An Analysis On Fibonacci Theory With Reference To Crude Oil In Commoditty Market In Aiwin Commodity Broker Private Limited Company

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ABSTRACT

Fibonacci Tool helpsto analyse and predict the crude oil by its behaviour. It shows the accuracy in predicting the price target of buying and selling of crude. Here, I have justified the three approaches (i.e. upward, downward and consolidation approaches) by using the Fibonacci Retracement, Fibonacci Arc and Fibonacci Fan methods to analyse the trend, price target in both buying and selling of crude in the market and it also proven arithmetically. The Secondary data were collected to analyse about the support and resistance level. From this project, we can eliminate the risk on investment and also helps to predict and identify the support and resistance level of the crude oil from its movement in the market.

1.1 INTRODUCTION

Crude oil is a naturally occurring, unrefined petroleum product composed of hydrocarbon deposits and other organic materials. A type of fossil fuel, crude oil can be refined to produce usable products such as gasoline, diesel, and various other forms of petrochemicals. Fibonacci retracement is a very popular tool used by many technical traders to help identify strategic places for transactions to be placed, target prices or stop losses. There is a special ratio that can be used to describe the proportions of everything from nature's smallest building blocks, such as atoms, to the most advanced patterns in the universe, such as unimaginably large celestial bodies. Nature relies on this innate proportion to maintain balance, but the financial markets also seem to conform to this 'goldenratio.

1.2 OBJECTIVES OF THE STUDY

- To study the crude oil behaviourin commodity market.

- To know how the fibonacci series is used to predict the price movements in crude oil market.
- To know how investor can make investment decision based on markettrends.

- To get decent returns from buying and selling ofcommodities.
- To justify the investment in chosencommodities.
- To analyse the movement and performance of the crude oil commodity usingfibonaccitheory.

!.3REVIEW OF LITERATURE

Hamilton (2000) has reported a clear evidence of nonlinearity-oil price increases is much more important than oil price decreases. An alternative interpretation was proposed based on the estimation of a linear functional form using exogenous disruptions in petroleum supplies as an instrument. His study shows that oil shocks play a crucial role in determining macroeconomic behavior because they disrupt spending by consumers and firms.

Kaushik Bhattacharya et al. (2005) has analyzed the impact of increase in oil price on inflation. They studied the mechanism of increase in the prices of petroleum products on the prices of other commodities and the output in India. In February 1999, from an all time low of 11 U.S Dollars per barrel, it increased to a peak of 35 dollars in the first week of September 2000. Due to this, all oil importing countries faced the threat of oil shock; India, being a major oil importer, was particularly affected. Historically, there have been four oil shocks in the past thirty years. In spite of this, low inflationary pressure has been assisting the developed countries in mitigating the risk associated with oil shocks. Contrary to this, developing countries are affected more because of the absence of advanced technology to conserve oil. Literature reveals that most researchers agree with the fact that inflation has a recessionary effect on oil prices.

Parikh, Purohit, & Maitra explains that demand projections of petroleum products and natural gas in India(2007) .In this article, the researchers look into the demand and consumption pattern of the fuel in the Indian economy and analyze how the energy demand will grow in the dynamic phase that Indian economy is metamorphosing into currently. To assist for the same analysis, econometric models have been created for different petroleum based products to extract the variables that are specific to the fuel at an individual level.

Bhattacharya and Batra (2009) has contributed towards the relationship between international crude oil price and few macroeconomic variables such as money supply, exchange rate, industrial production and WPI.

Bhanumurthy, Das and Bose (2012) with a macroeconomic model can be considered.

According to the researchers not only the growth trajectory, few other macroeconomic indicators such as government revenue, inflation and current account deficits are also driven by the oil price deregulation.

Anand, Caody, Mohommad, Thakoor, & P Walsh, 2013 has analysed in this study, the analysis is on the fuel pricing approaches taken in the country along with the necessity of fuel

subsidy reforms and reform options. The paper looks in detail into the degree of fuel subsidies in action in the county and the increases in domestic fuel prices required to counter the subsidies and also assesses the effect these increases in price will have on the inflation and household real incomes.

