



COMMODITY CHANNEL INDEX OF CRUDE OIL IN INDIA – AN ANALYTICAL VIEW

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Abstract

This is a new endeavor to find out how discerning non-agricultural commodities are preferred by the players in the market for trading and speculative investment. Commodity market was quite ubiquitous till 1970s but its development was hampered due to certain restrictions and regulations introduced by the Indian Government. There are five national and sixteen regional commodity exchanges recognised and regulated by this Commission. There are different varieties of commodities such as industrial, agricultural, non-agricultural; bullion, plantation etc. are traded on commodity exchanges in the country. So, considering these points, an attempt has been made to identify the regulatory framework of indices of Crude oil in India and to present analytical study over the periods which facilitate the investors to assist in making the better portfolio before investing their money into non-agricultural commodities like Crude oil.

Key words: *Crude oil, Commodity Channel Index, buy signal and sell signal. JEL Classification: Q2, Q3 and Q4*

Introduction

India is among the apex producers of a number of commodities and has a long history of trading in commodity derivatives. In the global era there has been a manifold growth in the past decade with the volume of international trade and business owing to the signal of globalization and liberalization all over the world. By the high volume of the demand of the financial instruments and foreign exchange has increased significantly at the global level. Differences in the price of crude oil often consider as an important factor in understanding the basic purpose of these instruments and it provides commitment to the prices of future dates for giving protection against adverse movements in future prices. In the present day, the financial derivatives have become increasingly popular and most commonly used in the world of finance. Appearance and enlargement of the derivatives market are relatively a recent occurrence in India. In the beginning of June 2000 derivatives market has showcased the exponential growth both in terms of volume and number of contracts traded. The market proceeds rise from Rs.2,365 Cr. in 2000-2001 to Rs. 2,64,44,804.86 Cr. in 2013-14. In India derivatives trading has exceeded cash segment in terms of turnover and number of trade contracts.

Future prospects and challenges of the derivatives market in India and its status in the Indian derivatives market in relation to global derivative market proves to be an outstanding factor. As a result, technical analysis helps to predict future share script price fluctuations based on the past price movements and identifying the trends that denotes the future price movement. It also regards as the factors relating to the supply and demand of stocks. It never attempts to measure a security's basic value, but instead use charts and other tools to know the patterns that can suggest future activity. It is an approach by prediction of future prices through the forces like supply and demand which is much more useful for a speculator who aims at profit margins.

Statement of the Problem

The growth of commodity derivative market is often influenced by the volatility of price of the commodity dealt with. In the long-term, the influence of oil price on stock prices prevail, as oil price effect transmits to macroeconomic indicators that influence liquidity of these markets. This suggests that the effect of oil price



changes transmits to fundamental macroeconomic indicators, which in turn affect the long-term equilibrium linkage between these markets. Crude Oil is a naturally occurring, unrefined petroleum product composed of hydrocarbon deposits. Crude oil can be refined to produce usable products such as gasoline, diesel and various forms of petrochemicals. Although it is often called "black gold," crude oil is ranging viscosity and can vary in colour to various shades of black and yellow depending on its hydrocarbon composition. Distillation, the process by which oil is heated and separated into different components, is the first stage in refining. India is the 6th largest consumer of petroleum, by the year 2010, India is expected to rank 4th in terms of consumption of energy. Around 70% of the demands are fed by the imports of oil and natural gas. Since there was an economic crisis in Europe, the crude oil price was clouded by the risk and the possibility of a price plunge and geographical issues are also the reason for the risk in commodity prices. The trader always has the following question which is: In which season the crude oil may be bought or sold? The technical analysis helps to the trader to solve the above problem. If there is an uptrend in the price movement Trader may purchase the scrip. With the onset of fall in price the trader may sell the stock. By applying the technical analysis, the present study focuses on applying the price fluctuations through the commodity channel index in the order to facilitate the investor for playing the investment game effectively.

Objective of the Study

The present study aims to analyse the Commodity Channel Index of crude oil price for two years 2012 and 2013.

