

A Comparative Analysis of Risk, Return, and CAPM-Based Performance of Selected Blue-Chip Companies Listed on the National Stock Exchange of India (2021-2026)

Dr. Gayatri N. Nayak^{*1}, Mrs Prajakta Khamkar², Dr. Meenakshi A. Arya³, Dr. Kirti Shivaji Bothe⁴

¹Assistant Professor, Department of Management Studies & Research Sasmira's Institute of Management Studies and Research, Sasmira Road, World, Mumbai, Maharashtra 400030

Email ID: gayatrinayak1606@gmail.com

²Assistant Professor, BBA- Mulund College of Commerce 400080, Maharashtra India

³Assistant Professor, Finance - Narsee Monjee College of Commerce and Economics, Mumbai – 400056, Maharashtra India

⁴Assistant Professor, BBA-Balaji college of Arts Commerce and Science, Tathawade, Pune Maharashtra India

***Corresponding Author**

Dr. Gayatri N. Nayak

Email ID: gayatrinayak1606@gmail.com

ABSTRACT

Background: The Indian capital market facilitates the aggressive enhancement of an economy through funding and cultivating new entrepreneurial talent. In economically turbulent times such as the post- pandemic economy, both wealth creation and wealth protection remain a concern for investors in any market. Blue-chip companies are financially sound and market leaders. The present study aims to fulfil the literature gap and furnishes an up-to-date comparison of the top ten large-cap firms in the National Stock Exchange (NSE).

Methods: Such research effort used a mix of descriptive and analytical methodologies, secondary data, and a timeframe between 2021–2026. Sample selection of blue-chip stocks is done across all sectors. Evaluation includes methods of analysis involving average monthly returns and standard deviation (total risk), the Capital Asset Pricing Model (CAPM) methods, and analysis of systematic risk (Beta), excess returns (Alpha), and market correlation (R-Square).

Results: The findings show that the State Bank of India (SBI) has the highest average monthly return of 2.71 % and was the most volatile with the highest standard deviation of 8.37%. Bharti Airtel had the highest risk-adjusted return (Sharpe of 0.33) and showed the greatest efficiency with a large positive Alpha (1.30) and a defensive Beta (0.77). Reliance Industries showed the greatest market correlation with an R-Square of 0.52. In contrast, HDFC Bank showed a significant negative Alpha of -1.18 having underperformed with a relative risk.

Conclusion: The variance of risk-return combinations proves that systematic risk (the CAPM Beta) is not the only predictor. The note in the study establishes that Bharti Airtel provided a value of low economic Beta coupled with high economic Alpha, making it desirable for high economic value diversification. Investors should leverage both total risk and CAPM metrics to identify efficient investment opportunities in the Indian market.

Keywords: Blue-chip stocks, National Stock Exchange, Risk-Return Analysis, CAPM, Beta, Alpha, Portfolio Management.

INTRODUCTION

BACKGROUND OF CAPITAL MARKET IN INDIA

In fact, the Indian capital market constitutes one of the major sources of economic development in the country through mobilization and investment of the savings generated. The Indian capital market represents a medium where people can invest money while firms can collect money to invest and develop. A developed capital market increases liquidity, helps in promoting entrepreneurship, and aids industrial development (Bhole, 2009)¹. During the last three decades, there have been considerable developments in the financial markets of India due to economic changes, globalization, and technological innovation. Liberalization which started in the year 1991

became a watershed in the history of the Indian financial system. Deregulation, privatization, increase in foreign investment, and development of financial institutions played vital roles in enhancing the efficiency and effectiveness of the Indian securities market. As per Henry (2000)², liberalization of stock markets in emerging economies had a positive impact on the price levels and economic performance of the concerned nations. They attracted investment inflows and improved investor confidence. Liberalization contributed to integration of the Indian domestic markets with international finance. One of the pivotal events in the development of India's capital markets is the incorporation of the National Stock Exchange of India in 1992. The features that characterize this organization include nationwide electronic trading

system, transparent price discovery mechanism, and an efficient system of settlements. According to Shah, Ajay and Thomas, Susan (2000)³, the emergence of the National Stock Exchange revolutionized India's securities market because of its shift from traditional methods of floor trading to computerized systems, which led to a reduction of transaction costs and improved access of investors. In addition to NSE, the Bombay Stock Exchange remains one of the most significant stock exchanges not only in Asia but also in the world. Both exchanges provide a wide variety of investment opportunities for individuals and institutions to choose from. When investors engage in equity trading, they gain access to a diverse selection of companies operating in a variety of industries⁸.

