

**Project Dissertation Report on**  
**An analysis of performance of equity mutual funds**  
**in India during covid-19**

Submitted By

Megha Anand

2K20/DMBA/64

Under the Guidance of

Dr. Shikha N. Khera

Associate Professor



**DELHI SCHOOL OF MANAGEMENT, DELHI**

**TECHNOLOGICAL UNIVERSITY**

**Bawana Road Delhi - 110042**

## **Certificate**

This to certify that the report of the submitted project work entitled “An analysis of performance of equity mutual funds in India during covid-19” carried out by Megha Anand bearing Enrolment No. 2K20/DMBA/64 under my guidance and supervision for the award of Degree in Master of Business Administration of Delhi Technological University, Delhi, fulfils the requirement of the ordinance relating to the MBA degree of the University and is up to the desired standard for the purpose of which is submitted to the best of my knowledge.

Dr. Shikha N. Khera

Associate Professor

## **Declaration**

I, Megha Anand, Roll No. 2K20/DMBA/64 want to declare that the Project Report/Dissertation named "An analysis of performance of equity mutual funds in India during covid-19" is a true work done by me. The matter typified in this task work has not been submitted before for the honour of any degree or certificate apparently and conviction.

Signature

Megha Anand

## **ACKNOWLEDGEMENT**

At the outset of this project, I'd like to express my honest and sincere gratitude to all of the individuals who have assisted me in this endeavour. I would not have progressed in the project without their energetic leadership, assistance, teamwork, and consolation.

I'm grateful to my mentor Dr. Shikha N Khera (Associate Professor) for her significant direction and support in bringing this exploration project to a successful conclusion.

I'd want to express my gratitude to the Delhi School of Management at Delhi Technological University for providing me with this opportunity.

I consider this open door to be a significant step forward in my professional development. I'll work hard to put my newly learned skills and knowledge to the best possible use, and I'll keep working to develop.

Thanking You,

**Megha Anand**

# PLAGIARISM REPORT



Similarity Report ID: oid:27535:16583946

PAPER NAME

**Dissertation Megha (1).docx**

WORD COUNT

**6069 Words**

CHARACTER COUNT

**30988 Characters**

PAGE COUNT

**29 Pages**

FILE SIZE

**301.3KB**

SUBMISSION DATE

**May 6, 2022 6:09 PM GMT+5:30**

REPORT DATE

**May 6, 2022 6:10 PM GMT+5:30**

## ● 9% Overall Similarity

The combined total of all matches, including overlapping sources, for each database.

- 3% Internet database
- 1% Publications database
- Crossref database
- Crossref Posted Content database
- 9% Submitted Works database

## ● Excluded from Similarity Report

- Bibliographic material
- Quoted material
- Cited material
- Small Matches (Less than 10 words)

# EXECUTIVE SUMMARY

## **Mutual Funds in India**

A mutual fund is a trust that pools the savings of a group of individuals with similar financial objectives. The funds raised are subsequently invested in capital market instruments such as stocks, bonds, and other assets. The income generated by these assets, as well as the capital gains obtained, are distributed to unit holders in proportion to the number of units they own. As a result, a mutual fund is the best investment for the average person because it allows them to invest in a diversified, professionally managed basket of securities at a reasonable cost.

On the basis of return and risk evaluation, this study attempts to analyse the performance of growth-oriented equity diversified schemes. Various financial tests such as the Average Return, Sharpe Ratio, Treynor Ratio, Standard Deviation, Beta, and Coefficient of Determination were used to complete the analysis (R2). The information was gathered from numerous mutual fund plan websites as well as amfiindia.com. According to the results of the analysis, the majority of the funds studied outperformed the Sharpe and Treynor ratios.

## **Introduction-**

COVID-19, with its economic and social implications, has raised the gravity of the difficulties that mutual funds face. Despite positive surprises in the overall market, organic growth in the Indian mutual fund business has slowed. Fees are under pressure, profit margins are shrinking, and investor tastes are shifting, all of which are putting pressure on the long-term outlook. Adding a pandemic to the mix makes it even more difficult for asset managers to stay competitive. Investors have shifted to low-cost passive products, putting more downward pressure on fees and depressing revenue prospects for US mutual fund managers. Many mutual fund companies still use active management, but owing to historic equities market performance, passive management is gaining ground quickly—far quicker than expected.

## **Objective-**

1. To study the performance of Selected Diversified Equity Mutual Funds in India from 2019 to 2021, as well as the mutual funds industry's pre- and post-covid performance, in order to provide future research opportunities.
2. To compare the performance of a few Indian Diversified Equity Mutual Funds before and after the covid pandemic.

## **Scope of the project**

The research is based on a sample of six mutual fund schemes that are all equity diversified funds. To get a better understanding of the Indian mutual fund industry's present performance trends and the impact of covid on mutual fund performance.

## **Research methodology**

The following statistical tools and procedures were used to determine if mutual funds underperform or outperform the market index: Standard deviation (Total Risk), Beta (Systematic Risk), and Coefficient of Determination. For the purpose of examining mutual fund returns, the average return was determined. Sharpe and Treynor ratios were calculated for this purpose.

## **Findings**

On the basis of return and risk evaluation, this study attempts to analyse the performance of growth-oriented equity diversified schemes. Various financial tests such as the Average Return, Sharpe Ratio, Treynor Ratio, Standard Deviation, Beta, and Coefficient of Determination were used to complete the analysis (R2). The information was gathered from numerous mutual fund plan websites as well as amfiindia.com. According to the results of the analysis, the majority of the funds studied outperformed the Sharpe and Treynor ratios.

The purpose of this study is to look at the performance of Selected Diversified Equity Mutual Funds in India during the course of the year 2019 to year 2021 and compare the performance of the MF in the pre covid years, i.e., 2017-2019. Selected Diversified Equity Mutual Funds in India were compared for performance.

## **Limitations**

Because of a lack of appropriate sources for data collecting, the secondary data employed in this project may not be entirely correct. Because the mistake in secondary data cannot be judged, those data will reflect incorrect study results. This is one of the most significant drawbacks of analysing secondary data. These types of studies cannot be completed in a short period of time; a full, in-depth investigation is required to arrive at any relevant and appropriate conclusion. The researcher's ineptness may lead to incorrect interpretation.