Mohab Nabil (2013) has given a new technique for determining price targets after a breakout from a previous price swing. Fibonacci analysis, which is employed by practitioners of various sciences such as astronomy, mathematics, and architecture, also has a role in projecting price targets of financial securities. After working with Fibonacci ratios for several years, the researcher developed a new technique for determining price targets after a breakout (up or down) from previous price swings, which is named as projected Fibonacci targets (PFT).

Bhattacharya, Sukanto and Kumar, Kuldeep (2013) explains the vast assemblage of technical analysis tools, the ones based on Fibonacci recurrences in asset prices are relatively more scientific. In this paper, we review some of the popular technical analysis methodologies based on Fibonacci sequences and also advance a theoretical rationale as to why security prices may be seen to follow such sequences. We also analyze market data for an indicative empirical validation of the efficacy or otherwise of such sequences in predicting critical security price retracements that may be useful in constructing automated trading systems.

Jain (2013) has found a moderate relationship between the crude oil price and inflation. A wide range of economic variables had been studied by different authors but no one attempted to analyse the impact of Indian basket crude oil price on nation's economy.

Aparna (2014) considers Gross Domestic Product (GDP), Index of Industrial Production (IIP) and Wholesale Price Index (WPI) as the relevant variables to study the impact of crude oil price change. The author finds an immediate negative effect on the GDP and IIP hike with a positive change in the crude oil price. In contrast, a positive impact on WPI has been revealed.

Michael L. Fredman and Robert EndreTarjan (2015) has develop a new data structure for implementing heaps (priority queues). Our structure, Fibonacci heaps (abbreviated F-heaps), extends the binomial queues proposed by Vuillemin and studied further by Brown. F-heaps support arbitrary deletion from an n-item heap in O(log n) amortized time and all other standard heap operations in O(1) amortized time. Using F-heaps we are able to obtain improved running times for several networkoptimization algorithms. In particular, we obtain the following worst-case bounds, where n is the number of vertices and m the number of edges in the problem graph. Of these results, the improved bound for minimum spanning trees is the most striking, although all the results give asymptotic improvements for graphs of appropriate densities.

MohdKhoshnevisan (2015) explains the homological fuzzy analysis for Crude Oil trading has been somewhat universally accepted by financial engineers. In this paper, I have made an attempt to modify the Fibonacci recurrences and apply Fuzzy Logic to create topological clusters to classify the Crude Oil patterns. In that, I have reviewed some of the previous literature, which is derived from Fibonacci numbers in asset pricing. This fuzzy logic algorithm tends to offer a greater reliability and accuracy for predication Crude Oil patterns.

Srithar, Bairavi and Mariselvam (2015) have also tried to portray a broader view of crude oil price. According to the researchers, the factors influencing crude oil price are geopolitics,speculative buying and selling, OPEC output, increased demand from developed and emerging countries, weather conditions, change in the refining sector, currency fluctuation and supply and spare capacity.

Dougher (2015) has pointed out several other elements affecting crude oil price and those are weather; exchange rates and inflation; speculation, hedging and investment; inventories and OPEC production decision.

M.K Anand,(2016) in this article particularly talks about the impact that rising fuel prices have in the economy – particularly that of the agriculture sector. It analyses deeply on the implications of these persistent rise – both direct and indirect. The finding of this research have stronger implications than commonly recognized; for inflation cost and cost of implementing the policyon food security

Rene Kempen (2016) explains a scientific approach to retracements is introduced and the myth of Fibonacci retracements refuted. The statistical analysis of the retracement data resulting from the application of the MinMax-process by Maier-Paape to a variety of Crude Oil markets reveals a logarithmic normal distribution of the retracement values in general. It is deduced that there are no overall statistically significant retracement levels. While in a local environment the 100% retracement do show significance, the Fibonacci retracements are not seen empirically.

