



## Relationship Between selected Multi Commodities Exchange Indexes and Nifty50 in India

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### Abstract

This paper explores the relationship between the commodity market and equity market in India. The study specifically focuses on the MCX Commodity Index and the NIFTY 50 index, which represents the equity market in India. The research period spans from April 1, 2018, to March 31, 2022. To analyze the relationship between these markets, the study employs various econometric tools. Initially, the researchers assess the stationarity of the variables using the Augmented Dickey Fuller Test. The findings of the study will be helpful for investors to plan their investment avenues. The study will be helpful for policy makers to strengthen the stock and commodity markets.

(Keywords: Commodity Market, , MCX, NIFTY, Relationship)

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### I. Introduction:

Commodity and stock market trading become very popular in recent days to make profit in India. Many people are diversifying their investment portfolio by investing on different underlying assets. Investors expect more profit along with the safety of their investment. Stock and commodity market investment gives best opportunities to invest on different assets with the safety of the principal amount of the investors. Traders or the investors can invest on different assets as per their requirements based on their capacity of bearing risk along with the expected returns.

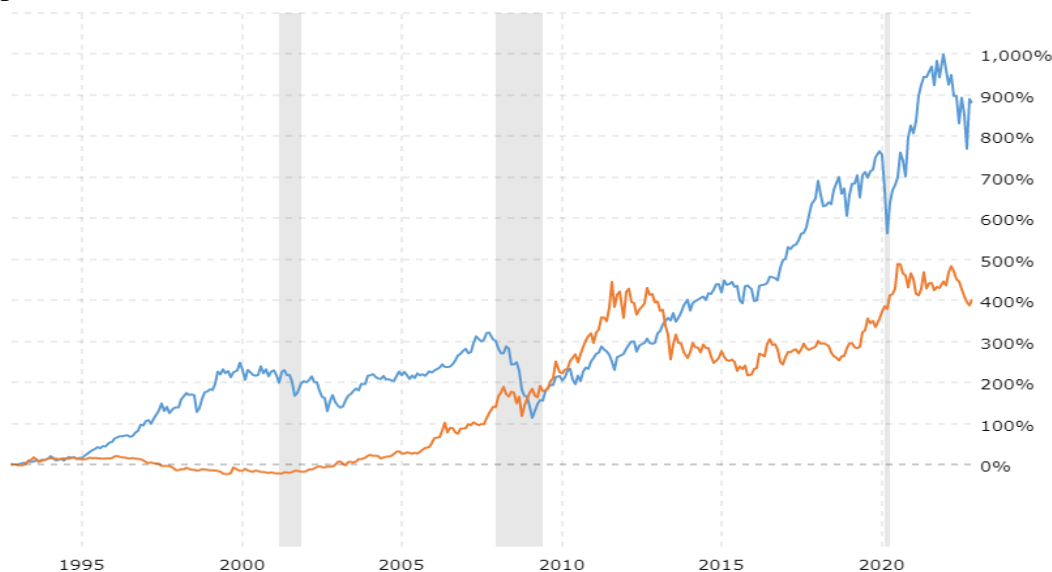
It is very essential to understand the commodity and stock market trading before entering in to the any type of trading or investment. For the understanding purpose commodity refers to the product that can be exchange with the any other similar type of products. Commodities include gold, grains, metals, natural gas, oil and others. On the other hand, stocks refer to securities that represents the ownership of a company or a business entity. Stocks or the shares are traded in the stock exchanges on the regular basis in the stock market. Similarly, commodity stocks are traded at commodity exchanges in the commodity market.

Essentially, it's important to know that the prices of stocks and commodities are fixed. But the factors such as supply and demand for the particular commodity or stocks will play a major role in determining the prices of these products.

More than this it is significantly important to know the relationship between the commodity trading and stock trading and also how investors or the traders get the benefit of it. Here commodity stock represents the actual products, while stocks represent ownership of shares of corporation or a business entity. Here the common thing is both are assets and both can be bought and sold in the respective stock exchanges. Even though those are influenced by set of

distinctly different factors, they are significantly interrelated each other. It has been evident that whenever the stock price rises commodity values came down and vice versa. As an example of gold can be taken to understand the relationship. Gold is one of the popular commodities which is frequently traded in all over the world. This is because of most investors see gold as a strong and highly stable investment that helps to hedge against market volatility that can impact on stock prices.

