th among the 50 companies. The rank of TCS stands at 15th, HCL at 17th, Wipro 21st and Tech Mahindra at 30th. Table 4.4 also shows that Infosys has the largest mean among the IT Company with mean of 6492.02 whereas Tech Mahindra has the least with mean value of 2785.01. Among the IT Company, HCL Company has the smallest deviation from the mean and TCS Company has the largest deviation from the mean with value of 1458.88 and 2622.97.

Table 4.5: Descriptive statistics of EVA of the Companies under Media sector

Sl. No.	Company	Min	Max	Mean	S.D.	Rank
1	Zee	92.12	5202.62	2433.24	1454.66	34

Source: Author's calculation

Table 4.5 shows the descriptive statistics of EVA of the companies under Media sector. Zee Company is the only Media Company listed in Nifty. The EVA mean value of Zee Company is Rs. 2433.24 crores and EVA rank of Zee among the fifty companies' stands at 34th. Table 4.5 also shows EVA deviation from the mean stands at 1454.66.

Table 4.6 : Descriptive statistics of EVA of the Companies under Metal sector

Sl. no.	Company	Min	Max	Mean	S.D.	Rank
1	Coal India	3256.32	8471.3	6190.92	1840.45	7
2	Hindalco	185.68	7607.11	1788.77	2001.71	40
3	Tata Steel	472.35	5731.68	3090.09	1855.60	26
4	VEDL	377.52	7946.37	2603.68	2780.12	31

Source: Author's calculation

The descriptive statistics of EVA of the companies under Metal sector is given in Table 4.6. As can be seen from the Table 4.6, there are only four companies under the Metal sector. The Coal India, Hindalco, Tata Steel and VEDL are the four metal companies listed in Nifty. Coal India ranks 7th among the 50 companies. TATA Steel ranks 26th, VEDL ranks 31st and Hindalco ranks 40th. Table 4.6 also shows that among the four companies, Coal India ranks top followed by TATA Steel with mean of 6190.92 and 3090.00. VEDL ranks last with mean of 1788.77. VEDL has the largest deviation from the mean whereas Coal India has the smallest deviation from the mean.

Table 4.7: Descriptive statistics of EVA of the Companies under Pharma sector

Sl. no.	Company	Min	Max	Mean	S.D.	Rank
1	Cipla	41.7	1161	462.42	301.19	50
2	Dr.Reddy	856.73	12461.33	5406.87	3507.71	8
3	Lupin	925.3	13240.93	5095.96	3791.87	11
4	Sun Pharma	2402.98	21327.09	8228.63	6521.62	3

Source: Author's calculation

Table 4.7 represents descriptive statistics of EVA of the companies under Pharma sector. There are four companies under Pharma sector. Cipla, Dr.Reddy, Lupin and SunPharma are the companies under Nifty. Among the four companies, Sun Pharma has the highest mean followed by Dr.Reddy and Lupin Company with mean of 8228.63, 5406.87 and 5406.87. Cipla Company has the least rank among the Nifty 50 companies with mean of 462.42. Regarding variability as can be seen in Table 4.7, the Sun Pharma Company has the largest deviation from the mean whereas Cipla Company has the least deviation from the mean.

Table 4.8: Descriptive statistics of EVA of the Companies under Services sector

Sl no.	Company	Min	Max	Mean	S.D.	Rank
1	Adaniports	1153.54	9013.27	3397.53	2356.73	22

Source: Author's calculation

Table 4.8 represents descriptive statistics of EVA of the companies under Service sector. Adaniports Company is the only Service company listed in Nifty under service sector. Table 4.8 shows that EVA mean value of Adani Company is 3397.53 crores. Table 8 also shows that Adani ports ranks 22nd among the fifty companies.

Table 4.9: Descriptive statistics of EVA of the Companies under Telecom sector

Sl. no.	Company	Min	Max	Mean	S.D.	Rank
1	Bhartiairtel	367.2	5478.23	1715.55	1319.28	41
2	Infratel	2288.8	7390.02	5373.39	3098.06	9

Source: Author's calculation

The descriptive statistics of EVA of the companies under Telecom sector are shown in the Table 4.9. Bharti airtel and Infratel are the only two telecom companies listed in Nifty. The EVA mean value of Bharti airtel is 1715.55 crores and the EVA mean value of Infratel is 5373.39. Table 4.9 also shows that Infratel ranks 9th among the nifty 50 companies while Bharti airtel rank 41st among Nifty listed company.

Table 4.10: Descriptive statistics of EVA of the Companies Automobile sector

Sl. no.	Company	Min	Max	Mean	S.D.	Rank
1	Bajaj Auto	1536	6245.05	2860.07	1418.023	29
2	Eicher	214.46	5774.91	1814.10	1601.132	39
3	Heromotoco	575	2634.3	1565.94	590.5867	44
4	M & M	1759.44	5035.58	3217.31	1137.044	24
5	Maruti	984.93	9214.37	4596.77	2859.724	12
6	Tata Motor	488.9	7061.35	1967.98	1818.768	38

Source: Author's calculation

Table 4.10 shows the descriptive statistics of EVA of the companies under Automobile sector. There are six companies under automobile sector listed in Nifty which include Bajaj Auto, Eicher, Heromotoco, M & M, Maruti and TATA Motors. Among the six companies, Maruti has the highest EVA with mean of 4596.77 followed by M & M Company and Bajaj Auto with mean of 3217.31 and 2860.07. Eicher and Heromotoco have the EVA mean of 1565.94 and 1814.10 and stand at 39th and 44th rank respectively. Table 4.10 also shows that among all the Nifty companies, Maruti rank at 12th followed by M & M and Bajaj Auto with an overall rank of 24th and 29th respectively. None of the automobile company are in the top 10 rank companies.

Table 4.11: Descriptive statistics of EVA of the Companies Finance sector

Sl. no.	Company	Min	Max	Mean	S.D.	Rank
1	Axis Bank	269.61	4456.38	2476.62	1287.18	33
2	Bajajfinserve	400.65	2779.97	1362.67	823.622	48
3	Bajajfin	301.47	8141.11	2143.12	2297.44	37
4	Hdfc	379.93	7374.22	4463.65	2712.26	16
5	Hdfc Bank	1021.89	8206.55	3062.27	2249.77	27
6	Ibulfin	1345.36	4443.21	2347.61	847.325	36
7	Icici Bank	804.51	5661.53	2496.28	1440.28	32
8	Indsbank	1221.23	11982.2	4566.60	3589.89	14
9	Kotakbank	2199.66	7768.19	3850.11	1681.63	19
10	SBI	1984.99	13431.84	8088.94	3460.46	4
11	Yes Bank	2257.21	16038.51	6397.93	3858.94	6

Source: Author's calculation

Under Nifty 50, financial sector have maximum number of companies listed. There are eleven companies under the finance sector in the NSE Nifty 50. In Table 4.11, the descriptive statistics of EVA of the companies under Finance sector are given. SBI and Yes Bank are the two companies whose ranks are among the top ten of the Nifty 50 companies. Among the finance sector, the highest rank is obtained by SBI followed by Yes Bank and Indsbank. The Ibulfin, Bajajfinance and Bajajfinserve Company's rank are among the bottom rank companies. SBI has the highest EVA mean value

while Bajajfinserve has the lowest EVA mean value with 8088.947 and 1362.678 respectively. Table 4.11 also reveals that Yes bank has the highest deviation from the mean of 3858.94 whereas Ibulfin has the lowest variation with 847.32.

Table 4.12: Descriptive statistics of EVA of the Companies in Fertilizer sector

Sl. no.	Company	Min	Max	Mean	S.D.	Rank
1	UPL	160.27	3982.23	1702.23	1266.92	42

Source: Author's calculation

The descriptive statistics of EVA of companies under Fertilizer sector is given in Table 4.12 and UPL is the only company listed under Nifty 50. As can be seen from the Table 4.12, UPL company ranks 42nd with mean of 1702.23 among the Nifty 50 Companies.

Table 4.13: Descriptive statistics of EVA of the Companies in Energy sector

Sl. no.	Company	Min	Max	Mean	S.D.	Rank
1	BPCL	94.82	3626.52	1580.02	1278.44	43
2	GAIL	208.18	9606.48	2369.11	2648.75	35
3	HINPETRO	216.3	5575.37	1387.82	1437.79	47
4	IOC	749.65	5759.5	3394.86	1541.28	23
5	NTPC	138.16	10997.21	5352.26	3601.98	10
6	ONGC	43.02	29415.76	10840.41	9080.77	1
7	POWERGRID	1236.81	6515.95	3642.13	1918.48	20
8	RELIANCE	274.8	10654.45	4594.04	3789.39	13

Source: Author's calculation

The descriptive statistics of EVA of companies under Energy sector is given in Table 4.13. As can be seen from the Table 4.13, there are nine companies under Energy sector and ONGC is not only the highest rank company among the Energy sector companies but also the highest rank company among all the 50 companies with mean of 10840.41. Among the energy sector, NTPC rank 10th and Reliance company rank 13th with mean of 5352.26 and 4594.04. Hindpetro has the lowest rank with mean of 1387.82

and also ranks 47th among the energy sector companies. Table 4.13 also reveals that ONGC has the largest deviation from the mean whereas BPCL has the least deviation from the mean with value of 9080.77 and 1278.44.

Table 4.14: Descriptive statistics of EVA of the Companies in Consumer goods sector

Sl. no.	Company	Min	Max	Mean	S.D.	Rank
1	Asian paint	339.56	1871.05	827.23	403.71	49
2	Hindustanlever	1314.00	5291	2986.42	1159.57	28
3	ITC	2061.27	6477.61	3905.32	1354.76	18
4	Titan	-321.12	32752.66	10014.46	8740.01	2

Source: Author's calculation

The descriptive statistics of EVA of companies under Consumer goods sector is given in Table 4.14. Titan company rank highest company among the Consumer goods sector companies as well as it the second highest rank company among all the 50 companies with mean of 10014.46. ITC rank 18th, Hindustanlever rank 28th and Asian paints rank 49th among the Nifty companies with mean of 3905.32, 2986.42 and 827.23 respectively. Table 4.14 also shows that among the consumer goods sector, Titan Company has the largest deviation from the mean whereas Asian paints has the least deviation from the mean with value of 8740.01 and 403.71. There are four companies under Consumer goods in Nifty 50.

Table 4.15: Descriptive statistics of EVA of the Companies in Cement sector

Sl. no.	Company	Min	Max	Mean	S.D.	Rank
1	Grasim	-275.31	4563.08	1404.92	1640.9	46
2	Ultratech	-319.13	2301.2	1433.91	877.55	45

Source: Author's calculation

In Table 4.15, the descriptive statistics of EVA of companies under Cement sector is given. Grasim and Ultratech are the two cement companies. The rank of Grasim and Ultratech are 46th and 45th respectively. The EVA mean value of Grasim and Ultratech are Rs. 1404.92 and Rs. 1433.91 respectively.

Table 4.16: Descriptive statistics of EVA of the Companies in Construction sector

Sl. no.	Company	Min	Max	Mean	S.D.	Rank
1	LARSEN &TOUBRO	1337.28	5956.83	3193.18	1163.33	25

Source: Author's calculation

The descriptive statistics of EVA of companies under Construction sector is given in Table 4.16. Larsen & Toubro is the only construction company listed under Nifty 50. As can be seen in the Table 4.16 the EVA rank of Larsen &Toubro is 25th with an EVA mean value of 3193.18.

4.3.3 RANKING OF COMPANIES AS PER EVA YEAR WISE

Ranking of all the selected companies was done on the basis of mean of EVA of the selected companies. Each Economic Value Added (EVA) is presented in Table 4.17 and shows the mean ranking of the EVA year wise of all the selected 50 companies for the entire period of 12 years i.e., 2007-08 to 2018-19.

Table 4.17: Ranking of the companies based on EVA year wise

Company	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	Whole period
ONGC	49	6	7	28	14	11	1	1	2	1	1	3	1
TITAN	1	1	1	1	10	5	6	5	3	7	50	48	2
SUNPHARMA	3	4	24	15	20	22	21	12	14	2	2	1	3
SBI	5	14	28	7	2	1	5	3	5	6	4	7	4
INFOSYS	15	16	11	18	8	10	12	8	1	5	3	5	5
YESBANK	16	12	3	2	1	31	26	18	9	9	12	9	6
COAL INDIA	7	9	18	19	4	4	9	7	7	14	6	6	7
DRREDDY	34	21	6	16	21	9	2	11	29	26	13	2	8
INFRATEL	NA	NA	NA	NA	NA	17	19	30	10	11	9	10	9
NTPC	31	47	48	14	11	12	3	6	4	4	14	21	10
LUPIN	22	36	36	11	28	8	4	2	15	10	20	27	11
MARUTI	6	3	37	4	37	42	30	28	11	13	7	11	12
RELIANCE	2	8	19	9	40	50	46	20	35	3	29	4	13
INDSBANK	26	20	12	6	13	6	7	4	37	38	37	43	14
TCS	4	15	5	10	3	2	37	38	32	34	8	23	15
HDFC	40	45	47	20	17	13	11	10	6	12	11	13	16
HCL	36	10	9	21	18	20	10	17	8	19	22	17	17
ITC	18	17	20	22	5	16	14	16	12	17	25	35	18
KOTAKBNK	14	22	8	23	12	28	8	15	20	33	17	32	19
POWERGRID	30	33	34	34	23	21	25	22	13	15	10	12	20
WIPRO	12	27	17	27	27	23	17	9	16	21	43	25	21
ADANIPORTS	25	13	4	5	39	34	33	34	24	25	27	15	22
IOC	19	29	14	13	22	29	13	23	19	16	24	46	23
M & M	17	24	21	35	19	15	18	29	23	28	16	18	24

LARSEN &TOUBRO	20	28	38	24	7	19	29	27	18	18	23	28	25
TATA STEL	39	25	27	38	9	18	15	14	26	30	45	20	26
HDFC BANK	21	19	15	17	6	3	43	40	34	39	34	38	27
HINDUSTANLEVER	29	26	32	36	25	24	28	25	17	20	21	16	28
BAJAJAUTO	8	7	35	31	24	7	32	35	22	27	35	31	29
TECH MAHINDRA	11	2	13	25	31	38	35	41	33	42	41	24	30
VEDL	42	35	26	29	45	43	48	46	43	8	5	19	31
ICICIBANK	10	11	10	12	44	39	36	33	27	37	33	37	32
AXISBANK	28	23	16	39	15	14	24	26	25	36	42	49	33
ZEE	48	43	25	26	35	30	22	21	28	29	15	39	34
GAIL	9	18	29	3	43	49	20	48	38	50	47	26	35
IBULFIN	27	30	31	33	26	33	39	32	21	23	18	34	36
BAJAJFIN	44	32	2	40	36	47	44	42	45	45	19	22	37
TATAMOTOR	33	41	40	8	32	41	42	44	39	22	36	29	38
EICHER	45	39	42	42	41	26	23	13	41	43	40	40	39
HINDALCO	24	40	22	30	38	45	50	45	50	41	38	8	40
BHRATIARTL	13	5	30	44	29	44	40	36	46	47	39	44	41
UPL	23	31	23	32	16	25	31	49	48	49	49	42	42
BPCL	47	48	45	48	33	35	27	24	40	24	30	41	43
HEROMOTOCO	38	37	33	41	34	37	41	39	36	32	28	33	44
ULTRATECH	37	42	44	49	30	32	34	37	30	31	31	36	45
GRASIM	46	49	49	37	49	27	16	19	42	46	46	47	46
HINPETRO	32	46	39	43	46	46	38	31	49	40	44	14	47
BAJAJFINSERVE	35	34	46	46	42	36	47	47	31	35	26	30	48
ASIANPAINT	43	38	41	45	47	48	45	43	44	44	32	45	49
CIPLA	41	44	43	47	48	40	49	50	47	48	48	50	50

As can be seen from Table 4.17, for the year 2007-08 Titan Company ranks first and Reliance ranks second. Titan also ranks first in the next consecutive three years from 2008-09 to 2010-11. ONGC who ranks first in the whole period stood at bottom on 49th in the year 2007-08. However, it stood 1st rank in the year 2013-14, 2014-15, 2016-17 and 2017-18; stood second rank in 2015-16; and third in 2018-19. SunPharma ranks 3rd position for the whole period and have got 1st ranks in the year 2018-19 and 2nd rank in 2016-17 and 2017-18 respectively. Coal India who ranks 7th position for the whole period is the only company who do not attain in top three position based on year wise EVA. The EVA of Infratel company for the year i.e., 2007-08 to 2011-12 could not be generated due to unavailability of company reports and ranking of these companies were analyzed from 2012-13 to 2018-19 data only. Among all the 50 companies, BajajFinserve, Asianpaints and Cipla companies were the worst performer based on year wise EVA and stood at 48th, 49th and 50th position respectively in the whole period.

4.4   MARKET VALUE ADDED (MVA) OF THE COMPANIES

Table 4.18 represents Market Value Added (MVA) of selected fifty companies for six years i.e. 2007-08 to 2012-13 whose values are expressed in Rupees crores. The Market Value Added (MVA) of Reliance stands at Rs. 3208211.74 crores and Rs. 2731522.36 crores in the year 2007-08 and 2012-13 respectively. MVA of ONGC stands at 2019193.45 and 2516968.82 in 2007-08 and in the year 2012-13 respectively. MVA of Axis banks grows continuously from 274142.86 to 3050588.68 during 5 years i.e. 2007-08 to 2012-13. However, it is found that MVA of SBI has decreased from 947367.77 to 606206.14 in the year 2012-13. Data for Infratel of 4 years i.e. 2007-08 to 2011-12 could not be generated since annual reports are not available during the study period and ITC, TCS, HCL, Adaniports, Asian paints and BPCL has almost an increase in 50% MVA from 2007-08 to 2012-

13. Axisbank, TCS and Reliance companies has largest MVA i.e., 3050588.68, 3045836.70 and 2731522.36 in 2012-13. However, Bajaj Finserve, Eicher and IndusBank were the three companies having least Market value of 3366.97, 5366.29, and 21952.89 respectively in the year 2008-09.

Table 4.18 : MVA of the Companies (2007-08 to 2012-13) (Amount in Rs.crores)

Company	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Reliance	3208211.74	1975192.98	3058135.70	2973295.43	3274890.83	2731522.36
ONGC	2019193.45	1569539.65	2248533.68	8401723.77	6341393.49	2516968.82
TCS	1573929.47	1038491.18	1509437.60	2292647.74	2258020.29	3045836.70
HDFC Bank	458519.52	395728.62	862751.88	1063553.38	1185820.40	1447240.69
HDFC	3457019.36	1853956.66	3928162.16	1007390.83	1173975.89	1245609.07
ITC	764988.62	683669.60	989913.09	1392654.02	1754541.89	2422064.36
Infosys	819328.69	752889.69	1478049.01	1835021.45	1614583.45	1621175.27
Axis Bank	274142.86	139133.69	457760.90	557860.72	2669686.91	3050588.68
Coal India	1888063.32	1947502.76	2130079.26	2063067.93	2131744.70	1903916.25
ICICI bank	840344.95	355669.51	1049222.35	1232872.14	1013779.20	1193280.77
Hinlever	496695.11	515583.08	519954.14	617275.05	882863.27	1007117.93
SBI	947367.77	613998.88	1239076.41	536176.80	589643.49	606206.14
Bharti Airtel	1523522.34	1143104.43	1142195.53	1305914.16	1229804.61	1053519.11
L&T	1768563.98	878615.37	961569.01	980225.20	772243.38	1235091.95
Sunpharma	249664.36	223154.59	363323.66	448761.70	577994.16	833100.11
Maruti	226782.72	213155.31	397477.42	352029.16	374440.55	369205.49
Kotak Bank	190765.36	87790.78	252899.25	326524.21	391404.32	472659.20
Wipro	514578.87	223939.77	855508.90	953730.27	811925.62	811025.92
NTPC	476991.41	518291.20	563393.43	629920.83	689996.29	752375.50
IOC	487642.85	416897.40	665604.72	538098.65	562809.26	579934.41
HCL	164569.65	63456.89	236987.29	321505.70	325367.47	540852.56
Adani	1156842.77	644766.75	1578426.13	269573.93	254624.26	271474.49
Powegrid	400221.72	387741.63	474657.49	454981.16	477217.02	493956.47
Vedl	899008.14	4214.14	358606.50	937852.64	608371.43	471712.60
Asianpaints	114111.77	135600.50	174422.71	240086.76	308223.42	468277.24
Ultratech	94962.82	65023.96	139144.37	299431.54	402261.18	497198.97
M &M	417984.76	225821.32	321899.18	415717.34	413201.37	510058.19
Infratel	NA	NA	NA	NA	NA	320796.46
BPCL	134801.11	122646.70	173153.96	205858.72	237289.96	256333.38
Bajajauto	132082.26	144693.13	580299.74	418609.07	479707.63	512665.12
Gail	346302.21	296137.18	503026.87	567359.64	452350.10	374898.27

Heromotors	135706.71	210214.33	384807.36	314437.24	406157.84	308912.50
Tata Steel	472646.68	122576.46	529546.56	599231.19	415554.20	269672.44
Indusbank	21952.89	7843.58	65711.87	117978.60	145607.57	206298.98
Lupin	39600.28	55318.82	142174.92	182628.65	232483.88	276090.48
Cipla	167248.93	166695.16	265757.87	251593.52	237492.96	296051.29
Grasim	227037.01	133621.97	245880.92	210721.36	223857.43	238538.38
Bajaj Finance	11157.93	24376.65	10571.05	21035.44	27762.44	31485.39
Dr.Reddy	94935.24	79057.39	211492.62	273381.89	131096.70	141855.66
Yes Bank	43936.05	142851.61	79129.18	97540.61	121385.40	143576.52
Eicher	5366.29	1141.98	16476.88	34980.32	60128.83	67427.03
Hindalco	263518.36	72673.91	325370.08	371295.79	215901.14	140095.61
Bajaj Finserve	3366.97	4526.26	11543.15	19572.47	23789.53	35054.49
Ibul	139471.30	221380.55	278424.68	248161.68	144277.44	171028.65
Zee	78176.64	12161.67	78122.56	89942.56	87216.11	161645.40
Mahindra Tech	73019.16	12839.59	75484.29	51677.84	51376.92	81426.33
Hinpedro	76058.54	80221.70	95731.51	107707.67	89789.04	83418.34
Tata Motors	231355.79	75164.19	375478.53	652780.74	100043.59	92082.13
UPL	55342.17	40514.16	62591.07	65290.60	55907.63	47316.52
Titan	46473.71	34143.48	80971.05	168152.02	24150.94	20795.55

Table 4.19 represents Market value Added (MVA) of selected fifty companies for six years i.e. 2013-14 to 2018-19 whose values are expressed in Rupees crores. In the year 2013-14, the MVA of Reliance, ONGC, TCS and HDFC Banks stands at 2356737.20, 5240222.71, 4130629.81 and 1746046.98 respectively and 7697254.91, 1775045.43 and 7421061.85 in 2018-19. Table 4.19 also shows that MVA of HDFC banks, Kotak bank, IOC, Asian paints, BPCL, Indusbank and Bajaj finserve grows continuously from 2013-14 to 2018-19. However, the Market value of ONGC, Coal India, ICICI bank, Lupin, TATA Motors and WIPRO has decreased during the period of 5 years 2013-14 to 2018-19. In 2013-14, among 50 companies, ICICI bank has the largest market value i.e. 7169784.11 followed by ONGC with value of 5240222.71. In the year 2018-19, Tata Motors and TITAN have the least MVA with the value of 27903.92 and 77732.97 respectively. In 2018-19, it is found that Reliance Company has the largest MVA with value of 7697254.91 followed by TCS with value of 7421061.85. HDFC bank has market value of

6185795.13 in 2018-19. MVA of TCS, HDFC bank, HDFC, Maruti, Kotak bank, NTPC, Adaniports and Ultra tech companies have almost 50% increase in MVA from 2013-14 to 2018-19. Titan was having the least MVA among the 50 companies in 2013-14 with MVA value of 20799.78. In 2014-15 IBUL was having least MVA among the 50 companies with MVA of 191808.84.

Table 4.19 : MVA of the Companies (2013-14 to 2018-19)(Amount in Rs.crores)

Company	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Reliance	2356737.20	3087912.40	7092789.63	7566730.36	4939611.98	7697254.91
ONGC	5240222.71	6272010.71	3766629.76	2153968.02	2009207.65	1775045.43
TCS	4130629.81	4951858.56	4894642.54	4705106.67	5368562.49	7421061.85
HDFC Bank	1746046.98	2502631.80	2631845.76	3607365.91	4784281.14	6185795.13
HDFC	1341783.14	2026758.09	1695777.43	2326142.13	2962618.77	3270240.62
ITC	2779043.64	2580121.55	2602936.03	3361971.05	3065312.77	3584393.90
Infosys	1831270.34	2484405.76	2722828.17	2267528.98	2127513.45	4865624.62
Axis Bank	3393113.65	3415135.72	3434382.81	3199551.49	1246524.03	1931522.70
Coal India	1781445.76	2251855.57	1806598.10	1791725.60	1738017.83	1434867.30
ICICI bank	7169784.11	1810152.09	1360286.30	1598167.57	1608384.83	2561194.32
Hinlever	1306299.72	1886089.43	1874775.69	1966817.78	2879009.44	3687066.48
SBI	1285079.26	1833082.48	1328103.36	2123031.41	2000831.52	2628965.96
Bharti Airtel	1206207.67	1505368.56	1327142.43	1324958.61	1524230.14	1260111.78
L&T	1141228.60	1557612.33	1089149.95	1419111.32	1782151.72	1880826.22
Sunpharma	1172083.63	2095282.23	1936589.13	1610620.83	1145715.64	1104198.95
Maruti	502627.61	1089994.53	1091989.73	1780132.52	2634186.12	1968534.60
Kotak Bank	582960.57	992525.01	1216128.78	1568060.74	1947205.26	2490407.97
Wipro	1018416.54	1181737.71	930439.97	734522.42	790189.01	970583.74
NTPC	792791.85	747729.56	831288.04	887763.63	1239499.46	1304222.45
IOC	622912.30	630223.81	845128.46	961579.79	1600051.77	1418749.78
HCL	953914.97	1354196.85	1120590.00	1214956.42	1312143.85	1433416.46
Adani	379263.06	627222.04	499345.30	685630.00	712105.63	758382.27
Powergrid	783313.42	527776.22	715918.47	982327.14	956579.11	976243.20
VEDL	486043.31	507993.15	397505.99	947698.59	954329.00	610118.00
Asianpaints	521581.98	773454.81	826058.85	1021721.28	1065947.32	1421911.80
Ultratech	582570.30	770667.90	864038.31	1069453.76	959086.20	1069717.27
M &M	567303.14	720137.68	746053.11	769545.80	881819.78	797804.05
Infratel	366245.65	712081.18	706189.89	587288.03	604781.14	565135.59
BPCL	313227.94	563222.05	624413.50	907014.66	1346327.29	1591224.23
Bajajauto	580025.71	568883.00	668118.99	793948.11	773800.40	819142.51

Gail	444553.98	457766.02	415744.99	598197.66	699186.07	737925.36
Heromotors	429875.83	513436.27	559883.26	633097.72	695473.07	496696.17
Tata Steel	342078.35	276283.08	265610.55	428820.69	625138.06	555444.54
Indusbank	258438.94	463798.39	569758.92	846679.50	1072448.78	1066755.77
Lupin	411470.31	893881.91	655329.41	639086.80	319048.06	320875.25
Cipla	296707.10	561288.96	399426.27	464070.90	424570.62	410791.15
Grasim	243586.48	309581.01	326503.81	448661.15	607132.91	481026.12
Bajaj Finance	36842.55	66136.10	78158.94	634376.02	1005740.18	1728657.35
Dr.Reddy	428276.92	584564.22	505258.97	424028.10	332614.34	447681.25
Yes Bank	139472.04	329523.45	350437.72	684487.12	676768.37	610444.15
Eicher	159136.88	428671.09	516232.91	690897.18	767939.92	553467.61
Hindalco	252133.53	228124.40	140695.62	391587.63	426922.22	404066.99
Bajaj Finserve	116085.22	214125.89	258898.71	636356.92	791717.32	1083275.20
IBUL	73713.08	191808.84	263187.99	410865.07	513458.52	350422.28
Zee	213240.76	272735.35	323584.63	447791.31	477366.24	338505.83
Mahindra Tech	327360.40	482546.81	265891.46	233909.17	370584.61	480888.32
Hinpedro	90904.35	206001.95	250005.19	512926.81	499957.79	402136.69
Tata Motors	174405.37	237808.58	161468.48	216076.64	70251.03	27903.92
UPL	73808.60	183647.35	236269.08	361120.74	362759.48	470380.22
Titan	20799.78	31682.38	26599.02	36824.21	35691.26	77732.97

To familiarize the performance of the individual companies under different sectors the descriptive statistics of MVA of the companies sector wise are given in the Tables following (Table no. 4.20 to Table 4.32)

Table 4.20: Descriptive statistics of MVA of the Companies under IT sector

Sl no.	Company	Mean	Min	Max	S.D.	Rank
1	HCL	753496.5	63456.89	1433416	524663.4	21
2	Infosys	2035018	752889.7	4865625	1070747	7
3	TCS	3599185	1038491	7421062	1944425	3
4	Mahindra Tech	208917.1	12839.59	482546.8	174093.3	46
5	Wipro	816383.2	223939.8	1181738	248814.3	18

Source: Author's calculation

Table 4.20 shows the descriptive statistics of MVA of the companies under IT sector. There are five companies under IT sector. For MVA, TCS

stands highest rank among IT companies with an overall rank of 3rd among the Nifty 50 companies with mean of 3599185. The rank of Infosys stands at 7th, Wipro 18th, HCL 21st and Tech Mahindra at 46th. The MVA mean value of Infosys was Rs. 2035018 crores whereas Tech Mahindra MVA mean value was Rs. 208917.1 crores. Infosys Company has largest deviation from the mean whereas Mahindra tech Company has the least deviation from the mean with value of 1070747 and 174093.3 respectively.

Table 4.21: Descriptive statistics of MVA of the Companies under Media sector

Sl. no.	Company	Mean	Min	Max	S.D.	Rank
1	ZEE	215040.8	12161.67	477366.2	155745.4	45

Source: Author's calculation

Table 4.21 shows the descriptive statistics of MVA of the companies under Media sector. There is only one company under Media sector i.e. ZEE company. ZEE stands with an overall rank of 45th among the Nifty 50 companies with MVA mean value of 215040.8 crores.

Table 4.22: Descriptive statistics of MVA of the Companies under Metal sector

Sl. no.	Company	Mean	Min	Max	S.D.	Rank
1	COAL India	1905740	1434867	2251856	220772.1	9
2	HINDALCO	269365.4	72673.91	426922.2	116102.5	42
3	TATA STEEL	408550.2	122576.5	625138.1	155933.8	33
4	VEDL	598621.1	4214.14	954329	292681.6	24

Source: Author's calculation

Table 4.22 shows the descriptive statistics of MVA of the companies under Metal sector. There are four companies under Metal sector. Coal India stand highest rank among Metal companies with an overall rank of 9th position among the Nifty 50 companies with MVA mean of 1905740. The rank of VEDL stands at 24th, Tata Steel at 33rd. Among the Metal sector, Hindalco rank lowest at 42nd among the Nifty 50 companies with mean of 269365.4 crores. Table 4.22 also shows that the MVA mean value of VEDL is Rs.

598621.1 crores whereas Tata Steel MVA mean value is Rs. 408550.2 crores. VEDL has the largest deviation from the mean whereas Hindalco has the least deviation from the mean with value of 292681.60 and 116102.50 respectively.

Table 4.23: Descriptive statistics of MVA of the Companies under Pharma sector

Sl. no.	Company	Mean	Min	Max	S.D.	Rank
1	CIPLA	328474.6	166695.2	561289	122838.4	36
2	DRREDDY	304520.3	79057.39	584564.2	173341.9	39
3	LUPIN	347332.4	39600.28	893881.9	261423.8	35
4	SUNPHARMA	980040.8	223154.6	2095282	645845.5	15

Source: Author's calculation

Table 4.23 shows the descriptive statistics of MVA of the companies under Pharma sector. Sun pharma ranks top among Pharma companies and also rank 15th among the Nifty companies with MVA mean of 980040.8. Table 4.23 also shows that among the Nifty 50 companies, Lupin stands at 35th, Cipla at 36th and Dr.Reddy rank lowest at 39th with mean of 304520.3 crores. The MVA mean value of Lupin was Rs. 347332.4 crores whereas Cipla MVA mean value was Rs. 328474.6 crores and Sunpharma has the largest deviation from the mean whereas Cipla has the least deviation from the mean.

Table 4.24: Descriptive statistics of MVA of the Companies under Services sector

Sl. no.	Company	Mean	Min	Max	S.D.	Rank
1	ADANIPORTS	653138.1	254624.3	1578426	390394.8	22

Source: Author's calculation

Table 4.24 shows the descriptive statistics of MVA of the companies under service sector. There is only one company under service sector i.e., Adaniports. As can be seen from the Table 4.24, mean MVA of Adaniports stands at 653138.1 with an overall rank of 22nd among the Nifty 50 companies and standard deviation from the mean is 390394.80.

Table 4.25: Descriptive statistics of MVA of the Companies under Telecom sector

Sl. no.	Company	Mean	Min	Max	S.D.	Rank
1	BHRATIARTL	1295507	1053519	1524230	156425	13
2	INFRATEL	551788.3	320796.5	712081.2	153603.2	28

Source: Author's calculation

Table 4.25 shows the descriptive statistics of MVA of the companies under Telecom sector which comprises of only two companies namely Bharti Airtel and Infratel. Bharti Airtel performs better than Infratel as can be observed that the mean with value of Bharati airtel is 1295507 and MVA mean value of Infratel is 551788.3. Bharti Airtel rank 13th among the Nifty 50 companies whereas Infratel ranks 28th among the Nifty. Table 4.25 also shows that standard deviation from the mean of the two companies is 156425 and 153603.20 respectively.

Table 4.26: Descriptive statistics of MVA of the Companies under Automobile sector

Sl. no.	Company	Mean	Min	Max	S.D.	Rank
1	BAJAJAUTO	539331.3	132082.3	819142.5	225494.4	30
2	EICHER	275155.6	1141.98	767939.9	293898.1	41
3	HEROMOTOCO	424058.2	135706.7	695473.1	166548.6	32
4	M & M	565612.1	225821.3	881819.8	212637.3	27
5	MARUTI	916713	213155.3	2634186	808311.7	16
6	TATAMOTOR	201234.9	27903.92	652780.7	171694.5	48

Source: Author's calculation

Table 4.26 shows the descriptive statistics of MVA of the companies under Telecom sector. There are six companies such as Bajaj Auto, Eicher, Heromotoco, M &M, Maruti, and Tata Motors. Table 4.26 shows that among the six companies, Maruti rank top and also secured 16th rank among Nifty companies. M & M whose rank is 2nd best among the six company rank 27th in the overall rank of Nifty companies. Bajaj auto whose rank is 30th in the overall Nifty also rank 3rd among automobile company. Table 4.26 also shows

that Eicher and Heromoto rank 41st and 48th among the Nifty companies with mean value of 275155.6 and 424058.2

Table 4.27: Descriptive statistics of MVA of the Companies Finance sector

Sl. no.	Company	Mean	Min	Max	S.D.	Rank
1	AXISBANK	1980784	139133.7	3434383	1363806	8
2	BAJAJFINSERVE	266526	3366.97	1083275	366992.1	43
3	BAJAJFIN	306358.3	10571.05	1728657	546959.6	38
4	HDFC	2190786	1007391	3928162	992470.6	5
5	HDFC BANK	2239298	395728.6	6185795	1808426	4
6	IBULFIN	250516.7	73713.08	513458.5	124778.8	44
7	ICICIBANK	1816095	355669.5	7169784	1772527	10
8	INDSBANK	403606.2	7843.58	1072449	397637.5	34
9	KOTAKBNK	876611	87790.78	2490408	776143.8	17
10	SBI	1310964	536176.8	2628966	699771.6	12
11	YESBANK	284962.7	43936.05	684487.1	242906.9	40

Source: Author's calculation

Table 4.27 shows the descriptive statistics of MVA of the companies under Finance sector. There are eleven companies under finance sector and for MVA, HDFC Bank ranks top among finance companies and also rank 4th among the Nifty companies with mean of 2239298 followed by HDFC whose rank is 5th in the overall Nifty 50. Table 4.27 also shows that among the Nifty companies, Axis bank rank 8th, ICICI bank rank 10th, SBI rank 12th, Kotak bank rank 17th which indicates that among the finance sector, the top rank holders are the banks whose branches are more in numbers in all over the state in comparison with other banks. Bajaj Finserve and IBULFIN are the worst performer whose rank are 43rd and 44th in the overall Nifty. Table 4.27 also shows that among the finance sector, HDFC bank has the largest deviation from the mean with a value of 1808426 whereas Yes bank has the lowest standard deviation from the mean with value of 242906.9.

Table 4.28: Descriptive statistics of MVA of the Companies in Fertilizer sector

Sl. no.	Company	Mean	Min	Max	S.D.	Rank
1	UPL	167912.3	40514.16	470380.2	153199.8	49

Source: Author's calculation

Table 4.28 shows the descriptive statistics of MVA of the companies under fertilizer sector. There is only one company under fertilizer sector i.e. UPL company. For MVA, UPL stand with an overall rank of 49th among the Nifty 50 companies with mean value of 167912.3 crores. The MVA standard deviation of UPL is 153199.8.

Table 4.29: Descriptive statistics of MVA of the Companies in Energy sector

Sl. no.	Company	Mean	Min	Max	S.D.	Rank
1	BPCL	539626.1	122646.7	1591224	495958.3	29
2	GAIL	491120.7	296137.2	737925.4	136377.7	31
3	HINPETRO	207905	76058.54	512926.8	169834.6	47
4	IOC	777469.4	416897.4	1600052	374268.8	20
5	NTPC	786188.6	476991.4	1304222	259290.9	19
6	ONGC	3692870	1569540	8401724	2294247	2
7	POWERGRID	635911.1	387741.6	982327.1	233489.5	23
8	RELIANCE	4163524	1975193	7697255	2107425	1

Source: Author's calculation

Table 4.29 shows the descriptive statistics of MVA of the companies under energy sector. There are eight companies under energy sector and for MVA Reliance rank 1st among energy sector as well as in the overall Nifty 50 with mean of 4163524. ONGC who secured 2nd rank among the companies also rank 2nd position in the overall Nifty companies. NTPC rank 3rd among the energy secured only 19th in the overall Nifty. Table 4.29 also shows that among the Nifty companies, BPCL, GAIL and Hinpetro are the worst performer whose rank are only 29th, 31st and 47th in the overall Nifty. ONGC has the largest deviation from the mean whereas GAIL has the least standard deviation from the mean with value of 2294247and 136377.7 respectively.

Table 4.30: Descriptive statistics of MVA of the Companies in Consumer goods sector

Sl. no.	Company	Mean	Min	Max	S.D.	Rank
1	ASIANPAINT	589283.2	114111.8	1421912	428671	25
2	HINDUSTANLEVER	1469962	496695.1	3687066	1025061	11
3	ITC	2165134	683669.6	3584394	1016474	6
4	TITAN	50334.7	20795.55	168152	42196.46	50

Source: Author's calculation

Table 4.30 shows the descriptive statistics of MVA of the companies under consumer goods sector. There are four companies under consumer goods sector. For MVA, ITC rank 1st among consumer goods companies and also rank 6th among the overall Nifty companies with mean of 2165134 followed by Hindustanlever whose rank is 11th among the Nifty 50. Asian paint ranks 25th in the overall rank. The rank of the Titan Company was at the bottom among Nifty companies. Titan Company also has the largest deviation from the mean whereas Asian paint has the least deviation from the mean.

Table 4.31: Descriptive statistics of MVA of the Companies in Cement sector

Sl. no.	Company	Mean	Min	Max	S.D.	Rank
1	GRASIM	308012.4	133622	607132.9	136810.3	37
2	ULTRATECH	567796.4	65023.96	1069717	375418.2	26

Source: Author's calculation

The descriptive statistics of MVA of the companies under cement sector which comprises of only two companies namely Grasim and Ultratech Company are given in the Table 4.31. As can be seen from the Table 4.31, in terms of MVA Ultratech Company performs better than Grasim. Ultratech ranks 26th in the overall Nifty 50 with mean of 567796.4 whereas Grasim company rank 37th among the Nifty companies with mean of 308012.4. Table 4.31 also shows that standard deviation from the mean of the two companies is 375418.20 and 136810.30 respectively.

Table 4.32: Descriptive statistics of MVA of the Companies in Construction sector

Sl no.	Company	Mean	Min	Max	S.D.	Rank
1	LARSEN &TOUBRO	1288866	772243.4	1880826	383193.3	14

Source: Author's calculation

Table 4.32 shows the descriptive statistics of MVA of the companies under construction sector. There is only one company under construction sector i.e. LARSEN &TOUBRO company. The MVA mean value of LARSEN &TOUBRO stands at 1288866 with an overall rank of 14th among the Nifty 50 companies and value of standard deviation is 383193.30.

4.4.1 RANKING OF COMPANIES AS PER MVA YEAR WISE

Ranking of all the selected companies was done on the basis of mean of MVA of the selected companies. Table 4.33 shows the mean ranking of the Market Value Added (MVA) year wise of all the selected 50 companies for the entire period of 12 years.