In recent years, India's stock market has become one of the largest stock markets in the world in terms of number of securities traded in the market. Some of the prominent benchmark indices used to gauge the performance of companies listed in this market are NIFTY 50 and S&P BSE Sensex. Blue-chip companies are an integral part of this evolving structure (NSE, 2025; BSE, 2025)^{4,5&6}. Blue-chip stocks comprise securities of financially healthy and respected companies, which lead the market and have reliable management practices. Such companies usually lead their respective sectors and can survive economic slumps better than other small players in the market. For investors, blue-chip stocks provide a great way to generate wealth and stay safe from market volatility (Brealey et al., 2025)⁷.

The top blue-chip companies of India according to market cap, liquidity, and investor importance are Reliance Industries, HDFC Bank, ICICI Bank, Bharti Airtel, State Bank of India, Tata Consultancy Services, Infosys, Bajaj Finance, Hindustan Unilever, and Larsen & Toubro. This list consists of various sectors such as energy, banks, telecom, IT, financial services, consumer goods, and infrastructure. Thus, the diversification of the sectors of operation of the top blue-chip companies makes them suitable for comparison India, F. (2025, September 9)⁸. Risk and return are two crucial factors in making investment decisions. Return refers to the gains from investing in terms of increases in value and dividends whereas risk means uncertainty about expected gains. In his contribution to investment analysis known as Modern Portfolio Theory, Markowitz (1952)⁹ stated that an investor must select an optimal combination that ensures maximum expected gains for a certain amount of risk. Such a concept formed the basis of portfolio management and remains important in equity analysis.

The concept was further enhanced by Sharpe (1964)¹⁰ through the Capital Asset Pricing Model (CAPM) where the relationship between expected gains and systematic risk is defined in terms of the beta coefficient. Under this model, a rational investor expects returns on account of market risks only and firm-specific risks can easily be diversified. According to Lintner (1965)¹¹, stocks having high systematic risk are expected to earn more in terms of returns. In this context, risk-return analysis of blue-chip stocks becomes necessary to evaluate whether large-cap companies pay sufficient return on their investments Sharpe, W. F. (1964)¹⁰. Large-cap blue chip firms are believed to be relatively safer investments due to

diversification of their operations, healthy financial statements, stable cash flows, and good governance practices. Nevertheless, low levels of risk do not always mean less volatility and higher profitability. Economic downturns, rising inflation, increased interest rates, currency risks, global recessions, and political uncertainties may influence even the biggest enterprises. Therefore, a risk-return analysis based on empirics is still required Brealey, R., Myers, S., Allen, F., & Edmans, A. (2025)⁷.

It is now more crucial than ever to analyse blue-chip stocks in India owing to events that took place after the pandemic period. Such incidents include disruption in business caused by the pandemic, rising inflation, monetary contraction, supply chain issues, and international conflict scenarios. In the face of all such uncertainties, investors tend to Favor large-cap firms in their portfolios.

In view of the above scenario, the current study titled "Risk-Return Analysis of Leading Blue-Chip Stocks in India: Case Study of Top 10 Large Cap Firms on NSE" aims at evaluating whether the best-performing listed companies in India provide good return prospects vis-a-vis their level of riskiness. The study will generate useful information for investors, portfolio managers, academicians, and policy makers about the efficient investments in Indian capital market.

Significance of blue-chip stocks in portfolio management

The importance of blue-chip stocks cannot be understated in the context of portfolio management since they consist of equity shares issued by financially sound, mature, and reputable firms, which enjoy steady income streams, pay regular dividends, and have robust market positioning. Blue-chip stocks are typically leading organizations in their industry segments and are thus more secure investments than mid-cap and small-cap stocks (Brealey et al., 2025)¹². Firstly, one of the significant benefits of blue-chip stocks is their stability. When markets become volatile or the economy faces an uncertain period, blue-chip firms tend to deliver outstanding performances due to the diversification of their operations, robust financial statements, and effective managerial policies (Fabozzi, 2018)¹³. Secondly, blue-chip stocks are essential in the process of diversification. Based on the principles of Modern Portfolio Theory, investors can mitigate the effects of unsystematic risk by diversifying across various assets (Markowitz, 1952)¹⁴. Since blue-chip stocks are involved in sectors like banking, information technology, fast-moving consumer goods, telecommunication services, and infrastructure development, their inclusion in portfolios ensures proper diversification. Yet another key factor in favour of investing in blue-chip stocks is that of regular dividends. Most blue-chip companies have established a tradition of regular and growing dividends, thus making them appropriate for conservative investors as well as those planning to live on dividend income after retirement. Moreover, blue-chip stocks also enjoy high liquidity since they remain actively traded in the stock market. An investor may find it easy to purchase or dispose of such stocks without having to worry about sharp movements in price levels. Their presence in

leading indices such as the NIFTY 50 and the S&P BSE Sensex only strengthens the case for investing in blue-chip stocks. Thus, blue-chip stocks remain extremely important for portfolio management.