When a market downturn affects stock market due to certain factors, investors rush towards gold to minimize the risk of loss and to protect their investments. Naturally gold value and demand goes up. Contrarywise, when a market moves upward and the stock tend to perform better, than the investors switch over form the commodities to shares or the stocks of the stock market to get the benefit of price hike and to make a profit out of it. It may lead to price drop for the commodities in the commodities market.



**Source:** <https://www.macrotrends.net/2608/gold-price-vs-stock-market>

The above chart shows the movement of gold rates and Dow Jones index movement in different time periods. It is an evident the demand for gold when stock market downturn and demand comes down for gold when market upward and performs well.

The ecosystem of trading in India is presently experiencing a radical change due to a merger between the Security Exchange Board of India and the regulator of commodities, FMC or the Forward Markets Commission. What does the collaboration of these two indicate? The merger of SEBI and FMC results in a single trading platform to facilitate the trading of stocks and securities as well as commodities. Now, commodity trading and trading in stocks take place at one spot, and this offers immense opportunities for investors. (<https://www.motilaloswal.com/>)

## II. Literature Review

(Yamori, 2011) used Japanese market data and found that correlation between equity and commodity market is found to be negative and almost zero till 2006. The correlation is found to be increasing from 2008 financial crisis which reveal that commodity market has lost the character as an alternative asset. Bansal et.al. (2014) studied the role of commodity futures in portfolio diversification. The study has used mean variance optimization technique to indentify optimum portfolio mix as to how utility of commodity futures changes with the

change in risk aversion level of investors. The study revealed that with the introduction of commodities in portfolio there is an increase in returns without a corresponding rise in risk. The study concluded with the increase in risk aversion levels of the investor, allocation to commodity future tends to increase. (Shehzad et al. 2014) did a multivariate analysis of commodities and stock market. The study used 25 stocks and 3 commodities over a period of 2004-12 and 10 commodity future contract from December 2009 to August 2012 in Pakistan. The study revealed that compared to stocks commodity future return shows stronger correlation with unexpected inflation. The GJR-GARCH model revealed that commodities have inverted asymmetric behavior where there is more impact from upward shocks compared to downward shocks. The stocks showed an asymmetric volatility where there is more impact from negative shocks compared to positive shocks. (Periasamy & Sathish, 2015) studied the relationship between commodity and stock market in India for the period of 2008 to 2013 with help of tools like Standard deviation, Portfolio Risk and Return, Relative Strength Index and Simple Moving Average. The study concluded that there is a positive correlation between both markets and both market move closely together. (Singh & Singh, 2015) analysed the correlation between commodity and stock market during a business cycle . The study compared returns on equity and commodity market during 2003-11. The study revealed that commodity market is less volatile than stock market. The study concluded that correlation between commodities and equities remained low in shorter period but in long run, correlation is found to be moderate. (Boyrie & Pavlova, 2016) studied the dependence of commodity and equity market in emerging economies. The correlations between both markets have been found using Dynamic Conditional Correlation (DCC) Model. The results reveal that emerging markets especially in Asia have less co movement with commodities compared to developed economies. It was concluded that agriculture and precious metals offer better diversification opportunities in developing economies.

Jones and Kaul (1996), using a standard cash-flow dividend valuation model, find a significant negative impact of oil price shocks on US and Canadian quarterly stock prices in the post war period. Sadorsky (1999) studied the relation between oil prices and stock prices by using a VAR model that includes a short-term interest rate and industrial production and found that there is a relation between oil price and other variables. Gorton and Rouwenhorst (2004) showed that commodity market price has a large impact on the stock price. It has become widely accepted in recent years that the price of crude oil since the 1970s has responded to some of the same economic forces that drive stock prices, making it necessary to control for reverse causality Hamilton (2003), Kilian (2008). Filis et al. (2011) analyze the interaction between oil prices and stock markets by differentiating oil-importing and oil-exporting countries. Their study showed that there is an interaction between oil and stock prices for oil-importing and oil-exporting economies.

