



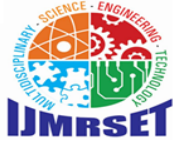
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Analysis of Capital Market Integration-India and Global Market

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ABSTRACT: This study analyses the level of capital market integration between the Indian stock market and major global markets during the period 2021-2025, focusing on the NIFTY 50 (India), S&P 500 (United States), and Nikkei 225 (Japan). Using secondary data, the research evaluates growth performance, volatility, risk-reward patterns, drawdowns, and currency-adjusted returns to understand both short-run and long-run relationships among these markets. The findings show that while the Indian market delivered the highest cumulative growth and relatively lower downside risk, all three markets experienced synchronized downturns during periods of global financial stress, especially in 2022, confirming increasing market integration. However, divergence during recovery phases suggests partial rather than perfect co-movement. The study concludes that although global integration enhances investment opportunities, it also increases exposure to external shocks and currency risks, making effective risk management and diversification strategies essential for investors.

KEYWORDS: Capital Market Integration, NIFTY 50, S&P 500, Nikkei 225, Global Stock Markets, Volatility Spillover, Risk Return Analysis, Currency Risk

I. INTRODUCTION

Capital market integration refers to the increasing connection between financial markets across different countries. Due to globalization, technological advancements, and liberalization of capital flows, stock markets no longer operate independently. Investors today can easily invest in foreign markets, and information spreads quickly across countries. As a result, price movements in one major market can influence other markets within a short period of time. This growing interconnectedness has changed the structure and functioning of global financial systems.

In recent years, the Indian stock market has become more closely linked with global markets. The NIFTY 50, which represents the performance of major Indian companies, is increasingly influenced by developments in international markets. Factors such as foreign institutional investment, cross-border portfolio flows, and global economic conditions have strengthened India's integration with developed economies. Because of this, global events now play an important role in shaping Indian market trends.

Among the most influential global indices are the S&P 500 of the United States and the Nikkei 225 of Japan. These markets represent major developed economies and significantly impact global investor sentiment. Movements in these indices often affect trading patterns in India, especially through overnight market reactions and global news. When the US or Japanese markets experience strong gains or losses, the Indian market frequently responds in a similar direction, indicating a growing level of integration.

Understanding capital market integration is important for investors, policymakers, and financial institutions. Higher integration can improve market efficiency and provide better access to international capital. However, it can also increase exposure to global financial shocks. During periods of crisis, markets may fall together, reducing the benefits of international diversification. Therefore, studying the relationship between Indian and global markets helps in assessing both opportunities and risks.

The period from 2021 to 2025 provides an interesting timeframe to examine these relationships. This period includes post-pandemic recovery, global inflation pressures, monetary tightening, and technological-driven market rallies. These



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events created both synchronized downturns and periods of divergence among markets. Analysing this timeframe helps to understand how global and domestic factors influence the level of integration over time.

This study focuses on examining the degree of integration between the Indian stock market (NIFTY 50) and major global markets represented by the S&P 500 and Nikkei 225. By analysing growth trends, volatility patterns, risk–return characteristics, and currency impacts, the research aims to provide a clear understanding of India’s position in the global financial system. The findings will help investors make informed decisions and support policymakers in managing financial stability in an increasingly interconnected world.

II. OBJECTIVE

- To examine the degree of capital market integration between the Indian stock market and major global markets during 2021–2025.
- To compare the growth performance of the Indian market with selected global market indices.
- To analyse the risk and return characteristics of the selected stock markets.
- To study the co-movement and synchronization patterns among Indian and global markets.
- To evaluate the impact of global economic events and currency fluctuations on market integration.

III. SCOPE OF STUDY

This study focuses on analysing the level of capital market integration between the Indian stock market and selected major global markets during the period 2021–2025. The scope is limited to a comparative analysis of the NIFTY 50, S&P 500, and Nikkei 225 indices, representing India, the United States, and Japan respectively. The research is based entirely on secondary data collected from reliable financial sources and considers index performance, growth trends, volatility, drawdowns, and risk–return patterns. The study examines both short-term fluctuations and long-term trends to understand market co-movements and synchronization during stable as well as crisis periods. However, the analysis does not cover individual company-level data, sector-specific movements, or other international markets beyond the selected indices. The findings are therefore confined to index-level integration and may not represent the entire global financial system.

IV. STATEMENT OF PROBLEM

With the rapid growth of globalization and cross-border capital flows, financial markets around the world have become increasingly interconnected. The Indian stock market, represented by the NIFTY 50, is no longer isolated from global influences, as movements in major markets such as the S&P 500 and Nikkei 225 often impact domestic market performance. However, the degree to which the Indian market is integrated with these global markets remains an important issue. Understanding whether market movements are closely synchronized or relatively independent is essential for investors, policymakers, and financial institutions.