Table 4.33: Ranking of the companies based on MVA year wise

Company	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	Whole period
Reliance	2	1	2	2	2	3	6	4	1	1	2	1	1
ONGC	3	4	3	1	1	4	2	1	3	8	9	14	2
TCS	6	6	6	3	4	2	3	2	2	2	1	2	3
HDFC Bank	19	15	13	9	9	8	9	6	6	3	3	3	4
HDFC	1	3	1	10	10	9	10	10	11	6	5	7	5
ITC	13	9	11	6	6	5	5	5	7	4	4	6	6
Infosys	12	8	7	5	7	7	7	7	5	7	8	4	7
Axis Bank	23	28	22	19	3	1	4	3	4	5	19	12	8
Coal India	4	2	4	4	5	6	8	8	10	11	13	17	9
ICICI Bank	11	17	10	8	11	11	1	13	12	14	14	9	10
Hinlever	15	13	19	16	12	13	11	11	9	10	6	5	11
SBI	9	11	8	21	17	17	12	12	13	9	10	8	12
Bharti Airtel	7	5	9	7	8	12	13	15	14	17	16	22	13

Larsen &Tourbo	5	7	12	11	14	10	15	14	18	16	12	13	14
Sunpharma	25	21	26	23	18	14	14	9	8	13	21	23	15
Maruti	28	23	23	27	28	28	26	18	17	12	7	11	16
Kotak Bank	29	33	32	28	27	24	21	19	15	15	11	10	17
Wipro	14	20	14	12	13	15	16	17	19	29	30	28	18
NTPC	17	12	17	15	15	16	18	23	22	25	20	21	19
IOC	16	14	15	20	19	18	20	26	21	22	15	20	20
HCL	31	39	34	29	29	19	17	16	16	18	18	18	21
Adani	8	10	5	33	31	33	32	27	34	31	33	31	22
Powegrid	21	16	21	22	21	23	19	32	25	21	26	27	23
VEDL	10	48	27	13	16	25	27	34	37	23	27	34	24
Asianpaints	36	29	36	36	30	26	25	21	23	20	23	19	25
Ultratech	37	38	39	31	26	22	22	22	20	19	25	25	26
M &M	20	19	29	25	24	21	24	24	24	28	28	30	27
Infratel	50	50	50	50	50	29	33	25	26	38	39	35	28
BPCL	34	31	37	38	33	35	36	30	29	24	17	16	29
Bajajauto	35	26	16	24	20	20	23	29	27	27	31	29	30
Gail	22	18	20	18	22	27	28	37	35	37	34	32	31
Heromotors	33	24	24	30	25	30	29	33	31	36	35	38	32
Tata Steel	18	32	18	17	23	34	34	41	42	43	37	36	33
Indusbank	46	46	45	41	37	37	38	36	30	26	22	26	34
Lupin	45	40	38	39	34	32	31	20	28	33	48	48	35
Cipla	30	25	31	34	32	31	37	31	36	40	44	43	36

Grasim	27	30	33	37	35	36	40	40	39	41	38	39	37
Bajaj Finance	47	43	49	48	47	49	49	49	49	35	24	15	38
Dr.Reddy	38	35	35	32	39	41	30	28	33	44	47	42	39
Yes Bank	44	27	42	43	40	40	44	39	38	32	36	33	40
Eicher	48	49	47	47	44	46	43	38	32	30	32	37	41
Hindalco	24	37	28	26	36	42	39	44	48	46	43	44	42
Bajaj Finserve	49	47	48	49	49	48	45	45	44	34	29	24	43
IBUL	32	22	30	35	38	38	48	47	43	45	40	46	44
Zee	39	45	43	44	43	39	41	42	40	42	42	47	45
Mahindra Tech	41	44	44	46	46	45	35	35	41	48	45	40	46
Hinpedro	40	34	40	42	42	44	46	46	45	39	41	45	47
Tata Motors	26	36	25	14	41	43	42	43	47	49	49	50	48
Upl	42	41	46	45	45	47	47	48	46	47	46	41	49
Titan	43	42	41	40	48	50	50	50	50	50	50	49	50

As can be seen from Table 4.33, in terms of MVA for the entire study period, Reliance rank 1st followed by ONGC and TCS. Reliance which rank is 1st for the whole period also rank 1st in the year 2008-09, 2015-16 to 2016-17 and 2018-19. ONGC who ranks 2nd for the whole period could not retain among top 5 in the year 2016-17 to 2018-19 and secured 8th, 9th and 14th ranks respectively. However, it stood 1st rank in the year 2010-11, 2011-12 and 2014-15; stood at 3rd in the year 2007-08, 2009-10, 2015-16, 4th ranks in the year 2008-09 and 2012-13. TCS who rank 3rd position for the whole period could attain 1st rank in 2017-18 year only and stood at 2nd rank in the year 2012-13, 2014-15, 2015-16, 2016-17 and 2018-19. Among top 5 rank holder, HDFC bank who ranks 4th position

is the only company who do not attain 1st rank on year wise MVA and among top 10 rank holder, HDFC bank, ITC, Infosys and Coal India could not attain 1st rank position based on year wise MVA. Among all the 50 companies, TATA motors, UPL and TITAN companies were the worst performer based on year wise MVA and stood at 48th, 49th and 50th ranks respectively and could not attain among top 30 ranks on year wise MVA except TATA motors who ranks 14th position in the year 2010-11.

4.5   STOCK PRICE OF THE COMPANIES

In Table 4.34, the company's year-end closing price of the fifty companies for six years i.e. 2007-08 to 2012-13 are given. From the Table 4.34, it can be observed that the HCL closing price stands at 253.25, Infosys at 1439.90, TCS at 810.45, Tech Mahindra at 705.25 and Wipro at 432.10 in the year 2007-08. Among the IT companies, Infosys company closing price is much higher than all the other IT Company in the year 2007-08. Among metal sector, the close price of Vedanta is much higher than all the other three companies with share price of 3151.55 in the year 2007-08. Table 4.34 also shows that there are only one company from Media Sector i.e., Zee Company, Adaniport from Service sector, UPL company from Fertilizer sector and Larsen & Toubro from Construction sector. Finance sector contributes a total of eleven companies. As can be seen from the Table 4.34, the largest closing price of the Nifty companies is obtained by Asian paint company companies whose closing price stand at 4917.25 in the year 2012-13 followed by Vedanta companies with value of 3151.55 in the year 2007-08. The least closing price is obtained by Indus bank in the year 2008-09 with value of 32.10 preceded by Hindalco with value of 52.05 in the year 2008-09. Data for Infratel of five years i.e. 2007-08 to 2012-13 could not be generated since reports are not available during the study period. Table 4.34 also shows that among the Nifty companies, the closing price of the companies such as HCL, Infosys, TCS, Tech Mahindra, Eicher, Heromotoco, Maruti, Bajaj finserve, Bajaj finance,

ICICI bank, Indus bank, Yes bank and NTPC has almost increase in 50% from 2007-08 to 2012-13 whereas Hindalco, Tata steel, Vedanta, Sunpharma, Adaniport, Airtel, Tata motor, HDFC bank, ONGC, and Titan has almost 35% decrease in stock price from 2012-13 to 2007-08.

Table 4.34: Year-end closing price of the companies (2007-08 to 2012-13)

Company	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
HCL	253.25	102.05	358.40	477.95	483.50	795.00
Infosys	1439.90	1323.90	2615.95	3241.30	2866.30	2889.35
TCS	810.45	538.55	780.65	1183.90	1168.80	1575.95
TECH MAHINDRA	705.25	265.10	853.10	676.15	720.75	1059.01
WIPRO	432.10	245.90	706.95	480.20	440.10	437.15
ZEE	246.05	106.35	268.25	123.60	126.75	210.45
COALINDIA	315.25	325.12	356.36	346.50	343.90	309.10
HINDALCO	165.10	52.05	181.25	209.05	129.40	91.60
TATASTEEL	694.35	205.90	623.05	662.25	471.75	312.85
VEDANTA	3151.55	99.60	470.75	291.35	194.70	155.50
CIPLA	220.00	220.05	338.35	321.65	305.10	379.75
DRREDDY	591.25	490.20	1274.95	1639.05	801.99	872.75
LUPIN	498.50	684.55	1627.35	416.65	529.50	628.55
SUNPHARMA	1229.53	1111.45	1792.00	442.50	569.95	818.95
ADANIPORTS	578.75	323.30	789.60	136.65	129.50	138.70
AIRTEL	826.25	625.75	312.55	357.40	337.90	291.75
INFRATEL	-	-	-	-	-	-
BAJAJAUTO	1025.12	1125.36	2014.80	1463.25	1678.80	1799.55
EICHER	249.00	217.45	651.35	1344.30	2282.95	2562.20
HEROMOTOCO	694.55	1071.75	1944.40	1589.45	2055.25	1571.85
M&M	697.05	383.65	541.35	700.35	700.20	863.25
MARUTI	827.00	779.85	1417.95	1268.00	1350.30	1285.20
TATAMOTOR	622.70	180.30	757.70	1248.35	275.25	269.15
AXISBANK	789.85	414.95	1168.25	1403.85	1146.02	1300.07
BAJAJFINSERVE	146.36	169.05	336.15	514.30	611.50	771.55
BAJAJFINANCE	333.95	695.85	320.35	611.36	721.12	699.85
HDFC	2379.75	1412.20	2717.20	701.20	811.25	826.25
HDFCBANK	1331.25	973.40	1933.50	2345.85	519.85	625.35
IBULS	563.78	886.36	912.36	812.36	478.25	563.25
ICICIBANK	769.40	332.80	952.50	1116.20	890.20	1045.20
INDUSBANK	78.65	32.10	170.10	263.30	321.65	404.70
KOTAKBANK	625.90	282.20	748.15	457.50	545.35	653.00
SBI	1600.25	1067.10	2078.20	1010.12	1036.00	1068.01

YESBANK	168.75	500.00	256.20	309.60	368.80	428.90
UPL	262.15	98.25	149.20	149.45	130.10	117.40
BPCL	408.55	376.05	518.05	611.85	700.25	377.70
GAIL	425.50	245.60	410.60	464.00	376.25	318.25
HINPETRO	256.40	269.25	318.55	356.55	303.60	285.20
IOC	445.55	387.80	295.75	245.34	256.67	264.82
NTPC	64.26	69.82	75.90	84.63	92.69	101.10
ONGC	980.55	780.20	1098.70	995.12	756.36	311.40
POWERGRID	98.30	95.60	107.15	101.90	108.15	112.36
RELIANCE	2265.80	1524.75	1074.25	1049.10	1156.32	992.25
ASIANPAINT	1199.90	1426.23	1836.25	2525.80	3242.00	4917.25
HINDUSTANLEVER	228.80	237.50	239.55	287.10	410.05	466.95
ITC	206.25	184.85	263.05	182.10	226.90	309.45
TITAN	1057.00	781.75	1840.60	3811.45	288.55	256.40
GRASIM	2575.30	1582.15	2818.45	2456.90	2627.05	2813.30
ULTRATECH	784.55	551.35	1154.85	1131.50	1514.55	1868.95
LARSEN&TORBO	3035.95	1523.36	1630.85	1651.10	1309.00	1366.20

In Table 4.35, the year-end closing price of the companies of the fifty companies for six years i.e. 2013-14 to 2018-19 are given. From the Table 4.35, it can be observed there are 13 sectors among the Nifty companies and among all the sectors, Eicher company has the highest value of share price i.e., 28372.65 in the year 2017-18 followed by Maruti company with value of 8861.10 in the year 2017-18. Infosys closing price is much higher than all other remaining five companies among the IT sector. Table 4.35 also shows that among the Nifty companies of all the sectors, the closing price of Eicher is highest with value of 5961.50 followed by Infosys with value of 3282.80 in the year 2013-14. NTPC, Hindalco and Powergrid companies become least among all the Nifty companies in the year 2013-14. Table 4.35 also shows that among the Nifty companies such as ZEE, Hindalco, Adaniports, Eicher, Maruti, Bajajfinserve, Bajaj finance, HDFC, HDFC bank, IBULS, Indus bank, Kotak bank, UPL, Reliance, Asian paint, and Titan companies has almost increase in 50% of share price of the company from 2013-14 to 2018-19 whereas Infosys, Tech Mahindra, Wipro, Tata motors, ICICI bank, SBI,

ONGC, and Grasim companies has almost 47% decrease in closing price of stock from 2012-13 to 2007-08.

Table 4.35: Year-end closing price of the companies (20013-14 to 2018-19)

Company	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
HCL	1390.70	980.40	814.10	874.75	968.60	1087.45
Infosys	3282.80	2218.35	1218.30	1022.25	1008.80	1137.15
TCS	2133.95	2553.95	2520.30	2431.80	2849.15	2001.65
TECH MAHINDRA	1795.35	629.70	474.95	459.15	638.70	775.90
WIPRO	543.20	628.85	564.25	515.70	281.15	254.80
ZEE	271.35	341.75	386.95	535.55	575.90	445.50
COALINDIA	288.75	362.90	291.55	292.65	283.30	237.20
HINDALCO	141.75	129.00	87.95	195.05	214.55	205.50
TATASTEEL	393.95	316.75	319.70	482.70	571.05	521.00
VEDANTA	188.55	189.50	161.25	274.95	277.85	184.85
CIPLA	382.80	712.45	511.95	592.95	545.45	528.90
DRREDDY	2563.90	3488.75	3035.20	2632.35	2080.55	2780.25
LUPIN	933.15	2008.40	1479.25	1445.20	735.85	739.60
SUNPHARMA	574.75	1023.90	820.10	688.15	495.10	478.85
ADANIPORTS	187.45	308.20	247.70	339.60	354.10	378.15
AIRTEL	317.75	393.30	350.08	350.05	398.70	333.10
INFRATEL	203.40	385.00	381.95	325.90	336.15	313.40
BAJAJAUTO	2039.60	2004.30	2357.35	2805.45	2744.70	2911.10
EICHER	5961.50	15908.15	19180.60	25587.50	28372.65	20547.70
HEROMOTOCO	2180.70	2603.75	2848.00	3221.95	3542.80	2553.15
M&M	958.95	1201.10	1243.85	1286.90	738.90	673.90
MARUTI	1735.05	3688.80	3716.30	6015.70	8861.10	6672.55
TATAMOTOR	401.65	524.25	363.30	465.85	326.85	174.25
AXISBANK	1460.50	1459.43	1463.58	1359.25	510.50	777.25
BAJAJFINSERVE	788.05	1414.55	1711.10	4098.40	5171.55	7037.05
BAJAJFINANCE	814.35	1414.55	1711.70	1171.10	1767.55	3025.00
HDFC	883.90	1315.70	1105.60	1502.01	1825.60	1968.25
HDFCBANK	748.80	1022.70	1071.15	1442.55	1886.10	2318.90
IBULS	237.55	557.90	649.90	997.75	1237.25	858.25
ICICIBANK	1245.05	315.50	236.65	276.85	278.35	400.45
INDUSBANK	501.85	886.00	967.60	1425.50	1796.75	1780.00
KOTAKBANK	781.05	1313.25	680.65	872.20	1047.80	1334.50
SBI	1917.70	267.05	194.25	293.40	249.90	320.75
YESBANK	413.95	815.75	865.05	1546.75	304.85	275.10
UPL	184.45	442.15	477.70	726.90	730.25	958.85
BPCL	460.05	810.10	904.30	649.85	638.40	752.36

GAIL	376.05	387.70	356.40	376.95	328.55	347.65
HINPETRO	309.80	649.80	787.50	525.65	344.85	283.85
IOC	284.53	287.92	385.73	219.44	176.70	162.85
NTPC	106.74	100.64	112.02	119.63	163.00	143.00
ONGC	632.12	753.69	463.69	185.40	177.80	159.75
POWERGRID	156.36	108.23	145.25	197.30	193.25	197.90
RELIANCE	869.32	1123.35	1236.25	1320.90	882.70	1363.25
ASIANPAINT	547.98	811.30	868.40	1073.50	1120.40	1492.70
HINDUSTANLEVER	605.55	873.55	869.50	911.75	1333.35	1706.80
ITC	352.85	325.85	328.25	280.30	255.50	297.25
TITAN	262.70	391.60	339.10	462.75	459.33	944.10
GRASIM	2888.05	3622.35	3844.15	1049.00	1050.90	857.95
ULTRATECH	2186.95	2877.90	3228.75	3984.75	3590.00	3998.35
LARSEN&TORBO	1271.90	1719.65	1216.70	1574.90	1310.90	1385.30

4.5.1 DESCRIPTIVE STATISTICS OF STOCK PRICE OF THE COMPANIES

To understand the behavior of the stock prices of the companies the descriptive statistics of the stock price of the Companies are presented sector-wise.

Table 4.36: Descriptive statistics of stock price of the Companies under IT sector

Sl no.	Company	Mean	Min	Max	S.D.
1	HCL	715.51	102.05	1390.7	381.1
2	Infosys	2022.03	1008.8	3282.8	915.22
3	TCS	1712.43	538.55	2849.15	802.56
4	Mahindra Tech	754.43	265.1	1795.35	384.93
5	Wipro	460.86	245.9	706.95	145.36

Source: Author's calculation

Table 4.36 shows the descriptive statistics of stock price of the companies under IT sector. There are five companies under IT sector. As can be seen from the Table 4.36, the mean of Infosys is highest with mean of 2022.03 followed by TCS with mean of 1712.43 and Tech Mahindra with mean of 754.43. Among the five companies, Wipro become least with mean of

460.86. Table 4.36 also shows that Infosys has the largest deviation from the mean whereas Wipro has the least deviation from the mean with value of 915.22 and 145.36 respectively. This indicates that among the IT companies listed in Nifty, Infosys in the most volatile IT company and the Wipro Company is the least volatile company.

Table 4.37: Descriptive statistics of stock price of the Companies under Media sector

Sl. no.	Company	Mean	Min	Max	S.D.
1	ZEE	303.2	106.35	575.9	157.64

Source: Author's calculation

Table 4.37 shows the descriptive statistics of stock price of the companies under Media sector. There is only one company under Media sector and as can be seen from the Table 4.37, the mean of ZEE stand at 303.2 and the standard deviation from the mean stand at 157.64.

Table 4.38: Descriptive statistics of stock price of the Companies under Metal sector

Sl. no.	Company	Mean	Min	Max	S.D.
1	COAL India	312.72	237.2	362.9	36.56
2	HINDALCO	150.19	52.05	214.55	53.73
3	TATA STEEL	464.61	205.9	694.35	156.57
4	VEDL	470.03	99.6	3151.55	849.81

Source: Author's calculation

Table 4.38 shows the descriptive statistics of stock price of the companies under metal sector. There are four companies under Metal sector viz. Coal India, Hindalco, Tata Steel and VEDL. Among the four companies, VEDL has the largest mean value of 470.03 followed by Tata steel with mean of 464.61. The mean of Coal India and Hindalco stands at 312.72 and 150.19 respectively. VEDL Company is the most volatile company among the metal sector with the largest deviation from the mean of 849.81 whereas Coal India is the least volatile metal company with standard deviation of 36.56

Table 4.39: Descriptive statistics of stock price of the Companies under Pharma sector

Sl. no.	Company	Mean	Min	Max	S.D.
1	CIPLA	421.62	220	712.45	154.91
2	DRREDDY	1854.27	490.2	3488.75	1044.13
3	LUPIN	977.21	416.65	2008.4	524.39
4	SUNPHARMA	837.1	442.5	1792	397.72

Source: Author's calculation

Table 4.39 shows the descriptive statistics of stock price of the companies under Pharma sector. Dr. Reddy has highest mean among the four companies with mean of 1854.27 followed by Lupin with mean of 977.21. Among the four companies, Cipla Company has the least mean of stock price i.e., 421.62. Dr. Reddy is the most volatile Pharma Company with largest standard deviation of 1044.13.

Table 4.40: Descriptive statistics of stock price of the Companies under Services sector

Sl. no.	Company	Mean	Min	Max	S.D.
1	ADANIPORTS	325.98	129.5	789.6	194.87

Source: Author's calculation

Table 4.40 shows the descriptive statistics of stock price of the companies under service sector. There is only one company under service sector i.e., Adaniports. The mean stock price of Adaniports stands at 325.98 and the standard deviation at 194.87.

Table 4.41: Descriptive statistics of stock price of the Companies under Telecom sector

Sl. no.	Company	Mean	Min	Max	S.D.
1	BHRATIARTL	407.88	291.75	826.25	157.6
2	INFRATEL	324.3	203.4	385	66.16

Source: Author's calculation

Bharti airtel and Infratel Company are the only two companies under telecom sector listed in Nifty. Table 4.41 shows the descriptive statistics of stock price of the two companies; Bharti airtel has higher mean value than Infratel Company. Table 4.41 also shows that standard deviation of the two companies.

Table 4.42: Descriptive statistics of stock price of the Companies Automobile sector

Sl. no.	Company	Mean	Min	Max	S.D.
1	BAJAJAUTO	1997.45	1025.12	2911.1	625.93
2	EICHER	10238.78	217.45	28372.65	10848.4
3	HEROMOTOCO	2156.47	694.55	3542.8	848.83
4	M & M	832.45	383.65	1286.9	286.35
5	MARUTI	3134.82	779.85	8861.1	2698.82
6	TATAMOTOR	467.47	174.25	1248.35	301.66

Source: Author's calculation

Table 4.42 shows the descriptive statistics of stock price of the six companies under automobile sector. Eicher motor has highest mean among the six companies with mean stock price of 10238.78 followed by Maruti with mean price of 3134.82. The mean stock price of Heromotoco is 2156.47. Tata motor has the least mean of stock price i.e., 467.47. Eicher is the most volatile automobile company with a standard deviation on 10848 and M&M the least volatile with a standard deviation of 286.

Table 4.43: Descriptive statistics of stock price of the Companies Finance sector

Sl. no.	Company	Mean	Min	Max	S.D.
1	AXISBANK	1104.46	414.95	1463.58	383.12
2	BAJAJFINSERVE	1897.47	146.36	7037.05	2272.44
3	BAJAJFIN	1107.23	320.35	3025	775.23
4	HDFC	1454.08	701.2	2717.2	653.57
5	HDFC BANK	1351.62	519.85	2345.85	637.44
6	IBULFIN	729.58	237.55	1237.25	270.9
7	ICICIBANK	654.93	236.65	1245.05	383.02
8	INDSBANK	719.02	32.1	1796.75	644.61
9	KOTAKBNK	778.46	282.2	1334.5	320.46
10	SBI	925.23	194.25	2078.2	675.42
11	YESBANK	521.14	168.75	1546.75	386.95

The descriptive statistics of stock price of eleven companies under finance sector are given in the Table 4.43. As can be seen from the Table 4.43, the mean stock price of Bajaj finserve is highest with value of 1897.47 followed by Bajaj finance and Axis bank with mean of 1107.23 and 1104.46 respectively. Among the eleven companies, Yes bank Company has the least mean stock price with a value of 521.14. Bajajfinserve is the most volatile finance company with the largest standard deviation of 2272.44 whereas IBULFIN is the least volatile company with standard deviation of 270.90.

Table 4.44: Descriptive statistics of stock price of the Companies in Fertilizer sector

Sl. no.	Company	Mean	Min	Max	S.D.
1	UPL	368.9	98.25	958.85	295.32

Source: Author's calculation

Table 4.44 shows the descriptive statistics of stock price of the companies under fertilizer sector. There is only one company under fertilizer sector i.e., UPL and as can be seen from the Table 4.44, the mean of UPL stand at 368.9 and the standard deviation from the mean stand at 295.32.

Table 4.45: Descriptive statistics of stock price of the Companies in Energy sector

Sl. no.	Company	Mean	Min	Max	S.D.
1	BPCL	600.63	376.05	904.3	174.94
2	GAIL	367.79	245.6	464	56
3	HINPETRO	390.92	256.4	787.5	170.76
4	IOC	284.43	162.85	445.55	85.46
5	NTPC	102.79	64.26	163	29.17
6	ONGC	607.9	159.75	1098.7	340.63
7	POWERGRID	135.15	95.6	197.9	41.02
8	RELIANCE	1238.19	869.32	2265.8	377.31

Source: Author's calculation

Table 4.45 shows the descriptive statistics of stock price of the eight companies under energy sector. Among the energy sector, Reliance has highest   mean stock price with value of 1238.19 followed by ONGC and BPCL with mean stock price of 607.9 and 600.63 respectively. NTPC has the least mean stock price of 102.79. Table 4.45 also shows that among the energy sector, Reliance Company has the largest standard deviation of 377.31 indicating to be the most volatile energy company whereas NTPC is the least volatile energy company with the lowest standard deviation with value of 29.17.

Table 4.46: Descriptive statistics of stock price of the Companies in Consumer goods sector

Sl. no.	Company	Mean	Min	Max	S.D.
1	ASIANPAINT	1755.14	547.98	4917.25	1253.99
2	HINDUSTANLEVER	680.87	228.8	1706.8	474.8
3	ITC	267.72	182.1	352.85	57.9
4	TITAN	907.94	256.4	3811.45	1024.86

Source: Author's calculation

Table 4.46 shows the descriptive statistics of stock price of the companies under consumer goods sector. The four companies under consumer goods sector are Asian paint, Hindustanlever, ITC and Titan Company. Asian paint has the highest mean stock price among the four companies with a mean value of 1755.14 followed by Titan with mean value of 907.94. Among the four companies, ITC Company has the least mean of stock price i.e., 267.72. Asian paint has the largest standard deviation of 1254 whereas ITC Company has the least standard deviation with value of 57.90.

Table 4.47: Descriptive statistics of stock price of the Companies in Cement sector

Sl. no.	Company	Mean	Min	Max	S.D.
1	GRASIM	2348.8	857.95	3844.15	995.9
2	ULTRATECH	2239.37	551.35	3998.35	1257.2

Source: Author's calculation

Table 4.47 shows the descriptive statistics of stock price of the companies under cement sector viz. Grasim and Ultratech Company. Among the two companies, Gramsim has higher stock mean stock price with value of 2348.8 than Ultratech Company whose mean is only 2239.37. The standard deviations of the two companies are 1257.20 and 995.90 respectively.

Table 4.48: Descriptive statistics of stock price of the Companies in Construction sector

Sl. no.	Company	Mean	Min	Max	S.D.
1	LARSEN &TOUBRO	1582.98	1216.7	3035.95	486.77

Source: Author's calculation

Table 4.48 shows the descriptive statistics of stock price of Larsen & Toubro. Larsen & Toubro is only company under construction sector. The mean and standard deviation of stock price of Larsen & Toubro is 1582.98 and 486.77 respectively.

4.6   STOCK RETURN OF THE COMPANIES

In Table 4.49, the yearly stock returns of all the fifty companies for six years i.e. 2007-08 to 2012-13 are given.

Table 4.49: Table: Annual stock return of the companies (2007-08 to 2012-13)

Company	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
HCL	-13.09	-59.70	251.20	33.36	1.16	64.43
Infosys	-28.67	-8.06	97.59	23.91	-11.57	0.80
TCS	-34.32	-33.55	44.95	51.66	-1.28	34.83
TECH MAHINDRA	-50.58	-62.41	221.80	-20.74	6.60	46.93
WIPRO	-22.76	-43.09	187.49	-32.07	-8.35	-0.67
ZEE	-1.85	-56.78	152.23	-53.92	2.55	66.04
COALINDIA	0.00	3.13	9.61	-2.77	-0.75	-10.12

HINDALCO	26.71	-68.47	248.22	15.34	-38.10	-29.21
TATASTEEL	54.42	-70.35	202.60	6.29	-28.77	-33.68
VEDANTA	85.01	-96.84	372.64	-38.11	-33.17	-20.13
CIPLA	-7.09	0.02	53.76	-4.94	-5.15	24.47
DRREDDY	-18.81	-17.09	160.09	28.56	-51.07	8.82
LUPIN	-17.77	37.32	137.73	-74.40	27.09	18.71
SUNPHARMA	16.38	-9.60	61.23	-75.31	28.80	43.69
ADANIPORTS	26.30	-44.14	144.23	-82.69	-5.23	7.10
AIRTEL	44.75	-24.27	-50.05	14.35	-5.46	-13.66
INFRATEL						
BAJAJAUTO	3.00	9.78	79.04	-27.37	14.73	7.19
EICHER	1.43	-12.67	199.54	106.39	69.82	12.23
HEROMOTOCO	0.84	54.31	81.42	-18.25	29.31	-23.52
M&M	-10.68	-44.96	41.11	29.37	-0.02	23.29
MARUTI	0.83	-5.70	81.82	-10.58	6.49	-4.82
TATAMOTOR	-14.49	-71.05	320.24	64.76	-77.95	-2.22
AXISBANK	61.06	-47.46	181.54	20.17	-18.37	13.44
BAJAJFINSERVE	-13.34	15.50	98.85	53.00	18.90	26.17
BAJAJFINANCE	-21.43	108.37	-53.96	90.84	17.95	-2.95
HDFC	56.58	-40.66	92.41	-74.19	15.69	1.85
HDFCBANK	39.52	-26.88	98.63	21.33	-77.84	20.29
IBULS	23.54	57.22	2.93	-10.96	-41.13	17.77
ICICIBANK	-9.84	-56.75	186.21	17.19	-20.25	17.41
INDUSBANK	87.26	-59.19	429.91	54.79	22.16	25.82
KOTAKBANK	30.56	-54.91	165.11	-38.85	19.20	19.74
SBI	60.92	-33.32	94.75	-51.39	2.56	3.09
YESBANK	20.54	196.30	-48.76	20.84	19.12	16.30
UPL	-19.25	-62.52	51.86	0.17	-12.95	-9.76
BPCL	34.95	-7.95	37.76	18.11	14.45	-46.06
GAIL	60.84	-42.28	67.18	13.01	-18.91	-15.42
HINPETRO	3.47	5.01	18.31	11.93	-14.85	-6.06
IOC	11.49	-12.96	-23.74	-17.04	4.62	3.18
NTPC	-54.76	8.65	8.71	11.50	9.52	9.07
ONGC	11.32	-20.43	40.82	-9.43	-23.99	-58.83
POWERGRID	-3.97	-2.75	12.08	-4.90	6.13	3.89
RELIANCE	65.35	-32.71	-29.55	-2.34	10.22	-14.19
ASIANPAINT	57.43	18.86	28.75	37.55	28.36	51.67
HINDUSTANLEVER	11.50	3.80	0.86	19.85	42.82	13.88
ITC	36.45	-10.38	42.30	-30.77	24.60	36.38
TITAN	25.42	-26.04	135.45	107.08	-92.43	-11.14
GRASIM	23.05	-38.56	78.14	-12.83	6.93	7.09

Company						
ULTRATECH	1.61	-29.72	109.46	-2.02	33.85	23.40
LARSEN&TORBO	87.39	-49.82	7.06	1.24	-20.72	4.37

In Table 4.49, it can be observed that for the year 2007-08, negative stock return are found in HCL at -13.09, Infosys at -28.67, TCS at -34.32, Tech Mahindra at -50.58, Wipro at -22.76, Zee at -1.85, Cipla at -7.09, Dr. Reddy at -18.81, Lupin at -17.77, M & M at -10.67, Tata motor at -14.49, Bajaj finserve at 13.34, Bajaj finance at -21.43, ICICI bank at -9.84, UPL at -19.25 and NTPC at -54.76.

In the year 2008-09, the stock return of almost all the company is found to be negative except Coal India, Lupin, Bajaj Auto, Heromotoco, Bajajfinserve, Bajajfinance, IBULS, Yes bank, Hinpetro, NTPC, Asian paint, and Hindustanlever.

In the year 2009-10, the highest stock return of the company is obtained by Vedanta Company with value of 372.64 followed by Tata motor with value of 320.24 and HCL Company with value of 251.20 in the year 2009-10. Stock return of Infratel Company for 5 years i.e., 2007-08 to 2012-13 could not be generated due to unavailability of data during the period.

Among the positive stock return, least closing stock return is obtained by Cipla with value of 0.02 in the year 2008-09 followed by Infosys with value of 0.80 in the year 2008-09 and Maruti with value of 0.83 in the year 2007-08.

Table 4.50: Annual stock return of the companies (2013-14 to 2018-19)

Company	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
HCL	74.93	-29.50	-16.96	7.45	10.73	12.27
Infosys	13.62	-32.43	-45.08	-16.09	-1.32	12.72
TCS	35.41	19.68	-1.32	-3.51	17.16	-29.75
TECH MAHINDRA	69.53	-64.93	-24.58	-3.33	39.10	21.48
WIPRO	24.26	15.77	-10.27	-8.60	-45.48	-9.37
ZEE	28.94	25.94	13.23	38.40	7.53	-22.64
COALINDIA	-6.58	25.68	-19.66	0.38	-3.19	-16.27

HINDALCO	54.75	-8.99	-31.82	121.77	10.00	-4.22
TATASTEEL	25.92	-19.60	0.93	50.99	18.30	-8.76
VEDANTA	21.25	0.50	-14.91	70.51	1.05	-33.47
CIPLA	0.80	86.12	-28.14	15.82	-8.01	-3.03
DRREDDY	193.77	36.07	-13.00	-13.27	-20.96	33.63
LUPIN	48.46	115.23	-26.35	-2.30	-49.08	0.51
SUNPHARMA	-29.82	78.15	-19.90	-16.09	-28.05	-3.28
ADANIPORTS	35.15	64.42	-19.63	37.10	4.27	6.79
AIRTEL	8.91	23.78	-10.99	-0.01	13.90	-16.45
INFRATEL	13.66	89.28	-0.79	-14.67	3.15	-6.77
BAJAJAUTO	13.34	-1.73	17.61	19.01	-2.17	6.06
EICHER	132.67	166.85	20.57	33.40	10.88	-27.58
HEROMOTOCO	38.73	19.40	9.38	13.13	9.96	-27.93
M&M	11.09	25.25	3.56	3.46	-42.58	-8.80
MARUTI	35.00	112.60	0.75	61.87	47.30	-24.70
TATAMOTOR	49.23	30.52	-30.70	28.23	-29.84	-46.69
AXISBANK	12.34	-0.07	0.28	-7.13	-62.44	52.25
BAJAJFINSERVE	2.14	79.50	20.96	139.52	26.18	36.07
BAJAJFINANCE	16.36	73.70	21.01	-31.58	50.93	71.14
HDFC	6.98	48.85	-15.97	35.85	21.54	7.81
HDFCBANK	19.74	36.58	4.74	34.67	30.75	22.95
IBULS	-57.83	134.86	16.49	53.52	24.00	-30.63
ICICIBANK	19.12	-74.66	-24.99	16.99	0.54	43.87
INDUSBANK	24.01	76.55	9.21	47.32	26.04	-0.93
KOTAKBANK	19.61	68.14	-48.17	28.14	20.13	27.36
SBI	79.56	-86.07	-27.26	51.04	-14.83	28.35
YESBANK	-3.49	97.06	6.04	78.80	-80.29	-9.76
UPL	57.11	139.71	8.04	52.17	0.46	31.30
BPCL	21.80	76.09	11.63	-28.14	-1.76	17.85
GAIL	18.16	3.10	-8.07	5.77	-12.84	5.81
HINPETRO	8.63	109.75	21.19	-33.25	-34.40	-17.69
IOC	7.44	1.19	33.97	-43.11	-19.48	-7.84
NTPC	5.58	-5.71	11.31	6.79	36.25	-12.27
ONGC	102.99	19.23	-38.48	-60.02	-4.10	-10.15
POWERGRID	39.16	-30.78	34.20	35.83	-2.05	2.41
RELIANCE	-12.39	29.22	10.05	6.85	-33.17	54.44
ASIANPAINT	-88.86	48.05	7.04	23.62	4.37	33.23
HINDUSTANLEVER	29.68	44.26	-0.46	4.86	46.24	28.01
ITC	14.02	-7.65	0.74	-14.61	-8.85	16.34
TITAN	2.46	49.07	-13.41	36.46	-0.74	105.54
GRASIM	2.66	25.43	6.12	-72.71	0.18	-18.36

ULTRATECH	17.01	31.59	12.19	23.41	-9.91	11.37
LARSEN&TORBO	-6.90	35.20	-29.25	29.44	-16.76	5.68

In Table 4.50, the annual stock return of the fifty companies for six years i.e. 2013-14 to 2018-19 are given. As can be seen from the Table 4.50, it can be observed that Bajaj finserve, HDFC Bank and UPL Company are the only three companies who have positive annual return during the entire six years i.e. 2013-14 to 2018-19. All the companies other than these companies have negative stock return in one or more years.

Table 4.50 also shows that among the positive stock return, Dr. Reddy has highest stock return among the companies with value of 193.77 in the year 2013-14 followed by Eicher motor with value of 166.85 and UPL with value of 139.70 in the year 2014-15 whereas Grasim, Axis bank and Coal India has least annual stock return with value of 0.18, 0.28 and 0.38 in the year 2017-18, 2015-16 and 2016-17 respectively.

4.6.1 DESCRIPTIVE STATISTICS OF STOCK RETURN OF THE COMPANIES

The descriptive statistics of annual stock return of the companies are discussed sector-wise are presented in the Table 4.51 to Table 4.63.

Table 4.51: Descriptive statistics of stock return of the Companies under IT sector

Sl. No.	Company	Mean	Min	Max	S.D.
1	HCL	28.02	-59.7	251.2	79.64
2	Infosys	0.45	-45.08	97.59	36.69
3	TCS	8.33	-34.32	51.66	30.46
4	Mahindra Tech	14.91	-64.93	221.8	78.23
5	Wipro	3.9	-45.48	187.49	61.51

Source: Author's calculation

Table 4.51 shows the descriptive statistics of stock return of the companies under IT sector. Among the five companies under IT sector, HCL has the highest annual mean return of 28.02 followed by Tech Mahindra with mean stock return of 14.91 and TCS with mean annual return of 8.33. Among the five companies, Infosys has the lowest mean annual return with value of 0.45. As expected regarding standard deviation also HCL has the largest standard deviation while lowest standard deviation of the annual stock return was that of TCS Company.

Table 4.52: Table : Descriptive statistics of stock return of the Companies under Media sector

Sl. no.	Company	Mean	Min	Max	S.D.
1	ZEE	16.64	-56.78	152.23	55.66

Source: Author's calculation

Table 4.52 shows the descriptive statistics of annual stock return of the companies under Media sector. ZEE is the only company under Media sector. The mean annual stock return of ZEE stands at 16.64 with a standard deviation of 55.66.

Table 4.53: Descriptive statistics of stock return of the Companies under Metal sector

Sl. no.	Company	Mean	Min	Max	S.D.
1	Coal India	-1.71	-19.66	25.68	11.84
2	Hindalco	24.66	-68.47	248.22	85.97
3	Tata Steel	16.52	-70.35	202.6	68.59
4	VEDL	26.19	-96.84	372.64	119.45

Source: Author's calculation

Table 4.53 shows the descriptive statistics of annual stock return of the companies under metal sector. Coal India, Hindalco, Tata Steel and VEDL are the four companies under metal sector. VEDL has the largest mean annual

stock return with a value of 26.19 followed by Hindalco with a value of 24.66. The mean annual stock return of Tata steel and Coal India stands at 16.52 and -1.71 respectively. VEDL Company has also the largest standard deviation with value of 119.45 whereas Coal India has the lowest standard deviation with a value of 11.84.The value found are on the expected line that higher the return higher is the risk.

Table 4.54: Descriptive statistics of stock return of the Companies under Pharma sector

Sl. no.	Company	Mean	Min	Max	S.D.
1	CIPLA	10.39	-28.14	86.12	31.37
2	DRREDDY	27.23	-51.07	193.77	74.86
3	LUPIN	17.93	-74.4	137.73	61.92
4	SUNPHARMA	3.85	-75.31	78.15	43.47

Source: Author's calculation

Table 4.54 shows the descriptive statistics of annual stock return of the companies under Pharma sector. Dr. Reddy has highest mean value among the four companies with value of 27.23 followed by Lupin with mean value of 17.93. Sun pharma Company has the least mean annual stock return with a value of 3.85. Dr. Reddy Company has the largest standard deviation with value of 74.86 whereas Cipla has the least standard deviation with a value of 31.37.

Table 4.55: Descriptive statistics of stock return of the Companies under Services sector

Sl. no.	Company	Mean	Min	Max	S.D.
1	ADANIPORTS	14.47	-82.69	144.23	56.45

Source: Author's calculation

Table 4.55 shows the descriptive statistics of annual stock return of Adaniports. Adaniports is the only company under service sector. The mean annual stock return of ZEE stands at 14.47 with the standard deviation of 56.45.

Table 4.56: Descriptive statistics of stock return of the Companies under Telecom sector

Sl. no.	Company	Mean	Min	Max	S.D.
1	BHRATIARTL	-1.27	-50.05	44.75	24.73
2	INFRATEL	13.98	-14.67	89.28	38.1

Source: Author's calculation

Table 4.56 shows the descriptive statistics of annual stock return of the companies under telecom sector which comprises of only two companies namely Bharti airtel and Infratel Company. Bharti Infratel has higher mean annual stock return as compared to Bharti airtel Company. The mean annual stock return value of Infratel is 13.98 whereas Bharati airtel is -1.27. The standard deviation of Bharati Airtel and Infratel companies are 24.73 and 38.10 respectively.

Table 4.57: Descriptive statistics of stock return of the Companies Automobile sector

Sl. no.	Company	Mean	Min	Max	S.D.
1	BAJAJAUTO	11.54	-27.37	79.04	24.62
2	EICHER	59.46	-27.58	199.54	74.93
3	HEROMOTOCO	15.56	-27.93	81.42	32.24
4	M & M	2.51	-44.96	41.11	26.68
5	MARUTI	25.07	-24.7	112.6	42.58
6	TATAMOTOR	18.34	-77.95	320.24	105.41

Source: Author's calculation

The descriptive statistics of annual stock return of the companies under automobile sector are given in Table 4.57. Eicher has highest mean value among the six companies with mean value of 59.46 followed by Maruti with mean value of 25.07 and Tata motor with mean value of 18.34. Tata motor has the largest standard deviation among the automobile companies whereas Bajaj auto has least variation with value of 24.62.

Table 4.58: Descriptive statistics of stock return of the Companies Finance sector

Sl. no.	Company	Mean	Min	Max	S.D.
1	AXISBANK	17.13	-62.44	181.54	62.65
2	BAJAJFINSERVE	41.95	-13.34	139.52	43.83
3	BAJAJFIN	28.36	-53.96	108.37	51.2
4	HDFC	13.06	-74.19	92.41	44.31
5	HDFC BANK	18.71	-77.84	98.63	41.74
6	IBULFIN	15.82	-57.83	134.86	51.47
7	ICICIBANK	9.57	-74.66	186.21	65.14
8	INDSBANK	61.91	-59.19	429.91	121.93
9	KOTAKBNK	21.34	-54.91	165.11	58.24
10	SBI	8.95	-86.07	94.75	55.27
11	YESBANK	26.06	-80.29	196.3	71.65

Source: Author's calculation

Table 4.58 shows the descriptive statistics of stock return of the companies under finance sector. Among the eleven companies under finance sector, IndusBank has the highest mean annual stock return with value of 61.91 followed by Bajajfinserve and Bajajfinance with mean value of 41.95 and 28.36 respectively. SBI stand at bottom with mean annual stock return of 8.95. Table 4.58 also shows that Indus Bank has the largest standard deviation whereas HDFC Bank has the least standard deviation with value of 121.93 and 41.74 respectively.

Table 4.59: Descriptive statistics of stock return of the Companies in Fertilizer sector

Sl. no.	Company	Mean	Min	Max	S.D.
1	UPL	19.7	-62.52	139.71	51.46

Source: Author's calculation

Table 4.59 shows the descriptive statistics of stock return of the companies under Fertilizer sector. There is only one company under Fertilizer sector and as can be seen from the Table 4.59, the mean of UPL stand at 19.7 and the standard deviation is 51.46.

Table 4.60: Descriptive statistics of stock return of the Companies in Energy sector

Sl. no.	Company	Mean	Min	Max	S.D.
1	BPCL	12.39	-46.06	76.09	31.68
2	GAIL	6.36	-42.28	67.18	31.5
3	HINPETRO	6	-34.4	109.75	37.55
4	IOC	-5.19	-43.11	33.97	19.94
5	NTPC	2.89	-54.76	36.25	21.44
6	ONGC	-4.25	-60.02	102.99	45.03
7	POWERGRID	7.44	-30.78	39.16	20.29
8	RELIANCE	4.32	-33.17	65.35	32.36

Source: Author's calculation

Table 4.60 shows the descriptive statistics of stock return of the companies under energy sector. BPCL has highest mean annual stock return value of 12.39 followed by Powergrid with value of 7.44 and Gail with value of 6.36. Table 4.60 also shows that among the eight companies, IOC, ONGC and NTPC were at bottom based on the mean of their stock return. ONGC has the largest deviation from the mean whereas Powergrid has the least standard deviation with value of 45.03 and 20.29 respectively.

Table 4.61: Descriptive statistics of stock return of the Companies in Consumer goods sector

Sl. no.	Company	Mean	Min	Max	S.D.
1	ASIANPAINT	20.84	-88.86	57.43	38.24
2	HINDUSTANLEVER	20.44	-0.46	46.24	17.42
3	ITC	8.22	-30.77	42.3	23.56
4	TITAN	26.48	-92.43	135.45	64.98

Source: Author's calculation

Table 4.61 shows the descriptive statistics of stock return of the companies under consumer goods sector. There are four companies under consumer goods sector and among the four companies; mean of Titan is highest with value of 26.48 followed by Asian paint with mean of 20.84 and Hindustanlever with mean of 20.44. ITC stand at bottom with mean of only

8.22. Table 4.61 also shows that Titan has the largest standard deviation whereas Hindustanlever has the least deviation with value of 64.98 and 17.42 respectively.

Table 4.62: Descriptive statistics of stock return of the Companies in Cement sector

Sl. no.	Company	Mean	Min	Max	S.D.
1	GRASIM	0.59	-72.71	78.14	36.55
2	ULTRATECH	18.52	-29.72	109.46	33.93

Source: Author's calculation

Table 4.62 shows the descriptive statistics of stock return of the companies under cement sector which comprises of only two companies namely Grasim and Ultratech Company. Among the two companies, mean of Ultratech is higher than Grasim Company with value of 18.52 and mean of Grasim Company is only 0.59 which indicate that among the two companies, Ultratech Company performs better than Grasim Company. Table 4.62 also shows that deviation from stock return of Grasim and Ultratech is 36.55 and 33.93 respectively.

