
PORTFOLIO RISK MANAGEMENT AT HDFC BANK

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ABSTRACT

Risk management occurs everywhere in the financial world. It occurs when an investor buys low-risk government bonds over more risky corporate bonds, when a fund manager hedges his currency exposure with currency derivatives and when a bank performs a credit check on an individual before issuing a personal line of credit. Stockbrokers use financial instruments like options and futures, and money managers use strategies like portfolio and investment diversification, in order to mitigate or effectively manage risk. In the financial world, risk management is the process of identification, analysis and acceptance or mitigation of uncertainty in investment decisions. Essentially, risk management occurs any time an investor or fund manager analyses and attempts to quantify the potential for losses in an investment and then takes the appropriate action (or inaction) given his investment objectives and risk tolerance. Risk management is an important part of planning for businesses. The process of risk management is designed to reduce or eliminate the risk of certain kinds of events happening or having an impact on the business

Keywords: Portfolio Risk, Proposed Tools.

1. INTRODUCTION

Definition of Risk Management

Risk management is a process for identifying, assessing, and prioritizing risks of different kinds. Once the risks are identified, the risk manager will create a plan to minimize or eliminate the impact of negative events. A variety of strategies is available, depending on the type of risk and the type of business. There are a number of risk management standards, including those developed by the Project Management Institute, the International Organization for Standardization (ISO), the National Institute of Science and Technology, and actuarial societies.

Types of Risk- There are many different types of risk that risk management plans can mitigate. Common risks include things like accidents in the workplace or fires, tornadoes, earthquakes, and other natural disasters. It can also include legal risks like fraud, theft, and sexual harassment lawsuits. Risks can also relate to business practices, uncertainty in financial markets, failures in projects, credit risks, or the security and storage of data and records.

Goals of Risk Management- The idea behind using risk management practices is to protect businesses from being vulnerable. Many business risk management plans may focus on keeping the company viable and reducing financial risks. However, risk management is also designed to protect the employees, customers, and general public from negative events like fires or acts of terrorism that may affect them.

Risk management practices are also about preserving the physical facilities, data, records, and physical assets a company owns or uses.

Process for Identifying and Managing Risk- While a variety of different strategies can mitigate or eliminate risk, the process for identifying and managing the risk is fairly standard and consists of five basic steps. First, threats or risks are identified. Second, the vulnerability of key assets like information to the identified threats is assessed. Next, the risk manager must determine the expected consequences of specific threats to assets.

The last two steps in the process are to figure out ways to reduce risks and then prioritize the risk management procedures based on their importance.

Strategies for Managing Risk- There are as many different types of strategies for managing risk as there are types of risks. These break down into four main categories.

Risk can be managed by accepting the consequences of a risk and budgeting for it. Another strategy is to transfer the risk to another party by insuring against a particular, like fire or a slip-and-fall accident. Closing down a particular high-risk area of a business can avoid risk. Finally, the manager can reduce the risk's negative effects, for instance, by installing sprinklers for fires or instituting a back-up plan for data. Having a risk management plan is an important part of maintaining a successful and responsible company. Every company should have one. It will help to protect people as well as physical and financial assets.

2. REVIEW OF LITERATURE

ARTICLE: 1

TITLE: Portfolio risk management: a structured literature review with future directions for research

Author: Camilo Mican

Source: International Journal of Information Systems and Project Management

Project Portfolio Risk Management (PPRM) has been identified as a relevant area regarding project portfolio success. This paper reports on a structured literature review of PPRM. A structured search and selection process was carried out and conventional content analysis was conducted in the literature analysis of 62 papers published in international journals. PPRM has its theoretical and practical bases in the modern theory of portfolios, decision theory and risk management (RM). The content analysis reveals four main recurrent topics in PPRM: (1) The influence of RM on project portfolio success, based on project portfolio impact level, moderators or contingency factors between RM and project portfolio success, and PPRM dimensions; (2) risk and project interdependencies, highlighting resources, technology, outcome, value, and accomplishment project interdependencies; (3) project portfolio risk (PPR) identification, where four main risk source categories are identified; and (4) PPR assessment, composed of risk measures and the main methods used for risk assessment. Therefore, this study provides an overview of PPRM as a research field, while it also promotes four future research directions: (1) PPRM as part of organizational RM; (2) RM, success dimensions and strategic impact; (3) mechanisms for PPR assessment, and (4) PPRM as a complex and dynamic system.

