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A Study on Commodity Derivative Market of Selected Non-Agricultural Products (Gold, Crude Oil, Copper) in the Chennai Market- An Analysis

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Abstract: *This is a new Endeavour to find out how selective non- agricultural commodities are selected by the players in the market for trading and speculative investment and analyzed the influencing factors with the tools like Simple Moving Average (SMA),Relativity Strength Index (RSI),Moving Average Convergence and Divergence (MACD), Exponential Moving Average (EMA),Rate of Change (ROC) that they could consider before investing their money into non agricultural commodities like gold, Crude Oil, Copper in India for the past Four years right from 2009 to 2012.*
Key terms: *Non-Agricultural commodities, Simple Moving Average (SMA),Relativity Strength Index (RSI),Moving Average Convergence and Divergence (MACD), Exponential Moving Average (EMA),Rate of change (ROC)*

I. Introduction about the Study:

Commodity markets are markets where raw or primary products are exchanged. These raw commodities are traded on regulated commodities exchanges, in which they are bought and sold in standardized contracts.The commodities market consists of the trading of forward contracts or futures contracts; forward contracts are contractual agreements to buy/sell any commodity between two entities; futures contracts are market agreements to buy/sell very specific commodities between two entities over a recognized commodities exchange.
A physical virtual market place for buying and selling of raw or primary products. For investors' purposes there are currently about 50 major commodity markets worldwide that facilitate investment trade in nearly 100 primary commodities. Commodities are split into two types: hard and soft commodities. Hard commodities are typically natural resources that must be mined or extracted (gold, rubber, oil, etc.), whereas soft commodities are agricultural products or livestock (corn, wheat, coffee, sugar, soybeans, pork, etc.)

Objectives of the study:

Primary Objective:

To Study and analyze the commodity market of selected non-agricultural products (gold, crude oil, copper), Chennai.

Secondary Objectives:

- To study the price volatility among selective non agricultural commodities in Chennai commodity market..
- To study and analyze the future price movements of gold, Crude oil, Copper market trends using past data in Chennai commodity market.
- To find out the reasons for real price volatility among the selective non agricultural commodities in Chennai commodity market.

Research Design:

Period of the Study: 4 years
Data Utilized in the Study: Secondary data
Secondary data is collected through e-books, publications, e-journals, company reports, previous studies, magazines, websites etc.

Tools used for data Analysis in the study:

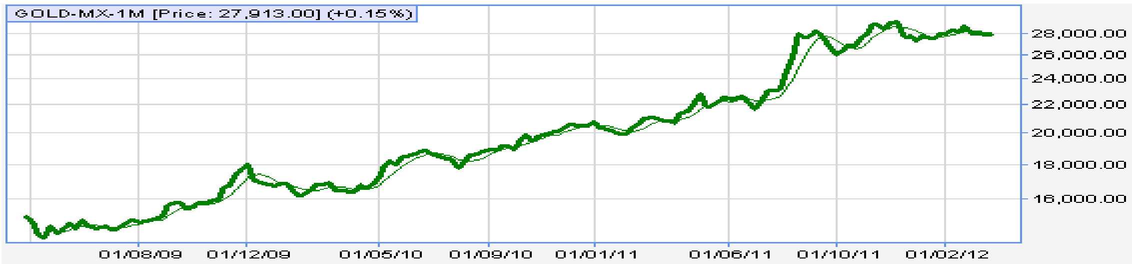
- Simple Moving Average (SMA)
- Relativity Strength Index (RSI)
- Moving Average Convergence and Divergence (MACD)

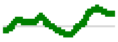
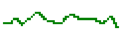
- Exponential Moving Average (EMA)
- Rate Of Change (ROC)

Data Analysis And Interpretation

I. GOLD

1.1 SIMPLE MOVING AVERAGE :CHART1.1

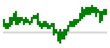
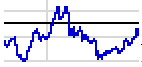


