A STUDY ON PORTFOLIO DIVERSIFICATION STRATEGIES

SRIRAMULA JHANSI [1] **MBA Student**

DR. K MADHU BABU [2] **HOD & ASSOCIATE PROFESSOR**

[1,2]MASTER OF BUSINESS ADMINISTRATION

[1,2]Megha Institute of Engineering and Technology for Women, Sy. No. 7, Edulabad Road, Edulabad, Ghatkesar, Telangana.

ABSTRACT

- Portfolio diversification is a fundamental investment strategy that aims to reduce risk while maximizing returns by allocating investments across different asset classes, industries, sectors, and geographic regions. This study examines various portfolio diversification strategies and their effectiveness in minimizing unsystematic risk and improving overall portfolio performance. It explores traditional diversification methods, including investments in equities, bonds, mutual funds, exchange-traded funds (ETFs), and alternative assets, along with modern approaches based on risk-return optimization. The study also highlights the influence of market conditions, investor objectives, and technological advancements, such as artificial intelligence and data analytics, on portfolio management decisions. By analyzing the relationship between diversification and investment performance, the research provides insights into how investors can achieve long-term financial stability, enhance risk-adjusted returns, and make informed investment decisions in dynamic financial markets.

INTRODUCTION

PORTFOLIO:

A portfolio is a grouping of financial assets such as stocks, bonds and cash equivalents, as well as their mutual, exchange-traded and closed-fund counterparts. Portfolios are held directly by investors and/or managed by financial professionals.

PORTFOLIO ANALYSIS:

In financial terms, **'portfolio analysis'** is a study of the performance of specific portfolios under different circumstances. It includes the efforts made to achieve the best trade-off between risk tolerance and returns. The analysis of a portfolio can be conducted either by a professional or an individual investor who may utilizes specialized software.

Portfolio analysis involves quantifying the operational and financial impact of the portfolio. It is vital to evaluate the performances of investments and timing the returns effectively.

The analysis of a portfolio extends to all classes of investments such as bonds, equities, indexes, commodities, funds, options and securities. Portfolio analysis gains importance because each asset class has peculiar risk factors and returns associated with it. Hence, the composition of a portfolio affects the rate of return of the overall investment.

Portfolio analysis is broadly carried out for each asset at two levels:

- Risk aversion: This method analyzes the portfolio composition while considering the risk appetite of an investor. Some investors may prefer to play safe and accept low profits rather than invest in risky assets that can generate high returns.

- Analyzing returns: While performing portfolio analysis, prospective returns are calculated through the average and compound return methods. An average return is simply the arithmetic average of returns from individual assets. However, compound return is the arithmetic mean that considers the cumulative effect on overall returns.

The next step in portfolio analysis involves determining dispersion of returns. It is the measure of volatility or standard deviation of returns for a particular asset. Simply put, dispersion refers is the difference between the real interest rate and the calculated average return.

RESEARCH METHODOLOGY

The present project were has been under taken to study “A study on Portfolio Analysis”. This is carried out as follows.

➢ Data collection ➢ Data analysis.

DATA COLLECTION:

The data can be collected through two sources.

1. Primary source
2. Secondary source

PRIMARY SOURCE:

First-hand information gathered is known as primary source .Data collection as such there is no primary data collection in this project. Only interaction with company people in gathering company profile is done.

SECONDARY SOURCE:

The information readily available for the research work is known as secondary source. In this study the secondary sources of information are Websites like:

- www.nseindia.com,
- Different text books, magazines.

SAMPLE:

Different companies from different sector randomly list of company

SAMPLE SIZE:

No of companies selected 10 companies from different sector.

FORMULAE'S:

Return = (close price-previous close)/previous close*100.

Risk= $\sqrt{\sum D^2}/(n-1)$.

$\sqrt{\sum D^2}$= Total Sum of the D^2.

Return of portfolio=w1 R1+w2 R2

Where: R1= return on the first company

R2= return on the second company

W1, W2= investment on 50%

Risk of portfolio=$\sqrt{w1^2\ \sigma1^2 + w2^2\ \sigma2^2 + 2*w1\ w2\sigma1\sigma2\ R1*R2}$.
$\sigma1$= Risk of company 1. $\sigma2$= Risk of company 2.
R1*R2= Correlation coefficient of companies 1 & 2.

Coefficient of Correlation = R1 * R2.

