Report

on

AN EMPIRICAL STUDY ON INVESTMENT AND PORTFOLIO ANALYSIS

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CERTIFICATE

This is to certify that research report on **An Empirical Study on: Investment and Portfolio Management** which is submitted by **AKASHDEEP KUMAR (2K18/MBA/720) and SHUBHAM GUPTA (2K18/MBA/745)** in partial fulfilment of the requirement for the award of degree MBA, in Finance and Marketing to Delhi Technological University, East Delhi Campus is a evidence of the candidate own work carried out by him under my supervision. The content embodied in this report is unique and has not been submitted for the honour of some other degree.

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DECLARATION

This is to certify that Research Report on An Empirical Study On: Investment and Portfolio Management which is submitted by us in partial fulfilment of the requirement for the award of degree MBA, in Finance and Information Technology to Delhi Technological University, East Delhi Campus comprises of my original work, and due acknowledgment has been made in the text to all other material used.

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He played a key role in the preparation of our major research project. I would like to extend our deepest gratitude and special thanks to our mentor who in spite of being extraordinarily busy with his duties, took time out to hear, guide and keep us on the correct path. He has served as a beacon of light. His patience and faith in our capabilities boosted our morale.

EXECUTIVE SUMMARY

An investment is basically an impose of cash which is in current and assets of different types that can be used for future leverage. Today there are a number of ways investment is present. Period and Risk are considered to be the main parts for an investment. The investigation of security is the principal part of the examination and it revolves on the risk breakdown and character spasms return through which components of the accessible investment choices.Picking up the portfolio which is the most ideal from those which are basically the arrangement of the accessible portfolio alternatives, this is the second part of process.

Construction of a portfolio and maintaining it is a vast process. Portfolio managers must respond to the changes which are the value in the market which has changed over the time. The amendments of portfolios that are coming at different intervals is a procedure which is done beforehand, this is what the requirement of the portfolio executives.

Research has been done by random sampling (simple) with the help of questionnaires that have been forwarded to the sample population(investor).The investors of different backgrounds were taken who are investing in the in the different portfolios and hence different weightage is given to the stock .Therefore researcher has able to collect the insights which might differ according to the different economic conditions of the investors, and also the monetary situations which they have spend in that portfolio. Hence 180 samples have been collected by the researcher.

Researcher has done the assessment of various investors, the conclusion and results are drawn from the findings by understanding those investors.

OBJECTIVES OF THE STUDY

- To identify the different factors that provide a sense of motivation to the investors to invest in shares.
- To suggest some strategies so as the investors can maintain their return on investment
- To develop the portfolio which will provide more and more profit with less risk.
- To select companies and analysis on their return.
- To select companies and analysis on the risk.
- To select companies and analysis on the calculated risk and return and portfolio calculation designed for both combinations.
- To select a portfolio and analysis is run.
- To find out the best portfolio and analysis is performed.
- To find out the effect of when investment is diversified.

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CHAPTER 1: INTRODUCTION

We turn towards the stock markets hoping to bring in enormous cash. However, a dominant part of times we fall prey to over excitement and free for all. The difficulty is that numerous investors add an ever-increasing number of stocks to their portfolio with the expectation that the mass will offer an approach to greater bucks. However, loading up on pointless investments is probably going to make you ten strides in reverse as opposed to two stages forward.

Investment is a fine art. It takes information about the financial exchange, however more critically it requires a system. The top investors don't arrive by storing, however rather know the estimation of a planned methodology.

While it might require some investment to turn into a pro investor, you can begin with the essentials and stir your way up from that point. The initial step to prevailing in your lucrative objective is to deliberately make a portfolio which works for you best.

The aftereffects of scholarly investigations have demonstrated that asset allocation is the most significant determinant of portfolio return. Most investors—both individual and institutional—hold a diverse portfolio investment as opposed to a portfolio gathered in only a couple of investments. A key purpose behind this diversification is the longing to manage risks, which is steady with the adage, "Don't tie up your resources in one place”

YOUR INVESTMENT PORTFOLIO

A portfolio is basically a record of your earnings and losses. Any advantage which can at last obtain a benefit, for example, land, stocks or different investments is viewed as a vital part of this arrangement of your equity.

Working up a solid investment collection is a bit by bit process. The specialty of making a gainful portfolio lies in tailor-production to fit the objectives and impediments of the investor. Before you start to choose your investments, you should decide how open minded you are of the

risk in question. On the off chance that you base your choices on your risk profile, it will promise you some genuine feelings of serenity. Another point to consider while making your portfolio is that broadening is your security net. Having a decent blend of investments is the way to limiting danger while developing your benefits.

Aside from these fundamentals, a beneficial portfolio relies on being very much kept up. The whole exercise of remaining refreshed about the financial exchange and investigating different dangers and returns can be incredibly disorderly. To facilitate the procedure, you should make some requests and this is the place portfolio the board becomes an integral factor.

risk and time period are major points while doing an investment. The main task is security investigation and then picking the most ideal portfolio considering risk and return.the portfolio manager must keep up with the changes.

Portfolio Management has an incredible scope of sub components. To give some examples, what are the thought processes, the equity creation yet additionally the social results of Portfolio Management? In this proposition one sub component concerning Portfolio Management will be examined both hypothetically just as exactly, to be specific the Perception of Investors on their Portfolio. The fundamental inquiry that will be addressed is in this way:

Why many of the investors tend to have the return as the most important criteria while other things which are risk, principal etc. is there too?

So as to address this inquiry, we will initially take a gander at the Types of Risk, Investment Alternatives, Evaluation measures for portfolio, how an ideal portfolio resemble, Use of CAPM Model in Portfolio Construction, Steps utilized by Investment firms in Building a Portfolio, Importance of Diversification, how a Portfolio is overseen and assessed, Incorporation of ESG, Use of different Models like Sharpe Ratio, Treynor Ratio.

The initial segment of the report will manage a writing audit on Portfolio Management all in all. In the second piece of the thesis there is an exact research about the Investors Perception on Risk and Portfolio Management. The last part contains a short outline and will likewise cover the confinements of the research, the primary conclusions and a few recommendations.

CHAPTER 2-LITERATURE REVIEW

- **Research paper:**

How Investment Analysis & Portfolio Management greatly focuses on portfolio construction?

As indicated by Author Md. Enamul Kabir, 2017, This paper spreads out Portfolio Construction is a capstone elective that draws on recently considered investment principles, hypotheses and procedures. It empowers integrate that procured money related hypotheses and information with regards to portfolio development and resource designation. It centres around holes in principle and how they can be overseen practically speaking.

The portfolio is an assortment of investment instruments like shares, mutual funds, bonds, FDs and other money counterparts, and so forth. Portfolio as a vast is the process of choosing the right investment option in the correct way to obtain desired return by considering risk factors for future periods.

Portfolio is known as an assembly of advantages. The portfolio provides a possibility to broaden the given possibility. Diversification of risk doesn't imply that there will be an elimination of risk. With each advantage, there is a connection of two sorts of risks: diversifiable/novel /unexplained/ unsystematic risk and undiversifiable/market risk/clarified/orderly risks. Indeed, even an ideal portfolio can not kill advertised risk, yet can just lessen or dispense with the diversifiable risk. When risks diminish, the fluctuation of return decreases.

