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# Portfolio Construction and Technical Analysis: Evidence from IT and Banking Sectors in India

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***Abstract*—This study examines portfolio construction and technical analysis outcomes in the Indian equity market by comparing the Information Technology (IT) and Banking sectors. Using secondary data obtained from the National Stock Exchange (NSE) and Bombay Stock Exchange (BSE), sectoral portfolios were constructed from eight representative companies—four from IT and four from Banking—over a one-year period from September 2024 to August 2025. Technical indicators such as Relative Strength Index (RSI), Simple Moving Average (SMA), and Rate of Change (ROC) were applied to evaluate price trends and momentum. Portfolio performance was assessed using risk-adjusted measures including Sharpe Ratio, Treynor Ratio, and Jensen's Alpha. The findings indicate that the Banking sector portfolio generated relatively stable and positive risk-adjusted returns, while the IT sector exhibited higher volatility with comparatively weaker performance. The results highlight the defensive nature of banking stocks and emphasize the importance of sectoral diversification in portfolio management. The study provides practical insights for investors and portfolio managers in optimizing asset allocation strategies within the Indian equity market.***

***Keywords*—Portfolio Construction, Technical Analysis, RSI, Banking Sector, IT Sector**

## I. INTRODUCTION

The Indian equity market has witnessed significant growth and structural transformation over the past two decades, driven by economic reforms, technological advancements, and increased participation from retail and institutional investors. In this evolving financial environment, portfolio construction has emerged as a crucial investment strategy aimed at maximizing returns while minimizing risk. Investors increasingly rely on quantitative tools and analytical techniques to make informed decisions in volatile market conditions.

Modern Portfolio Theory emphasizes diversification as a key mechanism for reducing unsystematic risk, while risk-adjusted performance measures help assess the efficiency of investment portfolios. Alongside fundamental analysis, technical analysis plays an important role in understanding short-term price movements and market momentum. Indicators such as Relative Strength Index (RSI), Simple Moving Average (SMA), and Rate of Change (ROC) are widely used to identify trends, overbought or oversold conditions, and potential entry and exit points.

Among the various sectors in the Indian stock market, the Information Technology (IT) and Banking sectors hold substantial economic importance but exhibit contrasting characteristics. The IT sector is largely growth-oriented and sensitive to global economic conditions, often displaying higher volatility. In contrast, the Banking sector forms the backbone of the financial system and generally offers relatively stable returns due to its defensive nature and regulatory support. These differences make the two sectors suitable for comparative portfolio analysis.

This study aims to compare portfolio performance between the IT and Banking sectors by integrating technical analysis tools with risk-adjusted performance metrics. By analyzing sectoral portfolios constructed from selected companies, the research seeks to provide insights into sector-specific risk–return behavior and assist investors in developing effective diversification and asset allocation strategies.

## II. RESEARCH METHODOLOGY

The present study adopts a descriptive and quantitative research design to analyze portfolio construction and technical analysis outcomes in the Indian equity market. The methodology is structured to systematically evaluate sectoral performance by integrating technical indicators with risk-adjusted portfolio performance measures.

### A. Research Design

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The study is based on a non-experimental, descriptive research design. It relies on historical market data without manipulating any variables, making it suitable for examining observed price movements, trends, and risk– return characteristics of selected stocks. A quantitative approach is employed to ensure objectivity and accuracy in analysis.

B. Data Source and Period of Study

The study uses secondary data collected from reliable and publicly available sources, namely the National Stock Exchange (NSE) and the Bombay Stock Exchange (BSE). Daily closing price data of selected stocks were collected for a period of one year, from September 1, 2024 to August 31, 2025. This period was chosen to capture recent market behavior and short-term price dynamics.

C. Sample Selection

The sample consists of eight actively traded companies representing two major sectors of the Indian economy:

- Information Technology Sector: Wipro Ltd., Tata Consultancy Services (TCS), HCL Technologies Ltd., and Infosys Ltd.
- Banking Sector: HDFC Bank Ltd., ICICI Bank Ltd., State Bank of India (SBI), and Kotak Mahindra Bank Ltd.

The companies were selected based on market capitalization, liquidity, and their significant contribution to their respective sectors, ensuring that the sample adequately represents sectoral performance. D. Tools and Techniques of Analysis

The analysis is carried out using both technical analysis indicators and portfolio performance measures:

1. Technical Analysis Indicators
    - Relative Strength Index (RSI): Used to identify overbought and oversold conditions and potential trend reversals.
    - Simple Moving Average (SMA): Applied to detect price trends and generate buy or sell signals.
    - Rate of Change (ROC): Measures the momentum of price movements and identifies acceleration or deceleration in trends.
2. Portfolio Performance Measures
    - Sharpe Ratio: Measures excess return per unit of total risk.
    - Treynor Ratio: Evaluates portfolio returns relative to systematic risk (beta).
    - Jensen's Alpha: Assesses portfolio performance by comparing actual returns with expected returns based on the Capital Asset Pricing Model (CAPM).

