# A Study on Comparative Analysis of the Commodity Derivative Market and Stock Market of India

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**Abstract**: The growth trends and connections between the Multi-Commodity Exchange Index (MCEI) and the Nifty 50 Index from 2020 to 2025 are highlighted in this analysis. The results, which show a sharp rise in the MCEI after 2023 and a steady rise in the Nifty 50, demonstrate strong market momentum and economic recovery. There is a large positive correlation between the two indices, indicating a strong correlation between the movements of the commodity and equity markets. Researchers, investors, and policymakers can benefit from the analysis's informative information on market performance, risk assessment, and future investment plans.

**Key words:** Nifty 50, MCX Index, and commodity derivatives market

**Introduction of the study:**

In order to distribute resources, mobilize savings, and encourage economic growth, India's financial system is crucial. In this system, the stock market and the commodities derivative market have grown to be significant avenues for investment, risk management, and wealth generation. While the stock market, represented by benchmark indices like the NIFTY 50, reflects the performance of the corporate sector and general economic health, the Multi Commodity Exchange (MCX) index represents the commodity derivatives market, which permits hedging against changes in the prices of essential commodities like gold, silver, crude oil, and agricultural products.

Over the past 20 years, the commodities derivatives market in India has grown due to a number of factors, including the need for risk management, increasing globalization, and the participation of both institutional and individual investors. However, the stock market remains the foundation of capital production, providing chances for portfolio diversification and long-term wealth growth. Despite their differences, both markets are connected because inflation, investor mood, and both domestic and global economic developments affect their movements.

The Indian financial environment has seen significant volatility in recent years due to shifts in domestic policy, geopolitical conflicts, and worldwide uncertainty. As a result, understanding the comparative dynamics between stocks and commodities has become more important. While equities frequently provide stability and growth, commodities act as a diversification and inflation cushion.

Therefore, comparing the MCX and NIFTY indices' performance, volatility, and statistical characteristics over the preceding five years is the aim of this study. In addition to helping investors make wise choices, the research's conclusions will help academics and policymakers comprehend how the Indian financial markets are changing.

**Need of the study:**

To compare the stock and commodity markets, the Nifty 50 Index and the MCX Index over the preceding five years (2020–2025) must be examined. This facilitates understanding their relationship and how shifts in one market impact the other.

**Scope of the study:**

This study's scope is restricted to analyzing the relationship between the stock market, represented by the Nifty 50 Index, and the Indian commodity derivatives market, represented by the MCX Index. The inquiry focuses on their relationships and travel between 2020 and 2025.

**Objectives of the study:**

- To research the idea and operation of the Indian stock market and commodity derivatives market.
- To examine the MCX Index's patterns during the last five years (2020–2025).
- To analyze the Nifty 50 Index's patterns during the last five years (2020–2025).
- To examine how the stock market and commodity derivatives market interacted between 2020 and 2025.
- To offer investors appropriate recommendations based on the results of the investigation.

**Limitations of the study:**

- The study is limited to two indices—the Nifty 50 and MCX Index—so the results may not fully reflect the equity or commodity market.
- The analysis only covers a five-year period (2020–2025), which may not capture long-term structural changes.

- The study uses secondary data, and its accuracy depends on the reliability of published sources. There is a lack of thorough analysis of external influences such changes in policy, geopolitical concerns, and worldwide economic developments.
- The association found may change with time, which restricts how broadly the results may be applied.

**Review of Literature:**

- **Bouri, E., Gupta, R., and Roubaud, D. (2021)** looked at the co-movement of commodities and global equities markets and found that they were highly correlated during times of crisis.
- **Yarovaya, L., Jalan, A., and Matkovskyy, R. (2021)** demonstrated that, especially during COVID-19, commodity markets have an impact on stock market movements and react swiftly to worldwide shocks.
- **Salisu, A. A., & Adediran, I. (2021)** discovered that gold and oil help stock investors diversify their holdings, emphasizing their function in lowering portfolio risk.
- **Akhtaruzzaman, M., Boubaker, S., & Sensoy, A. (2021)** showed how the pandemic reduced options for diversification by increasing the interconnectedness of the stock and commodity markets.
- **Bhunia, A., & Ganguly, S. (2022):** Particular to India found a moderate link between the movements of the MCX and Nifty, indicating the increasing integration of India's equities and commodity markets.
- **Roubaud, D., Bouri, E., and Shahzad, S. J. H. (2022)** demonstrated the great predictive value of commodity prices, particularly those of metals and oil, for stock market behavior in emerging markets.