Defining Blue-Chip Stocks

Blue-chip stocks represent securities issued by financially sound, mature, and reputable companies with a history of market leadership and robust corporate governance. These entities are typically resilient to cyclical downturns and are prioritized by institutional investors for their stable cash flows (Brealey et al., 2025). This study focuses on ten premier blue-chip companies listed on the NSE:

1. **Reliance Industries** (Energy)
2. **HDFC Bank** (Banking)
3. **ICICI Bank** (Banking)
4. **Bharti Airtel** (Telecom)
5. **State Bank of India (SBI)** (Banking)
6. **Tata Consultancy Services (TCS)** (IT)
7. **Infosys** (IT)
8. **ITC** (Consumer Goods/Conglomerate)
9. **Larsen & Toubro (L&T)** (Infrastructure)
10. **Hindustan Unilever (HUL)** (FMCG)

1.2 Statement of the Problem

While the Indian capital market has undergone significant technological and structural transformations since the 1991 liberalization, investors continue to face challenges in identifying efficient investment opportunities amidst increasing market volatility. Blue-chip stocks are traditionally viewed as safe havens due to their financial health and market leadership; however, the post-pandemic landscape—characterized by rising inflation, monetary contraction, and increased retail and algorithmic trading—has introduced new complexities into their risk-return profiles.

A critical gap exists in current financial literature regarding the Indian market. Most existing research focuses on broad market indices (like the Nifty 50), mutual fund performance, or general sector-wise trends rather than providing a detailed, company-wise comparison of individual top-tier blue chips. Furthermore, much of the available research utilizes outdated data that does not account for the structural shifts occurring between 2021 and 2026. Consequently, there is a lack of empirical evidence to help investors distinguish which specific large-cap leaders—such as SBI, Bharti Airtel, or Reliance—offer the most efficient risk-adjusted returns under current economic conditions. This study addresses these deficiencies by conducting a comparative analysis using the Capital Asset Pricing Model (CAPM) to evaluate the individual performance efficiency of the top ten blue-chip firms on the NSE.

1.3 Scope of the Study

This research deals specifically with the Indian equity market. The scope is demarcated as follows:

Target Population and Sample: The top 10 blue-chip companies traded on the NSE comprise the sample for this study. These were chosen for their market capitalization, liquidity, and importance among investors as of 2026.

Sectoral Coverage: The sample firms also capture the Energy (Reliance), Banking (HDFC, ICICI, SBI), IT (TCS and Infosys), Telecom (Bharti Airtel), FMCG (HUL and ITC), and Infrastructure (L&T) sectors.

Temporal Boundary: The study spans the post-COVID-19 market recovery phase. The analysis captures the five years between 2021 and 2026 to understand the emergence of retail and algorithmic trading.

Analytical Framework: The study only incorporates quantitative risk-return analysis. It employs average monthly returns, standard deviation, and the Sharpe Ratio as primary financial metrics. The Capital Asset Pricing Model (CAPM) helps the analysis with Beta, Alpha, and R-Square.

Market Benchmark: To this study, the Nifty 50 Total Returns Index (TRI) signifies the overall Indian market and serves as the primary benchmark.

Intended Audience: The objective is to help individual investors, institutional portfolio managers, financial academicians, and policymakers understand large-cap stock behaviour in modern India.

