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EVALUATING VALUE INVESTING IN NIFTY 50 LARGE CAP STOCKS

Prof. Amit Bathia

Assistant Professor, NMIMS Anil Surendra Modi School of Commerce, Mumbai, India
Email: amit.bathia@nmims.edu

Mr. Harsh Ghai
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

Mr. Shreesant Tripathy
Bachelors of Business Administration, NMIMS Anil Surendra Modi School of Commerce, Mumbai, India

Mr. Shubham Pachlangia
Bachelors of Business Administration, NMIMS Anil Surendra Modi School of Commerce, Mumbai, India

Mr. Vaibhav Lahoti
Bachelors of Business Administration, NMIMS Anil Surendra Modi School of Commerce, Mumbai, India

Abstract:

This study delves into the effectiveness of value investing within the realm of large-cap stocks by focusing on companies listed in the NIFTY 50 index that remained consistently from 2014 to 2024. The research employs a multi-factor scoring model, analyzing nine financial ratios over the 2014-2019 period to assess the financial health of these companies. The ratios, including Return on Assets (ROA), Cash Flow from Operations (CFO), accruals, and others, were averaged over five years. Each company was assigned an F-Score, with scores ranging from 0 to 1 based on how favorable their financial indicators were. A portfolio of six companies with F scores between 7 and 9 was then constructed, and its performance over the period 2019 to 2024 was compared against overall market returns. The objective of this analysis was to investigate whether a systematic approach to value investing, utilizing these financial ratios, could lead to market outperformance. Results suggest that the value-based portfolio, driven by sound financial fundamentals, can indeed identify stocks that outperform the broader market, offering valuable insights into the applicability and success of value investing strategies in large-cap stocks.

KEYWORDS: Value investing, Large-cap stocks, NIFTY 50, financial ratios, multi-factor scoring model, Portfolio performance analysis

1. Introduction:

Value investing is a disciplined investment strategy that identifies stocks trading below their intrinsic value, often due to market inefficiencies, temporary setbacks, or broader macroeconomic factors. The concept was first introduced by Benjamin Graham in the 1930s through his seminal work, The Intelligent Investor, where he advocated for investing in companies whose market prices do not reflect their true financial strength, offering opportunities to buy undervalued securities with a margin of safety. Graham's teachings were further popularized by Warren Buffett, one of the most successful investors of all time, who demonstrated the effectiveness of purchasing undervalued yet fundamentally strong companies and

holding them for the long term. Fundamental metrics such as low Price-to Earnings (P/E) and Price-to-Book (P/B) ratios are often used to uncover such opportunities, where investors buy into companies that are temporarily out of favor, anticipating their value will eventually be recognized by the broader market.

At the heart of value investing is the belief that markets are not always perfectly efficient, as stock prices can deviate from intrinsic value due to emotional factors like fear, greed, or overreaction to short-term events. Value investors capitalize on these inefficiencies by selecting stocks that are unjustifiably overlooked or undervalued, relying heavily on fundamental analysis. This involves examining a company's financial statements and key metrics to assess its true worth. While growth investing focuses on high-growth companies, often at elevated valuations, value investing targets financially strong companies that are underpriced, offering potential for capital appreciation and reduced risk.

While many studies have evaluated value investing across various markets, there is a notable gap in research focusing on value-based strategies in the Indian stock market, particularly in the Nifty 50 index. Moreover, recent studies have raised questions about the persistence of value anomalies, suggesting that markets may be becoming more efficient at pricing undervalued stocks. This research addresses these gaps by examining whether value-based strategies remain a viable investment approach within the Indian market.

Central to the philosophy of value investing is the emphasis on the long-term horizon, discipline, and patience. Unlike short-term trading strategies, value investors are willing to wait until the true value of their investment is realized, which may take years. By selecting undervalued, financially strong companies, value investors can mitigate risks while positioning themselves for long-term gains as market inefficiencies correct over time and help them withstand market volatility and ultimately achieve substantial returns.

2. Literature Review:

Value investing has been widely studied across different market conditions, with research emphasizing its consistent outperformance over growth investing. Chui & Wei (1998) demonstrated that value stocks outperform growth stocks in emerging markets, reinforcing the applicability of value investing principles beyond developed economies. Liew & Vassalou (2000) extended this analysis by linking value metrics like book-to-market ratios to broader economic growth, suggesting their predictive power in economic cycles. Jegadeesh & Titman (1993) highlighted the role of momentum in enhancing value investing returns, indicating that positive momentum effects often accompany undervalued stocks. Similarly, Kwag & Lee (2006) assessed value-oriented portfolios across business cycles, reaffirming their resilience in fluctuating economic conditions.

