Journal of Informatics Education and Research
ISSN: 1526-4726
Vol 5 Issue 1 (2025)

A comparative analysis of the Coffee Can portfolio and the Nifty 50 Index

Prof. Amit Bathia
Assistant Professor,
NMIMS Anil Surendra Modi School of Commerce, Mumbai, India
amit.bathia@nmims.edu
Ms. Dhruvi Jhaveri
Bachelors of Business Administration,
NMIMS Anil Surendra Modi School of Commerce, Mumbai, India
Ms. Hetvi Shah
Bachelors of Business Administration,
NMIMS Anil Surendra Modi School of Commerce, Mumbai, India
Ms. Jayashree Chakrapani
Bachelors of Business Administration,
NMIMS Anil Surendra Modi School of Commerce, Mumbai, India
Mr. Neel Vazirani
Bachelors of Business Administration,
NMIMS Anil Surendra Modi School of Commerce, Mumbai, India
Mr. Saarish Thevar
Bachelors of Business Administration,
NMIMS Anil Surendra Modi School of Commerce, Mumbai, India
Prof. Prasad Naik*
(*Corresponding Author)
Assistant Professor,
NMIMS Anil Surendra Modi School of Commerce, Mumbai, India
prasad.naik@nmims.edu

ABSTRACT
The study employed a comparative analysis of the Coffee Can portfolio and the Nifty 50 Index, assessing their performance metrics, including cumulative returns, volatility, and risk-adjusted returns. The findings revealed that the Coffee Can portfolio exhibited superior risk-adjusted returns, outperforming the Nifty 50 Index over the long term. This suggests that the disciplined, buy-and-hold approach of the Coffee Can strategy can effectively mitigate market volatility and generate consistent returns.

Furthermore, a comparison with large-cap mutual funds indicated that the Coffee Can portfolio offered comparable or superior returns with lower volatility, highlighting the potential benefits of a passive, long-term investment strategy.

The analysis of high-beta cyclical and low-beta defensive stocks within the Coffee Can portfolio demonstrated that a balanced approach can optimize risk-return characteristics. While cyclical stocks may contribute to higher returns during economic upturns, defensive stocks can provide stability during downturns.

Keywords: Coffee Can Investing, Long-Term Investment, Buy-and-Hold Strategy, Long-Term Returns, Risk-Adjusted Performance, Portfolio Diversification, Nifty 50 Index, Large-Cap Mutual Funds, Cyclical vs. Defensive Stocks

Introduction

Coffee can investing is a long-term investment strategy that involves purchasing stocks of fundamentally strong companies and holding them for an extended period—often a decade or more—regardless of market fluctuations. The term was introduced by Robert G. Kirby in 1984.

The name "Coffee Can" is quite interesting. It originates from a metaphor in which an investor places money in a coffee can, metaphorically sealing it away to avoid the temptation of frequent trading or reacting to market noise. Back in native America, people would store their valuables inside coffee cans underneath their mattresses and then forget about them. This is where the name for this investing strategy is derived from.

The time horizon for Coffee Can investing is usually 10 years. Portfolio returns at the end of the period consist of some exceptionally performing stocks, some stocks that have exhibited bad performance (laggards) and some stocks that haven't shown much change since portfolio inception. Coffee can investing offers several advantages. Firstly, it has the potential for significant long-term gains. By holding high-quality stocks for extended periods, investors can benefit from the power of compounding. Secondly, this strategy reduces exposure to short-term market volatility, as investors are less likely to panic-sell during market downturns. Thirdly, coffee can investing is relatively simple to implement, requiring minimal active management. Investors can select a group of quality stocks and hold them for the long term without frequent trading or rebalancing. Also, diversifying across various sectors and industries can help mitigate risk. Finally, coffee can investing is a cost-effective strategy, as it involves minimal trading fees and expenses, allowing for higher returns.

Although coffee can investing offers several advantages, it's crucial to be aware of potential drawbacks. First, selecting high-quality stocks for a coffee can portfolio requires in-depth research and analysis, which may be challenging for individual investors. Second, the buy-and-hold nature of this strategy can limit flexibility, potentially leading to missed opportunities or increased losses. Third, concentrating investments in a few stocks can expose the portfolio to significant risk if one or two of these stocks underperform. Fourth, sticking to a buy-and-hold strategy during market downturns or when other investment options seem attractive can be psychologically challenging. Finally, the dynamic nature of the business environment means that even strong companies can face disruptions, so investors must have faith in their ability to adapt and thrive in the long run.

Literature review

The report examines many investment options available to Indian investors, emphasizing the growing acceptance of the Coffee Can Portfolio (CCP) as a long-term investment strategy. With lower risk and no transaction fees, the CCP, which focuses on companies with a Return on Capital Employed (ROCE) of 15% or above, routinely beats more conventional assets like gold and mutual funds. According to the report, astute investors seeking long-term financial objectives ought to take the CCP into account for the best possible profits. *(the coffee can as an investment portfolio, 2018)*

The essay looks at how the Nifty 50 index's volatility has been affected by both anticipated and unanticipated trade shocks, and it finds that controlled volatility can have a good impact on investor behavior. The study demonstrates that negative news has a greater impact on market volatility than positive news, using the GARCH (1,1) model. This suggests that volatility is an essential and inevitable feature of the stock market. Investors can make well-informed decisions in unpredictable market situations by having a thorough understanding of these volatility patterns. *(The Persistence of*

Volatility in Nifty 50,2022)

With a client whose straightforward buy-and-hold strategy outperformed a professionally managed portfolio, the "coffee can portfolio" demonstrates the advantages of low-activity, long-term investment. Frequent changes in management or asset allocation, for example, can result in underperformance because investors often sell at lows and buy at highs in the market. This is something the study underlines. The main lesson here is that patience investing usually pays off in the long run by taking advantage of the power of reversion to the mean and avoiding snap judgments prompted by transient market swings. *(The coffee can approach, 2011)*

The Coffee Can Portfolio has surpassed gold, debt, cash, and the Nifty 50 index, expanding to an initial investment of Rs. 2.87 lakh from an initial investment of Rs. 1 lakh in 2017. It has beaten numerous asset classes. This investment approach is perfect for long-term financial objectives like home ownership or early retirement because it routinely outperforms the Sensex and provides a more profitable substitute for mutual funds without charging charges. The data, taken as a whole, emphasizes how much better the Coffee Can Portfolio has performed over the long run than alternative investing options. *(Brief Analysis of "Coffee Can Investing" approach, 2022)*

New findings in behavioural finance demonstrate how cognitive biases—like loss aversion—have an impact on investing decisions and frequently obstruct prudent financial decision-making. By reducing emotional reactions and everyday market noise, the Coffee Can investment strategy, which emphasises long-term ownership based on a company's historical performance over ten years, promotes a logical mindset. Notwithstanding its benefits, especially when considering India, further investigation is required to determine its effectiveness and how behavioural finance might improve investment success. *(Understanding Loss Aversion as a Hurdle in Successful Investment and Developing a Coffee Can Investing Approach to Overcome the Bias,2021)*

For active fund managers, Robert Kirby's Coffee Can Portfolio technique is helpful since it emphasises the significance of initial stock selection and encourages holding both successful and failing stocks to allow profitable assets to expand. While long-term holding strategies may clash with the emphasis on outperforming benchmarks, incorporating risk management and diversification can lessen possible drawbacks. As notable investors like Warren Buffett have shown, cultivating strategic patience and teaching investors about long-term investment are ultimately essential for attaining sustained wealth growth.*(Let The Profits Run: The Coffee Can Portfolio Revisited, International Journal of Recent Advances in Multidisciplinary Research, 2024)*

It has been demonstrated that long-term investing, particularly passive approaches like buy-and-hold and indexing, is successful and frequently outperforms active management over time. Research by Siegel (2014), Bogle (2010), and Malkiel (2012) demonstrates that index investing is successful even during bear markets. During market downturns, the cost-averaging effect—in which investors consistently purchase equities regardless of market conditions—helps lower average purchase costs. Indexing has had inconsistent results in Japan, despite performing well in nations such as the U.S. and Germany. Even though indexing occasionally experiences short-term losses, it eventually outperforms conservative investing strategies. *(long term passive investment strategies as a part of pension systems, 2015.)*