Table 4.63: Descriptive statistics of stock return of the Companies in Construction sector

Sl. no.	Company	Mean	Min	Max	S.D.
1	LARSEN &TOUBRO	3.91	-49.82	87.39	35.37

Source: Author's calculation

Table 4.63 shows the descriptive statistics of stock price of Larsen & Toubro. Larsen & Toubro is the only company under construction sector listed in Nifty. The mean annual stock return of Larsen & Toubro is 3.91 with the standard deviation of 35.37.

4.7   EARNINGS PER SHARE (EPS) OF THE COMPANIES

Table 4.64 represents Earning per Share (EPS) of selected fifty companies for six years i.e. 2007-08 to 2012-13. As can see from the Table 4.64, the Earning per Share (EPS) of HCL company stands at 15.82 and 58.15 respectively in the year 2007-08 and 2012-13 and EPS of Infosys stands at 81.53 and 157.55 in 2007-08 and 2012-13. As can be seen from the Table 4.64, Earning per Share (EPS) of Coal India, Eicher motor, Axis bank, Bajaj finserve, Bajaj finance, HDFC bank, Indus bank and SBI grows continuously during 5 years i.e. 2007-08 to 2012-13. However, it is found that Earning per Share (EPS) of ZEE, TATA steel, Vedanta, Sun pharma, BPCL, Reliance and SBI has decreased during 5 years i.e. from 2012-13 to 2007-08. Data for Infratel of 4 years i.e. 2007-08 to 2011-12 could not be generated since reports are not available during the study period. Infosys, Coal India, Cipla, Dr. Reddy, Bajaj auto, Eicher, Hero motoco, Axis bank, Bajaj finserve, HDFC bank, Indus bank, UPL, NTPC, Asian paints and Hindustan lever has almost an increase in 50% of EPS from 2007-08 to 2012-13. Table 4.64 also shows that EPS of Vedanta, Lupin, Sunpharma, Airtel, Tata motors, Reliance, Titan and Larsen Toubro companies has constantly decreased from 2012-13 to 2007-08. Vedanta, Grasim and SBI were the three top companies who have largest Earning per Share (EPS) i.e., 305.40, 294.75 and 210.06 in the year 2007-08 and 2012-13 while Tata motor, IBUL and Adani ports has the least EPS i.e. 0.93, 3.13 and 3.77 in the year 2018-19, 2008-09 and in the year 2009-10.

Table 4.64: Earning Per share of the companies (2007-08 to 2012-13)

Company	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
HCL	15.82	19.72	18.69	24.09	35.06	58.15
Infosys	81.53	104.60	108.99	119.66	139.07	157.55
TCS	51.36	53.63	28.61	38.61	53.07	70.99
TECH MAHINDRA	63.49	83.41	58.10	51.60	91.60	100.85
WIPRO	22.62	26.81	19.07	21.72	21.46	25.07
ZEE	8.90	11.75	6.77	6.33	6.08	7.54
COALINDIA	13.23	14.25	15.12	17.19	23.47	27.63

HINDALCO	17.04	3.22	22.17	12.84	17.74	15.81
TATASTEEL	176.81	66.07	24.92	99.03	54.27	74.54
VEDANTA	305.40	76.40	11.70	15.00	14.36	18.03
CIPLA	9.02	9.92	12.50	12.32	14.25	18.75
DRREDDY	26.07	54.48	20.83	59.06	76.76	89.93
LUPIN	50.01	60.84	79.80	19.36	19.43	29.39
SUNPHARMA	74.70	87.80	65.20	17.50	25.70	28.80
ADANIPORTS	5.61	10.79	3.37	4.58	5.58	7.68
AIRTEL	32.15	50.61	65.78	82.95	4.29	5.62
INFRATEL						6.00
BAJAJAUTO	53.70	37.00	55.20	119.40	105.20	108.30
EICHER	20.12	22.15	30.78	70.54	114.48	120.11
HEROMOTOCO	48.47	64.19	111.77	96.54	119.09	106.07
M&M	78.10	34.80	51.10	53.46	53.18	69.51
MARUTI	61.90	42.50	90.85	82.46	58.19	81.74
TATAMOTOR	56.24	56.88	48.64	155.25	3.90	0.93
AXISBANK	31.80	50.24	64.83	81.77	120.95	134.53
BAJAJFINSERVE	2.30	4.90	38.06	77.10	92.50	103.00
BAJAJFINANCE	5.68	9.27	24.43	67.47	110.84	135.88
HDFC	50.12	81.09	22.67	31.00	37.07	43.63
HDFCBANK	9.20	10.60	13.50	17.00	22.10	28.50
IBULS	22.84	3.13	9.97	28.86	32.00	40.19
ICICIBANK	39.39	33.76	41.93	53.54	66.33	83.29
INDUSBANK	2.35	4.28	9.01	13.16	17.20	21.80
KOTAKBANK	14.60	9.40	18.84	21.73	24.81	29.44
SBI	126.62	143.77	144.37	130.16	184.31	210.06
YESBANK	7.02	10.24	15.56	21.12	27.87	7.30
UPL	6.46	10.37	11.97	12.45	12.03	17.12
BPCL	48.94	17.53	45.15	45.22	10.80	26.01
GAIL	21.94	22.28	26.23	31.70	35.03	34.48
HINPETRO	40.38	22.37	46.31	50.31	5.16	14.80
IOC	66.36	21.41	44.12	32.25	17.41	18.32
NTPC	9.06	9.81	10.72	11.37	11.19	15.27
ONGC	78.09	75.41	19.16	22.12	26.36	20.43
POWERGRID	6.36	4.36	5.12	6.13	7.49	8.33
RELIANCE	105.75	110.16	82.29	64.75	66.15	70.65
ASIANPAINT	43.37	41.61	87.00	87.91	103.08	116.13
HINDUSTANLEVER	8.69	11.50	9.89	10.53	12.92	17.71
ITC	8.29	8.66	5.34	6.49	8.06	9.69
TITAN	33.24	36.93	56.61	97.57	6.77	8.17
GRASIM	289.54	238.49	300.94	248.52	288.65	294.75

| ULTRATECH | 81.14 | 78.57 | 87.98 | 61.39 | 87.69 | 97.69 |
| LARSEN&TOUBRO | 75.59 | 51.56 | 89.61 | 72.39 | 76.81 | 48.23 |

Table 4.65 represents Earning per Share (EPS) of selected fifty companies for six years i.e. 2013-14 to 2018-19. As can see from the table 4.65, Earning per Share (EPS) of Adani ports, Eicher motor, Hero motoco, Maruti, Bajaj finserve, HDFC bank, Power grid and Asian paints grows continuously during 5 years from 2013-14 to 2018-19. Table 4.65 also reveals that ZEE, Hindalco, Tata steel, adani ports, Airtel, Eicher, Maruti, Tata Motors, Bajaj finserve, HDFC bank, IBULS, Indus bank, UPL, Power grid, Asian paints and Titan companies has almost an increase in 50% of EPS from 2013-14 to 2018-19. However, it is found that Earning per Share (EPS) of HCL, Wipro, Tech mahindra, ZEE, Hindalco, Tata steel, Adani ports, Airtel, Bajaj Auto, Bajaj finserve, Maruti, Tata motors, Power grid and Asian paints has decreased from 2018-19 to 2013-14. Table 4.65 also shows that Eicher, Maruti and Bajaj auto companies were the three top companies who have largest Earning per Share (EPS) i.e., 753.37, 260.88 and 170.30 in the year 2018-19, 2017-18 and in 2018-19 whereas SBI, Tata motors and Axis bank company has the least EPS i.e. -7.67, 0.18 and 1.86 in the year 2017-18, 2015-16 and 2017-18 respectively.

Table 4.65: Earning Per share of the companies (2013-14 to 2018-19)

Company	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
HCL	46.59	52.09	39.73	60.33	62.23	73.58
Infosys	93.25	108.26	59.02	62.80	35.55	35.44
TCS	97.67	101.35	117.11	120.04	67.10	83.05
TECH MAHINDRA	31.27	27.46	34.51	32.14	43.02	48.47
WIPRO	32.37	35.28	36.26	34.97	12.64	14.99
ZEE	7.94	7.15	8.57	23.13	15.40	16.33
COALINDIA	23.92	21.73	22.59	14.78	11.34	28.14
HINDALCO	10.91	4.14	4.15	9.22	27.30	24.67
TATASTEEL	35.19	42.24	19.26	4.93	126.39	88.32
VEDANTA	21.46	52.77	41.38	18.60	28.30	19.07

CIPLA	17.29	14.71	16.93	12.52	17.53	18.97
DRREDDY	115.45	137.18	124.93	77.53	57.08	117.53
LUPIN	40.99	53.55	50.25	56.69	5.56	13.41
SUNPHARMA	15.10	18.90	18.90	29.00	8.70	11.10
ADANIPORTS	8.45	11.88	13.99	18.89	16.78	54.09
AIRTEL	8.03	10.53	11.86	14.72	13.48	13.48
INFRATEL	16.69	33.02	15.21	9.51	2.75	10.20
BAJAJAUTO	116.80	104.60	140.30	141.00	145.80	170.30
EICHER	145.85	227.22	493.07	613.12	629.07	753.37
HEROMOTOCO	105.61	119.46	158.26	169.12	186.30	172.45
M&M	79.06	53.12	26.52	30.69	36.64	40.29
MARUTI	94.44	126.04	181.98	248.64	260.88	253.26
TATAMOTOR	1.03	14.72	0.18	7.30	26.46	84.89
AXISBANK	26.91	31.56	35.12	16.54	1.86	19.61
BAJAJFINSERVE	97.00	106.20	117.10	142.10	166.50	202.30
BAJAJFINANCE	144.79	179.94	24.23	34.01	44.38	69.33
HDFC	51.01	55.81	44.43	46.08	74.77	95.40
HDFCBANK	35.50	42.10	48.80	57.20	71.83	83.33
IBULS	47.96	54.95	59.84	68.80	93.64	95.83
ICICIBANK	19.13	21.17	17.53	17.51	12.02	6.61
INDUSBANK	26.85	33.99	39.68	48.06	60.19	54.90
KOTAKBANK	32.19	39.49	18.91	26.89	32.70	37.78
SBI	15.68	17.55	12.98	13.43	-7.67	0.97
YESBANK	9.00	9.90	12.10	15.80	18.46	7.40
UPL	9.45	10.81	15.54	34.06	39.79	28.12
BPCL	54.08	66.74	57.84	66.51	45.80	39.67
GAIL	37.73	24.91	11.05	19.92	21.28	29.03
HINPETRO	31.90	44.21	46.82	81.07	47.37	43.91
IOC	29.15	20.23	25.27	41.88	23.41	18.41
NTPC	13.83	12.11	13.10	13.00	10.66	12.77
ONGC	30.89	21.43	10.03	15.97	15.23	14.36
POWERGRID	9.47	9.64	11.37	14.37	15.68	19.18
RELIANCE	76.95	80.11	100.97	101.33	60.94	66.82
ASIANPAINT	12.71	14.54	18.19	20.22	20.53	22.51
HINDUSTANLEVER	18.24	20.17	19.10	20.62	20.48	27.97
ITC	11.22	12.11	7.55	8.50	9.26	10.30
TITAN	8.28	9.19	7.60	7.85	12.73	15.82
GRASIM	225.61	189.84	52.80	67.80	44.22	26.96
ULTRATECH	80.45	76.48	90.30	98.92	80.94	88.72
LARSEN&TOUBRO	53.04	51.33	45.48	64.80	51.26	63.51

Table 4.66 shows descriptive statistics of Earning per Share (EPS) of all the selected Nifty fifty companies of the entire period of 12 years. As can be seen from Table 4.66, Eicher Company has the highest mean of 269.99 followed by Grasim with mean of 189.01 and Maruti with a mean of 131.91. Hero motoco and Bajaj auto come on 4th and 5th with a mean of 121.44 and 108.13. ITC, Powergrid and ZEE Company were at bottom with mean of 8.79, 9.97 and 10.49 respectively. Table 4.66 also shows that Eicher Company has the largest deviation from the mean with value of 260.58 followed by Grasim and Vedanta Company with value of 104.69 and 78.62. Least variation from the mean is obtained by NTPC with value of 1.70 followed by ITC and ITC Company with vale of 1.82 and 3.22 respectively.

Table 4.66: Descriptive Statistics of EPS of the companies

Company	Mean	Min	Max	SD
HCL	42.17	15.82	73.58	18.76
Infosys	92.14	35.44	157.55	36.99
TCS	73.55	28.61	120.04	29.01
TECH MAHINDRA	55.49	27.46	100.85	23.78
WIPRO	25.27	12.64	36.26	7.66
ZEE	10.49	6.08	23.13	5.02
COALINDIA	19.45	11.34	28.14	5.55
HINDALCO	14.10	3.22	27.3	7.78
TATASTEEL	67.66	4.93	176.81	47.26
VEDANTA	51.87	11.7	305.4	78.62
CIPLA	14.56	9.02	18.97	3.22
DRREDDY	79.74	20.83	137.18	36.62
LUPIN	39.94	5.56	79.8	21.48
SUNPHARMA	33.45	8.7	87.8	25.64
ADANIPORTS	13.47	3.37	54.09	13.11
AIRTEL	26.13	4.29	82.95	25.09
INFRATEL	13.34	2.75	33.02	9.20
BAJAJAUTO	108.13	37	170.3	39.20
EICHER	269.99	20.12	753.37	260.58
HEROMOTOCO	121.44	48.47	186.3	41.07
M&M	50.54	26.52	79.06	17.01
MARUTI	131.91	42.5	260.88	78.47

TATAMOTOR	38.04	0.18	155.25	44.44
AXISBANK	51.31	1.86	134.53	39.97
BAJAJFINSERVE	95.76	2.3	202.3	57.58
BAJAJFINANCE	70.85	5.68	179.94	56.00
HDFC	52.76	22.67	95.4	20.30
HDFCBANK	36.64	9.2	83.33	23.54
IBULS	46.50	3.13	95.83	28.49
ICICIBANK	34.35	6.61	83.29	22.56
INDUSBANK	27.62	2.35	60.19	18.90
KOTAKBANK	25.57	9.4	39.49	8.85
SBI	82.69	-7.67	210.06	77.19
YESBANK	13.48	7.02	27.87	6.20
UPL	17.35	6.46	39.79	10.23
BPCL	43.69	10.8	66.74	17.05
GAIL	26.30	11.05	37.73	7.33
HINPETRO	39.55	5.16	81.07	18.68
IOC	29.85	17.41	66.36	13.94
NTPC	11.91	9.06	15.27	1.70
ONGC	29.12	10.03	78.09	21.95
POWERGRID	9.79	4.36	19.18	4.38
RELIANCE	82.24	60.94	110.16	17.00
ASIANPAINT	48.98	12.71	116.13	36.82
HINDUSTANLEVER	16.49	8.69	27.97	5.53
ITC	8.79	5.34	12.11	1.82
TITAN	25.06	6.77	97.57	26.54
GRASIM	189.01	26.96	300.94	104.69
ULTRATECH	84.19	61.39	98.92	9.69
LARSEN&TOUBRO	61.97	45.48	89.61	13.43

4.8 Return on assets (ROA) of the companies

Table 4.67 represents Return on Assets (ROA) of selected fifty companies for six years i.e. 2007-08 to 2012-13. As can see from the Table 4.67, Return on Assets (ROA) of HCL company stands at 55.42 and 16.12 respectively in the year 2007-08 and 2012-13 and Return on Assets (ROA) of Infosys stands at 33.77 and 21.19 in 2007-08 and 2012-13. As can be seen from the Table 4.67, Airtel is the only company whose ROA has constantly

increase from 2007-08 to 2012-13. Return on Assets of ZEE, LUPIN, Bajaj finance, Indus bank, HDFC bank, Titan and M & M companies also grows continuously during the first 3 years i.e. 2007-08 to 2009-10 and start declining from 2010-11 to 2012-13. It is also found that return on Assets (ROA) of Infosys, Sun pharma, ICICI bank, Ultratech and Larsen &Toubro has decreased at a very high rate from 2007-08 to 2012-13. Data for Infratel of 4 years i.e. 2007-08 to 2011-12 could not be generated since reports are not available during the study period. Dr Reddy, Airtel, M & M, HDFC, HDFC bank, SBI, GAIL, ONGC and Hindustan lever has almost an increase in 25% ROA from 2007-08 to 2012-13. Table 4.67 also shows that among all the selected Nifty companies, Return on Assets of Hindalco, Tata steel, Airtel, Eicher, M & M, Axis bank, Bajaj finserve, HDFC, IBULS, ICICI bank, Indus bank, Kotak bank, SBI, UPL, BPCL, Gail, Hinpetro, IOC, NTPC and Power grid is less than 10% of whole the Return on Assets from during the period of five years from 2007-08 to 2012-13. HDFC bank, Bajaj auto and Adani ports are the three top companies who have largest Return on Assets (ROA) i.e., 69.00, 66.64 and 64.40 in the year 2012-13, 2010-11 and 2008-09 while IBULS, Tata motors and SBI has the least on ROA i.e. 0.10, 0.58 and 0.68 in the year 2007-08, 2012-13 and 2010-11.

Table 4.67: Return on Assets of the companies (2007-08 to 2012-13) in percentage

Company	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
HCL	55.42	32.28	33.02	12.17	10.64	16.12
Infosys	33.77	32.80	26.91	26.14	24.40	21.19
TCS	38.40	31.53	37.10	38.45	25.20	26.63
TECH MAHINDRA	25.41	51.91	13.91	12.45	15.80	14.33
WIPRO	20.27	20.16	18.87	18.99	12.96	14.08
ZEE	11.41	12.59	16.04	20.57	13.65	14.23
COALINDIA	14.44	15.80	15.44	15.57	13.82	14.28
HINDALCO	6.11	6.73	7.66	3.92	35.09	2.51
TATASTEEL	5.25	5.42	2.66	8.71	3.37	5.01
VEDANTA	12.51	5.57	6.66	7.68	5.64	6.14
CIPLA	24.55	23.48	33.32	36.00	12.24	13.25

DRREDDY	6.68	16.33	6.59	15.36	11.49	11.32
LUPIN	12.23	12.48	13.40	14.84	10.87	14.74
SUNPHARMA	30.16	24.90	16.20	16.68	16.13	14.07
ADANIPORTS	38.08	64.40	0.82	1.04	4.25	7.71
AIRTEL	0.98	1.23	1.39	1.40	3.19	3.62
INFRATEL	0.00	0.00	0.00	0.00	0.00	1.35
BAJAJAUTO	25.12	15.75	39.15	66.64	27.28	24.71
EICHER	5.07	2.98	4.67	9.31	8.14	7.25
HEROMOTOCO	32.37	31.16	43.61	41.89	24.21	25.01
M&M	0.69	0.87	1.27	6.08	3.33	5.36
MARUTI	20.75	12.83	19.83	15.95	7.28	8.99
TATAMOTOR	9.98	5.97	5.68	17.08	2.29	0.58
AXISBANK	1.90	2.27	1.37	1.38	1.54	1.65
BAJAJFINSERVE	3.98	4.04	2.07	2.06	2.25	2.40
BAJAJFINANCE	7.38	12.56	20.41	2.90	3.14	3.32
HDFC	1.97	2.08	2.37	2.72	2.11	2.17
HDFCBANK	11.95	12.28	36.00	45.00	15.00	69.00
IBULS	0.39	0.10	0.25	0.30	0.31	0.32
ICICIBANK	1.04	0.99	0.99	1.18	1.15	1.50
INDUSBANK	1.23	1.42	1.69	2.12	1.39	1.45
KOTAKBANK	2.96	3.25	2.41	2.13	2.00	1.90
SBI	0.93	0.96	0.87	0.68	0.88	8.95
YESBANK	11.78	13.27	13.13	12.25	13.27	1.31
UPL	6.56	9.40	9.33	9.32	5.36	6.22
BPCL	4.78	1.81	4.01	4.07	1.09	2.43
GAIL	2.84	2.63	6.78	4.92	9.19	7.22
HINPETRO	3.92	1.64	3.75	3.78	1.28	1.19
IOC	8.49	3.12	10.23	6.51	1.88	2.23
NTPC	8.80	8.18	8.11	7.71	6.32	7.04
ONGC	1.99	1.59	1.44	14.76	12.12	9.56
POWERGRID	3.79	3.67	3.82	4.17	3.61	3.81
RELIANCE	15.47	7.29	7.71	8.80	6.03	5.76
ASIANPAINT	31.61	25.57	42.29	33.68	17.86	17.08
HINDUSTANLEVER	11.85	9.71	13.62	14.06	25.26	31.67
ITC	29.40	26.98	32.89	24.02	21.26	21.81
TITAN	20.92	21.34	31.22	39.29	12.79	12.34
GRASIM	10.54	10.66	12.96	8.24	7.25	6.14
ULTRATECH	20.25	15.10	15.49	7.57	9.65	9.05
LARSEN&TOUBRO	16.24	10.54	11.54	4.70	3.94	3.08

Table 4.68 represents Return on Assets (ROA) of selected fifty companies for six years i.e. 2013-14 to 2018-19. As can see from the Table 4.68, Return on Assets (ROA) of HCL company stands at 19.96 and 17.60 respectively in the year 2013-14 and 2018-19 and Return on Assets (ROA) of Infosys stands at 18.71 and 18.34 in 2013-14 and 2018-19 respectively. Table 4.68 also shows that Return on Assets (ROA) of Adani ports, Airtel, BPCL, and Power grid Company are the only company whose ROA has constantly increase from 2013-14 to 2018-19. Vedanta, Eicher, SBI, UPL, BPCL and Hinpetro companies also grows continuously during the first 3 years i.e. 2013-14 to 2016-17 and start declining in 2017-18 and 2018-19. Return on Assets (ROA) of Cipla, Lupin, Sunpharma, Infratel, Axis bank, and Ultratech companies has decreased at a very high rate from 2013-14 to 2018-19. Hindalco, Airtel, Bajaj auto, Eicher motor, M & M, Tata motor, IBULS, ICICI bank, SBI, Yes bank, UPL, Hinpetro, IOC and Reliance, companies has almost an increase in 45% of ROA from 2013-14 to 2018-19. Table 4.68 also shows that among all the selected Nifty companies, Return on Assets of Hindalco, Tata steel, Axis bank, Bajaj finserve, Bajaj finance, HDFC, IBULS, ICICI bank, Kotak bank, IOC, Powergrid, Ultratech and Larsen &Tourbo is less than 10% of the whole Return on Assets from 2013-14 to 2018-19. Bajaj auto, Coal India and Hindustan lever are the three top companies who have largest Return on Assets (ROA) i.e., 59.00, 55.98 and 32.53 in the year 2018-19, 2017-18 and 2018-19 whereas Axis bank, IBULS and SBI has the least of ROA i.e. 0.06, 0.31 and 0.39 in the year 2018-19, 2015-16 and 2016-17 respectively.

Table 4.68: Return on Assets of the companies (2013-14 to 2018-19) in percentage

Company	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
HCL	19.96	18.01	12.03	15.90	18.70	17.60
Infosys	18.71	18.67	18.29	16.89	20.49	18.34
TCS	28.54	26.95	29.64	26.69	24.23	27.74
TECH MAHINDRA	19.00	13.24	14.34	11.16	11.72	13.55
WIPRO	15.99	14.84	12.44	10.78	15.19	15.91
ZEE	16.37	14.86	11.20	21.05	12.92	13.12

COALINDIA	14.50	12.43	12.64	7.98	55.98	13.29
HINDALCO	1.56	0.60	0.72	1.97	9.27	3.07
TATASTEEL	2.09	2.47	1.35	2.73	7.00	3.90
VEDANTA	4.83	5.98	8.93	4.83	8.60	5.03
CIPLA	10.36	7.51	6.55	4.94	6.20	6.23
DRREDDY	12.25	12.56	10.27	7.19	2.94	8.20
LUPIN	17.99	18.08	9.99	9.61	0.98	2.20
SUNPHARMA	10.70	9.26	8.19	11.34	3.25	4.12
ADANIPORTS	7.05	7.21	7.40	8.95	7.81	7.18
AIRTEL	5.30	7.34	10.86	13.23	12.67	14.56
INFRATEL	6.72	10.44	3.05	1.82	0.87	0.61
BAJAJAUTO	22.08	18.95	23.56	18.85	59.00	58.00
EICHER	7.38	9.60	27.08	23.81	22.11	21.62
HEROMOTOCO	25.41	26.35	24.13	20.49	21.35	18.65
M&M	5.29	3.31	41.50	39.47	10.47	10.06
MARUTI	16.75	14.70	12.88	14.88	13.63	11.64
TATAMOTOR	6.73	9.49	4.21	4.07	11.67	11.17
AXISBANK	1.63	1.59	1.54	0.65	0.66	0.06
BAJAJFINSERVE	2.08	1.91	1.79	1.76	1.64	1.54
BAJAJFINANCE	2.92	2.74	2.72	2.88	2.92	3.22
HDFC	2.19	1.99	2.46	2.21	2.21	2.67
HDFCBANK	17.00	17.62	16.82	17.13	16.82	17.36
IBULS	0.44	0.33	0.31	2.80	2.92	3.12
ICICIBANK	1.56	1.57	1.19	1.15	8.09	4.59
INDUSBANK	16.18	16.44	16.00	16.05	16.27	11.88
KOTAKBANK	2.05	2.06	1.42	1.79	1.82	1.80
SBI	0.61	0.64	4.22	0.39	18.66	2.26
YESBANK	1.48	1.47	1.54	1.55	13.55	4.49
UPL	0.59	0.61	5.60	8.50	8.81	2.41
BPCL	4.40	5.53	9.36	8.72	8.14	6.23
GAIL	7.07	4.41	3.17	5.70	7.31	9.40
HINPETRO	2.22	4.05	6.72	10.50	8.05	6.24
IOC	2.79	2.40	5.10	7.37	7.50	5.15
NTPC	5.70	4.55	4.78	4.23	3.71	3.92
ONGC	8.22	5.23	3.82	5.80	5.82	5.98
POWERGRID	3.22	3.15	3.33	3.86	3.65	4.05
RELIANCE	5.98	5.71	5.74	5.75	4.22	9.84
ASIANPAINT	17.40	18.25	17.07	16.23	15.30	14.12
HINDUSTANLEVER	28.69	30.23	28.06	28.59	29.26	32.53
ITC	22.39	21.74	18.51	18.96	18.58	17.88
TITAN	12.14	14.02	11.06	9.12	11.59	11.96

GRASIM	4.34	3.23	6.17	8.30	1.77	1.21
ULTRATECH	6.85	5.51	6.02	6.43	3.97	3.75
LARSEN&TOUBRO	2.88	2.56	2.33	3.06	3.28	3.66

Table 4.69 shows mean of the Return on Assets (ROA) of all the selected Nifty companies for the entire period of 12 years. As can be seen from Table 4.69, Bajaj auto Company has the highest mean of 33.26 followed by TCS with mean of 30.09 and Coal India with mean of 28.43 respectively. Heromotoco and HDFC bank come on 4th and 5th place respectively with a mean value of 27.89 and 24.33. IBULS, Axis bank and Infratel were at bottom with their mean of 0.97, 1.35 and 20.7 respectively. Table 4.69 also shows that Coal India has the largest deviation from the mean with value of 38.76 followed by Lupin and Adaniport with mean of 36.20 and 17.89 whereas HDFC has the least variation from the mean with value of 0.24 followed by Powergrid with mean of 0.30 and Kotak bank with mean of 0.0.49.

Table 4.69: Descriptive Statistics of Return on Assets of the companies

Company	Mean	Min	Max	S.D
HCL	21.82	10.64	55.42	12.22
Infosys	23.05	16.89	33.77	5.53
TCS	30.09	24.23	38.45	4.92
TECH MAHINDRA	18.07	11.16	51.91	10.85
WIPRO	15.87	10.78	20.27	2.99
ZEE	14.83	11.20	21.05	3.08
COALINDIA	28.43	7.98	150.80	38.76
HINDALCO	6.60	0.60	35.09	9.01
TATASTEEL	4.16	1.35	8.71	2.09
VEDANTA	6.86	4.83	12.51	2.16
CIPLA	15.39	4.94	36.00	10.62
DRREDDY	10.10	2.94	16.33	3.74
LUPIN	21.95	0.98	140.84	36.20
SUNPHARMA	13.75	3.25	30.16	7.55
ADANIPORTS	13.49	0.82	64.40	17.89
AIRTEL	6.31	0.98	14.56	4.99
INFRATEL	2.07	0.00	10.44	3.14
BAJAJAUTO	33.26	15.75	66.64	17.17

EICHER	12.42	2.98	27.08	8.24
HEROMOTOCO	27.89	18.65	43.61	7.64
M&M	10.64	0.69	41.50	13.70
MARUTI	14.18	7.28	20.75	3.77
TATAMOTOR	7.41	0.58	17.08	4.44
AXISBANK	1.35	0.06	2.27	0.58
BAJAJFINSERVE	2.29	1.54	4.04	0.80
BAJAJFINANCE	5.59	2.72	20.41	5.27
HDFC	2.26	1.97	2.72	0.24
HDFCBANK	24.33	11.95	69.00	16.47
IBULS	0.97	0.10	3.12	1.15
ICICIBANK	2.08	0.99	8.09	2.04
INDUSBANK	8.51	1.23	16.44	7.06
KOTAKBANK	2.13	1.42	3.25	0.49
SBI	3.34	0.39	18.66	5.18
YESBANK	7.42	1.31	13.55	5.53
UPL	6.06	0.59	9.40	3.16
BPCL	5.05	1.09	9.36	2.56
GAIL	5.89	2.63	9.40	2.23
HINPETRO	4.44	1.19	10.50	2.78
IOC	5.23	1.88	10.23	2.67
NTPC	6.09	3.71	8.80	1.77
ONGC	6.36	1.44	14.76	4.00
POWERGRID	3.68	3.15	4.17	0.30
RELIANCE	7.36	4.22	15.47	2.86
ASIANPAINT	22.21	14.12	42.29	8.63
HINDUSTANLEVER	23.63	9.71	32.53	8.25
ITC	22.87	17.88	32.89	4.51
TITAN	17.31	9.12	39.29	8.93
GRASIM	6.73	1.21	12.96	3.51
ULTRATECH	9.14	3.75	20.25	4.94
LARSEN&TOUBRO	5.65	2.33	16.24	4.34

4.9   Return on Invest Capital (ROIC) of the companies

Table 4.70 represents Return on Invest Capital (ROIC) of selected Nifty 50 companies for six years i.e. 2007-08 to 2012-13. As can see from the Table 4.70, Return on Invest Capital (ROIC) of HCL company stands at 40.00 and 24.19 respectively in the year 2007-08 and 2012-13 and Return on Invest

Capital (ROIC) of Infosys stands at 38.59 and 25.16 in 2013-14 and 2012-13 respectively. As can be seen from the Table 4.70, Return on Invest Capital (ROIC) of ZEE, Coal India, Hindalco, Lupin, Airtel, M &M, Bajaj finance, HDFC, HDFC bank, Indus bank, Titan, Grasim and Larsen & Tourbo are the only company whose ROA has constantly increase during the first three years from 2007-08 to 2012-13. HCL, Hindalco, Eicher, Tata motor, Kotak bank, Yes bank, Hinpetro, ONGC, Grasim and Larsen & Tourbo companies also grows continuously during the first three years however; start declining in 2011-12 and 2012-13 respectively. Data for Infratel of 4 years i.e. 2007-08 to 2011-12 could not be generated since reports are not available during the study period. Dr. Reddy, Eicher, M & M, HDFC, SBI, GAIL, ONGC and Hindustanlever companies has almost an increase in 47% of Return on Invest Capital (ROIC) from 2007-08 to 2012-13. Table 4.70 also shows that among all the selected Nifty companies, Return on Invest Capital (ROIC) of Tata steel, Airtel, M &M, Axis bank, Bajaj finserve, HDFC, IBULS, ICICI bank, Kotak bank, SBI, UPL, Hinptero, NTPC and Powergrid is less than 10% of the whole Return on Invest Capital (ROIC) from 2007-08 to 2012-13. Return on Invest capital of Infratel for a period of four years i.e., 2007-08 to 2011-12 could not be generated due to unavailability of report during the study period. Tech Mahindra, Asian paints and TCS are the three top companies which have largest Return on Invest Capital (ROIC) i.e., 95. 20, 90.23 and 71.09 in the year 2008-09, 2010-11 and 2009-10 resprctively whereas IBUL, Bajaj finserve and M &M motors has the least on Return on Invest Capital (ROIC) i.e. 0.10, 0.24 and 0.70 in the year 2008-09, 2012-13 and 2007-08 respectively.

Table 4.70 :Return on Invested Capital the companies (2007-08 to 2012-13) in percentage

Companies	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
HCL	40.00	61.77	54.83	20.71	16.55	24.19
Infosys	38.59	36.85	29.93	29.12	29.35	25.16
TCS	58.37	49.18	71.09	56.76	33.66	34.43
TECH MAHINDRA	88.80	95.20	16.80	14.97	20.79	20.55

WIPRO	30.54	36.19	28.12	28.02	18.83	22.68
ZEE	13.02	14.08	18.57	24.83	17.04	18.15
COALINDIA	21.33	21.55	22.56	22.74	20.33	20.70
HINDALCO	7.65	8.49	10.30	5.31	28.00	3.11
TATASTEEL	7.35	7.25	3.76	11.80	4.98	7.78
VEDANTA	16.02	7.07	7.14	8.56	6.96	7.00
CIPLA	30.53	28.84	41.61	42.76	13.60	31.00
DRREDDY	9.36	26.61	9.93	24.28	19.32	19.50
LUPIN	12.51	12.87	13.72	18.00	11.16	15.13
SUNPHARMA	32.52	26.20	17.04	18.21	16.49	14.22
ADANIPORTS	44.47	69.25	0.83	1.05	4.53	8.58
AIRTEL	1.05	1.32	1.44	1.44	3.53	4.00
INFRATEL	0.00	0.00	0.00	0.00	0.00	1.37
BAJAJAUTO	38.77	24.67	13.00	28.00	46.87	36.81
EICHER	6.72	3.67	7.05	15.29	12.52	11.18
HEROMOTOCO	54.67	50.13	14.00	13.00	27.09	29.30
M&M	0.70	0.89	1.32	6.87	3.75	6.06
MARUTI	21.28	13.26	20.65	16.52	7.82	9.39
TATAMOTOR	11.17	7.17	5.77	18.45	2.65	0.64
AXISBANK	1.91	2.28	1.38	1.38	1.54	1.66
BAJAJFINSERVE	0.41	0.41	2.09	2.18	2.37	0.24
BAJAJFINANCE	11.53	24.29	33.99	3.57	3.52	4.44
HDFC	1.98	2.09	2.38	2.74	2.12	2.18
HDFCBANK	11.96	12.28	36.00	14.00	15.00	17.00
IBULS	0.40	0.10	0.25	0.30	0.31	0.32
ICICIBANK	1.05	1.00	0.99	1.19	1.15	1.50
INDUSBANK	1.23	1.42	1.69	2.13	1.40	1.45
KOTAKBANK	2.99	3.29	2.43	2.14	2.01	1.91
SBI	0.93	0.96	0.88	0.68	0.88	9.00
YESBANK	12.28	13.66	13.52	12.54	13.57	1.35
UPL	6.72	9.57	9.35	9.34	5.39	6.25
BPCL	7.61	2.61	6.41	7.83	1.36	3.00
GAIL	2.91	2.70	6.85	5.04	10.19	7.94
HINPETRO	4.01	1.70	4.00	3.95	1.45	1.34
IOC	8.71	3.21	11.42	6.93	2.08	2.42
NTPC	8.86	8.25	8.91	8.59	6.86	7.60
ONGC	2.01	1.59	1.44	14.94	12.20	9.60
POWERGRID	4.86	4.51	4.57	4.76	4.50	4.61
RELIANCE	19.01	8.79	9.46	11.41	6.37	6.16
ASIANPAINT	11.00	66.63	12.00	90.23	20.27	19.55
HINDUSTANLEVER	12.89	10.33	15.01	15.31	26.85	33.49

Company						
ITC	37.56	33.75	42.93	32.66	24.11	24.36
TITAN	23.50	24.45	40.64	49.24	16.50	16.76
GRASIM	10.54	10.66	12.96	8.24	7.25	6.14
ULTRATECH	27.24	18.70	19.00	9.49	10.35	9.90
LARSEN&TOUBRO	15.00	20.57	21.04	5.49	4.54	3.37

Table 4.71 represents Return on Invest Capital (ROIC) of selected fifty companies for six years i.e. 2013-14 to 2018-19. As can see from the Table 4.71, Return on Invest Capital (ROIC) of HCL company stands at 28.86 and 22.28 respectively in the year 2013-14 and 2018-19 and Return on Invest Capital (ROIC) of Infosys stands at 23.71 and 23.52 in 2013-14 and 2018-19. Return on Invest Capital (ROIC) of Airtel and Yes bank are the only company who's ROIC has constantly increased from 2013-14-08 to 2018-19. Lupin, Airtel, Eicher, SBI and BPCL companies also grows continuously during the first 3 years i.e. 2013-14 to 2016-17 however start declining in 2017-18 and 2018-19. Return on Invest Capital (ROIC) of Dr. Reddy, Lupin, Sun pharma and Axis bank companies has decreased at a very high rate from 2013-14 to 2018-19. Hindalco, Tata steel, Airtel, IBULS, ICICI bank, SBI, Yes bank, UPL and Hinpetro companies has almost an increase in 40% in Return on Invest Capital (ROIC) from 2013-14 to 2018-19. Table 4.71 also shows that among all the selected Nifty companies, Return on Invest Capital (ROIC) of Hindalco, Tata steel, Adani ports, Axis bank, Bajaj finserve, Bajaj finance, HDFC, IBULS, Kotak bank, Yes bank, UPL, Gail, Hinpetro, IOC, NTPC, Power grid, grasim, power grid and Larsen & Toubro is less than 10% of the whole Return on Assets from 2013-14 to 2018-19. Coal India, ICICI bank and Bajaj are the three top companies who have largest Return on Invest Capital (ROIC) i.e., 90.92, 85.57 and 53.00 in both the year 2017-18 and 2018-19 whereas Coal India, Axis bank and UPL has the least on Return on Invest Capital (ROIC) i.e. -28.11, 0.06 and 0.59 in the year 2016-17, 2018-19 and 2013-14.

Table 4.71: Return on Invested Capital of the companies (2013-14 to 2018-19) in percentage

Companies	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
HCL	28.86	25.08	16.04	21.14	22.97	22.28
Infosys	23.71	24.37	22.19	20.30	24.85	23.52
TCS	37.23	37.22	34.71	30.30	29.11	34.34
TECH MAHINDRA	26.65	18.58	19.12	14.79	15.84	19.60
WIPRO	23.31	22.27	17.85	15.20	26.28	25.44
ZEE	19.32	17.97	13.51	25.57	18.98	18.98
COALINDIA	18.94	16.73	8.00	-28.11	90.92	20.30
HINDALCO	2.02	0.81	1.07	3.26	13.94	4.67
TATASTEEL	3.34	3.47	1.85	3.84	5.21	5.23
VEDANTA	6.08	7.67	12.37	8.26	13.52	8.10
CIPLA	11.72	8.63	10.36	5.87	9.71	9.73
DRREDDY	19.17	19.84	14.91	11.71	4.24	11.11
LUPIN	18.41	18.55	10.17	11.68	1.00	2.26
SUNPHARMA	10.79	9.81	8.25	11.43	3.28	4.17
ADANIPORTS	7.57	8.05	7.58	9.17	8.53	8.79
AIRTEL	5.49	7.79	11.61	14.51	12.94	14.94
INFRATEL	7.54	11.75	3.08	1.85	0.89	0.62
BAJAJAUTO	31.96	26.34	28.09	22.14	12.00	53.00
EICHER	11.76	15.66	36.62	31.15	32.09	28.75
HEROMOTOCO	29.99	28.30	33.38	28.17	28.76	24.49
M&M	6.00	3.82	42.27	40.07	10.00	10.00
MARUTI	18.25	15.88	13.24	15.42	14.12	11.95
TATAMOTOR	7.08	10.13	4.34	4.21	11.94	11.52
AXISBANK	1.64	1.60	1.54	0.65	0.66	0.06
BAJAJFINSERVE	2.21	2.04	1.82	1.81	1.66	1.56
BAJAJFINANCE	3.52	3.19	2.77	3.00	2.97	3.26
HDFC	2.19	2.00	2.47	2.22	2.21	2.68
HDFCBANK	17.00	17.65	1.68	1.71	16.99	17.54
IBULS	0.44	0.33	0.31	2.85	2.93	3.13
ICICIBANK	1.57	1.57	1.20	1.16	85.57	48.84
INDUSBANK	16.46	16.76	16.33	16.43	16.77	12.30
KOTAKBANK	2.06	2.07	1.43	1.79	1.82	1.80
SBI	0.61	0.64	4.25	0.39	19.61	2.27
YESBANK	1.51	1.50	1.55	1.56	13.60	4.51
UPL	0.59	0.61	5.79	8.68	9.11	2.47
BPCL	5.37	7.36	9.78	9.06	8.43	6.45
GAIL	7.70	4.88	3.24	5.81	7.40	9.48
HINPETRO	2.36	4.87	5.66	8.34	8.39	6.46
IOC	3.04	2.69	5.35	7.78	7.82	5.35

NTPC	6.14	5.01	4.79	4.25	4.04	4.29
ONGC	8.27	10.00	3.85	5.84	5.86	6.02
POWERGRID	3.64	3.60	3.40	3.91	3.69	4.11
RELIANCE	6.27	6.45	5.86	5.98	4.46	10.38
ASIANPAINT	20.22	21.15	18.82	17.72	15.62	14.27
HINDUSTANLEVER	30.85	32.37	29.36	29.85	30.66	33.53
ITC	24.71	23.77	19.86	20.20	20.01	19.17
TITAN	16.26	14.80	12.79	10.56	13.66	14.26
GRASIM	4.34	3.23	6.17	8.30	1.77	1.21
ULTRATECH	7.31	6.23	6.52	6.98	4.17	3.96
LARSEN&TOUBRO	3.24	2.92	2.67	3.44	3.69	4.12

Table 4.72 shows mean of the Return on Invest Capital (ROIC) of all the selected Nifty companies for the entire period of 12 years. As can be seen from Table 4.72, TCS Company has the highest mean of 42.20 followed by Tech Mahindra with mean of 30.98 and Hero motoco with a mean of 30.11. HCL and Asian paints came on 4th and 5th with a mean of 29.53 and 27.29. IBULS, Kotak bank and HDFC Company were at bottom with mean of 0.97, 2.15 and 2.27 respectively. Table 4.72 also shows that Tech Mahindra has the largest standard deviation from the mean with value of 27.50 followed by Coal India and Tata steel with value of 24.99 and 24.92 respectively. HDFC has the least variation with value of 0.24 followed by Powergrid with value of 0.49 and Kotak bank with value of 0.50.