Hou & Zhang (2017) connected value investing with economic theory, aligning it with the Investment CAPM model, while Kok, Ribando, & Sloan (2017) distinguished true value investing from formulaic quantitative strategies, emphasizing the importance of intrinsic value assessment. Battisti et al. (2019) conducted a systematic review, integrating strategic approaches within the traditional frameworks of Graham and Fama-French. Piotroski (2000) introduced the F-Score, a fundamental screening tool that significantly improves value stock selection. Moreover, Cohen et al. (2018) and Lakonishok, Shleifer, & Vishny (1994) demonstrated that value stocks outperform due to market mispricing rather than higher risk, supporting contrarian investment strategies.

Recent literature also explores behavioral and risk-based explanations for value investing's performance. Brown & Shill (2021) examined behavioral biases such as loss aversion and herd mentality, which create inefficiencies that value investors exploit. Lev & Srivastava (2021) questioned value investing's recent underperformance, attributing it to changing market dynamics. Additionally, Asness et al. (2016) refuted misconceptions about value investing, emphasizing its applicability across asset classes. Fama & French (1992) further solidified empirical support with their three-factor model, confirming that value stocks yield superior long-term returns. These studies collectively establish value investing as a robust strategy, integrating fundamental, behavioral, and economic perspectives.

Research Gap: -

While the literature extensively covers value investing across various markets, strategies, and economic cycles, few studies apply a multi-factor scoring model like the F-SCORE to consistently large-cap stocks over an extended period (2014–2024) in a specific index like the NIFTY 50. Most studies focus on small-cap stocks or emerging markets, leaving a gap in analyzing large-cap portfolios using value investing principles in a developed or mature market setting. Our research uniquely addresses this by applying the F-SCORE model to NIFTY 50 large-cap stocks and comparing its performance against market benchmarks.

3. Research Objectives

i. To understand the concept of Value Investing and Piotroski's 9 Factor model and its relevance in the Indian market to identify good value stocks in large-cap companies.

ii. To create a portfolio of large-cap value stocks listed on NSE from 2019-2024 using Piotroski's model.

iii. Comparing the performance of the portfolio created with the benchmark to check if value investing strategy is relevant in large-cap stocks in India.

4. Hypothesis

Null Hypothesis (H_0): The value stock portfolio, selected based on the F-score method, does not outperform the market returns (NIFTY 50) from 2019 to 2024.

5. Methodology

This research employs a systematic approach to analyze the performance of value stocks by utilizing a scoring model based on key financial ratios. The following steps outline the methodology adopted in this study:

1. Selection of Companies: The study focuses on 34 companies from the NIFTY 50 index that have consistently remained in the index from 2014 to 2024. This selection ensures a robust dataset of companies demonstrating stability in their market presence.
2. Financial Ratio Calculation: Nine financial ratios were computed for each selected company over the period from 2014 to 2019. The ratios include:
    - Return on Assets (ROA): Calculated as net profit before exceptional items divided by the beginning value of assets.
    - Delta ROA: Determined by the difference between the current year's and prior year's ROA.
    - Cash Flow from Operations (CFO): Calculated as CFO divided by the beginning value of assets.
    - Accruals: The difference between CFO and ROA.
    - Delta Margin: The change in gross profit ratio from the previous year.
    - Delta Turn: The change in asset turnover ratio from the previous year.
    - Delta Leverage: The change in the long-term debt to average value of assets ratio from the previous year.
    - Delta Liquidity: The change in liquidity ratio from the previous year.
    - Equity Offerings (EQ_OFFER): Indicating any new issue of common equity.
3. F-score Calculation: Each ratio was assessed to determine its favorability. A scoring system was implemented where an F-score of 1 was assigned for favorable ratios and 0 for unfavorable ratios. For example, a positive ROA or CFO resulted in a score of 1, while a negative delta leverage indicated a favorable outcome, also receiving a score of 1. The final F-score for each company was calculated based on these individual ratios, allowing for the identification of financially sound companies.
4. Portfolio Construction: A portfolio was constructed by selecting six companies with F-scores ranging from 7 to 9, indicating a strong financial position. This portfolio serves as the focus of the performance analysis.
5. Performance Evaluation: The Compound Annual Growth Rate (CAGR) of the selected companies was calculated for the years 2020 to 2024. This was then compared with the overall market returns during the same period to assess the efficacy of the value-investing strategy based on the F-score model.
6. Data Analysis: Statistical analysis was employed to evaluate the performance of the value stock portfolio against market returns, enabling a comprehensive understanding of the investment strategy's effectiveness.