Best portfolio the executives practice runs on the rule of least risk and most extreme return inside a given time span. A portfolio is constructed dependent on investor's pay, venture spending plan and risk hunger remembering the normal pace of return.

Balancing the Risk in the customer portfolio and also the Return (Crina O.Tarasi and Michael D.Hutt along with Ruth N. Bolton and Beth A. walker)

This research paper shows how finance portfolio hypothesis gives a sorting out System for: -

(1) Client portfolio falsity identification,

(2) Market fragments closeness evaluation,

(3) Segregating compensation that is on fluctuation that singular clients or portions give.

Utilizing the (7 year)arrangement of client information through a huge b2b organisation, how risk and return can be used to portray the market portion which is used by the creator. After that they also find the associations proficient portfolio and also test it.

(1) Current Portfolio

(2) An Imaginary maximisation of the profit of the portfolio.

At that point, utilizing the testing, creators also showed the (productive)portfolio has reliably fluctuation which is lower than current client blend & profitably maximum(portfolio). Also creators give rules to consolidate a risk overlay into built up client board structures. The methodology is particularly appropriate for b2b organisations which serve to advertise portions drawn from differing divisions of economy.

2.1 Systematic risk, specific risk and diversification

How well investment chance is overseen is a key determinant of the accomplishment of venture the board. Risk happens when there is vulnerability—implying that an assortment of results are conceivable from a specific circumstance or activity. In investment terms, risk is the likelihood that the genuine acknowledged profit for a venture will be some different option from the arrival initially expected on the venture. There will be times when the arrival neglects to meet an investor's desires and times when the arrival surpasses desires. Changes in the costs and estimations of investments (capital increases and misfortunes) mirror the danger of contributing. Salary (e.g., profits and intrigue) may likewise vary based on what was normal. Most investors lean toward more significant yields and lower dangers. That is, they incline toward better results and more conviction, every single other thing being equivalent. The exchange off among return and risk is an important issue in the investment in the board. Regularly, the higher the danger of a venture, the higher the normal return; the lesser the risk, the lesser the normal returns.

Systematic risk

Risk made by general monetary conditions is known as efficient or market chance on the grounds that the risk originates from the more extensive financial framework. For instance, if the economy enters a downturn, numerous organizations will see a downturn in their incomes and benefits.

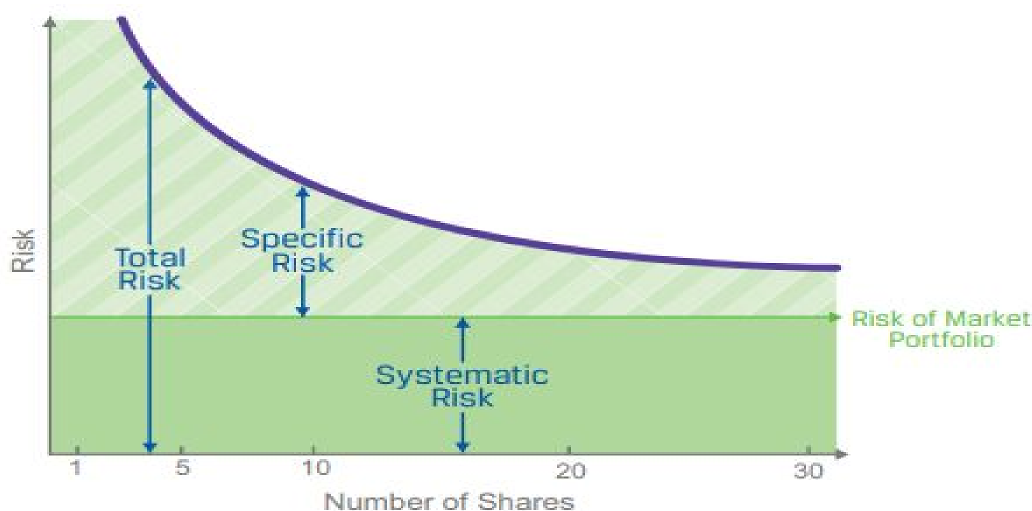
Specific risk: Risk that is explicit to a specific organization or security is differently known as explicit, eccentric, non-efficient, or unsystematic risk. Models incorporate the offer equity reaction when an organization dispatches a fruitful new item (e.g., the Apple iPad) or the reaction to the negative news that a promising new medication has flopped in preliminaries.

Expanding an equity portfolio by including various sorts of investments, for example, land, won't kill orderly risk since rents and land esteems are influenced by indistinguishable wide financial conditions from the securities exchange. Since orderly risk can't be dodged or enhanced away and, on the grounds, that risk is unwanted, investors must be made up for taking on deliberate risk. More introduction to orderly risk will in general be related with higher anticipated returns over the long haul. There are a few estimates which are utilized to quantify risk, for example,

- Beta,
- Standard Deviation,
- Variance
- Dispersion

Diversification

Diversification is one of the most significant standards of contributing. At the point when resources and additionally resource classes with various qualities are joined in a portfolio, the general degree of risk is regularly diminished.



Specific risk is seen to be the highest at the left side of the graph and lowest at the right side of the graph because much of specific risk is diverse away. Diversification is spreading danger and compensation inside a benefit class. Although it is very difficult to talk about the subset of a benefit class (or segment)they probably are going to revolve around each other, it tries to improve the profits of the whole after some time while lessening instability at some random time. Genuine diversification is made across different classes of protections, areas of the economy, and land districts.

Rebalancing

Rebalancing is utilized to maintain and restore any given portfolio to the unique objective designation at ordinary interludes, generally every year. This is done to re-establish the first resource blend when the developments of the business sectors constrain it messed up.

For example, any portfolio that starts with 70% equity and 30% of fixed-salary assignment could, after an encompassing business sector parade, move to the 80/20 allocation. The investor has made a decent benefit; however, the portfolio currently has more risk than the investor can endure.

Rebalancing for the most part includes selling costly protections and giving that cash something to do in lower-equity and undesirable protections.

The yearly exercise of rebalancing permits the investor to receive profit and also help in the development of the high potential parts while lining up the portfolio with the first risk/ return profile.

2.2 Investment Alternatives:

Every benefit class has its own benefits and negative marks. Investors assess every one of these advantages dependent on different factors. Such factors which decide the decision of an investment purpose have been the subject of study for scholastics since long. Dr. Rama (2015) studied and found that wellbeing, returns and liquidity are the essential worries for investors, trailed by worries about nonattendance of section boundary, charge productivity and income viability. Allotment in every one of these benefit classes should be an accomplished choice. Dzikeviciusand Vetrov (2012) consolidated business cycle and resource portion hypotheses by including important data about execution of advantage classes during various periods of the

business cycle and exhibited that distinctive resource classes have diverse return/chance attributes over the business cycle. They along these lines exhibited how business cycle approach can be utilized for dynamic. Most definitely, return and unpredictability for both the list are dissipated over some stretch of time where risk disinclined investors are eager to submit immense add up to high risk exchanges trusting that market limits all data and responds quickly towards news stuns (Shanthi, Thamilselvan, & Srinivasan, 2015). Likewise, the nearness of regularity in the securities exchange makes the equity costs unsurprising dependent on past examples.

