Indian MCX Financial Market Volatility In Wave 1 & 2 Covid19 Pandemic

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Abstracts

The MCX role has been expanded over the years as it has Partnered with exchanges from across the world giving it Clients a bigger platform over which they can improve their portfolio. It has also allowed foreign investors to directly invest within the country increasing the country's revenue. These improvements have led to varied sectors domestic growth but declines in global commodity prices. The pandemic signifies a singular shock on impact of both the demand and supply of commodities. Oil markets affected most, due to the collapse in travel arising from measures on mitigation, and an unprecedented collapse in demand and on record decline in oil prices. Metals prices have also fallen, while agricultural prices are much less affected due to incidental relationship with economic activity. The current research paper mainly focuses on the changes in the Base metals, Precious Metals, and Energy's during the pandemic and how did it effect the Indian Financial Market.

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I. Introduction:

The country's financial and economic activities depend in part on the price of oil and gold. The volatility of energy and bullion prices will affect the country's financial conditions. The Multi Commodity Exchange (MCX) , India's future transactions market where Energy and Bullion are the leaders deals main transactions and high trading volumes. In energy, natural gas and crude oil are traded on MCX. As Natural gas from crude oil, hence Price change in natural gas depends on crude oil price.

India, the third largest consumer of crude oi in the world. According to the Ministry of Petroleum and Natural Gas in F.2019-20, the import of crude oil and other petroleum products was 270 million metric tons (MT), valued INR 8,436 billion, the consumption of petroleum products was 214 million tons. (PPAC, 201920) COVID19 has created a serious negative impact on the consumption of petroleum products due to the international and national blockade. The factor affecting the price of crude oil in India is that the price exists in the international market, financial and natural crisis, political climate, trade between countries, etc. jewelry. People believe that gold is the safest way to invest, next to the land. Central banks of various countries and international agencies hold gold has financial security and help people and fight against the period of crisis. Silver is the best alternative to gold. Indians love money because half of the population is middle class, which prompts them to buy more money. The main focus of this article is to find out how the covid affected gold and silver.

The total number of COVID19 cases in India topped 2 crore with 3.57,229 infections reported in one day, while the death toll rose to 2.22,408 with 3,449 new deaths, according to ministry data. Union Health updates to May 4,2021.

Currently, India the third most affected country in the world. The Indian government decreed a national blockade from March 25 for two and a half months, which impacted most sectors as well as the livelihoods of the population.

Role of MCX in Indian Finance Market:

The MCX function has been elevated over time because it has Partnered with exchanges from the world over giving it Clients a larger platform over which they are able to enhance their portfolio. It has additionally allowed overseas buyers to without delay make investments with inside the U.S.A. growing the U.S.A.'s revenue. This has helped in the boom of the home marketplace.

The Multi Commodity Exchange has social obligations as Well. This includes, Public Private partnership and it have partnered with different institutions. By Partnering with Non-Profits, it allows carry the human beings on the grassroots a street in which they are able to find out about making an investment and additionally have the ability at make investments the little cash they have.

The Commodity marketplace has given buyers a street in which human beings trying to Explore can discover the items, they need to make investments in. it additionally diversifies from conventional buying and selling alternatives for the ones wishing to make investments.

In conclusion, it's miles critical to recognize that commodity buying and selling in India is reasonably younger and consequently calls for competitive boom. The authorities ought to undertake liberal guidelines this may facilitate the boom of Indian economy.

II. Objective of the Study

In present study following points are taken: -

1. Analyzing and Comparing the Impact of the novel Coronavirus on the MCX Commodity indices and commodities from the period 1.05.2021 to 31.06.2021.

2. Analyzing the Commodity market situation between Wave 1 and Wave 2 Covid by taking data from 1st April 2019 to 31st March 2021.

III. Research Methodology

From MCX , selected commodities are like Aluminum, Copper, Lead, Zinc, Nickel, Gold, Silver, Natural Gas and Crude oil 2 years data were gather to study the long-run relationship and impact of covid between the commodities contract returns in a pandemic situation between Wave 2 and Wave 1 covid period and to know beta values . The 2 years data were from financial year of 1st April 2019 - 31st March 2020 & 1st April 2020 - 31st March 2021. SPSS and Microsoft software were used for analysis.