CHAPTER-II REVIEW OF LITERATURE

REVIEW OF LITERATURE

A Portfolio alludes to a gathering of speculation apparatuses, for example, stocks, shares, common subsidizes, bonds and money so on relying upon the speculator's salary, spending plan and helpful time period. In plain terms, it is overseeing cash of a person under master direction of portfolio chiefs. It alludes to dealing with a person's interests as securities, shares, money, common assets and so forth so individual can wins the greatest benefits inside the stipulated time period. Portfolio administration is the specialty of choosing the correct venture arrangement for the people regarding least hazard and most extreme return. The demonstration or routine with regards to settling on speculation choices keeping in mind the end goal to make the biggest conceivable return. Portfolio administration takes two fundamental structures dynamic and detached. Dynamic administration includes utilizing specialized, key, or some different examination to make exchanges on a genuinely normal premise.

Definition: Portfolio administration is the workmanship and exploration of settling on choices about speculation blend and approach, coordinating ventures to destinations, resource designation for people and establishments, and adjusting hazard against execution."

Portfolio administration none other than Basket of Stocks. Portfolio Management is the expert administration of different securities and resources keeping in mind the end goal to meet indicated speculation objectives for the advantage of the speculators."

Advantages: There is vast number of advantages of Portfolio Management that can give high esteem returns in the event that it is performed on normal premise and executed legitimately. There are numerous organizations that intended to use their administration endeavors on adjusted task portfolio for accomplishing ideal execution and returns for the whole portfolio.

Boost general returns: The legitimate portfolio administration guarantees the correct blend of tasks for accomplishing the greatest general returns. The venture portfolio contains ventures that give esteems that contrast broadly from each other. The ventures in the portfolio fluctuate regarding following variables.

- Short-and long haul advantage
- Synergy with corporate objectives
- Level of venture
- Anticipated payback

By thinking about every one of these elements, PPM centers around streamlining of the profits of the whole portfolio by doing the accompanying exercises.

- Directing the assets towards commendable activities
- Eliminating the redundancies between ventures
- Saving time and expenses

Current Portfolio hypothesis (MPT) presents the idea of broadening in contributing by utilizing scientific definition. It plans to choose an accumulation of venture resources which has bring down hazard than any individual resource. It can be watched precipitously as powerful economic situations cause changes in estimation of various kinds of benefits in clashing ways. The costs in the security market may fall freely from costs in the stocks showcase, consequently there is general lower chance in a gathering of both security and stocks resources when contrasted with singular resource. In addition, the expansion lessens the hazard regardless of whether situations where resources' profits are decidedly related.

CHAPTER-III INDUSTRY PROFILE AND COMPANY PROFILE

INDUSTRY PROFILE

The securities market achieves one of the most important functions of channeling idle resources to productive resources or from less productive resources to more productive resources. Hence in the broader context the people who save and investors who invest focus more towards the economy's abilities to invest and save respectively. This enhances savings and investments in the economy, the two pillars for economic growth. The Indian Capital Market has come a long way in this process and with a strong regulator it has been able to usher an era of a modern capital market regime. The past decade in many ways has been remarkable for securities market in India. It has grown exponentially as measured in terms of amount raised from the market, the number of listed stocks, market capitalization, trading volumes and turnover on stock exchanges, and investor population. The market has witnessed fundamental institutional changes resulting in drastic reduction in transaction costs and significant improvements in efficiency, transparency and safety.

Stock market:

When investors think of the stock market, they Nov imagine a specific place - such as a stock exchange. In fact, the stock market is the abstract idea of stock trading and stock exchange. All selling of stocks - at stock exchanges and in other ways - affects the market overall. Following stock market information in the news can help you make the right decisions about stock market investing.

Need of stock market:

The stock market is simply a term for the overall market or industry that is concerned with buying and selling company stock, both private and publicly traded securities. The stock market does many things. It helps to set prices of stocks. The more a stock is traded on the market and the more in demand the stock, the higher is its value. Having a stock market that is interconnected with stock markets around the world helps traders and investors to see how Specific stocks are doing.

Of course, the stock market is mainly present to create money. Through the market, investors - both companies and individuals - can buy stocks, which effectively make them own a small part of a company. If the company prospers, investors are rewarded with dividends and profits.

Companies, by becoming public and offering stocks to the public, can raise money and improve their profile through business expansions which can help them make great profit.

invest in stock market:

Most financial experts recommend that investors must consult a full-service financial advisor initially. This type of advisor can provide advice and can help ensure that an investor's money gets a good return. More experienced investors Nov be interested in one of the online investing options. These allow almost anyone with a fast internet connection and a subscription to an investment site to buy and sell stocks when they wish.