Methodology

The exploratory research is used for the study; the study intends to predict the future portfolio of commodity investment by the investors. The averages of week indices are derived from the calculated Typical Price minus 20-period SMA of TP value of the Commodity Channel Index (CCI). The research conducted is an analytical study; in this paper a study is conducted to determine the level indices which affects over buy and over sell signal. It will be helpful to identify the seasons giving maximum return on investment to the investors of crude oil. Data required for this study was secondary data which were collected from various secondary sources like Capital Line Database, BSE, Ministry of Banking, Investopedia, MCX, Economy Watch etc., The researcher has analysed the crude oil price data relating to the Months from January 2012 to December 2012.

Significance of the Study.

Commodity trading is a growing and most important trading function in a growing country like India. The investment in the specified commodity requires sufficient knowledge on behaviours of markets. The trend of each commodity provides a barometer of how it is performing and captures market perception. It will enable the investors and other to evaluate the commodity market to get benefited. Hence, the measures to indicate price fluctuations and divergence of a commodity are inevitable. Stock market and trading system is a set of instruction which advice opening or closing trading position based on technical analysis.

Limitations of the Study

The limitations of the study are:

- The study is micro in nature and it covers only two years data.
- The study of past performance of the prices may or may not be sustained in the future.

Commodity Channel Index (CCI)

The **Commodity Channel Index (CCI)** is an oscillator originally introduced by Donald Lambert in 1980. Since its introduction, the indicator has grown in popularity and is now a very common tool for traders in identifying cyclical trends not only in commodities, but also equities and currencies. The Commodity Channel Index (CCI) can be used as either a coincident or leading indicator. The difference between a security's price change and its average price change is called CCI. Strength means the High positive readings that means above the average. Weakness means the Low negative readings that are below their average. As a coincident indicator, surges above



+100 reflect strong price action that can signal the start of an uptrend. Plunges below -100 reflect the weak price action that can signal the start of a downturn. Identifying overbuys and oversell levels can be tricky with the Commodity Channel Index (CCI), or any other momentum oscillator for that matter. CCI is an unbound oscillator. There are no upside or downside limits in theoretically. This makes an overbought or oversold assessment subjective. Securities can continue moving higher after an indicator becomes overbought. Likewise, securities can continue moving lower after an indicator becomes oversold. Volatile securities are likely to require greater extremes than docile securities. Trend changes can be identified when CCI crosses a specific threshold between zero and 100. It is calculated by using the following formula:

$$CCI = \frac{\text{Typical Price} - 20\text{-period SMA of TP}}{\text{Typical Price (TP) = (High + Low + Close)}}$$

An Analysis of Crude Oil Pricing Using CCI for the Year 2012

Q₁ of 2012 shows the maximum price rise on W₃ of February, 2012 (206.69) whereas, minimum price fall on W₁ of February, 2012 (-130.74) which is shown in the table 1.1. The market tends to be negative in the fortnight of February, 2012 than in the subsequent weeks of Q₁, 2012. The market turns bullish from the mid of February, 2012 and continues bullish till W₂ of March 2012. There were five overbuying signals and seven overselling signals in the month of January to March of 2012.

Q₂ of 2012 shows the maximum price rise on W₂ of April, 2012 (45.71) whereas, minimum price fall on W₂ of May, 2012 (-194.55) which is shown in the table 1.1. The market faced a tough period throughout the quarter, where the indices remained in negative. There were ten overbuying signals and three overselling signals in the month of April to June of 2012.

Table 1.1, Crude oil prices of CCI for the year 2012

Q ₁	2012				
	Month	W ₁	W ₂	W ₃	W ₄
Q ₁	January	-	-	-	-
	February	-127.77	69.44	206.69	130.68
	March	76.15	37.94	-8.08	-94.28
Q ₂	April	-142.72	-98.32	-42.34	70.91
	May	21.54	-206.81	-125.12	-104.21
	June	-178.66	-102.86	-81.13	-115.24
Q ₃	July	109.91	80.5	129.78	63.34
	August	55.94	111.92	113.51	50.28
	September	30.17	153.57	-133.76	-141.52
Q ₄	October	-84.16	-35.91	13.92	-160.24
	November	-64.81	-59.69	97.13	72.86
	December	69.54	-65.55	84.67	125.06