IV. Data Analysis:

The time-series data gathered from January 21st, 2020 to July 20th, 2020 on the basis daily closing price from Multi Commodity Exchange (MCX) for the study. The commodities future contract with near maturity period was selected from MCX. The data series was collected from the MCX database for the selected variables from the latest future contract closing price. The Energy and bullion market were subject to huge volatility during the COVID19 crisis.

Table 1. Description of Commodities Contract selected for analysis from MCX

Index	Commodity	Base Value	Lot Size	Tick Size	One Tick (=)
	Aluminum	NR / Kg	5MT	0.05	250
	Copper	NR / Kg	2500KGS	0.05	125
Base Metal	Nickel	NR / Kg	1500KGS	0.1	150
	Lead	NR / Kg	5MT	0.05	250
	Zinc	NR / Kg	5MT	0.05	250
Bullions	Gold	INR / 10 gms	1	1	100
	Silver	INR / 10 gms	30	1	30
Energy	Crude oil	INR / Barrel	100 BBL	1	100

	Natural oil	INR / Barrel	1250 mmbtu	0.1	125

The variables used in this study are Future closing price and Returns of Base Metal, Bullions, Energy Commodities. Statistical tools employed for checking hypothesis and to achieve the objectives of the paper: Return was calculated using the formula $Return\ Rate = (Pt - Pt{-}1)/Pt{-}1$ of the commodities future closing price.

Correlation: Correlation analysis measured the strength of relationship between two quantitative variables. A high correlation shows a strong relationship while a low correlation shows a weak relationship between variables. If the Significance P value is less than 0.05, shows that there lies a correlation between the variables and vice versa.

Beta: Beta shows the responsiveness of a commodity price with changes in the overall Commodity market. On comparison of the benchmark index, shows the commodity's market risk. Assist investor in investment decision i.e to invest in riskier commodity, highly volatile with the market (beta above 1), or a less volatile one (beta below 1).

Hypothesis:

The 'null hypothesis' mighty be:
H_0: If P >0.05, There is no Significant difference of market risk of Commodities of Wave 1 and Wave 2 covid19.

H_1: If P < 0.05 There is a significant difference of market risk of Commodities Wave 1 and Wave 2 Covid-19

Results and Discussions

Table 2. Beta and Paired Samples Correlations of selected variables with their returns

Index	Commodity	Beta Value	N	Correlation	Sig.
Base Metal	Aluminum	0.709	34	.754	.000
	Copper	1.09	34	.947	.000
	Nickel	1.158	34	.889	.000
	Lead	0.99	34	.631	.000
	Zinc	0.84	34	.838	.000
Bullions	Gold	0.83	34	.978	.000
	Silver	1.4	34	.953	.000
Energy	Crude oil	1.078	34	.967	.000
	Natural oil	0.552	34	.383	.026

Table 2. Explains the Regression (beta Values) and Correlation of Selected Commodities. The beta is a Score that measures a Commodities Volatility or risk against the the rest of the market, according to table 2 The beta value of Aluminum, Lead, Zinc, Gold Natural gas are less than 1. so, it is considered to be less risky and their price

variations and Returns are Comparatively low. Whereas, the beta value of Copper, Nickel, Silver and Crud oil are More than 1.so, it is considered to be riskier and their price variations and Returns are Comparatively more. The Paired Sample Correlation Table adds the information that the Base metal Index &Base metal commodities, Bullion& Bullion Commodities, Energy Index and Crude oil are Strongly and Positively Correlated ($r > 0.68$, $p<0.001$), whereas the Energy index &Natural gas are weekly and positively correlation ($r =.383$, $p>0.001$). So, it states that Correlation between base metal commodities return and bullion commodities return's statistically significant, whereas Oil return is affected by some other variables.
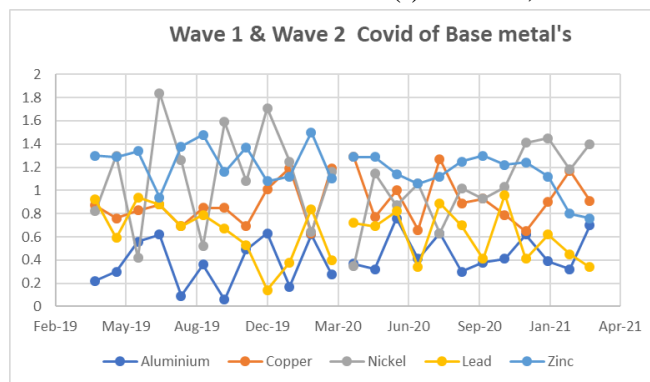
Table 3. Wave 1 and Wave 2 Covid-19 beta values of all Commodities From 2 years month-to-month Data.