This paper explores the concept of investment horizon, focusing on the contrast between short-term and long-term investing, especially for institutional investors. It identifies twelve influences shaping investment horizon, including investor circumstances, governance, market structure, and decision-

making behavior. Long-term investing is characterized by discretion over trading and a focus on long-term returns rather than short-term price changes. While short-termism is seen as pervasive and potentially harmful, long-term investing is viewed as less common but beneficial. The paper sets the stage for further discussion on the advantages of long-term investing and strategies to promote it among institutional investors. *(Long-Term Investing: What Determines Investment Horizon? ,2014)* This study examines the advantages and disadvantages of long-term investment while highlighting the wider array of options accessible to investors with a longer time horizon. The capacity to take advantage of transient market inefficiencies, invest in illiquid assets, and use dynamic techniques to gradually increase profits and lower risk are some of the main benefits. Long-term investing does, however, necessitate cautious execution because mispricing illiquid assets or misestimating long-term expectations can result in persistent underperformance. The study also emphasizes the possibility of dynamic tactics, such as the necessity for patience and caution when dealing with potentially short-term underperformance, such as purchasing cheap assets and selling expensive ones. *(Benefits (and Pitfalls) of Long-Term Investing ,2014)*

Despite short-term market changes, the buy and hold approach, which is based on patience and long-term investing, focuses on buying securities and holding them. It differs from active trading in that its goal is to profit from market expansion and long-term compound returns. Based on the Efficient Market Hypothesis, it asserts that frequent trading is not a reliable way to continually outperform markets since markets are efficient. The method reduces transaction costs and psychological strain, but it is not impervious to problems like behavioral biases and market volatility. Research on markets like the Nasdaq and CAC 40 demonstrates its efficacy, but further study is required to manage volatility and behavioral effects. *(Investing in the long-term: an empirical approach ,2024)*

Global prosperity is at risk due to the depletion of natural capital, yet political and economic systems are still unprepared. Present-day business methods ignore social and environmental concerns in favor of short-term profitability. Companies need to incorporate environmental, social, and governance (ESG) considerations into their business models in order to create long-term value, and investors need to look beyond immediate profits. This necessitates a change in perspective from effective market theory to adaptive markets that prioritize sustainability. It will take adjustments to governance, regulation, and finance education to bring about this transition, which will promote long-term business responsibility and sustainable investment strategies. *(Investing for long-term value creation ,2019)*

Despite being more popular than active management because of its low cost, great transparency, and long-term outperformance, passive investing is not without its problems. Passive investors are accused of being freeloaders by critics who point out that the market portfolio includes stocks with low performance. An alternate strategy for increasing returns is factor investing, which focuses on well-established factors like value, momentum, and low volatility. *(The dark side of passive investing ,2014)*

Passive investing has grown significantly in the last ten years, especially in the U.S. equities markets, as investors have shifted away from active management because of excessive fees and poor results. Active management proponents contend that market inefficiencies can be taken advantage of for larger returns, whereas passive strategies—which are based on the Efficient Market Hypothesis—offer lower costs and market returns. Although there is evidence for talented active managers, hefty fees can offset these gains, which makes passive investing a compelling long-term approach, particularly when combined with hedge fund or emerging market components for diversity. *(Returns*

of active vs. passive strategies of portfolio management: A systematic review, 2019)

In this study, a model is developed where investors allocate their investments between active and passive managers, where the former deal with micro-inefficiencies and the latter with the predicted market portfolio. The authors demonstrate how systematic factors cause inefficiencies as asset counts rise. They also discuss how the rise of passive investment impacts market efficiency, namely by raising macro-inefficiencies and decreasing active management costs more than passive ones. These findings provide insight into current patterns in asset management and market dynamics. *(Active and Passive Investing ,2022)*

In addition to examining the relationship between long-term investment strategies and Hofstede's long-term orientation notion, this study proposes a novel scale to measure both short- and long-term investment strategies among individual investors. The results underscore the significance of financial literacy and strategic investment behavior in the current complicated financial markets, offering investors, financial professionals, and policymakers' useful insights. In order to improve generalizability, the study also recommends that future studies concentrate on cross-cultural comparisons. *(Evaluating short- and long-term investment strategies: development and validation of the investment strategies scale ,2024)*

The article examines the widely held belief that, in the long run, equities tend to do better than government bonds; however, it emphasizes that this has only been the case for investors who have kept their investments for more than 25 years. Stocks and bonds both posed significant risks over shorter holding periods, casting doubt on the notion that stocks are always a better investment. When choosing how to allocate their assets, investors should take their holding time and risk tolerance into account. *(How Long Is a Long-Term Investment, 2005)*

The study examines the distinctions between active and passive investing approaches, with a focus on the American market. It emphasizes that passive investments in index funds, with their lower costs and greater market efficiency, frequently result in higher returns. It contends that although actively managed funds have traditionally outperformed their benchmarks in U.S. markets, active management may still offer a considerable advantage in less efficient markets such as emerging markets and EAFE. Ultimately, the author acknowledges that active management can provide further advantages like risk management and customized financial planning, but she advises novice investors to generally choose passive solutions for optimizing returns. *(A Comparison of Active and Passive Portfolio Management, 2017)*

This article investigates the factors that impact individual investors' decisions to make investments in India, emphasizing the role that economic growth, financial inclusion, and technology advancement have in influencing investing habits. It concludes that investors put safety ahead of returns and that income level and market involvement have a significant influence on the investments that they make. While recommending more research on the behavioral finance components of investment decision-making, the study suggests that information and experience gained personally have a substantial impact on investing confidence. (*"Investment behavior of short-term versus long-term individual investors of PAN India – An empirical study", 2021)*

The study looks into how working women in Chennai make investments. It finds that while they view shares as high-risk products, they prefer traditional investing routes like banks, gold, and life insurance. It concludes that women's income levels have an impact on their low risk tolerance and lower

investment returns, and that they are significantly less aware of riskier investment possibilities, such as equities. The report recommends financial institutions teach working women about the advantages of higher-risk options and how to diversify their investment portfolios in order to increase investment participation. *(A study on the investment behavior of working women with reference to Chennai city ,2021)*

This research delves at the factors that impact the financial behavior of individual investors, with a particular emphasis on risk attitudes, which are defined as risk inclination, risk neutrality, and risk aversion. The research employs Structural Equation Modeling (SEM) to identify three critical elements that have a major impact on investors' risk attitudes and contribute to market inefficiencies: overconfidence, market perception, and information asymmetry. The results indicate that excessive trading and a distorted impression of risk result from investors relying more on their own judgment than on technical analysis, highlighting the need for more research and analysis in a variety of settings. *(Exploring Determinants to Explain Aspects of Individual Investors' Financial Behaviour, 2015)*

In particular, through tactics like Coffee Can Investing and prudent small-cap investments, Saurabh Mukherjea highlights the need for Indian investors to switch from traditional asset classes like gold and real estate, which deliver poor long-term returns, to equities. He contends that the majority of Indians believe stock market trading is exclusive for the wealthy because they lack access to simple financial instruments, competent financial counsel, and faith in institutions. According to Mukherjea, middle-class families can achieve their long-term financial objectives by comprehending and utilizing successful investing strategies, which can lead to the accumulation of substantial wealth. *(Coffee Can Investing: The low-risk road to creating big wealth, 2018)*

Robert Kirby came up with the term "Coffee Can Investing," which highlights the importance of a long-term, buy-and-forget investment strategy that lets compound interest build up significant wealth over time. This strategy promotes patience and discipline in investing rather than frequent trading motivated by emotional responses to market changes. Warren Buffett points out that although investing may seem straightforward, it is difficult because of psychological biases that frequently result in less-than-ideal results. For this reason, a long-term investment strategy is necessary to achieve financial success. *(Coffee Can Investing is to do 'nothing' with your stocks and stay invested for long term, 2022)*

The study examines long-term stock market returns in 39 industrialized nations and shows that there is a substantial risk of loss for long-term investors, which is sometimes overlooked when using data from the United States alone. The results, obtained through the use of a bootstrap simulation approach, show a larger likelihood of unfavorable outcomes: 12.1% of scenarios show possible losses over a 30-year horizon, which is significantly higher than the historical loss probability of 1.2% in the United States. According to the findings, investors ought to proceed cautiously and reevaluate their stock allocation plans in light of a more comprehensive knowledge of market risks and performance variations among developed economies. *(Stocks for the long run? Evidence from a broad sample of developed markets, 2022)*

Research Gap

While anecdotal evidence and short-term studies have suggested the potential benefits of coffee can investing, there is a significant need for rigorous, long-term empirical research to fully assess its performance across various market cycles and economic conditions. Such studies can provide valuable insights into the strategy's ability to generate consistent returns, control risk, and outperform

traditional investment approaches. By examining the long-term performance of coffee can portfolios, researchers can determine whether this strategy is a viable option for investors with different risk tolerances and time horizons. Additionally, long-term studies can help identify the optimal stock selection criteria, rebalancing strategies, and behavioral factors that can enhance the success of coffee can investing.