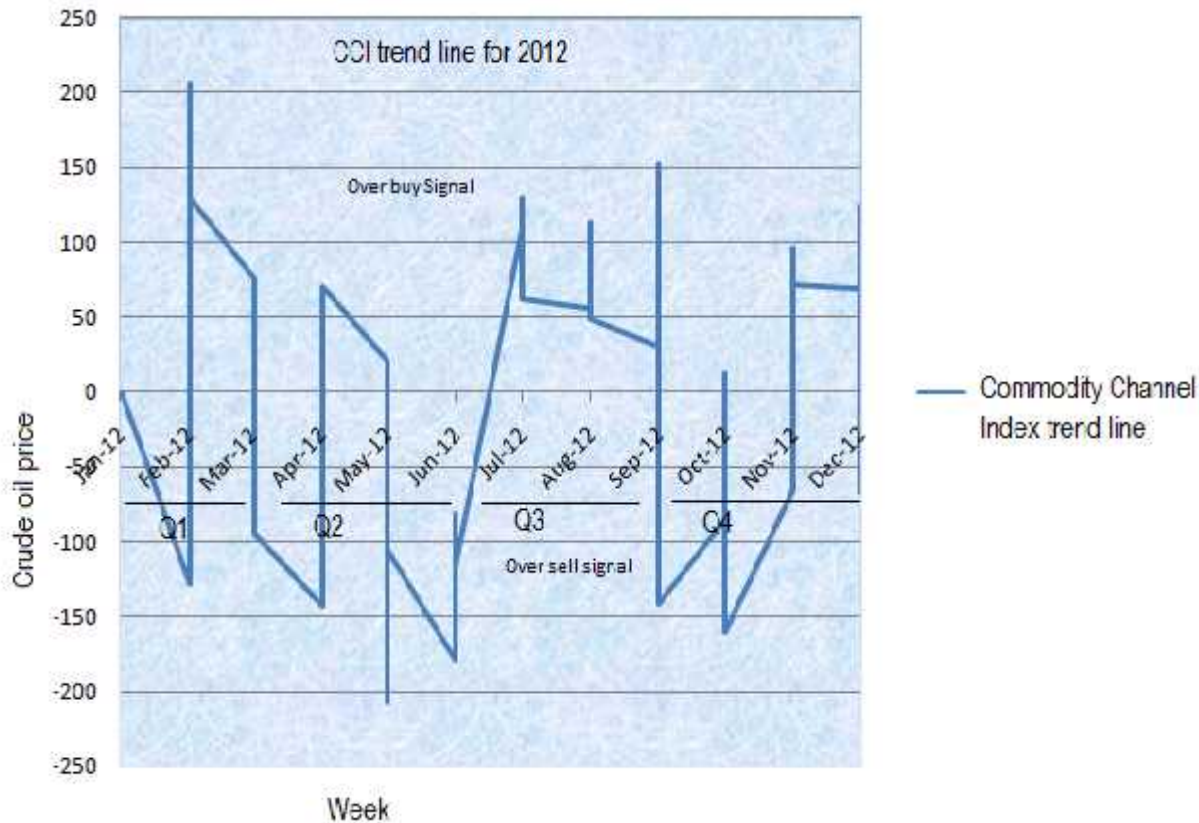
Q₃ of 2012 shows the maximum price rise on W₂ of September, 2012 (153.57) whereas, minimum price fall on W₄ of September, 2012 (-141.52) which is shown in the table 1.1. The market tends to be positive till September, 2012 fortnight and the market experience negative from September, 2012 third week. There were five overbuying signals and eight overselling signals in the month of July to September of 2012.

Q₄ of 2012 shows the maximum price rise on W₄ of December, 2012(125.06) whereas, minimum price fall on W₄ of October, 2012(-160.24) which is shown in the table 1.1. The market experiences negative trend in the months of October and November, than December 2012. There has been gradual fluctuation in this quarter. The



most noteworthy trend in the Oil markets for **2012** is the increased role of US and Canadian production, and it is only going to get stronger for **2013** and into the future. There were **three** overbuying signals and **six** overselling signals in the month of **October** to **December** of **2012**.