## CONTENTS

<b>S.No.</b>	<b>Topic</b>	<b>Page No.</b>
1	Certificate	i
2	Declaration	ii
3	Acknowledgement	iii
4	Plagiarism Report	iv
5	Executive Summary	v
6	List of Tables	viii
7	List of Abbreviations	ix
8	Chapter- 1: Introduction	10-20
9	Chapter- 2: Literature Review	21-23
10	Chapter- 3: Data Presentation & Analysis	24- 31
11	Chapter- 4: Summary and Conclusion	32- 33
12	References	34-35



## LIST OF TABLES

<b>Table No.</b>	<b>Title</b>	<b>Page No.</b>
1	Mutual funds selected for analysis	26
2	Return analysis using average monthly return	28
3	Risk analysis using Standard deviation	29
4	Risk analysis using beta	30
5	Risk analysis using R squared	31
6	Risk analysis using Sharpe ratio	32
7	Risk analysis using Treynor ratio	33

## LIST OF ABBREVIATIONS

S.No.	Abbreviated Name	Full Name
1	MF	Mutual fund
2	UTI	Unit trust of India
3	SBI	State Bank of India
4	NAV	Net asset value
5	AUM	Asset under management
6	IDBI	Industrial Development Bank of India
7	SIP	Systematic Investment plan
8	RD	Recurring deposit
9	BSE	Bombay Stock Exchange
10	AMC	Asset management company
11	AMFI	Association of Mutual Funds in India
12	DEMAT	dematerialization account
13	RCA	Rupee Cost Averaging

## **CHAPTER – 1**

### **Introduction**

A mutual fund is a sort of financial vehicle that aggregates the money of a group of individual investors with similar financial objectives in order to provide high returns on their investments. The funds obtained are subsequently invested in capital market instruments like stocks, bonds, and other assets, with profits shared among the investors. As a result, a mutual fund is a good investment because it allows you to invest in a diversified portfolio that is professionally managed at a low cost.

This research seeks to analyse the performance of a certain selected MF based on return and risk evaluation.

Various financial tests were utilised to complete the analysis, including the Average Return, Sharpe Ratio, Treynor Ratio, Standard Deviation, Beta, and Coefficient of Determination (R<sup>2</sup>). The data was gathered from a variety of mutual fund plan websites.

Stock market is a marketplace for buying and selling of financial securities such as stocks, commodities and bonds. Stock market function is largely based on demand supply theory, where when investors demand for the specific type of security they want to purchase, the demand is fulfilled by the investor who wants to sell the same security, the imbalance in demand supply drives out the rise and fall of the prices of the securities.

The exchanges on stock market are highly regulated by the regulatory authority of the country, SEBI in India. The stock markets in India are heavily controlled by the country's regulatory authority, SEBI. When a private company seeks finances for development or growth, it can raise capital through debt or equity. When a business wishes to raise equity for the first time, it may opt for an IPO, or initial public offering, which is a means of raising cash by selling a portion of its ownership to the general public or retail investors.

#### **BSE -SENSEX**

The Bombay stock exchange or BSE is the oldest stock exchange in India. It was established in 1886. The BSE undergoes periodic evaluations and modifications to ensure that it accurately

represents current market realities. The free float capitalisation technique, a version of the market capitalisation approach, is used to generate the index. It employs a company's float, or shares that are easily accessible for trading, rather than its outstanding shares. Total capitalization minus Directors' shares equals free floating capital.

### **NSE- Nifty**

The NSE was founded in 1992.

It was founded to be helpful in the professionalisation of the capital markets and to give investors capabilities of securities trading.

In the sense that it is owned and administered by brokers, the NSE is not a typical exchange. A corporate board of directors and a governing board of directors form a two-tier administrative organisation.

The NSE is a marketplace for shares, bonds, and government.

NSE-NIFTY: The NSE NIFTY was launched on April 22, 1996 as an index. The NSE-50 is an index that reflects how many persons have finished the NSE. The new index, which replaced the NSE-100 index, is intended to complement the new futures and options section well.

The National Index for Fifty Stocks is referred to as "Nifty."

### **Mutual Funds**

Participants in a mutual fund combine their money in order to attain a common financial goal. Following that, the funds are invested in various asset classes in accordance with the scheme's objectives.

Stocks, bonds, and other securities are examples of financial assets that may be invested in. They can buy them personally or through mutual funds or other investment vehicles. Direct investment has a number of benefits that mutual funds do not. For example, someone can be unable to recognise market trends or just lack the time to do so. Mutual funds are an excellent choice in this situation since they are professionally managed.

A mutual fund is a kind of financial instrument that combines funds from several participants in order to achieve a common aim. Depending on the scheme's objectives, the money is then invested in various asset categories such as stocks and bonds. An asset management is an

organisation that makes collective investments of the investors (AMC). The management team of a MF invests money of the investors in equities in which they assume they can make profit.

### **How mutual funds grow money**

#### **COMPOUNDING:**

Compounding is the major driving force in mutual funds. The technique of gaining interest on interest is known as compounding. the value of the investment compounds and continues to increase at an increasing rate. Over longer periods, compounding results in a greater value of an investment.

#### **DIVERSIFICATION:**

Diversification is the practice of investing in a variety of assets. Not all assets increase at the same rate; some rise while others fall. As a consequence, if a person holds both stocks, any losses in one are countered by gains in the other, the overall loss is less. As a result, reduces total risk. Diversification is a significant benefit of investing in a mutual fund.

#### **DISTRIBUTION OF CAPITAL GAINS:**

Mutual funds distribute earnings from the higher-priced sales of some of their underlying assets. Capital gains distribution is the term for this procedure. This money can be put towards buying more mutual fund units (reinvestment).

#### **AUTOMATIC REINVESTMENT:**

Dividends and capital appreciation are two sources of revenue for MF. The value rise can only be utilised after the mutual fund units are sold. Dividends become accessible immediately once they are paid out. The money from the dividends can be used to buy new mutual fund units automatically. Investors receive tax-free dividends from mutual funds. When dividends are distributed, mutual funds, on the other hand, are taxed. This is truer for debt mutual funds than for equity mutual funds.

#### **EXCHANGE OF MUTUAL FUNDS:**

Many fund firms join a collection of MF based on their objectives for investment or other factors. There is a privilege of shifting investments from one plan to another plan within a same type of funds. This is also called exchange permission.