|	DATES	Aluminum	Copper	Nickel	Lead	Zinc	Gold	Silver	Crude oil	Natural Gas
Wave 1 COVID	**Apr-19**	0.22	0.87	0.82	0.92	1.3	0.911	1.23	1.137	0.234
	May-19	0.3	0.76	1.3	0.59	1.29	1	1	1.093	0.516
	Jun-19	0.56	0.83	0.42	0.94	1.34	0.949	1.14	1.225	-0.166
	Jul-19	0.62	0.88	1.84	0.88	0.94	0.903	1.26	0.994	1.042
	Aug-19	0.09	0.69	1.26	0.69	1.38	0.957	1.12	1.135	0.248
	Sep-19	0.36	0.85	0.52	0.79	1.48	0.748	1.64	1.15	0.283
	Oct-19	0.06	0.85	1.59	0.67	1.16	0.926	1.19	1.108	0.412
	Nov-19	0.49	0.69	1.08	0.53	1.37	0.899	1.26	0.985	1.079
	Dec-19	0.63	1.01	1.71	0.14	1.08	0.817	1.49	1.027	0.915
	Jan-20	0.17	1.19	1.25	0.38	1.12	0.88	1.39	1.08	0.406
	Feb-20	0.62	0.63	0.64	0.84	1.5	0.903	1.33	1.025	0.835
	Mar-20	0.28	1.19	1.16	0.4	1.1	0.842	1.63	1.142	0.347
Wave 2 COVID	**Apr-20**	0.37	1.29	0.35	0.72	1.29	0.961	1.16	1.531	-0.037
	May-20	0.32	0.77	1.15	0.69	1.29	0.882	1.47	1.1	0.826
	Jun-20	0.76	1	0.87	0.82	1.14	0.913	1.33	1.162	0.434
	Jul-20	0.41	0.66	1.06	0.34	1.06	0.61	2.32	0.89	1.446
	Aug-20	0.63	1.27	0.63	0.89	1.12	0.738	1.79	1.052	0.853
	Sep-20	0.3	0.89	1.02	0.7	1.25	0.667	2.07	1.13	0.615
	Oct-20	0.38	0.93	0.93	0.41	1.3	0.758	1.81	1.159	0.334
	Nov-20	0.41	0.79	1.03	0.96	1.22	0.872	1.42	1.069	0.366
	Dec-20	0.62	0.65	1.41	0.41	1.24	0.803	1.62	0.813	1.508
	Jan-21	0.39	0.9	1.45	0.62	1.12	0.827	1.52	0.959	1.229
	Feb-21	0.32	1.17	1.18	0.45	0.8	0.691	1.72	1.099	0.487
	Mar-21	0.7	0.91	1.4	0.34	0.76	0.803	1.47	1.158	0.055

Table 3. Shows beta value of respective commodities from 2 years data. It shows the risk of commodities in Wave 1 and Wave 2 covid

| Table 4. Paired Samples Correlations			
	N	Correlation	Sig.
Wave 1 & Wave 2 Aluminum	12	0.105	0.744
Wave 1 & Wave 2 Copper	12	-0.318	0.314
Wave 1 & Wave 2 Nickel	12	0.294	0.353
Wave 1 & Wave 2 Lead	12	0.231	0.47
Wave 1 & Wave 2 Zinc	12	0.041	0.899
Wave 1 & Wave 2 Gold	12	0.368	0.239
Wave 1 & Wave 2 Silver	12	0.208	0.516
Wave 1 & Wave 2 Crude oil	12	0.534	0.074
Wave 1 & Wave 2 Natural gas	12	0.432	0.161

Table 4. explains the correlation of Pearson's r data analysis revealed the correlation among the variable such as, there is a low Correlation existing between Wave 1 and Wave 2 of Aluminum, Lead, Nickel, Zinc, Gold, Silver, Crude oil and, natural oil the value (r) is less than 0.68, and There is a negative Correlation existing between Wave 1 and Wave 2 Copper because the correlation value (r) is -.318, Whereas P> 0.05. there is no Significant