Figure 1.1: Trend Line of Crude Oil Price of CCI for the year 2012



Source: Investor.com

The Analysis of Crude Oil Pricing Using CCI for the Year 2013

Q₁ of **2013** shows the maximum price rise on **W₄** of **February, 2013 (178.47)** whereas, minimum price fall on **W₁** of **February, 2013 (-632.16)** which is shown in the table 1.1. The market tends to be negative in the month of **March, 2013**. The market turns bullish from the **W₃** of **February, 2013** and continues bullish till **W₁** of **March** of **2013** the prices of crude has a major fluctuation due the basic determinants of crude oil. There were **two** overbuying signals and **three** overselling signals in the month of **January** to **March** of **2013**.

Q₂ of **2013** shows the maximum price rise on **W₃** of **June, 2013 (165.81)** whereas, minimum price fall on **W₂** of **May, 2013 (-129.47)** which is shown in the table 1.1. There were **six** overbuying signals and **two** overselling signals in the month of **April** to **June** of **2013**.

Q₃ of **2013** shows the maximum price rise on **W₄** of **August, 2013 (149.30)** whereas, minimum price fall on **W₄** of **September, 2013 (-173.29)** which is shown in the table 1.1. The market tends to be fluctuating with over buy and over sell signals, throughout the **Q₃** which shows that there are positive trends existing till **second week of September, 2013** and the market experiences negative trend from **W₂** of **September 2013**. There were **seven** overbuying signals and **one** overselling signals in the month of **July** to **September** of **2013**.

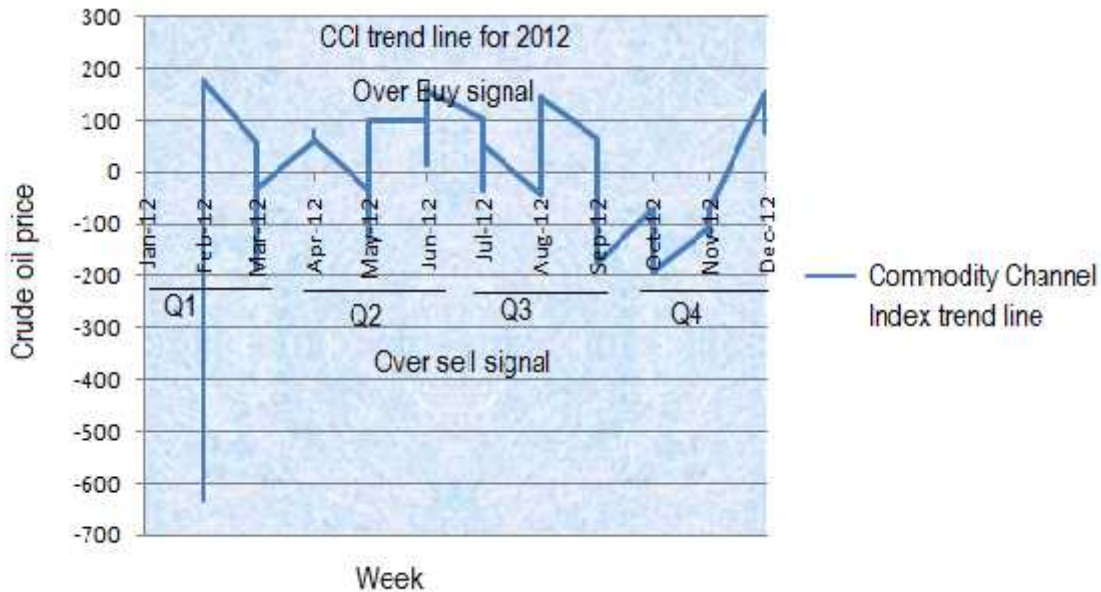


Table – 1.2, Crude Oil Prices of CCI for the year 2013

		2013			
Q ₁	Month	W ₁	W ₂	W ₃	W ₄
Q ₁	January				-161.64
	February	-632.16	-32.78	38.25	178.47
	March	57.24	-38.06	-184.62	-30.88
Q ₂	April	60.46	78.95	82.93	64.69
	May	-36.32	-129.47	-25.90	100.67
	June	99.59	17.13	165.81	158.37
Q ₃	July	104.40	48.23	-36.14	54.26
	August	-44.10	58.27	6.14	149.30
	September	64.82	46.23	-72.14	-173.29
Q ₄	October	-71.15	-72.50	-139.87	-194.09
	November	-104.50	-124.48	-93.10	-69.55
	December	157.02	112.72	76.31	100.33

Q₄ of 2013 shows the maximum price rise on W₁ of **December, 2013 (157.02)** whereas, minimum price fall on W₄ of **October, 2013(-194.09)** which is shown in the table 1.2. The market experiences record steady negative trend in the months of October and November, than in the December month of the Q₄ of 2013. There were **three** overbuying signals and **nine** overselling signals in the month of **October to December** of 2013.