2.LITERATURE REVIEW

Risk-return analysis continues to be one of the most thoroughly investigated subjects in finance due to its direct application in the making of investment decisions. The basic concepts of risk-return trade-off were put forward by Markowitz (1952)⁹. In his work, he presented the idea of Modern Portfolio Theory (MPT), where he highlighted the importance of diversification as an approach to maximizing returns for a particular level of risk. Investors can avoid unsystematic risk through diversification instead of investing in individual stocks, as stated by the model. The second breakthrough in the risk-return analysis came from Sharpe (1964)¹⁰ in the form of CAPM, which analysed systematic risk (beta) and returns. Further research in developed economies built on these models and tested whether high-risk stocks always earned higher returns. The empirical evidence provided mixed results as some research indicated that high risks earned higher returns whereas some other research suggested that only considering beta would not be enough to explain stock returns. Fama, E.F., & French, K.R. (1993)¹⁴ introduced their Three-Factor Model for explaining stock returns. Studies in India testing the applicability of CAPM and portfolio theory in NSE have been undertaken. According to Lalitha (2025)¹⁵, stocks listed on NSE between 2006–2023 did not show any statistically significant positive risk/return relationship in various periods. The paper suggested that beta cannot be taken in isolation when used in CAPM and behavioural aspects could impact stock valuation. Likewise, Bangur, Kumar, and Malhotra (2024)²⁴ conducted research on the empirical relevance of CAPM on NIFTY 50 companies from 2008–2023. They argued that despite inconsistencies during structural events like demonetization, GST introduction, and COVID-19, CAPM continues to serve as an adequate benchmark. Various studies conducted in India have compared the performance of stocks based on sector/index analysis rather than individual blue-chip companies. Charithra and Bhavya (2019)¹⁶ analysed some NSE financial services stocks through beta, standard deviation, covariance, and correlation approaches. It was

observed that different sectors showed significant variations in returns and volatility, with FMCG, IT, and pharmaceuticals showing higher returns as compared to cyclicals. Various researchers have analysed portfolio optimization techniques using Indian stock market data. Sen et al. (2021)¹⁷ analysed the minimum variance and optimum risk portfolio using NSE sector stocks and concluded that diversification leads to better risk-adjusted returns. Sen et al. (2023)¹⁹ further emphasized that there is significant variation in portfolio efficiency depending upon volatility and correlation among different sectors. Despite an increase in research in this area, most studies conducted in India focus only on mutual funds, benchmark indexes, sector portfolios, or tests of CAPM. Very few studies have focused on comparing the top ten blue-chip large-cap companies quoted on NSE through various risk-return models such as average return, standard deviation, beta, Sharpe ratio, Treynor ratio, and Jensen's alpha. Additionally, the dynamics of the market have changed in recent times due to increased retail participation, electronic trading, algo-trading, and post-COVID recovery.

2.1 Identification of the Literature Gap

The contribution of existing literature in risk and returns analysis is substantial for better comprehension of investment behaviour, formation of portfolios, and behaviour of the stock market. Some examples of foundational works are Harry Markowitz (1952)⁹ who presented Modern Portfolio Theory with an emphasis on diversification for achieving maximum returns at a fixed level of risk, and William F. Sharpe (1964)¹⁰ who created the CAPM linking systematic risk and expected returns. These contributions are important for financial research worldwide. At the same time, most research papers in this area have been theoretical in nature and have not considered emerging markets, including India.

Several studies have been dedicated to analysing the behaviour of the stock market in developed countries with completely different markets, investors, and legal systems compared to those in India. Most research conducted in developed markets relates to analysis of the role of diversification within sectors, behaviour of stock indexes, and investment practices of institutions, but may not apply to the situation in Indian stock markets where retail investors have an active part in investments (Henry, 2000)²⁰.

Previous research in the Indian market setting has largely been confined to studies on market efficiency, volatility, mutual funds' performance, and index-based research, but not company-wise analysis for the comparison of blue-chip stocks. Numerous studies can be found regarding benchmark indices like NIFTY 50 or S&P BSE Sensex for identifying market trends, yet there are hardly any studies which compare blue-chip stocks in terms of their performance. For instance, research may be done separately on banking, IT or pharmaceutical stocks without bringing them all together in one blue-chip analysis (Shah & Thomas, 2000)²¹.

A further gap in the existing literature is the lack of India-specific comparative study of the top ten blue-chip stocks of NSE with respect to the latest market capitalisation of the companies. The top blue-chip stocks in India include

those of Reliance Industries, HDFC Bank, ICICI Bank, Tata Consultancy Services, Infosys, Bharti Airtel, State Bank of India, Bajaj Finance, Hindustan Unilever, and Larsen & Toubro among others. There is, however, very little literature available about comparing the performance of these top 10 blue-chip companies in India through risk-return analysis.

