



CERTIFICATE

This is to certify that **Mr. RAJATH K J** a student of 4th Semester MBA bearing Reg. No:1IA16MBA32 studying in **Acharya Institute of Technology, Bangalore** has successfully completed the project in our organization on the topic entitled **“A Study on Optimal Portfolio Construction at R&D Capital Advisors Pvt. Ltd., Bangalore”** for a period of 10 weeks between 16th January to 24th March 2018.

We appreciate his sincere efforts during his project and we found his conduct to be good.

We wish him all the best for future endeavours.

With Warm regards,

For R&D Capital Advisors Private Limited

A handwritten signature in blue ink, appearing to read "Jagannath A S".

Jagannath A S

Head-Operations



(4th April, 2018)

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ACHARYA INSTITUTE OF TECHNOLOGY

(Affiliated to Visvesvaraya Technological University, Belagavi, Approved by AICTE, New Delhi and Accredited by NBA and NAAC)

Date: 25/05/2018

CERTIFICATE

This is to certify that **Mr. Rajath K J** bearing USN **1IA16MBA32** is a bonafide student of Master of Business Administration course of the Institute 2016-18 batch, affiliated to Visvesvaraya Technological University, Belagavi. Project report on “**A Study on Optimal Portfolio Construction at R&D Capital Advisors Pvt. Ltd, Bangalore**” is prepared by him under the guidance of **Prof. Swarupa Ranjan Panigrahi** in partial fulfillment of the requirements for the award of the degree of Master of Business Administration, Visvesvaraya Technological University, Belagavi, Karnataka.

Signature of Internal Guide

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Signature of Principal
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DECLARATION

I, **RAJATH.K J**, hereby declare that the Internship report entitled "**A STUDY ON OPTIMAL PORTFOLIO CONSTRUCTION AT R&D CAPITAL ADVISORS PVT. LTD. BANGALORE-KARNATAKA**". Prepared by me under the guidance of Prof. **SWARUPA RANJAN PANIGRAHI**, faculty of M.B.A Department, Acharya Institute of Technology and external assistance by **Mr. JAGANNATH A S**, Head operations, R&D CAPITAL ADVISORS PVT. LTD. Bangalore-27

I also declare that this Internship work is towards the partial fulfillment of university regulations for the award of degree of Master of Business Administration by Visveswaraya Technological University, Belgaum.

I have undergone a summer project for a period of Ten weeks. I further declare that this project is based on the original study undertaken by me and has not been submitted for the award of any degree/diploma from any other university / Institution.

Place:


Signature of Student

Date:

ACKNOWLEDGEMENT

I am truly grateful to my external guide **Mr. Jagannath A S**, opration head, R&D capital advisors pvt. Ltd. and my internal research Guide, **Prof. Swarupa Ranjan Panigrahi** for their research guidance, encouragement, and opportunities provided.

I wish to thank all the respondents from the firms who spent their valuable time in discussing with me and giving valuable data.

I deem it a privilege to thank our Principal, **Dr. Sharanabasava Pilli**, Dr. Mahesh, Dean Academics and our HOD **Dr. Nijaguna** for having given me the opportunity to do the project, which has been a very valuable learning experience.

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TABLE OF CONTENTS

CHAPTERS	TITLE	PAGE NO.
	Executive Summary	
1	INTRODUCTION	
1.1	Introduction	1
1.2	Industry Profile	1-9
1.3	Company Profile	10
1.4	Promoters	11
1.5	Vision, Mission & Quality Policy	11-12
1.6	Service Profile	13
1.7	Areas of Operation	13-14
1.8	Competitors Information	15
1.9	SWOT Analysis	15-17
1.10	Future Growth and Prospects	17-18
1.11	Financial statement	19-20
2	CONCEPTUAL BACKGROUND AND LITERATURE REVIEW	
2.1	Theoretical Background of the Study	21-22
2.2	Literature Review with research gap	24-26
3	RESEARCH DESIGN	
3.1	Statement of the Problem	27
3.2	Need for the study	27
3.3	Objectives	28
3.4	Scope of the study	29
3.5	Research Methodology	29
3.6	Limitations	30
3.7	Chapter Scheme	31
4	DATA ANALYSIS AND INTERPRETATION	
4.1	Data Analysis and Interpretation	32-43
4.2	Statistical Tools Results	44-47
5	SUMMARY OF FINDINGS, CONCLUSION AND SUGGESTIONS	
5.1	Findings	48-51
5.2	Conclusion	52
5.3	Suggestion	53
	BIBLIOGRAPHY	

LIST OF TABLES

SL No.	Table No.	Title of the Table	Page No.
1	1.1	Table showing major stock market	4
2	2.1	Table showing Compitative matrix	16
3	2.2	Table showing Financial statement	18

BSE 30 Companies

4	4.1	BSE 30 companies taken for portfolio construction	32
5	4.2	Calculation of Return, Risk and Beta	33
6	4.3	Calculation of Return Excess return to beta	34
7	4.4	Calculation of Return Systematic and	35

		unsystematic risk	
8	4.5	Calculation of Return Cut-off rate	37
9	4.6	Calculation of Return Weights	38
10	4.7	Calculation of Return Estimated return	39

SELECTED 30 COMPANIES

11	4.11	Table showing Selected 30 companies taken for Portfolio Construction	39
12	4.12	Calculation of Return , Risk and beta	41
13	4.13	Calculation of Excess return to beta	42

14	4.14	Calculation of Systematic and unsystematic risk	41
15	4.15	Calculation of Cut-off rate	43
16	4.16	Calculation of Weights	45
17	4.17	Calculation of Estimated return	46
18	4.18	Calculation of estimated comparative return	47

LIST OF FIGURES AND GRAPHS

SL No.	Graphs No.	Title of the Table	Page No.
1	2.1	Graphs showing Company growth	16
2	2.2	Graphs showing Net profit ratio	19
3	2.3	Graphs showing Gross profit ratio	19
4	2.4	Graphs showing Debt equity ratio	32
5	2.5	Graphs showing Return on equity	35

BASE ON 30 COMPANIES

6	4.2	Graphs showing Return, Risk and beta	33
7	4.3	Graphs showing Excess return to beta	34
8	4.4	Graphs showing Systematic and unsystematic risk	35

9	4.5	Graphs showing Cut-off rate	37
10	4.6	Graphs showing weights	38

EXECUTIVE SUMMARY

Investing in stock market requires time, knowledge and continuous observation of the market. Indian economy is rapidly growing because of new start-up are come out with a very good thought and ideas. The stock exchange also being a part of economy growth of this country. The stock exchange plays a vital role in economic growth of the counties. In the stock market, investment is a major and important concept which is practically having more values. This project is all about "A STUDY ON OPTIMAL PORTFOIO CONSTRUCTION USING WILLIAM F SHARPE'S SINGLE INDEX MODEL" The Sharpe model is very best model for portfolio and it's foremost objective is maximizing the return minimizing the risk.

In this research considering BSE 30 companies and selected 30 companies at the end comparing both which one is best of investment and suggest to an investors by using Sharpe's Single Index model.

The study consisting only BSE SENSEX index of Indian stock market. The analysis consists 6 years data from the year 2011 to 2016.

The study conducted by an analytical method used stratified random sampling. For this study secondary data used by various sources.

The research confined only Indian BSE market for the selected overall 60 companies by using only sharpe Single Index model for the portfolio construction.

This research might not be suitable for the short-term investments.

After comparing these seven and seven companies the first i.e. BSE.30 platform only 10 return will be getting remaining 90% is from selected 30 companies platform seven companies return. So these seven companies are best companies to invest in the stock market. Along with this model investors may go with technical and fundamental analysis before investing in particular companies.

CHAPTER 1

INTRODUCTION

1. INTRODUCTION TO INTERNSHIP

Internship or Project Work place a significant role and a part of MBA Academic curriculum. It helps to gain the world experience of knowledge on stock market activities. Internship is basically short term in nature with center of attention, helps to build a good resume for a job. Internship is apart from classroom study what we learned in theoretically it will be applying in practical world. Internship is an outstanding way to begin and build connections, which are valuable in emerging and continuing a strong proficient network for future. Internship helps to gain experience in particular field. Stock market is nothing but legal gambling, clients or customers invest their amount in stock market and expected to get maximum return. Any rational investor, before investing money he/she should analyze the wealth and risk associated with the particular stock. Due to various factors the stock market prices will be fluctuating, so investors need to understand the fundamental and technical analysis in stock market then only they will earn money.

1.2 INTRODUCTION TO INDUSTRY

Stock Market:

Stock market is where the shares of public listed companies are to be traded. Stock exchange is enables stock brokers to trade stock of the company and other securities. In trading a stock may be bought or sold, only if it is listed in the stock exchange.

India's major and foremost stock exchanges are Bombay stock exchange and National stock exchange. Stock trade is spot that gives an exchange to stock intermediaries to the stock exchange. Stock might be purchase or offer on the off chance that it is recorded on a trade. If one secures more stock, their ownership stake will be gets chance to be more unmistakable. In the stock market holding an association's stock infers that the people are one of the various shareholders of an association and an individual have a case to everything the association claims. The shareholders are capable for their offers of the association's wages and further any voting rights associated with the stock.

Today's era stock records are kept electronically, which will be advancement in stock exchange. In the past, man needed to offer his or her shares which are individual physically brought the endorsements down to business, but now exchanges will be

done by tick of mouse or a phone call. The estimation of an organization will be in business sector capitalization, which is the stock cost duplicated by the quantity of shares are remarkable. Stock trade is an open business division for the trading of association stocks are securities recorded in stock exchange.

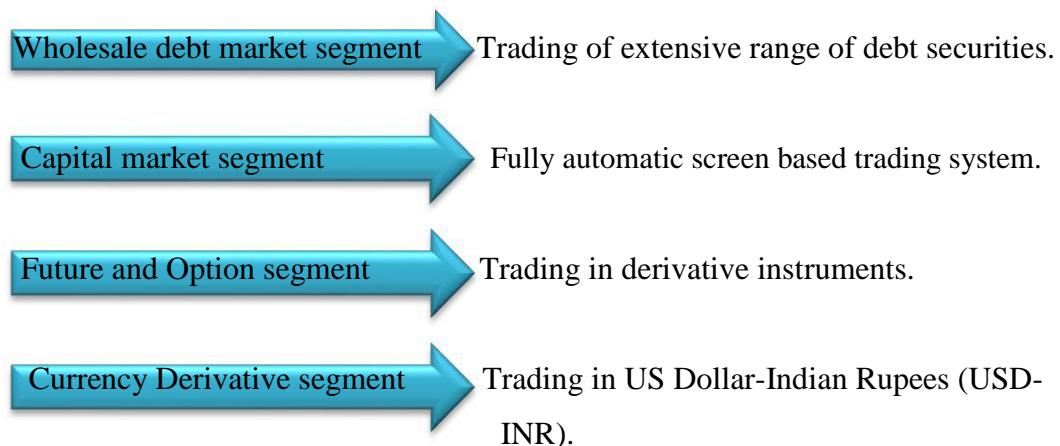
In view of volatility in stock market which implies many people and economist are of the view that economic outcome of the country. The stock market are reliant on two participants - buyers and sellers. The buyers and sellers usually trade goods, services or information's. Number of buyer and sellers involved will have a direct manner on the price of the good or services to be sold and it is known as the law of demand and supply. There are more sellers than buyers in that time the obtainability of supply will push down prices. The free market operates under laissez- faire (the policy of leaving things to take their own course, without interfering) Most of the stock markets today are mainly electronic networks although they maintain a physical location for buyer, seller and market makers to interrelate directly.

The range of world securities trade was evaluated at around \$36.6 trillion US dollars toward begin the October 2008. The offer exchanging framework is regularly seen as vital marker of a country's money related quality and progression in the stock market. The exchanges moreover go about as the clearing house for each trade, suggesting that they assemble and pass on the shares and definite portion to merchant of a security. It will be discards the threat to an individual buyer or a seller party could default on trade in market. The stock market is one of the very significant sources for the companies to raise the money. The liquidity that an exchange is affords investors to rapidly and simply sell securities. So will be an attractive and highlighted feature of investing in stocks, compare to other less liquid investments.

At close of the year 2012 the dimension of the world stock market was around \$55trillion. At present there are a total 60 stock exchanges in the world, with a total market capitalization of \$69 trillion. The financial system in utmost western countries has endured a remarkable transformations in the financial system.

The Efficient Market Hypothesis (EMH): the changes in essential factors- such as the outlook margins, profits and effect share prices outside.

Market Segment



LIST OF MAJOR STOCK MARKET TIMINGS

Table No: 1.1 – Table showing major stock market timings.

SL NO.	NAME	COUNTRY	TIME (IST)	
			OPEN	CLOSE
1	Bombay Stock Exchange	India	9:15	15:30
2	National Stock Exchange	India	9:15	15:30
3	Colombo Stock Exchange	Sri Lanka	9:30	14:30
4	NASDAQ	United States	9:30	16:00
5	New York stock Exchange	United States	9:30	16:00
6	London Stock Exchange	United Kingdom	8:00	16:30
7	New Zealand Stock Market	New Zealand	10:00	17:00
8	Australian Securities Exchange	Australia	10:00	16:00
9	Tokyo Stock Exchange	Japan	9:00	15:00
10	Korea Stock Exchange	South Korea	9:00	15:00
11	Singapore Exchange	Singapore	9:00	17:00
12	Bursa Malaysia	Malaysia	9:00	17:00
13	Shanghai Stock Exchange	China	9:30	15:00
14	Shenzhen Stock Exchange	China	9:30	15:00
15	Chittagong Stock Exchange	Bangladesh	10:30	14:30
16	Dhaka Stock Exchange	Bangladesh	10:30	14:30
17	Pakistan Stock Exchange	Pakistan	9:30	15:30
18	Johannesburg Stock Exchange	South Africa	9:00	17:00
19	Toronto Stock Exchange	Canada	9:30	16:00
20	Spanish Stock Exchange	Spain	9:00	17:30

HISTORY OF INDIAN STOCK MARKET:

The Indian stock market is oldest stock market. In 18th century the East India Company used to execute loan securities. In 1830s, trading of corporate stock and shares in bank and cotton presses took place in Bombay. That time trading was far-reaching but the brokers were very less. During that time an informal group of twenty two stockbrokers began trading under a banyan tree opposite the Town Hall of Bombay from the mid of 1850s, each investing amount of Re1. The native stockbrokers association which, in the year 1875 was legally organized as the Bombay Stock Exchange (BSE) in India. In the year 1956 the Indian Government was recognized the Bombay Stock Exchange.

National Stock Exchange is located in Mumbai. It was established in 1992. NSE has total market capitalization more than US \$1.41 trillion, and will be the world's 12th largest stock exchange (as of march 2016). NSE offers trading, clearing and settlement services in equity, currency and debt derivative segments, equity derivatives. NSE is the first exchange in India to introduced electronic trading facility. NSE was incorporated in 1992. And later as tax paying company and recognized as a stock exchange in 1993 under securities contract act 1956.

The two types of capital market, an investor can deal the securities, they are

Primary Market: A market place for new shares. Direct purchasing in primary market. One time sale of securities in the primary market. Price will be fixed in primary market.

Secondary Market: The place formerly issued securities are traded. Indirect purchasing in secondary market. Sale of securities will be done in multiple times. Price will be fluctuating depends on the demand and supply in secondary market.

The two financial markets plays a foremost role in enlistment of money in the economy. It will encourages direct interaction between company and the investors. In secondary market the brokers helps out the investors to buy and sell the stock among other investors.

SECURITIES AND EXCHANGE BOARD OF INDIA (SEBI)

In 1988 SEBI was established by the Indian Government and it is established and incorporated through sec 3 of SEBI Act 1992. SEBI was managed by –

- a. Chairman (appointed by Central Government)
- b. Two members (Ministry of CG deals with Finance)
- c. One member from RBI
- d. Five extra members (these members are appointed by CG)

The SEBI inception has been working aiming the securities and to satisfying its objectives with admirable passion. The SEBI has announced the broad regulatory measures- recommended registration rules, eligibility criteria, code of conduct etc. Which will helps in dealing with securities both transparent and safe to the end investor.

Power of SEBI

1. To accept the laws.
2. To require stock exchange to alter their by the laws
3. Registration of brokers
4. Compel companies to list their shares in one or more stock exchanges
5. Examine the books of account and call for timely returns from the renowned stock exchanges
6. Inspection of financial intermediaries.

FUNCTIONS OF SEBI

1. **Checks price Rigging:** Handling the prices of securities with the key objective of swelling the market price of securities in the market. It will prohibits such practices.
2. **Bans insider trading:** Person associated with the company it may be directors, promoters, managers etc. These insider have all the sensitive information which will affects the price of the securities, and if they use information it leads to earn. So SEBI prohibits insider trading.
3. **Prohibition of unfair trade practices:** Security Exchange Board of India does not allow misleading statements of companies to induce the sale or purchase of securities by other persons.
4. **Educate to investors:** SEBI take some steps to educate the investors, so it will helps to evaluate the securities.

INDIAN FINANCIAL SYSTEM



The Indian financial systems are classified into two categories:

- 1) Formal financial system.
- 2) Informal financial system.