Research Objectives

We will be focusing on 3 objectives

1. To evaluate and compare the performance, risk characteristics, and long-term investment outcomes of the Nifty 50 index and a Coffee Can portfolio strategy, focusing on metrics such as returns, volatility, risk-adjusted performance, and portfolio resilience during different market cycles
2. To compare and analyze the performance, risk profile, and degree of correlation between a Coffee Can investment portfolio and large-cap mutual funds, with a focus on understanding the impact of different investment strategies on long-term wealth accumulation and volatility management
3. To evaluate the effects of high beta cyclical stocks on overall portfolio stability and growth across different economic cycles by comparing and analyzing their performance, risk characteristics, and contribution to long-term wealth accumulation with low beta defensive stocks in a Coffee Can investment portfolio.

Hypothesis

This paper examines three sets of hypotheses:

1. To compare returns, correlation and understanding the relationship between the Nifty 50 index and the Coffee Can portfolio:

   Hypothesis I

   H0: The Coffee Can Investment Strategy is statistically indistinguishable from the Nifty 50 Index in terms of cumulative return generation, indicating no significant outperformance.

   Hypothesis II

   H0: Returns of the coffee can portfolio are not correlated with returns of Nifty 50 index.

2. To compare returns and correlation of large cap mutual funds with the Coffee Can portfolio:

   Hypothesis I

   H0: The Coffee Can Investment Strategy is statistically indistinguishable from large cap mutual funds in terms of cumulative return generation, indicating no significant outperformance.

   Hypothesis II

   H0: There is no correlation between the returns of the coffee can portfolio and large-cap mutual funds**.**

3. To compare returns of Nifty 50 with the returns of low beta and high beta stocks:

   H0: Under a Coffee Can Portfolio strategy, defensive and cyclical stocks (whether high or low beta) do not yield significantly different returns compared to the Nifty 50.

Research Methodology

1. **Data collection:**

   All company data has been sourced from the official website of the Bombay Stock Exchange of

India. We have collected the data of annual adjusted closing prices of all the companies mentioned. This data was collected from March 31st, 2014, to March 31st, 2024.

2. Methodology:

For this study, we have taken data of companies that fall under our criteria for a coffee can portfolio. We have developed 3 portfolios to test our hypotheses. The first portfolio is used to test the first 2 research objectives whilst the other 2 portfolios are used to test out the third research objective.

The following statistical tools have been used to analyze our hypotheses:

1. **Standard Deviation**: Standard deviation measures the dispersion or spread of data points around the mean.

$$\sigma = \sqrt{(\Sigma (Ri - Ravg)^2 / (n-1))}$$

Where:
σ: Standard deviation of returns
Ri: Return in period i
Ravg: Average return
n: Number of periods

2. **Coefficient of variation**: Compares the standard deviation of an investment's returns to its average return, helping assess risk-adjusted performance. A lower coefficient of variation suggests a better risk-return trade-off.

$$CV = (\sigma / \mu) * 100\%$$

Where:
CV: Coefficient of variation
σ: Standard deviation
μ: Mean

3. **Sharpe Ratio**: A measure of risk-adjusted performance, comparing the excess return of an investment to its volatility. A higher Sharpe ratio indicates a better risk-adjusted return.

$$Sharpe\ Ratio = (Rp - Rf) / \sigma p$$

Where:
Rp: Expected return of the portfolio
Rf: Risk-free rate of return (e.g., Treasury bond yield)
σp: Standard deviation of the portfolio's excess return

4. **Jensen's Alpha**: A measure of a portfolio's risk-adjusted performance compared to a benchmark index. It indicates the excess return generated by a portfolio over and above what would be expected based on its beta and the market's excess return.

$$Jensen's\ Alpha = Rp - [Rf + \beta p * (Rm - Rf)]$$

Where:
Rp: Return of the portfolio

Rf: Risk-free rate of return
βp: Beta of the portfolio
Rm: Return of the market index

Data Analysis and Findings

Research Objective 1 - Comparison with NIFTY 50

The objective of this hypothesis is to compare returns derived from our constructed coffee can portfolio to Nifty 50 returns in order to see whether our coffee can portfolio can beat the market. In order to make our portfolio we have set certain criteria and selected stocks which fulfill the criteria best.

Criteria for Selection of Stocks in a Coffee Can Portfolio

Quantitative Factors

Market Capitalisation: It determines the size and value of a company. For a coffee can portfolio, a company should atleast have a market capitalization of 100 crores as this means that it is a large company and therefore it can weather storms that can arise as investments in coffee can portfolio are typically held for 10-12 years.

Return on Capital Employed: It depicts the ability of the company to generate returns on their investments. The coffee can pitch typically underlines that companies generate a return on capital employed (ROCE) of over 15% every year which signifies that the company will be able to deliver good returns over the long run.

Listing Date: The firm should have been listed for at least 10 years. This is required to ensure the company is stable and can continue to be profitable for the next 10-15 years.

Revenue growth: It is a crucial indicator of business health, competitiveness, and long-term viability. To be a part of the portfolio, the firm should have a revenue growth of at least 15%. This shows the company's ability to maintain their position but also grow and give investors a chance for capital appreciation.

Industry Growth Rate: Apart from the firm, it is important that the industry also has a positive growth rate of at least 10%. If the industry is not growing, it does not matter if the company is growing as it will decline in the long run.

Qualitative Factors

Competitive Edge: The coffee can strategy emphasizes keeping stocks through market cycles without making frequent changes. Companies with a significant competitive edge are better equipped to produce steady revenue and earnings growth, which raises the possibility of long-term capital appreciation.

Good Brand value: Over time, consistent cash flows and profitability can result from a great brand's ability to establish a long-lasting competitive advantage. High-value brands typically maintain their market share and thrive in a coffee can portfolio that is intended to remain unaltered for years or even decades.

Macroeconomic Factors

Economic Growth: A strong economy generally fuels consumer spending, business expansion, and overall market growth. This creates a favorable environment for companies in a coffee can portfolio.

Cost of Borrowing: While high interest rates typically impede growth, lower rates lower a company's cost of capital, promoting investment and expansion. Companies that are sensitive to interest rates may be included in coffee can portfolios.

Supply Chain Vulnerabilities: Geopolitical concerns, trade tariffs, and limitations can raise costs and cause supply chain disruptions, particularly for multinational corporations. These macroeconomic shifts may have an effect on the profitability of businesses in a coffee can portfolio that have large international operations.

.

Table 1: Portfolio Construction

	Market Capitalisation	Listing Date	Return on Capital Employed	Revenue Growth	Share Price
Tata Consultancy Services	1483000	2004	64.30%	10.46%	4098.5
Infosys	742000	1999	40%	13.20%	1791.9
Hindustan Computers Limited	492000	1999	29.60%	12.71%	1820
Sun Pharmaceuticals	433000	1994	17.30%	10.78%	1799.15
Titan	279000	1986	22.70%	20.90%	3143.4
Asian Paints	275000	1982	37.50%	13.03%	2864.4
Trent	246000	1998	23.80%	36.30%	6931.5
Adani Power	234000	2009	32.20%	16.09%	604
Bharat Electronics	218000	1978	34.60%	10.25%	296.5
Persistent Systems	871000	2010	29.20%	23.88%	5674.05
Eicher Motors	133000	1983	31.10%	11.04%	4833.1
Dr. Reddy Laboratories	107000	2001	26.50%	12.64%	1284.8

Source: Screener

Hypothesis I

H0: The Coffee Can Investment Strategy is statistically indistinguishable from the Nifty 50 Index in terms of cumulative return generation, indicating no significant outperformance.

Table 2: Return Calculation

Year	Portfolio Returns	Nifty Returns
2023-24	0.69	0.29
2022-23	0.03	-0.01
2021-22	0.52	0.19
2020-21	1.04	0.71
2019-20	-0.10	-0.26
2018-19	0.18	0.14
2017-18	0.11	0.10
2016-17	0.13	0.19
2015-16	-0.01	-0.09
2014-15	0.64	0.27

Source: NSE index (Historical data)

In order to compare our portfolio with the Nifty 50 index we have taken returns for the same from 2013-14 to 2023-24. The returns have been calculated on an annual basis from 31st March 2013 to 31st March 2024. To justify whether a coffee can portfolio can generate better returns, we have used 5 measures - average returns, standard deviation, coefficient of variation, Sharpe ratio and Jensen's alpha.