Debt is another noteworthy resource class for the investors and the significant debt instruments are the bonds, for the most part the administration protections. Security returns rely upon changes in macroeconomic factors, for example, anticipated swelling, long haul loan fee, cash flexibly, forex savings, swapping scale and LIBOR (Thenmozhi &Karthika, 2014).

In general, gold has been seen as a significant resource class that can improve the risk balanced execution of a very much enhanced arrangement of stocks while going about as a fence against different market and macroeconomic investors (Dilip, 2014).

Another advantage class which has picked up noticeable quality with the quickly developing economy of India is land. Physical property, REITS, land common assets and land stocks are the roads accessible for putting resources into land in India. In any case, the land markets were found to neglect to meet desires for the protections trade in India more than 1998-2005 notwithstanding the way that there was some improvement in their introduction in later years (Graeme &Rajeev, 2007).

Any investor generally has a wide range of investment options for example:

Financial Assets (Non Marketable)

The most decent part of investment alternatives is through various non- marketable options. They can be of various types of deposits such as post office, bank, company and provident fund

Equity Shares

Bonds

Bonds is a type of fixed income that portrays a loan made by any investor to the borrower(usually government or corporate). Some examples of bonds are Preference Shares, PSU, Security by government agencies, savings, government Securities.

Instruments(Money Markets)

These are known as debt securities which usually give the owner the unreserved right to receive a fixed sum of money on any particular date.Certificate of deposits, Commercial paper and Treasury Bills.

Mutual Funds

Schemes like Debt, Equity and balanced.

Life cover

Coverage can be seen as a venture in life insurance. The various kinds of policies are payback, confirmation(Endowment).

Real Estate

It is a real, tangible property made up of land and buildings, animals and natural resources such as Residential real estates, Commercial.

Financial derivatives

2.3 Investment Evaluation

Venture Evaluation is the two-spread errand of adjusting experience chance against anticipated return. While assessing a venture accentuation ought to be laid on the solicitation "Will the common return legitimize the danger?" rather than on "What is the pace of return? "we can expand the customers' sources and utilizations of advantages for the top tier timespans.

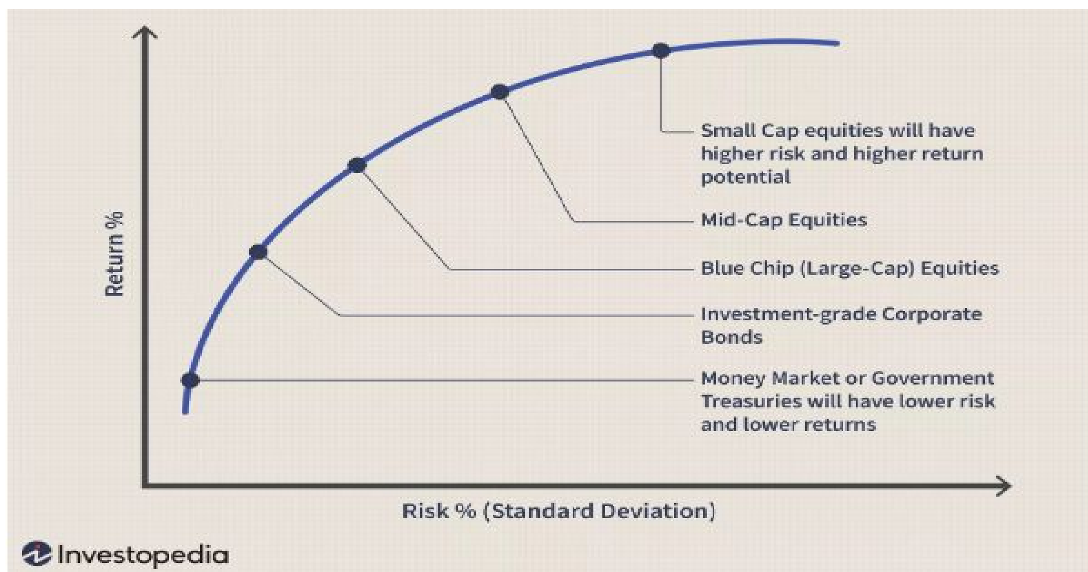
- Widely utilized systems for venture assessment are reward period, inside pace of return and net present worth. Each gives some degree of the surveyed return on an undertaking dependent on different questions and venture skylines.
- When a future undertaking is inspected, we see its cost versus its compensation. Cost is the money flood required for the undertaking and pay joins the future remuneration stream just as the benefits from the proposition of the speculation toward the fruition of a period length (considering the way that cash has a period respect, the undertaking's pay rates must be recorded

as they are relied on to happen).

How to Achieve Strategic Optimal Asset Allocation?

Key resource assignment is the drawn-out blend of advantages that is required to meet the investor's objectives. The ideal generally speaking danger and return profile of the portfolio is a factor in deciding the vital resource distribution. A portfolio with a key resource distribution ruled by equities would be required to have a better yield and be more unstable than a portfolio ruled by, state, securities since securities by and large have lower risk than equities and accordingly produce lower returns. The key resource portion that is reasonable for one investor may not be appropriate for another.This implies diversification into various sources i.e. stocks, securities and bonds.There are 3 classes of stocks which are subclasses:

- large cap stocks:- with the market capital of 10billion $ companies.
- mid capital stocks:- with the market capital between 2billion $ and 10 billion $ companies.
- small capital stocks:-with the market capital of under 2 billion $.
- International securities/bonds:- security issued by remote company
- emerging markets:- developing countries financial market
- money market:- investment in treasury bills and bonds
- real estate investment funds:- share in pool of real estate and home loan securities



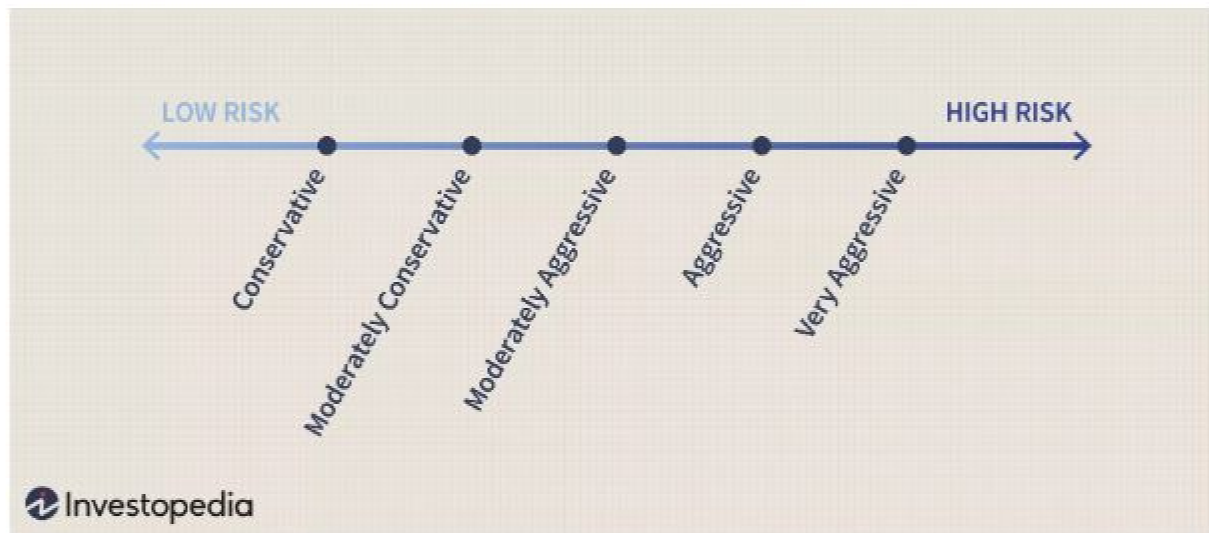
This figure shows the risk- return tradeoff.