## TRANSPARENCY:

It is crucial that investors' money is kept safe. SEBI restrictions have made the mutual fund industry much more transparent. This helps investor to monitor their mutual fund assets. AMCs are obligated to keep investors informed about the performance of their funds on a regular basis.

## VARIATION:

Mutual fund schemes invest in a wide range of enterprises and industries, as well as a wide range of asset classes. There will be a plethora of choices available.

## LIQUIDITY:

Open-ended MF investors has the privilege of redeeming their units at any time for the current NAV. As a result, mutual funds have a high level of liquidity, which is beneficial to investors.

## **Types of mutual funds**

- Growth Mutual funds
- Dividend pay-out mutual funds
- Re investment dividend Mutual funds
- Pension mutual funds
- Insurance
- SIP
- SWP

## **Benefits of Mutual Funds**

### PROFESSIONAL MONEY MANAGEMENT:

Mutual funds are managed by professional money managers. It is more risk-resistant. AMCs hire specialists to look after investor's money. These money managers have real-time access to key market data and they can conduct transactions on the broadest and most cost-effective scale conceivable. Simply put, they understand market trading in a manner that most ordinary investors couldn't do. In addition, competent money managers are resourceful. They are better at monitoring the firms in which the MF has invested, as opposed to individual investors.

### TAX EXEMPTIONS:

According to SEBI-authorized MF are tax free under Section 10 (23D) of the Income Tax Act if they distribute 90% of their earnings. This system allows for a tax deduction on Provident Fund (PF) and Voluntary PF, Public PF (PPF), Life Insurance Premiums, and Mutual Funds' Equity Linked Saving Program (ELSS).

#### LOW INVESTMENT REQUIREMENTS:

Fixed deposits and bonds may need a hefty initial commitment. The investment barrier for mutual funds, on the other hand, is substantially lower.

Because mutual funds are transparent, investors can trust them to function in a regulated environment. The Securities and Exchange Board of India, SEBI regulates all transactions made by mutual funds. It has taken efforts to ensure that mutual funds adhere to the standards it has set. At any time, investors can check on the status of their investment. They can also receive frequent updates as long as they remain invested.

#### **Mutual fund risk factors**

#### BETWEEN RISK AND RETURN:

The most fundamental thing to understand is the risk-reward trade-off. The higher the risk, the bigger the profit/loss; conversely, the lower the risk, the lower the profit/loss.

As a result, the investor who is putting money in MF must understand and determine the risk they are willing to take and the level of it. one must first understand the many types of risks that come with financial decisions.

#### MARKET RISK:

The prices and yields of all assets change from time to time. This is due to a wide range of external variables affecting the market as a whole. This is true for both major corporations and smaller mid-sized firms. Market risk is the term for this. A Rupee Cost Averaging Systematic Investment Plan ("SIP") might be useful.

#### CREDIT RISK:

Credit risk is determined by analyzing firms' debt independency, which is assessed by many credit risk organizations such as CRISIL, Moody's and such. The safest firm to invest in is with 'AAA' rating, which is the highest among all. An investor can also understand that a well-diversified portfolio might help to limit the risk and reap bigger chunks of returns.

### **RISK OF INFLATION:**

Inflation is the phenomenon which reduces the purchasing power of people. With high inflation, the risk of loss is there. People tend to choose or select investments that give out returns without the impact of inflation. As inflation reduces the whole value of money. The well diversified portfolio helps an investor in mitigating the risks attached to the inflation factor.

### **INTEREST RISK:**

Changes in interest rate, repo rate affect the security prices and equity rates. In case of bonds, with fall in interest rates, the prices of bonds rise and vice versa. With an increased interest rate, stock prices are inversely affected, that is, they fall. This, however can be mitigated with the help of a differentiated portfolio.

### **GOVERNMENT POLICY CHANGES:**

With changes in government policies, the securities prices are affected. The adverse policies have similar impact on securities, while a favourable policy may affect the security prices in similar way.

### **ADDITIONAL RISK:**

There may be number of other risks that can't be assessed otherwise and are unpredictable, one such is the covid pandemic that has impacted the stock market worldwide adversely.

### **Net asset value- NAV**

The Net Asset Value or NAV of a mutual fund scheme is a determiner that is used to determine its performance in long run.

The money that mutual funds gather from investors is invested in the stock market. NAV is the market value of the scheme's securities in simpler words. The NAV of a scheme changes because the market value of assets fluctuates every day. The NAV per unit of a MF is determined by dividing the market value of a scheme's securities by the total number of units in the scheme on a given day.

### **Types of schemes in Mutual funds**

#### **a. Open-ended Fund -**

An open-ended fund is one that is continually accessible for subscription and can be purchased again based on different maturity periods. There is no defined maturity date



for these programmes. Investors can purchase and sell units at daily NAV related prices. Open-end funds are mainly dependent on liquidity.

b. Closed-ended Fund-

A closed-ended fund or scheme has a specific defined maturity date. The fund can only be accessible for subscription for a small time on its launch. After participating in the scheme during the FPO, investors can purchase or sell the plan's units on the stock exchanges where the units are listed. To provide an exit strategy, certain closed-ended funds allow investors to sell back their units to the mutual fund through periodic buyback at NAV-related rates. According to SEBI requirements, the investor must have access to either a buyback facility or a stock market listing as an exit option.