COMPANY PROFILE

KARVY, is a premier integrated financial services provider, and ranked among the top five in the country in all its business segments, services over 16 million individual investors in various capacities, and provides investor services to over 300 corporate, comprising the who is who of Corporate India. KARVY covers the entire spectrum of financial services such as Stock broking, Depository Participants, Distribution of financial products - mutual funds, bonds, fixed deposit, equities, Insurance Broking, Commodities Broking, Personal Finance Advisory Services, Merchant Banking & Corporate Finance, placement of equity, Initial Public Offer, among others.

KARVY covers the entire spectrum of financial services such as Stock broking, Depository

Participants, Distribution of financial products - mutual funds, bonds, fixed deposit, equities, Insurance Broking, Commodities Broking, Personal Finance Advisory Services, Merchant Banking & Corporate Finance, placement of equity, Initial Public Offer, among others. Karvy has a professional management team and ranks among the best in technology, operations and research of various industrial segments.

As the flagship company of the Karvy Group, Karvy Consultants Limited has always remained at the helm of organizational affairs, pioneering business policies, work ethic and channels of progress. Having emerged as a leader in the registry business, the first of the businesses that company ventured into, we have now transferred this business into a joint venture with Computer share Limited of Australia, the world’s largest registrar.

With the advent of depositories in the Indian capital market and the relationships that we have created in the registry business, we believe that we were best positioned to venture into this activity as a Depository Participant.

Karvy was one of the early entrants registered as Depository Participant with NSDL

(National Securities Depository Limited), the first Depository in the country and then with CDSL (Central Depository Services Limited). Today, their service over 6 lakhs customer accounts in this business spread across over 250 cities/towns in India and are ranked amongst the largest Depository Participants in the country. With a growing secondary market presence, company had transferred this business to Karvy Stock Broking Limited (KSBL), KARVY associate and a member of NSE, BSE and HSE.

The term "KARVY" is derived from the initial letters of its founders –

K - Mr. Kuttumba Rao

A - Mr. Ajay Kumar

R - Mr. Ramakrishna

V - Mr. Vaidyanathan

Y - Mr. Yugandhar

These five energetic and dynamic Chartered Accountants started KARVY in 1975 as Karvy and Company.

Role Of Finance Department

In all the companies, finance and accounts are the integral part of its functioning and effective management. It gives complete picture about each and every department expense and income earned during particular period. It maintains books of accounts & prepares financial statements for specific period, which is known as the accounting period, which is of 6 months or 12 months.

As the company branches are many, top management needs to be informed about the financial aspect of the organization. In Karvy, F & A Department consists of

CHAPTER-IV DATA ANALYSIS AND INTERPRETATION

DATA ANALYSIS AND INTERPRETATION

RISK AND RETURN ANALYSIS OF ACC LIMITED

DATE	OPEN	CLOSE	RETURN	AVERAGE RETURN	DIFFERENCE	D*D
28-Mar-24	2,478.00	2,491.70	0.5498	-0.0993	0.6491	0.4214
27-Mar-24	2,463.95	2,454.10	-0.4014	-0.0993	-0.3021	0.0913
26-Mar-24	2,430.00	2,450.00	0.8163	-0.0993	0.9156	0.8384
22-Mar-24	2,439.05	2,443.25	0.1719	-0.0993	0.2712	0.0735
21-Mar-24	2,429.00	2,438.85	0.4039	-0.0993	0.5032	0.2532
20-Mar-24	2,409.05	2,397.70	-0.4734	-0.0993	-0.3741	0.1399
19-Mar-24	2,442.80	2,403.40	-1.6393	-0.0993	-1.5401	2.3718
18-Mar-24	2,480.10	2,441.55	-1.5789	-0.0993	-1.4796	2.1893
15-Mar-24	2,482.10	2,502.95	0.833	-0.0993	0.9323	0.8692
14-Mar-24	2,387.00	2,482.10	3.8314	-0.0993	3.9307	15.4506