Lucas W. Davis (2016) (Davis 2016; Bondia, Ghosh, and Kanjilal 2016) make an analysis about the oil prices.In August 2015, the United Arab Emirates (U.A.E.) raised residential fuel costs by 25%. U.A.E's. vitality serve, Suhail Al-Mazrouei, clarified that the change was tied in with "building a solid economy that isn't subject to government subsi-dies."1 Then, toward the finish of 2015, Saudi Arabia raised local gas and diesel costs by over half with an end goal to, "accomplish wide basic changes in the national economy and diminish its reliance on oil."

Violeta Gaucan (2016) has tried to explain how can be used Fibonacci Retracement as an important tool to predict forex market. In this article I have included some graphic formats such as Fibonacci arcs, fan, channel, expansion, which are created also with Fibonacci retracement and also rules to perfect chart plotting. I have analyzed some examples of Fibonacci retracements pattern in a downtrend and in an uptrend. In this article I have used and combine material from different sources trying to create a start point for those one of you that are interested.

Constance brown (2017)explains that Fibonacci analysis gives traders a first step toward applying Fibonacci analysis in the market. The book covers key elements of this technical analysis tool. Traders will get up to speed quickly on its unique benefits. The major ratios between numbers in the Fibonacci sequence describe predictable market patterns. Fibonacci analysis analyzes these movements to identify future market prices".

Energy Information Administration (2018) has come up with seven factors driving crude oil price. Geopolitical and economic events; arbitrage, global oil consumption; Non-OPEC production, Saudi-Arabia crude oil production; OPEC's spare production and unplanned supply disruptions are those seven factors.

1.4 RESEARCH METHODOLOGY

RESEARCH DESIGN

The Research design is Quantitative research because the data related to measurement, frequency of occurrences and prediction of future movement. In quantitative research provide quite accurate and reliable measures. Here, the sampling technique used is stratified sampling in probability sample.

QUANTITATIVE RESEARCH

Quantitative research is a technique that uses mathematical and statistical modeling,measurements,and research to understand behavior. Quantitative analyst represents given data in terms of numerical value.

SOURCES OF DATA COLLECTION

The data collections classified into two types are Primary data and Secondary data.

Primary Data

Primary Data is a data collected for the first time. The information is collected directly from the source by means of field study. Primary Data are original and are like raw materials. It is the crudest form of information. The investigator himself collects primary data or supervises its collection. It may be collected on a sample or census basis or from casestudies.

Secondary Data

According to M. M. Blair,Secondary data "are those already in existence and which have been collected for some other purpose". Secondary Data may be abstracted from existing records and published sources. The data which have already been collected and processed by some persons or agency and are not used for the first time are termed as secondary data. In simple, it refers to information gathered from sources that are already in existence. Here it refers to,

- Investing.com
- Mcxindia.com

This study is based on secondary data. The details regarding the companylike company profile and financial data was sourced from company's website and financialrecords.