Picking What's Right for You

The portfolio manager must consider the risk, time and available money with the investor to make the portfolio optimal.

Various portfolio companies model portfolios with different degrees of advantage and risk as per each investor profile.

The portfolio model are categorised from conservative to very aggressive



Security screening

Picking right stocks is an art. Every investor before investing must screen the stock i.e. measure company overall performance, measuring risk and cash flow

Why is screening needed ?

It is important as time is a very crucial factor in decision making as an investor has to decide upon when to invest in a limited time window and money available. A good screening benefits in long term

What exactly makes the screen good ?

An investor should do the background check of the company. he/she can look into various insights provided by Moody and s&p. A good strategy would be it can look into trade volume, simple moving average, r.s.i , cash flows and other ratios.

Acceptance by the user.

A good screen loses its value if investors disagree with it.

2.4 What does a manager do in portfolio management?

Different Styles of investment

The various styles of contributing by and large alludes to the investment theory that an administrator utilizes in their endeavors to include esteem. So as to address the inquiry, "What does a portfolio director do?", we need to take a gander at the different contributing styles they may utilize. A few classifications of significant contributing styles incorporate little versus enormous, esteem versus development, dynamic versus detached, and force versus contrarian.

Little versus huge styles allude to the inclination for supplies of little top (showcase capitalization) organizations or enormous top stocks.

Worth versus development styles depend on an inclination between concentrating on current valuation versus examination concentrated on future development potential.

Dynamic versus inactive contributing styles allude to the overall degree of dynamic contributing that the portfolio supervisor wants to take part in. Dynamic portfolio the board expects to beat benchmark lists, while latent contributing plans to coordinate benchmark record execution.

The data proportion is determined by

$Ip = [(S_p-S_f)- \beta(S_m-S_f)]/\omega = \alpha/\omega$,

where ω talks about the rish which is unsystematic.

As the numerator is esteem included, and the denominator is the risk taken so as to accomplish the additional worth, it is the most helpful device to evaluate the prize to-danger of an administrator's worth included

2.5 Different types of management of portfolio

Active

The main purpose of the investor will always be to gain more from the stock index and basically outperform the usual rate of return. In this the managers buy equity when it is low and sell when

it is climbing. This type of management involves quantitative analysis of the company and looks at various charts and ratios. The active manager prefers diversification to minimize risk.

Passive

Passive management is basically the opposite of active management. They prefer to invest in stocks even though having low turnover but good long term benefit. It focuses on profit through stability.

Discretionary

Here if anyone talks about managers they have given full control for managing investors' funds with investor goals and time taken in frame.

Non- Discretionary

Managers will be acting as a counselor for the investor so that they(investor) can decide upon where to put its investment.

Financial Models

- Capital asset pricing
- Sharpe
- Treynor Index.
- Modern theory of portfolio
- Value at risk.
- Jensen Index.

2.6 Traditional performance Models

- **Capital Asset Pricing Model (CAPM)**

An Empirical Testing of Capital Asset Pricing Model in India (Shweta Bajpai,Anil k. Sharma, May 2015)

This research paper focuses on testing of (CAPM) in the Indian equity market. The paper was conducted for a period ranging from January 2004-December 2013 and the data was historical data for 10 years. This study was done with rolling regression methodology. Further, the model developed for the second stage regression is a constrained model, in which the intercept term is assumed to be zero. A comparison between the developed model and the traditional model, has

been made. The results showed that CAPM is very much significant in the Indian equity market and the model developed in this study performs better than the traditional model.

Capm model is used to show the risk and return relationship while investing in the stock market. It is used to find out the expected return that an investor can earn. A risk premium is higher than risk free rate i.e. treasury bill

$S_a = S_{rf} + \beta_a * (S_m - S_{rf})$

According to above formula

S_a = Expected return on a security

S_{rf} = Risk-free rate

S_m = Expected return of the market

β_a = The beta of the security

$(S_m - S_{rf})$ =Equity market premium

Beta represented here is measurement of risk in relation to market index. A company having higher beta has great risk but so is the return.

Why is CAPM necessary ?

CAPM gives the idea of return and risk to the investor.it takes into account systematic risk of the investment

Basic assumptions which are made in CAPM:

- Investors are unwilling to take risks.
- Investors need high returns for their portfolio over a specific period of time.
- Investors expect high for identical subjective estimates i.e. variance, mean and also covariance in the returns.
- Investors can lend and borrow freely at a rate of return which is risk free..
- The investment market is free of taxes and there are no transaction costs, market is competitive and securities are dissolvable.
- Security risk is given in the market.

- **Jensen's performance index**

Michael Jensen in 1968 gave the theory of Jensen's Performance Index

When given a normal return in any portfolio, this index is used to discover the unusual return of any resources related to money such as shares, securities etc.

Furthermore, it is also known as Jensen's alpha, financial specialists lean toward portfolios that have positive return or positive value of alpha.

Jensen's formula = PR(Portfolio Return) – [Portfolio beta + Risk free rate * (Risk Free Rate-Market Return)

$$\alpha_J = S_i - [S_f + BETA_{iM}. (S_i - S_f)]$$

- **Sharpe Model**

Nobel Laureate Willam F. Sharpe on his name Sharpe extent name was given as it was made by him. It helps various budgetary experts which help them to understand the appearance of an endeavour that comes out due to its danger. The stretch is typically the earning of the return in plentitude of the risk free rate which is per unit of the hard or fast risk.

By removing the risk rates from the mean return, it provides certain advantages to the examiner that is related to the risk taking activities. Estimation of the sharpe index is essential but also it is essential to get the more appealing return by adjusting the risk.

SR = (AFR- RFR)/SD

SR= Sharpe Ratio

AFR= Average fund returns

RFR= Risk free Rate

SD= Standard deviation of fund returns

which means SRof stock is 1.25 per annum, while the stock generates extra 1.25% returns for every 1% additional yearly risk. Higher the SD will earn high returns to maintain its SR at high levels. Hence it can also be said that conversely that to achieve higher SR by earning moderate returns consistently.

- **Treynor Index**

The Treynor proportion, otherwise called the volatility and reward ratio, is used to decide for every unit of risk taken by any portfolio, how much return can be produced for that particular

unit.

Risk in the given Treynor proportion refers to methodical risk as found out by any portfolio's value of beta. It gives the value of any portfolio changes due to the changes in:

Formula :

$TR = s_p - s_f / beta_p$

where :

s_p= portfolio return

s_f= risk free rate

$beta_p$= beta of the portfolio

Distinction between the two measurements Sharpe and Treynor is that the Treynor proportion uses a portfolio beta, or precise hazard, to gauge instability as opposed to changing portfolio returns utilizing the portfolio's standard deviation as finished with the Sharpe proportion.