13-Mar-24	2,565.00	2,389.10	-7.3626	-0.0993	-7.2633	52.7557
12-Mar-24	2,642.00	2,561.60	-3.1387	-0.0993	-3.0394	9.2378
11-Mar-24	2,645.00	2,641.90	-0.1173	-0.0993	-0.018	0.0003
07-Mar-24	2,642.00	2,638.80	-0.1213	-0.0993	-0.022	0.0005
06-Mar-24	2,665.00	2,642.00	-0.8706	-0.0993	-0.7713	0.5948
05-Mar-24	2,705.00	2,668.75	-1.3583	-0.0993	-1.259	1.5851
04-Mar-24	2,710.00	2,695.65	-0.5323	-0.0993	-0.433	0.1875
02-Mar-24	2,700.15	2,702.55	0.0888	-0.0993	0.1881	0.0354
01-Mar-24	2,650.00	2,695.45	1.6862	-0.0993	1.7855	3.1879
29-Feb-24	2,570.00	2,629.30	2.2554	-0.0993	2.3546	5.5444
28-Feb-24	2,669.40	2,573.25	-3.7365	-0.0993	-3.6372	13.2294
27-Feb-24	2,666.65	2,669.40	0.103	-0.0993	0.2023	0.0409
26-Feb-24	2,679.10	2,674.65	-0.1664	-0.0993	-0.0671	0.0045
23-Feb-24	2,677.10	2,679.55	0.0914	-0.0993	0.1907	0.0364
22-Feb-24	2,676.80	2,680.10	0.1231	-0.0993	0.2224	0.0495
21-Feb-24	2,690.00	2,666.75	-0.8718	-0.0993	-0.7726	0.5968
20-Feb-24	2,674.00	2,686.70	0.4727	-0.0993	0.572	0.3272

19-Feb-24	2,744.00	2,670.50	-2.7523	-0.0993	-2.653	7.0384
16-Feb-24	2,649.95	2,720.40	2.5897	-0.0993	2.689	7.2306
15-Feb-24	2,635.05	2,637.65	0.0986	-0.0993	0.1979	0.0392
14-Feb-24	2,599.05	2,619.60	0.7845	-0.0993	0.8838	0.781
13-Feb-24	2,635.55	2,614.60	-0.8013	-0.0993	-0.702	0.4928
12-Feb-24	2,646.00	2,636.35	-0.366	-0.0993	-0.2667	0.0712
09-Feb-24	2,520.00	2,628.05	4.1114	-0.0993	4.2107	17.73
08-Feb-24	2,517.10	2,510.85	-0.2489	-0.0993	-0.1496	0.0224
07-Feb-24	2,535.00	2,505.55	-1.1754	-0.0993	-1.0761	1.158
06-Feb-24	2,485.80	2,528.25	1.679	-0.0993	1.7783	3.1624
05-Feb-24	2,510.00	2,486.20	-0.9573	-0.0993	-0.858	0.7362
02-Feb-24	2,552.80	2,499.45	-2.1345	-0.0993	-2.0352	4.142
01-Feb-24	2,553.40	2,530.00	-0.9249	-0.0993	-0.8256	0.6816
31-Jan-24	2,514.00	2,544.30	1.1909	-0.0993	1.2902	1.6646
30-Jan-24	2,508.00	2,513.15	0.2049	-0.0993	0.3042	0.0925
29-Jan-24	2,520.05	2,492.90	-1.0891	-0.0993	-0.9898	0.9797
25-Jan-24	2,248.70	2,467.65	8.8728	-0.0993	8.9721	80.4987
24-Jan-24	2,206.00	2,240.60	1.5442	-0.0993	1.6435	2.7012
23-Jan-24	2,309.00	2,207.95	-4.5766	-0.0993	-4.4774	20.0467
20-Jan-24	2,279.00	2,290.10	0.4847	-0.0993	0.584	0.341
19-Jan-24	2,273.00	2,277.10	0.1801	-0.0993	0.2793	0.078
18-Jan-24	2,246.00	2,260.10	0.6239	-0.0993	0.7232	0.523