Anna Creti, Marc Joets, Valérie Mignon (2013) in their research findings show that the 2007–2008 financial crisis has played a key role, emphasizing the links between commodity and stock markets, and highlighting the financialization of commodity markets. This evolution in commodity and stock correlations reduces their potential substitutability in portfolios. At the idiosyncratic level, the main exceptions are gold, coffee and cocoa for which risk management strategies are possible, with increased risk diversification allowed by their adverse evolution compared to the stock market in times of declining equity prices.

Mensi et al. (2014) use a quantile regression approach to examine the dependence structure between the BRICS stock markets and several influential global factors from September 1997 to September 2013. They show that the BRICS stock markets exhibit dependence on oil and gold prices, as well as on changes in the uncertainty of the US stock market as measured by the CBOE VIX index.

Sahu et al. (2014) Using a cointegration test, vector error correction model, Granger causality test, impulse response functions, and variance decompositions, indicate the existence of a long-term relationship between oil and the Indian stock markets from January 2001 to March 2013. They also confirm that no short-run causality exists between the examined variables, and reveal that a positive shock in oil price has a small but persistent positive impact on Indian stocks in the short run.

Shalini and Prasanna (2016), uses a Markov regime shift model and shows that Indian metal and energy futures indices have a significant relationship with the Indian stock market returns. Furthermore, the energy futures index has an inverse relationship with Indian stock during the tranquil period and a positive relationship in the crisis period. As for the metal futures index, it has an inverse relationship with stock returns in both tranquil and crisis periods.

**III. Research Methodology:**

The study uses VAR cointegration framework to analyse the relationship between commodity and equity market. The empirical analysis is done in three steps. First the data is adjusted seasonally. Secondly, the stationarity properties are estimated for the data using unit root tests. Thirdly, Cointegration relationship is analysed using Johansen’s Cointegration Test (Nazlioglu et.al. 2013) Daily data has been used in the study. The data period of the study is from April 1, 2018, to March 31, 2022. The data of Commodity Indices are obtained from the website of MCX. The data have been converted into their logarithmic returns to minimize the Heteroskedasticity of the data. The constituents of these indices are the liquid commodities traded in Multi Commodity Exchange. The data of NIFTY 50 has been obtained from the website of NSE.

The study is used to find the relativeness between the few NSE Stock Index and with related Commodities index .

<b>Commodities</b>	<b>Stocks Index</b>
Steel index	NSE Stock Index
Agri index	NSE Stock Index
Coal index	NSE Stock Index
Copper index	NSE Stock Index

**IV.RESULTS AND DISCUSSION**

**UNIT ROOT TEST:**

The variables are classified into stationary and non stationary variables. The variables are said to be stationary when the statistical properties of the variable such as mean standard deviation and auto correlation are found to be constant over a period of time. In order to perform cointegration test, the variables should be stationary and integrated in the same order. The optimal lag length for performing these test have been selected using Akaike Information Criteria (AIC). The following table shows the unit root test performed on the variables using Augmented Dickey Fuller Test..

		<b>Level</b>	<b>First Difference</b>	<b>Inference on Integration</b>
<b>STEEL INDEX</b>	t statistic	-0.972	-20.810	I(1)
	Prob.	0.616	0.000	
<b>AGRI INDEX</b>	t statistic	-1.951	-36.238	I(1)
	Prob.	0.343	0.000	
<b>COAL INDEX</b>	t statistic	-1.126	-34.389	I(1)
	Prob.	0.768	0.000	
<b>COPPER INDEX</b>	t statistic	-1.261	-34.644	I(1)
	Prob.	0.763	0.000	

From the above table it can be seen that all the variables are non stationary at their levels. But when converted into their first difference, they are found to be stationary. So it can be concluded that all the variables are integrated at the order of one. Hence the primary precondition of doing cointegration tests is satisfied. Hence, Johansen cointegration test is applied on the variables to find out their long run equilibrium relationship.