**Based on the investment goal**

a. Scheme with a focus on growth or equity-

Growth funds are intended to increase in value over long term. Such funds usually invest a significant amount of their assets in stocks. The risk in these funds is exceptionally large too. These plans however provide investors with numerous options- as dividends, capital appreciation, and other similar benefits, from which they may select based on their preferences. The investors must select this option on the application form. Mutual fund investors can also adjust their selections at any moment. Long-term investors who foresee capital appreciation over time should consider growth strategies.

b. Income / Debt Oriented Scheme-

Income funds are designed to offer investors with a steady supply of income. These funds commonly invest in bonds, debentures, securities, and other money market instruments such as futures and options. These funds are relatively less risky as compared to equity. Stock market fluctuations have no effect on the performance of these funds. However, the possibility for capital appreciation in such vehicles is restricted. Changes in the country's interest rates have an influence on the NAVs of these products. In the short term, if interest rates decrease, such funds' NAVs will likely rise, and vice versa. Long-term investors, on the other hand, may not be bothered.

c. Balanced Fund-

When an investor wants both regular income as well as growth, then they may invest in balanced funds, which are types of MF that invest in both equity and fixed income

assets. These are appropriate for investors looking for a respectable return on their investment. They invest almost half of their funds in stock and debt assets. These funds are affected by changes in stock market share values. The NAVs of such funds are expected to be less volatile and risky than those of pure equity funds.

d. Money Market-

These are funds that aim to provide simple liquidity, long-term savings, and significant income. These funds only invest in safe short-term assets including Treasury bills, Certificates, corporate debt, and bank call money, as well as government securities. The returns on these programmes fluctuate far less than those of other funds. These funds are ideal for businesses and individuals that need to save surplus cash for a short period of time.

e. Gilt Investment-

This type of fund solely invests in government bonds. With government securities, there is no chance of default. The NAVs of these schemes vary due to changes in interest rates and other economic reasons, much like income or debt-oriented schemes.

f. Index Funds-

Index funds are the types of funds that invest in assets, securities and firms that have the same weighting as a certain index, such as the BSE Sensex index or the S&P NSE 50 index (Nifty). The NAVs of such mutual funds are expected to grow or decrease in coordination with the index, but not exactly by the same proportion. The offer document for the mutual fund scheme contains the appropriate disclosures in this regard

ELSS (Equity Linked Savings Scheme) is a type of open-ended equity mutual fund that invests largely in equities and equity-related items. They are a subset of mutual funds that qualify for tax deductions under Section 80C of the Income Tax Act of 1961.

### **Covid and Mutual funds**

COVID-19, with its economic and social repercussions, has heightened the severity of mutual fund challenges. Owing to market uncertainty, there has been unforeseen volatility in the stock market since January 2020, as well as in human life due to the Covid 19 pandemic phase. The service industry has suffered as a result of the shutdown. All big city investors cancel their investments in a never-before-seen circumstance in order to survive in this crisis, which has

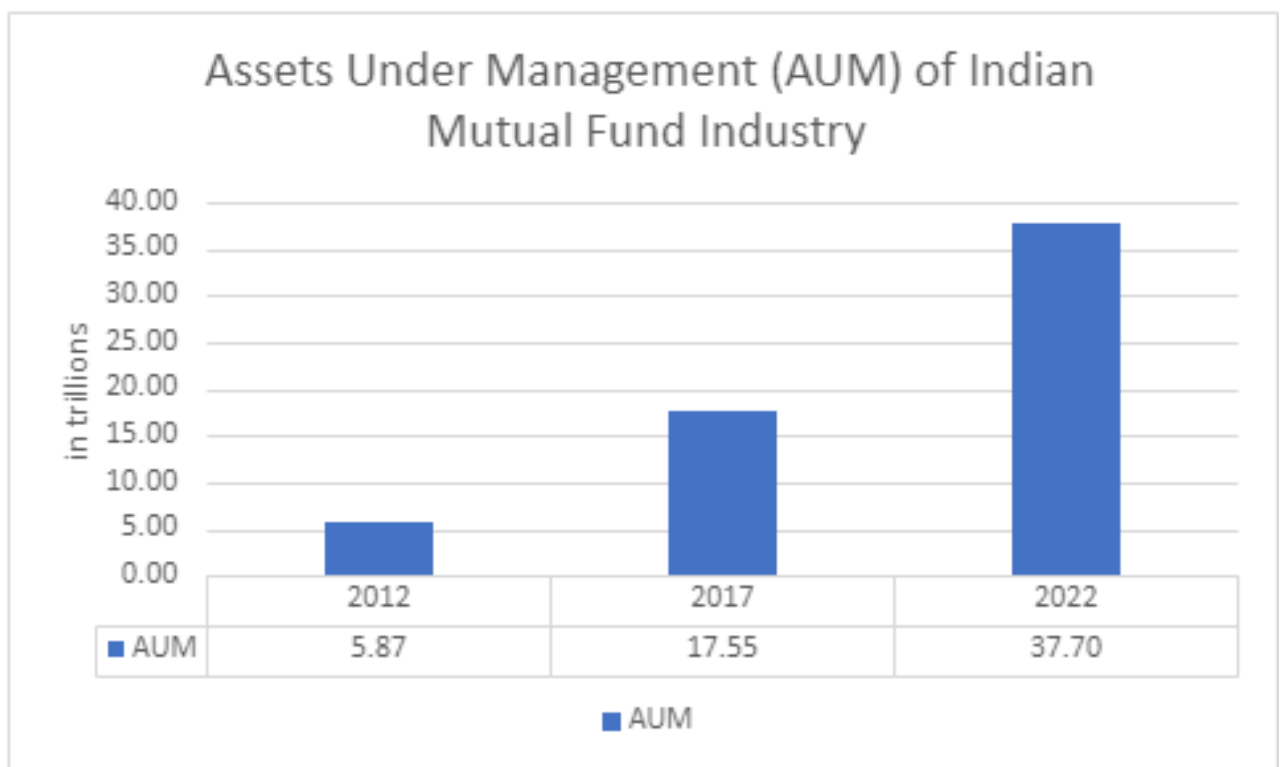
both an indirect and direct influence on the Indian economy. The Indian stock market, on the other hand, looks to be stabilising owing to strong monetary support from the RBI and SEBI.

The mutual fund business has seen a surprising good development as a result of digitization, with customers becoming more aware of it and appreciating the relevance of investing in human existence. Mutual funds have long been considered a safe stock market investment. Mutual fund returns have had a major impact as a result of the Covid 19 pandemic.

### **Mutual funds market over the last decade**

AUM, or assets under management, of the Mutual Funds Industry of India is expected to be around 37.5 thousand crores by the end of the financial year in March 2022. The Indian mutual fund industry's average assets under management were close to 38 thousand crore rupees.

This sum is more than six times more than it was a decade ago, when it was at \$5.87 trillion. If we look at growth over the last five years, it has nearly doubled, reaching about 17,000 crores in 2017.



**Objective-**

1. To study the performance of Selected Diversified Equity Mutual Funds in India from 2019 to 2021, as well as the mutual funds industry's pre- and post-covid performance, in order to provide future research opportunities.
2. To compare the performance of a few Indian Diversified Equity Mutual Funds before and after the covid pandemic.

