THE ROLE OF RISK-RETURN ANALYSIS IN FINANCIAL DECISION-MAKING: ASSESSING INVESTMENT VIABILITY AT HDFC

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ABSTRACT
Risk-return analysis is a fundamental concept in financial decision-making that helps investors and organizations evaluate the viability of investment opportunities. The principle is based on the relationship between risk and expected return, where higher returns are generally associated with higher levels of risk. Effective risk-return analysis enables investors to make informed decisions by balancing potential rewards against the uncertainties involved in an investment.
This study examines the significance of risk-return analysis in assessing investment viability and its role in financial planning and portfolio management. It explores various risk measures such as standard deviation, beta, variance, and coefficient of variation, along with return indicators used to evaluate investment performance. The study highlights how investors can utilize these tools to compare different investment alternatives and select those that align with their financial goals and risk tolerance.
The research also emphasizes the importance of diversification, asset allocation, and portfolio optimization in minimizing investment risk while maximizing returns. Through an analysis of financial data and investment performance indicators, the study demonstrates how risk-return analysis contributes to better investment decisions and long-term wealth creation.

I. INTRODUCTION

RISK-RETURN ANALYSIS

Risk-Return Analysis is a financial evaluation technique used to assess the relationship between the potential return of an investment and the level of risk associated with it. It is based on the fundamental principle that higher potential returns generally require taking on higher levels of risk. Investors use risk-return analysis to make informed investment decisions and to select investment opportunities that align with their financial objectives and risk tolerance.
Risk refers to the uncertainty associated with achieving expected returns and the possibility of financial loss. Different types of risks include market risk, credit risk, liquidity risk, interest rate risk, and inflation risk. Return, on the other hand, represents the gain or loss generated from an investment over a specific period, usually expressed as a percentage of the initial investment.
Risk-return analysis helps investors compare various investment alternatives by evaluating both expected returns and the risks involved. Common measures used in this analysis include standard deviation, variance, beta, Sharpe ratio, and coefficient of variation. These tools assist in understanding the volatility and performance of investments.
The concept plays a crucial role in portfolio management, where investors seek to maximize returns while minimizing risk through diversification and asset allocation. By analyzing the trade-off between risk and return, investors can construct efficient portfolios that provide optimal returns for a given level of risk.
In modern financial management, risk-return analysis is essential for investment planning, capital budgeting, and strategic decision-making. It enables investors, financial institutions, and businesses to evaluate investment viability, allocate resources effectively, and achieve long-term financial objectives. Thus, risk-return analysis serves as a cornerstone of sound financial decision-making and successful wealth creation.

MEANING:

Risk-Return Analysis is the process of evaluating the potential returns of an investment in relation to the risks involved. It helps investors determine whether the expected return from an investment is sufficient to compensate for the level of risk taken.

In simple terms, risk-return analysis is based on the principle that higher returns generally require higher risks, while investments with lower risks usually offer lower returns. By analyzing the relationship between risk and return, investors can make informed decisions, select suitable investment opportunities, and build portfolios that match their financial goals and risk tolerance.

Risk-return analysis is widely used in investment management, portfolio construction, capital budgeting, and financial planning to achieve an optimal balance between risk and reward.

Relationship between risk and return

Investors are risk averse; i.e., given the same expected return, they will choose the investment for which that return is more certain. Therefore, investors demand a higher expected return for riskier assets. Note that a higher expected return does not guarantee a higher realized return. Because by definition returns on risky assets are uncertain, an investment may not earn its expected return.

Although the historical (realized) returns rather than expected (future) returns, they are useful to demonstrate the relationship between risk and return. Note that the mean (average) annual return increases as the dispersion of returns increases.

A portfolio is a collection of assets. The assets may be physical or financial like Shares, Bonds, Debentures, Preference Shares, etc. The individual investor or a fund manager would not like to put all his money in the shares of one company that would amount to great risk. He would therefore, follow the age old maxim that one should not put all the eggs into one basket. By doing so, he can achieve objective to maximize portfolio return and at the same time minimizing the portfolio risk by diversification.