In addition, earlier research makes use of outdated data sources that do not account for structural changes resulting from the impact of digital investments, higher retail participation, algorithmic trading, and post-COVID-19 recovery trends. The Indian market has gone through significant shifts since the pandemic on account of inflation, high-interest rates, volatility, and other factors. Therefore, old results may not accurately describe the contemporary return characteristics of top blue-chip stocks in India (Brealey et al., 2025)²².

Another limitation lies in the lack of cross-sector comparison of leading blue-chip companies. As top companies belong to different sectors like banking, IT, telecom, FMCG, infrastructure, finance, etc., there is a significant variance in their risk exposure. Earlier research have failed to incorporate an overall sector-wise comparative study into their analysis (Fabozzi, 2025)²³.

Thus, the need for the present research is to fill this gap through conducting a comparison of the best performing 10 blue-chip stocks listed on NSE. This study tries to determine whether the most successful large cap companies continue to deliver favourable performance in terms of return to risk relationship, as well as to identify the stocks which perform better than others in terms of investment efficiency in the present Indian business scenario.

2.2 Conclusion

A distinct gap persists in Indian equity research. Most existing studies prioritize broad indices (NIFTY 50) or mutual fund portfolios, often neglecting granular, company-wise comparisons among top-tier blue chips. In addition, there is a failure to include an analysis involving the 2021-2026 data cycle, which involves the period after the pandemic and a marked rise in retail and algorithmic trading. This paper seeks to remedy the above inadequacies with an analysis that includes a cross-sector comparison of the leading companies based on their market capitalizations.

2.3 Theoretical Framework

The theoretical foundation of the analysis conducted herein is founded on the Modern Portfolio Theory (Markowitz, 1952), where investors can achieve maximum returns at a certain level of risk through diversification. In addition, the Capital Asset Pricing Model (Sharpe, 1964) identifies systematic risk measured in terms of Beta (β). According to CAPM, investors earn returns based only on the risks associated with the whole market, as company-specific risks are diversifiable.

3. RESEARCH OBJECTIVE

1. To compare the risk and return profiles of the top 10 blue-chip large-cap stocks on the National Stock Exchange of India.
2. Critical analysis of the risk-adjusted performance of ten

major blue-chip stocks using the capital asset pricing model (CAPM). This will involve the analysis of their systematic risk (Beta) and excess returns (Alpha) as well as the market efficiency (R-Square) of the stock.

4. RESEARCH METHODOLOGY

The following section gives a detailed description of the methodology used in this research to study the risk-return profile and investment efficiency of leading blue-chip stocks in India. It entails a systematic investigation of the research objectives as indicated below.

4.1 Research Design: In this research, a descriptive and analytical research methodology will be employed. The research will be descriptive in the sense that it will give an overview of the performance of selected firms and analytical due to use of financial models like the capital asset pricing model (CAPM).

4.2 Data sources: In this research, secondary data sources are to be used. The following sources of data include information on historical prices, dividends, and level of indices among others obtained from:

- The official website of the National Stock Exchange (NSE) of India.
- Annual reports of the respective companies.
- Morningstar India and other reputable market-published reports.

4.3 Sampling Technique and Selection: The study uses a purposive sampling method to select ten blue-chip companies listed on the NSE. The selection of these firms was based on their market capitalization, liquidity, and investor significance in 2026. To obtain a holistic market perspective, the sampling includes different industries, such as:

Banking: HDFC Bank, ICICI Bank, and State Bank of India.

- Information Technology: TCS and Infosys.
- Telecom: Bharti Airtel.
- FMCG: Hindustan Unilever and ITC Ltd.
- Energy & Infrastructure: Reliance Industries and Larsen & Toubro.

4.4 Period and Frequency of Study: The period under study spans five years, from 2021 to 2026. The time span takes into account the market restructuring that occurs in India after the COVID-19 pandemic. The data will be analysed using monthly stock price data in order to strike a balance between data accuracy and trend measurement.

4.5 Statistical and Financial Methods: To achieve the research aims, the gathered data will be processed using the following methods:

Monthly Average Return: For measuring the earning performance of each stock.

Standard Deviation: For quantifying volatility and total investment risk.

Sharpe Ratio: For measuring the risk-adjusted return by comparing excess return over the risk-free rate (using 91-day T-bills) with stock's volatility.

CAPM Methodology: For critical analysis of performance by means of:

□ Beta (β): Systematic risk against the market (Nifty 50 TRI).

□ Alpha (α): Excess return generated without market movement.

□ R-square: Market's predictive ability and reliability of Beta.