ARTICLE: 2

TITLE: Project portfolio risk management conceptualization

Author: Gabriela Fernandes

Source: International Journal of Information Systems and Project Management

A project portfolio is a collection of single projects and programs that are carried out in an integrated way, through which an organization seeks to achieve its strategic objectives, by managing the interfaces between projects and balancing scarce resources across projects and programs, as well as risks and benefits [7, 23]. In this regard, Bathallath et al. [24] highlight the importance of project interdependency management in the success of project portfolios. From a PPM process perspective, three generic, interdependent and recursive main phases are described in the literature [25, 26]: portfolio structuring, resource management and portfolio steering. Portfolio structuring is associated with strategic planning cycles, which include portfolio planning, and the selection of projects according to the organization's strategy. Resource management implies resource allocation across projects, with the resource management carried out in an integrated way. Portfolio steering comprises a permanent execution and coordination of the portfolio, monitoring the different aspects defined as key aspects for each portfolio.

ARTICLE: 3

TITLE: PROJECT REPORT ON "RISK MANAGEMENT IN BANKING SECTOR"

Author: Sharad Kumar

Source: International Journal of Information Systems and Project Management

Risk Management is the application of proactive strategy to plan, lead, organize, and control the wide variety of risks that are rushed into the fabric of an organization's daily and long-term functioning. Like it or not, risk has a say in the achievement of our goals and in the overall success of an organization. Present paper is to make an attempt to identify the risks faced by the banking industry and the process of risk management. This paper also examined the different techniques adopted by banking industry for risk management. To achieve the objectives of the study data has been collected from secondary sources i.e., from Books, journals and online publications, identified various risks faced by the banks, developed the process of risk management and analyzed different risk management techniques. Finally it can be concluded that the banks should take risk more consciously, anticipates adverse changes and hedges accordingly, it becomes a source of competitive advantage, and efficient management of the banking industry.

SEARCH GAP:

It can be concluded that the banks should take risk more consciously, anticipates adverse changes and hedges accordingly, it becomes a source of competitive advantage, and efficient management of the banking industry.

OBJECTIVES:

- ❖ To study the investment decision process.
- ❖ To analysis the risk return characteristics of sample scripts.

- ❖ Ascertain Risk Management.
- ❖ To construct an effective portfolio which offers the maximum return for minimum risk.

3. RESEARCH METHODOLOGY

Need For The Study

Risk management' or investment helps investors ineffective and efficient of their investment to achieve this goal. The rapid growth of capital markets in India has opened up new investment avenues for investors. The stock markets have become attractive investment options for the common man. But the need is to be able to effectively and efficiently manage investments in order to keep maximum returns with minimum risk. Hence this study on RISK MANAGEMENT' to examine the role process and merits of effective investment management and decision

Scope Of The 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.

DATA COLLECTION

The study is both descriptive and analytical in nature. It is a blend of primary data and secondary data. The primary data has been collected personally by approaching the online share traders who are engaged in share market. The data are collected with a carefully prepared questionnaire. The secondary data has been collected from the books, journals and websites which deal with online share trading.

Source of data

Primary Sources: The primary data was collected through structured unbiased questionnaire and personal interviews of investors. For this purpose questionnaire included were both open ended & close ended & multiple-choice questions. Secondary method: The secondary data collection method includes:

- Websites
- Journals
- Text books

Method Used For Analysis of Study

The methodology used for this purpose is Survey and Questionnaire Method. It is a time consuming and expensive method and requires more administrative planning and supervision. It is also subjective to interviewer bias or distortion.

Sample Size: 100 respondents

Sampling Unit: Businessmen, Government Servant, Retired Individuals

STATISTICAL TOOLS:

MS-excel and pie and bar diagrams are used to analyze the data.

HYPOTHESIS OF THE STUDY:

H0- Banks with higher profitability have lower loan losses (Non-Performing Loans/ Total Loans).

H1- Banks with higher interest income (net interest/Average total assets, interest net /total income) also have lower bad loans.

4. DATA ANALYSIS & INTERPRETATION

Calculation of return of WIPRO

Year	Beginning price(Rs)	Ending price(Rs)	Dividend(Rs)
2018-2019	2052.00	748.8	29.00
2019-2020	755.00	463.35	5.00
2020-2021	462.00	605.9	5.00
2021-2022	603.00	525.65	8.00
2022-2023	521.54	635.68	8.50

Return=Dividend+(Ending Price-Beginning price)

Beginning Price

$$\text{Return(2018)} = 29.00 + (748.8 - 2052.00) * 100 = -55.60\%$$

$$\text{Return(2019)} = 5.00 + (463.35 - 755.00) * 100 = -37.96\%$$

$$\text{Return(2020)} = 5.00 + (605.9 - 462.00) * 100 = 32.23\%$$

$$\text{Return(2021)} = 8.00 + (525.65 - 603.00) * 100 = -11.5\%$$

$$\text{Return(2022)} = 8.50 + (635.68 - 521.54) * 100 = 23.51\%$$

Calculation of return of CIPLA

Year	Beginning price(Rs)	Ending price(Rs)	Dividend(Rs)
2018-2019	898.00	1671.05	10.00
2019-2020	1634.00	320.8	3.00
2020-2021	320.00	448	3.50
2021-2022	447.95	251.35	2.00
2022-2023	251.5	215.65	2.00