**GRANGER CAUSALITY TEST**

To analyse the lead lag relationship, granger causality test have been done. Granger causality test will reveal in short run, which variable leads and which variable lags. The results have been presented in the table below:

**Table No: 2 Result of Granger Causality tests**

Null Hypothesis:	Obs	F-Statistic	Prob.
<b>NIFTY INDEX</b> does not Granger Cause <b>STEEL INDEX</b>	1232	4.18205	0.0155
<b>STEEL INDEX</b> does not Granger Cause <b>NIFTY INDEX</b>		0.66915	0.512
<b>NIFTY INDEX</b> does not Granger Cause <b>COPPERINDEX</b>	1232	2.80283	0.0610
<b>COPPERINDEX</b> does not Granger Cause <b>NIFTY INDEX</b>		0.28091	0.7551
<b>NIFTY INDEX</b> does not Granger Cause <b>AGRI INDEX</b>	1232	0.15377	0.5122

AGRI INDEX does not Granger Cause NIFTY INDEX		0.28641	0.7510
NIFTY INDEX does not Granger Cause COAL INDEX	1232	0.37053	0.6904
COAL INDEX does not Granger Cause NIFTY INDEX		0.07223	0.9303

From the table above it can be seen that the null hypothesis Nifty does not Granger Cause MCX Metal and Nifty does not Granger Cause Comdex is rejected. This shows that in short run, Nifty leads and Comdex and MCX Metal Lags. All other indices are found to have no lead lag relationship with Nifty.

## V. CONCLUSION

In this paper the relationship between commodity and equity market have been analysed with reference to India. The period of the study is 01/04/2018 to 31/03/2022. After confirming stationarity at first difference, the Johansen's cointegration test has been analysed. The results show that there is no long run association between commodity and equity market. Further, lead lag relationship of the commodity and stock market indices have been analysed. The result shows that in short run, Nifty leads and Comdex and MCX Metal Lags. The study reveals that in long run, investment in commodity market will help the investors to diversify the portfolio, as both the market does not exhibit long term association with each other.

## BIBLIOGRAPHY

- [1] Avalos, F. (2011)-“Commodity prices: Microeconomic drivers and emerging risks for Latin America”, Papers and Proceedings of the VI International Conference, Challenges of macroeconomic policy in emerging and developing economies, Fondo Latinoamericano deReservas, October,
- [2] Black, A., Klinkowsa. O.; MacMillan, D.; (2014)- “Forecasting Stock Returns: Do Commodity Prices Help?”, Journal of Forecasting,33(8)
- [3] oyrie, M. E., & Pavlova, I. (2016). Linkages between Equity and Commodity Markets: Are Emerging Markets Different. Retrieved from [https://acfr.aut.ac.nz/data/assets/pdf\\_file/0006/56445/42](https://acfr.aut.ac.nz/data/assets/pdf_file/0006/56445/42)
- [4] Creti, A. Et al. (2012)- “On the links between stock and commodity markets’ volatility”, CEP II, Working Paper No:2012-20
- [5] İŞCAN, E. (n.d.). The Relationship Between Commodity Prices And Stock Prices:Evidence From Turkey. Retrieved from <http://aves.cu.edu.tr/yayingoster.aspx?ID=2023&NO=6>
- [6] Periasamy, P., & Sathish, R. (2015). A Study On Relationship Between Indian Commodity Market And Indian Stock Market With Special Reference To Exchanges In India – An Analytical Framework. I J A B ER, 13(8), 6323-6334.

- [7] Singh, A. K., & Singh, K. V. (2015). Correlation Analysis Between Commodity Market And Stock Market During A Business Cycle. *International Journal of scientific research and management*, 3(12), 3819-3829
- [8] UNCTAD. (2011). *Price Formation in Financialized Commodity Markets: The Role of Information*. New York and Geneva: United Nations.
- [9] [www.mcxindia.com](http://www.mcxindia.com)
- [10] [www.nseindia.com](http://www.nseindia.com)