- **Value at risk model**

Incentive of the Risk Model was given to ascertain that type of risk which is associated with the money related market. Markets dealing in money are stated with dangers or vulnerability on the profits that are supposed to be earned in near future on different options of investment.

The calculated risk included and the calculated misfortune on estimation of the given portfolio for a specific timeframe is characterized as an incentive in danger model.

Incentive in this particular is utilized using monetary specialists which appraises risk associated with the money related portfolio over a given timeframe.

Post modern- portfolio theory

How investors can use the method of diversification to make their investment better and how any risky asset can be priced is known as PMPT.

Overview

This framework was given by Harry Markowitz and it gives the risk/return system for different investment options. It gave a way to deal with the choice and portfolio of the board. However, there are significant confinements to the first MPT definition.

Limitation

The 2 basic limitations that are given in MPT and its assumptions are;

- variance shows portfolio risk
- The return of the portfolio can be shown by the normal distribution curve.

Expressed in a different manner, this theory is restricted with proportions of return and risk that don't generally speak to the real factors of the venture markets.

- Typical circulation and the standard deviation is significant down to earth restriction: they are even. Utilizing this gives or infers that other than half-anticipated returns found out to be similarly as risky as the profits which are more regrettable than the anticipated. Besides, utilizing typical dispersion using demonstration of the example venture returns gives investment results with the drawback return seem higher risky than they originally are, the other way around comes back with progressively a power of drawback returns. The outcome is that utilizing conventional MPT methods for estimating venture portfolio development and assessment every now and again mutilates investment realty.
- For quite some time it has been perceived that investors usually don't perceive the risk and thus fail to achieve portfolio objectives. They don't take account of the risk factors and buy whatever is shown to them by their portfolio manager. Markowitz recommends selection of a model by analysing various portfolio securities; he suggests that the portfolio assessment should be done by analysing the mean and the standard deviation.Sortino ratio was introduced in pmpt theory that replaced the sharpe ratio and improved upon reliability in investment results.
- Current advancements in the budgetary/portfolio theory, joined the present handling power of the electronics and hence further have crushed the limitations. The ensuing broadened hazard/risk perspective is stated as PMPT. Thus, this theory ends up being just an (even) one of a kind occurrence of PMPT.

Chapter 3-ESG Factor Fund Reports & Portfolio Screenings

Resource proprietors and chiefs are progressively mindful of the potential risk and effect that ecological, social and administration (ESG) components can have on the drawn-out risk and return profile of assets and investment portfolios. In any case, it stays a test to adequately assess a portfolio's ESG dangers and to survey how ESG factors are coordinated into the venture procedure

Why use ESG as a risk management factor?

It can help by giving a goal and normalized system for estimating and benchmarking ESG qualities and for assessing the risk profile of assets and individual portfolios. The multi-dimensional risk evaluations given at store and portfolio level permit customers to gauge the material ESG introduction of portfolios.

Environmental gauges may consolidate an association's imperativeness based on the pollution waste generated, way of treating animals. Survey and natural risk can be used for measuring that might face association and hence how to manage those threats. For example, the obligation on the land which is causing waste which is hazardous, there might be harmful radiations or they have followed the government guidelines or not these are the issues related to the land.

Business association can be seen from the social principles. Collection of old work with another party(supplier) which can hold the different properties from its purpose of hold. what level of advantage is achieved from the association by the system to do the excretion there. What are the working conditions and hence do the association shows the high regarding its security and prosperity.

In a firm, specialists should understand associations of the uses of the exact and accounting in (direct) accounting systems and hence the predictors able to cover up the major issues. Since they like to require the certificates that associations may not think about the various conditions in their options of board of people, hence not to use any responsibility which is political to get a good treatment which they should not get and that leads to unlawful practice in the firm.

ESG Fund Screening

The view of the reserve's portfolio property the technique empowers investors to separate the

individual offer and effect of a store's basic organization's ESG Company Assessments separately Ratings. Therefore, the whole ESG factor of a store's portfolio can be determined.

The ESG Fund Screening gives multi-dimensional risk evaluations at the portfolio level permitting to gauge the material ecological, social and administration (ESG) introduction of portfolios. The ESG Screening Analytics can help by giving a goal, normalized system for estimating and benchmarking the ESG qualities and risk profile of portfolios.

Lately, as more youthful investors, specifically, have indicated an enthusiasm for keeping cash, financier organisations and common reserve organizations are started with to provide trade exchanged assets (ETFs) and other money related items that follow ESG models. Robo-counselors, for example, wealth front and other they have started to utilize by speaking to the investor. As a result from the reports of the United states it can be observed that 11.6$ trillion are picked by the models in the starting of the 2018,it went up to 8.1$trillion in next two years.

CHAPTER – 4 RESEARCH METHODOLOGY

4.1 INTRODUCTION

Research on this will help us to outline the study design, the methods of data collection and the analytical procedure of the study.

4.2 RESEARCH DESIGN

Our first assignment is to recognize an achievable strategy for information assortment for our exploration. We chose to continue with the technique for looking over for the information assortment. Through looking over, we will gather an essential arrangement of information. This technique would check the outer legitimacy of our examination. Chosen heterogeneous examples would speak to the populace who put resources into certain methods for venture. Our intended interest group for the overview will be investors, people and business workforce. We would focus on an example size of around l80. We would be then breaking down the investor that impacts the investment choices utilizing Tableau and thus give our investigation to the equivalent.

Our secondary task is selection of 2 sample companies from NIFTY 50 and analyse their individual risk and return using CAPM model and what would be the portfolio risk and return if both the companies are selected in portfolio with a combined weightage (means if invested equally in both companies) using Microsoft excel and hence provide our analysis for same.

Sample Design

Technique- Simple sampling(random)

Sample size- l80 respondent

Sampling area- India

Second Sampling technique- 2 Companies of different sectors are selected.

Sample universe: - Companies listed & traded in NSE NIFTY 50

Data Source:

Questionnaire(for primary data)

Journals, websites (for secondary data)

LIMITATIONS OF RESEARCH

- Size of the test is very much restricted i.e. 2 for various parts.
- To find the risk and return of the portfolio hence CAPM and various portfolios are used.
- It can be expressed as a mix of stocks where they are examined for the protections of 2, which will help in the simple exploration and also increasingly justifiable. It might(portfolio at least 2) give a bigger picture of the executives portfolio.
- Equal weightage has been given during the development of the portfolio accordingly return and risk will change.
- The information has been gathered from the timespan of one budgetary year beginning from April 2010 to March 2020.
- The information is for the most part gathered from aide sources so it might be possible that the significance may not be completely trusted.