- Portfolio management is the management of various financial assets which comprise the portfolio.
- Portfolio management is a decision – support system that is designed with a view to meet the multi-faced needs of investors.
- According to Securities and Exchange Board of India Portfolio Manager is defined as: “Portfolio means the total holdings of securities belonging to any person”.

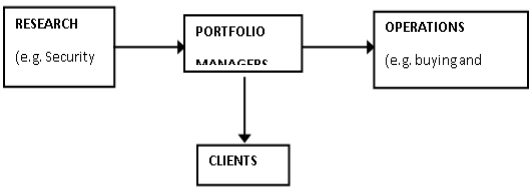
FUNCTIONS OF RISK-RETURN:

- To frame the investment strategy and select an investment mix to achieve the desired investment objectives
- To provide a balanced portfolio which not only can hedge against the inflation but can also optimize returns with the associated degree of risk
- To make timely buying and selling of securities
- To maximize the after-tax return by investing in various tax saving investment instruments.

STRUCTURE / PROCESS OF TYPICAL PORTFOLIO MANAGEMENT

In the small firm, the portfolio manager performs the job of security analyst.

In the case of medium and large sized organizations, job function of portfolio manager and security analyst are separate.



CHARACTERISTICS OF PORTFOLIO(Risk-Return):

Individuals will benefit immensely by taking portfolio management services for the following reasons:

- Whatever may be the status of the capital market, over the long period capital markets have given an excellent return when compared to other forms of investment. The return from bank deposits, units, etc., is much less than from the stock market.
- The Indian Stock Markets are very complicated. Though there are thousands of companies that are listed only a few hundred which have the necessary liquidity. Even among these, only some have the growth prospects which are conducive for investment. It is impossible for any individual wishing to invest and sit down and analyze all these intricacies of the market unless he does nothing else.
- Even if an investor is able to understand the intricacies of the market and separate chaff from the grain the trading practices in India are so complicated that it is really a difficult task for an investor to trade in all the major exchanges of India, look after his deliveries and payments

NEED & IMPORTANCE OF STUDY:

A risk-Return analysis has emerged as a separate academic discipline in India. Portfolio theory that deals with the rational investment decision-making process has now become an integral part of financial literature.

Investing in securities such as shares, debentures & bonds is profitable well as exciting. It is indeed rewarding but involves a great deal of risk & need artistic skill. Investing in financial securities is now considered to be one of the most risky avenues of investment. It is rare to find investors investing their entire savings in a single security. Instead, they tend to invest in a group of securities. Such group of securities is called as PORTFOLIO. Creation of portfolio helps to reduce risk without sacrificing returns. Portfolio management deals with the analysis of individual securities as well as with the theory & practice of optimally combining securities into portfolios.

The modern theory is of the view that by diversification, risk can be reduced. The investor can make diversification either by having a large number of shares of companies in different regions, in different industries or those producing different types of product lines. Modern theory believes in the perspective of combinations of securities under constraints of risk and return.

SCOPE OF STUDY:

This study covers the Markowitz model. The study covers the calculation of correlations between the different securities in order to find out at what percentage funds should be invested among the companies in the portfolio. Also the study includes the calculation of individual Standard Deviation of securities and ends at the calculation of weights of individual securities involved in the portfolio. These percentages help in allocating the funds available for investment based on risky portfolios.

OBJECTIVES OF THE STUDY:

- To understand the concept and importance of risk-return analysis in financial decision-making.
- To analyze the relationship between risk and return in various investment alternatives.
- To evaluate the level of risk associated with different investment instruments.
- To measure and compare the returns generated by selected investment options.
- To assess the viability of investments using risk-return analysis techniques.
- To study the impact of risk on investment performance and decision-making.
- To examine the effectiveness of diversification in reducing investment risk.
- To identify investment opportunities that provide an optimal balance between risk and return.
- To assist investors in making informed and rational investment decisions.
- To provide recommendations for improving investment strategies through effective risk management and return optimization.