Table 3: Hypothesis 1

Hypothesis 1		
	Coffee Can	**Nifty 50**
Average Returns	**32.26%**	15.31%
Standard Deviation	0.38	**0.26**
Coefficient of Variation	**0.85**	0.59
Sharpe Ratio	**0.68**	0.33
Jensen's Alpha	**20.08%**	-

Source: NSE Index (Historical Data) and Excel Calculations

From the above table we can reject the null hypothesis that our coffee can portfolio does not generate higher returns than the nifty 50 index. The following is the justification for rejection of the null hypothesis.

Average Returns: Both returns are being compared by taking a simple average of the returns over the past 10 years from 2013-14 to 2023-24. Our coffee can portfolio has given a return of 32.26% which is almost double of the return generated by Nifty 50 index. This is because the power of compounding works best over a long-time horizon and CCP core principle lies in long term investment.

Standard Deviation: The standard deviation of the CCP is 0.38 that is higher than the standard deviation of Nifty 50. This is because of the size of the two portfolios. CCP has focused only on 10-15 high quality stocks whereas nifty 50 invests in fifty stocks. This gives more diversification benefits to the index

Coefficient of variation: In order to have a comprehensive understanding about which portfolio gives better returns, we use coefficient of variation that measures risk per unit of return which is calculated by dividing the standard deviation of a data set by its expected mean. The CoV for the coffee can portfolio is 1.18 which is significantly less than that of nifty 50 which is at 3.58 showing that risk per unit of return for CCP is less than Nifty 50.

Sharpe Ratio: The Sharpe ratio's numerator is the difference over time between realized, or expected, returns and a benchmark such as the risk-free rate of return. The risk free rate above is taken as 6.9% which is the rate for India 10 year bond yield. The Sharpe ratio for CCP (0.68) is higher than that of nifty 50 index (0.33). A higher Sharpe ratio is better because it gives better returns compared to the risk undertaken.

Jensen's Alpha: It is a metric used to assess how well an investment portfolio performs in comparison to a benchmark index. It determines the excess return that the portfolio generates over the return that the capital asset pricing model (CAPM) predicts.

The portfolio gives a Jensen alpha of 20.08%. Since it is positive, we can conclude that it outperforms the market and it has an excess return of 20.08% over the expected return.

The above analysis rejects the null hypothesis thereby proving that the coffee can portfolio exhibits a statistically significant outperformance relative to the Nifty 50 Index.

Hypothesis II

Ho: Returns of the constructed coffee can portfolio are not correlated with returns of Nifty 50 index.

To test this hypothesis, we developed a Correlation Matrix in Jamovi. We further developed a linear regression model to find out the exact relationship between the two variables.

Table 4: Correlation Matrix

Correlation Matrix		

Portfolio Return	Pearson's r	—
	df	—
	p-value	—
Nifty 50 Returns	Pearson's r	**0.918**
	df	8
	p-value	0.0001789

Source: Jamovi

To run this correlation test we have used the same portfolio we constructed for Hypothesis I. The correlation test that shows the strength and direction of a relationship between two or more variables.

The resultant **p value** is 0.001789 which is less than 5% which means it is deemed statistically significant, therefore the null hypothesis should be rejected. The Pearson' R value is 0.918, which shows that Portfolio Returns and Nifty 50 returns are positively highly correlated.

This high correlation can be attributed to - Numerous excellent, large-cap corporations are frequently included in the Nifty 50 index, which lists the top 50 companies on the National Stock Exchange of India according to market size and liquidity. These businesses are also frequently preferred by Coffee Can Investing due to their solid business plans, consistent revenue, and promising future. This overlap results in a connection by nature. Despite the correlation, Coffee Can Investing is more about the underlying fundamentals and less about market timing or index tracking. It prioritizes company quality and sustainability over index movements.

Next, we developed a linear regression model to help us assess the Coffee Can fund's performance relative to the Nifty 50 Index.

Fig 1: Linear Regression of CCP and Nifty 50

Linear Regression

Model Fit Measures

				Overall Model Test			
Model	R	R^2	Adjusted R^2	F	df1	df2	p
1	0.91741	0.84165	0.82185	42.51971	1	8	0.00018

Note. Models estimated using sample size of N=10

Omnibus ANOVA Test

	Sum of Squares	df	Mean Square	F	p
NIFTY 50	1.06619	1	1.06619	42.51971	0.00018
Residuals	0.20060	8	0.02508		

Note. Type 3 sum of squares

[3]

Model Coefficients - Coffee Can Fund

Predictor	Estimate	SE	t	p
Intercept	0.11943	0.05898	2.02507	0.07745
NIFTY 50	1.32795	0.20365	6.52071	0.00018

Assumption Checks

Normality Test (Shapiro-Wilk)

Statistic	p
0.92067	0.36255

Source: NSE Index and Jamovi

Let's analyze our linear regression output:

1. Model Fit Measures:
The correlation coefficient (R) being 0.91741 indicates a strong positive correlation between our predictor variable (NIFTY 50) and our response variable (Coffee Can Fund). This suggests that as NIFTY 50 changes, the Coffee Can Fund also tends to change in a predictable manner. Our R^2 (Coefficient of Determination) is 0.84165, indicating that approximately 84.17% of the variance in the dependent variable (Coffee Can Fund) can be explained by the independent variable (NIFTY 50). This high R^2 value is another metric that tells us that the model fits the data very well.

The adjusted R^2 value of 0.82185 adjusts for the number of predictors in the model and the sample size. The slight decrease from R^2 suggests that while the model is good, it may benefit from additional explanatory variables. However, our value remains high, indicating a good fit overall. Our model statistic (F-statistic) is 42.51971, with a corresponding p-value of 0.00018. The p-value is highly

significant (less than 0.05), indicating that the overall model is statistically significant and that the predictor (NIFTY 50) is meaningfully related to the dependent variable (Coffee Can Fund).

2. Omnibus ANOVA Test:
The sum of squares for NIFTY 50 is 1.06619, with 1 degree of freedom. This value represents the variation in the dependent variable that can be attributed to the independent variable, NIFTY 50. Our residual sum of squares is 0.20060, with 8 degrees of freedom, indicating the variation in the dependent variable that is unexplained by the model.

3. Assumption Checks: (Normality)
The Shapiro-Wilk test results suggest that the residuals of the model are normally distributed (p-value > 0.05). This confirms that the normality assumption of linear regression is met, which is important for the validity of hypothesis testing.

By using the above model, we can develop the linear regression equation between Nifty 50 and our Coffee Can fund as:

Coffee Can Fund = 0.11943 + 1.32795 * NIFTY 50
The intercept (0.11943) represents the expected value of the Coffee Can Fund when NIFTY 50 is zero. However, this value might not have practical significance in this context due to its p-value being greater than 0.05. Our coefficient for NIFTY 50 (1.32795) indicates that for every 1% increase in NIFTY 50, the Coffee Can Fund is expected to increase by 1.32795%, holding other factors constant. To summarize, our linear regression model explains a substantial portion of the variance in the Coffee Can Fund returns using NIFTY 50 as the sole predictor. The model's high R^2 value (0.84165) demonstrates a strong explanatory power. The coefficient for NIFTY 50 is highly statistically significant, suggesting that changes in the NIFTY 50 index are strongly associated with changes in the Coffee Can Fund returns. Specifically, a 1% increase in the NIFTY 50 is associated with a 1.33% increase in the Coffee Can Fund. The intercept term, while positive, is not statistically significant at the 0.05 level, indicating that it does not meaningfully contribute to the model at this significance threshold. The normality of residuals, as confirmed by the Shapiro-Wilk test, supports the assumption of normality in the model, further ensuring the reliability of the statistical results.

Overall, the model appears to provide a solid fit for the data, and the results suggest a meaningful relationship between the NIFTY 50 index and Coffee Can Fund returns.

Research Objective 2 - Comparison with Indian Large Cap Mutual Funds

Hypothesis I
H0: The Coffee Can Investment Strategy is statistically indistinguishable from large cap mutual funds in terms of cumulative return generation, indicating no significant outperformance.