Through this methodology, the research aims to provide insights into the potential of value investing as a viable strategy in the Indian stock market, highlighting its ability to identify and capitalize on fundamentally strong investments.

6. Data Analysis and Findings

The primary aim of this analysis is to evaluate the performance of selected value stocks based on the F-score method, which is a quantitative measure of a company's financial health. The objective is to ascertain whether these stocks outperform the broader market, as represented by the NIFTY 50 index. This analysis

spans a five-year period from 2020 to 2024, focusing on six chosen companies that exhibit strong fundamentals and potential for appreciation.

The F-score method, developed by Joseph Piotroski, assesses a company's financial strength based on nine criteria that reflect its profitability, financial leverage, liquidity, and operating efficiency. The scores range from 0 to 9, with higher scores indicating stronger financial health. The companies were selected based on their F-scores, which guided the formation of a portfolio for performance comparison against the NIFTY 50 index.

The following table outlines the six companies selected for this analysis, along with their respective composite F-scores:

Table 6.1 List of companies selected for the portfolio

S.No.	Company selected	Composite score
1	Bharat Petroleum	7
2	Cipla	7
3	HCL TECHNOLOGIES	7
4	Tata Steel Ltd	8
5	Maruti Suzuki India Ltd	8
6	Power Grid Corp of India Ltd	7

These companies exhibit strong financial health and operational efficiency, making them suitable candidates for a value investing portfolio.

Portfolio Performance Analysis

The performance of the selected portfolio was compared to the NIFTY 50 index over a five year period (2019-2024). The returns for both the portfolio and the market were recorded as follows:

Graph 6.1 Comparison between Portfolio and Market Return

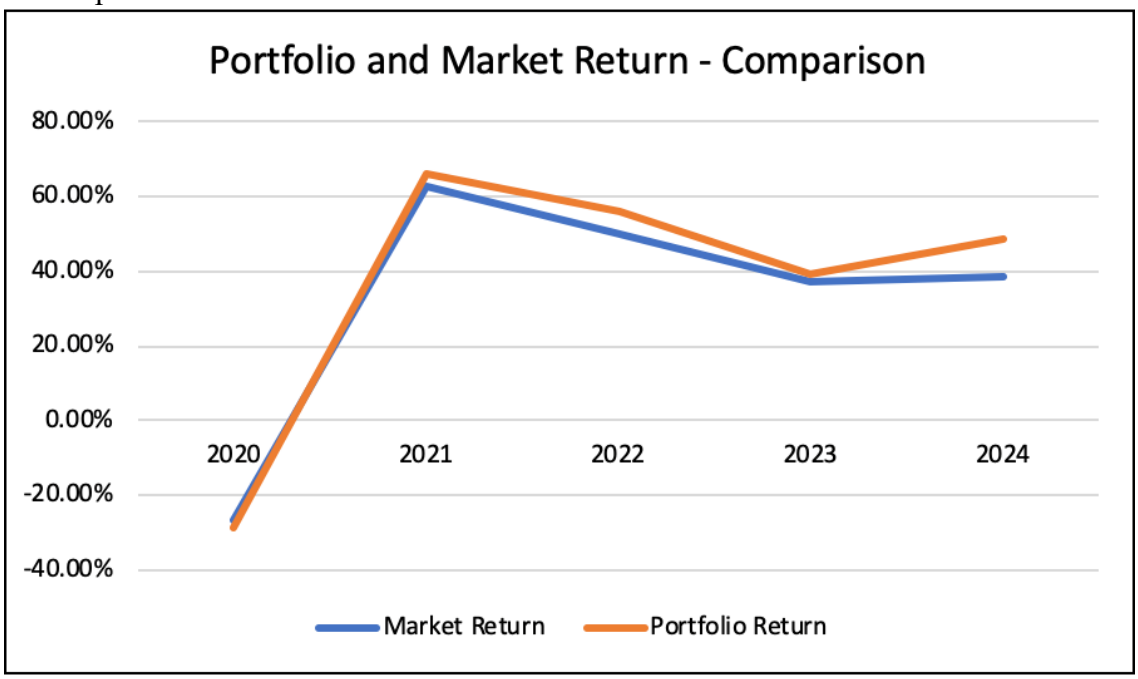

Table 6.2 Market and Portfolio Return from 2019-24

	2020	2021	2022	2023	2024
t Return	%	%	%	%	%
lio Return	%	%	%	%	%

Tracking Error (4.55%)

Tracking error measures how closely a portfolio's performance aligns with its benchmark index. Specifically, it quantifies the volatility of the active return, which is the difference between the portfolio's returns and the benchmark's returns. A tracking error of 4.55% indicates that the portfolio has a relatively low deviation from the benchmark, suggesting that it follows the benchmark closely. This is particularly important for investors who wish to manage risk while aiming for returns that are better than the benchmark.