II. METHODOLOGY AND FRAMEWORK

DATA COLLECTION METHODS

The data collection methods include both the primary and secondary collection methods.

Primary collection methods:

This method includes the data collection from the personal discussion with the authorized clerks and members of the hdfc financial services.

Secondary collection methods:

The secondary collection methods includes the lectures of the superintend of the department of market operations and so on., also the data collected from the news, magazines and different books issues of this study Superintend

LIMITATIONS OF THE STUDY

1. The study is based on historical financial data, which may not accurately predict future market performance.
2. The analysis is limited to selected investment instruments and may not represent the entire investment market.
3. Market conditions, economic factors, and investor behavior can change over time, affecting the accuracy of the findings.
4. The study relies on secondary data sources, and any inaccuracies in the data may influence the results.
5. Risk and return are influenced by several external factors such as inflation, interest rates, government policies, and global economic conditions, which are beyond the scope of this study.
6. The study focuses primarily on quantitative measures of risk and return and may not fully capture qualitative factors affecting investment decisions.
7. Time constraints may limit the depth and coverage of the analysis.
8. The findings and conclusions are applicable only to the period and investments selected for the study.
9. Investor preferences and risk tolerance levels vary from person to person, making it difficult to generalize the results.
10. Unexpected market events and economic uncertainties may affect investment performance and reduce the reliability of projections based on past trends.

III. LITERATURE REVIEW

The principle that potential return rises with an increase in risk. Low levels of uncertainty (low-risk) are associated with low potential returns, whereas high levels of uncertainty (high-risk) are associated with high potential returns. According to the risk-return tradeoff, invested money can render higher profits only if it is subject to the possibility of being lost.

Investors are risk averse; i.e., given the same expected return, they will choose the investment for which that return is more certain. Therefore, investors demand a higher expected return for riskier assets. Note that a higher expected return does not guarantee a higher realized return. Because by definition returns on risky assets are uncertain, an investment may not earn its expected return.

Although it show historical (realized) returns rather than expected (future) returns, they are useful to demonstrate the relationship between risk and return. Note that the mean (average) annual return increases as the dispersion of returns increases.

If inflation is considered, even money market securities have some risk. They may not achieve the expected real (inflation-adjusted) return. Unexpected inflation may reduce the real return below the expected return of the money market investment. Uncertainty in real returns can be eliminated by investing in inflation-indexed securities, such as Treasury Inflation Protected Securities (TIPS) and Series I Savings Bonds (I Bonds). In return for this reduction of uncertainty, investors must accept lower expected returns. Even inflation-linked securities have risks; e.g., TIPS have interest-rate risk, re-investment risk, and liquidity risk. No investment is truly risk-free.

The objective of the Risk / Return Analysis is to give investors a concise summary of historic asset class performance over investment periods of varying length. **THE COVER IMAGE** The image on the front cover of the handout is intended to show what each of the bars over-page represents. The line graph shows the performance of shares over each of the 721 twelve-month periods which may be observed using month-end data between 1 January 2008 and 31 December 2013. The bar to the right is a summary of the same

performance data used to draw the line graph. The bar highlights the best and worst twelve-month preiods; the range within which 90% of returns fell; the percentage of returns which were positive; the point of the median return; and the point of the most recent return.