During the period 2021–2025, global markets experienced significant economic events including post-pandemic recovery, inflation pressures, monetary policy changes, and geopolitical uncertainties. These factors created both market volatility and synchronized downturns across countries. The problem addressed in this study is to determine the extent of capital market integration between India and major global markets during this period and to assess how global events and external shocks influence the Indian stock market. This analysis is important for evaluating diversification benefits and managing investment risks in an interconnected financial environment.

V. RESEARCH METHODOLOGY

a. Data source

The study is based entirely on secondary data collected from reliable financial sources. The main source of data for this research is Yahoo Finance. It provides detailed historical information about major global stock market indices. Data for the NIFTY 50, S&P 500, and Nikkei 225 were collected for the period 2021–2025. The information includes daily closing prices, yearly performance values, and percentage changes. These figures were used to calculate returns, growth rates, volatility, and drawdowns. Since the study focuses on market index performance, no primary data such as surveys or interviews was required. Yahoo Finance is widely recognized for providing accurate and updated financial data. The



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use of secondary data ensures reliability and consistency in analysis. Therefore, the research completely relies on secondary data sourced from Yahoo Finance to examine capital market integration

b. Tools Used

The study uses various statistical and comparative tools to analyze capital market integration between Indian and global markets. Percentage growth analysis is used to measure overall market performance during the period 2021–2025. Risk–return analysis is applied to evaluate the relationship between returns and volatility of the selected indices. Volatility measurement helps in understanding market fluctuations and stability. Maximum drawdown analysis is used to assess downside risk during market corrections. Comparative trend analysis is conducted to examine similarities and differences in market movements. Correlation analysis is used to study the degree of co-movement between the selected indices. Currency-adjusted return analysis is also considered to evaluate the impact of exchange rate fluctuations. Graphical representation through charts and tables is used for better interpretation of data. These tools collectively help in examining the extent of capital market integration.

c. Techniques

The study uses various quantitative techniques to analyse capital market integration between the NIFTY 50, S&P 500, and Nikkei 225 during 2021-2025. Percentage growth analysis is applied to measure overall market performance and compare cumulative returns among the selected indices. Comparative index analysis is used to evaluate differences in starting values, ending values, and total growth rates. Risk–return analysis is conducted to understand the relationship between returns and market volatility. Volatility is measured using standard deviation to assess market fluctuations and stability. The maximum drawdown technique is used to identify the largest market decline during correction periods, especially in 2022. Trend analysis is carried out to examine year-wise movement patterns and recovery phases. Co-movement analysis helps determine the synchronization of markets during crisis and stable periods. Currency-adjusted return analysis is considered to evaluate the impact of exchange rate changes. Graphical and descriptive statistical techniques are used for clear presentation and interpretation of the results.

Growth Analysis

Index	Starting Value (Jan '21)	Ending Value (Dec '25)	Total Growth (%)
Nifty 50	100	209.04	+109.04%
S&P 500	100	184.30	+84.30%
Nikkei 225	100	181.65	+81.65%

Table 1.1

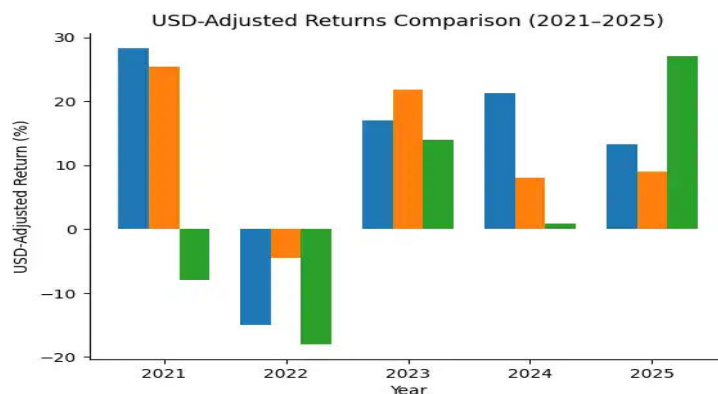


Chart 1.1 Comparison of the Stock Growth



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Risk Reward Analysis

2025 Indian and global market comparison						
Month	S&P 500	% Change	Nifty 50	% Change	Nikkei 225	% Change
Jan	6,150	0.023	25,200	0.014	39,105	0.018
Feb	6,240	0.015	25,650	0.018	39,800	0.020
Mar	6,310	0.011	26,100	0.018	40,500	0.042
Apr	6,280	-0.50	26,400	0.011	39,900	-1.50
May	6,390	0.018	26,650	0.009	40,800	0.023
Jun	6,510	0.019	27,200	0.021	41,500	0.017
Jul	6,580	0.011	27,550	0.013	41,100	-1.00
Aug	6,640	0.009	27,100	-1.60	42,200	0.027
Sep	6,710	0.011	27,800	0.026	42,900	0.017
Oct	6,650	-0.90	27,400	-1.40	42,000	-2.10
Nov	6,820	0.026	28,100	0.026	43,100	0.026
Dec	6,950	0.019	28,950	0.03	44,200	0.051