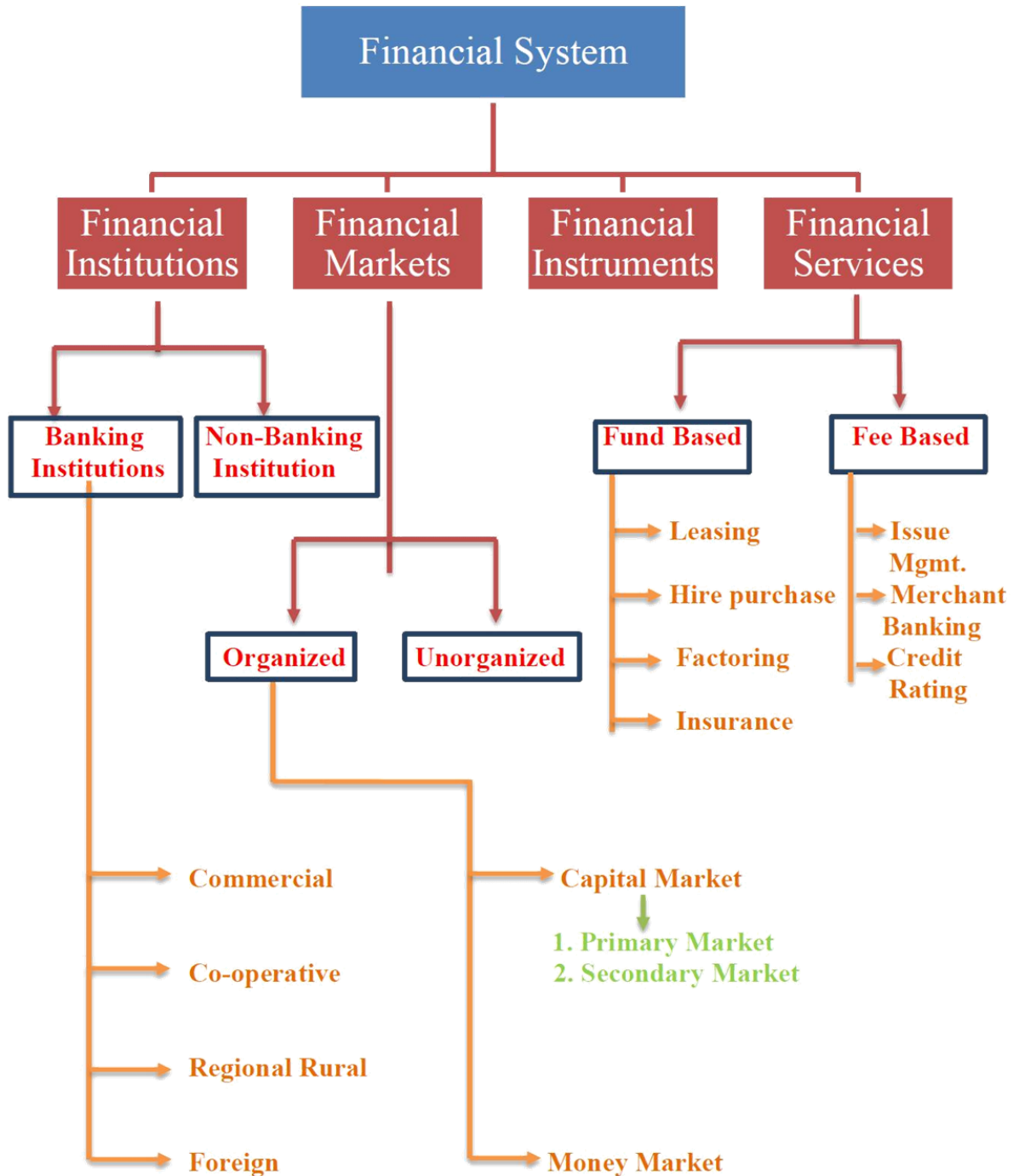
The formal financial system under Ministry of Finance (MOF), RBI, SEBI.

The informal financial system consist individual money lenders - neighbors, traders, landlords etc. The partnership firm consist of pawn brokers, local brokers and non-banking financial intermediaries.

The mediator's prepare the reserve funds and encourages the designation of assets in a successful way. The budgetary organizations are delegated savings of money and keeping proper guidelines. The money related foundations are further ordered into term account establishments.

In Speculation Street is a vast number of venture parkways for recoveries in India. In Mumbai, speculation will now open a window for speculation with higher limits and without any underlying exposure. In a monthly monetary policy, the RBI has held out opportunities for these betters make now take higher risks to earn a better returns. The primary dealers are now allowed to trade in currency future subject to a certain restrictions in trade.

Structure of Indian Financial System



STOCK EXCHANGE

The Stock exchange is where the stock brokers and traders can buy or sell the stocks in the preferred market. Stock exchanges also affords issue and redemption of securities and financial instruments. The listed securities only will be traded in a stock exchange.

The trade on an exchange is limited to the brokers who are members of the exchange. The companies view acquirements as an opportunity to expand product lines. The stock exchange provides opportunities to small investors to possess the shares of the same companies. A stock exchange is a most fundamental part of a securities trade in the stock market. There is no drive to issuing stock by method for the stock exchange itself nor must stock be hence the trade on the exchange. The way that the subordinates and bonds are traded in the stock exchange. Share price rise and fall depending largely on economic forces in the stock exchange. The former stock exchange was opened in the year 1602 in Amsterdam.

Bombay Stock Exchange: Bombay Stock Exchange was established in 1875, it is the Asia's first and the fastest stock exchange in the world with the speed of six micro seconds and also one of the India's leading stock exchange. BSE is over the past 140years, facilitated the growth of the Indian corporate sector. BSE provides an efficient and transparent market for trading equity, derivatives, debt instruments, mutual funds. In BSE more than 5500 companies are listed. It is the world's number 1 exchange in terms of listed companies.

National Stock Exchange: NSE was arranged in November 1992, it was India's first fully automated electronic exchange. NSE headquarter is in Mumbai. National Stock Exchange offers the capital raising capacities for the corporations and a trading stage for equities, derivatives and debt. NSE allows Initial Public Offers (IPOs), Indian Depository Receipts (IDRs). It is the greatest stock exchange in India by its turnover.

The business part of capitalization around 47, 01,923 Cr India's best market capitalization.

WORKINGS

The trading of stocks, at the exchange is to be in floor. In the floor all spots are called posts. The post has the names of stocks operated at a specific post. If a broker wishes to buy a particular company shares they will go to the preferred section of post has that stock. The broker sees at the price of stock is not quite what the broker is authorized to pay the money. The expert act between seller and buyer. If the value touches the requested price that time expert will sell or buy the stock as per the orders given to them by the brokers.

The stock exchanges perform very vital role in the national economies. They raise your spirits investment by providing places for buyers and sellers. The stock exchange will protects the investors by upholding the rules and regulations which ensures buyer will be treated fairly and receive exactly what they pay for. This support will helps traders buy and sell securities quickly and efficiently.

Role of Stock Exchange

1. Raising Capital for business
2. Corporate Governance
3. Creating investment opportunities for small investments
4. Barometer of the economy
5. Mobilizing savings for investment

1.3 COMPANY PROFILE:

R&D capital deals with private wealth management, risk management, financial planning and provide equity advisory services. As per the company view- the financial markets are indeed enigmatic (difficult to interpret or understand, mysterious). The dynamic changes makes markets not only interesting but offer the scope for accurate planning and accurate timely execution. The company believe that if these dramas did not play out, if nothing unexpected ever happened. The company engage to be part of this diversity with the confidence and convey passion to create new answers for its investors.

The company belief that the wealth management is about providing a personalized experience and the company engage to bridge the gap between the investor and funds.

The modern approach based on internal research and development. The company strive to ensure that the financial planning and advisory ensures the quality of investments in the direction of goals leads to accomplish the desired financial independence in the area's like-

- a. Identification of investments among best performing funds
- b. Monthly tracking of invested funds by the company
- c. In time advice.

The company says - for obtaining information on both rewarding as well as prolific benefits, better to consult and choose R&D capital. The company support with full spectrum of wealth advisory services that specifically focus upon those missed out investment opportunities that proved excellent both for wealth creation and protection. R&D capital works majorly on private wealth management, Risk management, financial planning and Advisory services. The company prepare a journey to help in every steps in a way.

1.3.1. PROMOTERS:

Rattan Deep Singh (Director): With a rich experience in Financial Services Advisory Business ranging from direct equity to the third party structured products. He has worked in investment management, Karvy, IL&FS Investmart and finance and sales at Motilal Oswal. An MBA from T A Pai Management Institute and Graduate in Economics from Delhi University.

Sumanta Mukherjee (Director): With an experience as GM with Right Horizons, where he is in Private Wealth Management. He has an experience in the investment advisory and sales experience at Metlife India, Motilal Oswal, Way2Wealth etc.

And he has an MBA from VTU Bangalore.

Ganesh Rathnam (Head-Equity Advisory Services): At present he is head of Equity Advisory Services at R&D Capital. He is well experienced portfolio strategist with over 13 years of investing experience. Previously he is an Equity Research Specialist with Boston-based Fidelity Investments. Previously he served as lead bank Analyst at Morningstar Inc. Chicago (US). He has a graduation in Mechanics from the

University of Minnesota. And later he obtain his MBA from Carlson School of Management, University of Minnesota.

Jagannath A S (Head-Operations): With over 15 years of experience in Direct Equity Operations. And also expertise in Management and Trading advisory from the reputed companies like Anand Rathi, Karvy, Apple Credit, IL&FS Investsmart.

1.3.2. Vision, Mission and Quality Policy

VISION: “To be among the top most admired private equity players in India, by Differentiated investment strategies”.

MISSION: To provide differentiated investment management services in Wealth Management and Risk Management through innovative products and Services to enable our clients to achieve their financial goals.

QUALITY POLICY:

The aim of providing a personalized experience and make bridge between Investor and Funds. For that company creating a customized solution by synchronizing the need of an Investor. With a good and effective well build team the company make a conventionally modern approach based on Internal Research and Development. With an effective team of the company which assures the proper way for their customers, it all will be possible with an effective and appropriate analysis and relationship with the customers. The company assures and guaranteed with their services in all operative functional areas and advisory services to their customers.

1.3.3. SERVICE PROFILE

With an expertise team, the company providing services like-



Private Wealth Management:

The company involved in Private Wealth Management which in the buying a home, saving for precious retirement years, accumulating wealth for child education the company with a proper plan and execution the company provide a successful plan for its customers.



Risk and Insurance Management:

The Risk and Uncertainties have been a part and parcel of everything it may personally or professionally. But identified it an early stage can help in bringing creative solutions. The company make a proper understanding and build a proper strategy for that problems.



Financial Planning:

Planning is an intellectual process deciding in advance what is to be done for future, so the planning is very much important and in the financial aspects it plays a vital role. Company work with an ultimate financial planning for the investment and savings.



Equity Advisory Services:

The company involved in the proper analysis and execution of strategies in the equity investments that will helps to build the perfect plan and results in an equity trades. The company with experienced team the plan and strategic ideas were very helpful for an investor. The company provides a perfect advises to their customers.

1.3.4 .AREA OF OPERATION

The company will manage a portfolio of Indian and International **operations**. The international portfolio comprises of 25-30 international stocks. The company operations will be domiciled US, Canada, Europe, Singapore and Australia.

The company operates various countries like- Canada, USA, Europe, Singapore, and Australia in the world.

OBJECTIVES OF THE COMPANY

- Define the policies and procedures to the parties.
- Assigning the responsibilities of involved parties.
- Proper understanding of all involved parties and their objectives.
- Proper analysis and interpretations.
- Long term portfolio.
- Proper planning of investments.
- Evaluation of investment results.

FINANCIAL STRATEGIES

- Identify the monetary needs.
- Understanding the level of risk.
- Implement thoughtful and creative solutions.
- Construct portfolio by selecting appropriate investments.
- Review to ensure that the financial objectives are being met.

Risk and Uncertainty have been a part and parcel of everything it may be personally or professionally. But identified it an early stage is helps to bringing creative solutions.

NATURE OF BUSINESS

The company provides very good services with a practical knowledge. The service widely depending on the practices and skills of operations. The company majorly provides services like - private wealth management, risk management, financial planning and equity advisory services. The company guide the clients to step by step through the entire process. The company maintain confidentiality in the client circumstance information's. The proper portfolio analysis of the company helps in a better investments and funding's.

INVESTMENT EXPERTISE



Indian stocks: The portfolio comprises 20-30 Indian stocks that will be managed by R&D capital. But the service held in clients own de-mat accounts. The service available for both Indian and International clients.

- **International stocks:** The portfolio comprises of 25-30 international stocks that will domiciled in US, Canada and Europe. Even this service available to both Indian and International clients.
- **Precious Metals:** The portfolio is for physical gold, silver, platinum and palladium is stored in covered vaults in foreign countries (New York, Salt Lake City, London, Zurich, Singapore and Melbourne).

VALUE INVESTING

The concept of value investing was pioneered by Benjamin Graham. The value investing place a vital role, it is an art of determining the intrinsic value of business conservatively. For estimation of business applying a margin of safety. Make a patience and wait until the price demanded by seller of business is below the estimation of intrinsic value subject to the margin of safety. The execution will right, that time it is the only repeatable investment method that generates consistently good results under all market conditions.

1.3.5. INFRASTRUCTURE FACILITIES

Company with a well build infrastructure and the company used technology to enable the business and deliver the services with cutting edge technology. The company with a hybrid technology and healthy environment. The company facilitates well atmosphere for the employees to work in healthy way. With a preferable facilities like computers, furniture, internet facilities, analytical tools, and good area of working conditions. With an experienced directors and management team the proper analysis will be done in a company.

1.4.COMPETITORS

- AAA Solutions Pvt. Ltd.
- 6th Sense Capital Advisors Pvt. Ltd.
- Classic Wealth Management Services Pvt. Ltd.
- Hexagon Cap advisors Pvt. Ltd.
- Fin First Cap advisors Pvt. Ltd.
- Ascent Capital Pvt. Ltd.

COMPETITIVE PROFILE MATRIX

Table No: 2.1 – Table showing Competitive matrix

SL No.	COMPETITORS	SERVICES	BROKERAGE COST	TARGET AREA
1	AAA Solutions Pvt. Ltd.	✓	✓	✓
2	6 th Sense Capital Advisors Pvt. Ltd.	✓	✓	✗
3	Classic Wealth Management Services Pvt. Ltd.	✓	✗	✓
4	Hexagon Cap advisors Pvt. Ltd.	✓	✓	✓
5	Fin First Cap advisors Pvt. Ltd.	✗	✓	✓
6	Ascent Capital Pvt. Ltd.	✓	✓	✗

1.5. SWOT ANALYSIS

Strengths:

- More focus on top traders: The Company mainly concentrated on top market traders and complete focus on top traders.
- Variety range of financial products and services: The Company provides various type of financial products and services to its customer.
- Efficient execution of trades: With the help of expertise team the execution of trade will efficient.
- More technical and fundamental analysis: The Company concentrate more on technical and fundamental analysis for the decisions.
- Major services such as - Wealth management, Portfolio management services, Risk management, financial planning and advisory services.

Weakness:

- Lack of advertising to reach investors: The Company not able concentrate on advertisement to reach investors.
- Lack of presence in world's largest markets: The Company involved various segments and area in the world but the presence in overall is limited.

Opportunities:

- Huge market development: The rapid market development is may be the opportunity for the Company.
- More number of youth looking for an investments: In accordance with the development the more number of youth looking for the investment so it will be an opportunity for the Company to reach them.
- Improving in customer habit: The preferences of the customers are improving day by day so it will helps to the company to reach to their habits and preferences.
- New introduction of financial markets: The new implications of financial trends of market provide to execute the plans.
- New taxation rule impact helps in future: The taxation is very important aspect for an investor, the new policies and rules are to be arising it makes an opportunities in future.

Threats:

- Entry of international finance firms in India market: The more number of international financial firms are entering into the Indian market so it makes huge competitiveness.
- More competition because of free public policies and regulations: The free public policies and regulations are intend to the new platform to the companies so it leads to more competition.
- More Online Competitors: The advertisement through online for more websites and Social Medias by the companies make more competitions.
- Monetary Policies by the government: The various monetary policies by the government is make difficult understanding and responses so it will be a threat for the company.

CORPORATE SOCIAL RESPONSIBILITY [CSR]

The Company contributes to the economy, which the company use resources or do its work in a country so it is their responsibility to return something to the economy. R&D capital involved in CSR activity these are some contribution to the Indian economy-

1. Improving the performance and operations.
2. Encouraging staff to be in an effective use of natural resources.
3. Additional educations to the employees.
4. Establishing a capacity building programs.
5. Conducting workshops, seminars etc.
6. Contributions to NGO's.

1.6. FUTURE GROWTH AND PROSPECTS

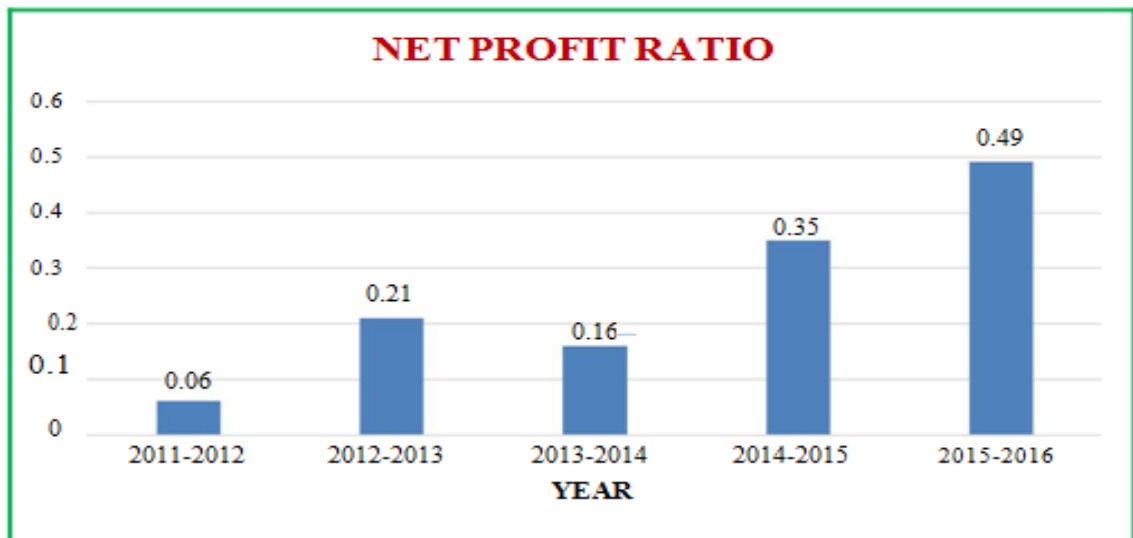
R&D Capital Advisors Pvt. Ltd is a private company. The company was incorporated on 9 March 2011. It is classified as a Non-Government Company and it is registered at registrar of companies, Bangalore.

1.7. FINANCIAL STATEMENTS

Table No: 2.2 – Table showing financial statement analysis.