CHAPTER 5- DATA ANALYSIS AND INTERPRETATIONS

Risks and Returns of HDFC BANK AND BHARTI AIRTEL using NIFTY 50 as Benchmark Index

We downloaded monthly historical data of HDFC Bank, BHARTI AIRTEL and NIFTY 50(to keep as Benchmark) of last 10 years (2010-2020) and calculated: -

- The monthly return using logarithm formula,
- Average monthly return of each stock and when combined as a Portfolio
- risk (using standard deviation) of each HDFC and BHARTI AIRTEL and when combined as a portfolio
- correlation between both stocks,
- Beta (using Regression analysis) of each stock and when combined as portfolio
- We assumed a Risk free rate at 8% yearly and converted it to monthly as we were using monthly data.
- We also assumed weights i.e. amount of investments in stocks as 50%.

We calculated the expected return of each portfolio using CAPM Model formula.

HDFC BANK			Bharti Airtel			NIFTY 50								
Date	Open	log returns	Date	Open	log returns	Date	Open	log returns			HDFC BANK	Bharti Airtel	NIFTY 50	Weight(assumed)
Jun-10	188.97		Jun-10	241.573		Jun-10	5086.25			Avg. Returns	1.36%	0.62%	0.53%	0.5
Jul-10	191.2	0.0117317	Jul-10	241.481	-0.0003809	Jul-10	5312.05	0.043437		Standard Deviation	0.064	0.088		0.5
Aug-10	213	0.1079722	Aug-10	282.799	0.1579456	Aug-10	5369.55	0.0107663		Correlation	0.41			
Sep-10	213.555	0.0026022	Sep-10	302.081	0.0659587	Sep-10	5403.05	0.0062195		Beta	1.07	0.78		
Oct-10	249.2	0.1543614	Oct-10	339.818	0.117715	Oct-10	6030.3	0.1098332		Risk-free Rate (assumed)	0.6%			
Nov-10	229.8	-0.0810464	Nov-10	302.081	-0.117715	Nov-10	6092.3	0.0102289		Exp. Return CAPM	0.52%	0.54%		
Dec-10	228.855	-0.0041208	Dec-10	328.249	0.0830773	Dec-10	5871	-0.0370007						
Jan-11	237	0.0349715	Jan-11	331.371	0.0094662	Jan-11	6177.45	0.0508806		Portfolio Return	0.53%			
Feb-11	207.69	-0.1320135	Feb-11	298.408	-0.104777	Feb-11	5537.3	-0.1093986		Portfolio Beta	0.93			
Mar-11	207.48	-0.0010117	Mar-11	304.009	0.0185957	Mar-11	5382	-0.0284469		Portfolio Risk	0.41%			
Apr-11	235.3	0.1258264	Apr-11	325.586	0.0685693	Apr-11	5835	0.0808142						
May-11	230.6	-0.0201767	May-11	347.99	0.0665471	May-11	5766.9	-0.0117396						
Jun-11	239	0.0357789	Jun-11	344.546	-0.0099461	Jun-11	5561.05	-0.0363478		Sharpe ratio	0.12	0.002		
Jul-11	254	0.0608707	Jul-11	362.589	0.0510424	Jul-11	5705.75	0.0256875		Treynor Index ratio	-0.001			
Aug-11	246.725	-0.0290599	Aug-11	411.206	0.1258244	Aug-11	5527.5	-0.0317388		Jensen alpha	0.0%			

Interpretations

1.Average returns: - we found that Interest in HDFC is progressively productive to the financial specialist as the normal returns are similarly more than the profits of Bharti Airtel. In this way, a financial specialist who is just worried about the profits since quite a while ago ought to put resources into HDFC protections.

2.Risk (Standard Deviation): - Standard deviation is known as a statistical measuring tool of volatility, that is, the amount the stock price fluctuates, without considering the direction. Researchers found that the associated risk for the investment in the airtel is higher as compared to HDFC in the long run. Thus, while considering the risk factor by investor HDFC bank equity is preferred to invest in.

3. Since the case of perfectly correlated securities or stocks the risk has been reduced to the minimum point whereas in the negative correlation of securities the risk might reach to 0 which is considered to be the companies risk but since the market risk remains same for the securities or stocks in the portfolio.
While in the management of the portfolio correlation which are negative are considered to be most profitable.In above case correlation is 0.41, hence it can be interpreted that combinations of both the portfolios are going to give a good return in the future.Hence investors can invest in the long term investment.

4.Beta comes out to be positive, hence price moves accordingly in that direction in which the movement of the market is. And if Beta comes out to negative, hence the price moves in that direction opposite to the direction of the movement of the market. Both stock Beta is positive here that means an investor can invest in these stocks. HDFC Stock is aggressive stock it moves with market while Bharti airtel stock is defensive stock it moves by 0.78% if market is up by 1%.

	HDFC BANK	Bharti Airtel	NIFTY 50	Weight(assumed)
Avg. Returns	1.36%	0.62%	0.53%	0.5
Standard Deviation	0.064	0.088		0.5
Correlation	0.41			
Beta	1.07	0.78		
Risk-free Rate (assumed)	0.6%			
Exp. Return CAPM	0.52%	0.54%		
Portfolio Return	0.53%			
Portfolio Beta	0.93			
Portfolio Risk	0.41%			
Sharpe ratio	0.12	0.002		
Treynor Index ratio	-0.001			
Jensen alpha	0.0%			

5.THE SHARPE RATIO of HDFC BANK was higher than Bharti Airtel thus an investor can invest in HDFC BANK

6.THE TEYNOR RATIO of a researcher selected profile comes out to be negative(slightly) which can also be interpreted that investment might have performed worse than a risk free instrument.

7. Jensen α, a proportion of the overabundance returns earned by the portfolio contrasted with returns proposed by the CAPM model came out to be 0 CAPM model itself gives hazard balanced returns, i.e., it considers the danger of the security. In this way, returns can be achieved same as Capm what if the security might be decently valued. The α for this situation will be 0.

8.EXPECTED RETURN (CAPM): - The expected return calculated for each of the portfolio by having the risk free rate at 8%(assumed), beta & average return of market (NIFTY 50) and found that the expected return of Bharti airtel is slightly better than HDFC bank.

9.PORTFOIO RETURN AND RISK: - when we combine both the stocks in our portfolio by equal percentage, we can see that the combined portfolio return is better and risk is minimized.

Regression analysis on HDFC BANK

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.86250608
R Square	0.743916737
Adjusted R Square	0.741727992
Standard Error	0.032657676
Observations	119

ANOVA

	df	SS	MS	F	Significance F
Regression	1	0.362492926	0.362492926	339.8826513	2.0903E-36
Residual	117	0.124783281	0.001066524		
Total	118	0.487276207			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	0.007986643	0.003009369	2.653926456	0.009062632	0.002026746	0.01394654	0.002026746	0.01394654
X Variable 1	1.070122269	0.058045546	18.43590658	2.0903E-36	0.955166106	1.185078432	0.955166106	1.185078432

Regression analysis on Bharti Airtel

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.45975574
R Square	0.211375341
Adjusted R Square	0.204634959
Standard Error	0.078481058
Observations	119

ANOVA

	df	SS	MS	F	Significance F
Regression	1	0.19315214	0.19315214	31.35955057	1.44081E-07
Residual	117	0.720635341	0.006159276		
Total	118	0.913787481			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	0.002029846	0.007231943	0.280677826	0.779453231	-0.012292638	0.01635233	-0.012292638	0.01635233
X Variable 1	0.781148128	0.139491737	5.599959873	1.44081E-07	0.504892053	1.057404202	0.504892053	1.057404202

1. The **correlation coefficient** has been needed for the statistical measurement so that to obtain the robustness of the movements which are between two investors.Here stock and market price, as we can see the equity of Multiple r is positive here. The equities **range** between -1.0 and 1.0.