Above Graph represent the Risk Level Between Base metals in Wave 1 and Wave 2 Covid-19. When we compare all beta values of base metal of Wave 1 and Wave 2 covid, there is no effect of covid on base metal because beta values of Wave 2 covid are less than Wave 1 covid beta values. so, there is no high covid impact on base metals.
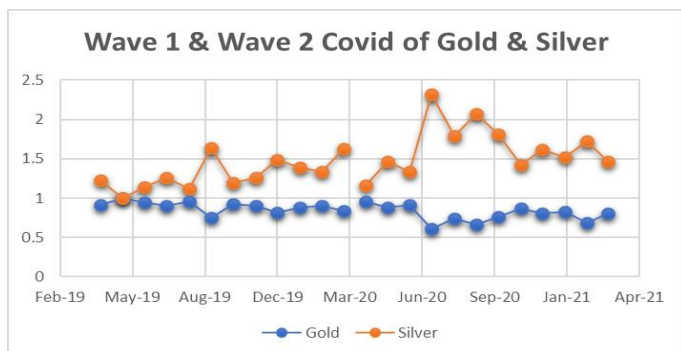
Above Graph represent the Risk Level of Gold and Silver in Wave 1 and Wave 2 Covid-19 Duration. So, in both Wave 1 and Wave 2 covid Silver is more risk that gold because the beta values of the both Wave 1 and Wave 2 covid period of silver is more then 1, whereas gold has less risk level in both Wave 1 and Wave 2 period because beta vales are less than 1.

Wave 1 & Wave 2 Covid of Crude Oil &Natural Gas
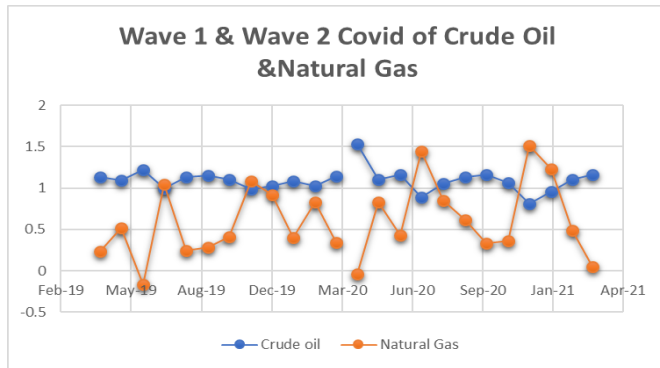
Above Graph represent the Risk Level of Crude oil and Natural Gas in Wave 1 and Wave 2 Covid-19 Duration. So, in both Wave 1 and Wave 2 covid Crude oil is moderate risk that Natural gas because the beta values of the both Wave 1 and Wave 2 covid period of silver is more then 1, whereas natural gas has less risk level in Wave covid and moderate risk levels in Wave 2 covid period because beta vales are less than Equal to 1 in Wave 1 covid and greater than equal to 1 in Wave 2 covid.

V. Conclusion

The unforeseen pandemic has already brought numerous challenges to almost all countries, and has put the entire global economy and markets in a standstill. Every sector were affected due to the COVID-19 pandemic. On a concluding note, the results of the present study states that the Coronavirus outbreak has deeply impact future prices of MCX Commodities as well as increased the volatility in the commodity market. Taking this conclusion under consideration, we will infer that an equivalent sort of negative effect has appeared on the financial system, as a whole. The paper provides original statistical analysis of the COVID-19 pandemic by taking the case of Base Metals, Bullions and Energy's which plays major role in MCX Market. However, with things going back to normal in a slow pace, and the positions are climbing back to the expected state in MCX.

Reference:

Hariharan* & Reference Reddy (June, 2018) – "A Study on Indian Commodity Market with Special Reference to Commodity Exchange".

Dr. Shree Bhagwat (2016) – "A Study of Commodity Market V/S Multi Commodity Exchange of India Limited (MCX)".

Prashanta Athma*; K.P. Venu Gopala Rao – "Commodity Derivatives in India: A Study of MCX Comdex".

Madhumathi TK – "Relationship and causality of oil, gold and silver returns at multi commodity exchange during covid19"

Commodity Market outlook (2020) – "A Shock Like No Other: The Impact of COVID-19 on Commodity Markets"

Sudarshan Ravichandran – "THE IMPACT OF COVID-19 ON THE U.S AND INDIAN CURRENCIES AND COMMODITIES MARKET".