Table 4.72: Descriptive Statistics of Return on invested capital (ROIC) of the companies

Companies	Mean	Min	Max	S.D
HCL	29.53	16.04	61.77	14.24
Infosys	27.33	20.30	38.59	5.44
TCS	42.20	29.11	71.09	12.81
TECH MAHINDRA	30.98	14.79	95.20	27.50
WIPRO	24.56	15.20	36.19	5.59
ZEE	18.34	13.02	25.57	3.74
COALINDIA	21.33	-28.11	90.92	24.99
HINDALCO	7.39	0.81	28.00	7.28
TATASTEEL	12.99	1.85	95.21	24.92

VEDANTA	9.06	6.08	16.02	3.00
CIPLA	20.36	5.87	42.76	13.03
DRREDDY	15.83	4.24	26.61	6.40
LUPIN	12.12	1.00	18.55	5.43
SUNPHARMA	14.37	3.28	32.52	8.18
ADANIPORTS	14.87	0.83	69.25	19.64
AIRTEL	6.67	1.05	14.94	5.23
INFRATEL	2.26	0.00	11.75	3.53
BAJAJAUTO	30.14	12.00	53.00	11.78
EICHER	17.70	3.67	36.62	10.85
HEROMOTOCO	30.11	13.00	54.67	11.61
M&M	10.98	0.70	42.27	13.84
MARUTI	14.82	7.82	21.28	3.92
TATAMOTOR	7.92	0.64	18.45	4.73
AXISBANK	1.36	0.06	2.28	0.59
BAJAJFINSERVE	1.57	0.24	2.37	0.74
BAJAJFINANCE	8.34	2.77	33.99	9.78
HDFC	2.27	1.98	2.74	0.24
HDFCBANK	14.90	1.68	36.00	8.36
IBULS	0.97	0.10	3.13	1.16
ICICIBANK	12.23	0.99	85.57	25.70
INDUSBANK	8.70	1.23	16.77	7.24
KOTAKBANK	2.15	1.43	3.29	0.50
SBI	3.43	0.39	19.61	5.42
YESBANK	7.59	1.35	13.66	5.67
UPL	6.16	0.59	9.57	3.21
BPCL	6.27	1.36	9.78	2.57
GAIL	6.18	2.70	10.19	2.40
HINPETRO	4.38	1.34	8.39	2.37
IOC	5.57	2.08	11.42	2.86
NTPC	6.47	4.04	8.91	1.86
ONGC	6.80	1.44	14.94	4.14
POWERGRID	4.18	3.40	4.86	0.49
RELIANCE	8.38	4.46	19.01	3.79
ASIANPAINT	27.29	11.00	90.23	23.58
HINDUSTANLEVER	25.04	10.33	33.53	8.50
ITC	26.92	19.17	42.93	7.54
TITAN	21.12	10.56	49.24	11.46
GRASIM	6.73	1.21	12.96	3.51
ULTRATECH	10.82	3.96	27.24	6.83
LARSEN&TOUBRO	7.51	2.67	21.04	6.74

4.10   Return on Net Worth (RONW) of the companies

Table 4.73 represents Return on Net Worth (RONW) of selected fifty companies for six years i.e. 2007-08 to 2012-13. As can see from the Table 4.73, Return on Net Worth (RONW) of HCL company stands at 24.29 and 36.20 respectively in the year 2007-08 and 2012-13 and Return on Net Worth (RONW) of Infosys stands at 33.13 and 25.28 in 2007-08 and 2012-13 respectively. Return on Net Worth (RONW) of Coal India, Dr. Reddy, Adani ports, Hero motoco, Bajaj finance, HDFC bank, SBI, Yes bank, UPL, NTPC, Power grid, ITC and Titan has increased during the first three years from 2007-08 to 2009-10. However, Return on Net Worth (RONW) of Hindalco, Tata Steel, Vedanta, Airtel, Bajaj auto, Hero motoco, TATA motor, Bajaj finserve, HDFC, IOC, and Larsen &Tourbo has decrease during the next three years from 2010-11 to 2012-13. Data for Infratel of 4 years i.e. 2007-08 to 2011-12 could not be generated since reports are not available during the study period. ZEE, Coal India, Dr. Reddy, Adani ports, Eicher, Bajaj Finance, ICICI bank, NTPC, ONGC, Asian paints, Hindustan lever, Titan and Dr. Reddy companies has almost an increase in 50% of Return on Net Worth (RONW) from 2007-08 to 2012-13. Table 4.73 also shows that among all the selected Nifty companies, Return on Net Worth (RONW) of Bajaj finserve, UPL, Hinpetro, IOC, NTPC, ONGC, Power grid and Titan is less than 15% of the whole Return on Net Worth (RONW) from 2007-08 to 2012-13. Eicher company has negative return on net worth of the company in 2008-09. Hindalco, Bajaj auto and Heromotoco are the three top companies who have largest Return on Invest Capital (ROIC) i.e., 86.70, 71.86 and 65.21 in the year 2010-11,while Eicher, Power grid and NTPC has the least on Return on Invest Capital (ROIC) i.e. -1.10, 0.34 and 0.90 in the year 2007-08.

Table 4.73:Return on Net worth the companies (2007-08 to 2012-13)in percentage

Companies	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
HCL	24.29	28.59	21.40	20.45	29.53	36.20
Infosys	33.13	32.66	26.33	26.29	28.46	25.28
TCS	41.19	33.69	38.11	37.15	35.32	36.10
TECH MAHINDRA	26.00	52.21	24.26	27.04	23.73	32.99
WIPRO	23.15	24.73	23.34	19.30	16.43	16.69
ZEE	8.58	13.21	19.81	19.85	16.35	19.10
COALINDIA	18.35	21.62	22.15	26.35	41.22	47.73
HINDALCO	23.21	21.12	85.25	86.70	76.62	14.20
TATASTEEL	21.47	21.46	13.57	14.62	12.72	9.17
VEDANTA	53.54	42.99	29.38	29.62	13.00	0.92
CIPLA	18.72	17.89	18.31	14.54	14.90	17.00
DRREDDY	9.84	10.66	14.30	14.84	13.58	16.25
LUPIN	33.62	30.31	25.60	25.69	21.53	26.00
SUNPHARMA	24.10	24.78	15.71	20.71	21.54	6.63
ADANIPORTS	8.17	15.67	20.11	22.98	22.55	26.17
AIRTEL	30.39	28.13	25.79	17.49	11.59	9.41
INFRATEL						5.71
BAJAJAUTO	46.16	29.55	58.60	71.86	50.07	38.84
EICHER	5.67	-1.10	15.33	20.67	18.47	19.16
HEROMOTOCO	32.41	33.72	64.41	65.21	55.43	43.21
M&M	25.43	16.07	26.72	26.46	24.08	22.88
MARUTI	20.56	13.04	21.10	16.50	10.76	12.87
TATAMOTOR	25.96	8.21	15.15	9.06	6.33	1.57
AXISBANK	16.25	15.28	16.28	17.67	18.59	15.64
BAJAJFINSERVE	3.72	3.34	3.41	12.96	5.13	2.04
BAJAJFINANCE	1.93	3.11	7.15	18.18	19.98	17.56
HDFC	20.39	17.47	18.69	20.41	21.67	19.52
HDFCBANK	10.23	12.96	13.25	15.47	17.26	18.57
IBULS	20.92	17.83	6.64	5.18	26.17	24.86
ICICIBANK	9.36	10.58	10.23	11.01	12.47	13.96
INDUSBANK	16.12	18.23	15.23	15.09	17.17	14.30
KOTAKBANK	9.36	11.25	10.23	11.97	13.59	14.37
SBI	9.36	10.69	11.36	11.34	13.94	14.26
YESBANK	15.25	20.70	23.70	19.00	25.00	24.80
UPL	5.39	8.12	9.43	6.97	6.47	6.19
BPCL	13.35	6.06	11.74	11.00	8.79	15.88
GAIL	20.14	20.00	18.98	18.69	18.49	16.89
HINPETRO	2.84	1.44	3.26	3.86	2.28	2.27

IOC	5.84	2.47	4.21	3.07	1.63	2.06
NTPC	0.90	0.99	1.06	1.10	1.12	1.53
ONGC	0.95	9.43	6.28	5.34	6.58	5.66
POWERGRID	0.34	0.40	0.48	0.58	0.70	0.91
RELIANCE	13.39	9.73	4.96	6.20	6.62	7.11
ASIANPAINT	4.46	4.37	9.22	9.19	10.64	12.09
HINDUSTANLEVER	8.79	11.49	9.88	10.63	12.91	17.71
ITC	10.00	10.57	12.88	5.23	7.88	9.39
TITAN	3.39	3.58	5.64	9.70	6.76	8.17
GRASIM	27.43	17.39	29.31	14.52	12.93	12.11
ULTRATECH	37.37	23.13	23.73	13.16	19.02	17.43
LARSEN&TOUBRO	28.21	24.67	31.23	19.38	17.26	16.47

Table 4.74 represents Return on Net Worth (RONW) of selected Nifty companies for six years i.e. 2013-14 to 2018-19. As can see from the Table 4.74, Return on Net Worth (RONW) of HCL company stands at 38.00 and 24.66 respectively in the year 2013-14 and 2018-19 and Return on Net Worth (RONW) of Infosys stands at 24.21 and 23.44 in 2013-14 and 2018-19. Return on Net Worth (RONW) of Power grid is the only company who's RONW has constantly increased from 2013-14-08 to 2018-19. Table 4.74 reveals that Vedanta in the year 2015-16, Sunpharma in 2013-14 to 2016-17, Airtel in 2015-16 and 2018-19, Tata motor from in 2014-15 to 2017-18 and SBI in the year 2017-18 shows negative Return on Net Worth (RONW). Return on Net Worth (RONW) of Wipro, Maruti, Bajaj finserve, UPL, BPCL, Reliance and Asian paints companies grows continuously during the first 3 years i.e. 2013-14 to 2016-17 and start declining in 2017-18 and 2018-19. Return on Net Worth (RONW) Lupin, ICICI bank, Yes bank, ONGC, Grasim and Ultratech companies has decreased at moderate rate from 2013-14 to 2018-19. Hindalco, Vedanta, Infratel, Tata motors, Bajaj finserve, NTPC and Powergrid companies has almost an increase in 40% of Return on Net Worth (RONW)from 2013-14 to 2018-19.Table 4.73 also shows that among all the selected Nifty companies, Return on Net Worth (RONW) of Sunpharma, Airtel, Tata motors, Bajaj finserve, SBI, IOC, NTPC, ONGC, Power grid, Reliance, Titan and Grasim is less than 10% of the whole Return on Net

Worth (RONW) from 2013-14 to 2018-19. Coal India, Hindalco and ZEE are the three top companies who have largest Return on Net Worth (RONW)i.e.,104.17, 78.80 and 39.58 in 2016-17, 2018-19 and 2013-14 respectively whereas Sun pharma, Tata motors and Vedanta has the least on Return on Net Worth (RONW) i.e. -38.18, -31.93 and -15.04 in the year 2013-14, 2014-15 and 2015-16.

Table 4.74: Return on Return on Net worth of the companies (2013-14 to 2018-19) in percentage

Companies	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
HCL	38.00	32.70	20.45	26.11	23.96	24.46
Infosys	24.21	25.30	20.78	20.31	25.44	23.44
TCS	38.95	39.20	34.14	30.49	30.33	35.18
TECH MAHINDRA	21.45	18.04	20.46	21.21	20.16	21.18
WIPRO	15.95	17.57	19.30	16.43	16.69	15.95
ZEE	39.58	32.38	17.13	33.20	19.56	17.56
COALINDIA	91.26	79.97	103.41	104.17	73.20	74.79
HINDALCO	11.80	11.50	65.88	69.18	74.02	78.80
TATASTEEL	10.48	9.65	6.95	6.93	6.77	14.95
VEDANTA	3.19	5.65	-15.04	15.00	15.00	12.00
CIPLA	13.76	10.65	12.20	7.61	10.40	11.96
DRREDDY	20.71	15.79	11.67	11.93	4.80	10.07
LUPIN	33.30	26.55	5.60	4.41	2.11	1.95
SUNPHARMA	-38.18	-6.48	-4.99	-0.10	1.36	3.57
ADANIPORTS	21.60	19.41	21.85	18.56	13.29	12.97
AIRTEL	9.89	16.89	6.69	-9.80	0.07	-1.90
INFRATEL	6.14	15.17	7.01	16.65	13.61	17.74
BAJAJAUTO	33.24	27.60	28.96	22.84	20.65	21.20
EICHER	24.50	24.00	36.62	31.18	27.87	24.69
HEROMOTOCO	36.90	36.15	35.56	34.74	31.07	26.24
M&M	22.39	17.25	14.29	13.60	14.37	14.01
MARUTI	13.26	16.50	17.95	20.17	18.49	16.25
TATAMOTOR	1.74	-31.93	-0.26	-11.48	-5.13	9.11
AXISBANK	16.26	16.46	15.46	6.59	0.03	7.01
BAJAJFINSERVE	3.38	4.91	6.05	2.53	4.91	9.71
BAJAJFINANCE	18.01	18.70	17.21	19.13	16.02	19.88
HDFC	19.46	19.34	20.78	18.77	16.79	12.45
HDFCBANK	19.50	16.47	16.91	16.26	16.45	14.12

IBULS	27.61	30.47	21.84	23.94	27.60	21.60
ICICIBANK	14.44	14.45	11.19	10.11	6.63	3.19
INDUSBANK	16.28	17.49	13.20	14.14	15.35	12.52
KOTAKBANK	12.23	13.19	8.72	12.35	10.89	11.47
SBI	9.20	10.20	6.89	6.69	-3.37	0.39
YESBANK	25.90	19.00	19.90	21.50	17.70	6.50
UPL	12.56	13.14	17.57	3.19	6.87	5.08
BPCL	20.86	22.63	27.36	27.09	23.36	13.41
GAIL	16.16	10.43	7.15	9.80	11.45	13.66
HINPETRO	5.11	8.06	10.99	6.11	5.36	6.23
IOC	2.89	2.17	4.74	4.03	3.12	2.36
NTPC	1.33	1.25	1.31	1.14	1.36	2.36
ONGC	6.23	4.13	3.06	3.35	2.63	4.36
POWERGRID	0.86	0.95	1.14	1.44	1.69	2.22
RELIANCE	6.80	7.02	8.59	9.67	8.25	8.69
ASIANPAINT	12.19	13.84	18.79	21.02	16.36	18.59
HINDUSTANLEVER	18.24	20.17	19.22	20.79	15.23	12.36
ITC	11.05	11.99	11.51	8.46	6.33	7.12
TITAN	8.35	9.27	7.86	8.58	7.25	9.45
GRASIM	8.27	4.73	5.61	7.85	3.97	1.22
ULTRATECH	12.65	10.68	10.95	0.17	8.95	9.12
LARSEN&TOUBRO	13.71	12.13	9.91	12.80	14.12	15.35

Table 4.75 shows mean of the Return on Net Worth (RONW) of all the selected Nifty companies for the entire period of 12 years. As can be seen from Table 4.75, Coal India Company has the highest mean of 58.69 followed by Hindalco with mean of 51.52 and Hero motoco with a mean of 41.25. Bajaj auto and TCS came 4th and 5th respectively with a mean value of 37.46 and 35.82. Power grid, NTPC and Tata motors Company were at bottom with mean of 0.98, 1.29 and 2.36 respectively. Table 4.75 also shows that Coal India has the largest deviation from the mean with value of 31.44 followed by Hindalco and Vedanta with value of 30.37 and 18.20 respectively. NTPC has the least variation from the mean followed by Power grid and IOC with value 0.36, 0.54 and 1.20 respectively.

Table 4.75: descriptive Statistics of Return on Net worth of the companies

Companies	Mean	Min	Max	S.D
HCL	27.18	20.45	38.00	5.68
Infosys	25.97	20.31	33.13	3.79
TCS	35.82	30.33	41.19	3.21
TECH MAHINDRA	25.73	18.04	52.21	8.85
WIPRO	18.79	15.95	24.73	3.07
ZEE	21.36	8.58	39.58	8.63
COALINDIA	58.69	18.35	104.17	31.44
HINDALCO	51.52	11.50	86.70	30.37
TATASTEEL	12.40	6.77	21.47	4.92
VEDANTA	17.10	-15.04	53.54	18.20
CIPLA	14.00	7.61	18.72	3.40
DRREDDY	12.87	4.80	20.71	3.84
LUPIN	19.72	1.95	33.62	11.93
SUNPHARMA	5.72	-38.18	24.78	17.14
ADANIPORTS	18.61	8.17	26.17	4.93
AIRTEL	12.05	-9.80	30.39	11.88
INFRATEL	11.72	5.71	17.74	4.86
BAJAJAUTO	37.46	20.65	71.86	15.48
EICHER	20.59	-1.10	36.62	9.97
HEROMOTOCO	41.25	26.24	65.21	12.58
M&M	19.80	13.60	26.72	5.09
MARUTI	16.45	10.76	21.10	3.24
TATAMOTOR	2.36	-31.93	25.96	13.82
AXISBANK	13.46	0.03	18.59	5.46
BAJAJFINSERVE	5.17	2.04	12.96	3.04
BAJAJFINANCE	14.74	1.93	19.98	6.35
HDFC	18.81	12.45	21.67	2.32
HDFCBANK	15.62	10.23	19.50	2.48
IBULS	21.22	5.18	30.47	7.61
ICICIBANK	10.64	3.19	14.45	3.13
INDUSBANK	15.43	12.52	18.23	1.65
KOTAKBANK	11.64	8.72	14.37	1.61
SBI	8.41	-3.37	14.26	5.00
YESBANK	19.91	6.50	25.90	5.09
UPL	8.42	3.19	17.57	3.93
BPCL	16.79	6.06	27.36	6.92
GAIL	15.15	7.15	20.14	4.30
HINPETRO	4.82	1.44	10.99	2.65
IOC	3.22	1.63	5.84	1.20

NTPC	1.29	0.90	2.36	0.36
ONGC	4.83	0.95	9.43	2.14
POWERGRID	0.98	0.34	2.22	0.54
RELIANCE	8.09	4.96	13.39	2.10
ASIANPAINT	12.56	4.37	21.02	5.18
HINDUSTANLEVER	14.79	8.79	20.79	4.11
ITC	9.37	5.23	12.88	2.29
TITAN	7.33	3.39	9.70	2.05
GRASIM	12.11	1.22	29.31	8.56
ULTRATECH	15.53	0.17	37.37	9.11
LARSEN&TOUBRO	17.94	9.91	31.23	6.43

4.11 Price earnings ratio (PE Ratio) of the companies

In Table 4.76, the year-end earning per share of the companies of the fifty companies for six years i.e. 2007-08 to 2012-13 are given. From the Table 4.76, it can be observed that the earning per share of HCL stands at 4, Infosys at 60.6, TCS at 7.28, Tech Mahindra at 6.83 and Wipro at 5.38 in the year 2007-08. Among the IT companies, price to earnings ratio of TCS is much higher than all the other IT Company in the year 2007-08. Among metal sector, price to earnings ratio of Coal India is much higher than all the other three companies with value of 8.87 in the year 2007-08. There are only one company from Media Sector i.e., Zee Company, Adaniport from Service sector, UPL company from Fertilizer sector and Larsen & Toubro from Construction sector. Finance sector contributes a total of eleven companies. As can be seen from the Table 4.76, the highest price to earnings ratio of the Nifty companies is obtained by Titan with value of 31.25 followed by HDFC bank and ZEE with value of 28.80 and 27.70 in the year 2007-08 whereas price to earnings ratio of IBULS, Eicher motor and ICICI bank has obtained the least in the same period i.e., 2007-08. Data for Infratel of five years i.e. 2007-08 to 2012-13 could not be generated since reports are not available during the study period. Table 4.76 also shows that among the Nifty companies Hindalco, Tata

steel, Lupin, Sunpharma, Airtel, Eicher, Bajaj finserve, Kotak bank, Yes bank, Hinpetro and Asian paint has almost increase in 46% of price to price to earnings from 2007-08 to 2012-13 whereas Tech Mahindra, Vendanta, Adaniports, M & M, Maruti, Axis bank, HDFC Bank, SBI, UPL, and Larsen & Toubro has almost 52% of decrease in price to earnings ratio from 2012-13 to 2007-08.

Table 4.76: Price-Earnings ratio of the companies (2007-08 to 2012-13)in percentage

Companies	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
HCL	4.00	2.52	3.94	4.44	3.36	4.11
Infosys	6.06	4.25	6.81	5.25	7.58	5.53
TCS	7.28	3.96	10.18	11.88	9.23	9.48
TECH MAHINDRA	6.83	1.66	3.62	2.54	2.77	2.50
WIPRO	5.38	2.87	5.87	5.51	4.43	4.44
ZEE	27.70	9.00	18.90	19.00	20.09	27.90
COALINDIA	8.87	5.52	2.68	12.31	11.08	9.52
HINDALCO	3.45	4.12	3.50	16.80	18.70	11.10
TATASTEEL	3.92	3.12	5.36	8.20	6.93	6.21
VEDANTA	3.45	1.76	5.43	2.18	1.31	1.04
CIPLA	4.56	3.93	4.59	3.90	3.24	3.44
DRREDDY	2.07	1.56	3.64	5.23	4.43	3.56
LUPIN	3.08	4.15	5.71	5.88	6.33	5.81
SUNPHARMA	6.06	4.47	6.48	6.85	7.94	10.88
ADANIPORTS	8.90	4.40	9.08	6.37	4.98	4.15
AIRTEL	15.96	17.85	18.23	25.68	21.23	31.89
INFRATEL						1.89
BAJAJAUTO	4.94	10.71	8.89	7.98	6.55	5.29
EICHER	0.60	0.78	2.69	2.67	4.47	6.55
HEROMOTOCO	4.62	5.62	11.20	10.72	9.57	6.15
M&M	8.90	11.00	14.70	4.08	3.43	3.47
MARUTI	13.40	18.40	15.70	2.63	2.57	2.08
TATAMOTOR	3.08	0.75	2.92	3.98	4.46	4.50
AXISBANK	1.25	3.36	2.05	3.05	0.02	0.02
BAJAJFINSERVE	0.00	2.02	3.97	5.46	6.12	5.08
BAJAJFINANCE	1.14	0.23	1.01	1.84	1.56	1.86
HDFC	5.67	3.60	5.12	5.93	5.23	5.14
HDFCBANK	28.80	14.42	28.62	27.59	23.51	4.10

IBULS	0.40	0.17	0.12	0.14	0.20	0.33
ICICIBANK	1.02	2.56	3.12	2.32	1.68	1.75
INDUSBANK	2.36	3.25	1.23	3.42	2.80	3.03
KOTAKBANK	2.96	2.23	3.69	4.93	5.03	5.14
SBI	2.36	1.12	2.65	2.70	1.67	1.43
YESBANK	1.05	1.58	2.23	2.66	2.65	2.09
UPL	3.38	2.36	3.42	3.08	1.71	1.54
BPCL	1.27	1.22	1.43	1.57	1.70	1.64
GAIL	10.25	15.25	13.23	14.64	10.74	9.23
HINPETRO	8.23	11.69	10.25	7.09	58.68	19.26
IOC	12.58	11.25	9.23	10.32	15.09	15.34
NTPC	13.25	10.25	16.12	17.03	13.68	9.30
ONGC	9.23	8.23	9.25	11.10	8.16	11.00
POWERGRID	11.66	18.25	15.23	17.66	15.16	11.36
RELIANCE	14.85	16.23	17.12	18.81	13.15	12.63
ASIANPAINT	22.14	26.25	25.23	28.76	31.45	42.34
HINDUSTANLEVER	20.14	18.25	25.23	27.00	31.76	26.37
ITC	22.36	25.02	28.08	28.36	32.14	27.03
TITAN	31.25	26.23	32.10	39.02	33.75	31.39
GRASIM	2.90	1.53	3.62	2.77	2.65	2.55
ULTRATECH	3.60	1.91	3.12	2.91	2.31	3.36
LARSEN&TOUBRO	8.18	2.82	4.68	4.02	2.73	2.48

Table 4.77 represents price to earnings ratio of selected fifty companies for six years i.e. 2013-14 to 2018-19. As can see from the Table 4.77, price to earnings ratio of HCL company stands at 5.36 and 4.36 respectively in the year 2013-14 and 2018-19 and Infosys stands at 4.46 and 5.16 in 2013-14 and 2018-19 respectively. Table 4.77 also shows that PE ratio of Bajaj finserve and Bajaj finance are the only company whose ratios has constantly increase from 2013-14 to 2018-19. ZEE, LUPIN, Airtel, Gail, Hindustanlever, Titan, and Larsen & Toubro also grows continuously during the first 3 years i.e. 2013-14 to 2016-17 and start declining in 2017-18 and 2018-19. PE ratio of Cipla, Lupin, Sunpharma, Infratel, Axis bank, and Ultratech companies has decreased at a very high rate from 2013-14 to 2018-19. Vedanta, Sunpharma, Eicher motor, Heromotoco, Tata motor, SBI, Hinpetro, and Grasim companies has almost decrease in 50% of PE ratio from

2013-14 to 2018-19. Titan, Asian paint and Hindustanlever are the three top companies who have largest PE ratio whereas Axis bank, Vedanta and Yes bank are the three companies whose PE ratio is at bottom.

Table 4.77: Price-earnings ratio of the companies (2013-14 to 2018-19) in percentage

Companies	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
HCL	5.36	5.35	4.88	4.86	4.02	4.36
Infosys	4.46	5.29	4.58	3.45	3.90	5.16
TCS	9.46	10.98	1.58	2.20	1.86	3.86
TECH MAHINDRA	4.56	4.94	2.84	2.45	2.99	3.40
WIPRO	4.56	4.48	5.36	8.39	14.83	21.40
ZEE	29.20	39.04	45.10	23.10	37.40	27.30
COALINDIA	11.06	13.68	11.49	13.06	13.86	10.43
HINDALCO	17.60	28.83	13.74	25.80	33.28	37.99
TATASTEEL	6.13	4.19	8.00	14.33	4.52	5.90
VEDANTA	1.65	1.65	0.03	1.28	1.31	0.88
CIPLA	3.06	5.15	3.43	3.73	3.10	2.70
DRREDDY	4.48	5.59	4.46	3.67	2.93	3.63
LUPIN	6.01	9.99	23.76	21.25	8.51	8.98
SUNPHARMA	16.03	9.31	9.18	7.85	5.32	5.03
ADANIPORTS	4.16	5.69	3.78	4.21	4.23	3.85
AIRTEL	25.37	30.25	33.10	32.22	22.13	21.22
INFRATEL	2.17	4.23	3.83	3.71	3.51	3.70
BAJAJAUTO	5.26	3.21	5.25	4.77	4.16	3.80
EICHER	16.27	12.00	14.23	13.01	10.99	6.28
HEROMOTOCO	8.11	8.07	7.40	6.37	19.02	3.97
M&M	3.45	3.65	3.20	2.85	2.91	2.34
MARUTI	2.84	4.71	3.76	4.99	6.41	4.37
TATAMOTOR	6.69	11.93	5.67	7.48	5.51	2.67
AXISBANK	0.02	0.02	0.02	0.01	0.01	0.00
BAJAJFINSERVE	5.10	8.64	10.06	23.52	28.62	35.42
BAJAJFINANCE	2.12	4.27	5.00	6.69	6.16	8.92
HDFC	4.93	6.67	5.12	6.02	4.68	4.38
HDFCBANK	4.13	4.13	3.73	4.13	4.26	4.23
IBULS	1.44	3.05	2.59	3.56	4.09	2.12
ICICIBANK	1.88	2.16	1.51	1.59	1.66	2.31
INDUSBANK	3.19	4.82	3.32	4.16	4.59	4.07
KOTAKBANK	4.88	7.17	5.21	5.81	5.33	6.01

SBI	12.21	1.50	1.05	1.49	1.15	1.30
YESBANK	1.08	2.90	2.64	3.21	2.73	2.37
UPL	2.39	5.38	5.10	4.48	4.66	6.12
BPCL	1.71	2.61	2.40	2.87	2.47	2.12
GAIL	9.97	15.57	24.19	18.93	14.23	16.21
HINPETRO	9.71	14.68	5.71	6.48	5.12	3.68
IOC	9.65	18.22	7.95	9.47	6.25	10.23
NTPC	8.67	12.12	9.84	12.77	13.27	13.12
ONGC	10.29	14.30	14.23	9.72	11.96	12.36
POWERGRID	12.08	15.06	12.21	13.85	11.58	12.36
RELIANCE	14.13	11.98	12.03	15.18	11.36	12.36
ASIANPAINT	43.12	55.78	47.43	53.09	12.36	43.36
HINDUSTANLEVER	33.19	43.32	45.33	44.09	36.36	45.12
ITC	31.56	27.06	28.27	33.09	25.36	32.14
TITAN	31.70	42.64	44.59	57.74	36.69	44.15
GRASIM	2.45	2.98	2.90	3.02	1.55	1.35
ULTRATECH	3.51	4.18	4.09	4.57	4.18	3.94
LARSEN&TOUBRO	3.13	3.91	4.27	6.79	4.75	5.05

Table 4.78 shows descriptive statistics of PE ratio of the selected Nifty companies for the entire period of 12 years. As can be seen from Table 4.78, Titan has the highest mean of 37.60 followed by Asian paint and Hindustanlever with mean of 35.94 and 33.01 respectively. ITC and ZEE Company came 4th and 5th with mean value of 28.37 and 26.98. Axis bank, IBULS and Vedanta Company were at bottom with mean of 0.82, 1.52 and 1.83 respectively. Table 4.78 also shows that Hinpetro has the largest deviation from the mean with value of 14.29 followed by Asian paint and Hindalco with value of 12.89 and 11.16 respectively. BPCL has least variation from the mean followed by Grasim and Cipla with value 0.53, 0.67 and 0.70 respectively.

Table 4.78: Descriptive Statistics of Price earnings ratio of the companies

Companies	Mean	Min	Max	S.D
HCL	4.27	2.52	5.36	0.78
Infosys	5.19	3.45	7.58	1.14
TCS	6.83	1.58	11.88	3.70
TECH MAHINDRA	3.43	1.66	6.83	1.35
WIPRO	7.29	2.87	21.40	5.17
ZEE	26.98	9.00	45.10	9.59
COALINDIA	10.30	2.68	13.86	3.19
HINDALCO	17.91	3.45	37.99	11.16
TATASTEEL	6.40	3.12	14.33	2.82
VEDANTA	1.83	0.03	5.43	1.33
CIPLA	3.74	2.70	5.15	0.70
DRREDDY	3.77	1.56	5.59	1.13
LUPIN	9.12	3.08	23.76	6.29
SUNPHARMA	7.95	4.47	16.03	3.05
ADANIPORTS	5.32	3.78	9.08	1.80
AIRTEL	24.59	15.96	33.10	5.82
INFRATEL	3.29	1.89	4.23	0.83
BAJAJAUTO	5.90	3.21	10.71	2.14
EICHER	7.55	0.60	16.27	5.29
HEROMOTOCO	8.40	3.97	19.02	3.87
M&M	5.33	2.34	14.70	3.80
MARUTI	6.82	2.08	18.40	5.43
TATAMOTOR	4.97	0.75	11.93	2.75
AXISBANK	0.82	0.00	3.36	1.24
BAJAJFINSERVE	11.17	0.00	35.42	10.97
BAJAJFINANCE	3.40	0.23	8.92	2.63
HDFC	5.21	3.60	6.67	0.77
HDFCBANK	12.64	3.73	28.80	10.69
IBULS	1.52	0.12	4.09	1.44
ICICIBANK	1.96	1.02	3.12	0.54
INDUSBANK	3.35	1.23	4.82	0.95
KOTAKBANK	4.87	2.23	7.17	1.29
SBI	2.55	1.05	12.21	2.96
YESBANK	2.27	1.05	3.21	0.67
UPL	3.64	1.54	6.12	1.44
BPCL	1.92	1.22	2.87	0.53
GAIL	14.37	9.23	24.19	4.08
HINPETRO	13.38	3.68	58.68	14.29
IOC	11.30	6.25	18.22	3.28

NTPC	12.45	8.67	17.03	2.48
ONGC	10.82	8.16	14.30	2.00
POWERGRID	13.87	11.36	18.25	2.29
RELIANCE	14.15	11.36	18.81	2.23
ASIANPAINT	35.94	12.36	55.78	12.89
HINDUSTANLEVER	33.01	18.25	45.33	9.42
ITC	28.37	22.36	33.09	3.17
TITAN	37.60	26.23	57.74	8.23
GRASIM	2.52	1.35	3.62	0.67
ULTRATECH	3.47	1.91	4.57	0.77
LARSEN&TOUBRO	4.40	2.48	8.18	1.62

4.12   Dividend per share (DPS) of the companies

In Table 4.79, the year-end Dividend per share of the companies of the fifty companies for six years i.e. 2007-08 to 2012-13 are given. From the Table 4.79, it can be observed that the dividend per share of HCL stands at 12, Infosys at 33.25, TCS at 14, Tech Mahindra at 13.22 and Wipro at 6.00 in the year 2007-08. Among the IT companies, Dividend per share of Infosys is much higher than all the other IT Company in the year 2007-08. Among metal sector, dividend per share of Tata steel is much higher than all the other three companies with value of 16.00 in the year 2007-08. There are only one company from Media Sector i.e., Zee Company, Adaniport from Service sector, UPL company from Fertilizer sector and Larsen & Toubro from Construction sector. Finance sector contributes a total of eleven companies. As can be seen from the Table 4.79, the highest dividend per share of the Nifty companies is obtained by Tech Mahindra with value of 52.21 in the year 2009-10 followed by Asian paint and SBI with value of 46.00 and 41.50 in the year 2018-19. Data for Infratel of four years i.e. 2007-08 to 2011-12 could not be generated since reports are not available during the study period. Table 4.79 also shows that among the Nifty companies Tech Mahindra, Coal India, Dr. Reddy, Airtel, Heromotoco, Bajaj finance, HDFC bank, IBULS, Indus bank,

SBI, Yes bank, Hinpetro, NTPC, Powergrid, Asian paint, Hindustan lever, ITC, Ultratech and Larsen & Toubro has almost increase in 40% of DPS from 2007-08 to 2012-13 whereas Vedanta, Lupin, Sun pharma, Eicher, Tata motor, HDFC, ICICI bank and has almost 52% of decrease in DPS from 2012-13 to 2007-08.

Table 4.79: Dividend Per share of the companies (2007-08 to 2012-13) in percentage

Companies	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
HCL	12.00	10.00	30.00	7.50	12.00	12.00
Infosys	33.25	23.50	25.00	32.00	27.00	24.00
TCS	14.00	14.00	20.00	14.00	25.00	22.00
TECH MAHINDRA	13.22	26.24	52.21	20.46	27.04	23.73
WIPRO	6.00	4.00	6.00	6.00	6.00	7.00
ZEE	2.00	2.00	3.98	2.00	1.50	2.00
COALINDIA	2.70	2.70	3.50	12.00	10.00	14.00
HINDALCO	1.20	2.30	1.40	1.40	1.50	1.55
TATASTEEL	16.00	16.00	8.00	12.00	12.00	8.00
VEDANTA	4.50	2.25	3.25	1.10	2.00	2.30
CIPLA	2.00	2.00	2.00	2.80	2.00	2.00
DRREDDY	3.75	6.25	11.25	11.25	13.75	15.00
LUPIN	10.00	12.50	13.50	3.00	3.20	4.00
SUNPHARMA	10.50	13.75	13.75	3.50	4.25	5.00
ADANIPORTS	1.50	3.00	4.00	0.90	1.00	1.00
AIRTEL	0	2.00	1.00	1.00	1.00	1.00
INFRATEL						3.00
BAJAJAUTO	22.00	22.00	23.00	20.00	25.00	22.00
EICHER	5.00	7.00	1.10	1.60	2.00	3.00
HEROMOTOCO	19.00	20.00	11.00	10.50	21.00	36.00
M&M	11.50	11.50	10.00	9.50	11.50	12.50
MARUTI	5.00	3.50	6.00	7.50	7.50	8.00
TATAMOTOR	15.00	6.00	15.00	20.00	4.00	2.00
AXISBANK	2.48	5.12	3.36	4.23	3.20	3.60
BAJAJFINSERVE	1.00	1.00	1.00	1.25	1.50	1.50
BAJAJFINANCE	1.00	2.00	6.00	10.00	12.00	15.00
HDFC	25.00	30.00	36.00	9.00	11.00	12.50
HDFCBANK	1.70	2.00	2.40	3.30	4.30	5.50
IBULS	0.00	0.00	0.00	0.00	0.00	20.00

ICICIBANK	11.00	11.00	2.40	2.80	3.30	4.00
INDUSBANK	1.23	3.23	2.50	2.00	2.20	3.00
KOTAKBANK	21.50	15.00	20.10	21.20	22.00	22.30
SBI	15.00	22.00	30.00	30.00	35.00	41.50
YESBANK	1.36	2.55	2.36	2.50	4.00	6.00
UPL	2.00	1.50	2.00	2.00	2.50	2.50
BPCL	8.00	7.00	14.00	14.00	11.00	11.00
GAIL	5.50	7.00	7.50	7.50	8.70	9.60
HINPETRO	3.00	5.25	12.00	14.00	8.50	8.50
IOC	5.50	7.50	13.00	9.50	5.00	6.20
NTPC	3.50	3.60	3.80	3.80	4.00	5.75
ONGC	32.00	32.00	33.00	8.75	9.75	9.50
POWERGRID	1.20	1.20	1.50	1.75	2.11	2.75
RELIANCE	13.00	13.00	7.00	8.00	8.50	9.00
ASIANPAINT	17.00	17.50	27.00	32.00	40.00	46.00
HINDUSTANLEVER	9.00	7.50	6.50	6.50	7.50	18.50
ITC	3.50	3.70	10.00	4.45	4.50	5.25
TITAN	8.00	10.00	15.00	25.00	1.75	2.10
GRASIM	30.00	30.00	30.00	20.00	22.50	22.50
ULTRATECH	5.00	5.00	6.00	6.00	8.00	9.00
LARSEN&TOUBRO	3.11	4.26	5.56	6.44	7.33	8.22

Table 4.80 represents Dividend per share of selected fifty companies for six years i.e. 2013-14 to 2018-19. As can see from the Table 4.80, HCL company stands at 10.00 and 8.00 respectively in the year 2013-14 and 2018-19 and Infosys stands at 36.00 and 21.50 in 2013-14 and 2018-19 respectively. Table 4.80 also shows that DPS of ZEE, Cipla, HDFC, HDFC bank, Indus bank, Asian paint and Larsen & Toubro are the only company whose ratios has constantly increase from 2013-14 to 2018-19. Tata steel, Heromotoco, Axis bank, Bajaj finance, Indusbank, Yes bank, Hinpetro, Reliance, Hindustanlever and ITC also grows continuously during the first 3 years i.e. 2013-14 to 2016-17 and start declining in 2017-18 and 2018-19. Table 4.80 also shows that among the Nifty companies, there are no changes in DPS for the first three years such as Cipla, Adaniports and Bajaj finserve companies. Dividend per share of Vedanta, Lupin, Infratel, HDFC bank, Indus bank, UPL, BPCL, IOC, Powergrid, Asian paint and Larsen & Toubro companies has

increased at a very high rate from 2013-14 to 2018-19. However, Tech Mahindra, Wipro, Coal India, Adaniports, Eicher, Tata motor, Axis bank, Bajajfinance, ICICI bank, Kotak bank, SBI, Yes bank, Gail and Grasim companies has almost decrease in 60% of DPS from 2013-14 to 2018-19. TCS, Infosys and Hinpetro are the three top companies who have largest DPS whereas Axis bank and Tata motor are the two companies whose DPS is at bottom.

Table 4.80: Dividend Per share of the companies (2013-14 to 2018-19) in percentage

Companies	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
HCL	10.00	30.00	16.00	24.00	12.00	8.00
Infosys	36.00	16.00	24.25	25.75	43.50	21.50
TCS	32.00	73.00	43.50	47.00	50.00	30.00
TECH MAHINDRA	32.99	21.45	12.00	9.00	14.00	14.00
WIPRO	8.00	12.00	6.00	2.00	1.00	1.00
ZEE	2.00	2.00	2.25	2.50	2.90	3.50
COALINDIA	29.00	20.70	27.40	19.90	16.50	13.10
HINDALCO	1.40	1.00	1.00	1.10	1.20	1.20
TATASTEEL	10.00	10.00	16.95	7.87	10.00	10.00
VEDANTA	3.25	4.10	3.50	19.45	21.20	18.85
CIPLA	2.00	2.00	2.00	2.00	3.00	3.00
DRREDDY	18.00	20.00	20.00	20.00	20.00	20.00
LUPIN	3.00	3.00	7.50	7.50	7.50	5.00
SUNPHARMA	1.50	3.00	1.00	3.50	2.00	2.72
ADANIPORTS	1.00	1.10	1.10	1.30	2.00	0.20
AIRTEL	1.80	3.85	1.36	1.00	5.34	2.50
INFRATEL	4.40	11.00	3.00	16.00	14.00	15.00
BAJAJAUTO	24.00	23.00	25.00	25.00	37.00	36.00
EICHER	5.50	2.50	1.10	1.00	1.10	2.50
HEROMOTOCO	26.00	26.00	27.00	25.00	21.00	27.00
M&M	13.00	14.00	12.00	13.00	7.50	8.50
MARUTI	12.00	12.00	3.50	7.80	8.00	8.00
TATAMOTOR	2.00	0.00	0.20	0.00	0.00	0.00
AXISBANK	4.00	4.60	5.00	5.00	0.10	2.00
BAJAJFINSERVE	1.75	1.75	1.75	1.75	1.75	2.50
BAJAJFINANCE	16.00	18.00	25.00	3.60	4.00	6.00

HDFC	14.00	15.00	17.00	18.00	20.00	21.00
HDFCBANK	6.90	8.00	9.50	11.00	13.00	15.00
IBULS	29.00	26.00	45.00	27.00	41.00	40.00
ICICIBANK	4.60	5.00	5.00	2.50	1.50	1.00
INDUSBANK	3.50	4.00	4.50	6.00	7.50	7.50
KOTAKBANK	24.30	33.30	0.50	0.60	0.70	0.80
SBI	30.00	3.50	2.60	2.60	0.00	0.00
YESBANK	8.00	9.00	10.00	12.00	2.70	2.00
UPL	4.00	5.00	5.00	7.00	8.00	8.00
BPCL	12.00	5.50	8.50	11.25	15.50	32.50
GAIL	10.40	7.79	7.76	8.63	5.50	6.00
HINPETRO	15.50	24.50	34.40	30.00	26.00	25.00
IOC	8.70	6.60	14.00	19.00	18.00	17.00
NTPC	5.75	2.50	3.35	4.78	4.90	5.97
ONGC	9.50	9.50	8.50	7.55	5.36	6.87
POWERGRID	2.58	2.00	2.31	4.35	5.80	8.63
RELIANCE	9.50	10.00	10.50	11.00	6.00	6.50
ASIANPAINT	5.30	6.10	7.50	10.30	11.23	12.36
HINDUSTANLEVER	13.00	15.00	16.00	17.00	15.00	16.00
ITC	6.00	6.25	8.50	4.75	5.25	5.36
TITAN	2.10	2.30	2.20	2.60	3.25	2.89
GRASIM	21.00	18.00	4.50	5.50	6.20	7.00
ULTRATECH	9.00	9.00	9.50	10.00	10.50	11.50
LARSEN&TOUBRO	9.50	10.83	12.17	14.00	16.00	18.00

Table 4.81 shows descriptive statistics of Dividend per share of the selected Nifty companies for the entire period of 12 years. As can be seen from Table 4.81, TCS has the highest mean of 32.04 followed by Infosys and Bajaj auto with mean of 27.65 and 25.33 respectively. Heromotoco and Tech mahindra Company came 4th and 5th with mean value of 22.46 and 22.20. Hindalco, Adaniports and Bajaj Finserve Company were at bottom with mean of 1.35, 1.51 and 1.54 respectively. Table 4.81 also shows that TCS has the largest deviation from the mean with value of 17.40 followed by IBULS and SBI with value of 17.37 and 14.80 respectively. Hindalco has least variation from the mean followed by Cipla and Bajaj finserve with value of 0.34, 0.41 and 0.42 respectively.