Return=Dividend+(Ending Price-Beginning price)

Beginning Price

$$\text{Return(2018)} = 10.00 + (1675.05 - 898.00) * 100 = 54.23\%$$

$$\text{Return(2019)} = 3.00 + (320.8 - 1634.00) * 100 = -75.95\%$$

$$\text{Return(2020)} = 3.50 + (448 - 320.00) * 100 = 41.09\%$$

$$\text{Return(2021)} = 2.00 + (251.35 - 447.95) * 100 = -43.44\%$$

$$\text{Return(2022)} = 2.00 + (215.65 - 251.5) * 100 = -17.65\%$$

Calculation of return of RANBAXY

Year	Beginning price(Rs)	Ending price(Rs)	Dividend(Rs)
2018-2019	598.45	1095.25	18.00
2019-2020	1109.00	1551.18	20.00
2020-2021	1568	362.75	17.50
2021-2022	363	391.8	8.50
2022-2023	391	425.5	8.50

Return=Dividend+(Ending Price-Beginning price)

Beginning Price

$$\text{Return(2018)} = 18.00 + (1095.25 - 598.45) * 100 = 85.52\%$$

$$\text{Return(2019)} = 20.00 + (1551.18 - 1109.00) * 100 = 17.35\%$$

Return(2020) = $17.50 + (362.75 - 1568.00) \times 100 = -70.24\%$
1568.00

Return(2021) = $8.50 + (391.8 - 363) \times 100 = 10.27\%$
363

Return(2022) = $8.50 + (425.5 - 391.00) \times 100 = 10.99\%$
391.00

Calculation of return of BAJAJ AUTO

Year	Beginning price(Rs)	Ending price(Rs)	Dividend(Rs)
2018-2019	502	1166.3	17.00
2019-2020	1155.05	1161.2	25.00
2020-2021	1179.00	2001.1	25.00
2021-2022	2022.00	2620.18	40.00
2022-2023	2648.65	2627.9	40.00

Return = Dividend + (Ending Price - Beginning p

Beginning Price

Return(2018) = $17.00 + (1166.3 - 502) \times 100 = 159.17\%$
502

Return(2019) = $25.00 + (1161.2 - 1155.05) \times 100 = 2.77\%$
1155.05

Return(2020) = $25.00 + (2001.1 - 1179.00) \times 100 = 76.34\%$
1179.00

Return(2021) = $40.00 + (2620.18 - 2022.00) \times 100 = 31.9\%$
2022.00

Return(2022) = $40.00 + (2627.9 - 2648.65) \times 100 = 0.726\%$
2648.65

Calculation of standard deviation of WIPRO

Year	Return (R)	$\bar{R}$	$\bar{R} - R$	$-(R - \bar{R})^2$
2018-2019	-55.6	-9.482	-46.15	2156.86992
2019-2020	-37.96	-9.482	-28.48	810.996484
2020-2021	32.23	-9.482	41.715	2039.89094
2021-2022	-11.5	-9.482	-2.020	4.072324
2022-2023	25.42	-9.482	34.902	1520.1796
	-47.41			5899.97928

Average (R) = $\sum R = -47.41 = -9.48$

N = 5

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Variance = $1/n-1 \sum (R-R)^2$

Standard Deviation = $\sqrt{\text{Variance}}$

= $\sqrt{1 (5899.97)}$

4

= 70.24

Calculation of standard deviation of CIPLA

Year	Return (R)	$\bar{R}$	$R - \bar{R}$	$(R - \bar{R})^2$
2018-2019	54.23	-7.744	61.974	3840
2019-2020	-75.95	-7.744	-68.206	4652
2020-2021	41.09	-7.744	48.834	2384
2021-2022	-43.44	-7.744	-35.696	1574
2022-2023	-17.65	-7.744	-6.906	47.692
	-38.72			15207.692

$$\text{Average } (R) = \sum R = -38.72 = -7.744$$

$$N = 5$$

$$\text{Variance} = 1/n-1 \sum (R - \bar{R})^2$$

$$\text{Standard Deviation} = \sqrt{\text{Variance}}$$

$$= \sqrt{1 (15207.692)}$$

$$4$$

$$= 55.22$$

5. CONCLUSION

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 & CIPLA 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.

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