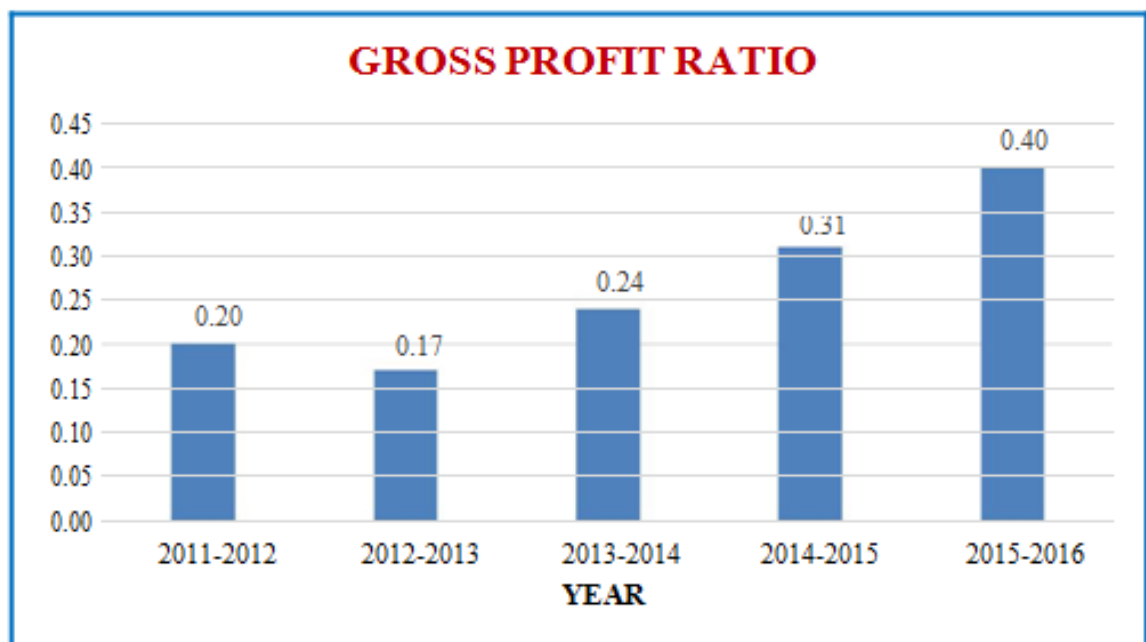
YEAR	NET PROFIT RATIO	GROSS PROFIT RATIO	DEBT EQUITY RATIO	RETURN ON EQUITY RATIO
2011-2012	0.06	0.20	2.02	0.0740
2012-2013	0.21	0.17	1.74	0.0620
2013-2014	0.16	0.24	1.52	0.0900
2014-2015	0.35	0.31	1.28	0.0440
2015-2016	0.49	0.40	1.94	0.0940

Graph No: 2.2 – Graph showing Net profit.



Interpretation: The above graph showing the Net profit ratio of the company. In the year 2012 it was around 0.06 and it increases 0.21 in 2013. In the year 2014 around 0.05 decreases its ratio. But in the year 2015 and 2016 it is continuously increasing in the net profit ratio.

Graph No: 2.3 – Graph showing Gross profit ratio.



Interpretation: The above graph showing the Gross profit ratio of the company. In the year 2012 it was around 0.20 and it decreases to 0.17 in 2013. In the year 2014 it starts increasing 0.24 later it is continuously increasing in 2015 and 2016.

ADVISE TO AN INVESTORS

The company done an analysis and made a report as considering the market variations the company make a hint on the preferred five sector for an investment. The company considered the fluctuations and information's of the year 2015-2016 and make a report on market and economy changes and confines five sector can bet for investment, which will hike more effective flow in future.

Automobiles: The implementation of seventh pay commission, that leads to strong hiring activities in urban areas. Stocks - Hero Moto Corp, Mahindra and Mahindra, Tata Motors and Maruti Suzuki India.

Cement: Government spending on infrastructure especially roads, railways, metros. Stocks – Ambuja Cement, Shree Cement.

Electrical equipment: It benefits to the exporters from a weak rupee, restoration of financial health of state electricity board, more focus on renewable energy and weak commodity prices. Stock: Suzlon Energy.

Infra and Construction: As a boom sector overall as arena. Stocks–Container Corporations, Larsen and Toubro, NBCC.

Financials: The private banks to gain share over PSU Banks due to the latter's capital constraints. The valuations are 20-30% lower than the long term averages. It offer a good entry points for those who are interested to invest 12plus months. Stocks - Axis Bank, HDFC Bank, ICICI Bank, Indus land Bank, YES Bank.

CHAPTER- 2

CONCEPTUAL BACKGROUND AND LITERATURE REVIEW

2.1.THE THEORETICAL BACKGROUND OF THE STUDY:

The Portfolio Management is previously (traditionally) named as security analysis and management. The research is to be conducted on the valuation of financial investments. The combination of securities which will be the output of risk and returns are to be measured. The proper idea and knowledge of portfolio will helps to the preferred investments and an investment portfolio is a collection of income which generating assets that have been bought to meet a monetarist goal. After 1960s, an idea of investment portfolio has become shined day by day.

The historical story hat “Harry Markowitz”, a graduate student in operations research and he was searching for a topic for his doctoral thesis. He was waiting in a waiting room a chance of encounter with a stock broker in that room, the casual talk was going on, the direction by the stock broker on market he read “John Burr Williams” book.

He was struck by the fact which he observed in that book, the fact was - there was no consideration was given to the risk of a specific investment. This was very much inspired him to write “Portfolio Selection” it was first published in March 1952 in Journal of Finance. The article was proved two old axioms that are - “nothing ventured, nothing gained and “don’t put all your eggs in one basket”.

The Portfolio Management Service (PMS) is an investment portfolio in stocks, debts, cash, fixed income, structured product of the company’s securities unlike mutual fund investors. The opportunity and adoptability for portfolio to address individual inclination and money related objectives. It is a strategy of securities for instance, stocks and coin market instruments. The method for combining the far reaching a perfect return with slightest serious and immediate danger is called Portfolio Improvement. Make a game plan of single security may provoke more unmistakable likelihood of genuine come back to some degree not exactly the same as that the normal return.

PORTFOLIO

A portfolio is a combination of financial assets such as stocks, cash equivalents, and bonds as their fund counterparts, including mutual exchange, the traded and the close funds. The portfolios are held by the investors or financial professionals. An investment portfolio can be thought as the parts or divided into a pieces of varied sizes which representing a variety of asset classes to achieve an appropriate risk-return portfolio allocation. An investor should be more conservative in an asset allocation as the objective or goal date of approaches and to protect the portfolio principal that has been built up to that point.

PORTFOLIO MANAGEMENT

An idea of an investing in shares, debentures and bonds is gainful as well as sensational. But it involves an abundant deal of risk and calls for scientific knowledge as well as arty skill. In that type of investments there will be both rational and emotional responses are involved. In an investments very rare to find an investors investing their entire savings in a single security. Instead of they will tend to invest in a group of securities such a group of securities are to be called as portfolio.

PORTFOLIO CONSTRUCTION

The portfolio construction is all about investing range of funds, will work together to create an investment solutions for an investors. Understanding of various types of investments work and merging them to address personal objectives and the factors such as attitude to risk the investment and the expected life of the investment.

Steps to creating a portfolio

- ✓ **Risk profiling:** Measuring of a perceived level of risk for an investment.
- ✓ **Asset Allocation:** Categorizing and identifying of the right combination of assets.
- ✓ **Fine Tune Portfolio:** Choosing an investment pattern will fit for the allocation of asset as most suitable one, by reducing risk and increasing returns.
- ✓ **Review of portfolio:** once portfolio done, it is very important to review it on a regular basis.
 - **Types of return**
 -

□ **Realized Return:** It is a type of return on an investment that has been actually earned. The element of certainty and absence of risk is in realized return. The actual return earned during the holding period of an investment.

□
□ An amount of 5000 deposited in a bank as a fixed deposit for 1 year @10%. The worth will be 5500 on completion of one year. The realized return is 500.

□
□ **Expected Return:** It is a type of ROI which is anticipated over a period of time in future. The calculation by multiplying potential outcomes by chance of occurring and sum of that. The expected return is usually based on historical data and it is not a guaranteed one.

TOOLS FOR MEASURING RISK

- **BETA:** It is a measure of stock volatility in which the relation with the market. If the market has beta of 1.0 and an individual stocks are to be ranked according to how much they are deviate from the market. The stocks are having High beta supposed to be riskier but it provides a potential for the higher returns.
- **STANDARD DEVIATION:** It is a measure of the dispersion of a set of data from its mean. The investment firms report the standard deviation of their mutual funds and other related products. The standard deviation is one of the key which is for the fundamental risk measures that analysts, portfolio managers, wealth advisors and the financial planners.
- **CORRELATION:** The measuring of the degree to which two securities move in relation to each other. The correlation are used in advanced portfolio management. The computation known as correlation co-efficient, which has value that must be fall between -1 and +1.
- **VARIANCE:** The measurement spread between numbers in a data set. Variance is measures how far each number in the set from the mean. The amount of square of the deviation of actual from the expected returns. The positive value of the variance considered as unfavorable and the negative value considered as favorable.

2.2. LITERATURE REVIEW

NIRANJAN MANDAL (2013) - APPLICATION AND CONSTRUCTION OF PORTFOLIO (an empirical study)

The work which was prepared here to get an idea in William F Sharpe's model to construct an optimal portfolio. Taking into consideration of BSE SENSEX as market flows index, with the daily indices along with a daily price, a certain securities for the tenure of 2001-2011. The ideal technique was used in selected stock portfolio that leads to beta more net worthy than cut-off rate. Then measure each securities in a procedure on the reason of beta quality, unsystematic risk and cut-off rates of each securities.

DILEEPSAND RAO, KESAVA (2013) -APPLICABILITY.AND UTILITY OF SINGLE INDEX MODEL

William Sharpe's single index model in Indian context and also performance and evaluation portfolio in terms of its rate of return. For the construction of portfolio as a sample of thirty companies from various sector was chosen and the data will be collected from secondary source. The study was concluded that the William F Sharpe's single index model will be more supportable and appropriate to the Indian market, the investors, construct a portfolio to improve their expected returns on their investments.

SARAVANAN AND NATARAJAN (2012) - PRACTICAL APPLICATION OF PORTFOLIO MANAGEMENT

An attempt was made on optimal portfolio construction using F Sharpe's single index model. In consideration of NSE NIFTY50 stocks have selected. The day-to-day data for all the stocks and index for the period 2006-2011 have been considered. The method frames a unique cut-off rates and selects stocks are excess of their expected return over risk free return. The pattern of investment percentage will be calculated on the basis of its respective weights apportioned on respective beta. Finally optimal portfolio consist of 4 stocks selected out of 50 were short listed. The scripts return is 0.1160%.

MORGAN STANLEY SMITH BARNEY (2010) - THE ESSENTIALS OF PORTFOLIO CONSTRUCTION

The portfolio construction is a customized process. In developing of a portfolio, the individual return and risk qualities will be considered. The portfolio development process giving a bit of knowledge in practice. The financial advisories are very important while constructing a portfolio. Based on the guidance it helps to evaluate existing portfolio to ensure and allocated according to the situations.

Prof. Y RAMA KRISHNA (2010) - PORTFOLIO MANAGEMENT

The article by which the portfolio management is very essential and very preferred tool in practices. The daily and annualized return, unsystematic risk and correlation among the stocks belongs to similar industry type S&P CNX500 was considered as market index. This study consider 244 days of trading 31/12/2008 to 31/12/2009. The returns are calculated using the continuous compounding method used for the movement of stock market.

RAKESH GUPTA AND PARIKSHIT K BASU (2009) - STUDY ON CHANGING GLOBAL FINANCIAL ENVIRONMENT

The diversification of investment portfolio in a country and a particular sector. Optimum portfolio selection within a capital market is based on the risk, return, trade-off among the particular sector. The market volatility can be attributed to substantial increase in sector and subsector specific risks. The analysis daily and monthly market data on 1997 to 2007 on a sample of 10 industry sector selected randomly, it indicates the investor expects reward to risk as compared with market returns. Major contributions are twofold, and the changes in correlation over time and it applied the model for the Indian market where the research is extremely inadequate.

Dr. SAIF SIDDIQUI (2009) - PORTFOLIO CONSTRUCTION

The portfolio construction in a proper circumstance in consideration of a crucial issues may interest investor's, portfolio managers, etc. they are attentive in understanding the market activities and eventual diversifications. Hence it become important to evaluate and observe the interdependency between Asian markets including S&P CNX NIFTY and relation with other markets.

JEAN-MARIE CLUCHIR (2008) - PORTFOLIO CONSTRUCTION AND DIVERSIFICATION

The execution of assets with preferable analysis and proper allocations. The undertaking of selecting speculation reserve has turned out to be especially unpredictable one. This helps in managing a selected finance and upgrades activities and improves to expanding the portfolio. The level of portfolio's are to be in a proper diversification.

RAJAN BAHADDUR PAVDEL AND SUJAN KOIRALA (2006) -TEST ON MARKOWITZ MODEL AND SHARPE'S MODEL

The research is conducted to check whether Markowitz and Sharpe models of portfolio selections offers a better investment alternatives or not. It is basically for the Nepali investors. The both models are applying for thirty stocks traded in Nepali stock market. The application and elementary are to be established about a half century ago to offer a better option for making a decisions.

HAYEK KALLEN (1985) -PORTFOLIO CONSTRUCTION AND DIVERSIFICATION

In the optimal portfolio construction the alternatives and the portfolio construction and diversification. Hayek uses individual securities (stock and bonds) for his clients. An appropriate level of diversification can be achieved with 20 to 30 individual securities. It helps to provide a better holdings. The proper attention to be ensure that no single security will comprises more than 10% of portfolio. Since 1985 we have used this approaches in investment decisions and Hayek investment management will be consider over a number of different market and economic cycles.

CHAPTER-3

RESEARCH DESIGN

3.1 STATEMENT OF THE PROBLEM

**“A STUDY ON OPTIMAL PORTFOLIO CONSTRUCTION AT R&D
CAPITAL ADVISORS PVT. LTD., - BANGALORE”**

3.2. NEED FOR THE STUDY

For every investor's prime objective is to maximizing the return from their investments. But a risk also associated with return which place a vital role in investment decision. There are many models for identifying better investments in the capital market. It is the challenging task for any investor to identify and implement the best model to get appropriate return. The main focus on this study is the testing of William Sharpe's model, which still working at present situation in Indian stock market.

3.3.OBJECTIVES OF THE STUDY

1. To construct a portfolio by considering BSE 30 companies.
2. To construct a portfolio for selected 30 companies chosen for this research.
3. Comparing of the return for BSE 30 and selected 30 companies.
4. Suggesting the best companies to invest to an investor.

3.4.SCOPE OF THE STUDY

The study on portfolio construction in Indian stock market. In consideration of only Bombay Stock Exchange (BSE) not any other stock exchanges. The study is limited for 2011-2016. The company index are taken and it is to be examined based on their performance in the past 6 years. And no other aspects other than the share price movements, index movements, rate of return and Beta values for the securities for the past 6 years are taken for analysis.

3.5. METHODOLOGY OF THE STUDY

In this study/research the secondary data source are used. Descriptive research is used for the study and exploring optimal portfolio construction among chosen companies. In characteristics of the risk and return of an individual company securities, an optimal portfolio is constructed.

- **Type of study:**

The research is conducted by an analytical method for this study, and used stratified random sampling to meet the objectives of the research.

- **Type of data:**

In this study secondary data used by various sources like www.moneycontrol.com, www.investopedia.com, www.equitymaster.com

- **Sample Size:**

The sample consist of 30 companies from 10 sectors, 3 companies from each sector.

And the BSE 30 companies are selected on the basis of research objectives.

LPP

Objective Function: Minimize the risk of the portfolio investment.

Constraints: 1. $w_1, w_2, w_3, w_n \geq 0$ (w = weights)

2. $w_1 + w_2 + w_3 = 100\%$

3. $w_1r_1 + w_2r_2 + w_3r_3 =$ maximize the returns. (r = average returns)

LPP	Situation 1	Situation2	Situation 3
	Equal Weights	Max Returns	Min SD
Constructing Variables	None	at $\sigma \leq$	at μ
Value of Constraints	N/a	6.0140	30.3200
Lupin	0.1429	0.439390718	0
HUL	0.1429	0.073185542	0
TCS	0.1429	0	0
Dr. Reddy Lab	0.1429	0	0
Maruti Suzuki	0.1429	0.48742374	1
Sun Pharma	0.1429	0	0
CIPLA	0.1429	0	0
$\sum w_i$	1	1	1
Portfolio Return (μ) %	18.1840	27.0840	30.3200
σ %	3.95202343	6.013987632	9.831546894
μ/σ	4.601178881	4.503494078	3.0839546

Testing for selected companies for one and half months i.e. January and February 2017

Particulars	Returns	Returns	Returns
Portfolio Return (μ) %	1.4177	-0.0113	2.2140

LPP	Situation 1	Situation2	Situation 3
	Equal Weights	Max Returns	Min SD
Constructing Variables	None	at $\sigma \leq$	at μ
Value of Constraints	N/a	6.7943	57.7280
Apollo Hospital	0.1429	0	0
Eicher Motors	0.1429	0.557332446	0
Pidilite Industries	0.1429	0.06720306	0
Shree Cement	0.1429	0.215863368	0
ZEE Entertainment	0.1429	0.104939847	0
UPL	0.1429	0.054661279	0
BAJAJ Finance	0.1429	0	1
$\sum w_i$	1	1	1
Portfolio Return (μ) %	34.3981	47.6681	36.3828
σ_p %	5.544162902	6.794277036	14.68587148
μ/σ	6.204388998	7.015916092	2.477400594

Testing for selected companies for one and half months i.e. January and February 2017

Particulars	Returns	Returns	Returns
Portfolio Return (μ) %	2.60338	5.58421	5.35129

By analyzing the Sharpe's Single Index Model of portfolio construction and used LPP model to identify the weights with three different situations.

Situations:

Situation1: Equal weights for all selected seven stocks in BSE 30 and Selected 30 groups - identified around 18.18% and 34.39% as portfolio return with 3.95% and 5.54% respectively as standard deviation, but when it is tested for two months resulted only 0.4586% as portfolio return.

Situation2: Calculated weights with the help of LPP model and identifies that investment proportion of 44%, 7% and 49% for Lupin, HUL and Maruthi Suzuki respectively. This situation is also focusing on what is the maximum return? With the condition of risks should be less than or equals to 6.01%. Identified around 27.08% as portfolio return, but when it is tested for two months, resulted negative returns of -0.2692%. And 55%, 54%, and 21% for Eicher Motors, UPL, Shree Cement respectively. This situation is also focusing on what is the maximum return? With the condition of risks should be less than or equals to 6.79%.

Situation3: Calculated weights with the help of LPP model and identifies that investment proportion is only to Maruthi Suzuki as 100%. The situation is also focusing on without focusing on risk if investor wants earn maximum returns, which is resulted that around 30.32% as portfolio return.