In order to compare our portfolio with the large cap mutual funds, we have taken returns for the same from 2013-14 to 2023-24. The returns have been calculated on an annual basis from 31st March 2013 to 31st March 2024. To justify whether a coffee can portfolio can generate better returns, we have used 5 measures - average returns, standard deviation, coefficient of variation, Sharpe ratio and Jensen's alpha.

The large cap mutual fund returns column is calculated as the average of 24 large cap mutual funds.

Fig 2: Returns of Large Cap funds

Large Cap Mutual Funds	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
ICICI Blue chip Fund	0.4090	-0.0028	0.0732	0.3275	-0.0022	0.1011	0.1299	0.2786	0.0685	0.2739
HDFC Large Cap Fund	0.2727	-0.0501	0.0367	0.2933	0.1061	0.2700	0.0547	0.0739	0.0075	0.3197
HDFC Top 100 fund	0.4651	-0.0621	0.0859	0.3200	0.0100	0.0700	0.0500	0.2700	0.1100	0.2900
JM Large Cap Fund	0.4553	-0.0143	0.0165	0.2086	0.0160	0.0501	0.1800	0.2178	0.0340	0.2893
Nippon India Large Cap Fund	0.5569	0.0167	0.0295	0.3842	0.0030	0.0713	0.0479	0.3040	0.1133	0.3215
SBI Bluechip Fund	0.4741	0.0786	0.0448	0.3023	-0.0358	0.1185	0.1592	0.2412	0.0436	0.2195
Groww Large Cap Fund	0.2883	0.0295	0.0415	0.3336	-0.0079	0.1257	0.0793	0.1585	0.0439	0.2232
Kotak Bluechip Fund	0.4238	0.0377	0.0259	0.2918	-0.0154	0.1466	0.1625	0.2608	0.0199	0.2290
Baroda BNP Paribas Large Cap Funds	0.4706	0.0464	-0.0606	0.3674	-0.0395	0.1697	0.1681	0.2200	0.4160	0.2480
Invesco large cap Fund	0.4165	0.0467	0.0257	0.2834	-0.0044	0.1050	0.1405	0.3253	-0.0299	0.2779
Edelweiss Large Cap Fund	0.3972	0.0141	0.0083	0.3499	0.0250	0.1296	0.1928	0.2517	0.0503	0.2763
Bandhan Large Cap Fund	0.3105	-0.0419	0.0707	0.3548	-0.0332	0.1165	0.1865	0.2830	-0.0107	0.2832
DSP Top 100 Equity Fund	0.3753	0.0416	-0.0263	0.2737	-0.0203	0.1563	0.0834	0.2045	0.0224	0.2760
Aditya Birla Sun Life Frontline Equity Fund - Direct Plan - Growth	0.4452	0.0092	0.0697	0.3200	-0.0100	0.0900	0.1500	0.2700	0.0400	0.2400
Tata Large Cap Fund - Direct Plan - Growth	0.3605	0.0124	0.0255	0.3100	-0.0200	0.1700	0.1700	0.2200	0.0100	0.2400
HSBC Large Cap Fund	0.3481	-0.0316	0.0770	0.3100	-0.0200	0.1300	0.0900	0.3200	0.0400	0.2500
Canara Robeco Bluechip Equity Fund - Direct Plan - Growth	0.3589	-0.0059	0.0129	0.3300	0.0500	0.1700	0.2400	0.2500	0.0200	0.2400
LIC MF Large Cap Fund - Direct Plan - Growth	0.3977	-0.0266	0.0176	0.2800	0.0300	0.1700	0.1500	0.2400	0.0000	0.1800
Mirae Asset Large Cap Fund - Direct Plan - Growth	0.5250	0.0386	0.0765	0.4000	0.0100	0.1400	0.1500	0.2800	0.0300	0.1900
UTI Large Cap Fund - Direct Plan - Growth	0.4311	-0.0049	0.0323	0.3100	0.0100	0.1200	0.1900	0.2900	-0.0100	0.2100
Axis Bluechip Fund - Direct Plan - Growth	0.4064	-0.0129	-0.0397	0.4000	0.0900	0.2000	0.2100	0.2100	-0.0500	0.1800
Taurus Large Cap Fund - Growth	0.3841	0.0284	-0.0188	0.2600	-0.0600	0.0900	0.1000	0.1600	0.0700	0.2100
Union Largecap Fund - Growth	0.3165	-0.0273	0.0565	0.0600	-0.0500	0.1200	0.1500	0.2700	0.0000	0.2200
PGIM India Large Cap Fund - Direct Plan - Growth	0.4463	0.0202	0.0235	0.3000	-0.0100	0.1600	0.1500	0.2100	0.0300	0.2100
Average	0.4028	0.0041	0.0333	0.3045	0.0026	0.1313	0.1399	0.2421	0.0284	0.2456

Source: Money Control

Table 5: Return calculation for CCP and Large Cap Fund

Year	Portfolio Returns	Large Cap Mutual Funds Returns
2023-24	0.69	0.246
2022-23	0.03	0.028
2021-22	0.52	0.24
2020-21	1.04	0.14
2019-20	-0.10	0.131
2018-19	0.18	0.003
2017-18	0.11	0.304
2016-17	0.13	0.033
2015-16	-0.01	0.004
2014-15	0.64	0.402

Source: NSE Index (Historical Data) and Money Control

Table No. 6: Hypothesis 1 - CCP and Large Cap Funds

Hypothesis 1		
	Coffee Can	**Large Cap Funds**
Average Returns	**32.26%**	15.32%
Standard Deviation	0.38	**0.14**
Coefficient of Variation	**0.85**	0.91
Sharpe Ratio	**0.68**	0.60
Jensen's Alpha	**20.08%**	-

Source: NSE Index and Excel calculation

Average Returns: The Coffee Can fund has significantly higher average returns (32.26%) compared to Large Cap Funds (15.32%). This suggests that the Coffee Can fund has generated superior returns over the period considered.

Standard Deviation: The Coffee Can fund exhibits higher standard deviation (0.38) than Large Cap Funds (0.14). This indicates that the Coffee Can fund's returns are more volatile and have a wider range of fluctuations compared to the Large Cap Funds.

Coefficient of Variation: The Coffee Can fund has a higher coefficient of variation (0.85) compared to Large Cap Funds (0.91). This suggests that the Coffee Can fund's returns are relatively more volatile compared to its average return compared to the Large Cap Funds.

Sharpe Ratio: Both funds have similar Sharpe Ratios (0.68 for Coffee Can and 0.60 for Large Cap Funds). This indicates that both funds have generated similar risk-adjusted returns.

Jensen's Alpha: A Jensen's alpha of 20.08% indicates that the investment or portfolio has significantly outperformed its benchmark index, considering its risk level. This means it has generated excess returns compared to what would be expected based on its risk profile.

Based on this analysis, we can reject the null hypothesis and say that the Coffee Can Investment Strategy exhibits a statistically significant outperformance relative to large cap mutual funds.

Hypothesis 2:
H0: The returns of the Coffee Can Investment Strategy are statistically indistinguishable from the returns of large cap mutual funds since its inception.

Table 7: Correlation matrix of CCP and Large Cap Mutual Funds

Correlation Matrix		
Portfolio Return	Pearson's r	—
	df	—
	p-value	—
Large Cap Funds	Pearson's r	**0.48183**
	df	8
	p-value	**0.15849**

Source: Jamovi

To run the correlation test, we have taken the returns of our constructed CCP portfolio from the period of 2013-14 to 2023-24 and the returns of 24 large cap mutual funds to assess the strength and direction of association between the same.

The p value is 0.15849 which is greater than 0.05 which means it is not statistically significant. Therefore we accept the null hypothesis that the returns of the Coffee Can Investment Strategy are statistically indistinguishable from the returns of large cap mutual funds since its inception. The Person's r coefficient is 0.48183 which means returns of the portfolio and the large cap mutual funds is positively but not strongly correlated.

This is mainly because the trading activity of mutual funds is generally higher than that of Coffee Can portfolios. In contrast to Coffee Can Investing's long-term, static character, mutual fund managers that use the active management strategy frequently rebalance their portfolios, which may result in varied performance outcomes. Coffee Can portfolios use a passive, "buy and hold" approach, concentrating on strong companies with steady earnings growth, whereas large-cap mutual funds are actively managed by fund managers to beat benchmark indexes like the Nifty 50 through stock selection and market timing.