Table 4.81: Descriptive Statistics of Dividend Per share of the companies

Companies	Mean	Min	Max	S.D
HCL	15.29	7.50	30.00	7.76
Infosys	27.65	16.00	43.50	7.06
TCS	32.04	14.00	73.00	17.40
TECH MAHINDRA	22.20	9.00	52.21	11.39
WIPRO	5.42	1.00	12.00	2.98
ZEE	2.39	1.50	3.98	0.69
COALINDIA	14.29	2.70	29.00	8.54
HINDALCO	1.35	1.00	2.30	0.34
TATASTEEL	11.40	7.87	16.95	3.13
VEDANTA	7.15	1.10	21.20	7.40
CIPLA	2.23	2.00	3.00	0.41
DRREDDY	14.94	3.75	20.00	5.53
LUPIN	6.64	3.00	13.50	3.61
SUNPHARMA	5.37	1.00	13.75	4.41
ADANIPORTS	1.51	0.20	4.00	1.00
AIRTEL	1.82	0.00	5.34	1.41
INFRATEL	9.49	3.00	16.00	5.42
BAJAJAUTO	25.33	20.00	37.00	5.20
EICHER	2.78	1.00	7.00	1.91
HEROMOTOCO	22.46	10.50	36.00	6.79
M&M	11.21	7.50	14.00	1.88
MARUTI	7.40	3.50	12.00	2.61
TATAMOTOR	5.35	0.00	20.00	6.87
AXISBANK	3.56	0.10	5.12	1.42
BAJAJFINSERVE	1.54	1.00	2.50	0.42
BAJAJFINANCE	9.88	1.00	25.00	7.12
HDFC	19.04	9.00	36.00	7.66
HDFCBANK	6.88	1.70	15.00	4.29
IBULS	19.00	0.00	45.00	17.37
ICICIBANK	4.51	1.00	11.00	3.15
INDUSBANK	3.93	1.23	7.50	1.99
KOTAKBANK	15.19	0.50	33.30	11.01
SBI	17.68	0.00	41.50	14.80
YESBANK	5.21	1.36	12.00	3.50
UPL	4.13	1.50	8.00	2.34
BPCL	12.52	5.50	32.50	6.68
GAIL	7.66	5.50	10.40	1.47
HINPETRO	17.22	3.00	34.40	9.95

IOC	10.83	5.00	19.00	4.92
NTPC	4.31	2.50	5.97	1.06
ONGC	14.36	5.36	33.00	10.45
POWERGRID	3.02	1.20	8.63	2.12
RELIANCE	9.33	6.00	13.00	2.21
ASIANPAINT	19.36	5.30	46.00	13.15
HINDUSTANLEVER	12.29	6.50	18.50	4.35
ITC	5.63	3.50	10.00	1.82
TITAN	6.43	1.75	25.00	6.86
GRASIM	18.10	4.50	30.00	9.50
ULTRATECH	8.21	5.00	11.50	2.11
LARSEN&TOUBRO	9.62	3.11	18.00	4.50

4.13 DESCRIPTIVE STATISTICS OF THE VARIABLES YEARWISE AND SECTOR WISE

To understand the behaviour of the variables under study with respect to years and sectors, the descriptive statistics of the variables year wise and sector wise are presented in the Table 4.82 to Table 4.106 as Appendix 4A.

Descriptive statistics of the variables year wise

Table 4.82: Descriptive Statistics of variables for the year 2007-08

Variables	N	Mean	Minimum	Maximum	Std. Deviation
Economic Value Added	49	1980.93	43.02	9774.81	2037.47
Earnings per share	49	56.28	2.3	326	73.71
Return on Assets	49	13.73	0.39	55.42	12.55
Return on Invested Capital	49	17.03	0.4	88.8	18.18
Return on Net Worth	49	17.75	0.34	53.54	12.52
PE ratio	49	8.07	0	31.25	7.78
Dividend per share	49	8.99	0	33.25	8.7
Market value added	49	576195.4	3366.97	3457019.4	777303.49
Market cap	49	593766.67	5356.2	3471973.5	788364.92
Stock price	49	803.18	64.26	3151.55	747.15
Stock return	49	14.84	-54.76	87.39	34.84
Book value of equity	49	17571.27	445.79	116954	24273.66

Source: Computed with SPSS Software

Table 4.83: Descriptive Statistics of variables for the year 2008-09

Variables	N	Mean	Minimum	Maximum	Std. Deviation
Economic Value Added	49	2746.18	-10.18	10820.97	2037.47
Earnings per share	49	43.13	3.13	238.49	73.71
Return on Assets	49	15.81	0.1	150.8	12.55
Return on Invested Capital	49	18.21	0.1	95.2	18.18
Return on Net Worth	49	16.62	-1.1	52.21	12.52
PE ratio	49	7.22	0.17	26.25	7.78
Dividend per share	49	9.44	0	32	8.7

Variables	N	Mean	Minimum	Maximum	Std. Deviation
Market value added	49	390484.3	1141.98	1975193	777303.49
Market cap	49	410804.32	2752.94	2096449.5	788364.92
Stock price	49	558.75	32.1	1582.15	747.15
Stock return	49	-17.67	-96.84	196.3	34.84
Book value of equity	49	20320.01	557.86	136299	24273.66

Source: Computed with SPSS Software

Table 4.84: Descriptive Statistics of variables for the year 2009-10

Variables	N	Mean	Minimum	Maximum	Std. Deviation
Economic Value Added	49	3015.43	-275.31	19419.53	2037.47
Earnings per share	49	46.56	3.37	300.94	73.71
Return on Assets	49	13.49	0.25	43.61	12.55
Return on Invested Capital	49	14.92	0.25	71.09	18.18
Return on Net Worth	49	19.25	0.48	85.25	12.52
PE ratio	49	9.01	0.12	32.1	7.78
Dividend per share	49	11.53	0	52.21	8.7
Market value added	49	664264.1	10571.05	3928162	777303.5
Market cap	49	688191.1	11723.55	3946344	788364.9
Stock price	49	940.85	75.9	2818.45	747.15
Stock return	49	100.64	-53.96	429.91	34.84
Book value of equity	49	23927.01	731.91	182443	24273.66

Source: Computed with SPSS Software

Table 4.85 : Descriptive Statistics of variables for the year 2010-11

Variables	N	Mean	Minimum	Maximum	Std. Deviation
Economic Value Added	49	4439	-319.13	32752.66	2037.47
Earnings per share	49	52.72	4.58	248.52	73.71
Return on Assets	49	16.35	0.3	140.84	12.55

Return on Invested Capital	49	15.37	0.3	90.23	18.18
Return on Net Worth	49	18.99	0.58	86.7	12.52
PE ratio	49	9.56	0.14	39.02	7.78
Dividend per share	49	9.31	0	32	8.7
Market value added	49	765670	19572.47	8401724	777303.5
Market cap	49	793886.2	22393.55	8517061	788364.9
Stock price	49	903.46	84.63	3811.45	747.15
Stock return	49	3.61	-82.69	107.08	34.84
Book value of equity	49	28216.14	1035.61	224877	24273.66

Source: Computed with SPSS Software

Table 4.86: Descriptive Statistics of variables for the year 2011-12

Variables	N	Mean	Minimum	Maximum	Std. Deviation
Economic Value Added	49	3373.29	267.67	16038.51	2037.47
Earnings per share	49	52.4	3.9	288.65	73.71
Return on Assets	49	9.78	0.31	35.09	12.55
Return on Invested Capital	49	10.35	-35.03	46.87	18.18
Return on Net Worth	49	18.27	0.7	76.62	12.52
PE ratio	49	10	0.02	58.68	7.78
Dividend per share	49	9.6	0	40	8.7
Market value added	49	756207.3	23789.53	6341393	777303.5
Market cap	49	788462.8	25619.95	6473555	788364.9
Stock price	49	794.1	92.69	3242	747.15
Stock return	49	-2.54	-92.43	69.82	34.84
Book value of equity	49	32255.58	1469.01	270173	24273.66

Source: Computed with SPSS Software

Table 4.87: Descriptive Statistics of variables for the year 2012-13

Variables	N	Mean	Minimum	Maximum	Std. Deviation
Economic Value Added	49	3472.41	274.8	13431.84	2037.47
Earnings per share	49	57.69	0.93	294.75	73.71
Return on Assets	49	10.26	0.32	69	12.55
Return on Invested Capital	49	11.49	0.24	36.81	18.18
Return on Net Worth	49	16.32	0.91	47.73	12.52
PE ratio	49	8.57	0.02	42.34	7.78
Dividend per share	49	10.85	1	46	8.7
Market value added	49	728588.7	20795.55	3050589	777303.5
Market cap	49	763913	22765.4	3084482	788364.9
Stock price	49	855.23	91.6	4917.25	747.15
Stock return	49	7.57	-58.83	66.04	34.84
Book value of equity	49	35324.36	1754.89	265646	24273.66

Source: Computed with SPSS Software

Table 4.88: Descriptive Statistics of variables for the year 2013-14

Variables	N	Mean	Minimum	Maximum	Std. Deviation
Economic Value Added	49	4198.91	367.92	15474.58	2037.47
Earnings per share	49	47.49	1.03	225.61	73.71
Return on Assets	49	9.57	0.44	28.69	12.55
Return on Invested Capital	49	11.49	0.44	37.23	18.18
Return on Net Worth	49	16.67	-38.18	91.26	12.52
PE ratio	49	9.32	0.02	43.12	7.78
Dividend per share	49	11.29	1	36	8.7
Market value added	49	1029341	20799.78	7169784	777303.5
Market cap	49	1070633	23322.51	7181335	788364.9
Stock price	49	1003.18	106.74	5961.5	747.15

Stock return	49	25	-88.86	193.77	34.84
Book value of equity	49	41291.73	2055.42	321287	24273.66

Source: Computed with SPSS Software

Table 4.89: Descriptive Statistics of variables for the year 2014-15

Variables	N	Mean	Minimum	Maximum	Std. Deviation
Economic Value Added	49	4224.82	41.7	15794.12	2037.47
Earnings per share	49	52.68	4.14	227.22	73.71
Return on Assets	49	9.25	0.33	30.23	12.55
Return on Invested Capital	49	11.16	0.33	37.22	18.18
Return on Net Worth	49	15.86	-31.93	79.97	12.52
PE ratio	49	11.35	0.02	55.78	7.78
Dividend per share	49	11.61	0	73	8.7
Market value added	49	1179231	31682.38	6272011	777303.5
Market cap	49	1224094	34766.25	6448187	788364.9
Stock price	49	1373.39	100.64	15908.15	747.15
Stock return	49	36.01	-86.07	166.85	34.84
Book value of equity	49	44863.28	2515.86	370920	24273.66

Source: Computed with SPSS Software

Table 4.90: Descriptive Statistics of variables for the year 2015-16

Variables	N	Mean	Minimum	Maximum	Std. Deviation
Economic Value Added	49	3249.76	185.68	10613.05	2037.47
Earnings per share	49	51.97	0.18	493.07	73.71
Return on Assets	49	9.96	0.31	41.5	12.55
Return on Invested Capital	49	11	0.31	42.27	18.18
Return on Net Worth	49	16.21	-15.04	103.41	12.52
PE ratio	49	10.59	0.02	47.43	7.78

Dividend per share	49	10.76	0.2	45	8.7
Market value added	49	1164333	26599.02	7092790	777303.5
Market cap	49	1217500	30105.3	7320858	788364.9
Stock price	49	1391.92	87.95	19180.6	747.15
Stock return	49	-4.38	-48.17	34.2	34.84
Book value of equity	49	53167.42	3506.28	463660	24273.66

Source: Computed with SPSS Software

Table 4.91: Descriptive Statistics of variables for the year 2016-17

Variables	N	Mean	Minimum	Maximum	Std. Deviation
Economic Value Added	49	4467.83	339.68	24993.64	2037.47
Earnings per share	49	59.46	4.93	613.12	73.71
Return on Assets	49	9.96	0.39	39.47	12.55
Return on Invested Capital	49	11.37	0.39	40.07	18.18
Return on Net Worth	49	16.02	-11.48	104.17	12.52
PE ratio	49	11.43	0.01	57.74	7.78
Dividend per share	49	10.79	0	47	8.7
Market value added	49	1313486	36824.21	7566730	777303.5
Market cap	49	1373255	41082.95	7827480	788364.9
Stock price	49	1629.74	119.63	25587.5	747.15
Stock return	49	16.88	-72.71	139.52	34.84
Book value of equity	49	59768.49	4258.74	519093	24273.66

Source: Computed with SPSS Software

Table 4.92: Descriptive Statistics of variables for the year 2017-18

Variables	N	Mean	Minimum	Maximum	Std. Deviation
Economic Value Added	49	4149.47	-321.12	29415.76	2037.47
Earnings per share	49	58.49	-7.67	629.07	73.71
Return on Assets	49	11.67	0.66	59	12.55
Return on Invested Capital	49	16.29	0.66	95.21	18.18
Return on Net Worth	49	14.47	-5.13	74.02	12.52
PE ratio	49	9.64	0.01	37.4	7.78
Dividend per share	49	11.11	0	50	8.7
Market value added	49	1354696	35691.26	5368562	777303.5
Market cap	49	1421800	40779.32	5454092	788364.9
Stock price	49	1720.68	163	28372.65	747.15
Stock return	49	-1.03	-80.29	50.93	34.84
Book value of equity	49	67103.8	5088.06	481673	24273.66

Source: Computed with SPSS Software

Table 4.93: Descriptive Statistics of variables for the year 2018-19

Variables	N	Mean	Minimum	Maximum	Std. Deviation
Economic Value Added	49	4409.88	214.72	21327.09	2037.47
Earnings per share	49	66.94	0.97	753.37	73.71
Return on Assets	49	9.94	0.06	58	12.55
Return on Invested Capital	49	12.35	0.06	53	18.18
Return on Net Worth	49	14.73	-1.9	78.8	12.52
PE ratio	49	10.56	0	45.12	7.78
Dividend per share	49	10.78	0	40	8.7
Market value added	49	1610577	27903.92	7697255	777303.5
Market cap	49	1684580	83817.2	8078441	788364.9
Stock price	49	1621.67	143	20547.7	747.15

Stock return	49	5.96	-46.69	105.54	34.84
Book value of equity	49	74003.49	6026.86	566863	24273.66

Source: Computed with SPSS Software

4.13.2 Descriptive Statistics of Variables sector wise

Table 4.94: Descriptive statistics of the variables in IT sector

Variables	N	Mean	Minimum	Maximum	Std. Deviation
Economic Value Added	49	4409.88	214.72	21327.09	2037.47
Earnings per share	49	66.94	0.97	753.37	73.71
Return on Assets	49	9.94	0.06	58	12.55
Return on Invested Capital	49	12.35	0.06	53	18.18
Return on Net Worth	49	14.73	-1.9	78.8	12.52
PE ratio	49	10.56	0	45.12	7.78
Dividend per share	49	10.78	0	40	8.7
Market value added	49	1610577	27903.92	7697255	777303.5
Market cap	49	1684580	83817.2	8078441	788364.9
Stock price	49	1621.67	143	20547.7	747.15
Stock return	49	5.96	-46.69	105.54	34.84
Book value of equity	49	74003.49	6026.86	566863	24273.66

Source: Computed with SPSS Software

Table 4.95: Descriptive statistics of the variables of Media Sector

Variables	N	Mean	Minimum	Maximum	Std. Deviation
Economic Value Added	49	2433.24	92.12	5202.62	2037.47
Earnings per share	49	10.49	6.08	23.13	73.71
Return on Assets	49	14.83	11.2	21.05	12.55
Return on Invested Capital	49	18.34	13.02	25.57	18.18

Return on Net Worth	49	21.36	8.58	39.58	12.52
PE ratio	49	26.98	9	45.1	7.78
Dividend per share	49	2.39	1.5	3.98	8.7
Market value added	49	215040.8	12161.67	477366.2	777303.5
Market cap	49	264035	46156.66	553125.2	788364.9
Stock price	49	303.2	106.35	575.9	747.15
Stock return	49	16.64	-56.78	152.23	34.84
Book value of equity	49	48994.19	28610.81	89382	24273.66

Source: Computed with SPSS Software

Table 4.96: Descriptive Statistics of the variables in Metal Sector

Variables	N	Mean	Minimum	Maximum	Std. Deviation
Economic Value Added	49	3418.36	185.68	8471.3	2037.47
Earnings per share	49	38.27	3.22	305.4	73.71
Return on Assets	49	11.52	0.6	150.8	12.55
Return on Invested Capital	49	12.55	-35.03	95.21	18.18
Return on Net Worth	49	34.93	-15.04	104.17	12.52
PE ratio	49	9.11	0.03	37.99	7.78
Dividend per share	49	8.55	1	29	8.7
Market value added	49	795569.3	4214.14	2251856	777303.5
Market cap	49	836247.6	28777.26	2292209	788364.9
Stock price	49	349.39	52.05	3151.55	747.15
Stock return	49	16.42	-96.84	372.64	34.84
Book value of equity	49	40678.32	9207.7	80600.26	24273.66

Source: Computed with SPSS Software

Table 4.97: Descriptive Statistics of the variables in Pharma Sector

Variables	N	Mean	Minimum	Maximum	Std. Deviation
Economic Value Added	49	4798.47	41.7	21327.09	2037.47
Earnings per share	49	41.92	5.56	137.18	73.71
Return on Assets	49	15.3	0.98	140.84	12.55
Return on Invested Capital	49	15.67	1	42.76	18.18
Return on Net Worth	49	13.08	-38.18	33.62	12.52
PE ratio	49	6.14	1.56	23.76	7.78
Dividend per share	49	7.3	1	20	8.7
Market value added	49	490092	39600.28	2095282	777303.5
Market cap	49	501754.8	40917.33	2120665	788364.9
Stock price	49	1022.55	220	3488.75	747.15
Stock return	49	14.85	-75.31	193.77	34.84
Book value of equity	49	11662.84	1317.05	44722.6	24273.66

Source: Computed with SPSS Software

Table 4.98: Descriptive Statistics of the variables in Service

Variables	N	Mean	Minimum	Maximum	Std. Deviation
Economic Value Added	49	3397.53	1153.54	9013.27	2037.47
Earnings per share	49	13.47	3.37	54.09	73.71
Return on Assets	49	13.49	0.82	64.4	12.55
Return on Invested Capital	49	14.87	0.83	69.25	18.18
Return on Net Worth	49	18.61	8.17	26.17	12.52
PE ratio	49	5.32	3.78	9.08	7.78
Dividend per share	49	1.51	0.2	4	8.7
Market value added	49	653138.1	254624.3	1578426	777303.5
Market cap	49	663238.4	259439.5	1581880	788364.9
Stock price	49	325.98	129.5	789.6	747.15

| Stock return | 49 | 14.47 | -82.69 | 144.23 | 34.84 |
| Book value of equity | 49 | 10100.38 | 2621.57 | 24748.14 | 24273.66 |

Source: Computed with SPSS Software

Table 4.99: Descriptive Statistics of the variables in telecom sector

Variables	N	Mean	Minimum	Maximum	Std. Deviation
Economic Value Added	49	3063.17	367.2	7390.02	2037.47
Earnings per share	49	21.41	2.75	82.95	73.71
Return on Assets	49	5.3	0.61	14.56	12.55
Return on Invested Capital	49	5.64	0.62	14.94	18.18
Return on Net Worth	49	11.93	-9.8	30.39	12.52
PE ratio	49	16.75	1.89	33.1	7.78
Dividend per share	49	4.64	0	16	8.7
Market value added	49	1021505	320796.5	1524230	777303.5
Market cap	49	1065137	337989	1593764	788364.9
Stock price	49	369.44	178.95	826.25	747.15
Stock return	49	3.81	-50.05	89.28	34.84
Book value of equity	49	43631.42	14531.6	74331.3	24273.66

Source: Computed with SPSS Software

Table 4.100: Descriptive Statistics of the variables in auto sector

Variables	N	Mean	Minimum	Maximum	Std. Deviation
Economic Value Added	49	2670.36	214.46	9214.37	2037.47
Earnings per share	49	120.01	0.18	753.37	73.71
Return on Assets	49	17.63	0.58	66.64	12.55
Return on Invested Capital	49	18.61	0.64	54.67	18.18
Return on Net Worth	49	22.99	-31.93	71.86	12.52
PE ratio	49	6.5	0.6	19.02	7.78

Dividend per share	49	12.42	0	37	8.7
Market value added	49	487017.5	1141.98	2634186	777303.5
Market cap	49	503207.6	2752.94	2676762	788364.9
Stock price	49	3137.91	174.25	28372.65	747.15
Stock return	49	22.08	-77.95	320.24	34.84
Book value of equity	49	16190.06	1069.04	95952.97	24273.66

Source: Computed with SPSS Software

Table 4.101: Descriptive Statistics of the variables in financial sector

Variables	N	Mean	Minimum	Maximum	Std. Deviation
Economic Value Added	49	3750.53	269.61	16038.51	2037.47
Earnings per share	49	48.87	-7.67	210.06	73.71
Return on Assets	49	5.48	0.06	69	12.55
Return on Invested Capital	49	5.77	0.06	85.57	18.18
Return on Net Worth	49	14.1	-3.37	30.47	12.52
PE ratio	49	4.52	0	35.42	7.78
Dividend per share	49	9.68	0	45	8.7
Market value added	49	1084228	3366.97	7169784	777303.5
Market cap	49	1116681	5356.2	7181335	788364.9
Stock price	49	1022.11	32.1	7037.05	747.15
Stock return	49	23.9	-86.07	429.91	34.84
Book value of equity	49	32452.74	1063.33	233603.2	24273.66

Source: Computed with SPSS Software

Table 4.102: Descriptive Statistics of the variables in fertilizer sector

Variables	N	Mean	Minimum	Maximum	Std. Deviation
Economic Value Added	49	1702.23	160.27	3982.23	2037.47
Earnings per share	49	17.35	6.46	39.79	73.71
Return on Assets	49	6.06	0.59	9.4	12.55
Return on Invested Capital	49	6.16	0.59	9.57	18.18
Return on Net Worth	49	8.42	3.19	17.57	12.52
PE ratio	49	3.64	1.54	6.12	7.78
Dividend per share	49	4.13	1.5	8	8.7
Market value added	49	167912.3	40514.16	470380.2	777303.5
Market cap	49	173921.4	43187.12	488383.2	788364.9
Stock price	49	368.9	98.25	958.85	747.15
Stock return	49	19.7	-62.52	139.71	34.84
Book value of equity	49	6009.05	2237.96	18003	24273.66

Source: Computed with SPSS Software

Table 4.103: Descriptive Statistics of the variables in Energy sector

Variables	N	Mean	Minimum	Maximum	Std. Deviation
Economic Value Added	49	4145.08	43.02	29415.76	2037.47
Earnings per share	49	34.06	4.36	110.16	73.71
Return on Assets	49	5.51	1.09	15.47	12.55
Return on Invested Capital	49	6.03	1.34	19.01	18.18
Return on Net Worth	49	6.9	0.34	27.36	12.52
PE ratio	49	11.53	1.22	58.68	7.78
Dividend per share	49	9.91	1.2	34.4	8.7
Market value added	49	1411827	76058.54	8401724	777303.5
Market cap	49	1488976	86824.03	8517061	788364.9
Stock price	49	465.97	64.26	2265.8	747.15

Stock return	49	3.74	-60.02	109.75	34.84
Book value of equity	49	77149.02	10765.49	381186	24273.66

Source: Computed with SPSS Software

Table 4.104: Descriptive Statistics of the variables in Consumer goods sector

Variables	N	Mean	Minimum	Maximum	Std. Deviation
Economic Value Added	49	4433.36	-321.12	32752.66	2037.47
Earnings per share	49	24.83	5.34	116.13	73.71
Return on Assets	49	21.5	9.12	42.29	12.55
Return on Invested Capital	49	25.09	10.33	90.23	18.18
Return on Net Worth	49	11.01	3.39	21.02	12.52
PE ratio	49	33.73	12.36	57.74	7.78
Dividend per share	49	10.93	1.75	46	8.7
Market value added	49	1068679	20795.55	3687066	777303.5
Market cap	49	1078841	22765.4	3694717	788364.9
Stock price	49	902.92	182.1	4917.25	747.15
Stock return	49	18.99	-92.43	135.45	34.84
Book value of equity	49	10162.85	445.79	59484.34	24273.66

Source: Computed with SPSS Software

Table 4.105: Descriptive Statistics of the variables in Cement sector

Variables	N	Mean	Minimum	Maximum	Std. Deviation
Economic Value Added	49	1419.42	-319.13	4563.08	2037.47
Earnings per share	49	136.6	26.96	300.94	73.71
Return on Assets	49	7.94	1.21	20.25	12.55
Return on Invested Capital	49	8.78	1.21	27.24	18.18
Return on Net Worth	49	13.82	0.17	37.37	12.52
PE ratio	49	3	1.35	4.57	7.78

	49				
Dividend per share	49	13.15	4.5	30	8.7
Market value added	49	437904.4	65023.96	1069717	777303.5
Market cap	49	461084.5	68635.29	1098118	788364.9
Stock price	49	2294.08	551.35	3998.35	747.15
Stock return	49	9.56	-72.71	109.46	34.84
Book value of equity	49	23180.1	2702.58	83698.73	24273.66

Source: Computed with SPSS Software

Table 4.106: Descriptive Statistics of the variables in Construction sector

Variables	N	Mean	Minimum	Maximum	Std. Deviation
Economic Value Added	49	3193.18	1337.28	5956.83	2037.47
Earnings per share	49	82.84	45.48	326	73.71
Return on Assets	49	5.65	2.33	16.24	12.55
Return on Invested Capital	49	7.51	2.67	21.04	18.18
Return on Net Worth	49	17.94	9.91	31.23	12.52
PE ratio	49	4.4	2.48	8.18	7.78
Dividend per share	49	9.62	3.11	18	8.7
Market value added	49	1288866	772243.4	1880826	777303.5
Market cap	49	1323838	801630.2	1943201	788364.9
Stock price	49	1582.98	1216.7	3035.95	747.15
Stock return	49	3.91	-49.82	87.39	34.84
Book value of equity	49	34971.99	9555.08	62374.8	24273.66

Source: Computed with SPSS Software

CHAPTER-5

RELATIONSHIP BETWEEN STOCK PRICE, EVA, MVA AND OTHER ACCOUNTING VARIABLES

5.1   HYPOTHESES TESTING

5.1.1   Relationship between the Stock price, Stock return and EVA

To find out the relationship between Stock price, Stock return and EVA, hypothesis testing was done using the Karl Pearson correlations.

Hypothesis 1

$H1_0$: There is no significant relationship between EVA and stock price

$H1_A$: There is a significant relationship between EVA and stock price

Table 5.1: Karl Pearson Correlations between Stock price, Stock Return and EVA of the entire observation

	Stock price	Stock Return	EVA
Stock price	1		
EVA	-0.021	0.009	1

**Correlation is significant at the 0.01 level (2-tailed)
Source: Calculated through SPSS software

In Table 5.1, the result of the Karl Pearson correlation between stock price, stock return, and EVA based on the entire 595 observations of the entire 50 companies are calculated. As can be seen in the Table 5.1 the correlation coefficient between EVA and stock price is only -0.021 and hence we failed to reject the null hypothesis that there is no significant relationship between EVA and stock price. As per the analysis there is no significant relationship between EVA and stock price in the Nifty 50 companies. In the Table 5.1 it can also be observed that there is also no significant relationship between EVA and the stock return. The correlation coefficient between EVA and the stock return is 0.009 only which indicates that there is no correlation between EVA and the stock return.

5.1.2 Relationship between the EVA and MVA

a) Hypothesis 2

$H2_0$: There is no significant relationship between EVA and MVA

$H2_A$: There is a significant relationship between EVA and MVA

Table 5.2: Karl Pearson Correlations between EVA and MVA of the entire observation

	EVA	MVA
EVA	1	
MVA	0.206**	1

**. Correlation is significant at the 0.01 level (2-tailed)
Source: Calculated through SPSS software

To find out the relationship between EVA and MVA, Karl Pearson's Correlation between EVA and MVA of the entire observation was conducted. As can be seen the Table 5.2 the correlation co-efficient between EVA and MVA is 0.206 which means there is a positive but weak correlation between EVA and MVA. The correlation is also significant at 0.01 levels. Thus it is found that there is a significant relationship between EVA and MVA hence we reject the null hypothesis and accept the alternative hypothesis.

5.1.3   Relationship between the stock price, stock return and accounting ratios

To find out the relationship between stock price, stock return and accounting ratios Karl Pearson's Correlation between stock price, stock return and the accounting ratios are calculated of the entire observation. The Karl Pearson's Correlation matrix is given in the Table 5.3.

Table 5.3: Karl Pearson Correlations between Stock price, Stock Return, and Accounting ratios of the entire observation

	Stock price	Stock return	EPS	ROA	ROIC	RONW	PER	DPS
Stock price	1							
Stock return	.109**	1						
EPS	.828**	.054	1					
ROA	.113**	-.035	.097*	1				
ROIC	.137**	-.007	.128**	.631**	1			

RONW	.108**	.077	.172**	.299**	.276**	1		
PER	.001	.012	-.139**	.154**	.143**	-.041	1	
DPS	.096*	.042	.263**	.179**	.229**	.264**	-.122**	1

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Source: Calculated through SPSS software

In the Table 5.3 it can be observed that the stock price is significantly correlated with all the accounting ratios other than Price Earnings Ratios. On the other hand there is no significant relationship between stock return and the accounting ratios. It can also be observed that there is a significant relationship among all the accounting ratios other than the relationship between Return on Net Worth (RONW) and price earnings ratios (PER).

As we can see from the Table 5.1, 5.2 and 5.3, we can observe that Stock price, stock return and EVA have no relationship whereas, positive significant relationship is found between EVA and MVA. Traditional accounting measurement tools such as EPS, ROA, ROIC, RONW, and DPS have also a positive correlation with stock price and no correlation is found between stock return and accounting measures. Therefore, EVA is not contributing to the stock price as compared to other traditional accounting variables investors and hence EVA is not an important variable that determine stock price of the companies as compared with accounting variables during the study period.

5.1.4 Relationship between the EVA, MVA and accounting ratios

To find out the relationship between EVA, MVA and accounting ratios Karl Pearson's Correlation between EVA, MVA and the accounting ratios of the entire observation was conducted. The Karl Pearson's Correlation matrix is given in the Table 5.4.

Table 5.4: Karl Pearson Correlations between EVA, MVA and Accounting ratios of the entire observation

	EVA	MVA	EPS	ROA	ROIC	RONW	PER	DPS
EVA	1	.206**	-.060	.068	.064	-.002	.058	.066
MVA	.206**	1	.018	.063	.056	.004	.047	.176**

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

In the Table 5.4 it can be observed that there is no significant relationship between EVA and the accounting ratios. None of the accounting ratios are statistically related to the EVA. As regard the relationship between MVA and the accounting ratios, there is a significant relationship between MVA and the Dividend per share (DPS) only. All the other accounting ratios have no significant relationship between MVA and the accounting ratios.

5.2 CORRELATION BETWEEN STOCK PRICE, STOCK RETURN, EVA AND MVA SECTOR WISE

To understand the relationship between the stock price, stock return, EVA and MVA in the respective sectors, the Karl Pearson's correlation test was conducted for all the sectors.

Table 5.5: Karl Pearson Correlations between Stock price, Stock Return, EVA and MVA of IT sector

	Stock price	Stock return	EVA	MVA
Stock price	1			
Stock return	.079	1		
EVA	.187	-.019	1	
MVA	.620**	-.081	.256*	1

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).
Source: Calculated through SPSS software

In Table 5.5, it can be observed that for IT sector there is no significant relationship between EVA and the stock price and stock return. There is also no significant relationship between MVA and the stock return. The correlation coefficient between EVA and Stock price is 0.187 and the correlation coefficient between EVA and stock return is -0.019 both are statistically insignificant. However, there is a significant relationship between MVA and stock price as well as EVA and MVA.

Table 5.6 : Karl Pearson Correlations between Stock price, Stock Return, EVA and MVA of Media sector

	Stock price	Stock return	EVA	MVA
Stock price	1			
Stock return	.187	1		
EVA	.449	.182	1	
MVA	.952**	.051	.563	1

**. Correlation is significant at the 0.01 level (2-tailed).
Source: Calculated through SPSS software

In Table 5.6, it can be observed that for Media sector, there is no significant relationship between EVA and the stock price and stock return. There is also no significant relationship between MVA and the stock return. The correlation coefficient between EVA and Stock price is 0.449 and the correlation coefficient between EVA and stock return is 0.182 both are statistically insignificant. However, there is a significant relationship between MVA and stock price.

Table 5.7 : Karl Pearson Correlations between Stock price, Stock Return, EVA and MVA of Metal sector

	Stock price	Stock return	EVA	MVA
Stock price	1			
Stock return	.234	1		
EVA	-.103	-.095	1	
MVA	.093	-.068	.631**	1

**. Correlation is significant at the 0.01 level (2-tailed).
Source: Calculated through SPSS software

In Table 5.7, it can be observed that for Metal sector, no statistical relationships have been found between stock price, EVA and MVA. There is also no significant relationship between stock return, EVA and MVA. The correlation coefficient between EVA and Stock price is -.103 and the correlation coefficient between EVA and stock return is -.095 both is statistically insignificant. However, there is a significant relationship between MVA and EVA.

Table 5.8: Karl Pearson Correlations between Stock price, Stock Return, EVA and MVA of Pharma sector

	Stock price	Stock return	EVA	MVA
Stock price	1			
Stock return	.359*	1		
EVA	.244	.103	1	
MVA	.048	.018	.492**	1

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).
Source: Calculated through SPSS software

In Table 5.8, it can be observed that for Pharma sector, no significant relationship has been found between stock price, EVA and MVA. However, a significant relationship between stock price and stock return is found to be positive. There is also no significant relationship between stock return, EVA and MVA. The correlation coefficient between EVA and Stock price is .244 and the correlation coefficient between EVA and stock return is .103 both are statistically insignificant. However, there is a significant relationship between EVA and MVA.

Table 5.9: Karl Pearson Correlations between Stock price, Stock Return, EVA and MVA of Service sector

	Stock price	Stock return	EVA	MVA
Stock price	1			
Stock return	.706*	1		
EVA	.189	-.187	1	
MVA	1.000**	.710**	.186	1

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).
Source: Calculated through SPSS software

In Table 5.9, it can be observed that for Service sector there is no significant relationship between EVA and the stock price. There is also no significant relationship between MVA and MVA. However, there is a significant relationship between MVA and stock price as well as MVA and stock return. The correlation coefficient between EVA and Stock price is .189 and the correlation coefficient between MVA and EVA is .186 both are statistically insignificant.

**Table 5.10: Karl Pearson Correlations between Stock price,
Stock Return, EVA and MVA of Telecom sector**

	Stock price	Stock return	EVA	MVA
Stock price	1			
Stock return	.270	1		
EVA	-.029	-.135	1	
MVA	.521*	-.011	-.722**	1

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Calculated through SPSS software

As can be seen from the table 5.10, it can be observed that for telecom sector, no significant relation has been found between EVA and Stock price as well as EVA and Stock return. There is also no significant relationship between MVA and MVA. However, a significant relationship has been found between MVA and stock price, between MVA and EVA. The correlation coefficient between EVA and Stock price is -0.29 and the correlation coefficient between MVA stock return is -0.11which indicates both are statistically insignificant.

**Table 5.11: Karl Pearson Correlations between Stock price,
Stock Return, EVA and MVA of Auto sector**

	Stock price	Stock return	EVA	MVA
Stock price	1			
Stock return	.092	1		
EVA	.017	-.033	1	
MVA	.302**	.021	.489**	1

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Calculated through SPSS software

To find out the relationship between EVA and MVA, Karl Pearson's Correlation between EVA and MVA of automobile sector was conducted. As can be seen the Table 5.11, no significant relationship has been found between EVA and stock price as well as EVA and stock return. However, there is a significant relationship between MVA and stock price, MVA and EVA during the study period.

Table 5.12: Karl Pearson Correlations between Stock price, Stock Return, EVA and MVA of Financial sector

	Stock price	Stock return	EVA	MVA
Stock price	1			
Stock return	.173[*]	1		
EVA	-.130	-.062	1	
MVA	.296[**]	-.064	-.037	1

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Calculated through SPSS software

Table 5.12 represents Karl Pearson Correlations between Stock price, Stock Return, EVA and MVA of Financial sector. As can be seen from the Table 5.12, there is a significant relationship between stock price and stock return, stock price and MVA. However, there is no significant relationship between EVA and stock price, EVA and stock return as well as MVA and EVA.

Table 5.13: Karl Pearson Correlations between Stock price, Stock Return, EVA and MVA of Fertilizer sector

	Stock price	Stock return	EVA	MVA
Stock price	1			
Stock return	.305	1		
EVA	-.715[**]	-.313	1	
MVA	.991[**]	.280	-.691[*]	1

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Source: Calculated through SPSS software

In Table 5.13, it can be observed that for fertilizer sector there is no significant relationship between EVA and stock return. There is also no significant relationship between MVA and the stock return. The correlation coefficient between EVA and Stock price is -.715 and the correlation coefficient between MVA and stock price is .991 both are statistically significant which indicate that there is a significant relationship between EVA and stock price, MVA and stock price. Table 5.13 also shows that there is a significant relationship between MVA and EVA.

Table 5.14: Karl Pearson Correlations between Stock price, Stock Return, EVA and MVA of Energy sector

	Stock price	Stock return	EVA	MVA
Stock price	1			
Stock return	.224*	1		
EVA	.019	.026	1	
MVA	.610**	.036	.352**	1

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Calculated through SPSS software

Table 5.14 represents Karl Pearson Correlations between Stock price, Stock Return, EVA and MVA of energy sector. As can be seen from the Table 5.14, there is a significant relationship between stock price and stock return and stock price and MVA. There is also a significant relationship between MVA and EVA. However, the study found that there is no significant relationship between EVA and stock price, EVA and stock return as well as MVA and stock return.

Table 5.15: Karl Pearson Correlations between Stock price, Stock Return, EVA and MVA of Consumer goods sector

	Stock price	Stock return	EVA	MVA
Stock price	1			
Stock return	.458**	1		
EVA	.241	.341*	1	
MVA	-.196	-.104	-.147	1

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Source: Calculated through SPSS software

In Table 5.15, it can be observed that for consumer goods sector, there is no significant relationship between EVA and stock return. There is also no significant relationship between MVA and stock price. Table 5.15 also shows that there is no significant relationship between EVA and stock return as well as MVA and stock return. However, there is a significant relationship between stock price and stock return as well as EVA and stock return.

Table 5.16: Karl Pearson Correlations between Stock price,
Stock Return, EVA and MVA Cement sector

	Stock price	Stock return	EVA	MVA
Stock price	1			
Stock return	.225	1		
EVA	.498*	.030	1	
MVA	.532**	-.003	.266	1

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).
Source: Calculated through SPSS software

Table 5.16 represents Karl Pearson Correlations between Stock price, Stock Return, EVA and MVA of cement sector. As can be seen from the Table 5.16, there is a significant relationship between stock price and EVA, stock price and MVA. The coefficient of correlation between stock return and EVA is .030, stock return and MVA is -.003, EVA and MVA is .266 which is statistically insignificant.

Table 5.17: Karl Pearson Correlations between Stock price,
Stock Return, EVA and MVA Construction sector

	Stock price	Stock return	EVA	MVA
Stock price	1			
Stock return	.824**	1		
EVA	-.429	-.243	1	
MVA	.361	.573	-.245	1

**. Correlation is significant at the 0.01 level (2-tailed).
Source: Calculated through SPSS software

In Table 5.17, it can be observed that for construction, there is no significant relationship between EVA and stock price. There is also no significant relationship between EVA and stock return. Table 5.17 also shows that there is no significant relationship between MVA and stock price, MVA and stock return as well as MVA and EVA. However, there is a significant relationship between stock price and stock return.

5.3 CORRELATION BETWEEN STOCK PRICE, STOCK RETURN AND ACCOUNTING RATIOS BASED ON SECTORS

Table 5.18: Karl Pearson Correlations between Stock price, Stock Return, and Accounting ratios of IT sector

	Stock price	Stock return	EPS	ROA	ROIC	RONW	PER	DPS
Stock price	1							
Stock return	.079	1						
EPS	.811**	-.053	1					
ROA	.139	-.045	.196	1				
ROIC	-.074	-.089	.043	.788**	1			
RONW	.291*	-.029	.424**	.651**	.598**	1		
PER	-.002	-.008	-.132	.064	.122	-.002	1	
DPS	.647**	.214	.560**	.240	.069	.410**	-.154	1

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Source: Calculated through SPSS software

Table 5.18 represents correlations between stock price, stock return and accounting ratios of IT sector and as can be seen from the Table 5.18 it can be observed that for IT sector, the stock price is significantly correlated with EPS, RONW and DPS but not significantly correlated with stock return, ROA, ROIC and PER. Stock return is not related with any of the other variables in the IT sector.

Table 5.19: Karl Pearson Correlations between Stock price, Stock Return, and Accounting ratios of Media sector

	Stock price	Stock return	EPS	ROA	ROIC	RONW	PER	DPS
Stock price	1							
Stock return	.187	1						
EPS	.733**	-.128	1					
ROA	.028	.114	.234	1				
ROIC	.253	.061	.390	.931**	1			
RONW	.318	.263	.181	.584*	.557	1		
PER	.590*	.131	-.017	-.330	-.193	.227	1	
DPS	.490	.493	.332	.035	.163	-.042	-.001	1

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Source: Calculated through SPSS software

Karl Pearson Correlations between Stock price, Stock Return, and Accounting ratios of Media sector is presented in Table 5.19 and as can be seen from the Table 5.19; it can be observed that there is a significant correlation between stock price and EPS and PER. However, stock price is insignificant with ROA, ROIC, ONW and DPS. Table 5.19 also shows that stock return is not significantly correlated with EPS, ROA, ROIC, RONW, PER and DPS.

Table 5.20: Karl Pearson Correlations between Stock price, Stock Return, and Accounting ratios of Metal sector

	Stock price	Stock return	EPS	ROA	ROIC	RONW	PER	DPS
Stock price	1							
Stock return	.234	1						
EPS	.843**	.032	1					
ROA	.013	-.064	-.075	1				
ROIC	.114	-.015	.150	.243	1			
RONW	.016	.074	-.090	.094	.071	1		
PER	-.150	-.009	-.244	-.026	-.086	.504**	1	
DPS	.049	-.125	.070	-.020	.255	.223	-.168	1

**. Correlation is significant at the 0.01 level (2-tailed).
Source: Calculated through SPSS software

Table 5.20 shows correlations between stock price, stock return and accounting ratios of metal sector and as can be seen from the Table 5.20 it can be observed that for Metal sector, the stock price is significantly correlated with EPS and other accounting ratios such as ROA, ROIC, RONW, PER and DPS are insignificant with stock price. Table 5.20 also shows that stock return has no relationship with any of the accounting ratios.

Table 5.21: Karl Pearson Correlations between Stock price, Stock Return, and Accounting ratios of Pharma sector

	Stock price	Stock return	EPS	ROA	ROIC	RONW	PER	DPS
Stock price	1							
Stock return	.359*	1						
EPS	.844**	.261	1					
ROA	-.156	-.185	-.065	1				
ROIC	-.092	.088	.130	.387**	1			
RONW	.037	.244	.254	.302*	.404**	1		

PER	.087	-.067	-.054	-.037	-.197	-.416**	1	
DPS	.827**	.211	.891**	-.131	-.019	.182	-.142	1

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Calculated through SPSS software

Table 5.21 represents correlations between stock price, stock return and accounting ratios of Pharma sector and as can be seen from the Table 5.21 it can be observed that for pharma sector, the stock price is significantly correlated with EPS and DPS but not significantly correlated with ROA, ROIC, RONW and PER. Table 5.21 also shows that stock return is insignificant with any of the other variables in the pharma sector.