17-Jan-24	2,289.00	2,251.80	-1.652	-0.0993	-1.5527	2.4109
16-Jan-24	2,309.05	2,294.45	-0.6363	-0.0993	-0.537	0.2884
15-Jan-24	2,344.00	2,320.40	-1.0171	-0.0993	-0.9178	0.8423
12-Jan-24	2,335.00	2,332.40	-0.1115	-0.0993	-0.0122	0.0001
11-Jan-24	2,318.90	2,321.75	0.1228	-0.0993	0.222	0.0493
10-Jan-24	2,312.00	2,306.60	-0.2341	-0.0993	-0.1348	0.0182
09-Jan-24	2,371.95	2,309.65	-2.6974	-0.0993	-2.5981	6.7501
08-Jan-24	2,400.05	2,354.75	-1.9238	-0.0993	-1.8245	3.3287
05-Jan-24	2,357.95	2,377.45	0.8202	-0.0993	0.9195	0.8455
04-Jan-24	2,299.80	2,358.20	2.4765	-0.0993	2.5758	6.6345
03-Jan-24	2,283.00	2,280.20	-0.1228	-0.0993	-0.0235	0.0006
02-Jan-24	2,244.00	2,267.30	1.0277	-0.0993	1.1269	1.27
01-Jan-24	2,212.00	2,243.30	1.3953	-0.0993	1.4946	2.2337
			-0.0993			284.996

VARIANCE= $\frac{\sum D^2}{N-1}$

= 4.6721

RISK= $\sqrt[2]{VARIANCE}$

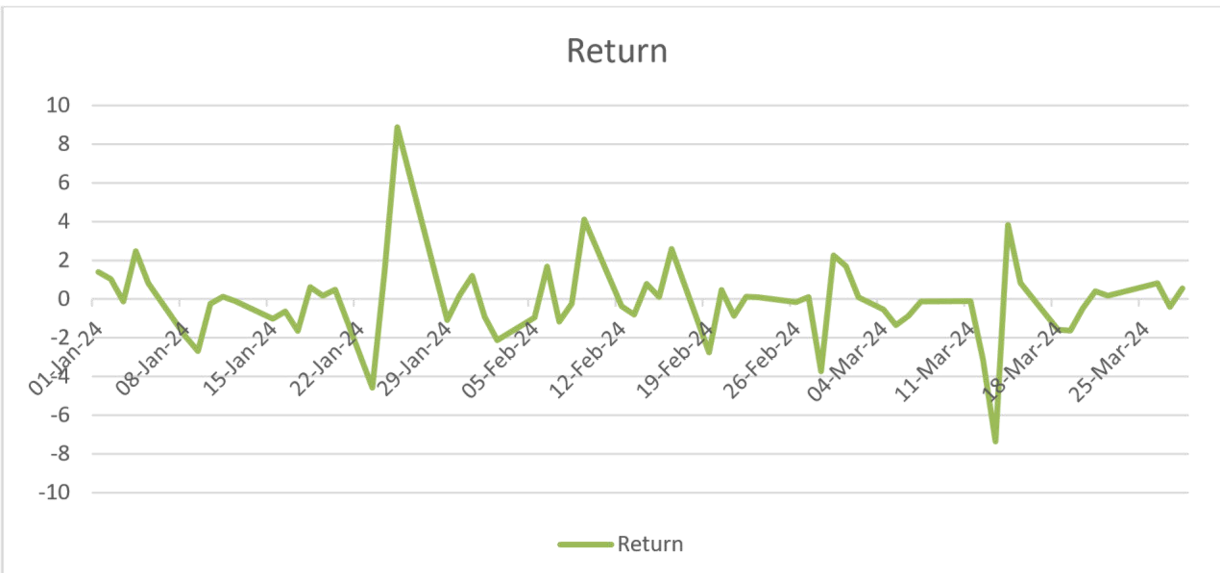
= 2.1615

COEFFICIENT OF VARIANCE= RISK/AVERAGE RETURN

= 2.1615/-0.0993

= -21.7695

GRAPHICAL REPRESENTATION



INTERPRETATION

From the above table and graph represents the risk and return of ACC Limited for a period of 3 months i.e, from 01-JAN-2024 To 31-MAR-2024, the ACC LIMITED has average return of -0.0993, Variance of 4.6721 and risk 2.1615. The highest ACC LIMITED On 19-Feb-24 i.e, 2,744.00 and the Lowest ACC LIMITED On 23-Jan-24 i.e, 2,207.95.

FINDINGS

- The APOLLO TYRES LIMITED has average return of -0.3035, variance of 3.9938 and risk of 1.9985.
- The BHARTI AIRTEL LIMITED has average return of 0.4590, variance of 5.0940 and risk of 2.2570.
- Correlation coefficient of APOLLO TYRES LIMITED AND BHARTI AIRTEL

  LIMITED i.e, covariance is 0.5699 and correlation coefficient is 0.6437.