Mutual fund managers actively manage risk by adjusting allocations based on macroeconomic trends, valuations, or company-specific risks. Coffee Can Investing, on the other hand, accepts the risk of holding a few select stocks over the long term without making short-term adjustments. Also mutual funds often hold cash or equivalents to manage liquidity and investor redemptions. This cash cushion can impact returns during market stress, while Coffee Can portfolios are typically fully invested, affecting performance outcomes. Therefore we can conclude that even though both large cap mutual funds and Coffee can portfolio invest in the same asset class, the different strategies (active, passive) used causes the low correlation between them.

Research Objective 3 - Comparison of High Beta and Low Beta Stocks

<u>Stock Selection Criteria for portfolio 2</u> -

Step 1: The study selected 24 companies, split evenly between high-beta and low-beta stocks, with equal weightage given to each company.

Step2: For high beta stocks companies having beta of more than 1 are selected. For low beta stocks companies having beta of less than 1 are selected.

Step 3: All companies chosen for the study have been in existence for at least 10 years and have a market capitalization of over 100 crores.

Step 4: To determine the returns of cyclical stocks, eight companies were selected from each of the following sectors: electric equipment, telecommunication equipment and services, and software. These sectors were chosen due to their sensitivity to market fluctuations.

Step 5: Similarly, to determine the returns of defensive stocks, eight companies were selected from each of the following sectors: hospital and healthcare services, consumer foods, and pharmaceutical and drugs. These sectors were chosen for their relative stability during market fluctuations.

Step 6: Returns were calculated over the past 10 years, spanning from 2014 to 2024.

Defensive stocks (low beta)

Calculations:

Table 8: HPR of low beta stocks

	Apollo Hospita	Fortis Health	Kovai Medical	Indraprastha	KMC Speciality	Constronics In	Lotus Eye Care	Fortis Malar	Nestle	Britannia	Jubilant Foodworks	Hatsun Agro
year	HPR	HPR	HPR	HPR	HPR	HPR	HPR	HPR	HPR	HPR	HPR	HPR
2013												
2014	19.23%	8.44%	209.65%	57.02%	18.26%	-40.12%	38.40%	40.80%	20.44%	99.93%	8.56%	51.92%
2015	27.44%	60.04%	78.80%	16.49%	215.06%	47.25%	116.13%	130.63%	-9.42%	58.13%	10.54%	33.61%
2016	-17.93%	1.55%	12.48%	-21.84%	22.43%	-56.71%	18.59%	0.00%	4.34%	-0.96%	-43.79%	-12.39%
2017	2.17%	-11.22%	34.54%	25.82%	148.75%	53.33%	17.75%	-19.66%	30.10%	63.62%	106.15%	127.76%
2018	4.43%	-12.41%	-46.59%	-40.20%	-46.08%	29.16%	-13.43%	-9.16%	41.58%	-33.87%	-28.94%	-24.08%
2019	14.53%	-5.95%	5.76%	1.15%	5.90%	-7.72%	-22.24%	-14.36%	33.16%	-2.92%	31.98%	-6.24%
2020	67.27%	17.34%	48.23%	44.56%	50.11%	17.38%	47.67%	10.73%	24.36%	18.10%	68.83%	23.16%
2021	107.88%	91.84%	54.60%	33.36%	245.31%	68.01%	55.56%	21.45%	7.16%	0.88%	28.68%	74.19%
2022	-10.65%	-3.73%	-0.85%	8.47%	-11.83%	-22.09%	49.61%	-9.84%	-0.56%	19.41%	-85.77%	-27.50%
2023	27.30%	46.88%	83.55%	109.38%	30.52%	129.47%	7.55%	1.12%	35.70%	23.97%	10.43%	24.40%
2024	22.48%	41.45%	73.75%	128.74%	-6.78%	645.59%	-17.17%	-8.53%	-91.16%	7.27%	9.10%	-0.55%
Weights	0.04166666667	0.04166666667	0.04166666667	0.04166666667	0.04166666667	0.04166666667	0.04166666667	0.04166666667	0.04166666667	0.04166666667	0.04166666667	0.04166666667

Zydus Wellness	Hindustan Foods	Heritage Foods	ADF Foods	Sun Pharma	Divis Labs	Cipla	Torrent Pharm	Dr Reddys Lab	Zydus Life	Lupin	Aurobindo Pharm
HPR	HPR	HPR	HPR	HPR	HPR	HPR	HPR	HPR	HPR	HPR	HPR
49.88%	211.41%	84.16%	36.45%	45.51%	40.65%	56.24%	138.65%	28.10%	98.04%	57.12%	189.23%
3.91%	114.90%	51.09%	30.29%	-4.19%	-32.06%	3.59%	28.73%	-7.23%	-75.60%	26.47%	-23.33%
1.18%	65.97%	55.81%	54.00%	-20.44%	-32.93%	-12.35%	-9.67%	1.60%	-8.67%	-17.82%	-23.21%
20.97%	121.40%	-6.58%	122.93%	-9.36%	40.24%	6.85%	7.69%	-21.06%	21.71%	-40.38%	2.88%
30.89%	6.17%	-36.13%	-13.70%	-24.55%	34.97%	-14.35%	25.03%	8.39%	-19.85%	-4.41%	6.20%
7.92%	100.38%	-31.01%	13.12%	0.43%	24.55%	-7.99%	4.27%	9.94%	-26.86%	-9.54%	-37.45%
35.22%	124.93%	-18.68%	110.26%	36.96%	108.14%	71.36%	51.64%	80.88%	87.37%	27.69%	101.40%
-5.13%	24.29%	38.23%	26.06%	42.72%	21.75%	15.18%	17.08%	-5.68%	1.48%	-2.61%	-20.31%
-20.04%	-68.08%	-12.26%	-3.89%	18.37%	-27.05%	13.85%	-52.68%	-13.74%	-13.14%	-22.95%	-40.30%
11.52%	-8.72%	-15.40%	-74.31%	25.91%	14.33%	15.97%	48.55%	36.92%	64.12%	80.52%	147.47%
9.83%	7.14%	95.04%	44.85%	45.88%	46.69%	19.10%	44.08%	13.94%	45.20%	56.76%	32.38%
0.04166666667	0.04166666667	0.04166666667	0.04166666667	0.04166666667	0.04166666667	0.04166666667	0.04166666667	0.04166666667	0.04166666667	0.04166666667	0.04166666667

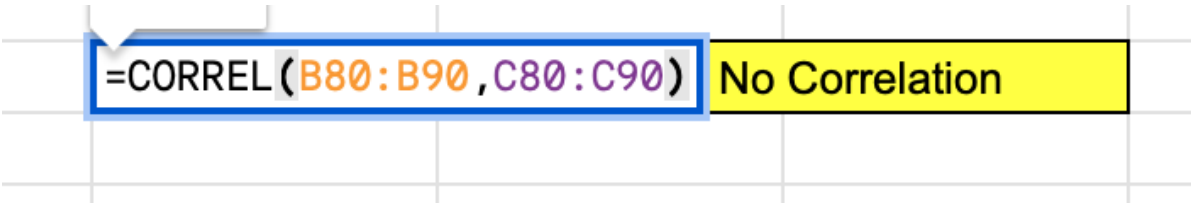
Table 9: Weighted portfolio returns of low beta stocks

weighted portfolio return	
2014	65.33%
2015	37.55%
2016	-1.70%
2017	35.27%
2018	-7.54%
2019	3.37%
2020	52.29%
2021	39.25%
2022	-14.05%
2023	36.55%
2024	52.71%

Table 10: Correlation of low beta stocks with nifty 50

Correlation Matrix		
year	portfolio return	Nifty 50 return
2014	65.33%	13.05%
2015	37.55%	26.65%
2016	-1.70%	-8.86%
2017	35.27%	18.55%
2018	-7.54%	10.25%
2019	3.37%	14.93%
2020	52.29%	-26.03%
2021	39.25%	70.87%
2022	-14.05%	18.88%
2023	36.55%	-0.62%
2024	52.71%	28.64%

Correlation = 0.09



The correlation coefficient between the portfolio return and the Nifty 50 return over 10 years is 0.09. This indicates that there is almost no consistent relationship between the movements in the Nifty 50 return and the portfolio return.

The low correlation suggests effective diversification because the portfolio and Nifty 50 are not closely related. The portfolio's returns might be from a range of assets or strategies not tied to the Nifty 50.