Table 5.22: Karl Pearson Correlations between Stock price, Stock Return, and Accounting ratios of Service sector

	Stock price	Stock return	EPS	ROA	ROIC	RONW	PER	DPS
Stock price	1							
Stock return	.706*	1						
EPS	.021	-.072	1					
ROA	.160	-.270	-.087	1				
ROIC	.177	-.261	-.081	.999**	1			
RONW	-.551	-.071	-.387	-.508	-.534	1		
PER	.718**	.464	-.454	.066	.092	-.269	1	
DPS	.678*	.452	-.423	.346	.333	-.127	.501	1

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Calculated through SPSS software

Karl Pearson Correlations between Stock price, Stock Return, and Accounting ratios of Service sector is presented in Table 5.22 and as can be seen from the Table 5.22; it can be observed that there is a significant correlation between stock price and EPS and PER. However, stock price is insignificant with PER and DPS but not significant with EPS, ROA, ROIC, ROIC and RONW. Table 5.22 also shows that stock return is not significantly correlated with any of the accounting ratios such as EPS, ROA, ROIC, RONW, PER and DPS.

Table 5.23: Karl Pearson Correlations between Stock price, Stock Return, and Accounting ratios of Telecom sector

	Stock price	Stock return	EPS	ROA	ROIC	RONW	PER	DPS
Stock price	1							
Stock return	.270	1						
EPS	.305	-.035	1					
ROA	-.143	.226	-.246	1				
ROIC	-.147	.250	-.242	.998**	1			
RONW	.555*	.031	.513*	-.719**	-.714**	1		
PER	.146	-.201	.109	.413	.408	-.200	1	
DPS	-.206	.165	-.285	-.172	-.169	.105	-.641**	1

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Calculated through SPSS software

Table 5.23 represents correlations between stock price, stock return and accounting ratios of Telecom sector and as can be seen from the Table 5.23 it can be observed that stock price is insignificant with any of the accounting ratios except RONW whose value is .555. Table 5.23 also shows that stock return is insignificant with any of the other variables in the telecom sector.

Table 5.24: Karl Pearson Correlations between Stock price, Stock Return, and Accounting ratios of Automobile sector

	Stock price	Stock return	EPS	ROA	ROIC	RONW	PER	DPS
Stock price	1							
Stock return	.092	1						
EPS	.936**	.003	1					
ROA	.123	-.087	.207	1				
ROIC	.261*	-.065	.323**	.683**	1			
RONW	.147	.041	.227	.603**	.455**	1		
PER	.329**	.126	.267*	.122	.105	.258*	1	
DPS	-.232*	-.071	-.094	.566**	.521**	.521**	-.093	1

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Source: Calculated through SPSS software

Karl Pearson Correlations between Stock price, Stock Return, and Accounting ratios of automobile sector is presented in Table 5.24 and as can be seen

from the Table 5.24; it can be observed that there is a significant correlation between stock price and EPS, ROIC, PER and DPS. However, stock price is insignificant with ROA and RONW. Table 5.24 also shows that stock return is not significantly correlated with any of the accounting ratios such as EPS, ROA, ROIC, RONW, PER and DPS.

Table 5.25: Karl Pearson Correlations between Stock price, Stock Return, and Accounting ratios of Financial sector

	Stock price	Stock return	EPS	ROA	ROIC	RONW	PER	DPS
Stock price	1							
Stock return	.173*	1						
EPS	.529**	.023	1					
ROA	.021	-.011	-.149	1				
ROIC	-.081	-.016	-.182*	.498**	1			
RONW	-.048	.021	.026	.043	-.142	1		
PER	.666**	.086	.209*	.276**	.105	-.104	1	
DPS	.116	-.013	.366**	-.154	-.182*	.371**	-.079	1

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).
Source: Calculated through SPSS software

Table 5.25 represents correlations between stock price, stock return and accounting ratios of financial sector and as can be seen from the Table 5.25 it can be observed that stock price is statistically significant with EPS and PER. However, stock price has is insignificant with ROA, ROIC, RONW and DPS. Table 5.25 also shows that stock return is insignificant with any of the accounting ratios under financial sector.

Table 5.26: Karl Pearson Correlations between Stock price, Stock Return, and Accounting ratios of Fertilizer sector

	Stock price	Stock return	EPS	ROA	ROIC	RONW	PER	DPS
Stock price	1							
Stock return	.305	1						
EPS	.803**	.046	1					
ROA	-.186	-.591*	.217	1				
ROIC	-.170	-.594*	.231	1.000**	1			
RONW	-.172	.331	-.395	-.405	-.403	1		
PER	.857**	.501	.487	-.247	-.234	.182	1	

DPS	.954**	.381	.846**	-.268	-.252	-.067	.770**	1

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Source: Calculated through SPSS software

Karl Pearson Correlations between Stock price, Stock Return, and Accounting ratios of fertilizer sector is presented in Table 5.26 and as can be seen from the Table 5.26; it can be observed that there is a significant correlation between stock price and EPS, PER and DPS. However, stock price is insignificant with ROA, ROIC and RONW. Table 5.26 also shows that stock return is significant with ROA, ROIC but insignificant with EPS, RONW, PER and DPS.

Table 5.27: Karl Pearson Correlations between Stock price, Stock Return, and Accounting ratios of Energy sector

	Stock price	Stock return	EPS	ROA	ROIC	RONW	PER	DPS
Stock price	1							
Stock return	.224*	1						
EPS	.814**	.075	1					
ROA	.364**	-.067	.348**	1				
ROIC	.423**	.003	.375**	.957**	1			
RONW	.385**	.152	.412**	.249*	.268**	1		
PER	-.064	-.075	-.202*	-.135	-.141	-.334**	1	
DPS	.360**	.023	.418**	.057	.008	.202*	-.309**	1

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Calculated through SPSS software

Table 5.27 represents correlations between stock price, stock return and accounting ratios of energy sector and as can be seen from the Table 5.27 it can be observed that stock price is statistically significant with all the accounting ratios except PER whose value is -.064. Table 5.27 also shows that stock return is insignificant with any of the accounting ratios under energy sector.

Table 5.28: Karl Pearson Correlations between Stock price, Stock Return, and Accounting ratios of Consumer goods sector

	Stock price	Stock return	EPS	ROA	ROIC	RONW	PER	DPS
Stock price	1							
Stock return	.458**	1						
EPS	.940**	.410**	1					
ROA	.331*	.358*	.422**	1				
ROIC	.311*	.235	.349*	.619**	1			
RONW	.064	.047	-.087	.129	-.020	1		
PER	.185	.144	.003	-.146	-.108	.379**	1	
DPS	.893**	.343*	.913**	.467**	.374**	.180	-.004	1

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Source: Calculated through SPSS software

Karl Pearson Correlations between Stock price, Stock Return, and accounting ratios of consumer goods sector is presented in Table 5.28 and as can be seen from the Table 5.28; it can be observed that there is a significant correlation between stock price and EPS, ROIC, PER and DPS. However, stock price is insignificant with ROA and RONW. Table 5.28 also shows that stock return is significantly correlated with EPS, ROA and DPS. However, Stock return has no relationship with ROIC, RONW and PER.

Table 5.29: Karl Pearson Correlations between Stock price, Stock Return, and Accounting ratios of Cement sector

	Stock price	Stock return	EPS	ROA	ROIC	RONW	PER	DPS
Stock price	1							
Stock return	.225	1						
EPS	.275	.142	1					
ROA	-.456*	.225	.125	1				
ROIC	-.492*	.211	.008	.984**	1			
RONW	-.390	.312	.295	.900**	.870**	1		
PER	.595**	.351	-.112	.058	.072	.037	1	
DPS	.304	.103	.944**	.021	-.104	.231	-.133	1

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Calculated through SPSS software

Table 5.29 represents correlations between stock price, stock return and accounting ratios of cement sector and as can be seen from the Table 5.29 it can be observed that stock price is statistically significant with ROA, ROIC and PER whereas stock price and EPS, RONW and DPS has no relationship. Table 5.29 also shows that stock return is insignificant with any of the accounting ratios under cement sector.

Table 5.30: Karl Pearson Correlations between Stock price, Stock Return, and Accounting ratios of Construction sector

	Stock price	Stock return	EPS	ROA	ROIC	RONW	PER	DPS
Stock price	1							
Stock return	.824**	1						
EPS	.949**	.757**	1					
ROA	.786**	.401	.784**	1				
ROIC	.439	.027	.399	.881**	1			
RONW	.579*	.239	.573	.919**	.919**	1		
PER	.725**	.759**	.719**	.465	.154	.234	1	
DPS	-.508	-.139	-.478	-.698*	-.667*	-.730**	.089	1

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).
Source: Calculated through SPSS software

Karl Pearson Correlations between Stock price, Stock Return, and accounting ratios of construction sector is presented in Table 5.30 and as can be seen from the Table 5.30; it can be observed that there is a significant correlation between stock price and EPS, ROA, RONW and PER. However, stock price is insignificant with ROIC and DPS. Table 5.30 also shows that stock return is significantly correlated with EPS and PER whereas stock return has no relationship with ROA, ROIC, RONW and DPS.

5.4   CORRELATIONS BETWEEN EVA, MVA AND ACCOUNTING RATIOS   OF DIFFERENT SECTOR

Table 5.31: Karl Pearson Correlations between EVA, MVA and Accounting ratios of IT sector

	EVA	MVA	EPS	ROA	ROIC	RONW	PER	DPS
EVA	1	.256*	.122	.096	.124	.176	.001	.099
MVA	.256*	1	.409**	.180	-.002	.322*	.087	.543**

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).

Karl Pearson Correlations between EVA, MVA and Accounting ratios of IT sector is presented in the Table 5.31 and as can be seen from the Table 5.31, it can be observed none of the accounting ratios have significant relationship with EVA whereas there is a significant relationship between MVA and EPS, RRONW and DPS. Table 5.31 also shows that MVA has no relationship with ROA and ROIC.

Table 5.32: Karl Pearson Correlations between EVA, MVA and Accounting ratios of Media sector

	EVA	MVA	EPS	ROA	ROIC	RONW	PER	DPS
EVA	1	.563	.020	.321	.481	.610*	.495	.116
MVA	.563	1	.697*	.102	.345	.422	.642*	.289

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).

Table 5.32 represents correlation between EVA, MVA and accounting ratios of media sector of all the selected Nifty companies. As can be seen from the Table 5.32, there is a significant correlation between EVA and RONW. There is also a significant correlation between MVA and EPS and PER. Table 5.32 also shows that there is no significant relationship between EVA and EPS, ROA, ROIC, PER and DPS. MVA has no relationship with ROA, ROIC, RONW and DPS.

Table 5.33: Karl Pearson Correlations between EVA, MVA and Accounting ratios of Metal sector

	EVA	MVA	EPS	ROA	ROIC	RONW	PER	DPS
EVA	1	.631**	-.220	.170	.222	.388**	.095	.677**
MVA	.631**	1	-.108	.419**	.428**	.346*	-.007	.469**

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Karl Pearson Correlations between EVA, MVA and accounting ratios of metal sector is presented in Table 5.33 and as can be seen from the Table 5.33; it can be observed that there is a significant correlation between EVA and RONW and DPS. However, EVA and EPS, ROA, ROIC and PER are statistically insignificant. Table 5.33 also shows the relationship between MVA and accounting ratios and shows that MVA is significant with ROA, ROIC, RONW and DPS whereas MVA is insignificant with EPS and PER.

Table 5.34: Karl Pearson Correlations between EVA, MVA and Accounting ratios of Pharma sector

	EVA	MVA	EPS	ROA	ROIC	RONW	PER	DPS
EVA	1	.492**	.180	-.022	-.214	-.122	.176	.096
MVA	.492**	1	-.182	-.185	-.337*	-.618**	.418**	-.272

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

To find the relationship between EVA, MVA with accounting ratios of pharma sector, Karl Pearson Correlations between EVA, MVA and Accounting ratios of Pharma sector was conducted and as can be seen from the Table 5.34, EVA is insignificant with any other accounting ratios other than MVA whose value is .492. Table 5.34 also shows that MVA is statistically insignificant with EPS, ROA and DPS. However, there is a significant relationship between MVA and ROIC, RONW and PER.

Table 5.35: Karl Pearson Correlations between EVA, MVA and Accounting ratios of Service sector

	EVA	MVA	EPS	ROA	ROIC	RONW	PER	DPS
EVA	1	.186	.125	-.138	-.145	.049	.284	.205
MVA	.186	1	.025	.157	.175	-.553	.714[**]	.675[*]

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Karl Pearson Correlations between EVA, MVA and Accounting ratios of service sector is presented in the Table 5.35 and as can be seen from the Table 5.35, EVA has no relationship with any of the accounting ratios under service sector. Table 5.35 also shows that MVA is statistically insignificant with all the accounting ratios except PER and DPS whose value is .714 and .675 respectively.

Table 5.36: Karl Pearson Correlations between EVA, MVA and Accounting ratios of Telecom sector

	EVA	MVA	EPS	ROA	ROIC	RONW	PER	DPS
EVA	1	-.722[**]	-.176	-.573[*]	-.574[*]	.302	-.811[**]	.726[**]
MVA	-.722[**]	1	.248	.370	.355	.030	.848[**]	-.585[**]

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table 5.36 shows correlation between EVA, MVA and accounting ratios of telecom sector. As can be seen from the Table 5.36, EVA is statistically correlated with ROA, ROIC, PER and DPS but insignificant with EPS and RONW. Table 5.36 also shows that there is a significant correlation between MVA and PER, DPS; however, there is no significant relationship between MVA and EPS, ROA, ROIC and RONW.

Table 5.37: Karl Pearson Correlations between EVA, MVA and Accounting ratios of Automobile sector

	EVA	MVA	EPS	ROA	ROIC	RONW	PER	DPS
EVA	1	.489[**]	.037	-.099	-.075	-.055	.073	-.047
MVA	.489[**]	1	.373[**]	.171	.118	.076	-.052	.150

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Karl Pearson Correlations between EVA, MVA and Accounting ratios of automobile sector is presented in the Table 5.37 and as can be seen from the Table 5.37, EVA and MVA has no relationship with any of the accounting ratios under automobile sector except MVA there is a significant relationship with EPS whose value is .373.

Table 5.38: Karl Pearson Correlations between EVA, MVA and Accounting ratios of Financial sector

	EVA	MVA	EPS	ROA	ROIC	RONW	PER	DPS
EVA	1	-.037	-.047	.181*	.060	.091	-.013	.116
MVA	-.037	1	-.001	.080	.068	-.035	-.030	.027

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).

Table 5.38 shows Karl Pearson Correlations between EVA, MVA and Accounting ratios of financial sector and as can be seen from the Table 5.38, EVA and MVA has no relationship with any of the accounting ratios under automobile sector during the study period except EVA there is a significant relationship with ROA whose value is .181.

Table 5.39: Karl Pearson Correlations between EVA, MVA and Accounting ratios of Fertilizer sector

	EVA	MVA	EPS	ROA	ROIC	RONW	PER	DPS
EVA	1	-.691*	-.516	.030	.011	-.217	-.822**	-.684*
MVA	-.691*	1	.843**	-.144	-.129	-.160	.829**	.963**

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).

In the Table 5.39 it can be observed that the EVA is significantly correlated with PER and DPS. However, EVA is insignificantly correlated with EPS, ROA, ROIC and RONW. As can be seen from the Table 5.39, it can also be observed that there is a significant relationship with MVA and EPS, PER and DPS whereas MVA is insignificant with ROA, ROIC and RONW.

Table 5.40: Karl Pearson Correlations between EVA, MVA and Accounting ratios of Energy sector

	EVA	MVA	EPS	ROA	ROIC	RONW	PER	DPS
EVA	1	.352**	-.085	.124	.134	-.149	.028	-.133
MVA	.352**	1	.382**	.412**	.414**	-.015	.046	.031

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Table 5.40 shows Karl Pearson Correlations between EVA, MVA and Accounting ratios of energy sector and as can be seen from the Table 5.40; EVA has no relationship with any of the accounting ratios under energy sector. However, there is a significant relationship between MVA with EPS, ROA, and ROIC whereas MVA has no relationship with RONW, PER and DPS.

Table 5.41: Karl Pearson Correlations between EVA, MVA and Accounting ratios of Consumer goods sector

	EVA	MVA	EPS	ROA	ROIC	RONW	PER	DPS
EVA	1	-.147	.223	.239	.186	-.253	.090	-.003
MVA	-.147	1	-.291*	.174	.015	.279	.007	-.099

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).

In the Table 5.41 it can be observed that EVA is insignificant with any of the accounting ratios. Table 5.41 also shows that there is no significant relationship between MVA with other accounting ratios except EPS whose value is -.291.

Table 5.42: Karl Pearson Correlations between EVA, MVA and Accounting ratios of Cement sector

	EVA	MVA	EPS	ROA	ROIC	RONW	PER	DPS
EVA	1	.266	.083	-.442*	-.415*	-.425*	.206	.025
MVA	.266	1	-.437*	-.570**	-.532**	-.565**	.600**	-.313

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).

Table 5.42 shows Karl Pearson Correlations between EVA, MVA and Accounting ratios of cement sector and as can be seen from the Table 5.42; there is a significant relationship between EVA and ROA, ROIC and RONW. EVA has no

relationship with EPS, PER and DPS. Table 5.42 also shows that there is a significant relationship between MVA with EPS, ROA, ROIC, RONW and PER whereas MVA has no relationship with DPS whose value is -.313.

Table 5.43: Karl Pearson Correlations between EVA, MVA and Accounting ratios of Construction sector

	EVA	MVA	EPS	ROA	ROIC	RONW	PER	DPS
EVA	1	-.245	-.309	-.633*	-.694*	-.565	-.404	.208
MVA	-.245	1	.334	.001	-.265	-.199	.616*	.563

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).

Karl Pearson Correlations between EVA, MVA and Accounting ratios of construction sector is presented in the Table 5.43 and as can be seen from the Table 5.43, EVA has no relationship with any of the accounting ratios under construction sector except ROA and ROIC whose value is -.633 and -.694 respectively. Table 5.43 also shows that none of the accounting ratios have relation with MVA except for PER whose value is .616.

CHAPTER-6

FINDINGS, CONCLUSIONS AND SUGGESTIONS

The summary of the findings of the study are given here in this chapter. Conclusions and suggestions related to the study are also highlighted in this chapter.

6.1   FINDINGS:

Findings of the study based on the analysis of the data are given as follows:

1. There have been growths in the capital market in India which can be witnessed in terms of the number of intermediaries and companies listed in the stock exchanges.

Ranking of the companies based on mean of Economic Value Added (EVA)

2. There were 595 EVA observations of the Nifty 50 companies for 12 years. The mean EVA value of the entire observations was Rs. 3648.47 crores with standard deviation of 3570. The minimum EVA value was -321.12 whereas the maximum EVA value was Rs. 32752.66 crores.

3. All the 50 companies were found having positive EVA values during the study period except four observations. Thus, all the companies listed in the Nifty 50 are creating value for the shareholders.

4. Among the Nifty companies, Ultratech had negative EVA value in the year 2010-11 with a value of -319.13 and for Grasim in the year 2008-09 and 2009-10 with values of -10.18 and -275.31 respectively. The negative EVA was found of Titan Company in the year 2017-18 with a value of -321.12.

5. For the whole period, ONGC ranks 1st rank followed by Titan and Sunpharma. SBI stand 4th rank and Infosys ranks 5th. Cipla is the least rank among Nifty 50 companies.

6. Among the IT companies Infosys stands highest rank with 5th position among the 50 companies. The rank of TCS stands at 15th, HCL 17th Wipro 21st and Tech Mahindra at 30th.

7. Zee Company is the only media company listed in Nifty and stands at 34th rank.

8. Among the four companies of metal sector Coal India ranks 7th among the 50 companies. The EVA rank of Tata Steel, VEDL and Hindalco stands at 26th, 31st and 40th respectively.

9. Sun Pharma with rank of 3rd has the highest EVA mean among the pharma companies followed by Dr.Reddy (rank 8th) and Lupin Company (11th rank). Cipla Company rank last i.e., 50th among the Nifty 50 companies.

10. Adaniports Company is the only Service company listed in Nifty under service sector and ranks 22nd among the fifty companies.

11. Infratel ranks 9th among the nifty 50 companies while Bharti airtel rank 41st among Nifty listed company as per mean of EVA.

12. Maruti rank 12th among the automobile companies followed by M &M (24th rank) and Bajaj Auto (29th rank). Eicher and Heromotoco rank least with 39th rank and 44th rank.

13. SBI and Yes Bank rank 4th and 6th among the top ten of the Nifty 50 companies from financial sector. Ibulfin, Bajajfinance and Bajajfinserve Companies are among the bottom at 36th rank, 37th rank and 48th rank.

14. UPL is the only company listed under Nifty 50 under Fertilizer Company and rank 42nd in the overall.

15. ONGC ranks 1st among the Energy sector companies as well as among all the Nifty companies.NTPC rank 10th and Reliance company rank 13th. Hindpetro rank 47th and stand bottom among the energy companies.

16. Titan company rank 2nd among the Nifty 50 companies. ITC rank 18th, Hindustanlever rank 28th and Asian paints rank 49th. Asian paints rank 49th among the Nifty companies.

17. Under Cement companies, Grasim rank 46th while Ultratech rank 45th among the Nifty 50 companies.

18. Larsen & Toubro is the only construction company listed under Nifty 50 and rank 25th among the Nifty companies.

Ranking of the companies based on mean of Market Value Added (MVA)

19. There were 595 MVA observations of the Nifty 50 companies for 12 years. The mean MVA value of the entire observations was Rs. 963866.94 crores with standard deviation of 1212464.23. The minimum MVA value was 1141.98 whereas the maximum MVA value was Rs. 8401723.77 crores.

20. MVA of Axis banks grows continuously during 5 years i.e. 2007-08 to 2012-13.

21. ITC, TCS, HCL, Adaniports, Asian paints and BPCL have almost an increase in 50% MVA from 2007-08 to 2012-13.

22. Axisbank, TCS and Reliance companies has largest MVA. Bajaj Finserve, Eicher and IndusBank having least Market value during 2007-08.

23. MVA of HDFC bank, Kotak bank, IOC, Asian paints, BPCL, Indusbank and Bajaj finserve grows continuously from 2013-14 to 2018-19.

24. Market value of ONGC, Coal India, ICICI bank, Lupin, TATA Motors and WIPRO has decreased during the period of 5 years 2013-14 to 2018-19.

25. In 2013-14, among 50 companies, ICICI bank has the largest market value followed by ONGC. In the year 2018-19, Tata Motors and TITAN have the least MVA.

26. In 2018-19, Reliance Company has the largest MVA followed by TCS.

27. MVA of TCS, HDFC bank, HDFC, Maruti, Kotak bank, NTPC, Adaniports and Ultra tech companies have almost 50% increase in MVA from 2013-14 to 2018-19.

28. Titan was having the least MVA among the 50 companies in 2013-14. IBUL was having least MVA among the 50 companies.

29. TCS stands highest rank among IT companies with an overall rank of 3rd among the Nifty 50 companies. The rank of Infosys stands at 7th, Wipro 18th, HCL 21st and Tech Mahindra at 46th.

30. There is only one company under Media sector and ZEE stands with an overall rank of 45th among the Nifty 50 companies.

31. Coal India stand highest rank among Metal companies with an overall rank of 9th position among the Nifty 50 companies. The rank of VEDL stands at 24th, Tata Steel at 33rd. Among the Metal sector, Hindalco rank lowest at 42nd among the Nifty 50 companies.

32. Sun pharma rank top among Pharma companies and also rank 15th among the Nifty companies. Lupin stands at 35th, Cipla at 36th and Dr.Reddy rank lowest at 39th.

33. Telecom sector which comprises of only two companies namely Bharti Airtel and Infratel. Bharti Airtel performs better than Infratel as per their mean of MVA. Bharti Airtel rank 13th among the Nifty 50 companies whereas Infratel ranks 28th among the Nifty.

34. Among automobile companies, Maruti rank top and also secured 16th rank among Nifty companies. M & M whose rank is 2nd best among the six company rank 27th in the overall rank of Nifty companies. Bajaj auto whose rank is 30th in the overall Nifty rank 3rd among automobile company.

35. HDFC Bank rank top among finance companies and also rank 4th among the Nifty companiesfollowed by HDFC whose rank is 5th in the overall Nifty 50. Axis bank rank 8th, ICICI bank rank 10th, SBI rank 12th, Kotak bank rank 17th. Bajaj Finserve and IBULFIN are the worst performer whose rank are 43rd and 44th in the overall Nifty.

36. There is only one company under fertilizer sector i.e. UPL company and UPL stand with an overall rank of 49th among the Nifty 50 companies.

37. Reliance rank 1st among energy sector as well as in the overall Nifty 50. ONGC who secured 2nd rank among the companies also rank 2nd position in the overall Nifty companies. NTPC rank 3rd among the energy secured only 19th in the overall Nifty. BPCL, GAIL and Hinpetro are the worst performer whose rank are only 29th, 31st and 47th in the overall Nifty.

38. ITC rank 1st among consumer goods companies and also rank 6th among the overall Nifty companies. Asian paint ranks 25th in the overall rank and Titan Company were at the bottom among Nifty companies.

39. Ultratech ranks 26th in the overall Nifty 50 and Grasim company rank 37th among the Nifty companies.

40. There is only one company under construction sector i.e. LARSEN &Toubro company and rank of 14th among the Nifty 50 companies.

Yearly stock price and descriptive statistics of stock price of the companies.

41. Among the IT sector, mean of Infosys is highest followed by TCS and Tech Mahindra and Wipro has the least. Among the IT companies listed in Nifty, Infosys in the most volatile IT company and the Wipro Company is the least volatile company.

42. There is only one company under Media sector and the mean of ZEE stand at 303.2 with the standard deviation of 157.64.

43. VEDL has the largest mean among the metal companies followed by Tata steel VEDL Company is the most volatile company among the metal sector with the largest deviation from the mean of 849.81 whereas Coal India is the least volatile metal company with standard deviation of 36.56.

44. Dr. Reddy has highest mean among the four companies of pharma sector followed by Lupin. Among the four companies, Cipla Company has the least mean of stock price i.e., 421.62. Dr. Reddy is the most volatile Pharma Company with largest standard deviation of 1044.13.

45. There is only one company under service sector i.e., Adaniports. The mean stock price of Adaniports stands at 325.98 and the standard deviation at 194.87.

46. Bharti airtel and Infratel Company are the only two companies under telecom sector listed in Nifty. Bharti airtel has higher mean value than Infratel Company.

47. Eicher motor has highest mean among the six companies among automobile companies followed by Maruti. Tata motor has the least mean of stock price i.e., 467.47. Eicher is the most volatile automobile company and &M the least volatile among the companies.

48. The mean stock price of Bajaj finserve is highest followed by Bajaj finance and Axis bank among finance companies and Yes bank Company has the least mean stock price. Bajajfinserve is the most volatile finance company with the largest standard deviation whereas IBULFIN is the least volatile company with standard deviation.

49. There is only one company under fertilizer sector i.e., UPL and the mean of UPL stand at 368.9 and the standard deviation from the mean stand at 295.32.

50. Among the energy sector, Reliance has highest mean stock price followed by ONGC and BPCL Company. NTPC has the least mean stock price and among the energy sector, Reliance Company has the largest standard deviation indicating to be the most volatile energy company whereas NTPC is the least volatile energy company with the lowest standard deviation.

51. Asian paint has the highest mean stock price among the four consumer goods companies followed by Titan and ITC Company has the least mean of stock price.

52. Among the two of cement companies, Grasim has higher stock price than Ultraterch Company whose mean is only 2239.37.

53. Larsen & Toubro is only company under construction sector. The mean and standard deviation of stock price of Larsen & Toubro is 1582.98 and 486.77.

Yearly stock return and descriptive statistics of stock return of the companies.

54. During 2007-2012-13, Negative stock return are found in HCL at -13.09, Infosys at -28.67, TCS at -34.32, Tech Mahindra at -50.58, Wipro at -22.76, Zee at -1.85, Cipla at -7.09, Dr. Reddy at -18.81, Lupin at -17.77, M & M at -10.67, Tata motor at -14.49, Bajaj finserve at 13.34, Bajaj finance at -21.43, ICICI bank at -9.84, UPL at -19.25 and NTPC at -54.76 in the year 2007-08.

55. In the year 2008-09, the stock return of almost all the company is found to be negative except Coal India, Lupin, Bajaj Auto, Heromotoco, Bajajfinserve, Bajaj finance, IBULS, Yes bank, Hinpetro, NTPC, Asian paint, and Hindustanlever.

56. In the year 2009-10, the highest stock return of the company is obtained by Vedanta Company followed by Tata motor and HCL Company.

57. Among the positive stock return, least closing stock return is obtained by Cipla followed by Infosys and Maruti Company.

58. Bajaj finserve, HDFC Bank and UPL Company are the only three companies who have positive annual return during the entire six years i.e. 2013-14 to 2018-19. All the companies other than these companies have negative stock return in one or more years.

59. Among the positive stock return, Dr. Reddy has highest stock return among the companies followed by Eicher motor in the year 2014-15 whereas Grasim, Axis bank and Coal India has least annual stock return in the year 2017-18, 2015-16 and 2016-17 respectively.

60. Among the five companies under IT sector HCL has the highest annual mean return followed by Tech Mahindra and TCS. Among the five companies, Infosys has the lowest mean annual return. HCL has the largest standard deviation while lowest standard deviation of the annual stock return was TCS Company.

61. ZEE is the only company under Media sector. The mean annual stock return of ZEE stands at 16.64 with a standard deviation of 55.66.

62. VEDL has the largest mean annual stock return followed by Hindalco. VEDL Company has also the largest standard deviation whereas Coal India has the lowest standard deviation.

63. Dr. Reddy has highest mean value among the four pharma companies followed by Lupin. Sun pharma Company has the least mean annual stock return.

64. Adaniports is the only company under service sector. The mean annual stock return of ZEE stands at 14.47 with the standard deviation of 56.45.

65. Among telecom companies, Bharti Infratel has higher mean annual stock return as compared to Bharti airtel Company.

66. Eicher has highest mean value among the six automobile companies followed by Maruti and Tata motor. Tata motor has the largest standard deviation among the automobile companies whereas Bajaj auto has least variation.

67. Among the eleven companies under finance sector, IndusBank has the highest mean annual stock return followed by Bajajfinserve and Bajajfinance. SBI stand at bottom with mean annual stock return. IndusBank has the largest standard deviation whereas HDFC bank has the least standard deviation.

68. There is only one company under Fertilizer sector and the mean of UPL stand at 19.7 and the standard deviation is 51.46.

69. Among Energy Company, BPCL has highest mean annual stock return followed by Powergrid and GAIL. IOC, ONGC and NTPC were at bottom based on the mean of their stock return. ONGC has the largest deviation from the mean whereas Powergrid has the least standard deviation.

70. Among the four companies; mean of Titan is highest followed by Asian paint and Hindustanlever. ITC stand at bottom with mean of only 8.22.

71. Among the two companies of cement, mean of Ultratech is higher than Grasim Company which indicates that Ultratech Company performs better than Grasim Company.

72. Larsen & Toubro is the only company under construction sector listed in Nifty. The mean annual stock return of Larsen & Toubro is 3.91 with the standard deviation of 35.37.

Yearly Earning per Share (EPS) of the companies and descriptive statistics of Earning per Share (EPS) of the companies

73. Earning per Share (EPS) of Coal India, Eicher motor, Axis bank, Bajaj finserve, Bajaj finance, HDFC bank, Indus bank and SBI grows continuously during 5 years i.e. 2007-08 to 2012-13. However, it is found that Earning per

Share (EPS) of ZEE, TATA steel, Vedanta, Sun pharma, BPCL, Reliance and SBI has decreased during 5 years i.e. from 2012-13 to 2007-08.

74. Infosys, Coal India, Cipla, Dr. Reddy, Bajaj auto, Eicher, Hero motoco, Axis bank, Bajaj finserve, HDFC bank, Indus bank, UPL, NTPC, Asian paints and Hindustan lever has almost an increase in 50% of EPS from 2007-08 to 2012-13.

75. EPS of Vedanta, Lupin, Sunpharma, Airtel, Tata motors, Reliance, Titan and Larsen Toubro companies has constantly decreased from 2012-13 to 2007-08.

76. Vedanta, Grasim and SBI were the three top companies who have largest Earning per Share (EPS) in the year 2007-08 and 2012-13 while Tata motor, IBUL and Adani ports have the least EPS in the year 2012-13, 2008-09 and in the year 2009-10.

77. Earning per Share (EPS) of Adani ports, Eicher motor, Hero motoco, Maruti, Bajaj finserve, HDFC bank, Power grid and Asian paints grows continuously during 5 years from 2013-14 to 2018-19.

78. ZEE, Hindalco, Tata steel, Adani ports, Airtel, Eicher, Maruti, Tata Motors, Bajaj finserve, HDFC bank, IBULS, Indus bank, UPL, Power grid, Asian paints and Titan companies has almost an increase in 50% of EPS from 2013-14 to 2018-19. Earning per Share (EPS) of HCL, Wipro, Tech mahindra, ZEE, Hindalco, Tata steel, Adani ports, Airtel, Bajaj Auto, Bajaj finserve, Maruti, Tata motors, Power grid and Asian paints has decreased from 2018-19 to 2013-14.

79. Eicher, Maruti and Bajaj auto companies were the three top companies who have largest Earning per Share (EPS) in the year 2018-19, 2017-18 and in 2018-19 whereas SBI, Tata motors and Axis bank company has the least EPS in the year 2017-18, 2015-16 and 2017-18.

80. Among the Earning per Share (EPS) of all the selected Nifty fifty companies of the entire period of 12 years, Eicher Company has the highest mean followed by Grasim and Maruti.

81. Hero motoco and Bajaj auto come on 4th and 5th place. ITC, Powergrid and ZEE Company were at bottom.

Yearly Return on Assets (ROA) of the companies and descriptive statistics of Return on Assets (ROA) of the companies

82. Airtel is the only company whose ROA has constantly increase from 2007-08 to 2012-13. Return on Assets of ZEE, LUPIN, Bajaj finance, Indus bank, HDFC bank, Titan and M & M companies also grows continuously during the first 3 years i.e. 2007-08 to 2009-10 and start declining from 2010-11 to 2012-13.

83. ROA of Infosys, Sun pharma, ICICI bank, Ultratech and Larsen &Toubro has decreased at a very high rate from 2007-08 to 2012-13.

84. Dr Reddy, Airtel, M & M, HDFC, HDFC bank, SBI, GAIL, ONGC and Hindustan lever has almost an increase in 25% ROA from 2007-08 to 2012-13.

85. Among all the selected Nifty companies, Return on Assets of Hindalco, Tata steel, Airtel, Eicher, M & M, Axis bank, Bajaj finserve, HDFC, IBULS, ICICI bank, Indus bank, Kotak bank, SBI, UPL, BPCL, Gail, Hinpetro, IOC, NTPC and Power grid is less than 10% of whole the Return on Assets from during the period of five years from 2007-08 to 2012-13.

86. HDFC bank, Bajaj auto and Adani ports are the three top companies which have largest ROA the year 2012-13, 2010-11 and 2008-09 while IBULS, Tata motors and SBI has the least on ROA in the year 2007-08, 2012-13 and 2010-11.

87. ROA of Adani ports, Airtel, BPCL, and Power grid Company are the companies whose ROA has constantly increase from 2013-14 to 2018-19. Vedanta, Eicher, SBI, UPL, BPCL and Hinpetro companies also grows continuously during the first 3 years i.e. 2013-14 to 2016-17 and start declining in 2017-18 and 2018-19.

88. Return on Assets (ROA) of Cipla, Lupin, Sunpharma, Infratel, Axis bank, and Ultratech companies has decreased at a very high rate from 2013-14 to 2018-19. Hindalco, Airtel, Bajaj auto, Eicher motor, M & M, Tata motor, IBULS, ICICI bank, SBI, Yes bank, UPL, Hinpetro, IOC and Reliance, companies has almost an increase in 45% of ROA from 2013-14 to 2018-19.

89. Among all the selected Nifty companies, Return on Assets of Hindalco, Tata steel, Axis bank, Bajaj finserve, Bajaj finance, HDFC, IBULS, ICICI bank, Kotak bank, IOC, Powergrid, Ultratech and Larsen &Toubro is less than 10% of the whole Return on Assets from 2013-14 to 2018-19.

90. Bajaj auto, Coal India and Hindustan lever are the three top companies which have largest Return on Assets (ROA) in the year 2018-19, 2017-18 and 2018-19 whereas Axis bank, IBULS and SBI have the least in the year 2018-19, 2015-16 and 2016-17.

91. Among all the selected Nifty companies for the entire period, Bajaj auto Company has the highest mean followed by TCS and Coal India. Heromotoco and HDFC bank are placed on 4th and 5th place. IBULS, Axis bank and Infratel were at bottom.

Yearly Return on Invest Capital (ROIC) of the companies and descriptive statistics of return on Invest Capital (ROIC) of the companies

92. ROIC of ZEE, Coal India, Hindalco, Lupin, Airtel, M &M, Bajaj finance, HDFC, HDFC bank, Indus bank, Titan, Grasim and Larsen &Tourbo are the only company whose ROA has constantly increase during the first three years from 2007-08 to 2012-13.HCL, Hindalco, Eicher, Tata motor, Kotak bank, Yes bank, Hinpetro, ONGC, Grasim and Larsen &Tourbo companies also

grows continuously during the first three years however; these companies start declining in 2011-12 and 2012-13.

93. Dr. Reddy, Eicher, M & M, HDFC, SBI, GAIL, ONGC and Hindustanlever companies have almost an increase in 47% of Return on Invest Capital (ROIC) from 2007-08 to 2012-13.

94. Among all the selected Nifty companies, ROIC of Tata steel, Airtel, M &M, Axis bank, Bajaj finserve, HDFC, IBULS, ICICI bank, Kotak bank, SBI, UPL, Hinptero, NTPC and Powergrid is less than 10% of the whole Return on Invest Capital (ROIC) from 2007-08 to 2012-13.

95. Tech Mahindra, Asian paints and TCS are the three top companies which have largest ROIC in the year 2008-09, 2010-11 and 2009-10whereas IBULS, Bajaj finserve and M &M motors have least in the year 2008-09, 2012-13 and 2007-08.

96. Return on Invest Capital (ROIC) of Airtel and Yes bank are the only company whose ROIC has constantly increased from 2013-14-08 to 2018-19. Lupin, Airtel, Eicher, SBI and BPCL companies also grows continuously during the first 3 years i.e. 2013-14 to 2016-17 however start declining in 2017-18 and 2018-19.

97. Dr. Reddy, Lupin, Sun pharma and Axis bank companies have decreased at a very high rate from 2013-14 to 2018-19. Hindalco, Tata steel, Airtel, IBULS, ICICI bank, SBI, Yes bank, UPL and Hinpetro companies has almost an increase in 40% in Return on Invest Capital (ROIC) from 2013-14 to 2018-19.

98. Among all the selected Nifty companies, Return on Invest Capital (ROIC) of Hindalco, Tata steel, Adani ports, Axis bank, Bajaj finserve, Bajaj finance, HDFC, IBULS, Kotak bank, Yes bank, UPL, Gail, Hinpetro, IOC, NTPC, Power grid, Grasim, Power grid and Larsen & Toubro is less than 10% of the whole Return on Assets from 2013-14 to 2018-19.

99. Coal India, ICICI bank and Bajaj are the three top companies which have largest ROIC in the year 2017-18 and 2018-19 whereas Coal India, Axis bank and UPL have the least in the year 2016-17, 2018-19 and 2013-14.

100.   Among all the Nifty 50 companies, TCS Company has the highest mean followed by Tech Mahindra and Hero motoco. Asian paint came on 4th and 5th place. IBULS, Kotak bank and HDFC Company were at bottom.

Yearly Return on net Worth (RONW) of the companies and descriptive statistics of return on Net worth (RONW) of the companies

101.   Coal India, Dr. Reddy, Adani ports, Hero motoco, Bajaj finance, HDFC bank, SBI, Yes bank, UPL, NTPC, Power grid, ITC and Titan has increased during the first three years from 2007-08 to 2009-10. However, Return on Net Worth (RONW) of Hindalco, Tata Steel, Vedanta, Airtel, Bajaj auto, Hero motoco, TATA motor, Bajaj finserve, HDFC, IOC, and Larsen &Tourbo have decreased during the next three years from 2010-11 to 2012-13.

102.   ZEE, Coal India, Dr. Reddy, Adani ports, Eicher, Bajaj Finance, ICICI bank, NTPC, ONGC, Asian paints, Hindustan lever, Titan and Dr. Reddy companies have almost an increase in 50% of Return on Net Worth (RONW) from 2007-08 to 2012-13.Bajaj finserve, UPL, Hinpetro, IOC, NTPC, ONGC, Power grid and Titan is less than 15% of the whole Return on Net Worth (RONW) from 2007-08 to 2012-13.

103.   Eicher company has negative return on net worth of the company in 2008-09.Hindalco, Bajaj auto and Heromotoco are the three top companies which have largest Return on Invest Capital (ROIC) in the year 2010-11,while Eicher, Power grid and NTPC has the least in the year 2007-08.

104.   Power grid is the only company whose RONW has constantly increased from 2013-14-08 to 2018-19. Vedanta in the year 2015-16, Sunpharma in 2013-14 to 2016-17, Airtel in 2015-16 and 2018-19, Tata

motor from in 2014-15 to 2017-18 and SBI in the year 2017-18 shows negative Return on Net worth (RONW).

105.	Wipro, Maruti, Bajaj finserve, UPL, BPCL, Reliance and Asian paints companies grows continuously during the first 3 years i.e. 2013-14 to 2016-17 and start declining in 2017-18 and 2018-19. Lupin, ICICI bank, Yes bank, ONGC, Grasim and Ultratech companies have decreased at moderate rate from 2013-14 to 2018-19. Hindalco, Vedanta, Infratel, Tata motors, Bajaj finserve, NTPC and Powergrid companies have almost an increase in 40% of Return on Net Worth (RONW) from 2013-14 to 2018-19.

106.	Sunpharma, Airtel, Tata motors, Bajaj finserve, SBI, IOC, NTPC, ONGC, Power grid, Reliance, Titan and Grasim is less than 10% of the whole Return on Net Worth (RONW) from 2013-14 to 2018-19. Coal India, Hindalco and ZEE are the three top companies which have largest Return on Net Worth (RONW) in 2016-17, 2018-19 and 2013-14 whereas Sun pharma, Tata motors and Vedanta have the least in the year 2013-14, 2014-15 and 2015-16.

107.	Among all the Nifty 50 companies, Coal India Company have the highest mean followed by Hindalco and Heromotoco. Bajaj auto and TCS came 4th and 5th place. Power grid, NTPC and Tata motors Company were at bottom.

Yearly Return on Price to Earnings ratio (PE) of the companies and descriptive statistics of PER ratio of the companies

108.	Among the IT companies, price to earnings ratio of TCS is much higher than all the other IT Company in the year 2007-08. Among metal, ratio of Coal India is much higher than all the other three companies with value of 8.87 in the year 2007-08.

109.	The highest price to earnings ratio of the Nifty companies is obtained by Titan followed by HDFC bank and ZEE in the year 2007-08 whereas price

to earnings ratio of IBULS, Eicher motor and ICICI bank has obtained the least in the same period i.e., 2007-08.