- Construction portfolio weightage (50,50) portfolio return of 0.07775, portfolio risk of 1.6437 weightage (60,40) portfolio return of 0.154, portfolio risk of 7.1886 weightage (70,30) portfolio return of 0.23025 portfolio risk 5.5222.

- The ACC LIMITED has average return of -0.0993, variance of 4.6721 and risk of

  2.1615.

- The AMBICAAGAR LIMITED has average return of -2.0202, variance of 17.9561 and risk of 4.2375.
- Correlation coefficient of ACC LIMITED AND AMBICAAGAR LIMITED i.e,

  covariance is 1.5998 and correlation coefficient is -7.39508

- Construction portfolio weightage (50,50) portfolio return of -1.05975, portfolio risk of 10.9985, weightage (60,40) portfolio return of -0.86766, portfolio risk of 10.2433, weightage (70,30) portfolio return -0.67557, portfolio risk of 9.70037.

SUGGESTIONS

- Apollo Tyres Limited has a negative average return of -0.3035, indicating it's performing below average.Bharti Airtel Limited shows a positive average return of 0.4590, suggesting it's performing above average.ACC Limited has a slightly negative average return of -0.0993, indicating a relatively weaker performance.AmbicaAgar Limited has a significantly negative average return of -2.0202, indicating poor performance.
- Bharti Airtel Limited has the highest risk among the mentioned stocks, with a risk value of 2.2570.Apollo Tyres Limited and ACC Limited have moderate risks compared to Bharti Airtel Limited, with risks of 1.9985 and 2.1615 respectively.AmbicaAgar Limited has the highest risk among the mentioned stocks, with a risk value of 4.2375.

- Portfolios with different weightages have been constructed for pairs of stocks.
- The portfolio with a weightage of (50,50) for Apollo Tyres Limited and Bharti Airtel Limited has a positive return of 0.07775 and a relatively low risk of 1.6437.
- However, the portfolio with a weightage of (70,30) for ACC Limited and AmbicaAgar Limited has a negative return, indicating a potential loss, and relatively high risk.
- The correlation coefficient between Apollo Tyres Limited and Bharti Airtel Limited is positive (0.6437), indicating a moderate positive correlation between these two stocks.

CONCLUSION

In conclusion, the analysis of the provided stock data highlights several key points:

There is significant variation in the performance of the stocks, with some exhibiting positive average returns (e.g., Bharti Airtel Limited) while others show negative returns (e.g., AmbicaAgar Limited). Different stocks carry varying levels of risk, with Bharti Airtel Limited and AmbicaAgar Limited standing out as particularly high-risk options. Constructing portfolios with diversified weightages can help manage risk and optimize returns. However, careful consideration of correlation coefficients is essential to ensure effective diversification. While positive correlation coefficients indicate a relationship between stocks that move in the same direction, the unusually large negative correlation coefficient between ACC Limited and AmbicaAgar Limited warrants further investigation. Diversification, risk management, and ongoing monitoring are crucial for successful investment outcomes. Adjustments to portfolio weightages, reconsideration of high-risk stocks, and consultation with financial professionals can help optimize portfolio performance and mitigate potential risks.In summary, prudent investment decisions should be based on a thorough understanding of individual stock characteristics, portfolio diversification strategies, and ongoing monitoring of market dynamics. By incorporating these principles, investors can navigate market uncertainties and strive for long-term financial success.

BIBLIOGRAPHY

REFERENCES

- Alexander, C., & Dimitriu, A. (2005). Indexing and statistical arbitrage. The Journal of Portfolio Management, 31(2), 50-63.
- Behr, P., Guettler, A., &Miebs, F. (2013). On portfolio optimization: Imposing the right constraints. Journal of Banking & Finance, 37(4), 1232-1242.
- Bertero, E., & Mayer, C. (1990). Structure and performance: Global interdependence of stock markets around the crash of October 1987. European Economic Review, 34(6), 1155-1180.
- Bird, R., & Tippett, M. (1986). Note - Naive Diversification and Portfolio Risk - A Note. Management Science, 32(2), 244-251.
- Brands, S., & Gallagher, D. R. (2005). Portfolio selection, diversification and fund-offunds: a note. Accounting & Finance, 45(2), 185-197.
- Chen, M. H. (2003). Risk and return: CAPM and CCAPM. The Quarterly Review of Economics and Finance, 43(2), 369-393.

Websites:

- www.bseindia.com
- www.portfoliomanagement.com
- www.econamictimes.com
- www.karvybroking.com