2. R-square values go from 0 to 1 and are regularly expressed in the form of 0% to 100%. The R^2=100% tells as all the developments in any of the security (or some other ward variable) can be completely clarified by development in the file though a high R-squared, somewhere in the range of 85% and 100%, portrays that the stock or reserve's exhibition moves accordingly through the list.Since with the lesser value of R^2, at less than 70%, states that the security doesn't for the most part follow the developments of the file.

3. The standard mistake is a proportion of the exactness of the model. The stand mistake is low in both the stocks. In this way, it implies that information is solid

4. The significance of F gives us the likelihood that the model cannot be right. Everybody needs the criticalness For the likelihood of being off-base to be as little as could reasonably be expected. Here in Both the stocks the essentialness of is moderately low.

QUESTIONNAIRE ANALYSIS

1. When the return of a portfolio is on decline, what investors do?

INTERPRETATION

- More than 45% of the respondents who review their portfolio on timely basis have stated that they want to rebalance securities when the portfolio is on decline while only 29.4% of

- If the portfolio is in decline state, 29% of the sample population who review their portfolio on timely basis have said that they would like to reconstruct their portfolio using the process of rebalancing securities, other than that 11% of the people who doesn't review their portfolio regularly have opted for the same option i.e. rebalancing securities. To get a better return, these people would diversify their investment into different methods of investment.

- Whenever the portfolio is declining, 25% of the target population in the portfolio review category have said that they would like to continue their existing portfolio, other than them, 32% of the population who never review their portfolio have chosen the same option of continuing

their portfolio.To obtain maximum return , these investors gives same amount of weightage to the same type of securities in the future.

2. Maximum allocation of investors among various choices.

INTERPRETATION:

● The option of Mutual Funds is found to be most popular among respondents in the male category with 24% of the respondents opting for it.It means that they want to opt for more detailed portfolio management or reinvestment of dividends or reduction of risk, convenience, and lastly fair pricing.

While in the female category, they prefer Fixed Deposits as their primary option for allocation of assets.

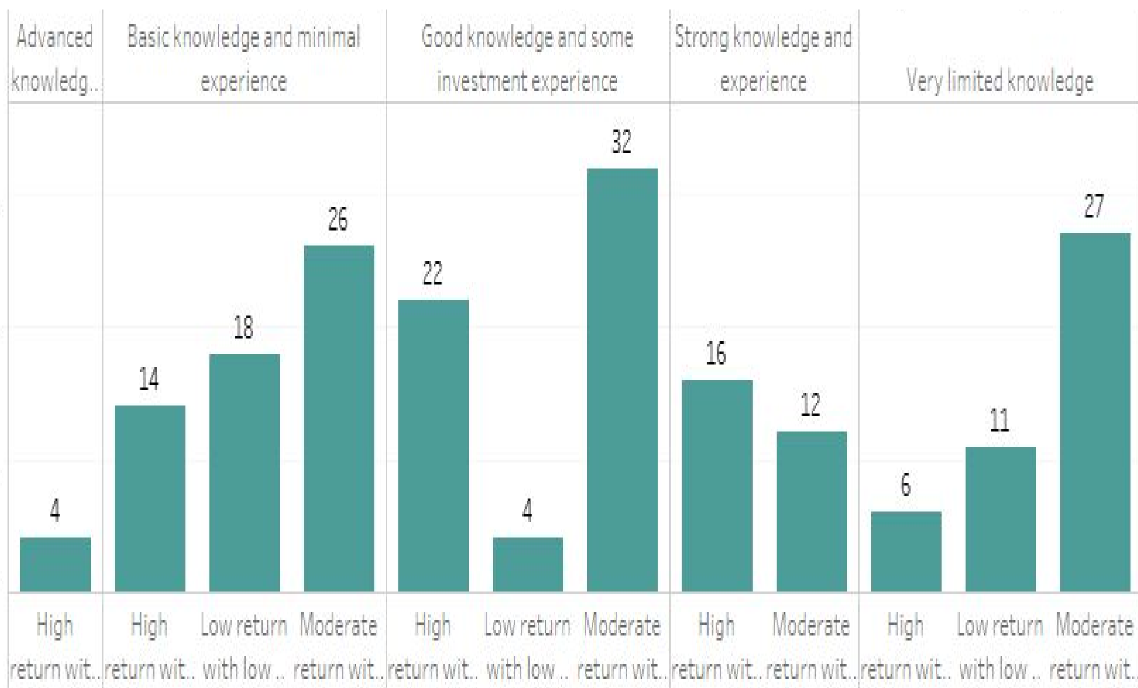
● Other options like Corporate Bonds, Insurance Plans, Saving Bank Balance have found to be fairly popular as investment criteria for both the categories.

The option of real estate can be interpreted as the least opted criteria from the given chart.

3. Which of the following statements best describes the level of investment knowledge according to the risk and returns associated with it?

INTERPRETATION

● Investors prefer moderate return with moderate risk in all the categories having basic, good or limited knowledge with almost 44% of responses.



● People having advanced knowledge prefer high returns on their investments.

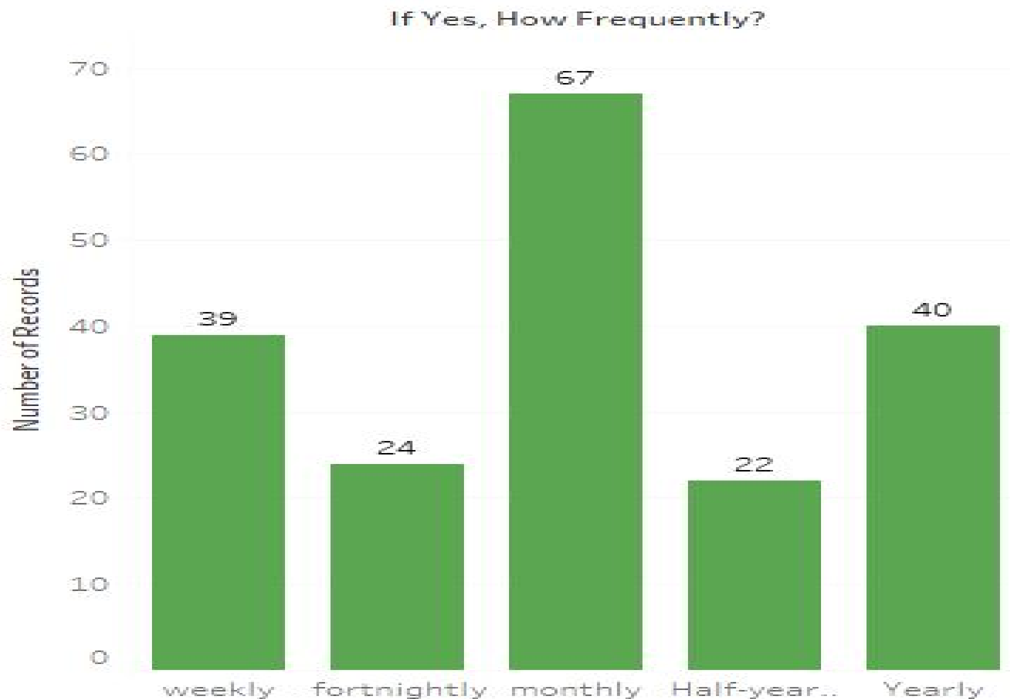
● High return with high risk is preferred by only 31% of the sample population which means that they want a more secured type of investment that usually has low risk in future periods.