**Research and methodology:**

Research Design: The Deceptive and Analytical research design serves as the foundation for this investigation.

**Data Type:** Secondary data is employed in the study.

**Data Sources:** MCX, NSE, Study Period 2020–2025, the last five years
**Tools Used:**
- Trend analysis and descriptive statistics are two methods and tools used for analysis.
- Analysis of Correlation

**Data analysis and interpretation:**

**MCX Index**

| | |
|---|---|
| Mean | 2888.081 |
| Standard Error | 261.7187 |
| Median | 1629.2 |
| Mode | #N/A |
| Standard Deviation | 2189.696 |
| Sample Variance | 4794768 |
| Kurtosis | 0.728736 |
| Skewness | 1.37112 |
| Range | 8175.9 |
| Minimum | 1067.6 |
| Maximum | 9243.5 |
| Sum | 202165.7 |
| Count | 70 |

**Interpretation:**

The data's significant variability and strong positive skewness indicate that a few exceptionally high values are driving the average upward. While most of the data fall on the lower end, the wide range shows significant dispersion and the presence of outliers.
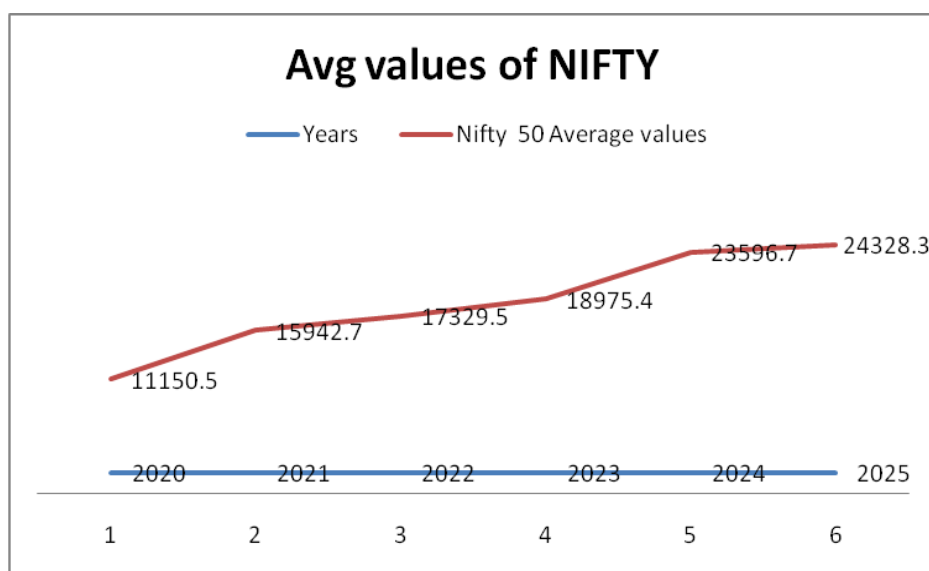
**Nifty index**

| | |
|---|---|
| Mean | 18388.84 |
| Standard Error | 556.5698 |
| Median | 17715.48 |
| Mode | #N/A |
| Standard Deviation | 4656.597 |
| Sample Variance | 21683893 |
| Kurtosis | -0.83244 |
| Skewness | -0.16329 |
| Range | 17213.1 |
| Minimum | 8597.75 |
| Maximum | 25810.85 |
| Sum | 1287219 |
| Count | 70 |