Using Nifty 50 returns to predict or explain the portfolio's performance would be ineffective because there is no strong correlation between the two. The portfolio's returns may be influenced by factors

that do not impact the Nifty 50, such as specific sector allocations, individual stock picks, or alternative assets.

The portfolio's performance is largely independent of the Nifty 50's performance. This is further supported by the yearly trend analysis which reveals no consistent pattern between the two sets of returns.

In 2020 and 2022, the portfolio returns and Nifty 50 return moved in opposite directions. In 2014 and 2021, both returns were positive, but with significantly different magnitudes. In 2016, both returns were negative, with the portfolio return at -1.7% and the Nifty 50 at -8.86%.

The low correlation of 0.09 implies that there is almost no linear relationship between Nifty 50 returns and the portfolio's returns. The portfolio is not influenced by the general market trends reflected in the Nifty 50 and points toward unique return drivers or diversification effects within the portfolio.

Linear Regression:

Table 11: Linear regression summary for low beta stocks

SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0.09229615							
R Square	0.00851858							
Adjusted R Square	-0.101646							
Standard Error	0.28649367							
Observations	11							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	0.0063468	0.0063468	0.07732592	0.78723723			
Residual	9	0.73870758	0.08207862					
Total	10	0.74505439						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.25628757	0.10291706	2.49023419	0.03440878	0.02347302	0.48910213	0.02347302	0.48910213
Nifty 50 return	0.10290224	0.3700516	0.27807539	0.78723723	-0.7342126	0.94001711	-0.7342126	0.94001711

This regression analysis explores the link between a dependent variable and the return on the Nifty 50 index. However, the analysis reveals a very weak correlation between the two.

The correlation coefficient (R) is only 0.0923, signifying a negligible positive correlation. This means the model does not explain the variability in the dependent variable well.

The R-squared value is a mere 0.0085, indicating that only 0.85% of the variance in the dependent variable is explained by the Nifty 50 return. This lack of explanatory power is further emphasized by the negative Adjusted R-squared value (-0.1016).

The F-statistic (0.0773) and Significance F (0.7872) confirm that the regression model is not statistically significant. This implies that the observed relationship could be due to chance rather than a true connection between the variables.
While the intercept of the model is statistically significant (with a value of 0.2563), the Nifty 50 Return Coefficient (0.1029) is not. This means that while the dependent variable has an average value

even without considering Nifty 50 returns, changes in the Nifty 50 return do not appear to meaningfully impact the dependent variable.

Cyclical Stocks (high beta)

Calculations:

Table 12: HPR of high beta stocks

	Siemens	ABB India	Suzlon Energ	Bharat Bijlee	Schneider Inf	Voltamp Tran	Transformers	TD Power Sys	Indus Towers	ITI Ltd	HFCL	Optiemus Infr
Year	HPR	HPR	HPR	HPR	HPR	HPR	HPR	HPR	HPR	HPR	HPR	HPR
2013												
2014	36.67%	85.65%	42.44%	95.57%	115.28%	87.20%	139.22%	93.14%	100.39%	70.96%	119.20%	94.69%
2015	31.92%	-13.17%	42.18%	22.88%	5.39%	2.60%	29.60%	-29.39%	23.10%	7.18%	-1.65%	128.03%
2016	-7.00%	-6.96%	-33.88%	-12.58%	-17.17%	13.65%	27.12%	-46.68%	-17.07%	47.39%	-29.86%	-24.19%
2017	11.14%	34.68%	12.45%	69.22%	-6.28%	26.84%	-87.58%	14.75%	9.89%	205.65%	128.43%	183.70%
2018	-15.33%	-4.82%	-65.12%	-9.92%	-20.27%	-3.41%	-68.69%	-33.47%	-31.25%	-31.92%	-25.87%	-23.51%
2019	42.95%	-3.60%	-65.50%	-29.22%	-34.42%	10.67%	-45.48%	5.85%	-2.77%	-1.44%	-16.98%	-77.87%
2020	5.31%	-5.60%	250.27%	6.60%	27.45%	3.43%	185.08%	11.13%	-8.99%	36.86%	46.31%	232.85%
2021	49.90%	84.37%	57.56%	120.77%	24.85%	59.65%	72.70%	192.70%	7.97%	-7.07%	205.83%	246.88%
2022	19.57%	20.06%	2.81%	26.73%	56.40%	39.07%	58.22%	-73.44%	-23.28%	-11.94%	-6.48%	-2.91%
2023	42.32%	74.20%	259.85%	97.99%	147.73%	135.62%	315.22%	118.90%	4.68%	193.82%	14.27%	1.20%
2024	70.91%	64.86%	80.28%	-3.93%	87.08%	97.33%	271.15%	52.66%	79.32%	-25.13%	44.66%	121.34%
Weights	0.04166666667	0.04166666667	0.04166666667	0.04166666667	0.04166666667	0.04166666667	0.04166666667	0.04166666667	0.04166666667	0.04166666667	0.04166666667	0.04166666667

Vindhya Telel	NELCO	Vodafone Idea	TataTeleservic	Nucleus Softv	Saksoft	63 Moons Tec	Subex	OnMobile Glo	Mindteck	Intense Tech	Virinchi
HPR	HPR	HPR	HPR	HPR	HPR	HPR	HPR	HPR	HPR	HPR	HPR
203.73%	118.10%	-7.82%	2.56%	31.97%	111.61%	9.49%	7.31%	122.21%	141.92%	349.29%	366.92%
75.28%	52.55%	-8.22%	15.39%	40.74%	125.41%	-42.32%	9.48%	77.84%	145.63%	-48.28%	32.82%
-32.13%	-37.35%	-47.61%	-31.36%	-1.08%	-1.17%	-38.73%	-22.35%	-37.31%	-39.55%	338.73%	13.78%
115.21%	57.68%	46.32%	17.28%	103.43%	-22.02%	65.51%	1.08%	-30.67%	-16.11%	-18.38%	89.84%
46.63%	104.16%	-65.16%	-43.34%	-27.49%	29.43%	-16.76%	-36.08%	-34.83%	-49.46%	-67.80%	-31.85%
-49.42%	-3.76%	-83.66%	-43.75%	-24.69%	-31.67%	2.88%	-1.17%	-17.54%	-34.09%	-34.84%	-59.24%
-12.26%	-18.58%	72.73%	254.22%	121.94%	88.99%	-20.30%	382.20%	122.75%	113.41%	73.85%	40.44%
33.60%	269.87%	44.45%	2496.61%	-11.24%	154.62%	182.48%	90.51%	50.62%	283.39%	96.46%	138.71%
42.91%	-1.83%	-48.60%	-55.21%	-31.51%	-87.50%	-26.45%	-37.45%	-12.05%	-35.14%	-22.64%	-66.42%
36.29%	11.55%	102.78%	-1.06%	281.86%	160.59%	180.82%	0.12%	19.02%	69.06%	48.25%	-15.39%
-8.84%	12.79%	-50.75%	-21.15%	-18.21%	-28.42%	22.99%	-29.79%	-25.94%	23.57%	34.27%	-6.44%
0.04166666667	0.04166666667	0.04166666667	0.04166666667	0.04166666667	0.04166666667	0.04166666667	0.04166666667	0.04166666667	0.04166666667	0.04166666667	0.04166666667

Table 13: Weighted portfolio returns of high beta stocks

weighted portfolio return	
2014	105.74%
2015	30.21%
2016	-1.81%
2017	42.17%
2018	-21.92%
2019	-24.95%
2020	83.75%
2021	206.09%
2022	-11.54%
2023	95.82%
2024	35.19%

Table 14: Correlation of high beta stocks with nifty 50

Correlation Matrix		
year	portfolio return	Nifty 50 return
2014	1.06	0.13
2015	0.30	0.27
2016	-0.02	-0.09
2017	0.42	0.19
2018	-0.22	0.10
2019	-0.25	0.15
2020	0.84	-0.26
2021	2.06	0.71
2022	-0.12	0.19
2023	0.96	-0.01
2024	0.35	0.29

Correlation= 0.433 (Moderate Correlation)

```
=correl(B100:B110,C100:C110)
```

The correlation coefficient between portfolio return and Nifty 50 return is 0.433. This indicates a moderate positive correlation, meaning that the two variables tend to move in the same direction but not always consistently.

A moderate correlation suggests that other factors besides the Nifty 50 return influence the portfolio return. This means that relying solely on Nifty 50 returns to predict portfolio returns would be insufficient.