### **Scope of the project**

The research is based on a sample of six mutual fund schemes that are all equity diversified funds. To get a better understanding of the Indian mutual fund industry's present performance trends and the impact of covid on mutual fund performance.

### **Research methodology**

The following statistical tools and procedures were used to determine if mutual funds underperform or outperform the market index: Standard deviation, Beta, and R squared. For the purpose of examining mutual fund returns, the average return was determined. Sharpe and Treynor ratios were calculated for this purpose.

### **Data**

Secondary data was gathered and obtained from fact sheets, newspapers, journals, books, and periodicals to gain an overview of the present performance patterns in the Indian mutual fund business. Data was also gathered from AMFI, and moneycontrol.com websites. Over a three-year period, we collected NAVs of the selected mutual fund schemes on a monthly basis. We have used BSE Sensex as a benchmark for evaluating the performance of various schemes. Furthermore, the monthly yields on Government of India treasury bills have been utilised as a risk-free rate substitute.

### **Risk analysis-**

#### **Standard deviation**

Standard deviation is a commonly used indicator of risk of a security, standard deviation tells about the volatility of a security and hence, the risk associated with it. If standard deviation is large for a security, it tells that it is expected to vary more frequently with larger highs and lows and is not safe for risk averse investors, whereas, a smaller standard deviation is an indicator of a rather less risky security.

#### **Beta**

It is a measure of systematic risk of a portfolio. Beta tells about the covariance of the selected security or in this case the mutual fund with the market value, and how the movements of the two are synchronized or related.

### **Coefficient of determination**

The coefficient of determination is a statistical metric for determining how effectively a model explains and forecasts future outcomes. Investors use the coefficient of variation to judge whether an investment's potential returns are worth the risk.

### **Return analysis**

#### **Average return**

The average rate of return is calculated by dividing the average yearly net income after tax or return on investment by the original investment or average investment over the project's lifetime, and then expressing the result in percentages.

#### **Sharpe ratio**

The Sharpe ratio is an indicator of performance of mutual funds. It is used to determine how much money an investor will yield if they retain or hold a risky mutual fund for longer period. It is a risk indicator and for every unit of risk an investor is willing to accept the amount of return they can yield is defined.

$$\text{Sharpe Ratio} = (\text{Average fund returns} - \text{Risk free Rate}) / \text{Standard Deviation of fund returns}$$

#### **Treynor ratio**

Treynor ratio is an indicator of the measure of the performance of the mutual funds against the uncertainties that have occurred. It is used to tell how a MF creates risk adjusted profits.

Calculated as below-

$$\text{Treynor ratio} = (\text{Returns generated by the portfolio} - \text{Risk free rate}) / \text{Beta}$$

## CHAPTER - 2

### LITERATURE REVIEW

**(Jain & Gangopadhyay, 2012)** has studied that the last decade has been tremendous with respect to the growth in mutual fund industry. According to the paper the AUM in the specific industry is more than 6.8 thousand billion rupees, this paper attempted to analyse the performance of equity based mutual funds performance. The analysis uses risk return relationship and CAPM for the performance of the mutual funds under focus. The analysis shows that HDFC, ICICI were the best performers while LIC was the worst performing MF.

**(Chawla, 2016)** has studied the Mutual funds buying behaviour of investors with the help of primary research done on 431 respondents, the researcher has used convenience sampling to understand MF buying behaviour of the investors. He has identified various features and factors of these investors that has in any way affected their MF buying decision. He has identified two main factors – credibility of the MF and miscellaneous features of the fund. The demographic variables impact on these factors is studied. The various attributes and their impacts is of major importance here.

**(Rao, 2020)**. In this paper Rao has analysed Indian economy and MF investment in India during covid 19 pandemic. The attempt to study data and report of banks and research agencies is also done to understand the planning and strategic consequences of the investment is done. The researcher also plans to understand the post pandemic growth of the MF industry further in 2021.

**(Rao, 2006)** has said in his study that the In India's capital market, the mutual fund sector has evolved as a significant financial intermediary. According to the study, the business has managed about US \$45 billion in financial assets for around 20 million investors across the country. The majority of the funds that the researcher has examined for the study are open-ended, while the remainder are closed-ended. According to the publication, the assets have expanded at a nearly 50% annual pace over the last four decades. The tremendous rise, according to Rao, may be attributed to the introduction of commercial banks and private firms

into the mutual fund business, as well as the fast growth of the Indian capital markets in recent years.

**(Panwar & Madhumathi, 2006)** In terms of mean returns, the study discovered that public-sector sponsored funds do not differ much from private-sector sponsored funds. The researcher examined variations in asset characteristics, portfolio diversification, and variable impacts of diversification on investment performance across three years using a sample of public-sector and private-sector MF with varying net assets. The study indicates that public-sector sponsored mutual funds and private-sector MF differ significantly. When residual variance is utilised as a metric of portfolio diversity and excess standard deviation adjusted returns as a performance measure, the model indicated a significant difference across sponsorship classes.

**(Bijan Roy, et. al.)** Empirical research on the performance of Indian mutual funds was undertaken. On a sample of 89 Indian mutual fund schemes, this research employs a technique known as conditional performance evaluation. The study also uses the unconditional and conditional forms of CAPM, the Treynor-Mazuy model, and the Henriksson-Merton model to assess the performance of several mutual funds. With the Indian context in mind, the impact of information factors on the appraisal of mutual fund managers' performance is investigated. The findings imply that using conditioning delayed information factors increases mutual fund scheme performance.

**(Gupta & Agarwal, 2009)** In his research, he discovered how to build the finest mutual fund portfolio. Their goal was to build the finest portfolio possible, thus they included industry concentration as a variable and compared the performance of two types of portfolios against the given benchmarks. The findings are positive and are likely to aid in the creation of the finest mutual fund portfolio.

**(Jensen Michael, 1968)** has devised a method for evaluating portfolios in terms of risk-adjusted returns. He tested the following using a sample of 115 fund managers in the selection of securities from 1945 to 1966. The analysis discovered that net returns were higher than usual, although several funds had exceptionally low returns. When using gross returns, it was discovered that many funds performed above average and nearly twice as many performed below average. Because fund managers were unable to foresee securities price fluctuations, the

researcher found that there was little evidence that funds could perform much better than expected.