SELECTED 30 COMPANIES

SL. No	INDUSTRY	COMPANIES
1	AUTOMOBILE	TATA MOTORS
		EICHER MOTORS
		ASHOK LEYLAND
2	BANK	SBI
		BANK OF BARODA
		PNB
3	CEMENT	ULTRATECH CEMENTS
		SHREE CEMENTS
		AMBUJA CEMENTS
4	CHEMICALS	UPL
		PIDILITE INDUSTRIES
		TATA CHEMICALS
5	CRUDE OIL	ONGC
		GAIL
		CAIRN INDIA
6	MEDIA & ENTERTAINMENT	ZEE ENTERTAINMENT
		SUN TV NETWORK
		DISH TV
7	FINANCE	BAJAJ FINANCE
		SHRIRAM TRANSPORT
		M&M FINANCIAL
8	HOSPITAL	APOLLO HOSPITAL
		FORTIS HEALTH
		POLY MEDICURE
9	INFRASTRUCTURE	LARSEN & TOUBRO
		ADANI PORTS
		SIEMENS
10	TELECOMMUNICATION	BHARTI AIRTEL
		IDEA CELLULAR
		TATA COMMUNICATIONS

BSE 30 Companies

SL No	COMPANIES	SL No	COMPANIES
1	ADANI PORTS	16	INFOSYS
2	ASIAN PAINTS	17	ITC
3	AXIS BANK	18	LARSEN AND TOUBRO
4	BAJAJ AUTO	19	LUPIN
5	BHARTI AIRTEL	20	M&M
6	BHEL	21	MARUTI SUZUKI
7	CIPLA	22	NTPC
8	COAL INDIA	23	ONGC
9	Dr. REDDY LAB	24	RELIANCE
10	GAIL	25	SBI
11	HDFC	26	SUN PHARMA
12	HDFC BANK	27	TATA MOTORS
13	HERO MOTORCORP	28	TATA STEEL
14	HUL	29	TCS
15	ICICI BANK	30	WIPRO

3.6.Hypothesis:

H₀: ($\mu_2 - \mu_1 = 0$) the average mean return of BSE 30 companies and the average mean return of Selected 30 companies are equal.

H₁: ($\mu_2 - \mu_1 \neq 0$) the average mean return of BSE30 companies and the average mean return of Selected 30 companies are not equal.

CHAPTER 4

DATA ANALYSIS AND INTERPRETATION

4.2.DATA ANALYSIS:

This project is titled “A study on optimal portfolio construction” has been chosen to conduct the research in R&D Capital Advisors Pvt. Ltd., Bangalore. The required information has been collected through secondary data by various websites. Thus collected data was transferred to spread sheet and various calculations, tables and diagrams are made. For each table and graphs interpretations are expressed. The following are the tables and diagrams with respective interpretations.

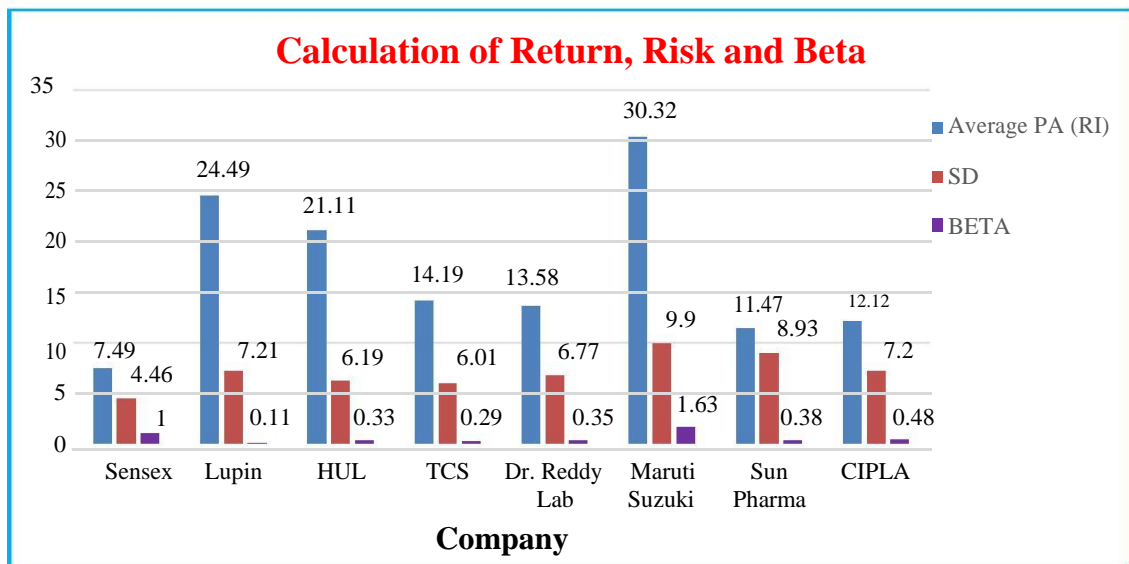
Table No: 4.1 – BSE 30 Companies for Portfolio Construction.

SL. No	Company	SL. No	Company
1	Adani Ports	16	Infosys
2	Asian Paints	17	ITC
3	Axis Bank	18	Larsen
4	Bajaj Auto	19	Lupin
5	Bharti Airtel	20	M&M
6	BHEL	21	Maruti Suzuki
7	CIPLA	22	NTPC
8	Coal India	23	ONGC
9	Dr. Reddy Lab	24	Reliance
10	GAIL	25	SBI
11	HDFC	26	Sun Pharma
12	HDFC Bank	27	Tata Motors
13	Hero Motorcorp	28	Tata Steel
14	HUL	29	TCS
15	ICICI Bank	30	Wipro

Table No: 4.2 – Calculation of Return, Risk and Beta.

SL. No	Company	Average Return	SD	BETA
Mkt	Sensex	7.49	4.46	1.00
1	Lupin	24.49	7.21	0.11
2	HUL	21.11	6.19	0.33
3	TCS	14.19	6.01	0.29
4	Dr. Reddy Lab	13.58	6.77	0.35
5	Maruti Suzuki	30.32	9.90	1.63
6	Sun Pharma	11.47	8.93	0.38
7	CIPLA	12.12	7.20	0.48

Graph No: 4.2 – Graph showing Return, Risk and Beta.



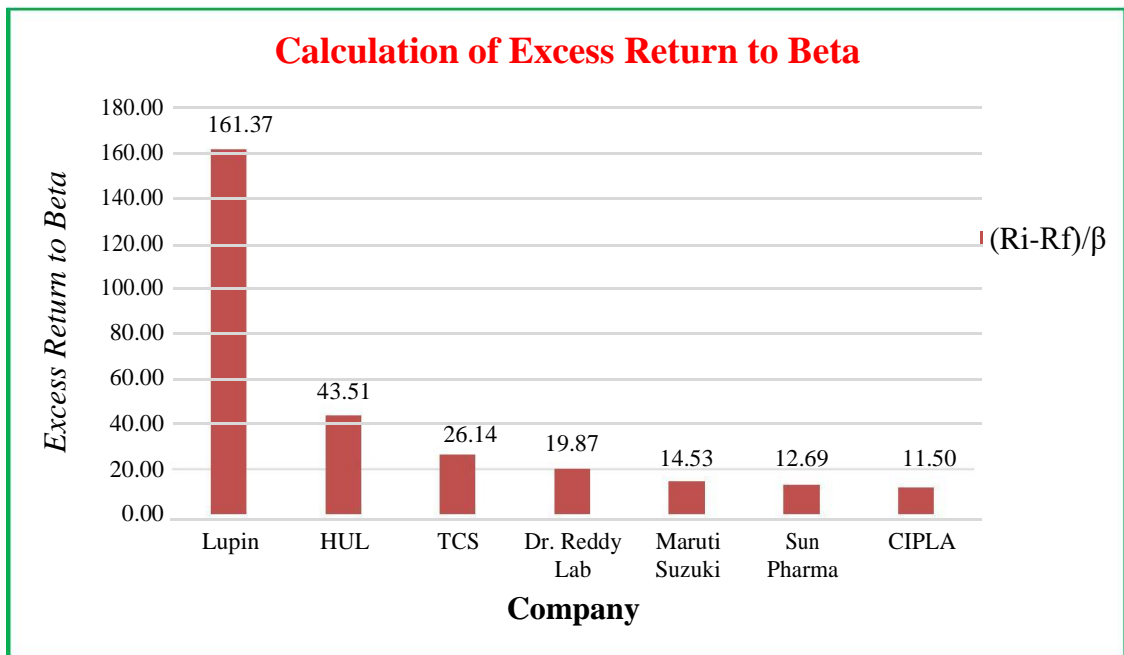
Interpretation: From the above graph and table it is identified that average return, standard deviation and beta co-efficient was considered these 7 companies taken into consideration as per single index portfolio model selection. The highest return by Maruti Suzuki at 30.32% associated with highest risk of 9.9%. The return wise next position is Lupin followed by HUL, that the beta coefficient is very nominal. If investors are risk averse then for them it is suggested to invest in index which has very less volatility of 4.46%. It is also found that investment in HUL is best of return and risk but the beta coefficient value is very less that is 0.33.

These 7 companies are tested to identify the model works for present era in Indian capital market.

Table No: 4.3 – Calculation of Excess Return to Beta.

SL No	Company	$(R_i - R_f)/\beta$
1	Lupin	161.37
2	HUL	43.51
3	TCS	26.14
4	Dr. Reddy Lab	19.87
5	Maruti Suzuki	14.53
6	Sun Pharma	12.69
7	CIPLA	11.50

Graph No: 4.3 – Graph showing Excess Return to Beta.

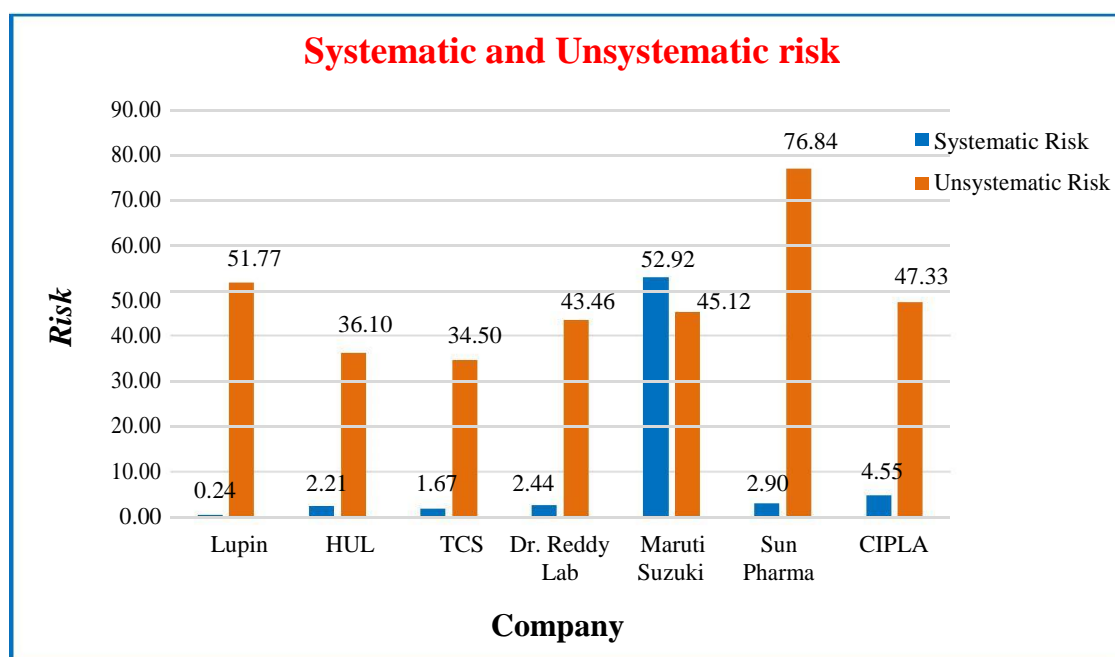


Interpretation: From the above graph and table it is identified that excess return to beta was considered these 7 companies taken into consideration as per single index portfolio model selection. The highest excess return to beta by Lupin at 161.37% and next position will be HUL at 43.51%. It means if we invest in these seven companies we can expect more returns.

Table No: 4.4 – Calculation of Systematic and Unsystematic Risk.

Rank	Company	Systematic Risk	Unsystematic Risk
1	Lupin	0.24	51.77
2	HUL	2.21	36.10
3	TCS	1.67	34.50
4	Dr. Reddy Lab	2.44	43.46
5	Maruti Suzuki	52.92	45.12
6	Sun Pharma	2.90	76.84
7	CIPLA	4.55	47.33

Graph No: 4.4 – Graph showing Systematic and Unsystematic Risk.

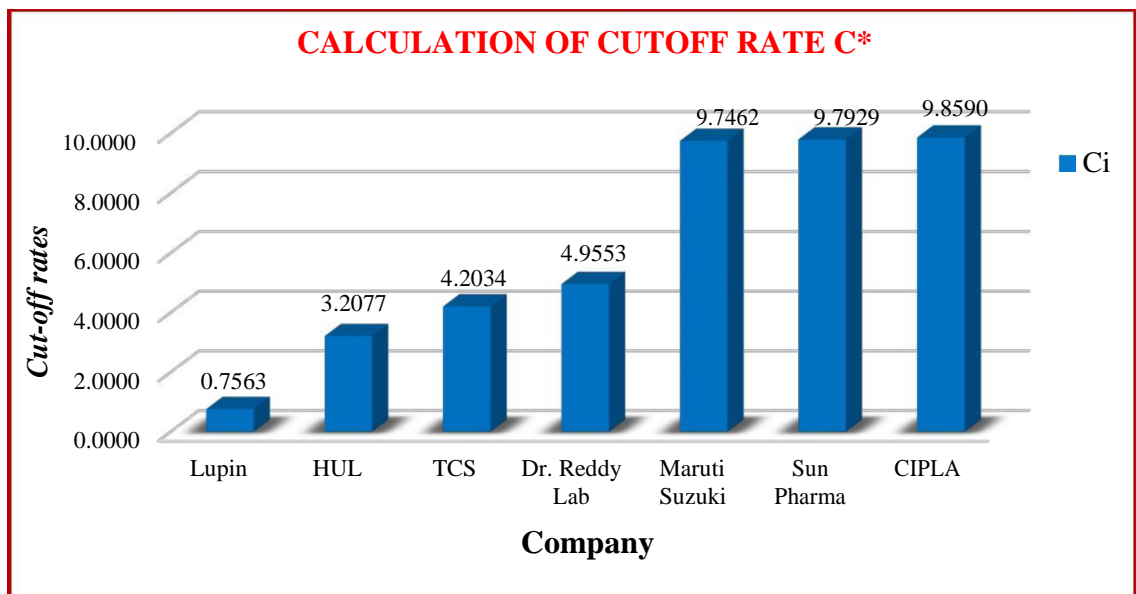


Interpretation: From the above graph and table it is identified that systematic and unsystematic risk was considered for these 7 companies taken into consideration as per single index portfolio model selection. Here Maruti Suzuki has a high systematic risk of 52.92% and an unsystematic risk of 45.12%. Sun Pharma has a high unsystematic risk of 76.84% and a systematic risk of 2.90%. Systematic risk is the risk which is uncontrollable, the company cannot control the systematic risk. Unsystematic risk is the risk which is controllable, the company can control these types of risks.

Table No: 4.5 – Table showing calculation of Cut-off rates.

CALCULATION OF CUTOFF RATE C*		
Rank	Company	Cutoff Rate C*
1	Lupin	0.7563
2	HUL	3.2077
3	TCS	4.2034
4	Dr. Reddy Lab	4.9553
5	Maruti Suzuki	9.7462
6	Sun Pharma	9.7929
7	CIPLA	9.8590

Graph No: 4.5 – Graph showing Cut-off rates.

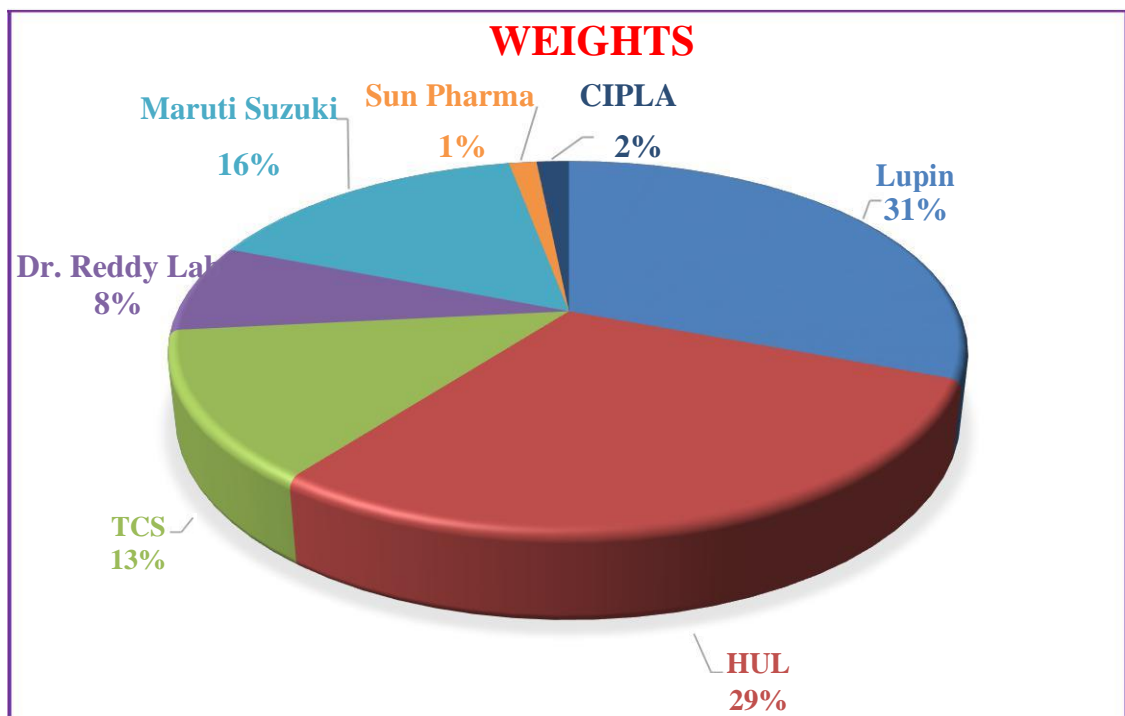


Interpretation: From the above graph and table it is identified that the total risk, i.e. systematic and unsystematic risk and excess return to beta, rank wise allocation was made. We found that the cut-off rate ought to be 9.8590 till this value. The cut-off rate corresponds to the maximum level of return is to be calculated that is what cut-off rate, there after the returns gradually decreases, so up to CIPLA (9.8590) we need to consider.

Table No: 4.6 – Table showing calculation of Weights.

Rank	Company	Weights
1	Lupin	0.3082
2	HUL	0.2953
3	TCS	0.1300
4	Dr. Reddy Lab	0.0768
5	Maruti Suzuki	0.1605
6	Sun Pharma	0.0134
7	CIPLA	0.0157

Graph No: 4.6 – Graph showing the Weights.



Interpretation: From the above graph and table it is identified that weights were considered for these 7 companies taken into consideration as per single index portfolio model selection. The highest weight is for Lupin at 31% and next will be HUL at 29%. These stocks qualify for investment as they are well with the cut-off rate. Once we know where to invest the ultimate next question is how much weightage needs to be given for the particular stocks to reduce the risk and maximize the return.

Table No: 4.7 – Table showing estimated returns in terms of Profit/Loss.