THE PERFORMANCE HISTORY OF THE ASSET CLASSES

The main bar graph shows the range of returns observed for the following four asset classes:

- International Shares
- Australian Shares
- Bonds
- Cash

Investment periods of 1-year, 3-years, 5-years, 10-years and 20-years are graphed. **WHERE INVESTORS ACHIEVED THE GREATEST GROWTH** The area column graphs at the bottom of the inside spread summarise how frequently each asset class outperformed the others over investment periods ranging from one year to twenty-five years. The first of these graphs compares Australian shares, bonds and cash since 1950. The second includes international shares, but relies on data since 1970 only. Both the main bar graph, and the area column graphs highlight the historical tendency for equity investments to outperform fixed interest and cash over longer investment periods.

TYPES OF PORTFOLIO MANAGEMENT:

`1. DISCRETIONARY PORTFOLIO MANAGEMENT SERVICE (DPMS):

In this type of service, the client parts with his money in favor of the manager, who in return, handles all the paper work, makes all the decisions and gives a good return on the investment and charges fees. In the Discretionary Portfolio Management Service, to maximize the yield, almost all portfolio managers park the funds in the money market securities such as overnight market, 18 days treasury bills and 90 days commercial bills. Normally, the return of such investment varies from 14 to 18 percent, depending on the call money rates prevailing at the time of investment.

2. NON-DISCRETIONARY PORTFOLIO MANAGEMENT SERVICE (NDPMS):

The manager functions as a counselor, but the investor is free to accept or reject the manager‘s advice; the paper work is also undertaken by manager for a service charge. The manager concentrates on stock market instruments with a portfolio tailor-made to the risk taking ability of the investor.

IMPORTANCE OF PORTFOLIO MANAGEMENT:

- Emergence of institutional investing on behalf of individuals. A number of financial institutions, mutual funds and other agencies are undertaking the task of investing money of small investors, on their behalf.
- Growth in the number and size of ingestible funds – a large part of household savings is being directed towards financial assets.
- Increased market volatility – risk and return parameters of financial assets are continuously changing because of frequent changes in government‘s industrial and fiscal policies, economic uncertainty and instability.
- Greater use of computers for processing mass of data.
- Professionalization of the field and increasing use of analytical methods (e.g. quantitative techniques) in the investment decision – making
- Larger direct and indirect costs of errors or shortfalls in meeting portfolio objectives – increased competition and greater scrutiny by investors.

TYPES OF RISKS:

Risk consists of two components. They are

1. Systematic Risk
2. Un-systematic Risk

1. Systematic Risk:

Systematic risk is caused by factors external to the particular company and uncontrollable by the company. The systematic risk affects the market as a whole. Factors affect the systematic risk are

- economic conditions
- political conditions
- sociological changes

The systematic risk is unavoidable. Systematic risk is further sub-divided into three types. They are

a) Market Risk
b) Interest Rate Risk
c) Purchasing Power Risk

a). Market Risk

One would notice that when the stock market surges up, most stocks post higher price. On the other hand, when the market falls sharply, most common stocks will drop. It is not uncommon to find stock prices falling from time to time while a company‘s earnings are rising and vice-versa. The price of stock may fluctuate widely within a short time even though earnings remain unchanged or relatively stable.

b). Interest Rate Risk:

Interest rate risk is the risk of loss of principal brought about the changes in the interest rate paid on new securities currently being issued.

c). Purchasing Power Risk:

The typical investor seeks an investment which will give him current income and / or capital appreciation in addition to his original investment.

2. Un-systematic Risk:

Un-systematic risk is unique and peculiar to a firm or an industry. The nature and mode of raising finance and paying back the loans, involve the risk element. Financial leverage of the companies that is debt-equity portion of the companies differs from each other. All these factors affect the un-systematic risk and contribute a portion in the total variability of the return.