**(Mishra, et al., 2002)** looked how MF responded with a reduced partial moment. It's also looked at how risk from the lower partial moment may be assessed by only considering states when the return is less than a certain rate or the risk-free rate. In India, researchers looked into the usage of index funds. In this study, the tracking inaccuracy of index funds in relation to India is assessed. The consistency and amount of tracking faults revealed by well-run index funds imply that it is possible to achieve low levels of tracking error under Indian conditions, according to the expert. There have been times when certain index funds appear to deviate from the indexation discipline.

**(Anand, 2000)** focused on a single mutual fund's schemes and those of its competitors in the market Author conducted a three-year performance study and SWOT analysis using a literature review and Delphi approach. Following a thorough financial analysis, the author determines which of the selected equity funds achieves larger returns than the benchmark and competitors, concluding that Birla Sunlife outperforms the benchmark and competitors.



## CHAPTER – 3

### DATA PRESENTATION & ANALYSIS

Mutual funds selected for analysis

S.No.	Schemes
1.	<b>SBI Contra Fund - Direct Plan - Growth Contra Fund</b>
2.	<b>Kotak India EQ Contra Fund - Direct Plan - Growth Contra Fund</b>
3.	<b>Invesco India Contra Fund - Direct Plan - Growth Contra Fund</b>
4.	<b>IDBI India Top 100 Equity Fund - Direct Plan - Growth Large Cap Fund</b>
5.	<b>UTI Mastershare Unit Scheme - Direct Plan - Growth Large Cap Fund</b>
6.	<b>Kotak Bluechip Fund - Direct Plan - Growth Large Cap Fund</b>

The above-mentioned mutual funds were subjected to return and risk analysis utilising various analysis methodologies. Mutual funds operate on a variety of themes, exposing them to a variety of risks. Despite the fact that they are professionally handled, there is still a risk involved. Economic success, diversification, industry growth, and individual firm performance all contribute to these risks. Investors should compare the performance of funds against several risk measures before making an investing decision. We will try to grasp the parameters by which fund performance and risk analysis are measured in this post. Before making an investment selection, investors must do a comparative examination of these parameters.

#### **Interpretation**

Risk analysis is done to analyse the uncertainty of predicted cash flows, the variance of portfolio or stock returns, we attempt to assess the probability of success or failure, and possible future of the portfolio.



Risk measures of mutual fund

## Return analysis using average monthly return

Schemes	Average return (monthly)	
	2017-2019	2019-2021
<b>SBI Contra Fund - Direct Plan - GrowthContra Fund</b>	0.0407	0.0504
<b>Kotak India EQ Contra Fund - Direct Plan - GrowthContra Fund</b>	0.0393	0.04001
<b>Invesco India Contra Fund - Direct Plan - GrowthContra Fund</b>	0.0338	0.0387
<b>IDBI India Top 100 Equity Fund - Direct Plan - GrowthLarge Cap Fund</b>	0.0357	0.0355
<b>UTI Mastershare Unit Scheme - Direct Plan - GrowthLarge Cap Fund</b>	0.0353	0.0410
<b>Kotak Bluechip Fund - Direct Plan - GrowthLarge Cap Fund</b>	0.0367	0.048
<b>BSE SENSEX</b>	0.0150	0.035

The average return is used to analyse how much a company or asset or a portfolio of companies has returned. Since, it does not account for compounding, the average return is not the same as the annualised return. The average return is the average of the returns over selected time period. An average return is calculated in the same way as a simple average is calculated for a set of numbers. The sum of numbers of set are divided by the set's count of numbers.

SBI Contra Fund - Direct Plan – Growth Contra Fund has the greatest average monthly return in the selected mutual fund portfolio, making it the best mutual fund option in terms of returns, followed by Kotak Bluechip Fund - Direct Plan - GrowthLarge Cap Fund. Returns have increased over time, with pre-covid years showing lower returns than post-covid years.

## Risk analysis using Standard deviation

Standard deviation is one of the most widely used method for measuring the risk of an investment. Market volatility, or the difference between asset values and their average price, is calculated using the standard deviation. Excessive volatility is assumed when the standard deviation is large and the prices move drastically up or down. Similarly, when the gap between trading ranges is

small, the standard deviation is low, signifying volatility to be low. Standard deviation is used to calculate market volatility and also the risk, in investing. The greater the risk, the more volatile the price movement will be and the wider the range will be. It is assumed that they'll continue to perform similarly in future. A security with a wider range of trading and a proclivity to spike, reverse abruptly, or gap is highly riskier, potentially resulting in a bigger loss.

Schemes	Total Risk (standard deviation)	
	2017-2019	2019-2021
<b>SBI Contra Fund - Direct Plan - GrowthContra Fund</b>	0.2001	0.2012
<b>Kotak India EQ Contra Fund - Direct Plan - GrowthContra Fund</b>	0.221	0.2189
<b>Invesco India Contra Fund - Direct Plan - GrowthContra Fund</b>	0.2098	0.2108
<b>IDBI India Top 100 Equity Fund - Direct Plan - GrowthLarge Cap Fund</b>	0.2163	0.2074
<b>UTI Mastershare Unit Scheme - Direct Plan - GrowthLarge Cap Fund</b>	0.20776	0.2064
<b>Kotak Bluechip Fund - Direct Plan - GrowthLarge Cap Fund</b>	0.2122	0.2101
<b>BSE SENSEX</b>	0.2032	0.2153

The standard deviation of the Kotak MF is the largest among the others, making it a risky investment mutual fund. Invesco MF is the second most loss causing mutual fund, following in the footsteps of the first. A similar pattern can be found in the pre-covid years. SBI MF, on the other hand, appears to have a lower standard deviation before covid time and a higher volatility after covid time.

### **Risk analysis using beta**

Beta is an indicator of systematic risk and is used to tell how the security and market are synchronized. It basically tells about the covariance between the two. It is calculated in regression analysis. By default the market has a beta value of 1.0 which is a benchmark.