Company	Share Price as of 2nd Jan	Number of shares	Share Price as of 15th Feb	Total Sales	Profit/loss
Lupin	1474.25	2091	1440.15	3010740.61	-71288.58
HUL	855.15	3453	846.65	2923848.25	-29354.17
TCS	2229.9	583	2446.9	1426953.27	126547.41
Dr. Reddy Lab	3021.05	254	2926.85	743850.00	-23940.64
Maruti Suzuki	5896.5	272	6027.05	1640728.71	35539.30
Sun Pharma	631.55	212	649.3	137764.35	3766.08
CIPLA	574.25	274	583.4	159891.94	2507.73
TOTAL				10043777.13	43777.13

Total Investment = 10000000(Assumption)

Return = 0.4377

PARTICULARS	AMOUNT
TOTAL SALE	10043777.13
TOTAL INVESTMENT	10000000.00
TOTAL PROFIT	43777.13

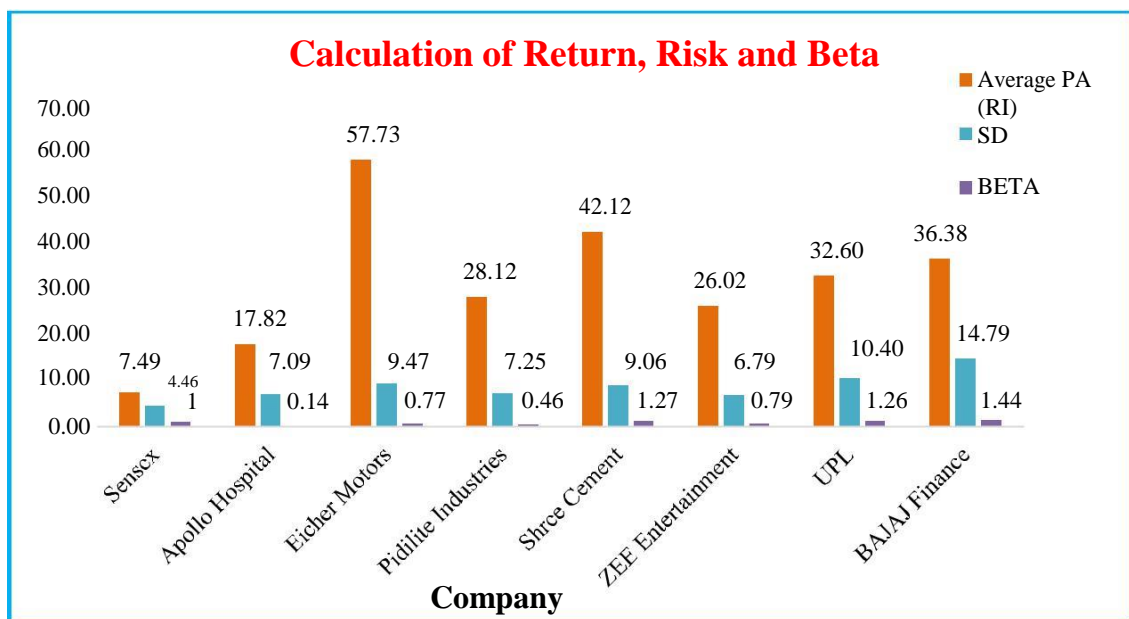
Table No: 4.11 – Selected 30 Companies for Portfolio Construction.

SL. No	INDUSTRY	COMPANIES
1	AUTOMOBILE	TATA MOTORS
		EICHER MOTORS
		ASHOK LEYLAND
2	BANK	SBI
		BANK OF BARODA
		PNB
3	CEMENT	ULTRATECH CEMENTS
		SHREE CEMENTS
		AMBUJA CEMENTS
4	CHEMICALS	UPL
		PIDILITE INDUSTRIES
		TATA CHEMICALS
5	CRUDE OIL	ONGC
		GAIL
		CAIRN INDIA
6	MEDIA & ENTERTAINMENT	ZEE ENTERTAINMENT
		SUN TV NETWORK
		DISH TV
7	FINANCE	BAJAJ FINANCE
		SHRIRAM TRANSPORT
		M&M FINANCIAL
8	HOSPITAL	APOLLO HOSPITAL
		FORTIS HEALTH
		POLY MEDICURE
9	INFRASTRUCTURE	LARSEN & TOUBRO
		ADANI PORTS
		SIEMENS
10	TELECOMMUNICATION	BHARTI AIRTEL
		IDEA CELLULAR
		TATA COMMUNICATIONS

Table No: 4.12 – Calculation of Return, Risk and Beta.

SL No	Company	Average Return	SD	BETA
Mkt	Sensex	7.49	4.46	1
1	Apollo Hospital	17.82	7.09	0.14
2	Eicher Motors	57.73	9.47	0.77
3	Pidilite Industries	28.12	7.25	0.46
4	Shree Cement	42.12	9.06	1.27
5	ZEE Entertainment	26.02	6.79	0.79
6	UPL	32.60	10.40	1.26
7	BAJAJ Finance	36.38	14.79	1.44

Graph No: 4.12 – Graph showing Return, Risk and Beta.

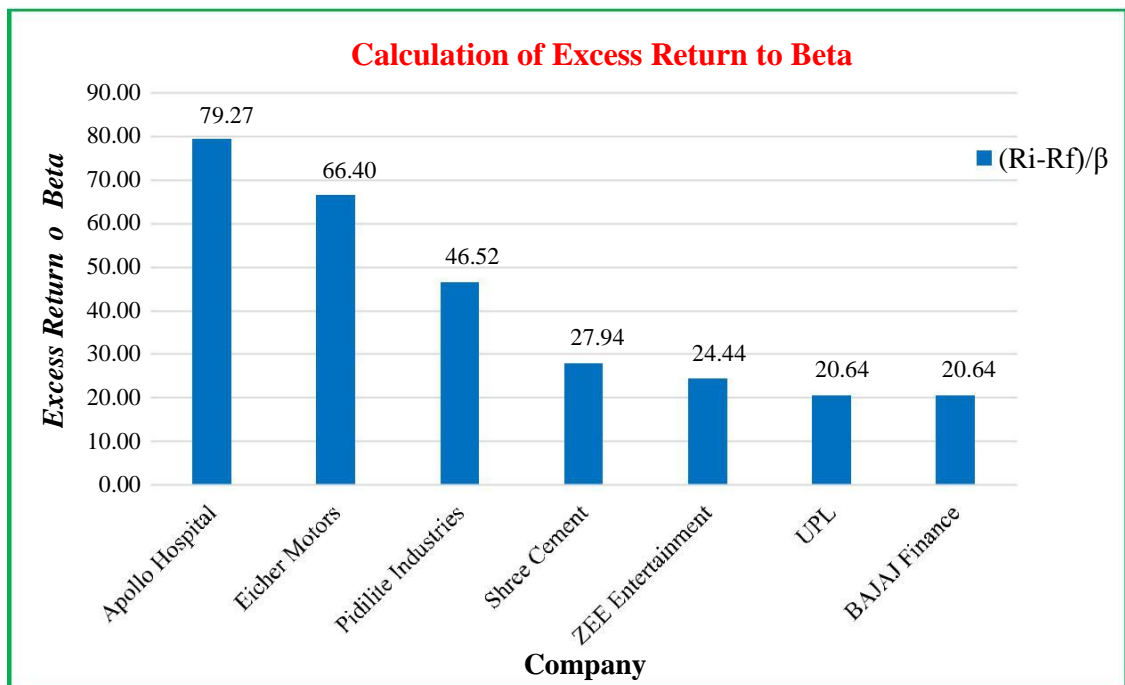


Interpretation: From the above graph and table it is identified that average return, standard deviation and beta co-efficient were considered for these 7 companies taken into consideration as per single index portfolio model selection. The highest return by Eicher Motors at 57.73% associated with risk of 9.47%. The return wise next position is Shree cement followed by Bajaj finance, that the beta coefficient is very nominal. If investors are risk averse then for them it is suggested to invest in index which has very less volatility of 4.46%. It is also found that investment in Shree cement is best of return and risk but the beta coefficient value is very less that is 1.27.

Table No: 4.13 – Calculation of Excess return to Beta

SL No	Company	$(R_i - R_f)/\beta$
1	Apollo Hospital	79.27
2	Eicher Motors	66.40
3	Pidilite Industries	46.52
4	Shree Cement	27.94
5	ZEE Entertainment	24.44
6	UPL	20.64
7	BAJAJ Finance	20.64

Graph No: 4.13 – Graph showing Excess Return to Beta.

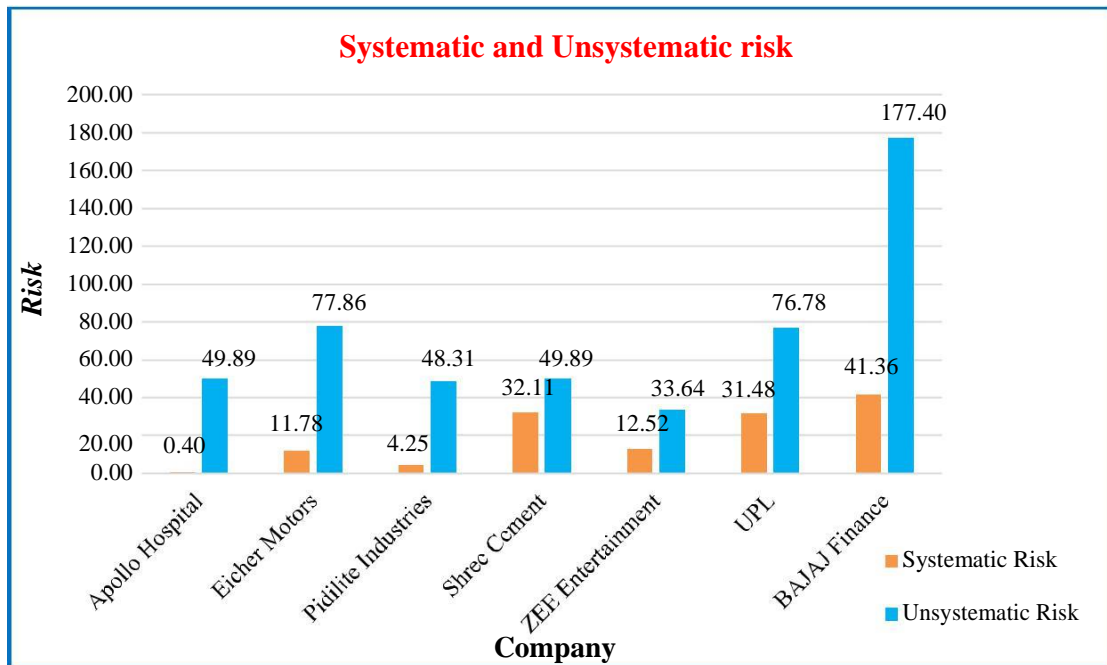


Interpretation: From the above graph and table it is identifies that excess return to beta was considered these 7 companies taken into consideration as per single index portfolio model selection. The highest excess return to beta by Apollo Hospital at 79.27% and next position will be Eicher Motors at 66.40%. It means if we invest in these seven companies we can expect more returns.

Table No: 4.14 – Calculation of Systematic and Unsystematic Risk.

Rank	Company	Systematic Risk	Unsystematic Risk
1	Apollo Hospital	0.40	49.89
2	Eicher Motors	11.78	77.86
3	Pidilite Industries	4.25	48.31
4	Shree Cement	32.11	49.89
5	ZEE Entertainment	12.52	33.64
6	UPL	31.48	76.78
7	BAJAJ Finance	41.36	177.40

Graph No: 4.14 – Graph showing Systematic and Unsystematic Risk.

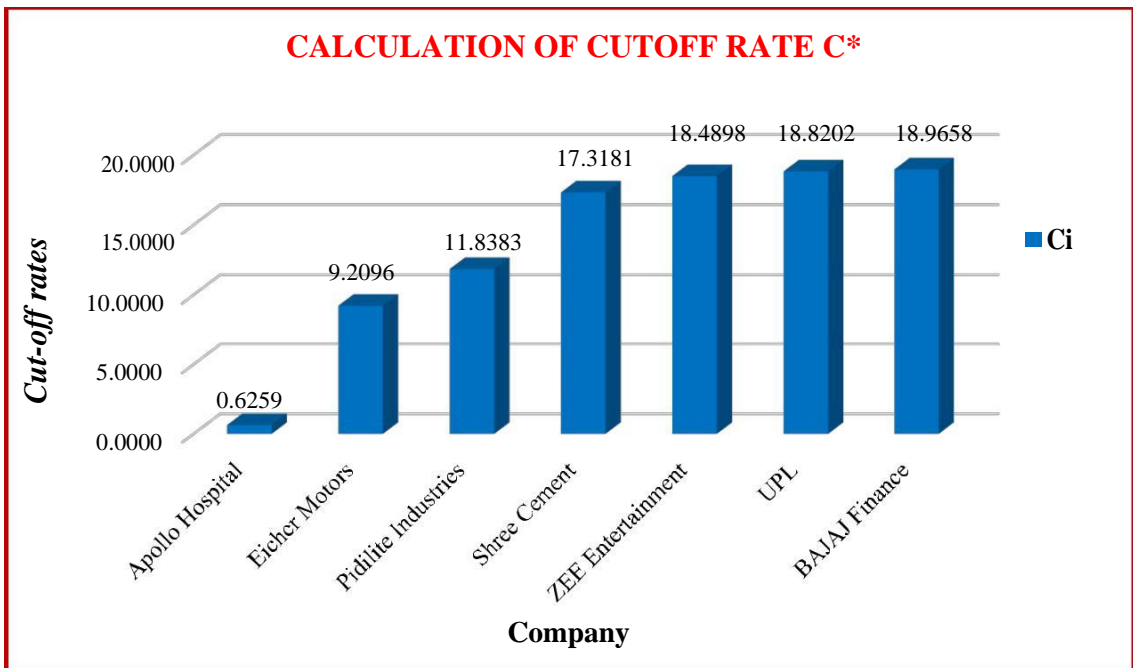


Interpretation: From the above graph and table it is identified that systematic and unsystematic risk was considered for these 7 companies taken into consideration as per single index portfolio model selection. Here the Bajaj Finance has the highest systematic risk of 41.36% and the highest unsystematic risk at 177.40%. The next position in unsystematic risk is Eicher Motors with a high unsystematic risk of 77.86% and a systematic risk of 11.78%. Systematic risk is the risk which is uncontrollable, the company cannot control the systematic risk. Unsystematic risk is the risk which is controllable, the company can control these types of risks.

Table No: 4.15 – Table showing calculation of Cut-off rates.

CALCULATION OF CUTOFF RATE C*		
Rank	Company	Cutoff Rate C*
1	Apollo Hospital	0.6259
2	Eicher Motors	9.2096
3	Pidilite Industries	11.8383
4	Shree Cement	17.3181
5	ZEE Entertainment	18.4898
6	UPL	18.8202
7	BAJAJ Finance	18.9658

Graph No: 4.15 – Graph showing Cut-off rates.

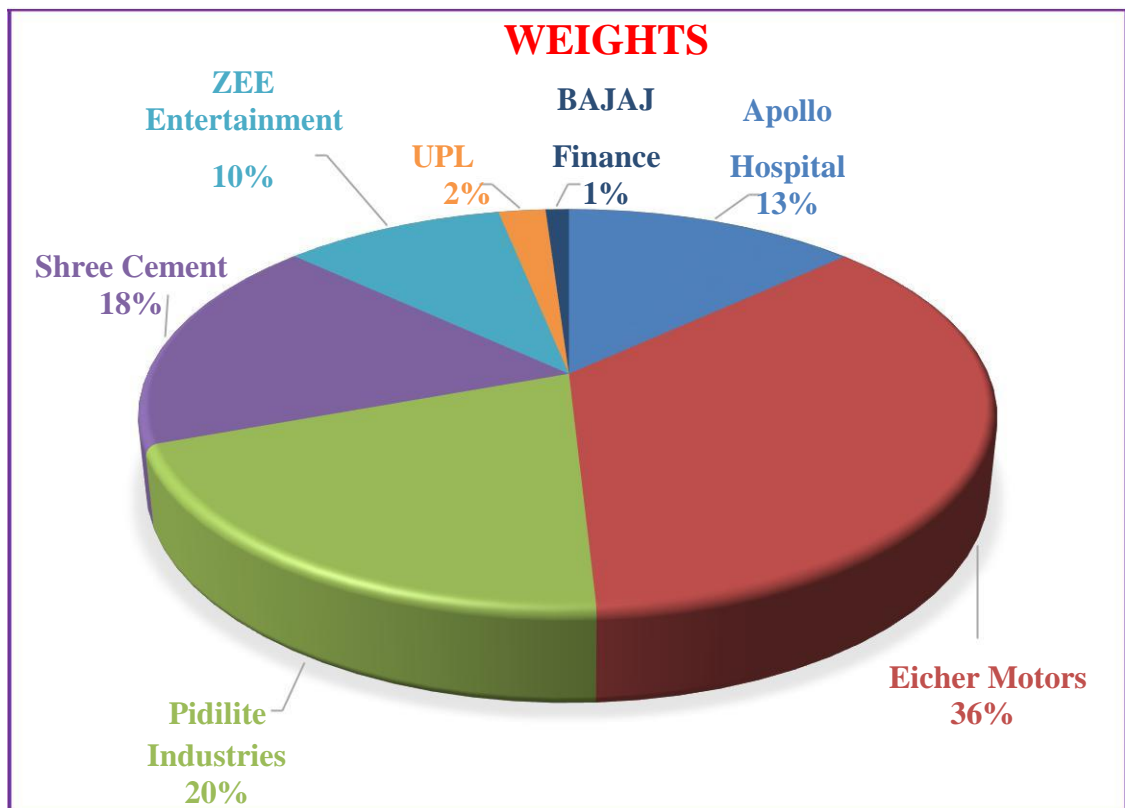


Interpretation: From the above graph and table it is identified that the total risk, i.e. systematic and unsystematic risk and excess return to beta, rank wise allocation was made. We found that the cut-off rate ought to be 18.9658 till this value. The cut-off rate corresponds to the maximum level of return is to be calculated that is what cut-off rate, there after the returns gradually decreases, so up to Bajaj Finance (18.9658) we need to consider.

Table No: 4.16 – Table showing calculation of Weights.

Rank	Company	Weights
1	Apollo Hospital	0.1312
2	Eicher Motors	0.3602
3	Pidilite Industries	0.2024
4	Shree Cement	0.1755
5	ZEE Entertainment	0.0992
6	UPL	0.0211
7	BAJAJ Finance	0.0104

Graph No: 4.16 – Graph showing the Weights.