Managerial inefficiently

- Technological change in the production process
- Availability of raw materials
- Changes in the consumer preference
- Labor problems

The nature and magnitude of the above mentioned factors differ from industry to industry and company to company. They have to be analyzed separately for each industry and firm. Un-systematic risk can be broadly classified into:

a) Business Risk
b) Financial Risk

A. Business Risk:

Business risk is that portion of the unsystematic risk caused by the operating environment of the business. Business risk arises from the inability of a firm to maintain its competitive edge and growth or stability of the earnings. The volatility in stock prices due to factors intrinsic to the company itself is known as Business risk. Business risk is concerned with the difference between revenue and earnings before interest and tax. Business risk can be divided into.

i). Internal Business Risk

Internal business risk is associated with the operational efficiency of the firm. The operational efficiency differs from company to company. The efficiency of operation is reflected on the company‘s achievement of its pre-set goals and the fulfillment of the promises to its investors.

ii). External Business Risk

External business risk is the result of operating conditions imposed on the firm by circumstances beyond its control. The external environments in which it operates exert some pressure on the firm. The external factors are social and regulatory factors, monetary and fiscal policies of the government, business cycle and the general economic environment within which a firm or an industry operates.

a.Financial Risk:

It refers to the variability of the income to the equity capital due to the debt capital. Financial risk in a company is associated with the capital structure of the company. Capital structure of the company consists of equity funds and borrowed funds.

PORTFOLIO ANALYSIS:

Various groups of securities when held together behave in a different manner and give interest payments and dividends also, which are different to the analysis of individual securities. A combination of securities held together will give a beneficial result if they are grouped in a manner to secure higher return after taking into consideration the risk element.

There are two approaches in construction of the portfolio of securities. They are

- Traditional approach
- Modern approach

TRADITIONAL APPROACH:

Traditional approach was based on the fact that risk could be measured on each individual security through the process of finding out the standard deviation and that security should be chosen where the deviation was the lowest. Traditional approach believes that the market is inefficient and the fundamental analyst can take advantage of the situation. Traditional approach is a comprehensive financial plan for the individual. It takes into account the individual need such as housing, life insurance and pension plans. Traditional approach basically deals with two major decisions. They are

a. Determining the objectives of the portfolio
b. Selection of securities to be included in the portfolio

IV. DATA ANALYSIS AND INTERPRETATION

CALCULATION OF RETURN OF CIPLA

Year	Beginning price (Rs)	Ending price (Rs)	Dividend (Rs)
2020-2021	898.00	1371.05	10.00
2021-22	1334.00	317.8	3.00
2022-23	320.00	448	3.50
2023-24	447.95	251.35	2.00
2024-25	251.5	212.65	2.00

$$\text{Return} = \frac{Dividend + (Ending\,\text{Price} - Beginning\,\text{Price})}{Beginning\,\text{Price}} * 100$$

Return (2021) = $\frac{10.00+(1375.05-898.00)}{898.00} * 100$ = 54.23%

Return (2022) = $\frac{3.00+(317.8-1334.00)}{1334} * 100$ = -75.95%

Return (2023) = $\frac{3.50+(448-320.00)}{320} * 100$ = 41.09%

Return (2024) = $\frac{2.00+(251.35-447.95)}{447.95} * 100$ = -43.44%

Return (2025) = $\frac{2.00+(212.65-251.5)}{251.5} * 100$ = -14.65%

CALCULATION OF RETURN OF RANBAXY

Year	Beginning price(Rs)	Ending price(Rs)	Dividend(Rs)
2020-2021	598.45	1095.25	15.00
2021-22	1109.00	1251.15	17.00
2022-23	1268	362.75	14.50
2023-24	363	391.8	8.50
2024-25	391	425.5	8.50

$$Return = \frac{Dividend + (Ending\,Price - Beginning\,Price)}{Beginning\,Price} * 100$$