Table 1.2

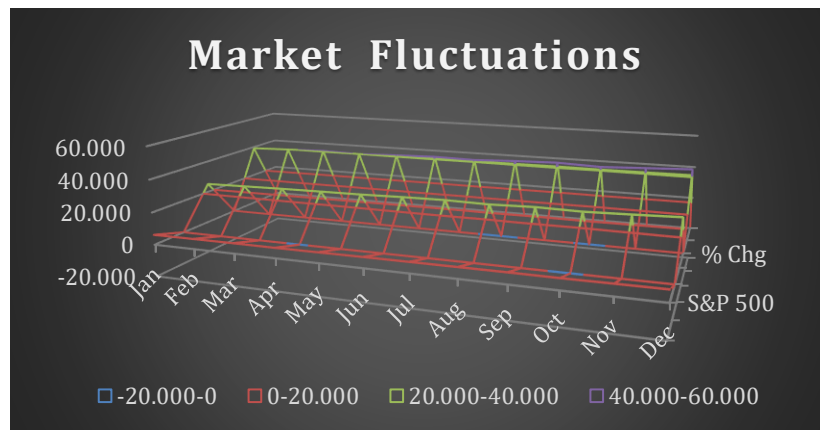
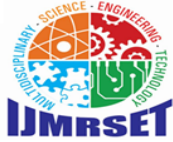


Chart 1.2

d. Analysis and Interpretation

The analysis of capital market integration between the NIFTY 50, S&P 500, and Nikkei 225 during 2021-2025 shows both similarities and differences in performance and risk behaviour. The NIFTY 50 recorded the highest cumulative growth during the study period, indicating strong domestic market resilience and consistent recovery after downturns. The S&P 500 and Nikkei 225 also showed steady growth, but their overall returns were comparatively lower than the Indian market. This suggests that emerging markets like India provided relatively better growth opportunities during the selected period.

In terms of volatility and risk, all three markets experienced significant fluctuations, especially during the 2022 global market correction. The maximum drawdown analysis reveals that markets moved downward almost simultaneously during periods of global stress, indicating strong co-movement and integration. However, during recovery phases, slight variations in growth patterns were observed, suggesting partial rather than perfect integration. The synchronized downturns confirm that global economic events influence the Indian market, while differences in recovery speed highlight domestic economic strength and independent growth factors. Overall, the analysis indicates increasing capital market integration with moderate diversification benefits.



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VI. FINDINGS

The study finds that the NIFTY 50 recorded the highest cumulative growth during the period 2021-2025 compared to the S&P 500 and Nikkei 225, indicating strong performance of the Indian stock market. All three markets experienced significant volatility, particularly during the 2022 correction period, showing that global markets reacted simultaneously to economic stress. The maximum drawdown analysis revealed synchronized declines, confirming the presence of capital market integration between India and major global markets. However, differences in recovery speed and growth trends suggest that integration is partial rather than complete. The Indian market demonstrated relatively better resilience and faster recovery compared to the developed markets. Overall, the findings indicate increasing interconnectedness among markets, while still maintaining some level of independent domestic performance.

VII. SUGGESTION

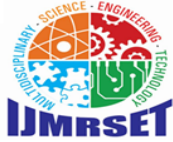
- Investors should diversify their portfolios across the NIFTY 50, S&P 500, and Nikkei 225, as the study shows partial integration and synchronized downturns during 2021-2025.
- Since the analysis indicates higher cumulative growth in the NIFTY 50 compared to the other indices, long-term investors may consider a stronger allocation toward the Indian market while maintaining global exposure.
- As maximum drawdown and volatility analysis in the study reveal significant market fluctuations during 2022, investors should adopt strong risk management and portfolio rebalancing strategies.
- Policymakers should monitor foreign capital flows and global market trends closely, as the study confirms increasing capital market integration between India and major developed markets.

VIII. CONCLUSION

The study concludes that there is a significant level of capital market integration between the NIFTY 50, S&P 500, and Nikkei 225 during the period 2021-2025. The findings show that these markets experienced synchronized downturns during global stress periods, especially in 2022, confirming strong co-movement. However, differences in recovery speed and overall growth patterns indicate that integration is partial rather than complete. The Indian market demonstrated relatively higher cumulative growth and faster recovery compared to the developed markets. This suggests that while India is increasingly connected to global financial systems, it still maintains certain independent growth characteristics. Overall, the study highlights that global market movements significantly influence the Indian stock market, making diversification, risk management, and continuous monitoring essential for investors in an interconnected financial environment.

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