 Monthly Moving Average (MMA)  Simple Moving Average (SMA)

INFERENCE

The SMA is plotted using last 3 years data of gold. Here 5 months moving average has been taken to construct the SMA. The 3 years chart of SMA shows that on many occasions, the monthly moving average line cuts the 5 months SMA line from bottom to top which signals bullish and it is the right to invest and some time, the monthly moving average line cuts the 5 months SMA line from top to bottom which signals bearish and it is right time to go for fresh short. For instance, the average closing price of gold as on February 2012 is 28318 which are greater than 5 months SMA 27965. So, it shows BUY SIGNAL for the investor.

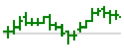
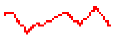
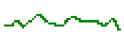
1.2 RELATIVE STRENGTH INDEX :CHART 1.2

 Monthly Moving Average (MMA)  Relative Strength Index (RSI)

INFERENCE

The RSI is plotted using last 3 years data of gold. Here the RSI chart shows the overbought and oversold period of gold. The investor should not buy the gold at the time of overbought period because after that may be a sudden falls in the prices. Similarly the investor should not afraid at the time of oversold period; it can act reversible and buy more at that time. Here the investor is signal to BUY the gold.

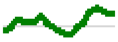
1.3 MOVING AVERAGE CONVERGENCE DIVERGENCE :CHART 1.3

 Monthly Moving Average (MMA)  12 EMA  26 EMA

INFERENCE

The MACD is plotted using last 3 years data of gold. Here, the MACD is calculated through EMA 12 versus EMA 26 period. If the EMA 12 line is above EMA 26 line it signals for bullish and vice versa the EMA 26 line is above EMA 12 line it signals for bearish. The average closing price of EMA 12 is 25345 which is greater than EMA 26 21739. So, it shows BUY SIGNAL for the investor.

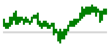
1.4 EXPONENTIAL MOVING AVERAGE :CHART-1.4

 Monthly Moving Average (MMA)  Exponential Moving Average (EMA)

INFERENCE

The EMA is plotted using last 3 years data of gold. Here 5 months moving average has been taken to construct the EMA. The 3 years chart of EMA shows that on many occasions, the monthly moving average line cuts the 5 months EMA line from bottom to top which signals bullish and it is the right to invest and some time, the monthly moving average line cuts the 5 months EMA line from top to bottom which signals bearish and it is right time to go for fresh short.For instance, the average closing price of gold as on February 2012 is 28318 which are greater than 5 months SMA 27381. So, it shows BUY SIGNAL for the investor.

1.5 RATE OF CHANGE :CHART 1.5

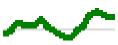
 Monthly Moving Average (MMA)  Rate of Change (ROC)

INFERENCE

The ROC is plotted using last 3 years data of gold. The ROC chart which is plotted above and below the line that determine the buy signal and sell signal of the gold. When the chart is marked above the zero line it signal positive attitude and that is marked below, it signal negative attitude for the investor. Here the ROC is in positive 5.645227, it gives BUY signal to the investor.

II. Crude-Oil

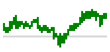
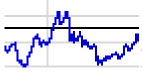
2.1 SIMPLE MOVING AVERAGE :CHART 2.1

 Monthly Moving Average (MMA)  Simple Moving Average (SMA)

INFERENCE

The SMA is plotted using last 3 years data of crude oil. Here 5 months moving average has been taken to construct the SMA The 3 years chart of SMA shows that on many occasions, the monthly moving average line cuts the 5 months SMA line from bottom to top which signals bullish and it is the right to invest and some time, the monthly moving average line cuts the 5 months SMA line from top to bottom which signals bearish and it is right time to go for fresh short. For instance, the average closing price of crude oil as on February 2012 is 5075 which is greater than 5 months SMA 4950. So, it shows BUY SIGNAL for the investor.