Interpretation: From the above graph and table it is identified that weights were considered for these 7 companies taken into consideration as per single index portfolio model selection. The highest weight for Eicher Motors at 36% and next will be Pidilite Industries at 20%. These stocks qualify for investment as they are well with the cut-off rate. Once we know where to invest the ultimate next question is how much weightage needs to be given for the particular stocks to reduce the risk and maximize the return.

Table No: 4.17 – Table showing estimated returns in terms of Profit/Loss.

Company	Share Price as of 2nd Jan	Number of shares	Share Price as of 15th Feb	Total Sales	Profit/loss
Apollo Hospital	1230.65	1066	1255.35	1338229.76	26330.72
Eicher Motors	23037.45	156	25262.90	3949630.39	347929.37
Pidilite Industries	673.85	3003	671.05	2015464.43	-8409.66
Shree Cement	15479.50	113	15324.80	1737390.09	-17538.52
ZEE Entertainment	489.85	2025	519.15	1051505.75	59345.31
UPL	725.90	291	701.50	204063.99	-7097.88
BAJAJ Finance	1036.20	101	1091.65	109854.99	5580.05
TOTAL				10406139.41	406139.41

Total Investment = 10000000(Assumption)

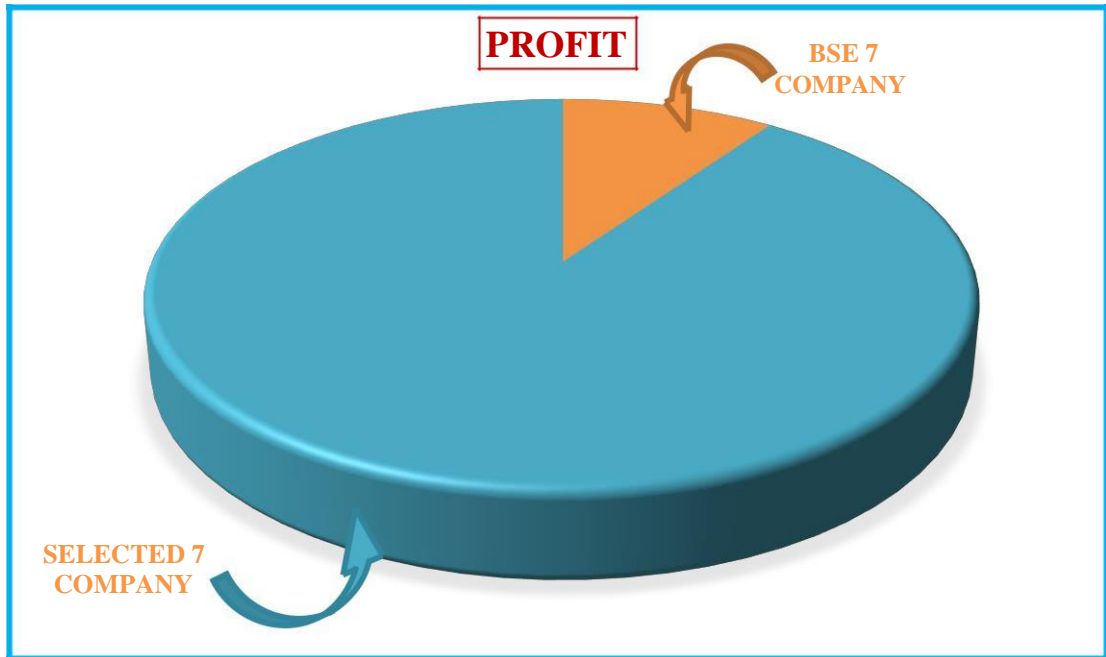
Return = 4.0613

PARTICULARS	AMOUNT
TOTAL SALE	10406139.41
TOTAL INVESTMENT	10000000.00
TOTAL PROFIT	406139.41

Table No: 4.18 – Table showing estimated comparative Profit.

BSE 7 C* COMPANY		SELECTED 7C* COMPANY	
PARTICULARS	AMOUNT	PARTICULARS	AMOUNT
TOTAL SALE	10043777.13	TOTAL SALE	10406139.41
TOTAL INVESTMENT	10000000.00	TOTAL INVESTMENT	10000000.00
TOTAL PROFIT	43777.13	TOTAL PROFIT	406139.41

Graph No: 4.18 – Graph showing the profit of BSE and Selected companies.



Interpretation: From the above graph and table it is identified that the Profit of these Selected 30 companies and BSE 30 companies, 7 companies taken into consideration as per single index portfolio model selection. The BSE 30 companies, 7 companies of model selection gives ₹ 43777.13 as a profit if 1 crore is assumed as investment. The selected 30 companies, 7 companies of model selection gives ₹ 406139.41 as a profit if 1 crore is assumed as investment. Here the profit is compared of both, 90% profit is more in the selected company compared to BSE companies.

HYPOTHESIS TESTING:

After calculating the returns of BSE 30 companies and Selected 30 companies that will be put for Hypothesis testing, so the hypothesis will be –

H₀: ($\mu_2 - \mu_1 = 0$) the average mean return of BSE 30 companies and the averagemean return of Selected 30 companies are equal.

H₁: ($\mu_2 - \mu_1 \neq 0$) the average mean return of BSE 30 companies and the averagemean return of Selected 30 companies are not equal.

t-Test: Paired two sample for Means		
	<i>Avg. Return of BSE 30 Companies</i>	<i>Avg. Return of Selected 30 Companies</i>
Mean	6.356563333	13.33170632
Variance	135.3855622	270.1694033
Observations	30	30
Pearson Correlation	0.158646967	
Hypothesized Mean Difference	0	
df	29	
t Stat	-2.0572388	
P(T<=t) one-tail	0.024377554	
t Critical one-tail	1.699127027	
P(T<=t) two-tail	0.048755108	
t Critical two-tail	2.045229642	

The value is less than 0.05.

So the Null hypothesis (H₀) is rejected.

CHAPTER 5

SUMMARY OF FINDINGS, SUGGESTIONS & CONCLUSION

5.1 FINDINGS:

The study on optimal portfolio construction using Sharpe's Single Index Model.

The project includes overall 60 companies in the analysis. The analysis consist of BSE SENSEX as market index and considering 6 years monthly wise data used for the calculation.

Objective 1- To construct a portfolio by considering BSE 30 companies: The first objective is to construct a portfolio for BSE 30 companies. While constructing a portfolio we followed some steps and get some values:

1. In the first part of data analysis BSE 30 companies are to be calculated. In the calculation part first calculated the average return, risk and beta for all 30 companies which BSE has given and also for the market index – SENSEX.

Here the highest return by Maruthi Suzuki at 30.32% associated with highest risk of 9.9%. The return wise next position is Lupin followed by HUL, that the beta coefficient is very nominal.

(Table No: 4.2 Graph No: 4.2, Page No: 48)

2. After the calculation of return, risk and beta, using these values and calculated excess return to beta. The highest excess return to beta by Lupin at 161.37% and next position will be HUL at 43.51%. Once we calculated the excess return to beta values, further sort it or write in a descending order.

(Table No: 4.3 Graph No: 4.3, Page No: 49)

3. Further for the calculations, we have to use the ranked table only. And for finding out Unsystematic risk, we should calculate variance and systematic risk first, and after that unsystematic risk will be obtained by using the formula. In these 7 companies Maruti Suzuki having more systematic risk level of 52.92 and the Sun pharma Company having high unsystematic risk level of 76.84. The Lupin Company having very low systematic risk of 0.24.

(Table No: 4.4 Graph No: 4.4, Page No: 50) 4. After calculating unsystematic risk, move to cut-off rate calculation. Because of calculating cut-off rate we are calculated all the needed values. Using the formula of C^* that was given by William Sharpe calculated cut-off rate. Put the C^* formula

for all the BSE30 companies and we get one C* point or value. By identifying the C* taken the best company ranges. Here in BSE30 Companies we get 7 companies and these companies are best for an investment. The C* value here is 9.8590 it will be identified as up to some point the value in increasing at some point it start declining in the value here we take or identify the maximum value and it considered as C* or Ci point.

(Table No: 4.5 Graph No: 4.5, Page No: 51)

5. After getting 7 companies in BSE 30, put that 7 companies for weight calculation by using weight formula. The Lupin Company is 1st preferred company around 31% of weightage we should give here.

(Table No: 4.6 Graph No: 4.6, Page No: 52)

6. For the further analysis considering all 7 companies and assumed 1 crore rupees as an investment and calculated profit and return percentage by considering 1 month 15 days as from 2nd Jan – 15th Feb. In this calculation I get value around ₹ 43777.13 as profit if we invest 1 crore rupees.

(Table No: 4.7 Page No: 53)

Objective 2 -To construct a portfolio for selected 30 companies chosen for this

research: The second objective is to construct a portfolio for selected 30 companies.

While constructing a portfolio we followed some steps and get some values:

7. In the second part of data analysis Selected 30 companies are to be calculated. In the calculation part first calculated the average return, risk and beta for all 30 selected companies which is selected various 10 sectors as 3 companies from each sector will be selected as peer competitors.

(Table No: 4.12 Graph No: 4.12, Page No: 55)

8. After the calculation of return, risk and beta, using these values and calculated excess return to beta. Here the highest return by Eicher Motors at 57.73% associated with risk of 9.47%. The return wise next position is Shree cement followed by Bajaj finance, that the beta coefficient is very nominal. Once we calculated the excess return to beta values, further sort it or write in a descending order.

(Table No: 4.13 Graph No: 4.13, Page No: 56)

10. Further for the calculations, we have to use the ranked table only. And for finding out Unsystematic risk, we should calculate variance and systematic risk first, and after that unsystematic risk will be obtained by using the formula. In these 7 companies Bajaj Finance having more systematic risk level of 41.36 and also it is having high unsystematic risk level of 177.40. The Apollo hospital having very low systematic risk of 0.40.

(Table No: 4.14 Graph No: 4.14, Page No: 57)

11. After calculating unsystematic risk, move to cut-off rate calculation. Because of calculating cut-off rate we are calculated all the needed values. Using the formula of C^* that was given by William Sharpe calculated cut-off rate. Put the C^* formula for all the Selected 30 companies and we get one C^* point or value. By identifying the C^* taken the best company ranges. Here in Selected 30 Companies we get 7 companies and these companies are best for an investment. The C^* value here is 18.9658 it will be identified as up to some point the value is increasing, at some point it start declining in the value here we take or identify the maximum value and it considered as C^* or C_i point.

(Table No: 4.15 Graph No: 4.15, Page No: 58)

12. After getting 7 companies in Selected 30, put that 7 companies for weight calculation by using weight formula. The Eicher Motors is 1st preferred company around 36% of weightage we should give here.

(Table No: 4.16 Graph No: 4.16, Page No: 59)

13. For the further analysis considering all 7 companies and assumed 1crore rupees as an investment and calculated profit and return percentage by considering 1month 15 days as from 2nd Jan – 15th Feb. In this calculation get value around ₹ 406139.41 as profit if we invest 1 crore rupees.

(Table No: 4.17 Page No: 60)

Objective 3 -Comparing the return for BSE 30 and selected 30 companies:

The third objective is comparing the returns, which one is best for investments either BSE

30 or Selected 30 Company's platform.

14. After calculating BSE 30 Companies and Selected 30 Companies profit. Comparing both which one is giving best or more return among them will be very best for investment. Because where we get more return with same level of risk and

here same amount of investment assumed as investment so choosing more return platform for an investment.

(Table No: 4.18 Graph No: 4.18, Page No: 61)

Objective 4 - Suggesting the best companies to invest to an investor: In this research after comparing 7 companies taken into consideration as per single index portfolio model selection from both BSE 30 Companies and Selected 30 Companies, the profits of 7 companies are to be compared and we get maximum profit around 90% from 7 companies as per single index portfolio model selection from selected 30 company segment. So it is suggest to an investor to invest in more profit segment companies.

5.2. CONCLUSION

The risk and returns are very important aspect in setting of any financial choices. An investor must and should monitor the market and continuously update his portfolio by a right method. In this study using Sharpe's Single Index Model and calculated the C_i/C^* and the weightage of securities. The Sharpe's Single Index Model gives exact number of securities along with weightage for investment. So using this model we can easily identify the securities which gives maximum return with minimum risk and it also gives a proper weightage of investment in each securities.

In this study BSE 30 Companies and Selected 30 Companies overall 60 companies are put under Sharpe's Single Index Model for optimal portfolio of securities. Finally optimized selected 7 companies from BSE 30 and 7 companies from Selected 30 companies. For both 7 companies estimating the profit taking 1.5 month calculation with an assumption of 1 crore rupees investment. To know which one is good for an investment choice. After analyzing profit, Selected 30 companies (7 C^*) companies are giving 90% more than BSE 30 (7 C^*). Here selecting companies are giving more returns in this calculations. So it is suggested to go with selected 7 C^* companies for earning very good return.

5.3. SUGGESTIONS

The investors should concentrate on Systematic and Unsystematic risk of these seven companies, in which the companies can control the risk. Further share price of that company may go high and those companies grab the investor attention and it helps the investor confidence.

High risk and high beta associated with Bajaj finance in these seven companies in the selected part of the 30 companies so it shows difficult in getting high return.

If an investor depending on the risk and return the investor should amount only Eicher Motors, Shree Cement, Zee entertainment and Pedilite industry, because these companies are giving more return among the seven companies in selected 30 companies.

The investor should take care of portfolio again and again because of an economic condition of these expected return may change.

India is a fast developing country with a developing economy, so the Sharpe's model is insightful for financial specialist to make a specialized investigation and further go with specific industries.

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ANNEXURE

Calculation of Return, Risk and Beta

BSE 30 COMPANIES					SELECTED 30 COMPANIES				
SL No	Company	Average PA	SD	BETA	SL No	Company	Average PA	SD	BETA
1	Sensex	7.493316225	4.458887316	1	1	Sensex	7.493316225	4.458887316	1
2	Adani Ports	16.38810762	9.512740159	1.061488403	2	Tata Motors	6.025037495	15.24686206	2.044034539
3	Asian Paints	7.992517905	13.2522743	0.847058465	3	Eicher Motors	57.72796887	9.467581159	0.769686795
4	Axis Bank	3.300784669	14.63004011	1.983816769	4	Ashok Leyland	19.24254035	15.16798411	2.161497971
5	Bajaj Auto	15.57087992	7.088417682	0.908692859	5	SBI	-13.32007277	14.29237142	1.484729882
6	Bharti Airtel	3.127394837	8.104212758	0.769320424	6	Bank of Baroda	-7.684971209	14.45218496	1.000217101
7	BHEL	-26.02979343	15.42578142	1.491721611	7	PNB	-15.35641473	15.78529705	2.060836975
8	CIPLA	12.11976243	7.202545949	0.478405033	8	Ultratech Cement	24.04937012	8.336751195	1.027792053
9	Coal India	3.03781321	7.51409851	0.756178047	9	Shree Cement	42.12332688	9.055613841	1.270888176
10	Dr. Reddy Lab	13.58293894	6.77495068	0.350394242	10	Ambuja Cement	11.67049694	7.71208001	1.054087697
11	GAIL	2.218825078	7.705805566	0.904638425	11	UPL	32.59715504	10.40478433	1.25838794
12	HDFC	13.83725806	5.875936288	0.902600359	12	Pidilite Industries	28.11549025	7.249844712	0.462104354
13	HDFC Bank	7.144509828	11.32261729	1.312582218	13	Tata Chemical	9.170515678	7.26501508	1.068134584
14	Hero Motorcorp	13.9896581	7.620688619	0.787155749	14	ONGC	-14.21635303	12.58751995	1.234623283
15	HUL	21.1144634	6.18938902	0.333119883	15	GAIL	2.218825078	7.705805566	0.904638425
16	ICICI Bank	-4.113467368	13.82215001	2.197140732	16	CAIRN India	-0.88132791	8.752799963	0.642350416
17	Infosys	-7.674516303	11.92303697	0.765342991	17	ZEE Entertainment	26.01752542	6.794276145	0.793639901
18	ITC	9.205525137	6.31744228	0.483200287	18	SUN TV Network	7.744714612	11.35130736	1.394854098
19	Larsen	4.094756165	10.98157019	1.752093199	19	DISH TV	13.28557336	11.1533053	1.490517069
20	Lupin	24.4883982	7.212105552	0.110727731	20	BAJAJ Finance	36.38275034	14.79038378	1.442296452
21	M&M	11.80396091	7.328746193	0.839994149	21	Shriram Transport	10.66890287	11.11244836	1.482838249
22	Maruti Suzuki	30.32004426	9.9015232	1.631524429	22	M&M Financial	11.80396091	7.328746193	0.839994149
23	NTPC	1.256199866	8.004794676	0.979574858	23	Apollo Hospital	17.82278637	7.091619397	0.14133084
24	ONGC	-14.21635303	12.58751995	1.234623283	24	FORTIS Health	10.70985785	9.480199687	0.814878921
25	Reliance	5.392093155	6.756317125	1.005050246	25	POLY Medicure	21.24624086	15.3834038	1.513441023
26	SBI	-13.32007277	14.29237142	1.484729882	26	L&T	4.094756165	10.98157019	1.752093199
27	Sun Pharma	11.46860799	8.929897749	0.381981889	27	Adani Ports	16.38810762	9.512740159	1.061488403
28	Tata Motors	6.025037495	15.24686206	2.044034539	28	SIEMENS	10.16552035	9.871991223	1.464979438
29	Tata Steel	-0.150696939	11.90624192	1.552631883	29	BHARTI Airtel	3.127394837	8.104212758	0.769320424
30	TCS	14.19355197	6.013987459	0.289732241	30	IDEA Cellular	6.495314701	9.537496353	0.55478209
31	Wipro	4.528710672	7.370832096	0.354414007	31	TATA Communications	22.51619616	9.980631125	1.094177958