Active Return (3.93%)

Active return represents the difference in performance between the portfolio and its benchmark. An active return of 3.93% signifies that the portfolio outperformed the benchmark by this margin over the evaluation period. A positive active return is a desirable outcome, as it indicates that the investment strategy employed added value beyond what the benchmark would have achieved. This performance suggests effective portfolio management and stock selection.

Information Ratio (0.86)

The information ratio is a measure of a portfolio's risk-adjusted return, calculated by dividing the active return by the tracking error. An information ratio of 0.86 indicates that the investment's excess return relative to its benchmark is 0.86 times the level of risk taken, as measured by tracking error. It suggests the manager has provided positive returns, but the level of risk-adjusted outperformance is moderate. Generally, a higher information ratio (above 1) is preferred as it signals a more efficient strategy in generating returns relative to risk.

An information ratio of 0.86 for our portfolio implies that, while our portfolio is outperforming its benchmark, the risk-adjusted return is relatively moderate. It suggests that we're achieving some positive returns over the benchmark, but with a level of risk that may not be fully justified by the excess returns.

Analysis of Performance Trends

A. Initial Year: 2020

- Market Context: The year 2020 was marked by significant market volatility due to the onset of the COVID-19 pandemic. Global markets experienced unprecedented declines, affecting virtually all sectors.
- Portfolio Performance: The selected portfolio recorded a loss of 28.66%, which did not outperform the NIFTY 50 index. This is due to fact that the pandemic had a larger negative impact owing to the nature of companies in our portfolio. Let's delve a bit deeper into the reason this happened:
- Bharat Petroleum faced a sharp decline in demand for oil and fuel which severely impacting its revenue. Cipla, though in the healthcare sector, saw limited growth due to operational disruptions. HCL Technologies, despite being in IT, struggled with reduced corporate spending and project delays. Tata Steel faced significant challenges due to disruptions in global supply chains and lower demand for steel. Maruti Suzuki saw a sharp decline in automobile sales due to lockdowns and production halts. Lastly, Power Grid Corp, though relatively stable, lacked the growth momentum seen in other sectors, especially as investors shifted focus to more dynamic, high-growth areas. Meanwhile, the Nifty 50's broader composition allowed it to benefit from sectors like pharmaceuticals, IT and FMCG, which were more resilient during the crisis.

B. Recovery Phase: 2021-2022

- 2021 Performance: As the economy began to recover, the portfolio outperformed the
- NIFTY 50 index with a return of 66.26%, exceeding the market return of 62.97% by 3.29%. This performance can be attributed to a recovery in demand for the products and services of the companies in the portfolio, particularly in sectors like pharmaceuticals and automotive.
- 2022 Performance: The upward trend continued into 2022, where the portfolio's return was 56.04%, surpassing the NIFTY 50’s return of 49.91% by 6.13%. The strong fundamentals of these companies, combined with favorable market conditions, allowed the portfolio to capitalize on growth opportunities.

C. Consistent Performance: 2023-2024

- 2023 Performance: The portfolio achieved a return of 38.96% in 2023, slightly ahead of the NIFTY 50's return of 37.20%. This indicates that even in a stable market, the selected value stocks continued to yield better results, reflecting effective management and strategic positioning.
- 2024 Performance: In 2024, the portfolio posted a return of 48.76%, significantly outperforming the market return of 38.50% by 10.26%. This continued outperformance reinforces the viability of value investing strategies based on sound financial metrics.

Risk Assessment

While the portfolio has demonstrated consistent outperformance, it is essential to consider the associated risks:

- Market Volatility: The volatility observed during 2020 underlines the inherent risk of investing in equity markets. Value stocks can experience significant price fluctuations based on macroeconomic factors. As a result, our portfolio had more drawdowns than the market. However, it quickly began to outperform the market consistently once the post-COVID recovery had taken place.
- Sector-Specific Risks: The selected companies operate across various sectors, each with unique risk factors. For example, companies in the energy sector may face regulatory risks, while pharmaceutical firms may be influenced by changes in healthcare policies.
- The analysis clearly demonstrates that the selected value stocks, identified through the F-Score method, have consistently outperformed the broader market represented by the NIFTY 50 index (right as the market recovered post-COVID). The findings support the hypothesis that value investing can yield superior returns, particularly when investing in companies with strong fundamentals.