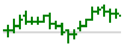
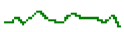
2.2 RELATIVE STRENGTH INDEX :CHART 2.2

 Monthly Moving Average (MMA)  Relative Strength Index (RSI)

INFERENCE

The RSI is plotted using last 3 years data of crude oil. Here the RSI chart shows the overbought and oversold period of crude oil. The investor should not buy the gold at the time of overbought period because after that may be a sudden falls in the prices. Similarly the investor should not afraid at the time of oversold period; it can act reversible and buy more at that time. Here the investor is signal to BUY the crude oil.

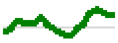
2.3 MOVING AVERAGE CONVERGENCE DIVERGENCE CHART 2.3

 Monthly Moving Average (MMA)  12 EMA  26 EMA

INFERENCE

The MACD is plotted using last 3 years data of crude oil. Here, the MACD is calculated through EMA 12 versus EMA 26 period. If the EMA 12 line is above EMA 26 line it signals for bullish and vice versa the EMA 26 line is above EMA 12 line it signals for bearish. The average closing price of EMA 12 is 4650 which is greater than EMA 26 4173. So, it shows BUY SIGNAL for the investor.

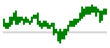
2.4 EXPONENTIAL MOVING AVERAGECHART2.4

 Monthly Moving Average (MMA)  Exponential Moving Average (EMA)

INFERENCE

The EMA is plotted using last 3 years data of crude oil. Here 5 months moving average has been taken to construct the EMA. The 3 years chart of EMA shows that on many occasions, the monthly moving average line cuts the 5 months EMA line from bottom to top which signals bullish and it is the right to invest and some time, the monthly moving average line cuts the 5 months EMA line from top to bottom which signals bearish and it is right time to go for fresh short. For instance, the average closing price of crude oil as on February 2012 is 5075 which is greater than 5 months SMA 4528. So, it shows BUY SIGNAL for the investor.

2.5 RATE OF CHANGE CHART 2.5

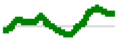
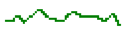
 Monthly Moving Average (MMA)  Rate of Change (ROC)

INFERENCE

The ROC is plotted using last 3 years data of crude oil. The ROC chart which is plotted above and below the line that determine the buy signal and sell signal of the crude oil. When the chart is marked above the zero line it signal positive attitude and that is marked below, it signal negative attitude for the investor. Here the ROC chart is marked below the zero line; it gives SELL signal to the investor

III. Copper

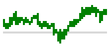
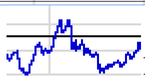
3.1 SIMPLE MOVING AVERAGECHART3.1

 Monthly Moving Average (MMA)  Simple Moving Average (SMA)

INFERENCE

The SMA is plotted using last 3 years data of copper. Here 5 months moving average has been taken to construct the SMA. The 3 years chart of SMA shows that on many occasions, the monthly moving average line cuts the 5 months SMA line from bottom to top which signals bullish and it is the right to invest and some time, the monthly moving average line cuts the 5 months SMA line from top to bottom which signals bearish and it is right time to go for fresh short. For instance, the average closing price of copper as on February 2012 is 418 which are greater than 5 months SMA 399. So, it shows BUY SIGNAL for the investor.

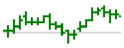
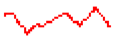
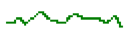
3.2 RELATIVE STRENGTH INDEX CHART3.2

 Monthly Moving Average (MMA)  Relative Strength Index (RSI)

INFERENCE

The RSI is plotted using last 3 years data of copper. Here the RSI chart shows the overbought and oversold period of copper. The investor should not buy the gold at the time of overbought period because after that may be a sudden falls in the prices. Similarly the investor should not afraid at the time of oversold period; it can act reversible and buy more at that time. Here the investor is signal to BUY the copper.