**Interpretation:**

With the mean and median close to one another, the distribution shows some fluctuation but no extreme skewness. A negative kurtosis indicates a flatter-than-normal distribution with fewer extreme outliers and more evenly distributed numbers.
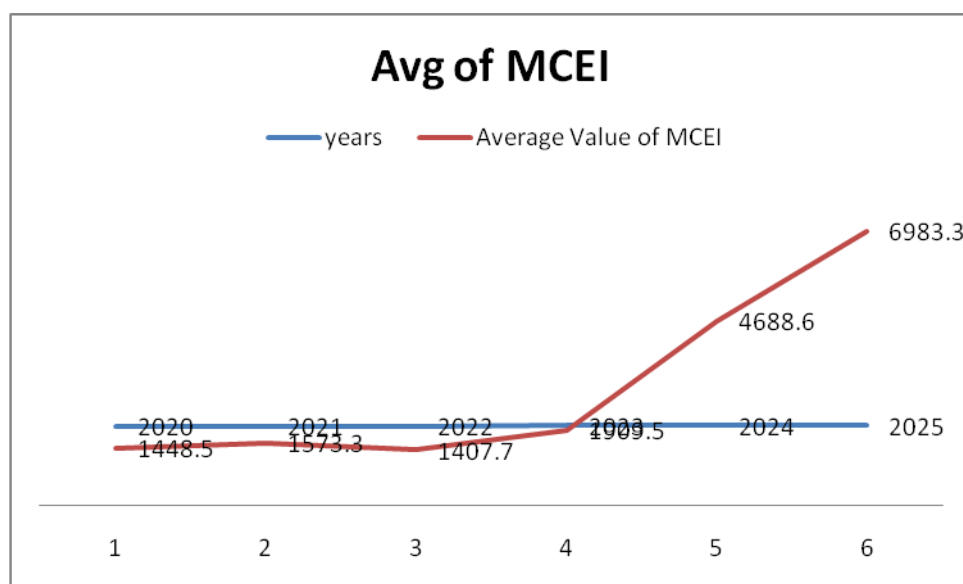
| Years | Nifty 50 Average values |
|---|---|
| 2020 | 11150.5 |
| 2021 | 15942.7 |
| 2022 | 17329.5 |
| 2023 | 18975.4 |
| 2024 | 23596.7 |
| 2025 | 24328.3 |



### Interpretation

The Nifty 50 showed a consistent upward trend from 2020 to 2025, demonstrating strong market expansion and improved investor mood. The strong gain after 2023 indicates that the Indian stock market is having positive momentum and a faster economic recovery.

| years | Average Value of MCEI |
|---|---|
| 2020 | 1448.5 |
| 2021 | 1573.3 |
| 2022 | 1407.7 |
| 2023 | 1909.5 |
| 2024 | 4688.6 |
| 2025 | 6983.3 |

**Avg of MCEI**

**Interpretation:**

The MCEI varies somewhat between 2020 and 2022, but it begins to climb quickly and steadily in 2023. This strong upward trend after 2023 reflects the significant increase in commodity market activity and growing market volatility or demand.

**Correlation between the Nifty 50 vs MCEI**

- **Ho:** There is no significant correlation between the MCX and NIFTY returns.
- **H1:** There is a significant correlation between the MCX and NIFTY returns.

| 0.805553 |
|---|

**Interpretation**

A strong positive association, where the two variables move closely in the same direction, is indicated by a value of 0.805553. This indicates a strong alignment between the variables and a high degree of association or effect.

**Findings of the study:**

- The Nifty 50 showed a steady and strong upward trend from 2020 to 2025, indicating continued economic expansion, strong business success, and rising investor confidence in India.
- The MCEI showed moderate fluctuations until 2022 but surged sharply from 2023 onward, reflecting increased activity, volatility, and growth momentum in the commodity markets; the strong positive correlation (0.805553) indicates a high

degree of association between the two market indicators, suggesting that movements in the commodity market index and equity market index are closely aligned.

- Since 2023, the commodities and stock markets have performed noticeably better, indicating improved market sentiment and promising macroeconomic prospects. When considered collectively, the trends demonstrate greater market expansion and the substantial growth of both the commodities and equity markets, especially in the later years.

**Suggestions of the study:**

- Investors should consider diverse portfolios that manage risk and boost returns because the commodities and stock markets have both had strong growth and substantial correlation.
- To prevent speculative volatility from arising from increased commodity market activity, policymakers should strengthen market stability measures. • It is advised to continuously monitor post-2023 market conditions, as rapid growth in both Nifty and MCEI may signal both new opportunities and potential volatility.
- Because the substantial correlation points to deeper connections between commodities and stocks that could uncover new predictive markers, researchers can examine sector-wise trends in more detail.
- High-growth eras should be the emphasis of long-term investment strategies, particularly in light of the Nifty's steady rising trajectory and the MCEI's rapid increase after 2023.

**Further study:**

In order to obtain a greater understanding of market interactions, future research can expand on this study by comparing various stock and commodities indexes. Additionally, researchers can employ sophisticated forecasting models, examine sector-wise linkages, or investigate how global events and policy changes affect the commodities and equities markets.

**Conclusion of the study:**

The Nifty 50 index and the MCEI show a strong and consistent upward trend during the period, especially after 2023, which is suggestive of improved economic conditions, rising commodity activity, and greater market confidence, according to the study. The substantial positive correlation between the two metrics highlights the interconnectedness of market dynamics by showing that the commodity and equity markets move in tandem. All things considered, the patterns indicate a robust and

expanding financial ecosystem that offers significant opportunities for scholars, investors, and regulators to improve market participation, stability, and strategic planning.

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