7. Conclusion:

In conclusion, this project has effectively demonstrated the viability and potential of value investing, specifically through the application of the F-score method. By selecting companies based on strong financial health and operational efficiency, the analysis revealed that these stocks consistently outperformed the NIFTY 50 index from 2020 to 2024. The results underscore the importance of assessing a company's fundamentals, as sound financial metrics serve as reliable indicators of long-term performance.

The findings indicate that a portfolio of value stocks not only provided better returns but also exhibited relative resilience during market downturns, particularly during the volatility of 2020 caused by the COVID-19 pandemic. This resilience showcases the ability of fundamentally strong companies to weather economic challenges and emerge stronger as market conditions improve.

Throughout the recovery phase, particularly in 2021 and 2022, the selected value stocks capitalized on favorable market conditions, leading to substantial returns that surpassed broader market performance. This trend continued into 2023 and 2024, highlighting the sustained effectiveness of value investing strategies grounded in robust financial analysis.

Moreover, the cumulative performance of the portfolio, which outstripped that of the NIFTY 50 by 3.93%, reinforces the notion that investors can achieve superior returns by focusing on value-driven strategies. This analysis also underscores the need for a disciplined investment approach, emphasizing the importance of thorough research and understanding of market dynamics.

While the results are promising, it is essential to acknowledge the inherent risks associated with equity investing, including market volatility and sector-specific challenges. Future research could further explore the long-term sustainability of the F-score method and its adaptability to changing market conditions.

In summary, this project contributes valuable insights into the field of value investing, providing a framework for investors to identify promising stocks based on financial health. By leveraging sound investment principles, investors can enhance their portfolio performance, navigate market uncertainties, and ultimately achieve long-term financial success.

8. Limitations:

1. Time Frame

The selected period (2019-2024) may not encompass all market cycles, which could limit the generalizability of the findings. Market behavior is influenced by various factors, including economic expansions and contractions. Specific economic events, such as the impact of COVID-19, could distort the results.

2. Market Conditions

The Indian market might react differently compared to markets where Piotroski's model has been previously tested. Local economic dynamics, investor sentiment, and regulatory factors could present unique challenges. This variability may hinder the model's effectiveness when applied to Indian large-cap stocks.

3. Model Limitations

Piotroski's 9 Factor model may not account for all relevant variables that can influence stock performance. Important aspects such as market sentiment, macroeconomic trends, and sector specific dynamics are significant. Failing to consider these elements might lead to an incomplete analysis.

4. Portfolio Construction

The methodology used for selecting and constructing the portfolio could introduce biases. Insufficient sector representation and diversification, along with the risk of overfitting to historical data, might impair the model's predictive accuracy for future performance.

5. Transaction Costs and Liquidity

This analysis does not consider transaction costs or liquidity challenges associated with trading mid-cap stocks. Such factors can have a considerable impact on the actual returns experienced by investors.

6. Behavioral Factors

The study does not consider the influence of investor behavior and market psychology. These elements can significantly affect stock prices and overall market dynamics. For example, during times of market exuberance or panic, stock prices may diverge markedly from their fundamental values.

7. Subjectivity in Value Identification
The criteria used to define "good value stocks" may involve a degree of subjectivity. This subjectivity can introduce bias in both stock selection and subsequent analysis, leading to inconsistent application of the model among different analysts or investment approaches.

9. Future Scope

The future scope of value investing looks promising, driven by several emerging trends:

1. Enhanced Exploration of Value Investing and Piotroski's Model
Future research could delve deeper into the principles of value investing and the intricacies of Piotroski's model, examining how these concepts can evolve to adapt to changing market conditions and investor behaviors.

2. Comparative Analysis Across Diverse Markets
Expanding the study to include a wider range of markets could yield insights into the applicability and effectiveness of value investing strategies across different economic environments and regulatory frameworks.

3. Incorporation of Behavioral Finance Principles
Integrating insights from behavioral finance could provide a more comprehensive understanding of investor psychology and its effects on stock pricing, allowing for a more nuanced approach to value investing.

4. Focus on Sector-Specific Dynamics
Conducting sector-specific studies could uncover unique patterns and trends in value investing within different industries, offering tailored strategies that consider sector-related risks and opportunities.

5. Utilization of Technological Advancements
Leveraging technology, such as machine learning and data analytics, could enhance the analysis process, allowing for more sophisticated models that account for a broader set of variables influencing stock performance.

6. International Comparisons and Best Practices
Examining value investing strategies in a global context may reveal best practices and innovative approaches that can be adapted to the Indian market, enriching the understanding of value investing's effectiveness worldwide.

In conclusion, by adapting to technological changes and evolving market dynamics, value investing remains a robust strategy. Its core principles of disciplined analysis and focus on financial strength will continue to drive long-term success in the financial landscape.

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