Instruments Used

- Fibonacciretracement
- Fibonacciarc
- Fibonaccifan

1.5DATA ANALYSIS AND INTERPRETATION

Figure 1 showing Fibonacci Retracement Buying Approach

INTERPRETATION

The Fibonacci buying approach is drawn for the second week of December to identify the resistance and support level. The stock entry level was at 309.77 and the support level was 290.89. The first resistance level was fixed at 161.8% i.e. 321.79. The stock crossed the first resistance level and still continues to uptrend. So the support level can be changed to 100% level and the next resistance will be at 261.8%. When the trend continues the uptrend then the target level can be changed as per theirlevel.
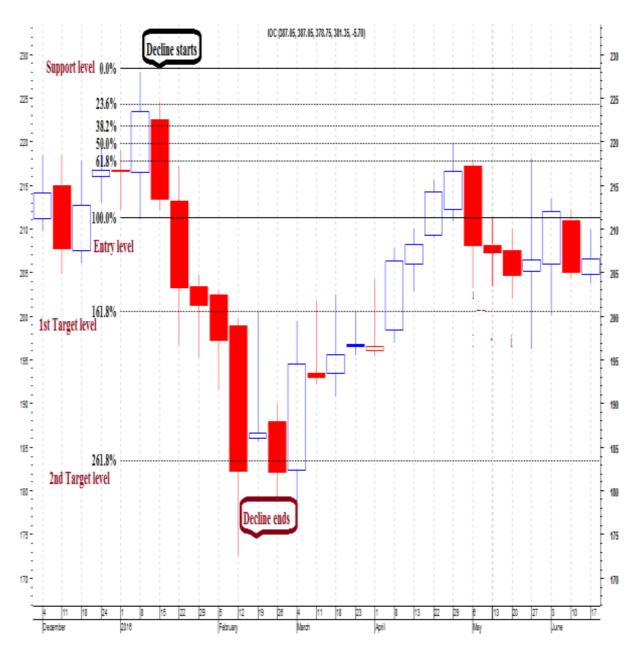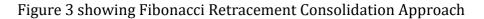
Figure 2 showing Fibonacci Retracement Selling Approach

INTERPRETATION

The selling approach is drawn from the second week of january on weekly basis to identify potential resistance and support level. The entry level was at 100% and support level was at 0%. The first resistance was at 161.8%, when the stock reached that level then the target gets achieved to cover the stock. Here the stock continues the downtrend and reached the 261.8% level of second target to cover the stocks at higherreturns.
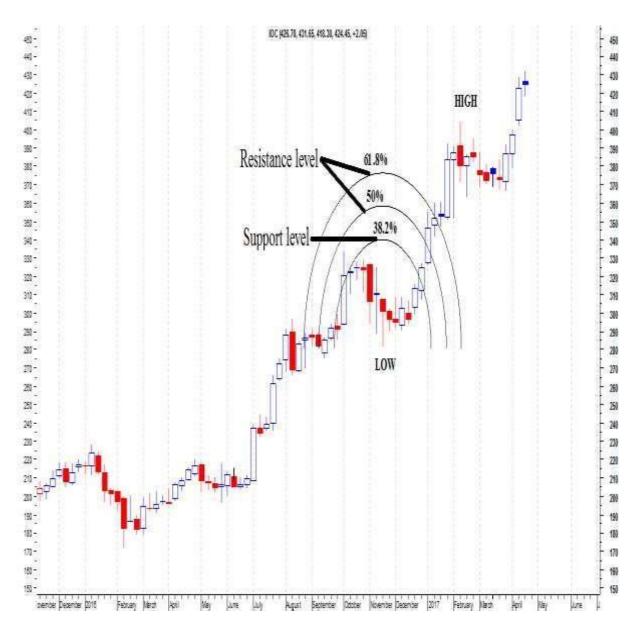
Figure 3 showing Fibonacci Retracement Consolidation Approach

INTERPRETATION

The Fibonacci consolidation stage is drawn on weekly basis to identify the sustaining stage of the stock. The stock entry level was at 100% and support level at 0%. The stock gets stagnated from the period of August to September between 0% to 100% level and their price level will be from 270.86 to 289.00.
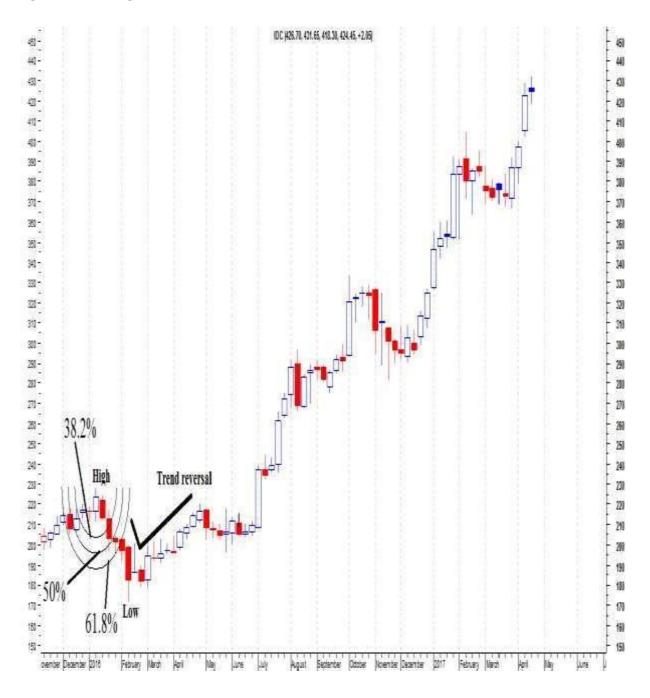
Figure 4 showing Fibonacci Upward Arc