Calculation of Excess Return to Beta

BSE 30 COMPANIES								SELECTED 30 COMPANIES						
SL No	Company	Average PA	SD	BETA	Rf	(Ri-Rf)/β	Rank	SL No	Company	Average PSD	BETA	Rf	(Ri-Rf)/β	Rank
19	Lupin	24.4883982	7.212106	0.110728	6.62	161.3724	1	22	Apollo Hospital	17.82279 7.091619	0.141331	6.62	79.2664	1
14	HUL	21.1144634	6.189389	0.33312	6.62	43.51125	2	2	Eicher Motors	57.72797 9.467581	0.769687	6.62	66.40099	2
29	TCS	14.19355197	6.013987	0.289732	6.62	26.13983	3	11	Pidilite Industries	28.11549 7.249845	0.462104	6.62	46.51653	3
9	Dr. Reddy Lab	13.58293894	6.774951	0.350394	6.62	19.87173	4	8	Shree Cement	42.12333 9.055614	1.270888	6.62	27.93584	4
21	Maruti Suzuki	30.32004426	9.901523	1.631524	6.62	14.52632	5	16	ZEE Entertainment	26.01753 6.794276	0.79364	6.62	24.44122	5
26	Sun Pharma	11.46860799	8.929898	0.381982	6.62	12.69329	6	10	UPL	32.59716 10.40478	1.258388	6.62	20.6432	6
7	CIPLA	12.11976243	7.202546	0.478405	6.62	11.49604	7	19	BAJAJ Finance	36.38275 14.79038	1.442296	6.62	20.63567	7
4	Bajaj Auto	15.57087992	7.088418	0.908693	6.62	9.850281	8	7	Ultratech Cement	24.04937 8.336751	1.027792	6.62	16.95807	8
13	Hero Motorcorp	13.9896581	7.620689	0.787156	6.62	9.362389	9	30	TATA Communications	22.5162 9.980631	1.094178	6.62	14.52798	9
1	Adani Ports	16.38810762	9.51274	1.061488	6.62	9.202274	10	24	POLY Medicure	21.24624 15.3834	1.513441	6.62	9.664229	10
11	HDFC	13.83725806	5.875936	0.9026	6.62	7.996073	11	26	Adani Ports	16.38811 9.51274	1.061488	6.62	9.202274	11
20	M&M	11.80396091	7.328746	0.839994	6.62	6.171425	12	21	M&M Financial	11.80396 7.328746	0.839994	6.62	6.171425	12
17	ITC	9.205525137	6.317442	0.4832	6.62	5.350835	13	3	Ashok Leyland	19.24254 15.16798	2.161498	6.62	5.839719	13
2	Asian Paints	7.992517905	13.25227	0.847058	6.62	1.620334	14	23	FORTIS Health	10.70986 9.4802	0.814879	6.62	5.018976	14
12	HDFC Bank	7.144509828	11.32262	1.312582	6.62	0.399602	15	9	Ambuja Cement	11.6705 7.71208	1.054088	6.62	4.791344	15
27	Tata Motors	6.025037495	15.24686	2.044035	6.62	-0.29107	16	18	DISH TV	13.28557 11.15331	1.490517	6.62	4.471987	16
24	Reliance	5.392093155	6.756317	1.00505	6.62	-1.22174	17	20	Shriram Transport	10.6689 11.11245	1.482838	6.62	2.730509	17
18	Larsen	4.094756165	10.98157	1.752093	6.62	-1.44127	18	27	SIEMENS	10.16552 9.871991	1.464979	6.62	2.420184	18
3	Axis Bank	3.300784669	14.63004	1.983817	6.62	-1.67315	19	12	Tata Chemical	9.170516 7.265015	1.068135	6.62	2.387822	19
28	Tata Steel	-0.150696939	11.90624	1.552632	6.62	-4.36079	20	17	SUN TV Network	7.744715 11.35131	1.394854	6.62	0.806331	20
5	Bharti Airtel	3.127394837	8.104213	0.76932	6.62	-4.53986	21	29	IDEA Cellular	6.495315 9.537496	0.554782	6.62	-0.22475	21
8	Coal India	3.03781321	7.514099	0.756178	6.62	-4.73723	22	1	Tata Motors	6.025037 15.24686	2.044035	6.62	-0.29107	22
10	GAIL	2.218825078	7.705806	0.904638	6.62	-4.86512	23	25	L&T	4.094756 10.98157	1.752093	6.62	-1.44127	23
15	ICICI Bank	-4.113467368	13.82215	2.197141	6.62	-4.8852	24	28	BHARTI Airtel	3.127395 8.104213	0.76932	6.62	-4.53986	24
22	NTPC	1.256199866	8.004795	0.979575	6.62	-5.47564	25	14	GAIL	2.218825 7.705806	0.904638	6.62	-4.86512	25
30	Wipro	4.528710672	7.370832	0.354414	6.62	-5.9007	26	6	PNB	-15.3564 15.7853	2.060837	6.62	-10.6638	26
25	SBI	-13.32007277	14.29237	1.48473	6.62	-13.4301	27	15	CAIRN India	-0.88133 8.7528	0.64235	6.62	-11.6779	27
23	ONGC	-14.21635303	12.58752	1.234623	6.62	-16.8767	28	4	SBI	-13.3201 14.29237	1.48473	6.62	-13.4301	28
16	Infosys	-7.674516303	11.92304	0.765343	6.62	-18.6773	29	5	Bank of Baroda	-7.68497 14.45218	1.000217	6.62	-14.3019	29
6	BHEL	-26.02979343	15.42578	1.491722	6.62	-21.8873	30	13	ONGC	-14.2164 12.58752	1.234623	6.62	-16.8767	30

**Government of India
Ministry of Finance
Department of Economic Affairs
Budget Division**

New Delhi, dated January 30, 2017

NOTIFICATION

Auction for Sale (Re-issue) of 6.62 per cent Government Stock 2051

F. No.4 (2) W&M/2016(iii): Government of India hereby notifies sale of **6.62 per cent Government Stock 2051** (hereinafter called "The Stock") for an aggregate amount of ₹ 2,000 crore (nominal). The sale will be subject to the terms and conditions spelt out in this notification (called 'Specific Notification') as also the terms and conditions specified in the General Notification F. No. 4 (13)-W&M/2008, dated October 8, 2008 issued by Government of India.

Method of Issue

2. The Stock will be sold through Reserve Bank of India, Mumbai Office, Fort, Mumbai- 400 001 in the manner as prescribed in paragraph 5.1 of the General Notification F. No. 4 (13)-W&M/2008, dated October 8, 2008 by a price based auction using multiple price auction method.

Allotment to Non-competitive Bidders

3. The Government Stock up to 5% of the notified amount of the sale will be allotted to eligible individuals and institutions as per the enclosed Scheme for Non-competitive Bidding Facility in the Auctions of Government Securities (**Annex**).

Place and date of auction

4. The auction will be conducted by Reserve Bank of India, Mumbai Office, Fort, Mumbai-400 001 on **February 03, 2017**. Bids for the auction should be submitted in electronic format on the Reserve Bank of India Core Banking Solution (E-Kuber) system on **February 03, 2017**. The non-competitive bids should be submitted between 10.30 a.m. and 11.30 a.m. and the competitive bids should be submitted between 10.30 a.m. and 12.00 noon.

When Issued Trading

5. The Stock will be eligible for "When Issued" trading in accordance with the guidelines issued by the Reserve Bank of India.

Tenure

6. The Government Stock will be of '**35 year**' tenure commencing from **November 28, 2016**. The Stock will be repaid at par on **November 28, 2051**.

Date of Issue and Payment for the Stock

7. The result of the auction shall be displayed by the Reserve Bank of India at its Fort, Mumbai Office on **February 03, 2017**. The payment by successful bidders will be on **February 06, 2017** i.e. the date of re-issue. The payment for the Stock will include accrued interest on the nominal value of the Stock allotted in the auction from the date of original issue i.e. **November 28, 2016 to February 05, 2017.**

Interest

8. Interest at the rate of 6.62 per cent per annum will accrue on the nominal value of the Stock from the date of original issue and will be paid half yearly on **May 28 and November 28**.

By Order of the President of India

(Prashant Goyal)
Joint Secretary to the Government of India

Calculation of Systematic and Unsystematic Risk

BSE 30 COMPANIES										
Rank	Company	RI	SD(σ)	BETA(β)	β^2	Rf	(Ri-Rf)/β	Variance	SR	USR
1	Lupin	24.4883982	7.212105552	0.110727731	0.01226063	6.62	161.3723867	52.0144665	0.243761882	51.77070462
2	HUL	21.1144634	6.18938902	0.333119883	0.110968857	6.62	43.51125264	38.30853644	2.206246865	36.10228957
3	TCS	14.19355197	6.013987459	0.289732241	0.083944771	6.62	26.13983153	36.16804515	1.668962755	34.4990824
4	Dr. Reddy Lab	13.58293894	6.77495068	0.350394242	0.122776125	6.62	19.87172761	45.89995672	2.440995152	43.45896157
5	Maruti Suzuki	30.32004426	9.9015232	1.631524429	2.661871962	6.62	14.52631897	98.04016168	52.92247616	45.11768552
6	Sun Pharma	11.46860799	8.929897749	0.381981889	0.145910163	6.62	12.69329287	79.7430738	2.90093861	76.84213519
7	CIPLA	12.11976243	7.202545949	0.478405033	0.228871376	6.62	11.49603798	51.87666814	4.550346565	47.32632158
8	Bajaj Auto	15.57087992	7.088417682	0.908692859	0.825722711	6.62	9.850280915	50.24566523	16.41675149	33.82891373
9	Hero Motorcorp	13.9896581	7.620688619	0.787155749	0.619614173	6.62	9.362388707	58.07489503	12.3189683	45.75592673
10	Adani Ports	16.38810762	9.512740159	1.061488403	1.12675763	6.62	9.202274458	90.49222534	22.40183023	68.09039511
11	HDFC	13.83725806	5.875936288	0.902600359	0.814687407	6.62	7.996072669	34.52662727	16.19735115	18.32927611
12	M&M	11.80396091	7.328746193	0.839994149	0.705590171	6.62	6.171425024	53.71052076	14.02831524	39.68220552
13	ITC	9.205525137	6.31744228	0.483200287	0.233482517	6.62	5.350835272	39.91007696	4.642023778	35.26805318
14	Asian Paints	7.992517905	13.2522743	0.847058465	0.717508043	6.62	1.620334324	175.6227741	14.2652625	161.3575116
15	HDFC Bank	7.144509828	11.32261729	1.312582218	1.722872079	6.62	0.399601503	128.2016623	34.25358463	93.94807771
16	Tata Motors	6.025037495	15.24686206	2.044034539	4.178077196	6.62	-0.291072628	232.4668027	83.06717753	149.3996252
17	Reliance	5.392093155	6.756317125	1.005050246	1.010125997	6.62	-1.221736774	45.64782109	20.08299789	25.5648232
18	Larsen	4.094756165	10.98157019	1.752093199	3.069830578	6.62	-1.441272551	120.5948839	61.03337723	59.56150667
19	Axis Bank	3.300784669	14.63004011	1.983816769	3.935528974	6.62	-1.67314612	214.0380737	78.24491233	135.7931614
20	Tata Steel	-0.150696939	11.90624192	1.552631883	2.410665765	6.62	-4.360787004	141.7585967	47.92807593	93.83052079
21	Bharti Airtel	3.127394837	8.104212758	0.769320424	0.591853916	6.62	-4.539857583	65.67826442	11.76704785	53.91121658
22	Coal India	3.03781321	7.51409851	0.756178047	0.571805238	6.62	-4.737226643	56.46167641	11.36844654	45.09322987
23	GAIL	2.218825078	7.705805566	0.904638425	0.81837068	6.62	-4.865120474	59.37943942	16.27058078	43.10885864
24	ICICI Bank	-4.113467368	13.82215001	2.197140732	4.827427397	6.62	-4.885197935	191.0518308	95.9773479	95.07448293
25	NTPC	1.256199866	8.004794676	0.979574858	0.959566902	6.62	-5.475640876	64.07673781	19.07779835	44.99893946
26	Wipro	4.528710672	7.370832096	0.354414007	0.125609288	6.62	-5.900696045	54.32916578	2.497323184	51.8318426
27	SBI	-13.32007277	14.29237142	1.484729882	2.204422824	6.62	-13.43010133	204.2718809	43.82762057	160.4442603
28	ONGC	-14.21635303	12.58751995	1.234623283	1.52429465	6.62	-16.87668888	158.4456585	30.30553251	128.140126
29	Infosys	-7.674516303	11.92303697	0.765342991	0.585749894	6.62	-18.67726819	142.1588107	11.64568967	130.513121
30	BHEL	-26.02979343	15.42578142	1.491721611	2.225233365	6.62	-21.88732347	237.9547325	44.24136901	193.7133635

Calculation of Systematic and Unsystematic Risk

SELECTED 30 COMPANIES										
Rank	Company	R_i	SD(σ)	BETA(β)	β^2	R_f	(R_i-R_f)/β	Variance	SR	USR
1	Apollo Hospital	17.82278637	7.091619397	0.14133084	0.019974406	6.62	79.26639631	50.29106567	0.397124677	49.893941
2	Eicher Motors	57.72796887	9.467581159	0.769686795	0.592417762	6.62	66.40099481	89.63509301	11.77825806	77.85683495
3	Pidilite Industries	28.11549025	7.249844712	0.462104354	0.213540434	6.62	46.51652831	52.56024834	4.245541734	48.31470661
4	Shree Cement	42.12332688	9.055613841	1.270888176	1.615156755	6.62	27.93583854	82.00414203	32.11202345	49.89211858
5	ZEE Entertainment	26.01752542	6.794276145	0.793639901	0.629864292	6.62	24.44121749	46.16218833	12.52275784	33.63943049
6	UPL	32.59715504	10.40478433	1.25838794	1.583540206	6.62	20.64320089	108.259537	31.48343347	76.7761035
7	BAJAJ Finance	36.38275034	14.79038378	1.442296452	2.080219056	6.62	20.63566772	218.7554524	41.35824149	177.3972109
8	Ultratech Cement	24.04937012	8.336751195	1.027792053	1.056356505	6.62	16.95807052	69.50142049	21.00213788	48.49928262
9	TATA Communications	22.51619616	9.980631125	1.094177958	1.197225404	6.62	14.52798061	99.61299765	23.8028477	75.81014995
10	POLY Medicure	21.24624086	15.3834038	1.513441023	2.29050373	6.62	9.664229154	236.6491126	45.53905326	191.1100593
11	Adani Ports	16.38810762	9.512740159	1.061488403	1.12675763	6.62	9.202274458	90.49222534	22.40183023	68.09039511
12	M&M Financial	11.80396091	7.328746193	0.839994149	0.705590171	6.62	6.171425024	53.71052076	14.02831524	39.68220552
13	Ashok Leyland	19.24254035	15.16798411	2.161497971	4.672073477	6.62	5.839718806	230.067742	92.88865159	137.1790904
14	FORTIS Health	10.70985785	9.480199687	0.814878921	0.664027656	6.62	5.018976123	89.8741861	13.20198278	76.67220332
15	Ambuja Cement	11.67049694	7.71208001	1.054087697	1.1111100872	6.62	4.791344173	59.47617808	22.09054766	37.38563042
16	DISH TV	13.28557336	11.1533053	1.490517069	2.221641132	6.62	4.471987274	124.396219	44.1699494	80.22626965
17	Shriram Transport	10.66890287	11.11244836	1.482838249	2.198809272	6.62	2.730508787	123.4865085	43.71601374	79.77049476
18	SIEMENS	10.16552035	9.871991223	1.464979438	2.146164753	6.62	2.420184382	97.45621072	42.66935247	54.78685825
19	Tata Chemical	9.170515678	7.26501508	1.068134584	1.140911489	6.62	2.387822394	52.78044412	22.68323267	30.09721144
20	SUN TV Network	7.744714612	11.35130736	1.394854098	1.945617955	6.62	0.806331368	128.8521787	38.68214599	90.17003273
21	IDEA Cellular	6.495314701	9.537496353	0.55478209	0.307783167	6.62	-0.224746439	90.96383667	6.119245232	84.84459144
22	Tata Motors	6.025037495	15.24686206	2.044034539	4.178077196	6.62	-0.291072628	232.4668027	83.06717753	149.3996252
23	L&T	4.094756165	10.98157019	1.752093199	3.069830578	6.62	-1.441272551	120.5948839	61.03337723	59.56150667
24	BHARTI Airtel	3.127394837	8.104212758	0.769320424	0.591853916	6.62	-4.539857583	65.67826442	11.76704785	53.91121658
25	GAIL	2.218825078	7.705805566	0.904638425	0.81837068	6.62	-4.865120474	59.37943942	16.27058078	43.10885864
26	PNB	-15.35641473	15.78529705	2.060836975	4.247049039	6.62	-10.66382979	249.175603	84.43845336	164.7371497
27	CAIRN India	-0.88132791	8.752799963	0.642350416	0.412614057	6.62	-11.67793734	76.61150719	8.203459044	68.40804815
28	SBI	-13.32007277	14.29237142	1.484729882	2.204422824	6.62	-13.43010133	204.2718809	43.82762057	160.4442603
29	Bank of Baroda	-7.684971209	14.45218496	1.000217101	1.000434249	6.62	-14.30186626	208.86565	19.8903097	188.9753403
30	ONGC	-14.21635303	12.58751995	1.234623283	1.52429465	6.62	-16.87668888	158.4456585	30.30553251	128.140126