Examining specific years reveals variations in the relationship:

In 2021, both portfolio and Nifty 50 returns were strongly positive, supporting the positive correlation. However, in 2020, the portfolio return was positive while the Nifty 50 return was negative. This highlights that the positive correlation does not consistently hold true across all years. In 2023, the portfolio had a strong positive return while the Nifty 50 return was close to zero, further demonstrating that portfolio return does not always follow the Nifty 50 return.

Overall, while a moderate positive relationship exists, the Nifty 50 return is not a strong predictor of portfolio return. This aligns with the findings of a regression analysis, which indicated that Nifty 50 return has limited explanatory power for portfolio returns.

Linear Regression:

Table 15: linear regression summary for high beta stocks

Regression Statistics								
Multiple R	0.43324501							
R Square	0.18770124							
Adjusted R Squa	0.09744582							
Standard Error	0.66251661							
Observations	11							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	0.91282473	0.91282473	2.07966725	0.18315191			
Residual	9	3.95035434	0.43892826					
Total	10	4.86317906						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.30319206	0.23799569	1.27393928	0.23459757	-0.2351916	0.84157573	-0.2351916	0.84157573
Nifty 50 return	1.2340733	0.85574433	1.44210514	0.18315191	-0.7017549	3.16990145	-0.7017549	3.16990145

This regression analysis explores the link between a dependent variable, cyclical stocks, and the Nifty 50 index return (the independent variable). The analysis reveals a weak, positive correlation of 0.4332 between these variables. This means that when the Nifty 50 return increases, the dependent variable also tends to increase, but the relationship is not very strong.

Statistically Insignificant Results

The F-statistic of 2.0797 with a Significance F of 0.1832 ($p > 0.05$) indicates that the overall regression model is not statistically significant. This means the model does not effectively explain the dependent variable's variability, and the observed association might be random.

The Nifty 50 Return Coefficient of 1.2341 suggests that for every 1% rise in the Nifty 50 return, the dependent variable's return is predicted to increase by approximately 1.23%, assuming other factors remain constant. However, with a p-value of 0.1832 (above 0.05), this coefficient is not statistically significant, meaning the relationship between the Nifty 50 return and the dependent variable is not reliably confirmed.

The 95% confidence interval for the Nifty 50 return coefficient (-0.7018 to 3.1699) includes zero, further suggesting that this variable might not be a significant predictor of the dependent variable. Additional variables may need to be considered to better understand the relationship, or a larger sample size could improve the robustness of the analysis.

Conclusion

This research paper examined the Coffee Can investment strategy, which involves selecting fundamentally strong companies and holding their stocks for an extended period. The paper compares the performance of Coffee Can Portfolio to the Nifty 50 index, large-cap mutual funds, and portfolios of high-beta and low-beta stocks.

We found that the Coffee Can investment strategy generated significantly higher returns than the Nifty 50 index and large-cap mutual funds over a 10-year period. This outperformance is attributed to the power of compounding and the Coffee Can investment's focus on long-term investment in high-quality companies. While the Coffee Can investment portfolio exhibited higher volatility than the Nifty 50 and large-cap mutual funds, it had a lower coefficient of variation, indicating better risk-

adjusted returns. The Coffee Can investment portfolio had a high positive correlation with the Nifty 50, suggesting that both are influenced by similar market trends. However, the Coffee Can investment portfolio had a low correlation with large-cap mutual funds, likely due to differences in investment strategies and management styles.

The research also compared the performance of a portfolio of high-beta (cyclical) stocks and a portfolio of low-beta (defensive) stocks. The low-beta portfolio showed almost no correlation with the Nifty 50, suggesting effective diversification. The high-beta portfolio had a moderate positive correlation with the Nifty 50, indicating that its performance is partially influenced by market trends. However, both the high-beta and low-beta portfolios showed statistically insignificant relationships with the Nifty 50 in the regression analysis, indicating that other factors may be driving their returns.

Limitations and Future Scope

1. **Limited Time Horizon**: The research analyzed a 10-year period, which might not be sufficient to fully capture the long-term performance of the Coffee Can Portfolio across different market cycles and economic conditions. Longer-term studies would provide more robust insights into the strategy's consistency, risk management, and outperformance potential.

2. **Lack of Exploration into Behavioral Factors**: The research did not extensively investigate the behavioral aspects of Coffee Can investing, such as investor psychology, emotional biases, and decision-making processes. Future research should explore how behavioral finance principles can be integrated into Coffee Can investing to enhance investment outcomes.

3. **Focus on Indian Stock Market**: The research concentrated solely on the Indian stock market, limiting the generalizability of findings to other markets. Examining the performance of Coffee Can investing in diverse global markets with varying economic and regulatory environments is crucial to determine its broader applicability.

In addition to the limitations mentioned, the following areas could be explored in future research:

1. **Impact of ESG Factors**: Examining the integration of environmental, social, and governance (ESG) factors into Coffee Can investing could provide insights into the strategy's long-term sustainability and impact on portfolio performance.

2. **Comparison with Other Long-Term Investment Strategies**: Comparing Coffee Can Investing with other long-term investment approaches, such as factor investing, value investing, and growth investing, would offer a comprehensive understanding of their relative strengths and weaknesses.

References

1. https://www.5paisa.com/blog/what-is-coffee-can-investing
2. https://www.zeebiz.com/market-news/news-why-coffee-can-investing-may-not-be-the-best-investment-approach-in-today-s-world-175564
3. https://www.smallcase.com/learn/what-is-coffee-can-investing/#how-does-coffee-can-investing-work-in-indian-markets
4. https://www.businessperspectives.org/index.php/journals/investment-management-and-financial-innovations/issue-381/investment-behavior-of-short-term-versus-long-term-individual-investors-of-pan-india-an-empirical-study
5. https://www.fundssociety.com/wp-content/uploads/2014/05/darksiderobeco.pdf

6. https://www.academia.edu/38523763/THE_COFFEE_CAN_AS_AN_INVESTMENT_PORTFOLIO
7. https://www.researchgate.net/publication/365990479_The_Persistence_of_Volatility_in_Nifty_50
8. https://www.ijsrp.org/research-paper-0922/ijsrp-p12943.pdf
9. http://csinvesting.org/wpcontent/uploads/2013/06/The_Coffee_Can_Approach_Michael_Mauboussin.pdf
10. https://journal.ijresm.com/index.php/ijresm/article/view/1274
11. https://www.researchgate.net/publication/381490380_Let_The_Profits_Run_The_Coffee_Can_Portfolio_Revisited_International_Journal_of_Recent_Advances_in_Multidisciplinary_Research
12. https://www.researchgate.net/publication/284785630_Long_Term_Passive_Investment_Strategies_as_a_Part_of_Pension_Systems
13. https://www.researchgate.net/publication/262561311_Long-Term_Investing_What_Determines_Investment_Horizon#:~:text=A%20characterization%20of%20investment%20horizon,long%2Dterm%20value%20and%20returns.
14. https://www.researchgate.net/publication/280614859_Benefits_and_Pitfalls_of_Long-Term_Investing#:~:text=Three%20key%20advantages%20held%20by,unlisted%20and%2For%20illiquid%20assets.
15. https://www.researchgate.net/publication/381369719_Investing_in_the_long-term_an_empirical_approach
16. https://www.tandfonline.com/doi/full/10.1080/20430795.2019.1625012
17. https://lbs.ac.at/wp-content/uploads/2019/03/Beslin-LBS-WP-No7.pdf
18. https://www.researchgate.net/publication/379861245_The_Rise_of_Passive_Investing_A_Systematic_Literature_Review_applying_PRISMA_framework
19. https://www.researchgate.net/publication/378403146_Evaluating_short-and_long-term_investment_strategies_development_and_validation_of_the_investment_strategies_scale_ISS
20. https://ideas.repec.org/a/fip/fedker/y2005iqip5-32nv.90no.1.html
21. https://www.studocu.com/vn/document/ueh-international-school-of-business/english-academic-practice-4-eap4/a-comparison-of-active-and-passive-portfolio-management/89140676
22. https://www.sdnbvc.edu.in/wp-content/uploads/2022/01/PAPER-ID-8.pdf
23. https://www.researchgate.net/publication/281234118_Exploring_Determinants_to_Explain_Aspects_of_Individual_Investors'_Financial_Behaviour
24. https://economictimes.indiatimes.com/markets/stocks/news/coffee-can-investing-the-low-risk-road-to-creating-big-wealth/articleshow/62981694.cms?from=mdr