INTERPRETATION

The Fibonacci upward arc is drawn from November low to February high to identify the potential support and resistance level. The stock crossed the support level of 38.2% inside way and the resistance levels were 50% and 61.8%. By next week the resistance level also crossed by the stock and the trend still continues the uptrend by achieving thetarget.

Figure 5 showing Fibonacci Downward Arc

INTERPRETATION

The Fibonacci downward arc is drawn from January high to February low to identify the potential support and resistance level. The stock reached the three levels of resistance (i.e. 38.2%, 50% and 61.8%) by consecutive weeks. After the reach of resistance level the reversal takes place and trend changes.

Figure 6 showing Fibonacci Upward Fan

INTERPRETATION

The Fibonacci Fan lines are drawn from 2016 February low to 2017 February high to identify the potential support and resistance level. The stock resistance levels are 38.2%, 50% and 61.8%. Here, the stock touches the 38.2% of resistance level by achieving the first target of 299.70 price level. After that the stock continues the uptrend by achieving the second (338.00) and third (375.49) targetconsecutively.

Figure 7 showing Fibonacci Downward Fan

INTERPRETATION

The Fibonacci fan is drawn from the period of October high to August low to identify the potential support and resistance level. The stock reached the first target at the price level of 168.78 and then it reached the second and third target level (i.e. the price level of 150.46 and 132.12) continuously. After that the stock reached the 61.8 of

resistance level in that week itself. But the trend continues to wards downtrend.

1.6 FINDINGS

- In buying approach the crude oil was showed little volatility but the price moved from 290.89 to 370 and above.
- To identify the potential resistance level the investor has to analyse the closing and opening price of the crude oil and have to fix the target level. Here the crude price started from 227.43 level and moved towards down at the level of 181. This creates an investors to earn huge profit.
- The fibonacci selling approach helps to identify that the crude price continues downward trend and it defines that it reached 261.8% in 2ndtarget to cover price at higher return.
- The consolidation was sustained during the period between august and September of the price level between 270.86 to289.00.
- The Fibonacci upward arc was drawn to identify the potential support and resistance level from low to high(i.e) 280.0 to380.8.
- Here the Fibonacci downward arc was drawn to identify the potential support and resistance level from the high to low i.e. 225 to 169.32 of price level.
- The Fibonacci fan helps to identify the potential support and resistance level but analysingin a long term movement of crude oil. The Fibonacci upward fan helps to identify that potential support and resistance level from low to high i.e338. To 375.49 and trend continues upward.
- The Fibonacci downward fan helps to identify that potential support and resistance from high to low i.e150.46 to 132.12 . The trends continues to show downward trend.

1.7 CONCLUSION

The Fibonacci Tools can be used effectively to identify the potential support and resistance level based on the volatility of the Crude Oils in the market. It is used in all markets such as online Crude Oil trading, forex trading and also in the futures markets. The tool can also be analysed for any period wise i.e. minutes, hourly, daily, weekly, monthly and yearly. The Fibonacci tool is more advantageous than other tools in terms of future prediction of market prices, fixing the price target, analysing the trend in commodity markets. Thus the tool plays an important role technical analysis and Crude Oil marketanalysis.

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