5. DATA ANALYSIS AND INTERPRETATION

5.1 Risk and Return Performance

Table 1: Comparative Analysis of Risk, Return, and Sharpe Ratio

Particulars	% Return Reliance Industries Ltd	% Return HDFC Bank Ltd	% Return Bharti Airtel Ltd	% Return ICICI Bank Ltd	% Return Infosys Ltd	% Return Tata Consultancy Services Ltd	% Return State Bank of India	% Return ITC Ltd	% Return Larsen & Toubro Ltd	% Return Hindustan Unilever Ltd FMC G	% Return Nifty 50 TRI
Average Monthly Percentage Returns	1.04	0.17	2.32	1.38	0.56	0.37	2.71	1.39	2.07	0.42	1.2
Standard Deviation	6.04	6.78	5.62	6.07	7.5	6.07	8.37	6.47	5.89	6.53	3.6
Average Monthly Risk-Free Rate (Based on 91 Days T-bills) i.e. Rf	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44
Sharpe Ratio	0.1	-0.04	0.33	0.16	0.02	-0.01	0.27	0.15	0.28	0	0.21

Sources: Author's compilation

Interpretation: Analysis of return, risk, and risk-adjusted performance among chosen blue-chip companies trading in National Stock Exchange of India shows some variance between firms. Out of all firms under study, State Bank of India was found to have the highest average return of 2.71%, followed by Bharti Airtel and Larsen & Toubro. These firms had strong growth potential during the research period since they had higher returns compared to other companies such as HDFC Bank, TCS, and Hindustan Unilever Ltd.

From the results of risk analysis using standard deviation, State Bank of India had the highest volatility, followed by Infosys and HDFC Bank. However, Bharti Airtel and Larsen & Toubro had relatively low risks despite having

higher monthly returns, which made them safer investment choices. The Nifty 50 TRI portfolio had the lowest standard deviation, which denotes the benefits of diversification in minimizing risk.

In terms of risk-adjusted performance measured by Sharpe Ratio, Bharti Airtel had the best return, followed by Larsen & Toubro and State Bank of India. The two portfolios, which were found to have negative Sharpe Ratios, are HDFC Bank and TCS. This suggests that after risk adjustment, their performance could have been weaker compared to other portfolios.

5.2 CAPM-Based Performance Statistics

Table 2: Risk-Adjusted Performance Statistics (CAPM)

Company Name	Multiple R	R Square	Standard Error	Alpha Coefficient	Beta Coefficient	Beta P-value	Observations
Reliance Industries Limited	0.7210	0.5198	4.2243	-0.3240	1.2096	8.23×10^{-11}	60
Larsen & Toubro Ltd	0.6593	0.4346	4.4633	0.8119	1.0770	1.02×10^{-08}	60
HDFC Bank Limited	0.6325	0.4000	5.2974	-1.1754	1.1905	5.93×10^{-08}	60
ICICI Bank Limited	0.6188	0.3829	4.8053	0.1486	1.0418	1.37×10^{-07}	60
Tata Consultancy Services Ltd	0.5638	0.3179	5.0545	-0.7885	0.9497	2.72×10^{-06}	60
State Bank of India	0.5374	0.2888	7.1232	1.3215	1.2492	9.54×10^{-06}	60
Bharti Airtel Limited	0.4926	0.2427	4.9353	1.2954	0.7689	6.38×10^{-05}	60
ITC Ltd	0.4661	0.2172	5.7695	0.3107	0.8365	0.0002	60
Infosys Ltd	0.4395	0.1932	6.7979	-0.5747	0.9154	0.0004	60
Hindustan Unilever Ltd	0.3917	0.1534	6.0553	-0.5559	0.7095	0.0020	60

Sources: Author's compilation

Interpretation: This analysis critically reviews the risk-adjusted performance of ten large-cap blue-chip stocks using the CAPM regression output obtained from the available sources. It mainly assesses the stock's systematic risk (Beta), excess return (Alpha), and explanatory ability of the market (R-Square).

1. Systematic Risk Assessment (Beta Analysis)

Beta is used as a proxy for the systematic risk. If the Beta of the stock exceeds 1.0, then the stock can be categorized as an aggressive stock, whereas a stock with Beta less than 1.0 will be termed as a defensive stock.

Aggressive Stocks: The aggressive stocks having maximum systematic risk include SBI with Beta 1.25, followed by Reliance Industries (1.21), HDFC Bank (1.19), Larsen & Toubro (1.08), and ICICI Bank (1.04). Such stocks tend to magnify the gains made in the market but increase risks to the investor's portfolio during bear markets.