110.   Hindalco, Tata steel, Lupin, Sunpharma, Airtel, Eicher, Bajaj finserve, Kotak bank, Yes bank, Hinpetro and Asian paint have almost increase in 46% of price to price to earnings from 2007-08 to 2012-13 whereas Tech Mahindra, Vedanta, Adaniports, M & M, Maruti, Axis bank, HDFC Bank, SBI, UPL, and Larsen & Toubro has almost 52% of decreased in price to earnings ratio from 2012-13 to 2007-08.

111.   PE ratio of Bajaj finserve and Bajaj finance are the only company whose ratios has constantly increase from 2013-14 to 2018-19. ZEE, LUPIN, Airtel, Gail, Hindustanlever, Titan, and Larsen & Toubro also grows continuously during the first 3 years i.e. 2013-14 to 2016-17 and start declining in 2017-18 and 2018-19.

112.   PE ratio of Cipla, Lupin, Sunpharma, Infratel, Axis bank, and Ultratech companies has decreased at a very high rate from 2013-14 to 2018-19.Vedanta, Sunpharma, Eicher motor, Heromotoco, Tata motor, SBI, Hinpetro, and Grasim companies have almost decreased in 50% of PE ratio from 2013-14 to 2018-19.

113.   Titan, Asian paint and Hindustanlever are the three top companies which have largest PE ratio whereas Axis bank, Vedanta and Yes bank are the three companies whose PE ratio is at bottom.

114.   Among all the Nifty 50 companies, Titan has the highest mean followed by Asian paint and Hindustanlever. ITC and ZEE Company came 4th and 5th place. Axis bank, IBULS and Vedanta Company were at bottom.

Yearly Return on Dividend per Share (DPS) of the companies and descriptive statistics of DPS ratio of the companies

115.   Among the IT companies, Dividend per share of Infosys is much higher than all the other IT Company in the year 2007-08. Among metal

sector, dividend per share of Tata steel is much higher than all the other three companies with value of 16.00 in the year 2007-08.

116.   The highest dividend per share of the Nifty companies is obtained by Tech Mahindra followed by Asian paint and SBI.

117.   Tech Mahindra, Coal India, Dr. Reddy, Airtel, Heromotoco, Bajaj finance, HDFC bank, IBULS, Indus bank, SBI, Yes bank, Hinpetro, NTPC, Powergrid, Asian paint, Hindustan lever, ITC, Ultratech and Larsen & Toubro have almost increase in 40% of DPS from 2007-08 to 2012-13 whereas Vedanta, Lupin, Sun pharma, Eicher, Tata motor, HDFC, ICICI bank and have almost 52% of decrease in DPS from 2012-13 to 2007-08.

118.   ZEE, Cipla, HDFC, HDFC bank, Indus bank, Asian paint and Larsen & Toubro are the only company whose ratios has constantly increased from 2013-14 to 2018-19. Tata steel, Heromotoco, Axis bank, Bajaj finance, Indusbank, Yes bank, Hinpetro, Reliance, Hindustanlever and ITC also grows continuously during the first 3 years i.e. 2013-14 to 2016-17 and start declining in 2017-18 and 2018-19.

119.   Vedanta, Lupin, Infratel, HDFC bank, Indus bank, UPL, BPCL, IOC, Powergrid, Asian paint and Larsen & Toubro companies have increased at a very high rate from 2013-14 to 2018-19. However, Tech Mahindra, Wipro, Coal India, Adaniports, Eicher, Tata motor, Axis bank, Bajajfinance, ICICI bank, Kotak bank, SBI, Yes bank, Gail and Grasim companies have almost decreased in 60% of DPS from 2013-14 to 2018-19.

120.   TCS, Infosys and Hinpetro are the three top companies who have largest DPS whereas Axis bank and Tata motor are the two companies whose DPS is at bottom.

121.   Among all the Nifty companies, TCS has the highest mean followedby Infosys and Bajaj auto. Heromotoco and Tech mahindra Company came 4th and 5th place. Hindalco, Adaniports and Bajaj Finserve Company were at bottom.

Relationship between the Stock price, Stock and EVA

122.   As per correlation between stock price, stock return, and EVA based on the entire 595 observations of the entire 50 companies, the correlation coefficient between EVA and stock price is only -0.021 and hence we failed to reject the null hypothesis that there is no significant relationship between EVA and stock price. Therefore, there is no significant relationship between EVA and stock price in the Nifty 50 companies. The study also found that there is also no significant relationship between EVA and the stock return.

Relationship between the EVA and MVA

123.   The relationship between EVA and MVA of the entire observation was conducted and the correlation co-efficient between EVA and MVA is found to be 0.206 which is significant at 0.01 level. Thus it is found that there is a significant relationship between EVA and MVA.

Relationship between the stock price, stock return and accounting ratios

124.   Correlation between stock price, stock return and the accounting ratios of the entire observation was conducted and observed that the stock price is significantly correlated with all the accounting ratios other than Price Earnings Ratios. The study also found that there is a significant relationship among the accounting ratios other than the relationship between Return on Net worth (RONW) and price earnings ratios (PER).

Relationship between the EVA, MVA and accounting ratios

125.   There is no significant relationship between EVA and the accounting ratios. None of the accounting ratios are statistically related to the EVA. As regard the relationship between MVA and the accounting ratios, there is a significant relationship between MVA and the Dividend per share (DPS) only. All the other accounting ratios have no significant relationship between MVA and the accounting ratios.

CORRELATION BETWEEN STOCK PRICE, STOCK RETURN, EVA AND MVA SECTOR WISE

126.   The relationship between the stock price, stock return, EVA and MVA in the respective sectors was conducted for all the sectors and for IT sector there is no significant relationship between EVA and the stock price and stock return. There is also no significant relationship between MVA and the stock return.

127.   The study found that correlation coefficient between EVA and Stock price is 0.187 and the correlation coefficient between EVA and stock return is -0.019 which mean both are statistically insignificant. However, there is a significant relationship between MVA and stock price as well as EVA and MVA.

128.   For Media sector, there is no significant relationship between EVA and the stock price and stock return. There is also no significant relationship between MVA and the stock return. The study also found that The correlation coefficient between EVA and Stock price is 0.449 and the correlation coefficient between EVA and stock return is 0.182 both are statistically insignificant. However, there is a significant relationship between MVA and stock price.

129.   For Metal sector, no statistical relationships have been found between stock price, EVA and MVA. There is also no significant relationship between stock return, EVA and MVA. The correlation coefficient between EVA and Stock price is -.103 and the correlation coefficient between EVA and stock return is -.095 both are statistically insignificant. However, there is a significant relationship between MVA and EVA.

130.   No significant relationships have been found between stock price, EVA and MVA in pharma sector. However, a significant relationship between stock price and stock return is found to be positive. There is also no significant relationship between stock return, EVA and MVA. The correlation

coefficient between EVA and Stock price is.244 and the correlation coefficient between EVA and stock return is .103 both are statistically insignificant. However, there is a significant relationship between EVA and MVA.

131.   For Service sector, there is no significant relationship between EVA and the stock price. There is also no significant relationship between MVA and MVA. However, there is a significant relationship between MVA and stock price as well as MVA and stock return. The correlation coefficient between EVA and Stock price is .189 and the correlation coefficient between MVA and EVA is .186 both are statistically insignificant.

132.   For telecom sector, no significant relation has been found between EVA and Stock price as well as EVA and Stock return. There is also no significant relationship between MVA and MVA. However, a significant relationship has been found between MVA and stock price, between MVA and EVA. The correlation coefficient between EVA and Stock price is -0.29 and the correlation coefficient between MVA stock return is -0.11which indicates both are statistically insignificant.

133.   For automobile sector, no significant relationship has been found between EVA and stock price as well as EVA and stock return. However, there is a significant relationship between MVA and stock price, MVA and EVA during the study period.

134.   Correlations between Stock price, Stock Return, EVA and MVA of Financial sector reveals that there is a significant relationship between stock price and stock return and stock price and MVA. However, there is no significant relationship between EVA and stock price, EVA and stock return as well as MVA and EVA.

135.   For fertilizer sector there is no significant relationship between EVA and stock return. There is also no significant relationship between MVA and the stock return. The correlation coefficient between EVA and Stock price is -.715 and the correlation coefficient between MVA and stock price is .991

both are statistically significant which indicate that there is a significant relationship between EVA and stock price, MVA and stock price.

136.   For energy sector there is a significant relationship between stock price and stock return and stock price and MVA. There is also a significant relationship between MVA and EVA. However, there is no significant relationship between EVA and stock price, EVA and stock return as well as MVA and stock return.

137.   For consumer goods sector, there is no significant relationship between EVA and stock return. There is also no significant relationship between MVA and stock price. There is no significant relationship between EVA and stock return as well as MVA and stock return. However, there is a significant relationship between stock price and stock return as well as EVA and stock return.

138.   Correlations between Stock price, Stock Return, EVA and MVA of cement sector reveals that there is a significant relationship between stock price and EVA, stock price and MVA.

139.   For construction, there is no significant relationship between EVA and stock price. There is also no significant relationship between EVA and stock return. The study also found that there is no significant relationship between MVA and stock price, MVA and stock return as well as MVA and EVA. However, there is a significant relationship between stock price and stock return.

CORRELATION BETWEEN STOCK PRICE, STOCK RETURN, AND ACCOUNTING RATIOS BASED ON SECTORS

140.   Correlations between stock price, stock return and accounting ratios of IT sector observed that for IT sector, the stock price is significantly correlated with EPS, RONW and DPS but not significantly correlated with

stock return, ROA, ROIC and PER. Stock return is not related with any of the other variables in the IT sector.

141.   For Media Company, Stock price, Stock Return, and Accounting ratios, it is found that there is a significant correlation between stock price and EPS and PER. However, stock price is insignificant with ROA, ROIC, ONW and DPS. Table 125 also shows that stock return is not significantly correlated with EPS, ROA, ROIC, RONW, PER and DPS.

142.   For metal company, the stock price is significantly correlated with EPS and other accounting ratios such as ROA, ROIC, RONW, PER and DPS are insignificant with stock price.

143.   For Pharma Company, the stock price is significantly correlated with EPS and DPS but not significantly correlated with ROA, ROIC, RONW and PER.

144.   Correlations between Stock price, Stock Return, and Accounting ratios of Service sector found that there is a significant correlation between stock price and PER and DPS. However, stock price is insignificant with EPS, ROA, ROIC and RONW.

145.   For Telecom Company, stock price is insignificant with any of the accounting ratios except RONW.

146.   Stock price, Stock Return, and Accounting ratios of automobile sector reveal that there is a significant correlation between stock price and EPS, ROIC, PER and DPS. However, stock price is insignificant with ROA and RONW.

147.   In regards to financial company, stock price is statistically significant with EPS and PER. However, stock price is insignificant with ROA, ROIC, RONW and DPS.

148.   The study found that for Stock price, Stock Return, and Accounting ratios of fertilizer sector, there is a significant correlation between stock price and EPS, PER and DPS. However, stock price is insignificant with ROA, ROIC and RONW.

149.   For Energy Company, stock price is statistically significant with all the accounting ratios except PER.

150.   Among Consumer Company, there is a significant correlation between stock price and EPS, ROIC and DPS. However, stock price is insignificant with PER and RONW.

151.   Stock price is statistically significant with ROA, ROIC and PER whereas stock price and EPS, RONW and DPS have no relationship among the cement company.

152.   For construction sector, there is a significant correlation between stock price and EPS, ROA, RONW and PER. However, stock price is insignificant with ROIC and DPS.

CORRELATIONS BETWEEN EVA, MVA AND ACCOUNTING RATIOS OF IT SECTOR

153.   The correlations between EVA, MVA and Accounting ratios of IT sector and found that none of the accounting ratios have significant relationship with EVA whereas there is a significant relationship between MVA and EPS, RRONW and DPS.

154.   Among the media company, there is a significant correlation between EVA and RONW. There is also a significant correlation between MVA and EPS and PER. There is no significant relationship between EVA and EPS, ROA, ROIC, PER and DPS. MVA has no relationship with ROA, ROIC, RONW and DPS.

155. For metal sector, there is a significant correlation between EVA and RONW and DPS. However, EVA and EPS, ROA, ROIC and PER are statistically insignificant. The result also found that MVA is significant with ROA, ROIC, RONW and DPS whereas MVA is insignificant with EPS and PER.

156. For pharma sector, EVA is insignificant with any other accounting ratios other than MVA. MVA is also statistically insignificant with EPS, ROA and DPS. However, there is a significant relationship between MVA and ROIC, RONW and PER.

157. Correlation between EVA, MVA and accounting ratios of telecom sector reveals that EVA is statistically correlated with ROA, ROIC, PER and DPS but insignificant with EPS and RONW. The study also found that there is a significant correlation between MVA and PER, DPS; however, there is no significant relationship between MVA and EPS, ROA, ROIC and RONW.

158. For automobile company, EVA and MVA have no relationship with any of the accounting ratios under automobile sector except for MVA;there is a significant relationship with EPS.

159. EVA and MVA have no relationship with any of the accounting ratios under automobile sector during the study period except EVA which is significantly related with ROA.

160. For fertilizer company, EVA is significantly correlated with PER and DPS. However, EVA is insignificant with EPS, ROA, ROIC and RONW. There is a significant relationship with MVA and EPS, PER and DPS whereas MVA is insignificant with ROA, ROIC and RONW.

161. For energy sector, EVA has no relationship with any of the accounting ratios under energy sector. However, there is a significant relationship between MVA with EPS, ROA, and ROIC whereas MVA has no relationship with RONW, PER and DPS.

162. For consumer goods Company, EVA is insignificantly related with any of the accounting ratios. The study also finds that there is no significant relationship between MVA with other accounting ratios except EPS.

163. Correlations between EVA, MVA and Accounting ratios of cement sector reveals that there is a significant relationship between EVA and ROA, ROIC and RONW. EVA has no relationship with EPS, PER and DPS. The study also finds that there is a significant relationship between MVA with EPS, ROA, ROIC, RONW and PER whereas MVA has no relationship with DPS.

164. For construction sector, EVA has no relationship with any of the accounting ratios under construction sector except ROA and ROIC and none of the accounting ratios have relation with MVA except for PER.

6.2 CONCLUSIONS

The market value of stocks or stock price depends upon number of factors ranging from company specific to market specific. Financial information is used by various stakeholders to assess firm's current performance and to forecast the future as well. Performance measurements determine the necessary information about the situation of business and help managers in terms of decision making, planning, controlling and expediency and it also informs them about the fields that need amendment. EVA has been adopted by the advanced economies as financial performance measurement tool and corporate strategy which helped EVA to be identified as an important financial performance measurement tool over the conventional tools around the world. Though, there are mixed evidences on the superiority of EVA, it has gained attention of corporate giants based on what EVA can be acclaimed to be the most recent and exciting innovation in company performance measures. Another inference is that investor in India mostly focus on traditional measures while making investment decision and in valuation of companies. Therefore, the main purpose of this study is to investigate and examine correlation of Economic Value Added (EVA) as a tool of performance measures

while investing in Indian market and to provide evidence about its superiority as a financial performance measure as compared to conventional performance measures such as, Earning per Share (EPS), Return on Assets (ROA), Return on Invest Capital RoIC), Return on Net Worth (RoNW), Price to Earnings ratio (PE ratio) in Indian companies whose companies are listed in Nifty 50.

The study found that the companies under studies are value creators as the EVA value of the companies were found to be positive.The study found no evidence to support the contention that EVA as well as MVA is the best measure of stock price and stock return compared with traditional accounting performance measurement tools. The study has found a very weak correlation between EVA and MVA with stock price as well as stock return. However, EVA and MVA are positively correlated. The relationship between stock price and other accounting measures are found to be higher as compared to the relationship between stock price and EVA. Therefore, Economic Value Added (EVA) does not have an impact on stock price of a company. In regards to relationship between MVA and accounting measures, there is a relationship between MVA and the accounting ratios.

6.3   SUGGESTIONS

The share prices are influenced by the extent to which the management is able to meet the expectation of shareholders. Various measures like return on capital employed, return on equity, earning per share, net profit margin, operating profit margin have been used to evaluate the performance of the business. The problem with these measures is that they lack a proper benchmark for comparison. Traditional accounting measurement tools are found to be insufficient because these do not fully covered the company real picture and these measures fail to capture the shareholders' value creation actions. Recognizing problems associated with traditional measures, various value based measures have been developed and Economic value added (EVA) is one such measure that has gained significant attention among researcher and companies due to its ability to reflect the true value of the company.EVA is a difficult performance metric to calculate, with several complex components that can be calculated in several different ways such as NOPAT, cost of equity, and cost of debt, yet EVA is a well-accepted method especially in firm value maximization in all

over the world and many studies have been conducted in finance literature to bring out its superiority over traditional measurement tools. EVA is considered to be a method that needs to be thought over especially by not only big firms in every country but also by small and medium scaled firms.

The finding of this study does not provide strong support for the view that EVA has an economical significant influence on investment in stock market and there are several reasons why EVA may not cause improved market performance. EVA is based upon the book value and assets worth, whereas stock prices are determined by cash flow and growth expectations of firms. Therefore, EVA does not provide full cash flow information on which the stock market can act upon. The study is limited to companies listed in Nifty 50 only for a period of twelve years due to many constraints taking some popular traditional accounting measurement tools only. Futures perspectives of research can be done taking a more number of sampled companies across sectors taking variables such as component of income statement cash flow statement variables along with EVA.

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Brief Bio-Data of the candidate

Personal Information

Name	:	C. Vanlalzawna
Date of Birth	:	20.01.1989
Gender	:	Male
Nationality	:	Indian
Present Address	:	C-3, (D) Tuikual North, Aizawl, Mizoram
Permanent Address	:	152, New Siaha West. Siaha district Siaha.
Mobile No.	:	8974138358
Email	:	zahnak24@yahoo.com
Father's Name	:	C. Vanlalhmangaihsanga (L)
Mother's Name	:	Z. Hmetsungi

Education
1. Master of Philosophy with CGPA 7.73 from Mizoram University.
2. Master of Business Administration with CGPA 7.52 from Mizoram University.
3. Bachelor of Business Administration with 61.18% from Sikkim Manipal University.

SEMINAR/CONFERENCE/WORKSHOP ATTENDED:

1. Attended 2 Days National Seminar on "Corporate Governance in India: Emerging Issues and Challenges" Organized by Department of Management, Mizoram University during 27-28 August 2015.

2. Attended 2 Days National Level Seminar on "Women Entrepreneurship in North East India; Problems & Prospects" organized by Department of Management, Mizoram University during 20-22 September 2015.

3. Attended 10 Days National Level Workshop on "Research Methodology" sponsored by ICSSR, New Delhi and organized by Department of Mass Communication, Mizoram University during 22-31 March 2016.

4. Attended 5 Days Workshop on "Official Statistics in North East Region with special reference to the State of Mizoram" during 7-11 November 2016 organized by Indian Statistical Institute (ISI) and Sampling and Official Statistics Unit (SOSU) at Pachhunga University college, Aizawl, Mizoram.

5. Attended 2 Days National Level Seminar on "Agribusiness and Carbon management" organized by Department of Management, Mizoram University during 30-31 October 2017.

6. Attended Webinar on "Integrating Energy, Climate Change and Development Sustainable Development Goals held on 8th September 2020, Organized by Department of Management, Mizoram University.

7. Attended Webinar on "Covid-19, Aviation and Tourism: Implications for Destinations and Managers of Tourisms Enterprises" held on 31st July 2020, Organized by Department of Management, Mizoram University.

8. Attended Webinar on "Sustainable IT in Rural and Remote Environments" held on 2nd June 2020, Organized by Department of Management, Mizoram University.

9. Attended Webinar on "Cyber Crime against Women: Precautions and Strategies" 23rd November 2020, Organized by Department of Management, Mizoram University and supported by National Commission for Women (NCW), New Delhi.

PRESENTED PAPER IN SEMINAR/CONFERENCE/WORKSHOP:

1. Presented paper titled "A Comparative Study of Financial Performance Evaluation of Banks in India" in Joint Seminar on "Corporate Governance in India: Emerging Issues and Challenges" Organized by Department of Management, Mizoram University during 27-28 August 2015.

2. Presented paper titled "Impact of Demonetization on Stock Price in Indian Stock Market: An Empirical Study" in National Seminar on Demonetization and Digitization of Indian Economy during 27-28 November 2017 at North Eastern Hill University (NEHU), Shillong.

3. Presented paper titled "Economic Value Added (EVA) and Stock Price of Automobile Firms in Indian Stock Market: An Empirical Study" in International Conference on Recent Trends in Business, Management and Sustainable Development during 22-24 November 2018 at Manipur University, Imphal.

4. Presented paper titled "Sustainable Development Goals (SDGs) 2030: An analysis of Mizoram" in International Conference on the theme "Sustainable Business Management and Information Technology" during 31st & 1st November 2019 organized by North Eastern Management Association (NEMA) and Department of Management, Mizoram University.

PUBLICATION:

1. Published paper titled "Financial Performance of Commercial Banks in India: A CAMEL rating Evaluation" published in Research World- Journal of Arts, Science & Commerce. Volume III, Issue 2 (9), April 2017.

2. Vanlalzawna, C. and Rajkumar Giridhari Singh (2019). *Sustainable Development Goals (SDGS) 2030: An Analysis of Mizoram* in Sharma, L.S. Akoijam, L.S.S., Singh, WC. and Ahmed, JU (Ed.), Sustainability and Business Management. Excel India Publishers, New Delhi (ISBN: 978-93-88237-87-1), pp. 10-26.

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4. Published paper titled "Economic Value Added (EVA) and Stock Price of Firms in Indian Stock market". Journal of Commerce and Accounting Research. Volume 9, Issue 1, April 2020.

5. Published paper titled "Economic Value Added (EVA) vs. Traditional Accounting Performance Measure: Which One is a Better Performance Tool". Management Convergence, an International Journal of Management. Volume 11, Issue 2, June 2020.

(C. VANLALZAWNA)

PARTICULARS OF CANDIDATE

NAME OF THE CANDIDATE	:	C. VANLALZAWNA
DEGREE	:	DOCTOR OF PHILOSOPHY
DEPARTMENT	:	MANAGEMENT
TITLE OF THESIS	:	ECONOMIC VALUE ADDED (EVA) AND STOCK PRICE OF FIRMS IN INDIAN STOCK MARKET; AN EMPIRICAL STUDY
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EXTENTION (IF ANY)	:	

Head

Department of <u>Management</u>

ABSTRACT

ECONOMIC VALUE ADDED (EVA) AND STOCK PRICE OF FIRMS IN INDIAN STOCK MARKET: AN EMPIRICAL STUDY

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

C. VANLALZAWNA

MZU Regn No. 256 of 2013

Ph.DRegn No: MZU/Ph.D./1023 of 22.05.2017

DEPARTMENT OF MANAGEMENT

SCHOOL OF ECONOMICS, MANAGEMENT AND

INFORMATION SCIENCE (SEMIS)

MIZORAM UNIVERSITY

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ABSTRACT

1. INTRODUCTION

The aim of a firm is to maximize its wealth and wealth is represented by the value of a firm. It is apparently becoming important for every firm to maximize its value rather than profits. Value of a firm is represented by share price of a firm. There have been growing concern about firm's performance and efficiency, and companies have started moving away from wealth maximization concept to shareholders value creation concept to prove their edge over their competitors. With the rapidly growing knowledge of capital markets among the Indian public, there have been a surge in the operations of the Indian stock markets, through both National Stock Exchange (NSE) and BSE in India.

Maximizing the profits from investment firms is the major target of shareholders. Earlier, traditional performance tools like Earning per share (EPS), Return on Investment (ROI), Return on Capital Employed (ROCE), etc., have been employed by the investors to measure the stockholder value creation in companies. Different measurement tools have been evolved for measuring a firm performance and shareholders' value. Failures to use appropriate criteria for measuring corporate performance and shareholders' value may cause company's real value, and may affect the group of buyers and stock profits.

Economic Value Added (EVA) and Market Value Added (MVA) are the two important tools of financial performance measurements of firms. EVA as defined by Stern Steward & Co. is an internal management performance measure that compares net operating profit to total cost of capital. In corporate finance, EVA is an estimate of firm's economic profit, or the value created in excess of the required return of the company's shareholders. EVA indicates how profitable company's projects are as a sign of management performance. Market Value Added (MVA) is the calculation

that shows "the difference between the market value of the company and the capital contributed by investors, both bondholders and shareholders".

2. SIGNIFICANCE AND SCOPE OF THE STUDY

Stock price maximization is the most widely accepted objective of listed firms worldwide. The entire corporate decision making framework revolves around this comprehensive framework. The metrics of financial performance are important in the corporate and investors decision-making to the extent they influence the stock prices. The studies of particular stock price and its relationship with Economic value added are very important for stakeholders and many other who are reliant on the Indian financial markets. Wealth maximization of shareholders is the basic purpose of every company's objectives and financial performance of a company is the most important subject that is considered by investors, managers and government. In order to ensure optimal allocation of limited resources, evaluating the company's performance is vital. Variation of price in the stock movements help to determine the stock price in the oncoming days and thereby facilitate in taking well informed decisions. Developing competent knowledge about the market sphere and study of market trends of a stock price in relation with its value added gives the investors insight knowledge of stock market.

The overall scope of the present study is focused on companies listed in National Stock Exchange (NSE, Nifty 50 INDEX) for a period of recent 12 twelve years from 2007-08 to 2018-19 in India.

3. LITERATURE REVIEW

There have been many studies conducted to prove EVA as a superior performance measure as compared to traditional accounting measures. Some academic literature has proved EVA to be a superior measure while some studies reject the superiority of EVA.

Various articles dealing with the study of EVA have been published over the last two decades since Steward & Co. (1991). However, the concept of EVA is still under development and debate. Literature on EVA can be discussed broadly as many

sub-themes. However, EVA and stock return is one of the most widely covered aspects followed by literature on relationship between EVA and firm performances; comparison of EVA and other accounting measures.

In this section, selective literature review related to the relationship between accounting ratios and shares price of the companies; relationship between EVA and accounting measures; EVA and shares price are presented.

Basana, Julio and Soehono (2020) investigated the effect of economic value added and profitability on created shareholders value Fernandez model and market value added model in manufacturing companies listed on the Indonesia Stock Exchange period year 2013 to 2018. The samples are fifty Manufacturing companies enterprises listed on the IDX period year 2013 to 2018. Methods of data analysis were performed using panel data regression with pooled OLS model. The results showed profitability has a significant effect on created shareholders value Fernandez model and market value-added model in manufacturing companies listed on the IDX period 2013 to 2018.

Shyshani, Omush and Guermat (2020) examine whether the adoption of EVA framework enhances the firms performances and gauge long-term effects such as adoption on the firm value. The study sample consists of 89 US firms EVA adopters on NASDAQ, NYSE and American Stock Exchange Markets. It compares the performance of adopting firms to that of selected matching firms and to the market indexes, particularly, the S&P500 portfolio. The price and return data of both adopting and control firms were collected from CRSP database. Then it uses two common aggregating methods to test the event of adopting EVA by different US firms namely the CAR and BHAR methods. The results obtained however, showed a slight improvement in the performance of companies adopting EVA within five years from the date of adoption.

Behera (2020) explored whether the EVA valuation model could be implemented under changing required return by making any changes in the model and found that it could be implemented under the scenario of changing required return by replacing the book value of the equity of the existing model with the present value of required earnings or normal market earnings. The study further examined whether the explanatory ability of the EVA valuation model under the

assumption of changing required return is better than that of the valuation model under the assumption of constant required return. Relative information content analyses were conducted by considering sample of the intrinsic value of equities determined by valuation models and the market value of equities of 69 large-cap, 88 mid-cap, and 79 small-cap companies. The results showed that the EVA-based valuation model with changing normal market return outperformed the EVA-based valuation model with constant required return.

Pasha and Ramzan (2019) in their study on impact of economic value-added dynamics on market value of stocks in Pakistan stock exchange, a new evidence from panel cointegration, FMOLS and DOL, they found that EVA has a negative weak but significant relation with stock return in long run by employing panel cointegration, panel FMOLS and panel DOLS for 70 nonfinancial Pakistan Stock Exchange listed firms from 13 industries for a study period of 2006–2015. The study also found the long-run relationship of EVA with stock returns to deduce if any opportunity of realizing excess return exists in the Pakistani capital market by using EVA, a value-based performance measure, to take investment decisions.

Purswani and Anuradha (2017) conducted a study to examine the impact of EPS, DPS, BVPS, PBVPS, ATR, CFO and NW on market price of the share of real-estate companies listed on BSE. The study covers the top 20 companies based on their market capitalization for a period of five years from 2011-12 to 2015-16. Secondary data were employed including accounting information sourced from annual reports of construction companies listed on BSE and data related to market share price sourced from the website of BSE. The study found that earning per share and price-to-book value per share is reported to have positive and statistically significant relationship with share price.

Examining the effect of Economic Value Added (EVA) and Earning per Share (EPS) on stock return, Amyalianthy and Rotonga (2016) in their study mentioned that EVA and EPS have a positive significant effect on stock return. The data used in their study covers a period from 2013 to 2014 from annual reports, company's websites and financial data from the Indonesian Capital Market Directory (ICMD) published by the Institute for Economic and Financial Research (ECFIN). Twenty one companies listed in LQ 45 Index from Indonesia Stock were taken as the

sample of the study. The study revealed that EVA and EPS are the important variables that determine the return of the companies in Indonesia.

Examining whether EVA is a better predictor in Tehran Stock Exchanges (TSE) and to present a model to predict the status of economic value added of TSE by using Genetic Algorithms, Hajabedi, Mousdakhani and Orooji (2016) analyzed data from a period of 2006 to 2012 by taking a sample size of 500 from TSE. The study found that companies' EVA in Iran is predictable with reasonable accuracy and created model by the generic algorithm have high capable of EVA forecast.

To explore the correlation between selected performance measurement tools; Return on Equity (ROE), Economic Value Added (EVA) and the share price of companies listed in Johannesburg Stock Exchange (JSE), Totowa (2015) conducted a studies taking a sample of 100 companies listed in JSE for a period of two years i.e. 2010 to 2012. Data were extracted from McGregor BFA Database to investigate the relationship between Equity (ROE), Economic Value Added (EVA) and the share price of companies. The study found that there is a synergy in using ROE and EVA as performance measurement tools and their interaction explains a positive movement in the share price of listed companies.

In a study conducted by Geeta and Swaminathan (2015) found existence of a significant difference in market price of a company and the traditional measurement tools like EPS, book value and DPS. Hero Honda, Maruti, Tata Motors and Mahindra & Mahindra from automobile sectors and Infosys, TCS, WIPRO and Oracle financial services from IT sectors which are listed in the NSE have been selected for the study. Secondary data for four years i.e., 2010 to 2014 were collected of these automobile and IT companies in India for the study. Financial analysis techniques like Ratio analysis, EPS, Dividend per share, book value per share and price earnings ratio has been used. The study found that the dividend per share does not have positive or negative effects towards the market price.

Bani, Tajik, Nourizadeh, Asadi and Bani (2013) had done studies on the relationship between EVA and EPS and DPS of companies listed in Tehran Stock Exchange. The study covers a period of 3 years from 2009 to 2012. The EPS and DPS of 21 companies among top 50 companies in Tehran Stock Exchange were

selected randomly based on the availability of data. The study found that there is no significant correlation between EPS and DPS with economic value.

4. RESEARCH GAP

After a critical review of the above literature of stock price and its value measurement, some of the research issues were identified. Most of the studies concluded that stock price of a particular firm are positively influenced by EVA and is more superior to other traditional accounting measures (Risbud and Kulkarni, 2016; Prasad and Madhavi, 2015; Awan, Siddique and Sarwar, 2014; Masum, 2014; Panahi, Preece, Zakaria and Rogers, 2014; Hasan, Asaduzzaman and Karim, 2013; Nakhaei and Hamid, 2013; Sharma and Kumar, 2010; Shil, 2009; Ramana, 2007; Medeiros, 2004). However, findings of some studies have contradicted the positive relationship between EVA and share price (Mengi and Bhatia, 2015; Reddy, Narayan and Poornima, 2015; Ray, 2014; Bani, Tajik, Nourizadeh, Asadi and Bani, 2013; Haque and Faruquee, 2013; Patel and Patel, 2012). Thus there is inconclusive evidence of influencing share price by the EVA. Again, earlier studies utilized Price Earnings (PE) and Earnings per Share (EPS) to measure the relationship of EVA with stock price. However, these measures are found to be insufficient because these do not fully covered the company real picture and these measures fail to capture the shareholders' value creation actions. From the literature it can also be drawn that the study of relationship between stock price and other variables like Dividend per Share (DPS) based on the industry wise is found to be scanty. Further analyzing the data of more than 10 years of stock price and its relationship with EVA on industry and sector wise is expected to reveal broader past and future trends in Indian stock market.

5. RESEARCH DESIGN

5.1 STATEMENT OF THE PROBLEM

Indian financial market had vastly contributed in the growth of economy and plays a significant role. Stock market plays an important role in Indian economy and it has direct impact on the entire economy of a country. The traditional measures

like, Earning per Share (EPS), Return on Assets (ROA), Return on Invest Capital, Return on Capital Employed (ROCE), Return On Net Worth (RONW), Dividend per share (DPS), etc. failed to measure the economic performance as it does not take into account company cost of capital, but the value based measure i.e., EVA on the other hand consider company cost of capital and is becoming popular in measuring financial performance in today's world.

The major backdrop is that most of the company were using traditional financial measure but not using the value based measure to analyze the financial performance. The value based methods are quite useful in valuing company because most of these are highly levered entity. As the financial leverage increases financial risks, equity shareholders will require higher rate of return in order to be compensated for assuming higher degree of risks. Therefore, EVA is quite useful method in valuing company to measure the return earned by the firms more than return required by equity shareholders. For investment decision, it is important to examine the superiority of EVA over traditional accounting measures. EVA is considered as superior as it accounts for the cost of capital and measure the true economic profits of the firms. The present study thus aimed to analyze the relationship between EVA and stock price of a firm in the Indian stock market.

5.2 OBJECTIVES OF THE STUDY

The following objectives have been undertaken for the present study:

a) To rank selected companies based on average performance on Economic Value Added (EVA)

b) To identify the relationship between the stock return and EVA

c) To examine the temporal and sectoral trends in value added in Indian economy

d) To analyze whether a significant correlation exists between values added of a firm and market value of a firm

e) To analyze the descriptive and predictive power of value added as an indicator of stock market performance i.e., Price to Earnings (PE),

Earning per Shares (EPS) and Dividend per Share (DPS)

5.3 RESEARCH HYPOTHESIS

The following are the hypothesis of the study:

$H1_0$: There is no significant relationship between EVA and stock price

$H1_A$: There is a significant relationship between EVA and stock price

$H2_0$: There is no significant relationship between EVA and MVA

$H2_A$: There is a significant relationship between EVA and MVA

5.4   RESEARCH METHODOLOGY

5.4.1. Population

The population was drawn from the companies listed in the National Stock Exchange (NSE). The Nifty 50 companies listed in the NSE as on 1st April 2017 were taken for the study. The period of twelve years data i.e. 2007-08 to 2018-19 were considered for the study.

5.4.2   Sample

The sample consisted of all fifty companies which were listed in NSE and included in Nifty 50 index. These fifty companies belong to 13 different sectors viz. Information Technology, Media, metal, pharma, services, telecom, auto, financial, energy, consumer goods, cement and constructions. The sampled companies are listed in the Table 1.

Table 1 : List of 50 companies selected for the study

Sl. No	Company	Sector	Sl. No	Company	Sector
1	HCL		26	AXISBANK	
2	INFOSYS		27	BAJAJFINSERVE	
3	TCS		28	BAJAJFIN	
4	TECH MAHINDRA		29	HDFC	
5	WIPRO		30	HDFC BANK	
6	ZEE	Media	31	IBULFIN	
7	COAL INDIA		32	ICICIBANK	
8	HINDALCO		33	INDSBANK	

9	TATA STEL		34	KOTAKBNK	
10	VEDL		35	SBI	
11	CIPLA		36	YESBANK	
12	DRREDDY		37	UPL	Fertilizer
13	LUPIN		38	BPCL	
14	SUNPHARMA		39	GAIL	
15	ADANIPORTS	Services	40	HINPEDRO	
16	BHRATIARTL		41	IOC	
17	INFRATEL		42	NTPC	
18	BAJAJAUTO		43	ONGC	
19	EICHER		44	POWERGRID	
20	HEROMOTOCO		45	RELIANCE	
21	M & M		46	ASIANPAINT	
22	MARUTI		47	HINDUSTANLEVER	
23	TATAMOTOR		48	ITC	
24	GRASIM		49	TITAN	
25	ULTRATECH		50	LARSEN &TOUBRO	Construction

5.4.3 Data Collection

The study employed secondary data. The annual published reports and financial statements of quoted companies and information from the National Stock Exchange were analyzed. The financial statements were obtained from the annual reports of the companies. The annual reports were downloaded from the companies' websites. The closing price of the Nifty 50 as market index was downloaded from the NSE website.

5.4.4 Period of Study

The study covered a period of 12 years from 2007-08 to 2018-19.

5.4.5 Data Analysis

Ranking was done based on mean value of EVA for each sector and all the selected 50 companies are again rank on the basis of mean value of EVA. For the purpose of inferential analysis, statistical methods of correlation have been employed. Correlation matrix is used to illustrate the relationship between Stock price, stock return, EVA, MVA, EPS, DPS, PE Ratio, ROA, RoIC and RoNW.

6.   Model and Variables

6.1   Calculation of EVA of Sample Companies

EVA seeks to determine a company's true economic profit. EVA is an independent variable which represents the company profits after distributing company cost of capital.

EVA value has been obtained by applying (1)

$$EVA = NOPAT - Invest\ Capital\ \times WACC \ldots\ldots\ldots\ldots..\ (1)$$

Where, NOPAT= Profit after Taxes $\times$ (1-t)

$$Invest\ Capital\ = Total\ Assets - Non\ Interest\ bearing\ Current\ Liabilities$$

$$WACC = Cost\ of\ debt + Cost\ of\ equity$$

and, $WACC = \frac{D}{v} \times (R_d)(1 - t) + \frac{E}{v} \times (R_e)$

Where,

$\frac{D}{v} = \%$ of debt,

$R_d =$ Cost of debt,

$1 - t =$ Tax rate,

$\frac{E}{v} = \%$ of Equity,

$R_e =$ Cost of equity

Cost of Equity: The CAPM model was employed for finding cost of equity of a particular firm and under CAPM model; Cost of Equity is represented by:

$$E(R_i) = R_f + \beta_i\ (R_m - R_f)$$

Where,

$E(R_i)=$ Expected return;

$R_f =$ Risk free rate of return;

$\beta_i =$ Beta of assets;

(R_m)= Market return.

Cost of debt: It is the interest payment on its borrowing. It is represented as:

$K_d = Total\ cost\ of\ debt\ (1 - t)$

Where,

K_d = Cost of debt,

t= Corporate Tax rate.

6.2 Calculation of return of the stock prices of the companies

The daily average return of the selected stock price are calculated by using the

(2)

$$R_i = (P_t - P_{t-1}/P_{t-1}) \times 100 \qquad \dots\dots \dots\dots\dots (2)$$

The beta of the stock return was calculated using the following model (3)

$$R_i = \alpha_i + R_m\ \beta i + e_i \qquad \dots\dots \dots\dots\dots (3)$$

Where,

$R_i = Return\ of\ the\ stock$;

$R_m = Return\ of\ the\ Nifty\ 50$;

$\beta = beta\ of\ the\ stock$;

$\alpha = intercept$

6.3 EPS, ROA, RoIC, RoNW, PE ratios, DPS, MVA

The Earning per Share, Return on Assets, Return on Invest Capital, Return on Net Worth, Price to Earnings ratios, Dividend per share and Market value added calculated from the data obtained from the company's annual reports.

Earnings per Share (EPS): It is the proportion of a company's profit allocated to each outstanding share of common stock. It is represented as;

$$Earning\ per\ share = \frac{Net\ Income - Preferred\ Dividends}{Weighted\ Average\ Shares\ Outstanding}$$

Return on Assets (ROA): Return on Assets is an indicator of how profitable a company relatively to its total assets.

$$\text{Return on Assets} = \frac{\text{Net Income}}{\text{Total Assets}}$$

Return on Invest Capital (RoIC): Return on Invest Capital is a profitability measure that aims to measure percentage return that investors in company are earning from their invest capital.

$$\text{Return on Invest Capital (RoIC)} = \frac{\text{Net Opertating Profit after Tax (NOPAT)}}{\text{Invest Capital (IC)}}$$

Return on Net worth (RoNW): Return on Net Worth explains the efficiency of the shareholder's capital to generate profit.

$$\text{Return on Net Worth} = \frac{\text{Net Income}}{\text{Equity Shareholders}}$$

Price to Earning (PE) ratio: Price to Earning (PE) ratio explains the ratio of a company's share price to the company's earnings per share. It is used for valuing the companies and to find out whether they are overvalued or undervalued.

$$\text{PE ratio} = \frac{\text{Average share price}}{\text{Earning per share}}$$

Dividend per Share (EPS): Dividend Per Share (DPS) is the total amount of dividend attributed to each individual share outstanding of the company. It represents all the dividends that a company has paid out for each of its outstanding shares during a certain period of time.

$$\text{Dividend per Share} = \frac{\text{Total Dividends paid}}{\text{Shares outstanding}}$$

Market Value Added (MVA): Market Value Added (MVA) is a calculation that shows the difference between the market value of a company and the capital

contributed by all investors, both bondholders and shareholders. In other words, it the sum of all capital claims held against the company plus the market value of debt and equity.

$$\text{Market Value Added (MVA)} = V - K$$

Market value is obtained by multiplying market value of shares prices with total number of shares.

Where,

$V = $ Market value of a firm

$K = $ Invest capital/ Book value of equity

6.4 Correlation

Correlation matrix is used to illustrate the relationship between stock return, EVA, EPS, ROA, RoIC, RoNW, PE ratio, DPS, MVA, Market price per share and market value of company.

7. LIMITATION OF THE STUDY

There were some limitations inherent in the study. The traditional performance measurement tools employed in the study was completely done on the basis of ratios calculated from the Balance sheet and Profit and Loss Account. There are many other ratios that could have been used to assess the performances of the company; however, due to unavailability of required information and data on annual reports, few selective ratios have been taken to analyze the performance of selected company. The findings of the study is based on NIFTY 50 companies only. Therefore, the finding and conclusion may not therefore be generalized to all other companies.

8. **CHAPTERS DESIGN**

The study is divided into six chapters

Chapter 1:   INTRODUCTION

The Chapter introduces the importance of capital markets in Indian financial system.   Significance and scope of the study, review of literature on different studies in Economic Value Added (EVA) and stock price relationship, research gap, statement of the problem, objectives of the study, research hypotheses, and research methodology used, Models and variables and limitations of the study are the components of this chapter.

Chapter 2:   OVERVIEW OF INDIAN STOCK MARKET

Structure, functions and regulatory bodies of Indian financial markets have been discussed in this chapter. Different kinds of financial markets and financial instruments, history of stock market in India, problems and prospects of Indian stock market, challenge of Indian stock market and Government policy on Indian financial market are the main components of this chapter. Investment in securities, different kinds of investment alternatives that prevail in the present market have also been overviewed.

Chapter 3:   EVA: CONCEPTUAL AND THEORETICAL FRAMEWORK

Chapter 3 introduces the EVA Model theoretical framework, concept, importance and implementation of EVA. Main theory of EVA and its usefulness of EVA over traditional performance measurement tools have also been discussed. EVA as a performance tool in management and its advantages over traditional performance measurement tools to make decision about the stock in comparison with traditional measure of performance have also been covered in this chapter.