Schemes	Beta	
	2017-2019	2019-2021
<b>SBI Contra Fund - Direct Plan - GrowthContra Fund</b>	0.91	0.88
<b>Kotak India EQ Contra Fund - Direct Plan - GrowthContra Fund</b>	0.98	0.97
<b>Invesco India Contra Fund - Direct Plan - GrowthContra Fund</b>	0.966	0.97
<b>IDBI India Top 100 Equity Fund - Direct Plan - GrowthLarge Cap Fund</b>	0.922	0.94
<b>UTI Mastershare Unit Scheme - Direct Plan - GrowthLarge Cap Fund</b>	0.95	0.93
<b>Kotak Bluechip Fund - Direct Plan - GrowthLarge Cap Fund</b>	0.96	0.95
<b>BSE SENSEX</b>	1	1

Beta with lower value indicates less risk, hence, SBI MF is a favourable choice for investing.

### Risk analysis using R squared

The percentage of a fund portfolio's or a security's movements that can be explained by movements in a benchmark index is represented by R-squared.

Schemes	R <sup>2</sup>	
	2017-2019	2019-2021
<b>SBI Contra Fund - Direct Plan - GrowthContra Fund</b>	0.909	0.912
<b>Kotak India EQ Contra Fund - Direct Plan - GrowthContra Fund</b>	0.945	0.930
<b>Invesco India Contra Fund - Direct Plan - GrowthContra Fund</b>	0.970	0.943
<b>IDBI India Top 100 Equity Fund - Direct Plan - GrowthLarge Cap Fund</b>	0.943	0.974
<b>UTI Mastershare Unit Scheme - Direct Plan - GrowthLarge Cap Fund</b>	0.998	0.984
<b>Kotak Bluechip Fund - Direct Plan - GrowthLarge Cap Fund</b>	0.975	0.988
<b>BSE SENSEX</b>	1	1

In mutual funds, R-squared is a statistical measure used by investors to compare a fund to a benchmark. A higher R-squared value indicates that the fund tracks the benchmark. Investors can monitor their assets and maintain a more diverse portfolio by keeping an eye on this indicator. Kotak Bluechip Fund - Direct Plan - GrowthLarge Cap Fund is having higher correlation with the benchmark and it signifies that the benchmark affects a larger portion of the mutual fund portfolio.

### **Risk analysis using Sharpe ratio**

It was created by nobel laureate William F. Sharpe, and is named after him. It is an effective ratio which tells about the return and risks of an investment. The amount of return that is earned for the risk taken is determined by using this ratio. Volatility is a major indicator or measure of risk and is useful in Sharpe ratio determination. An investor can assess the return or the earning on an investment by simply subtracting risk free rate from the mean return.

<b>Schemes</b>	<b>Sharpe ratio</b>	
	<b>2017-2019</b>	<b>2019-2021</b>
<b>SBI Contra Fund - Direct Plan - GrowthContra Fund</b>	0.889	0.940
<b>Kotak India EQ Contra Fund - Direct Plan - GrowthContra Fund</b>	0.708	0.720
<b>Invesco India Contra Fund - Direct Plan - GrowthContra Fund</b>	0.7	0.690
<b>IDBI India Top 100 Equity Fund - Direct Plan - GrowthLarge Cap Fund</b>	0.659	0.790
<b>UTI Mastershare Unit Scheme - Direct Plan - GrowthLarge Cap Fund</b>	0.765	0.710
<b>Kotak Bluechip Fund - Direct Plan - GrowthLarge Cap Fund</b>	0.698	0.710
<b>BSE SENSEX</b>	0.73	0.600

The Sharpe Ratio is an indicator of the risk of an investment. A negative Sharpe ratio tells that the risk free rate of the security is much greater than the return that it gives out

SBI MF has the highest Sharpe ratio, followed by IDBI MF making it the most attractive investment MF option.

A high and positive Sharpe Ratio indicates a fund's better risk-adjustment, whereas a low and negative Shape Ratio is indicative of poor performance. If the Sharpe Ratio is greater than the benchmark comparison then the fund's performance is assumed to be superior than the market.

SBI MF has a significant high Sharpe ratio, making it the most favourable MF among its peers.

### **Risk analysis using Treynor ratio**

Treynor ratio is an indicator that tells the return an investor gets on a selected portfolio for the risk they take on it.

The treynor ratio tells systematic risk, similar to beta, of a portfolio. Treynor ratio is an indicator of the measure of the performance of the mutual funds against the uncertainties that have occurred. It is used to tell how a MF creates risk adjusted profits.

<b>Schemes</b>	<b>Treynor ratio</b>	
	<b>2017-2019</b>	<b>2019-2021</b>
<b>SBI Contra Fund - Direct Plan - GrowthContra Fund</b>	0.243	0.210
<b>Kotak India EQ Contra Fund - Direct Plan - GrowthContra Fund</b>	0.189	0.160
<b>Invesco India Contra Fund - Direct Plan - GrowthContra Fund</b>	0.123	0.150
<b>IDBI India Top 100 Equity Fund - Direct Plan - GrowthLarge Cap Fund</b>	0.178	0.170
<b>UTI Mastershare Unit Scheme - Direct Plan - GrowthLarge Cap Fund</b>	0.185	0.160
<b>Kotak Bluechip Fund - Direct Plan - GrowthLarge Cap Fund</b>	0.165	0.160
<b>BSE SENSEX</b>	0.120	0.118

SBI Contra Fund - Direct Plan – Growth Contra Fund is a suitable MF to invest in since a greater Treynor ratio is desirable and is thought to be an indicator of superior investment options.

### **Covid behaviour among investors**

Over the course of the pandemic, the mutual fund industry has grown, and surprisingly, numerous smaller organisations have acquired traction and surpassed the expansion of established major players thus far in 2021.

Small players made huge progress this year, coinciding with the boom in the stock market. In the last year and a half, a growing number of individual investors have turned to the capital market as other types of investment markets have failed to deliver the investment returns, they are accustomed to. Over the last several years, Mutual Funds have risen to prominence as the favoured savings-to-investment vehicle, and the pandemic has accelerated this trend.

Over time, the mutual fund industry has expanded its reach beyond the top 15 cities, even as the number of MF players has increased due to new fund houses entering the industry, allowing for a steady but steady increase in the number of investors who have chosen mutual funds as their preferred savings vehicle. The number of mutual fund investors in the country has more than doubled, from 1.19 crore at the end of March 2017 to 2.39 crore as of June 30, 2021, showing that the epidemic has had no effect on inflows.