CALCULATION OF CUTOFF RATE C*

Rank	Company	Average PA(Return)	SD(σ)	BETA(β)	Beta ²	Rf	USR	(Ri-Rf)* β	(Ri-Rf)* β /USR	Cumulative (Beta2/USR)	Cumulative Cutoff Rate C*	1	
1	Lupin	24.4883982	7.212105552	0.110727731	0.01226063	6.62	51.77070462	1.978527186	0.038217119	0.038217119	0.000236826	0.000236826	0.756259543
2	HUL	21.1144634	6.18938902	0.333119883	0.110968857	6.62	36.10228957	4.828393956	0.133742043	0.171959162	0.003073735	0.00331056	3.207706749
3	TCS	14.19355197	6.013987459	0.289732241	0.083944771	6.62	34.4990824	2.194302182	0.063604654	0.235563815	0.002433246	0.005743807	4.203390925
4	Dr. Reddy Lab	13.58293894	6.77495068	0.350394242	0.122776125	6.62	43.45896157	2.439773715	0.056139715	0.29170353	0.002825105	0.008568912	4.955341667
5	Maruti Suzuki	30.32004426	9.9015232	1.631524429	2.661871962	6.62	45.11768552	38.66720118	0.857029804	1.148733334	0.058998416	0.067567327	9.746187024
6	Sun Pharma	11.46860799	8.929897749	0.381981889	0.145910163	6.62	76.84213519	1.852080437	0.024102407	1.172835742	0.00189883	0.069466157	9.792912803
7	CIPLA	12.11976243	7.202545949	0.478405033	0.228871376	6.62	47.32632158	2.63111403	0.055595152	1.228430893	0.004836027	0.074302185	9.859015337
8	Bajaj Auto	15.57087992	7.088417682	0.908692859	0.825722711	6.62	33.82891373	8.133600665	0.240433398	1.468864291	0.024408786	0.09871097	9.857584569
9	Hero Motorcorp	13.9896581	7.620688619	0.787155749	0.619614173	6.62	45.75592673	5.801068739	0.126782892	1.595647183	0.013541725	0.112252695	9.816330831
10	Adani Ports	16.38810762	9.512740159	1.061488403	1.12675763	6.62	68.09039511	10.36873296	0.152278937	1.74792612	0.016547967	0.128800663	9.759594454
11	HDFC	13.83725806	5.875936288	0.902600359	0.814687407	6.62	18.32927611	6.514299712	0.355404091	2.103330211	0.044447331	0.173247994	9.408955258
12	M&M	11.80396091	7.328746193	0.839994149	0.705590171	6.62	39.68220552	4.354496839	0.109734244	2.213064455	0.017781022	0.191029016	9.170412968
13	ITC	9.205525137	6.31744228	0.483200287	0.233482517	6.62	35.26805318	1.249326487	0.035423744	2.248488199	0.006620227	0.197649243	9.068429518
14	Asian Paints	7.992517905	13.2522743	0.847058465	0.717508043	6.62	161.3575116	1.16260291	0.007205137	2.255693336	0.004446697	0.20209594	8.937208133
15	HDFC Bank	7.144509828	11.32261729	1.312582218	1.722872079	6.62	93.94807771	0.688462273	0.007328115	2.26302145	0.018338556	0.220434496	8.358896968
16	Tata Motors	6.025037495	15.24686206	2.044034539	4.178077196	6.62	149.3996252	-1.21612391	-0.008140073	2.254881377	0.027965781	0.248400277	7.549037917
17	Reliance	5.392093155	6.756317125	1.005050246	1.010125997	6.62	25.5648232	-1.234108076	-0.048273679	2.206607698	0.03951234	0.287912618	6.524367912
18	Larsen	4.094756165	10.98157019	1.752093199	3.069830578	6.62	59.56150667	-4.424462548	-0.074283926	2.132323772	0.051540512	0.33945313	5.470994072
19	Axis Bank	3.300784669	14.63004011	1.983816769	3.935528974	6.62	135.7931614	-6.584715034	-0.048490771	2.083833001	0.028981791	0.368434921	4.976525695
20	Tata Steel	-0.150696939	11.90624192	1.552631883	2.410665765	6.62	93.83052079	-10.51239994	-0.11203604	1.971796962	0.025691702	0.394126623	4.436745328
21	Bharti Airtel	3.127394837	8.104212758	0.769320424	0.591853916	6.62	53.91121658	-2.686932486	-0.049839953	1.921957009	0.010978308	0.40510493	4.220347949
22	Coal India	3.03781321	7.51409851	0.756178047	0.571805238	6.62	45.09322987	-2.70877101	-0.060070459	1.86188655	0.012680512	0.417785442	3.977684515
23	GAIL	2.218825078	7.705805566	0.904638425	0.81837068	6.62	43.10885864	-3.981471949	-0.092358556	1.769527994	0.018983817	0.436769259	3.63302916
24	ICICI Bank	-4.113467368	13.82215001	2.197140732	4.827427397	6.62	95.07448293	-23.58293835	-0.24804698	1.521481014	0.050775216	0.487544475	2.828862168
25	NTPC	1.256199866	8.004794676	0.979574858	0.959566902	6.62	44.99893946	-5.254243754	-0.116763724	1.40471729	0.021324212	0.508868686	2.51216391
26	Wipro	4.528710672	7.370832096	0.354414007	0.125609288	6.62	51.8318426	-0.74118223	-0.014299747	1.390417543	0.0024234	0.511292086	2.475860312
27	SBI	-13.32007277	14.29237142	1.484729882	2.204422824	6.62	160.4442603	-29.6056219	-0.184522786	1.205894757	0.013739493	0.52503158	2.096008445
28	ONGC	-14.21635303	12.58751995	1.234623283	1.52429465	6.62	128.140126	-25.72504657	-0.200757151	1.005137606	0.01189553	0.536927109	1.711674665
29	Infosys	-7.674516303	11.92303697	0.765342991	0.585749894	6.62	130.513121	-10.94020786	-0.083824582	0.921313024	0.004488054	0.541415163	1.557027545
30	BHEL	-26.02979343	15.42578142	1.491721611	2.225233365	6.62	193.7133635	-48.70440246	-0.251425103	0.66988792	0.011487248	0.55290241	1.110556933

CALCULATION OF CUTOFF RATE C*

Rank	Company	Average PA(Return)	SD(σ)	BETA(β)	β^2	Rf	USR	(Ri-Rf)* β	(Ri-Rf)* β /USR	Cumulative	(Beta2/USR)	Cumulative	1
1	Apollo Hospital	17.82278637	7.091619397	0.14133084	0.019974406	6.62	49.893941	1.583299209	0.031733296	0.0317333	0.00040034	0.0004003	0.625929111
2	Eicher Motors	57.72796887	9.467581159	0.769686795	0.592417762	6.62	77.85683495	39.33712875	0.505249523	0.5369828	0.00760907	0.0080094	9.209581476
3	Pidilite Industries	28.11549025	7.249844712	0.462104354	0.213540434	6.62	48.31470661	9.933159625	0.205592879	0.7425757	0.00441978	0.0124292	11.83826114
4	Shree Cement	42.12332688	9.055613841	1.270888176	1.615156755	6.62	49.89211858	45.12075832	0.904366453	1.6469422	0.03237298	0.0448022	17.31805135
5	ZEE Entertainment	26.01752542	6.794276145	0.793639901	0.629864292	6.62	33.63943049	15.39465015	0.457637062	2.1045792	0.01872399	0.0635262	18.48981124
6	UPL	32.59715504	10.40478433	1.25838794	1.583540206	6.62	76.7761035	32.6893386	0.425774911	2.5303541	0.02062543	0.0841516	18.82015611
7	BAJAJ Finance	36.38275034	14.79038378	1.442296452	2.080219056	6.62	177.3972109	42.92670923	0.241980745	2.7723349	0.01172633	0.0958779	18.96579815
8	Ultratech Cement	24.04937012	8.336751195	1.027792053	1.056356505	6.62	48.49928262	17.91376811	0.369361507	3.1416964	0.02178087	0.1176588	18.70543259
9	TATA Communications	22.51619616	9.980631125	1.094177958	1.197225404	6.62	75.81014995	17.39326746	0.22943191	3.3711283	0.01579242	0.1334512	18.34639859
10	POLY Medicure	21.24624086	15.3834038	1.513441023	2.29050373	6.62	191.1100593	22.13595292	0.115828298	3.4869566	0.01198526	0.1454365	17.81476873
11	Adani Ports	16.38810762	9.512740159	1.061488403	1.12675763	6.62	68.09039511	10.36873296	0.152278937	3.6392355	0.01654797	0.1619844	17.14340107
12	M&M Financial	11.80396091	7.328746193	0.839994149	0.705590171	6.62	39.68220552	4.354496839	0.109734244	3.7489698	0.01778102	0.1797655	16.29540323
13	Ashok Leyland	19.24254035	15.16798411	2.161497971	4.672073477	6.62	137.1790904	27.28359535	0.198890336	3.9478601	0.0340582	0.2138237	14.94715176
14	FORTIS Health	10.70985785	9.480199687	0.814878921	0.664027656	6.62	76.67220332	3.332738951	0.043467369	3.9913275	0.0086606	0.2224843	14.63194013
15	Ambuja Cement	11.67049694	7.71208001	1.054087697	1.111100872	6.62	37.38563042	5.323666691	0.142398741	4.1337262	0.02972	0.2522043	13.66512782
16	DISH TV	13.28557336	11.1533053	1.490517069	2.221641132	6.62	80.22626965	9.935150871	0.123839123	4.2575653	0.02769219	0.2798965	12.89413204
17	Shriram Transport	10.66890287	11.11244836	1.482838249	2.198809272	6.62	79.77049476	6.003868038	0.07526427	4.3328296	0.02756419	0.3074606	12.1110555
18	SIEMENS	10.16552035	9.871991223	1.464979438	2.146164753	6.62	54.78685825	5.194114415	0.094805845	4.4276354	0.03917298	0.3466336	11.15466723
19	Tata Chemical	9.170515678	7.26501508	1.068134584	1.140911489	6.62	30.09721144	2.724294002	0.090516492	4.5181519	0.03790755	0.3845412	10.39040785
20	SUN TV Network	7.744714612	11.35130736	1.394854098	1.945617955	6.62	90.17003273	1.568812786	0.017398383	4.5355503	0.02157721	0.4061184	9.937317525
21	IDEA Cellular	6.495314701	9.537496353	0.55478209	0.307783167	6.62	84.84459144	-0.069173171	-0.000815293	4.534735	0.00362761	0.409746	9.857185953
22	Tata Motors	6.025037495	15.24686206	2.044034539	4.178077196	6.62	149.3996252	-1.21612391	-0.008140073	4.526595	0.02796578	0.4377118	9.275631572
23	L&T	4.094756165	10.98157019	1.752093199	3.069830578	6.62	59.56150667	-4.424462548	-0.074283926	4.452311	0.05154051	0.4892523	8.251899075
24	BHARTI Airtel	3.127394837	8.104212758	0.769320424	0.591853916	6.62	53.91121658	-2.686932486	-0.049839953	4.4024711	0.01097831	0.5002306	7.996813422
25	GAIL	2.218825078	7.705805566	0.904638425	0.81837068	6.62	43.10885864	-3.981471949	-0.092358556	4.3101125	0.01898382	0.5192144	7.568080396
26	PNB	-15.35641473	15.78529705	2.060836975	4.247049039	6.62	164.7371497	-45.28980807	-0.274921644	4.0351909	0.02578076	0.5449952	6.778498272
27	CAIRN India	-0.88132791	8.752799963	0.642350416	0.412614057	6.62	68.40804815	-4.818481107	-0.070437342	3.9647535	0.00603166	0.5510268	6.593368691
28	SBI	-13.32007277	14.29237142	1.484729882	2.204422824	6.62	160.4442603	-29.6056219	-0.184522786	3.7802308	0.01373949	0.5647663	6.146078045
29	Bank of Baroda	-7.684971209	14.45218496	1.000217101	1.000434249	6.62	188.9753403	-14.30807683	-0.075713989	3.7045168	0.00529399	0.5700603	5.971579925
30	ONGC	-14.21635303	12.58751995	1.234623283	1.52429465	6.62	128.140126	-25.72504657	-0.200757151	3.5037596	0.01189553	0.5819559	5.541701264

Rank	Company	BETA(β)	USR	($R_i - R_f$)/ β	C^*	Z_i	W
1	Lupin	0.110728	51.7707	161.3724	9.859015	0.324058	0.308203
2	HUL	0.33312	36.10229	43.51125	9.859015	0.310513	0.29532
3	TCS	0.289732	34.49908	26.13983	9.859015	0.136731	0.130041
4	Dr. Reddy Lab	0.350394	43.45896	19.87173	9.859015	0.080729	0.076779
5	Maruti Suzuki	1.631524	45.11769	14.52632	9.859015	0.168777	0.160519
6	Sun Pharma	0.381982	76.84214	12.69329	9.859015	0.014089	0.0134
7	CIPLA	0.478405	47.32632	11.49604	9.859015	0.016548	0.015738
					SUM	1.051445	1

Calculation of Weights

BSE 30 COMPANIES							
SELECTED 30 COMPANIES							
Rank	Company	BETA(β)	USR	($R_i - R_f$)/ β	C^*	Z_i	W
1	Apollo Hospita	0.141331	49.89394	79.2664	18.9658	0.170809	0.13119
2	Eicher Motors	0.769687	77.85683	66.40099	18.9658	0.468941	0.36017
3	Pidilite Industri	0.462104	48.31471	46.51653	18.9658	0.263508	0.202387
4	Shree Cement	1.270888	49.89212	27.93584	18.9658	0.228491	0.175493
5	ZEE Entertainm	0.79364	33.63943	24.44122	18.9658	0.129179	0.099216
6	UPL	1.258388	76.7761	20.6432	18.9658	0.027493	0.021116
7	BAJAJ Finance	1.442296	177.3972	20.63567	18.9658	0.013577	0.010427
					SUM	1.301998	1

Calculation of Estimated Return

BSE 30 COMPANIES										
Rank	Company	Weights	Share Price as of 2nd jan	Investment	Number of shares	Total Investment	Share Price as of 15th feb	Total Sales	Profi/loss	
1	Lupin	0.30820292	1474.25	3082029.197	2091	3082029.197	1440.15	3010740.612	-71288.58444	
2	HUL	0.295320242	855.15	2953202.421	3453	2953202.421	846.65	2923848.248	-29354.17246	
3	TCS	0.130040586	2229.9	1300405.858	583	1300405.858	2446.9	1426953.269	126547.4108	
4	Dr. Reddy Lab	0.076779064	3021.05	767790.6437	254	767790.6437	2926.85	743850.001	-23940.6427	
5	Maruti Suzuki	0.160518941	5896.5	1605189.41	272	1605189.41	6027.05	1640728.709	35539.29916	
6	Sun Pharma	0.013399827	631.55	133998.2678	212	133998.2678	649.3	137764.3501	3766.082263	
7	CIPLA	0.01573842	574.25	157384.2027	274	157384.2027	583.4	159891.9353	2507.732615	
		1		10000000		10000000		10043777.13	43777.12521	
				Total Investment	10000000					
				Return	0.437771252					
						10000000	100			
						43777.12521	4377712.521			
								10000000		
								0.437771252		
				3.502170017						

SELECTED 30 COMPANIES										
Rank	Company	Weights	Share Price as of 2nd jan	Investment	Number of shares	Total Investment	Share Price as of 15th feb	Total Sales	Profi/loss	
1	Apollo Hospital	0.131189904	1230.65	1311899.038	1066	1311899.038	1255.35	1338229.763	26330.72461	
2	Eicher Motors	0.360170102	23037.45	3601701.019	156	3601701.019	25262.9	3949630.391	347929.3729	
3	Pidlilite Industries	0.202387408	673.85	2023874.083	3003	2023874.083	671.05	2015464.426	-8409.657095	
4	Shree Cement	0.175492861	15479.5	1754928.61	113	1754928.61	15324.8	1737390.094	-17538.51584	
5	ZEE Entertainment	0.099216044	489.85	992160.4414	2025	992160.4414	519.15	1051505.753	59345.31169	
6	UPL	0.021116187	725.9	211161.8663	291	211161.8663	701.5	204063.9884	-7097.877858	
7	BAJAJ Finance	0.010427494	1036.2	104274.9428	101	104274.9428	1091.65	109854.9907	5580.047847	
		1		10000000		10000000		10406139.41	406139.4063	
				Total Investment	10000000					
				Return	4.061394063					
						10000000	100			
						406139.4063	40613940.63			
								10000000		
								4.061394063		
				32.4911525						

LPP Calculations:

SL NO	Company	Return	SD(σ)	R/SD
1	Lupin	24.4884	7.2121	3.3955
2	HUL	21.1145	6.1894	3.4114
3	TCS	14.1936	6.0140	2.3601
4	Dr. Reddy Lab	13.5829	6.7750	2.0049
5	Maruti Suzuki	30.3200	9.9015	3.0622
6	Sun Pharma	11.4686	8.9299	1.2843
7	CIPLA	12.1198	7.2025	1.6827

	Lupin HUL	HUL	TCS	Dr. Reddy Lab	Maruti Suzuki	Sun Pharma	CIPLA
<i>Lupin</i>	51.28187	5.974876	3.595697	15.88427037	4.472627265	23.57549348	14.29751
<i>HUL</i>	5.974876	37.76898	-3.40216	2.322190426	11.21997177	6.535423497	13.07126
<i>TCS</i>	3.595697	-3.40216	35.65864	6.738885865	-8.654741004	-5.768785258	4.282908
<i>Dr. Reddy Lab</i>	15.88427	2.32219	6.738886	45.25347845	10.06392887	18.49782848	16.13351
<i>Maruti Suzuki</i>	4.472627	11.21997	-8.65474	10.06392887	96.65931433	17.58020195	15.80974
<i>Sun Pharma</i>	23.57549	6.535423	-5.76879	18.49782848	17.58020195	78.61993191	12.22825
<i>CIPLA</i>	14.29751	13.07126	4.282908	16.13351071	15.80974162	12.22824615	51.14601

SL NO	Company	Return	SD(σ)	R/SD
1	Apollo Hospital	17.8228	7.0916	2.5132
2	Eicher Motors	57.7280	9.4676	6.0974
3	Pidilite Industries	28.1155	7.2498	3.8781
4	Shree Cement	42.1233	9.0556	4.6516
5	ZEE Entertainment	26.0175	6.7943	3.8293
6	UPL	32.5972	10.4048	3.1329
7	BAJAJ Finance	36.3828	14.7904	2.4599

	Apollo Hos	Eicher Mo	Pidilite Ind	Shree Cem	ZEE Entert	UPL	BAJAJ Finance
<i>Apollo Hospital</i>	49.58274	17.56087	12.51242	11.44197	7.36977	-0.50548	28.24872379
<i>Eicher Motors</i>	17.56087	88.37263	20.6353	29.00646	12.50474	21.24542	33.96657265
<i>Pidilite Industries</i>	12.51242	20.6353	51.81996	22.24213	4.689421	3.758397	28.58883364
<i>Shree Cement</i>	11.44197	29.00646	22.24213	80.84915	20.88767	28.80805	51.08081973
<i>ZEE Entertainment</i>	7.36977	12.50474	4.689421	20.88767	45.51202	21.1735	26.89581094
<i>UPL</i>	-0.50548	21.24542	3.758397	28.80805	21.1735	106.7348	31.69046039
<i>BAJAJ Finance</i>	28.24872	33.96657	28.58883	51.08082	26.89581	31.69046	215.6743897



ACHARYA INSTITUTE OF TECHNOLOGY
DEPARTMENT OF MBA

PROJECT WEEKLY REPORT (16MBAPR407)

Name of the Student: RAJATH K.J.









Internal Guide: SWARUPA RANJAN PANIGRAHI













USN No: 11A16MBA32

Specialization: Finance & Marketing

Title of the Project: A Study On Optimal Portfolio Construction at R&D Capital Advisors pvt.ltd.

Company Name : R&D CAPITA ADVISORS PVT.LTD.

Week	Work Undertaken	External Guide Signature	Internal Guide Signature
15-1-2018 to 20-1- 20018	Introduction about R&D Capital Advisors pvt.ltd. and its operation		
22-1-2018 to 27-1- 20018	Learning about the different operation and services by R&D Capital pvt.ltd. Advisors		
29-1-2018 to 3-2- 20018	Orientation and gathering information about the growth of the company		
5-2-2018 to 10-2- 2018	Analysis of the market position of the company		

12-2-2018 to 17-2- 2018	Research problem identification		
19-2-2018 to 24-2- 2018	Preparation of the research instrument for data collection		
26-2-2018 to 3-3- 2018	Theoretical background of the study		
5-3-2018 to 10-3- 2018	Data collection and analysis		
12-3-2018 to 17-3- 2018	Interpretation of the data gathered during the survey		
19-3-2018 to 24-3- 2018	Final report preparation and submission		



Head of the Department
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