4. What % of monthly income can be invested ? / what is your time horizon ?

INTERPRETATION:

- Shorter investment horizons that are of 0-1 year shift their portfolio in favor of bonds and are in favour of making profits in a small period of time as non-risky assets which could be more suitable for them other than investment in equities.
- ·Time horizon of 1-3 years has been selected by almost 28% of the sample population. This states that investors having a greater bearing power of risk tend to move their portfolio towards stocks and those with a lower bearing power of risk tend to move towards favor of bonds. It means that if any investment is performing negatively at the start of a short time period, then the investors can opt some method to minimize their loss of investments or reconstruct by investing in other equity stocks for a long horizon.

5. Time Horizon of portfolio review by sample population

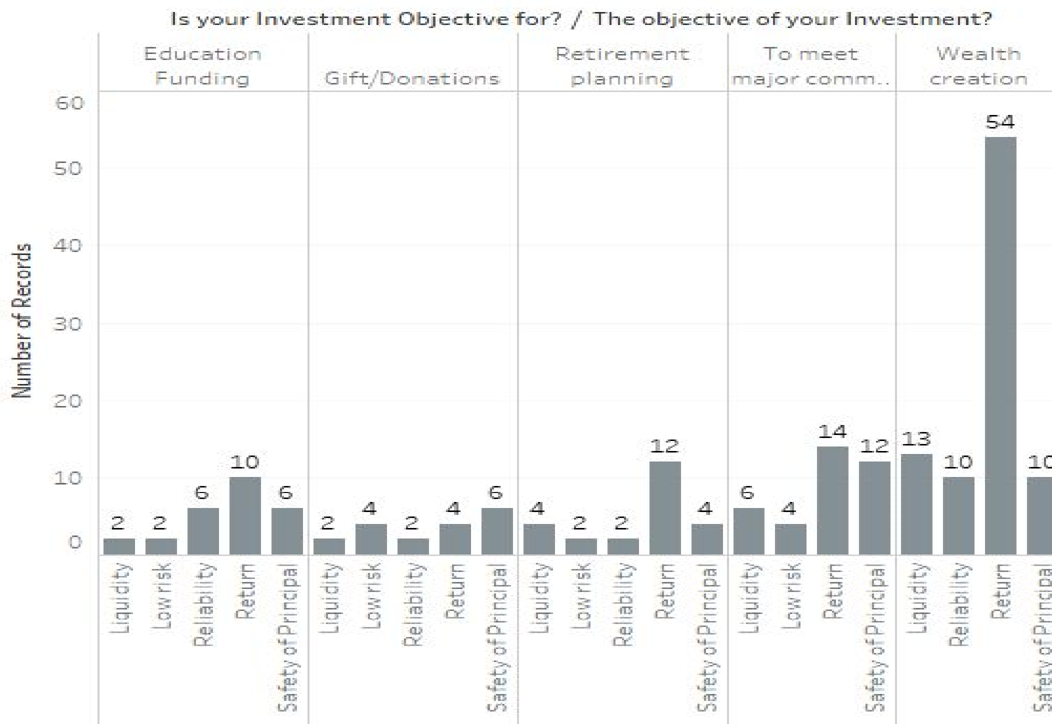


INTERPRETATION:

- Portfolios have been reviewed on a weekly basis by 20.3% of the target investors. This shows that the investors give time and importance to their investment and check every week whether they need to reconstruct a new portfolio to maximise return or should go with the same.
- Fortnightly reviews have been chosen by 12.5% of the respondents. These investors review their portfolio to keep them up to date with the market scenarios and the volatility. If their portfolio is performing and giving them return then, they usually continue with it.
- Half- yearly review has been opted by almost 11.5% of the respondents. These investors usually go on with the same investment options for every 6 months in the light that those options would give them the maximum returns. This is a kind of risk which these sample of investors are option as it is not a long-term investment and they are not bothered by their money that has been invested in the market.
- Yearly audits have been done by almost 21% of the target audience. These investors are fairly knowledgeable of how the market and economy is going and possibly they take

help of the speculation counsels. Because of this they least trouble to check whether their cash is protected and is getting them the necessary returns.

6. What Are Your Investment objectives for?/ The objectives of your Investment ?



INTERPRETATION

● Retirement as the fundamental goal of investments has been selected by 12.5% of the investors.This implies that they want to secure their future.

● 13.5% of the respondents selected their investment purpose as to meet critical duties. It states that noteworthy obligations mean propelled instruction for the wards, functions, etc.

● 45.3% of the sample population have chosen their main objective is to create wealth for the future. It suggests larger pieces of money related masters add to make wealth. Their saying is to be placed into various streets and get most prominent consequently.

● 9% of the respondents have said they have blessings as a speculation reason.

DATA ANALYSIS

Questionnaire and interpretation is used for collection of the data. Researchers found that the variety of investors need their wealth to be secure on priority basis and hence they want their money to in the most safest vault where they can get the maximum returns out of that .Hence from the research, the major part that a financial authorities slant toward moderate return with moderate risk thus exhibiting that they extend their theories into balanced backings like qualities similarly as protections and other fixed compensation insurances. By this their portfolio remains safe and improves returns.

Therefore, from the above assessment, we found that "An enormous segment of the money related authorities don't slant toward return as their theory models rather go for either peril or liquidity or prosperity of head, etc.

CHAPTER 6- CONCLUSION

A huge segment of the white collar class family have been hazard disinclined for example they dodge chance and in this way park a large portion of their reserve funds in Fixed Deposits and Other Savings Accounts, anyway the yield come back from such venture roads is low. In any case, according to the continuous example people from the working class have a premium pulled in towards interest in Mutual Funds and Equities. This example is set to go upwards in the coming very long time to come, as the Indian white collar class turns out to be more hazard cordial and as when salaries rise.

- Investment must be presumed as in a trusted association or a company. Before venturing we ought to know about the principles of the company where we want to invest. Principles of the company such as , balance sheet, income statement, cash flow ,size, management capability etc. of the company must be magnificent.
- The investment should be carefully done by measuring the previous performance, present market status i.e. news and future risk properly assessed for better outcomes.
- Equity and debt should be invested in such a manner that guaranteed return must be ensured by consistently watching the market instability (bearish /bullish) to avoid higher risk and ascertain trends.
- Wherever impeccable with speculator's goals and hazard estimation we recommend putting resources into values on a drawn out premise.
- 45.3% of the respondents have said their endeavor objective is for wealth creation. This suggests larger pieces of the budgetary masters add to make wealth. Their proverb is to place into various streets and get most prominent consequently.

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CHAPTER 8 – PLAGIARISM REPORT

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