E. Data Analysis Procedure

Sectoral portfolios were constructed by combining the selected stocks from each sector. Technical indicators were calculated using historical price data, and portfolio returns and risk measures were computed using spreadsheet-based analytical tools. The performance of IT and Banking sector portfolios was then compared to evaluate relative efficiency and risk–return trade-offs.

F. Ethical Considerations

The study exclusively uses secondary data available in the public domain. No confidential, personal, or proprietary information was involved, ensuring compliance with ethical research standards.

## III. RESULTS AND DISCUSSION

The results of the study are analyzed through a comparative evaluation of IT and Banking sector portfolios using both portfolio performance measures and technical analysis indicators. This section discusses sector-wise return behavior, risk characteristics, and the implications of technical indicators in understanding market movements.

Table: Sector-wise Portfolio Performance Comparison

| Sector | Standard Deviation (%) | Mean Return (%) | Sharpe Ratio | Treynor Ratio | Jensen's Alpha |
|---|---|---|---|---|---|
| IT Sector | -0.13 | 2.04 | 0.93 | -0.07 | -0.0017 -0.0001 |
| Banking Sector | 0.08 | 2.64 | -0.32 | 0.01 | -0.0015 0.00 |

Source: Author's calculations based on NSE and BSE data

The IT sector portfolio recorded negative mean returns, indicating underperformance during the study period. Although volatility was comparatively lower, returns were insufficient to compensate for the risk undertaken. In contrast, the Banking sector

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portfolio generated positive mean returns, reflecting better profitability and stronger market resilience.

The beta value of the IT sector portfolio is close to unity, indicating that IT stocks move largely in line with the overall market. The Banking sector portfolio, however, exhibits a negative beta, suggesting an inverse relationship with market movements. This highlights the defensive nature of banking stocks, making them suitable for portfolio hedging during periods of market uncertainty.

Risk-adjusted performance indicators further support these findings. The negative Sharpe Ratio of the IT sector reflects inefficient risk-return performance, whereas the positive Sharpe Ratio of the Banking sector indicates better compensation for risk. Similarly, Treynor Ratio and Jensen's Alpha values favor the Banking sector, demonstrating relatively superior portfolio efficiency.

Technical Indicator Analysis

Technical indicators were used to examine short-term price trends and momentum behavior of selected stocks across both sectors.

Table 2: Interpretation of Technical Indicators

| Indicator | IT Sector | Banking Sector |
|---|---|---|
| RSI | Frequent overbought and oversold signals | Stable RSI levels with fewer extreme signals |
| Indicator | IT Sector | Banking Sector |
| SMA | Frequent crossovers and trend instability | Clearer trend direction indicating price stability |
| ROC | High fluctuations reflecting consistent momentum | Moderate and uncertain momentum |

The RSI analysis shows that IT stocks frequently entered overbought and oversold zones, indicating high volatility and sensitivity to market news. Banking stocks displayed relatively stable RSI values, suggesting steady price behavior.

The SMA indicator reveals that IT stocks experienced frequent trend reversals, making them more suitable for short-term trading strategies. In contrast, Banking stocks showed sustained trends, supporting long-term investment decisions.

The ROC indicator highlights sharp momentum changes in IT stocks, while Banking stocks exhibited smoother momentum patterns, reinforcing their role as stable portfolio components.

The combined analysis of portfolio metrics and technical indicators suggests that Banking sector stocks function as defensive assets, offering stability and consistent returns. The IT sector, while growth-oriented, is characterized by higher volatility and weaker risk-adjusted performance during the study period. These findings emphasize the importance of sectoral diversification, where blending growth-oriented and defensive stocks can help optimize portfolio risk and returns.

## VI. CONCLUSION

A conclusion section is not required. Although a conclusion may review the main points of the paper, do not replicate the abstract as the conclusion. A conclusion might elaborate on the importance of the work or suggest applications and extensions.

## VII. APPENDIX

The appendix section presents supporting information that supplements the main analysis of the study. Detailed calculations of technical indicators such as Relative Strength Index (RSI), Simple Moving Average (SMA), and Rate of Change (ROC), along with intermediate portfolio computation steps, were carried out using spreadsheetbased tools. Due to space constraints and journal guidelines, extensive numerical tables and daily price data have not been included in the main body of the paper but are available with the author upon request.

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