Defensive Stocks: The defensive stocks, which provide minimum exposure to market changes, include Hindustan Unilever (0.71), followed by Bharti Airtel (0.77), ITC

(0.84), Infosys (0.92), and TCS (0.95).

2. Risk-Adjusted Excess Returns (Alpha Analysis)

Alpha is the intercept in the regression equation and shows how the stock performs without the effects of market movement. Positive Alpha values indicate gains, whereas negative Alpha values show poor performance compared to the level of risk assumed.

Best Performers (Positive Alpha): SBI and Bharti Airtel are top performers, having Alphas of 1.32 and 1.30, respectively. Others that have created positive excess returns include Larsen & Toubro (0.81), ITC (0.31), and ICICI Bank (0.15).

Worst Performers (Negative Alpha): The worst performer is HDFC Bank, having an Alpha of -1.18. Poor performers in terms of creating excess returns include TCS (-0.79), Infosys (-0.57), HUL (-0.56), and Reliance Industries (-0.32).

3. Model Reliability and Explanatory Power (R-Square)

R-Square explains the proportion of the movement of the stock prices that can be attributed to the movement in the market index.

High Correlation with Market: The highest R-Square

value is observed for Reliance Industries at 0.52, which means that 52% of its variance is attributed to the market, making the beta an accurate indicator of future volatility. Other companies with high correlation include Larsen & Toubro (0.43) and HDFC Bank (0.40).

Low Correlation with Market: HUL (0.15) and Infosys (0.19) have the least R-Square values, implying that most of their stock prices are determined by unsystematic risk factors.

Statistical Significance

The findings are statistically significant since all the ten stocks show a low p-value for the beta coefficients and significance F. For example, the beta coefficient of Reliance Industries has a p-value of 8.23E-11, while that of HDFC Bank has a p-value of 5.93E-08.

5.3 Portfolio Management Synthesis

Table 3: Portfolio Management Summary

Stock	Beta (Risk Type)	Alpha (Excess Return)	R ² (Reliability)
Reliance Industries	1.21 (Aggressive)	-0.32	High (0.52)
Bharti Airtel	0.77 (Defensive)	1.30	Low (0.24)
SBI	1.25 (Aggressive)	1.32	Moderate (0.29)
Hindustan Unilever	0.71 (Defensive)	-0.56	Low (0.15)

Sources: Author's compilation

Summary of Findings for Portfolio Management

According to this assessment, Bharti Airtel is an ideal stock in a diversified portfolio since it is a stock with a defensive Beta and high positive Alpha. On the other hand, although SBI has a higher Alpha than Bharti Airtel, it has the highest level of systematic risk among all the stocks.

Portfolio Allocation: Bharti Airtel should be Overweight in a diversified portfolio since it is a rare stock that has a defensive Beta and high Alpha. SBI is only suitable for high conviction "Satellite" portfolios because it has high volatility. HDFC Bank and TCS should be Underweight or neutral until their Alpha is stabilized.

6.LIMITATIONS AND FUTURE RESEARCH

Acknowledging the constraints of this study is essential for providing a balanced interpretation of the findings and establishing a foundation for subsequent academic inquiry.

6.1 Limitations of the Study

•**Sample Selection:** The study is limited to only the top 10 blue-chip firms in terms of market cap and liquidity available in the NSE. As a result, the conclusions about risk-return dynamics and efficiency of CAPM cannot be generalized to other categories such as mid or small cap stocks.

•**Use of Only Secondary Sources:** All the data collected by the researcher has been acquired from external sources like the NSE website, annual reports of each company, and Morningstar India. The reliability of these sources directly affects the accuracy of the results derived.

•**Time Period Considered:** The five-year time period (2021-2026) used in this paper includes the post-pandemic recovery phase and growing importance of retail traders and algorithmic trading. While this is relevant for today's scenario, long-term cycles of decades can also be considered along with past structural changes such as that in 1991.

•**Limitations of Model Used:** Although CAPM is a strong theoretical model, the researcher has pointed out that CAPM alone is not sufficient to estimate the stock returns. Several behavioral and firm-related factors such as biases, quality aspects not covered in the regression analysis can

affect the stock's value.

6.2 Scope for Future Research

•**Larger Sample Size:** In future studies, researchers could extend the sample set to cover the whole Nifty 50 index or contrast the performance of blue chips in various emerging market economies for a broader perspective on the efficiency of investments.