Return (2021) = $\frac{15.00+(1095.25-598.45)}{598.45} * 100$ = 85.52%

Return (2022) = $\frac{17.00+(1251.15-1109.00)}{1109} * 100$ = 14.35%

Return (2023) = $\frac{4.50+(362.75-1268.00)}{1268.00} * 100$ = -70.24%

Return (2024) = $\frac{8.50+(391.8-363)}{363} * 100$ = 10.27%

Return (2025) = $\frac{8.50+(425.5-391.00)}{391.00} * 100$ = 10.99%

CALCULATION OF RETURN OF MAHENDRA&MAHENDRA

Year	Beginning price (Rs.)	Ending price (Rs.)	Dividend (Rs.)
2020-2021	113.45	388.8	5.50
2021-22	392.55	545.45	9.00
2022-23	547.10	511.6	13.00
2023-24	514.80	908.45	10.00
2024-25	913.00	861.95	11.50

$$Return = \frac{Dividend + (Ending\,Price - Beginning\,Price)}{Beginning\,Price} * 100$$

Return (2021) = $\frac{5.50+(388.8-113.45)}{113.45} * 100$ = 247.55%

Return (2022) = $\frac{9.00+(545.45-392.55)}{392.55} * 100$ = 41.24%

Return (2023) = $\frac{13.00+(511.6-547.10)}{547.10} * 100$ = - 4.11%

Return (2024) = $\frac{10.00+(908.45-514.80)}{514.50} * 100$ = 78.41%

Return (2025) = $\frac{11.50+(861.95-913.00)}{913.00} * 100 = -4.3\%$

V. FINDINGS

CIPLA & RANBAXY

The combination of CIPLA and RANBAXY gives the proportion of investment is 0.49916 and 0.50084 for CIPLA and RANBAXY, based on the standard deviations The standard deviation for CIPLA is 55.22 and for RANBAXY is 55.13. When compared to both the risk is almost same, hence the risk is same when invested in either of the security.

MAHENDRA & BAJAJ AUTO

The combination of M&M and BAJAJ AUTO gives the proportion of investment is 1.6206 and 0.6206 for M&M and BAJAJ AUTO, based on the standard deviations The standard deviation for M&M is 104. 186 and for BAJAJ AUTO is 54.6.

Hence the investor should invest their funds more in BAJAJ AUTO when compared to M&M as the risk involved in BAJAJ AUTO is less than M&M as the standard deviation of BAJAJ AUTO is less than that of M&M.

VI. SUGGESTIONS

Investor would be able to achieve when the returns of shares and debentures Resultant portfolio would be known as diversified portfolio. Thus portfolio construction would address itself to three major via. Selectivity, timing and diversification.

In case of portfolio management, negatively correlated assets are most profitable. Correlation between the BAJAJ are negatively correlated which means both the combinations of portfolios are at good position to gain in future.

Investors may invest their money for long run, as both the combinations are most suitable portfolios. A rational investor would constantly examine his chosen portfolio both for average return and risk.

VII. CONCLUSIONS

In case of perfectly correlated securities or stocks, the risk can be reduced to a minimum point.

In case of negatively correlative securities the risk can be reduced to a zero.(which is company's risk) but the market risk prevails the same for the security or stock in the portfolio.

BIBLIOGRAPHY

BOOKS:

1. Securities Analysis And Portfolio Management , Donalde, Fisher & Ronald J.Jodon , 6th Edition
2. Security Analysis ad Portfolio Management, Sudhindra Bhatt, Excel Publications
3. Security Analysis ad Portfolio Management, Kelvin S.
4. Investment Analysis and Portfolio Management, Prasanna Chnadra
5. Financial Management and Policy, Van Home, James C, Englewood Cliffs, N.J. Prentice Hall, 1995
6. Money and Stock prices, Sprinkel, Beryl, W., HomewoodIll, Richard S. Irwin, Inc, 1964.
7. Portfolio and Investment Section: Theory and Practice, Prentice Hall, 1984

WEBSITES:

1. www.investopedia.com
2. www.nseindia.com
3. www.bseindia.com.
4. www.moneycontrol.com
5. www.indiainfoline.com
6. www.moneybhai.com

NEWSPAPERS& MAGAZINE

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2. Economic Times,
3. Financial Express.