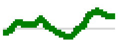
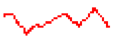
3.3 MOVING AVERAGE CONVERGENCE DIVERGENCE 3.3

 Monthly Moving Average (MMA)  12 EMA  26 EMA

INFERENCE

The MACD is plotted using last 3 years data of copper. Here, the MACD is calculated through EMA 12 versus EMA 26 period. If the EMA 12 line is above EMA 26 line it signals for bullish and vice versa the EMA 26 line is above EMA 12 line it signals for bearish. The average closing price of EMA 12 is 411 which is greater than EMA 26 384. So, it shows BUY SIGNAL for the investor.

3.4 EXPONENTIAL MOVING AVERAGE 3.4

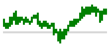
 Monthly Moving Average (MMA)  Exponential Moving Average (EMA)

INFERENCE

The EMA is plotted using last 3 years data of copper. Here 5 months moving average has been taken to construct the EMA. The 3 years chart of EMA shows that on many occasions, the monthly moving average line cuts the 5 months EMA line from bottom to top which signals bullish and it is the right to invest and some time, the monthly moving average line cuts the 5 months EMA line from top to bottom which signals bearish and it is right time to go for fresh short.

For instance, the average closing price of copper as on February 2012 is 417 which are greater than 5 months SMA 378. So, it shows BUY SIGNAL for the investor

3.5 RATE OF CHANGE CHART 3.5

 Monthly Moving Average (MMA)  Rate of Change (ROC)

INFERENCE

The ROC is plotted using last 3 years data of copper. The ROC chart which is plotted above and below the line that determine the buy signal and sell signal of the copper. When the chart is marked above the zero line it signal positive attitude and that is marked below, it signal negative attitude for the investor. Here the ROC is in positive 12.34104, it gives BUY signal to the investor.

Limitations of the study.

- The commodity market is having seasonal trends; we cannot predict every price movement about the market.
- The commodity market is more volatile we can give assumption price movement about the market trend.
- We cannot provide the exact future price movement about the commodities.

Findings:

- In Gold, SMA chart shows many buy and sell signal over the selected period. SMA chart shows that there is a buy signal to the investor for February 2012.
- ROC chart shows many buy and sell signal over the selected period. In Crude Oil, ROC chart is marked below the zero line in the chart; hence it is the right time to sell the Crude Oil for February 2012.
- RSI chart shows many buy and sell signal over the selected period. In Copper, RSI chart shows that there is a further increase in price level. So the investors can buy the Copper commodity for February 2012.

Suggestions:

- SMA method applied in Gold commodity suggests that investors can buy the Gold commodity to earn good return. As on February 2012, investment in Gold will yield better return to the investors in short run. In Gold, RSI chart shows some positive movement to the investors as on February 2012. So the investors are advised to buy the Gold on a short term speculation to get good return.
- In Copper, RSI chart shows the positive signal for buying the Copper commodity as on February 2012. So the investors can buy the Copper commodity on a short term investment. EMA chart shows many occasions buy signal to the investors here the investor can buy the Copper on their own interest. As per the study investing in Copper, at this time will return less return to the investors.
- In Crude Oil, ROC chart shows negative signal (i.e., ROC is marked below the zero line) to the investors, it is the right time to go for fresh sell for the Crude Oil commodity by the investors as on February 2012.

The investor should wait till the end of the bear market to make their investment strategy. The buying decision should be made only when the product is showing positive sign for buying. Investors can predict the commodity market through price movement. As per the study investing in these commodities at the present condition will yield less profit. Do never hope that the market will move as per our wishes.

IV. Conclusion :

The last three years price movement of each commodity explains that investors are satisfied from the reasonable return from investment in commodities. Besides, the investors are motivated to buy or sell the commodities from the commodities market from their investments. An investor can succeed in his investment only when he is able to select the right commodities at right time. The investors should keenly watch the situation like market price, economy, returns, and the risk involved in a commodities before taking decision on a particular commodity. This study made will help the investors know the commodity market and technical analysis thus can succeed in the market.

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