•**Different Asset Pricing Models:** Academicians might explore whether alternative asset pricing models such as the Fama-French three-factor model or others can better predict returns than the single-beta CAPM utilized in this study.

•**Use of Qualitative Variables:** Incorporating insights from behavioural finance or corporate governance variables may shed light on why some blue-chip stocks like HDFC Bank or Tata Consultancy Services yielded a negative alpha.

•**Sector-Based Studies:** Due to the large variation in risk profiles noted among industries such as Banking, Information Technology, and FMCG, sector-specific studies are warranted.

7 APPLICATIONS

The findings of the present study have practical implications for the investors, portfolio managers, academicians and policy makers in understanding the behaviour of blue-chip stocks in the Indian capital market. Below, the applications of the study are discussed:

1. **Investment Decision Making:** The study helps investors to find efficient blue-chip stocks based on their risk-return characteristics and CAPM indicators. Investors can choose stocks with good Alpha, mild Beta and higher Sharpe Ratios for better decision making.

2. **Portfolio Construction & Diversification:** The research provides portfolio managers with advice on how to construct diversified portfolios by combining aggressive and defensive stocks. Stocks like Bharti Airtel and ITC with lower Beta values could be suitable for conservative investors, while SBI and Reliance Industries could be attractive to aggressive investors looking for higher returns.

3. **Risk Management:** This study reveals information about systematic risks that exist across various industries and organizations. The Beta coefficient can help investors

understand how their investments behave relative to changes in the market and manage their risks effectively.

4. Performance Analysis: By employing CAPM in this study, the investors and other financial professionals will be able to determine whether the stocks they invested in were performing well or underperforming compared to the risks they took.

5. Academic Value: This research adds to the current body of literature on the risk-return relationship and its application through CAPM within the context of the Indian stock exchange market. Future research on portfolio management, market efficiency, and investment analysis will find this useful.

6. Policymaking: This research will be helpful for policymakers who wish to understand how big stocks will behave in a post-pandemic market situation.

8 FINDINGS

The main findings of the study are summarised below:

- State Bank of India posted the highest average monthly return of 2.71%, suggesting good growth potential among the selected blue-chip companies.
- Bharti Airtel showed best risk-adjusted performance with highest Sharpe Ratio of 0.33
- The highest standard deviation and Beta coefficient was of State Bank of India which indicates higher volatility and systematic risk.
- Bharti Airtel and Hindustan Unilever showed defensive characteristics with Beta values less than 1 indicating less sensitivity to market movements.
- Reliance Industries recorded the highest R-Square value (0.52) indicating more dependency on overall market movements.
- Positive Alpha values were observed for SBI, Bharti Airtel, Larsen & Toubro, ITC and ICICI Bank indicating value creation above the expected market returns.
- HDFC Bank, Infosys, TCS, HUL and Reliance Industries generated Negative Alpha values, indicating relatively weaker performance on a risk-adjusted basis.
- The study confirms that high returns are generally associated with high levels of systematic risk.
- Market risk alone does not explain stock performance based on the CAPM analysis because some stocks were affected by company specific factors.
- Bharti Airtel was found to be the most efficient stock for diversification of portfolio due to its lower market risk and higher excess returns.

9. CONCLUSIONS & IMPLICATIONS

The study examined the risk-return characteristics and CAPM based performance of ten major blue-chip companies listed on National Stock Exchange of India for the period 2021–2026. Our results show that there are significant differences in return generation, volatility, systematic risk and investment efficiency of blue-chip stocks.

The analysis showed that the State Bank of India had the highest average returns but also the highest level of market risk. Bharti Airtel is the most efficient investment option with high risk-adjusted returns, positive Alpha and defensive Beta. Larsen & Toubro and ITC also displayed positive portfolio characteristics.

The CAPM analysis also suggests that stock performance

cannot be explained by systematic risk alone as some companies were highly affected by firm specific factors. Stocks with lower Beta values such as Bharti Airtel and HUL provided defensive stability whereas aggressive stocks like SBI and Reliance Industries were more sensitive to market fluctuations. The study concludes that investors should not decide on investments based solely on return numbers. On the contrary, efficient portfolio construction should consider both total risk measures and CAPM indicators such as Alpha, Beta and R-Square. The results provide significant insights for investors looking for diversified investment opportunities in the changing Indian capital market, especially during the post-pandemic recovery process.

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