## CHAPTER-4

### SUMMARY & CONCLUSIONS

#### Findings of the study

- i. SBI MF has the greatest average monthly return in the selected mutual fund portfolio, making it the best mutual fund option in terms of returns, followed by Kotak MF. Returns have increased over time, with pre-covid years showing lower returns than post-covid years
- ii. The standard deviation of the Kotak MF is the largest among the others, making it a risky investment mutual fund. Invesco mutual Fund is the second most dangerous mutual fund, following in the footsteps of the first. A similar pattern can be found in the pre-covid years. SBI contra MF, on the other hand, appears to have a lower standard deviation before covid time and a higher volatility after covid time.
- iii. Beta with lower value indicates less risk, hence, SBI MF is a favourable choice for investing.
- iv. In mutual funds, R-squared is a statistical measure used by investors to compare a fund to a benchmark. A higher R-squared value indicates that the fund tracks the benchmark. Investors can monitor their assets and maintain a more diverse portfolio by keeping an eye on this indicator. Kotak MF is having higher correlation with the benchmark and it signifies that the benchmark affects a larger portion of the mutual fund portfolio.
- v. A high and positive Sharpe Ratio indicates a fund's superior risk-adjusted performance, whereas a low and negative Sharpe Ratio indicates poor performance. The fund's performance is generally superior to the market if the Sharpe Ratio is greater than the benchmark comparison, and vice versa. the Sharpe Ratios outcomes. SBI MF has a significant high Sharpe ratio, making it the most favourable MF among its peers.
- vi. SBI MF is a suitable MF to invest in since a greater Treynor ratio is desirable and is thought to be an indicator of superior investment options.
- vii. The study was done with respect to both pre and post covid pandemic and the results were found to be similar, however, the number of investors in mutual funds has grown significantly and this gives an opportunity to the researcher to test for the increase in risk appetite of the investors.

## **Limitations**

Because of a lack of appropriate sources for data collecting, the secondary data employed in this project was not entirely correct. Because the mistake in secondary data cannot be judged, those data will reflect incorrect study results. This is one of the most significant drawbacks of analysing secondary data. These types of studies cannot be completed in a short period of time; a full, in-depth investigation is required to arrive at any relevant and appropriate conclusion. The researcher's ineptness will lead to incorrect interpretation.

## **Conclusion**

SBI MF has the highest average monthly return in the selected mutual fund portfolio, making it the best mutual fund option in terms of returns. A higher Treynor ratio is desirable and is regarded to be an indicator of superior investment options, hence SBI MF is a good MF to invest in. It has the highest Sharpe ratio among its peers, making it the most attractive MF. Because a smaller beta suggests lesser risk, the SBI MFs is a good investment option.

## **Further scope for study**

- i. The project only examines at data for three years, both before and after the covid, but the researcher might study at more years' worth of data and include different types of mutual funds, such as small caps and SIPs, to get a better view of the performance.
- ii. Data must be collected over a longer length of time, and research must be conducted over a longer period of time in order to arrive at a more accurate interpretation and analysis.
- iii. There is a slew of different mutual fund analysis metrics that can be scrutinised for further information.
- iv. The study was done with respect to both pre and post covid pandemic and the results were found to be similar, however, the number of investors in mutual funds has grown significantly and this gives an opportunity to the researcher to test for the increase in risk appetite of the investors.

## References

1. Agrawal Deepak (2006), "Measuring Performance of Indian Mutual Funds", LNCT-MER Prabandhan & Taqniki, Vol. I (1) Sept 2007, pp. 179-185.
2. Sarkar, J. and Mazumdar, S. 1995. Weak form of efficient market hypothesis, a special analytical investigation. Vikalpa, (April-June): pp.25-30.
3. Russ Wermer (1999), "Mutual Fund Performance: An Empirical Decomposition into Stock-Picking Talent, Style, Transactions Costs, and Expenses", The Journal of Finance, Vol. Lv, No. 4, August 2000.
4. S. P. Kothari, Warner (2001)," Evaluating Mutual Fund Performance", The Journal of Finance, Vol. v, No. 5, October 2001.
5. Roy & Deb (2003), "The Conditional Performance of Indian Mutual Funds in India, [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=593723](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=593723)
6. Agrawal, Deepak and Patidar, Deepak, A Comparative Study of Equity Based Mutual Fund of Reliance and HDFC (October 10, 2009). Prabandhan & Taqniki, Vol. 3, pp. 145-154, October 2009. Available at SSRN: <http://ssrn.com/abstract=1524154>
7. Michael J. Cooper, Huseyin Gulen, and P. Raghavendra Rau (2006)," Changing Names with Style: Mutual Fund Name Changes and Their Effects on Fund Flows" The Journal of Finance, Vol. 5, No. 6, December 2006.
8. Martin Gruber (1996) in their study "Another Puzzle: The Growth in Activity Managed Mutual Funds" Journal of Finance, 51(3), pp. 783-810
9. WHO, (2005), Integrated Risk Assessment: Report Prepared for the WHO/UNEP/ILO, International Programme on Chemical
10. Occupational Safety and Health Administration (OSHA), (2009), "Guidelines for Nursing Homes: Ergonomics for the Prevention
11. of Musculoskeletal Disorders".
12. National Institute for Occupational Safety and Health (NIOSH), (2008), "Exposure to stress: Occupational hazards in Hospital".
13. Papp, E.M (2007), "Occupational Health and Safety Management Programme for Nurses", ICHRN newsletter, Vol.1 (2).
14. Agnihotram, R.V (2005), "An overview of Occupational Health Research in India," Indian journal of occupational and
15. Environmental medicine, Vol.9 (1), 10-14.

16. Ramsay, J.D (summer 2005), “A new look at nursing safety: The development and use of JHAs in the Emergency Department”,
17. The Journal of SH&E Research, Vol.2 (2).
18. E-Fact 18 – “Risk assessment in Healthcare” (2007), European Agency for safety and health at work.
19. Cox (2000), “Research on Work-related Stress”, Luxembourg: Office for Official Publications of the European Communities.
20. World Health Organization, (2005), Protection of Health Care Workers.
21. CRISIL (1999), CRISIL is grading for healthcare institutions.
22. Chad J. Roy, (1995), Occupational Health and Safety in the Nursing Home Industry, WORKSAFE IOWA - Occupational Medicine