Figure 1.2: Trend Line of Crude Oil Price of CCI for the year 2013



Source: Investor.com

For the year 2012 and 2013 the highest number of **Buy Signal** (Ten in 2012) falls on Q₂ of 2012 than in Q₁, Q₃ and Q₄ of 2012 and (Nine in 2013) falls in Q₃ of 2013 than in Q₁, Q₂ and Q₄ of 2013. The highest **Sell Signal** (Eight) falls in Q₃ of 2012 followed by Q₁, Q₄ and Q₂ of 2012. The Q₂ of 2012 was concerned about China's



slowing growth hurting demand. Speculation will dump the euro zone helped to boost the dollar, and that pushes down crude oil prices by making commodities like oil more expensive for investors trading in other currencies.

The highest *Sell Signal* (Nine) falls in **Q4** of **2013** followed by **Q1**, **Q2** and **Q3** of **2013**. The **Q4** of **2013** had higher supplies and fewer threats from the Middle East were the reasons. The overbought and oversold position of crude oil price is evidently shown for the crude oil traders using the Commodity Channel Index.

Conclusion

For the year **2012** and **2013** the highest number of *Buy Signal* (Ten) falls on **Q2** followed by **Q1**, **Q3** and **Q4** of **2012** and **Q3** of **2013** followed by **Q1**, **Q2** and **Q4** of **2013**. The **Q2** of **2012** was concerned about China's slowing growth soreness of demand. Speculation had dumped the Euro zone helped to increase the dollar, and that thrust down crude oil prices by making commodities like oil more expensive for investors trading in other currencies. The **Q3** of **2013** was concerned with oil prices were the highest in more than a year as a result of lower supplies and trouble in Egypt and too much oil was being produced for the infrastructure to handle it, West Texas Intermediate was lower than Brent crude for several years; it has returned to being consistent with Brent. The highest *Sell Signal* (Eight) falls in **Q3** of **2012** followed by **Q1**, **Q4** and **Q2** of **2012**. The **Q3** of **2012**, signs of a slowdown in manufacturing in China, Europe and the United States delivered the oil market another drive. Prices got thump and it has been driven by the deteriorating economic data. The highest *Sell Signal* (Nine) falls in **Q4** of **2013** followed by **Q1**, **Q2** and **Q3** of **2013** which is due to higher supplies and fewer threats from the Middle East were the reasons and also the better economy in the United States leading to higher demand. The overbought and oversold position of crude oil price is evidently shown for the crude oil traders using the Commodity Channel Index. Based on the analytical study of the **Commodity Channel Index** the trader could have bought the Crude Oil in the **Q2** of **2012** and **Q3** of **2013**. Thus based on the conceptual and analytical study the number of *Buy Signal* are more when compared other Quarters in the **Q2** of **2012** and **Q3** of **2013** and the trader might have sold the crude oil more in **Q1** and **Q3** of **2012** and **Q1** and **Q4** of **2013** because the number of *Sell Signal* is more when compared to other Quarters.

References

1. A. Vashishtha, S. Kumar, "Development of financial derivatives market in India-a case study", www.eurojournals.com (accessed on 20 February, 2014)
2. John C. Hull, "Futures and options markets", 2nd ed., PHI Learning Private Ltd., New Delhi, 2009, PP.1-169.
3. M. Gurusamy, and J. Sachin, "Financial derivatives", 1st ed., Ramesh Book Depot, New Delhi, 2009-10, PP.1.01-5.10.
4. 4.S. Kevin, "Security analysis and portfolio management", 6th Pr., PHI Learning Private Ltd., New Delhi, 2009, PP.232-270.
5. http://www.investopedia.com/crude_oilhttp://news.investors.com/crude_oil_prices/recent_news
6. http://www.mcxindia.com/SitePages/ContractSpecification.aspx?ProductCode=CRUDE_OIL