Chapter 4:   FINANCIAL PERFORMANCES OF THE SELECTED NIFTY 50
              COMPANIES

              Appraisal of all the companies listed in NSE 50 is conducted in
              chapter four by analyzing data obtained from respective annual
              reports. The analysis of data is carried into three different phase. At
              first, daily average return of the selected stock price are calculated. In
              the second phase, EPS, ROA, RoIC and RoNW, PE ratio and DPS
              were calculated from the company's annual reports. EVA, MVA and
              stock return have also been calculated. In the third phase, mean and
              rank of each different company are calculated and have been
              analyzed. Analysis of sectoral trend of EVA of the selected companies
              is also included in chapter 4.

Chapter 5:   RELATIONSHP BETWEEN STOCK PRICE, EVA, MVA AND
              OTHER ACCOUNTING VARIABLES

              In chapter 5, for purpose of the inferential analysis, the statistical
              methods of correlation and Correlation matrix is used to illustrate the
              relationship between Stock price, stock return, EVA, MVA, EPS,
              DPS, PE Ratio, ROA, RoIC and RoNW. Hypothesis testing conducted
              to find the relationship among the variables is also presented in the
              chapter.

Chapter 6:   FINDINGS, CONCLUSION AND SUGGESTIONS

              In chapter 6, summary of the research findings are given. Findings
              relating to ranking of different companies based on EVA, MVA and
              accounting ratios, correlations among Stock price, stock return, EVA,
              MVA and accounting ratios of the companies are presented.
              Conclusions drawn from the study are given in the chapter. Finally
              suggestions related to EVA as measure of performance of the
              companies are presented in this chapter.

9.   FINDINGS:

Findings of the study based on the analysis of the data are given as follows:

1. There have been growths in the capital market in India which can be witnessed in terms of the number of intermediaries and companies listed in the stock exchanges.

Ranking of the companies based on mean of Economic Value Added (EVA)

2. There were 595 EVA observations of the Nifty 50 companies for 12 years. The mean EVA value of the entire observations was Rs. 3648.47 crores with standard deviation of 3570. The minimum EVA value was -321.12 whereas the maximum EVA value was Rs. 32752.66 crores.

3. All the 50 companies were found having positive EVA values during the study period except four observations. Thus, all the companies listed in the Nifty 50 are creating value for the shareholders.

4. Among the Nifty companies, Ultratech had negative EVA value in the year 2010-11 with a value of -319.13 and for Grasim in the year 2008-09 and 2009-10 with values of -10.18 and -275.31 respectively. The negative EVA was found of Titan Company in the year 2017-18 with a value of -321.12.

5. For the whole period, ONGC ranks 1st rank followed by Titan and Sunpharma. SBI stand 4th rank and Infosys ranks 5th. Cipla is the least rank among Nifty 50 companies.

6. Among the IT companies Infosys stands highest rank with 5th position among the 50 companies. The rank of TCS stands at 15th, HCL 17th Wipro 21stand Tech Mahindra at 30th.

7. Zee Company is the only media company listed in Nifty and stands at 34th rank.

8. Among the four companies of metal sector Coal India ranks 7th among the 50 companies. The EVA rank of Tata Steel, VEDL and Hindalco stands at 26th, 31st and 40threspectively.

9. Sun Pharma with rank of 3rd has the highest EVA mean among the pharma companies followed by Dr.Reddy (rank 8th) and Lupin Company (11th rank). Cipla Company rank last i.e., 50th among the Nifty 50 companies.

10. Adaniports Company is the only Service company listed in Nifty under service sector and ranks 22nd among the fifty companies.

11. Infratel ranks 9th among the nifty 50 companies while Bharti airtel rank 41st among Nifty listed company as per mean of EVA.

12. Maruti rank 12th among the automobile companies followed by M &M (24th rank) and Bajaj Auto (29th rank). Eicher and Heromotoco rank least with 39th rank and 44th rank.

13. SBI and Yes Bank rank 4th and 6th among the top ten of the Nifty 50 companies from financial sector. Ibulfin, Bajajfinance and Bajajfinserve Companies are among the bottom at 36th rank, 37th rank and 48th rank.

14. UPL is the only company listed under Nifty 50 under Fertilizer Company and rank 42nd in the overall.

15. ONGC ranks 1st among the Energy sector companies as well as among all the Nifty companies.NTPC rank 10th and Reliance company rank 13th. Hindpetro rank 47th and stand bottom among the energy companies.

16. Titan company rank 2nd among the Nifty 50 companies. ITC rank 18th, Hindustanlever rank 28th and Asian paints rank 49th. Asian paints rank 49th among the Nifty companies.

17. Under Cement companies, Grasim rank 46th while Ultratech rank 45th among the Nifty 50 companies.

18. Larsen & Toubro is the only construction company listed under Nifty 50 and rank 25th among the Nifty companies.

Ranking of the companies based on mean of Market Value Added (MVA)

19. There were 595 MVA observations of the Nifty 50 companies for 12 years. The mean MVA value of the entire observations was Rs. 963866.94 crores with standard deviation of 1212464.23. The minimum MVA value was 1141.98 whereas the maximum MVA value was Rs. 8401723.77 crores.

20. MVA of Axis banks grows continuously during 5 years i.e. 2007-08 to 2012-13.

21. ITC, TCS, HCL, Adaniports, Asian paints and BPCL have almost an increase in 50% MVA from 2007-08 to 2012-13.

22. Axisbank, TCS and Reliance companies has largest MVA. Bajaj Finserve, Eicher and IndusBank having least Market value during 2007-08.

23. MVA of HDFC bank, Kotak bank, IOC, Asian paints, BPCL, Indusbank and Bajaj finserve grows continuously from 2013-14 to 2018-19.

24. Market value of ONGC, Coal India, ICICI bank, Lupin, TATA Motors and WIPRO has decreased during the period of 5 years 2013-14 to 2018-19.

25. In 2013-14, among 50 companies, ICICI bank has the largest market value followed by ONGC. In the year 2018-19, Tata Motors and TITAN have the least MVA.

26. In 2018-19, Reliance Company has the largest MVA followed by TCS.

27. MVA of TCS, HDFC bank, HDFC, Maruti, Kotak bank, NTPC, Adaniports and Ultra tech companies have almost 50% increase in MVA from 2013-14 to 2018-19.

28. Titan was having the least MVA among the 50 companies in 2013-14. IBUL was having least MVA among the 50 companies.

29. TCS stands highest rank among IT companies with an overall rank of 3rd among the Nifty 50 companies. The rank of Infosys stands at 7th, Wipro 18th, HCL 21st and Tech Mahindra at 46th.

30. There is only one company under Media sector and ZEE stands with an overall rank of 45th among the Nifty 50 companies.

31. Coal India stand highest rank among Metal companies with an overall rank of 9th position among the Nifty 50 companies. The rank of VEDL stands at 24th, Tata Steel at 33rd. Among the Metal sector, Hindalco rank lowest at 42nd among the Nifty 50 companies.

32. Sun pharma rank top among Pharma companies and also rank 15th among the Nifty companies. Lupin stands at 35th, Cipla at 36th and Dr.Reddy rank lowest at 39th.

33. Telecom sector which comprises of only two companies namely Bharti Airtel and Infratel. Bharti Airtel performs better than Infratel as per their mean of MVA. Bharti Airtel rank 13th among the Nifty 50 companies whereas Infratel ranks 28th among the Nifty.

34. Among automobile companies, Maruti rank top and also secured 16th rank among Nifty companies. M & M whose rank is 2nd best among the six company rank 27th in the overall rank of Nifty companies. Bajaj auto whose rank is 30th in the overall Nifty rank 3rd among automobile company.

35. HDFC Bank rank top among finance companies and also rank 4th among the Nifty companiesfollowed by HDFC whose rank is 5th in the overall Nifty 50. Axis bank rank 8th, ICICI bank rank 10th, SBI rank 12th, Kotak bank rank 17th. Bajaj Finserve and IBULFIN are the worst performer whose rank are 43rd and 44th in the overall Nifty.

36. There is only one company under fertilizer sector i.e. UPL company and UPL stand with an overall rank of 49th among the Nifty 50 companies.

37. Reliance rank 1st among energy sector as well as in the overall Nifty 50. ONGC who secured 2nd rank among the companies also rank 2nd position in the overall Nifty companies. NTPC rank 3rd among the energy secured only 19th in the overall Nifty. BPCL, GAIL and Hinpetro are the worst performer whose rank are only 29th, 31st and 47th in the overall Nifty.

38. ITC rank 1st among consumer goods companies and also rank 6th among the overall Nifty companies. Asian paint ranks 25th in the overall rank and Titan Company were at the bottom among Nifty companies.

39. Ultratech ranks 26th in the overall Nifty 50 and Grasim company rank 37th among the Nifty companies.

40. There is only one company under construction sector i.e. LARSEN &Toubro company and rank of 14th among the Nifty 50 companies.

Yearly stock price and descriptive statistics of stock price of the companies.

41. Among the IT sector, mean of Infosys is highest followed by TCS and Tech Mahindra and Wipro has the least. Among the IT companies listed in Nifty, Infosys in the most volatile IT company and the Wipro Company is the least volatile company.

42. There is only one company under Media sector and the mean of ZEE stand at 303.2 with the standard deviation of 157.64.

43. VEDL has the largest mean among the metal companies followed by Tata steel VEDL Company is the most volatile company among the metal sector with the largest deviation from the mean of 849.81 whereas Coal India is the least volatile metal company with standard deviation of 36.56.

44. Dr. Reddy has highest mean among the four companies of pharma sector followed by Lupin. Among the four companies, Cipla Company has the least mean of stock price i.e., 421.62. Dr. Reddy is the most volatile Pharma Company with largest standard deviation of 1044.13.

45. There is only one company under service sector i.e., Adaniports. The mean stock price of Adaniports stands at 325.98 and the standard deviation at 194.87.

46. Bharti airtel and Infratel Company are the only two companies under telecom sector listed in Nifty. Bharti airtel has higher mean value than Infratel Company.

47. Eicher motor has highest mean among the six companies among automobile companies followed by Maruti. Tata motor has the least mean of stock price i.e., 467.47. Eicher is the most volatile automobile company and &M the least volatile among the companies.

48. The mean stock price of Bajaj finserve is highest followed by Bajaj finance and Axis bank among finance companies and Yes bank Company has the least mean stock price. Bajajfinserve is the most volatile finance company with the largest standard deviation whereas IBULFIN is the least volatile company with standard deviation.

49. There is only one company under fertilizer sector i.e., UPL and the mean of UPL stand at 368.9 and the standard deviation from the mean stand at 295.32.

50. Among the energy sector, Reliance has highest mean stock price followed by ONGC and BPCL Company. NTPC has the least mean stock price and among the energy sector, Reliance Company has the largest standard deviation indicating to be the most volatile energy company whereas NTPC is the least volatile energy company with the lowest standard deviation.

51. Asian paint has the highest mean stock price among the four consumer goods companies followed by Titan and ITC Company has the least mean of stock price.

52. Among the two of cement companies, Grasim has higher stock price than Ultraterch Company whose mean is only 2239.37.

53. Larsen & Toubro is only company under construction sector. The mean and standard deviation of stock price of Larsen & Toubro is 1582.98 and 486.77.

Yearly stock return and descriptive statistics of stock return of the companies.

54. During 2007-2012-13, Negative stock return are found in HCL at -13.09, Infosys at -28.67, TCS at -34.32, Tech Mahindra at -50.58, Wipro at -22.76, Zee at -1.85, Cipla at -7.09, Dr. Reddy at -18.81, Lupin at -17.77, M & M at -10.67, Tata motor at -14.49, Bajaj finserve at 13.34, Bajaj finance at -21.43, ICICI bank at -9.84, UPL at -19.25 and NTPC at -54.76 in the year 2007-08.

55. In the year 2008-09, the stock return of almost all the company is found to be negative except Coal India, Lupin, Bajaj Auto, Heromotoco, Bajajfinserve, Bajaj finance, IBULS, Yes bank, Hinpetro, NTPC, Asian paint, and Hindustanlever.

56. In the year 2009-10, the highest stock return of the company is obtained by Vedanta Company followed by Tata motor and HCL Company.

57. Among the positive stock return, least closing stock return is obtained by Cipla followed by Infosys and Maruti Company.

58. Bajaj finserve, HDFC Bank and UPL Company are the only three companies who have positive annual return during the entire six years i.e. 2013-14 to 2018-19. All the companies other than these companies have negative stock return in one or more years.

59. Among the positive stock return, Dr. Reddy has highest stock return among the companies followed by Eicher motor in the year 2014-15 whereas Grasim, Axis bank and Coal India has least annual stock return in the year 2017-18, 2015-16 and 2016-17 respectively.

60. Among the five companies under IT sector HCL has the highest annual mean return followed by Tech Mahindra and TCS. Among the five companies, Infosys has the lowest mean annual return. HCL has the largest standard deviation while lowest standard deviation of the annual stock return was TCS Company.

61. ZEE is the only company under Media sector. The mean annual stock return of ZEE stands at 16.64 with a standard deviation of 55.66.

62. VEDL has the largest mean annual stock return followed by Hindalco. VEDL Company has also the largest standard deviation whereas Coal India has the lowest standard deviation.

63. Dr. Reddy has highest mean value among the four pharma companies followed by Lupin. Sun pharma Company has the least mean annual stock return.

64. Adaniports is the only company under service sector. The mean annual stock return of ZEE stands at 14.47 with the standard deviation of 56.45.

65. Among telecom companies, Bharti Infratel has higher mean annual stock return as compared to Bharti airtel Company.

66. Eicher has highest mean value among the six automobile companies followed by Maruti and Tata motor. Tata motor has the largest standard deviation among the automobile companies whereas Bajaj auto has least variation.

67. Among the eleven companies under finance sector, IndusBank has the highest mean annual stock return followed by Bajajfinserve and Bajajfinance. SBI stand at bottom with mean annual stock return. IndusBank has the largest standard deviation whereas HDFC bank has the least standard deviation.

68. There is only one company under Fertilizer sector and the mean of UPL stand at 19.7 and the standard deviation is 51.46.

69. Among Energy Company, BPCL has highest mean annual stock return followed by Powergrid and GAIL. IOC, ONGC and NTPC were at bottom based on the mean of their stock return. ONGC has the largest deviation from the mean whereas Powergrid has the least standard deviation.

70. Among the four companies; mean of Titan is highest followed by Asian paint and Hindustanlever. ITC stand at bottom with mean of only 8.22.

71. Among the two companies of cement, mean of Ultratech is higher than Grasim Company which indicates that Ultratech Company performs better than Grasim Company.

72. Larsen & Toubro is the only company under construction sector listed in Nifty. The mean annual stock return of Larsen & Toubro is 3.91 with the standard deviation of 35.37.

Yearly Earning per Share (EPS) of the companies and descriptive statistics of Earning per Share (EPS) of the companies

73. Earning per Share (EPS) of Coal India, Eicher motor, Axis bank, Bajaj finserve, Bajaj finance, HDFC bank, Indus bank and SBI grows continuously during 5 years i.e. 2007-08 to 2012-13. However, it is found that Earning per Share (EPS) of ZEE, TATA steel, Vedanta, Sun pharma, BPCL, Reliance and SBI has decreased during 5 years i.e. from 2012-13 to 2007-08.

74. Infosys, Coal India, Cipla, Dr. Reddy, Bajaj auto, Eicher, Hero motoco, Axis bank, Bajaj finserve, HDFC bank, Indus bank, UPL, NTPC, Asian paints and Hindustan lever has almost an increase in 50% of EPS from 2007-08 to 2012-13.

75. EPS of Vedanta, Lupin, Sunpharma, Airtel, Tata motors, Reliance, Titan and Larsen Toubro companies has constantly decreased from 2012-13 to 2007-08.

76. Vedanta, Grasim and SBI were the three top companies who have largest Earning per Share (EPS) in the year 2007-08 and 2012-13 while Tata motor, IBUL and Adani ports have the least EPS in the year 2012-13, 2008-09 and in the year 2009-10.

77. Earning per Share (EPS) of Adani ports, Eicher motor, Hero motoco, Maruti, Bajaj finserve, HDFC bank, Power grid and Asian paints grows continuously during 5 years from 2013-14 to 2018-19.

78. ZEE, Hindalco, Tata steel, Adani ports, Airtel, Eicher, Maruti, Tata Motors, Bajaj finserve, HDFC bank, IBULS, Indus bank, UPL, Power grid, Asian paints and Titan companies has almost an increase in 50% of EPS from 2013-14 to 2018-19. Earning per Share (EPS) of HCL, Wipro, Tech mahindra, ZEE, Hindalco, Tata steel, Adani ports, Airtel, Bajaj Auto, Bajaj finserve, Maruti, Tata motors, Power grid and Asian paints has decreased from 2018-19 to 2013-14.

79. Eicher, Maruti and Bajaj auto companies were the three top companies who have largest Earning per Share (EPS) in the year 2018-19, 2017-18 and in 2018-19 whereas SBI, Tata motors and Axis bank company has the least EPS in the year 2017-18, 2015-16 and 2017-18.

80. Among the Earning per Share (EPS) of all the selected Nifty fifty companies of the entire period of 12 years, Eicher Company has the highest mean followed by Grasim and Maruti.

81. Hero motoco and Bajaj auto come on 4th and 5th place. ITC, Powergrid and ZEE Company were at bottom.

Yearly Return on Assets (ROA) of the companies and descriptive statistics of Return on Assets (ROA) of the companies

82. Airtel is the only company whose ROA has constantly increase from 2007-08 to 2012-13. Return on Assets of ZEE, LUPIN, Bajaj finance, Indus bank, HDFC bank, Titan and M & M companies also grows continuously during the first 3 years i.e. 2007-08 to 2009-10 and start declining from 2010-11 to 2012-13.

83. ROA of Infosys, Sun pharma, ICICI bank, Ultratech and Larsen &Toubro has decreased at a very high rate from 2007-08 to 2012-13.

84. Dr Reddy, Airtel, M & M, HDFC, HDFC bank, SBI, GAIL, ONGC and Hindustan lever has almost an increase in 25% ROA from 2007-08 to 2012-13.

85. Among all the selected Nifty companies, Return on Assets of Hindalco, Tata steel, Airtel, Eicher, M & M, Axis bank, Bajaj finserve, HDFC, IBULS, ICICI bank, Indus bank, Kotak bank, SBI, UPL, BPCL, Gail, Hinpetro, IOC, NTPC and Power grid is less than 10% of whole the Return on Assets from during the period of five years from 2007-08 to 2012-13.

86. HDFC bank, Bajaj auto and Adani ports are the three top companies which have largest ROA the year 2012-13, 2010-11 and 2008-09 while IBULS, Tata motors and SBI has the least on ROA in the year 2007-08, 2012-13 and 2010-11.

87. ROA of Adani ports, Airtel, BPCL, and Power grid Company are the companies whose ROA has constantly increase from 2013-14 to 2018-19. Vedanta, Eicher, SBI, UPL, BPCL and Hinpetro companies also grows continuously during the first 3 years i.e. 2013-14 to 2016-17 and start declining in 2017-18 and 2018-19.

88. Return on Assets (ROA) of Cipla, Lupin, Sunpharma, Infratel, Axis bank, and Ultratech companies has decreased at a very high rate from 2013-14 to 2018-19. Hindalco, Airtel, Bajaj auto, Eicher motor, M & M, Tata motor, IBULS, ICICI bank, SBI, Yes bank, UPL, Hinpetro, IOC and Reliance, companies has almost an increase in 45% of ROA from 2013-14 to 2018-19.

89. Among all the selected Nifty companies, Return on Assets of Hindalco, Tata steel, Axis bank, Bajaj finserve, Bajaj finance, HDFC, IBULS, ICICI bank, Kotak bank, IOC, Powergrid, Ultratech and Larsen &Toubro is less than 10% of the whole Return on Assets from 2013-14 to 2018-19.

90. Bajaj auto, Coal India and Hindustan lever are the three top companies which have largest Return on Assets (ROA) in the year 2018-19, 2017-18 and 2018-19 whereas Axis bank, IBULS and SBI have the least in the year 2018-19, 2015-16 and 2016-17.

91. Among all the selected Nifty companies for the entire period, Bajaj auto Company has the highest mean followed by TCS and Coal India. Heromotoco and HDFC bank are placed on 4th and 5th place. IBULS, Axis bank and Infratel were at bottom.

Yearly Return on Invest Capital (ROIC) of the companies and descriptive statistics of return on Invest Capital (ROIC) of the companies

92. ROIC of ZEE, Coal India, Hindalco, Lupin, Airtel, M &M, Bajaj finance, HDFC, HDFC bank, Indus bank, Titan, Grasim and Larsen &Tourbo are the only company whose ROA has constantly increase during the first three years from 2007-08 to 2012-13.HCL, Hindalco, Eicher, Tata motor, Kotak bank, Yes bank, Hinpetro, ONGC, Grasim and Larsen &Tourbo companies also grows continuously during the first three years however; these companies start declining in 2011-12 and 2012-13.

93. Dr. Reddy, Eicher, M & M, HDFC, SBI, GAIL, ONGC and Hindustanlever companies have almost an increase in 47% of Return on Invest Capital (ROIC) from 2007-08 to 2012-13.

94. Among all the selected Nifty companies, ROIC of Tata steel, Airtel, M &M, Axis bank, Bajaj finserve, HDFC, IBULS, ICICI bank, Kotak bank, SBI, UPL, Hinptero, NTPC and Powergrid is less than 10% of the whole Return on Invest Capital (ROIC) from 2007-08 to 2012-13.

95. Tech Mahindra, Asian paints and TCS are the three top companies which have largest ROIC in the year 2008-09, 2010-11 and 2009-10whereas IBULS, Bajaj finserve and M &M motors have least in the year 2008-09, 2012-13 and 2007-08.

96. Return on Invest Capital (ROIC) of Airtel and Yes bank are the only company whose ROIC has constantly increased from 2013-14-08 to 2018-19. Lupin, Airtel, Eicher, SBI and BPCL companies also grows continuously during the first 3 years i.e. 2013-14 to 2016-17 however start declining in 2017-18 and 2018-19.

97. Dr. Reddy, Lupin, Sun pharma and Axis bank companies have decreased at a very high rate from 2013-14 to 2018-19. Hindalco, Tata steel, Airtel, IBULS, ICICI bank, SBI, Yes bank, UPL and Hinpetro companies has almost an

increase in 40% in Return on Invest Capital (ROIC) from 2013-14 to 2018-19.

98. Among all the selected Nifty companies, Return on Invest Capital (ROIC) of Hindalco, Tata steel, Adani ports, Axis bank, Bajaj finserve, Bajaj finance, HDFC, IBULS, Kotak bank, Yes bank, UPL, Gail, Hinpetro, IOC, NTPC, Power grid, Grasim, Power grid and Larsen & Toubro is less than 10% of the whole Return on Assets from 2013-14 to 2018-19.

99. Coal India, ICICI bank and Bajaj are the three top companies which have largest ROIC in the year 2017-18 and 2018-19 whereas Coal India, Axis bank and UPL have the least in the year 2016-17, 2018-19 and 2013-14.

100. Among all the Nifty 50 companies, TCS Company has the highest mean followed by Tech Mahindra and Hero motoco. Asian paint came on 4th and 5th place. IBULS, Kotak bank and HDFC Company were at bottom.

Yearly Return on net Worth (RONW) of the companies and descriptive statistics of return on Net worth (RONW) of the companies

101. Coal India, Dr. Reddy, Adani ports, Hero motoco, Bajaj finance, HDFC bank, SBI, Yes bank, UPL, NTPC, Power grid, ITC and Titan has increased during the first three years from 2007-08 to 2009-10. However, Return on Net Worth (RONW) of Hindalco, Tata Steel, Vedanta, Airtel, Bajaj auto, Hero motoco, TATA motor, Bajaj finserve, HDFC, IOC, and Larsen &Tourbo have decreased during the next three years from 2010-11 to 2012-13.

102. ZEE, Coal India, Dr. Reddy, Adani ports, Eicher, Bajaj Finance, ICICI bank, NTPC, ONGC, Asian paints, Hindustan lever, Titan and Dr. Reddy companies have almost an increase in 50% of Return on Net Worth (RONW) from 2007-08 to 2012-13.Bajaj finserve, UPL, Hinpetro, IOC,

NTPC, ONGC, Power grid and Titan is less than 15% of the whole Return on Net Worth (RONW) from 2007-08 to 2012-13.

103. Eicher company has negative return on net worth of the company in 2008-09.Hindalco, Bajaj auto and Heromotoco are the three top companies which have largest Return on Invest Capital (ROIC) in the year 2010-11,while Eicher, Power grid and NTPC has the least in the year 2007-08.

104. Power grid is the only company whose RONW has constantly increased from 2013-14-08 to 2018-19. Vedanta in the year 2015-16, Sunpharma in 2013-14 to 2016-17, Airtel in 2015-16 and 2018-19, Tata motor from in 2014-15 to 2017-18 and SBI in the year 2017-18 shows negative Return on Net worth (RONW).

105. Wipro, Maruti, Bajaj finserve, UPL, BPCL, Reliance and Asian paints companies grows continuously during the first 3 years i.e. 2013-14 to 2016-17 and start declining in 2017-18 and 2018-19. Lupin, ICICI bank, Yes bank, ONGC, Grasim and Ultratech companies have decreased at moderate rate from 2013-14 to 2018-19. Hindalco, Vedanta, Infratel, Tata motors, Bajaj finserve, NTPC and Powergrid companies have almost an increase in 40% of Return on Net Worth (RONW) from 2013-14 to 2018-19.

106. Sunpharma, Airtel, Tata motors, Bajaj finserve, SBI, IOC, NTPC, ONGC, Power grid, Reliance, Titan and Grasim is less than 10% of the whole Return on Net Worth (RONW) from 2013-14 to 2018-19. Coal India, Hindalco and ZEE are the three top companies which have largest Return on Net Worth (RONW) in 2016-17, 2018-19 and 2013-14 whereas Sun pharma, Tata motors and Vedanta have the least in the year 2013-14, 2014-15 and 2015-16.

107. Among all the Nifty 50 companies, Coal India Company have the highest mean followed by Hindalco and Heromotoco. Bajaj auto and TCS came 4th and 5th place. Power grid, NTPC and Tata motors Company were at bottom.

Yearly Return on Price to Earnings ratio (PE) of the companies and descriptive statistics of PER ratio of the companies

108.   Among the IT companies, price to earnings ratio of TCS is much higher than all the other IT Company in the year 2007-08. Among metal, ratio of Coal India is much higher than all the other three companies with value of 8.87 in the year 2007-08.

109.   The highest price to earnings ratio of the Nifty companies is obtained by Titan followed by HDFC bank and ZEE in the year 2007-08 whereas price to earnings ratio of IBULS, Eicher motor and ICICI bank has obtained the least in the same period i.e., 2007-08.

110.   Hindalco, Tata steel, Lupin, Sunpharma, Airtel, Eicher, Bajaj finserve, Kotak bank, Yes bank, Hinpetro and Asian paint have almost increase in 46% of price to price to earnings from 2007-08 to 2012-13 whereas Tech Mahindra, Vedanta, Adaniports, M & M, Maruti, Axis bank, HDFC Bank, SBI, UPL, and Larsen & Toubro has almost 52% of decreased in price to earnings ratio from 2012-13 to 2007-08.

111.   PE ratio of Bajaj finserve and Bajaj finance are the only company whose ratios has constantly increase from 2013-14 to 2018-19. ZEE, LUPIN, Airtel, Gail, Hindustanlever, Titan, and Larsen & Toubro also grows continuously during the first 3 years i.e. 2013-14 to 2016-17 and start declining in 2017-18 and 2018-19.

112.   PE ratio of Cipla, Lupin, Sunpharma, Infratel, Axis bank, and Ultratech companies has decreased at a very high rate from 2013-14 to 2018-19.Vedanta, Sunpharma, Eicher motor, Heromotoco, Tata motor, SBI, Hinpetro, and Grasim companies have almost decreased in 50% of PE ratio from 2013-14 to 2018-19.

113.   Titan, Asian paint and Hindustanlever are the three top companies which have largest PE ratio whereas Axis bank, Vedanta and Yes bank are the three companies whose PE ratio is at bottom.

114.   Among all the Nifty 50 companies, Titan has the highest mean followed by Asian paint and Hindustanlever. ITC and ZEE Company came 4th and 5th place. Axis bank, IBULS and Vedanta Company were at bottom.

Yearly Return on Dividend per Share (DPS) of the companies and descriptive statistics of DPS ratio of the companies

115.   Among the IT companies, Dividend per share of Infosys is much higher than all the other IT Company in the year 2007-08. Among metal sector, dividend per share of Tata steel is much higher than all the other three companies with value of 16.00 in the year 2007-08.

116.   The highest dividend per share of the Nifty companies is obtained by Tech Mahindra followed by Asian paint and SBI.

117.   Tech Mahindra, Coal India, Dr. Reddy, Airtel, Heromotoco, Bajaj finance, HDFC bank, IBULS, Indus bank, SBI, Yes bank, Hinpetro, NTPC, Powergrid, Asian paint, Hindustan lever, ITC, Ultratech and Larsen & Toubro have almost increase in 40% of DPS from 2007-08 to 2012-13 whereas Vedanta, Lupin, Sun pharma, Eicher, Tata motor, HDFC, ICICI bank and have almost 52% of decrease in DPS from 2012-13 to 2007-08.

118.   ZEE, Cipla, HDFC, HDFC bank, Indus bank, Asian paint and Larsen & Toubro are the only company whose ratios has constantly increased from 2013-14 to 2018-19. Tata steel, Heromotoco, Axis bank, Bajaj finance, Indusbank, Yes bank, Hinpetro, Reliance, Hindustanlever and ITC also grows continuously during the first 3 years i.e. 2013-14 to 2016-17 and start declining in 2017-18 and 2018-19.

119.   Vedanta, Lupin, Infratel, HDFC bank, Indus bank, UPL, BPCL, IOC, Powergrid, Asian paint and Larsen & Toubro companies have increased at a

very high rate from 2013-14 to 2018-19. However, Tech Mahindra, Wipro, Coal India, Adaniports, Eicher, Tata motor, Axis bank, Bajajfinance, ICICI bank, Kotak bank, SBI, Yes bank, Gail and Grasim companies have almost decreased in 60% of DPS from 2013-14 to 2018-19.

120.　　TCS, Infosys and Hinpetro are the three top companies who have largest DPS whereas Axis bank and Tata motor are the two companies whose DPS is at bottom.

121.　　Among all the Nifty companies, TCS has the highest mean followedby Infosys and Bajaj auto. Heromotoco and Tech mahindra Company came 4th and 5th place. Hindalco, Adaniports and Bajaj Finserve Company were at bottom.

Relationship between the Stock price, Stock and EVA

122.　　As per correlation between stock price, stock return, and EVA based on the entire 595 observations of the entire 50 companies, the correlation coefficient between EVA and stock price is only -0.021 and hence we failed to reject the null hypothesis that there is no significant relationship between EVA and stock price. Therefore, there is no significant relationship between EVA and stock price in the Nifty 50 companies. The study also found that there is also no significant relationship between EVA and the stock return.

Relationship between the EVA and MVA

123.　　The relationship between EVA and MVA of the entire observation was conducted and the correlation co-efficient between EVA and MVA is found to be 0.206 which is significant at 0.01 level. Thus it is found that there is a significant relationship between EVA and MVA.

Relationship between the stock price, stock return and accounting ratios

124.   Correlation between stock price, stock return and the accounting ratios of the entire observation was conducted and observed that the stock price is significantly correlated with all the accounting ratios other than Price Earnings Ratios. The study also found that there is a significant relationship among the accounting ratios other than the relationship between Return on Net worth (RONW) and price earnings ratios (PER).

Relationship between the EVA, MVA and accounting ratios

125.   There is no significant relationship between EVA and the accounting ratios. None of the accounting ratios are statistically related to the EVA. As regard the relationship between MVA and the accounting ratios, there is a significant relationship between MVA and the Dividend per share (DPS) only. All the other accounting ratios have no significant relationship between MVA and the accounting ratios.

CORRELATION BETWEEN STOCK PRICE, STOCK RETURN, EVA AND MVA SECTOR WISE

126.   The relationship between the stock price, stock return, EVA and MVA in the respective sectors was conducted for all the sectors and for IT sector there is no significant relationship between EVA and the stock price and stock return. There is also no significant relationship between MVA and the stock return.

127.   The study found that correlation coefficient between EVA and Stock price is 0.187 and the correlation coefficient between EVA and stock return is -0.019 which mean both are statistically insignificant. However, there is a significant relationship between MVA and stock price as well as EVA and MVA.

128.   For Media sector, there is no significant relationship between EVA and the stock price and stock return. There is also no significant relationship between MVA and the stock return. The study also found that The correlation coefficient between EVA and Stock price is 0.449 and the correlation coefficient between EVA and stock return is 0.182 both are statistically insignificant. However, there is a significant relationship between MVA and stock price.

129.   For Metal sector, no statistical relationships have been found between stock price, EVA and MVA. There is also no significant relationship between stock return, EVA and MVA. The correlation coefficient between EVA and Stock price is -.103 and the correlation coefficient between EVA and stock return is -.095 both are statistically insignificant. However, there is a significant relationship between MVA and EVA.

130.   No significant relationships have been found between stock price, EVA and MVA in pharma sector. However, a significant relationship between stock price and stock return is found to be positive. There is also no significant relationship between stock return, EVA and MVA. The correlation coefficient between EVA and Stock price is.244 and the correlation coefficient between EVA and stock return is .103 both are statistically insignificant. However, there is a significant relationship between EVA and MVA.

131.   For Service sector, there is no significant relationship between EVA and the stock price. There is also no significant relationship between MVA and MVA. However, there is a significant relationship between MVA and stock price as well as MVA and stock return. The correlation coefficient between EVA and Stock price is .189 and the correlation coefficient between MVA and EVA is .186 both are statistically insignificant.

132.   For telecom sector, no significant relation has been found between EVA and Stock price as well as EVA and Stock return. There is also no significant relationship between MVA and MVA. However, a significant

relationship has been found between MVA and stock price, between MVA and EVA. The correlation coefficient between EVA and Stock price is -0.29 and the correlation coefficient between MVA stock return is -0.11which indicates both are statistically insignificant.

133.   For automobile sector, no significant relationship has been found between EVA and stock price as well as EVA and stock return. However, there is a significant relationship between MVA and stock price, MVA and EVA during the study period.

134.   Correlations between Stock price, Stock Return, EVA and MVA of Financial sector reveals that there is a significant relationship between stock price and stock return and stock price and MVA. However, there is no significant relationship between EVA and stock price, EVA and stock return as well as MVA and EVA.

135.   For fertilizer sector there is no significant relationship between EVA and stock return. There is also no significant relationship between MVA and the stock return. The correlation coefficient between EVA and Stock price is -.715 and the correlation coefficient between MVA and stock price is .991 both are statistically significant which indicate that there is a significant relationship between EVA and stock price, MVA and stock price.

136.   For energy sector there is a significant relationship between stock price and stock return and stock price and MVA. There is also a significant relationship between MVA and EVA. However, there is no significant relationship between EVA and stock price, EVA and stock return as well as MVA and stock return.

137.   For consumer goods sector, there is no significant relationship between EVA and stock return. There is also no significant relationship between MVA and stock price. There is no significant relationship between EVA and stock return as well as MVA and stock return. However, there is a

significant relationship between stock price and stock return as well as EVA and stock return.

138.   Correlations between Stock price, Stock Return, EVA and MVA of cement sector reveals that there is a significant relationship between stock price and EVA, stock price and MVA.

139.   For construction, there is no significant relationship between EVA and stock price. There is also no significant relationship between EVA and stock return. The study also found that there is no significant relationship between MVA and stock price, MVA and stock return as well as MVA and EVA. However, there is a significant relationship between stock price and stock return.

CORRELATION BETWEEN STOCK PRICE, STOCK RETURN, AND ACCOUNTING RATIOS BASED ON SECTORS

140.   Correlations between stock price, stock return and accounting ratios of IT sector observed that for IT sector, the stock price is significantly correlated with EPS, RONW and DPS but not significantly correlated with stock return, ROA, ROIC and PER. Stock return is not related with any of the other variables in the IT sector.

141.   For Media Company, Stock price, Stock Return, and Accounting ratios, it is found that there is a significant correlation between stock price and EPS and PER. However, stock price is insignificant with ROA, ROIC, ONW and DPS. Table 125 also shows that stock return is not significantly correlated with EPS, ROA, ROIC, RONW, PER and DPS.

142.   For metal company, the stock price is significantly correlated with EPS and other accounting ratios such as ROA, ROIC, RONW, PER and DPS are insignificant with stock price.

143.   For Pharma Company, the stock price is significantly correlated with EPS and DPS but not significantly correlated with ROA, ROIC, RONW and PER.

144.   Correlations between Stock price, Stock Return, and Accounting ratios of Service sector found that there is a significant correlation between stock price and PER and DPS. However, stock price is insignificant with EPS, ROA, ROIC and RONW.

145.   For Telecom Company, stock price is insignificant with any of the accounting ratios except RONW.

146.   Stock price, Stock Return, and Accounting ratios of automobile sector reveal that there is a significant correlation between stock price and EPS, ROIC, PER and DPS. However, stock price is insignificant with ROA and RONW.

147.   In regards to financial company, stock price is statistically significant with EPS and PER. However, stock price is insignificant with ROA, ROIC, RONW and DPS.

148.   The study found that for Stock price, Stock Return, and Accounting ratios of fertilizer sector, there is a significant correlation between stock price and EPS, PER and DPS. However, stock price is insignificant with ROA, ROIC and RONW.

149.   For Energy Company, stock price is statistically significant with all the accounting ratios except PER.

150.   Among Consumer Company, there is a significant correlation between stock price and EPS, ROIC and DPS. However, stock price is insignificant with PER and RONW.

151.	Stock price is statistically significant with ROA, ROIC and PER whereas stock price and EPS, RONW and DPS have no relationship among the cement company.

152.	For construction sector, there is a significant correlation between stock price and EPS, ROA, RONW and PER. However, stock price is insignificant with ROIC and DPS.

CORRELATIONS BETWEEN EVA, MVA AND ACCOUNTING RATIOS OF IT SECTOR

153.	The correlations between EVA, MVA and Accounting ratios of IT sector and found that none of the accounting ratios have significant relationship with EVA whereas there is a significant relationship between MVA and EPS, RRONW and DPS.

154.	Among the media company, there is a significant correlation between EVA and RONW. There is also a significant correlation between MVA and EPS and PER. There is no significant relationship between EVA and EPS, ROA, ROIC, PER and DPS. MVA has no relationship with ROA, ROIC, RONW and DPS.

155.	For metal sector, there is a significant correlation between EVA and RONW and DPS. However, EVA and EPS, ROA, ROIC and PER are statistically insignificant. The result also found that MVA is significant with ROA, ROIC, RONW and DPS whereas MVA is insignificant with EPS and PER.

156.	For pharma sector, EVA is insignificant with any other accounting ratios other than MVA. MVA is also statistically insignificant with EPS, ROA and DPS. However, there is a significant relationship between MVA and ROIC, RONW and PER.

157.   Correlation between EVA, MVA and accounting ratios of telecom sector reveals that EVA is statistically correlated with ROA, ROIC, PER and DPS but insignificant with EPS and RONW. The study also found that there is a significant correlation between MVA and PER, DPS; however, there is no significant relationship between MVA and EPS, ROA, ROIC and RONW.

158.   For automobile company, EVA and MVA have no relationship with any of the accounting ratios under automobile sector except for MVA;there is a significant relationship with EPS.

159.   EVA and MVA have no relationship with any of the accounting ratios under automobile sector during the study period except EVA which is significantly related with ROA.

160.   For fertilizer company, EVA is significantly correlated with PER and DPS. However, EVA is insignificant with EPS, ROA, ROIC and RONW. There is a significant relationship with MVA and EPS, PER and DPS whereas MVA is insignificant with ROA, ROIC and RONW.

161.   For energy sector, EVA has no relationship with any of the accounting ratios under energy sector. However, there is a significant relationship between MVA with EPS, ROA, and ROIC whereas MVA has no relationship with RONW, PER and DPS.

162.   For consumer goods Company, EVA is insignificantly related with any of the accounting ratios. The study also finds that there is no significant relationship between MVA with other accounting ratios except EPS.

163.   Correlations between EVA, MVA and Accounting ratios of cement sector reveals that there is a significant relationship between EVA and ROA, ROIC and RONW. EVA has no relationship with EPS, PER and DPS. The study also finds that there is a significant relationship between MVA with EPS, ROA, ROIC, RONW and PER whereas MVA has no relationship with DPS.

164.   For construction sector, EVA has no relationship with any of the accounting ratios under construction sector except ROA and ROIC and none of the accounting ratios have relation with MVA except for PER.

10.   CONCLUSIONS

The market value of stocks or stock price depends upon number of factors ranging from company specific to market specific. Financial information is used by various stakeholders to assess firm's current performance and to forecast the future as well. Performance measurements determine the necessary information about the situation of business and help managers in terms of decision making, planning, controlling and expediency and it also informs them about the fields that need amendment. EVA has been adopted by the advanced economies as financial performance measurement tool and corporate strategy which helped EVA to be identified as an important financial performance measurement tool over the conventional tools around the world. Though, there are mixed evidences on the superiority of EVA, it has gained attention of corporate giants based on what EVA can be acclaimed to be the most recent and exciting innovation in company performance measures. Another inference is that investor in India mostly focus on traditional measures while making investment decision and in valuation of companies. Therefore, the main purpose of this study is to investigate and examine correlation of Economic Value Added (EVA) as a tool of performance measures while investing in Indian market and to provide evidence about its superiority as a financial performance measure as compared to conventional performance measures such as, Earning per Share (EPS), Return on Assets (ROA), Return on Invest Capital RoIC), Return on Net Worth (RoNW), Price to Earnings ratio (PE ratio) in Indian companies whose companies are listed in Nifty 50.

The study found that the companies under studies are value creators as the EVA value of the companies were found to be positive.The study found no evidence to support the contention that EVA as well as MVA is the best measure of stock price and stock return compared with traditional accounting performance measurement tools. The study has found a very weak correlation between EVA and MVA with stock price as well as stock return. However, EVA and MVA are

positively correlated. The relationship between stock price and other accounting measures are found to be higher as compared to the relationship between stock price and EVA. Therefore, Economic Value Added (EVA) does not have an impact on stock price of a company. In regards to relationship between MVA and accounting measures, there is a relationship between MVA and the accounting ratios.

11.   SUGGESTIONS

The share prices are influenced by the extent to which the management is able to meet the expectation of shareholders. Various measures like return on capital employed, return on equity, earning per share, net profit margin, operating profit margin have been used to evaluate the performance of the business. The problem with these measures is that they lack a proper benchmark for comparison. Traditional accounting measurement tools are found to be insufficient because these do not fully covered the company real picture and these measures fail to capture the shareholders' value creation actions. Recognizing problems associated with traditional measures, various value based measures have been developed and Economic value added (EVA) is one such measure that has gained significant attention among researcher and companies due to its ability to reflect the true value of the company.EVA is a difficult performance metric to calculate, with several complex components that can be calculated in several different ways such as NOPAT, cost of equity, and cost of debt, yet EVA is a well-accepted method especially in firm value maximization in all over the world and many studies have been conducted in finance literature to bring out its superiority over traditional measurement tools. EVA is considered to be a method that needs to be thought over especially by not only big firms in every country but also by small and medium scaled firms.

The finding of this study does not provide strong support for the view that EVA has an economical significant influence on investment in stock market and there are several reasons why EVA may not cause improved market performance. EVA is based upon the book value and assets worth, whereas stock prices are determined by cash flow and growth expectations of firms. Therefore, EVA does not provide full cash flow information on which the stock market can act upon. The study is limited to companies listed in Nifty 50 only for a period of twelve years due

to many constraints taking some popular traditional accounting measurement tools only. Futures perspectives of research can be done taking a more number of sampled companies across sectors taking variables such as component of income statement cash flow statement variables along with EVA.