

**A STUDY ON THE IMPACT OF CRUDE OIL PRICE ON INDIAN
STOCK MARKET**

PROJECT REPORT

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2020-2022

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BONAFIDE CERTIFICATE

Certified that this project report “**A STUDY ON THE IMPACT OF CRUDE OIL PRICE ON INDIAN STOCK MARKET**” is the Bonafide work of Ms. AMRUTHA UNNI (YPAUMBA009) who carried out the project work.

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DECLARATION

I, Amrutha Unni hereby declare that the Project Report entitled “**A STUDY ON THE IMPACT OF CRUDE OIL PRICE ON INDIAN STOCK MARKET**” has been prepared by me and submitted to the University of Calicut in partial fulfilment of requirements for the award of the Master of Business Administration, is a record of original work done by me under the supervision of **Dr. Suraj E S**, Associate Professor of Naipunnya Business School, Pongam, Koratty East, Thrissur.

I also declare that this Project work has not been submitted by me fully or partly for the award of any Degree, Diploma, Title or recognition before any authority.

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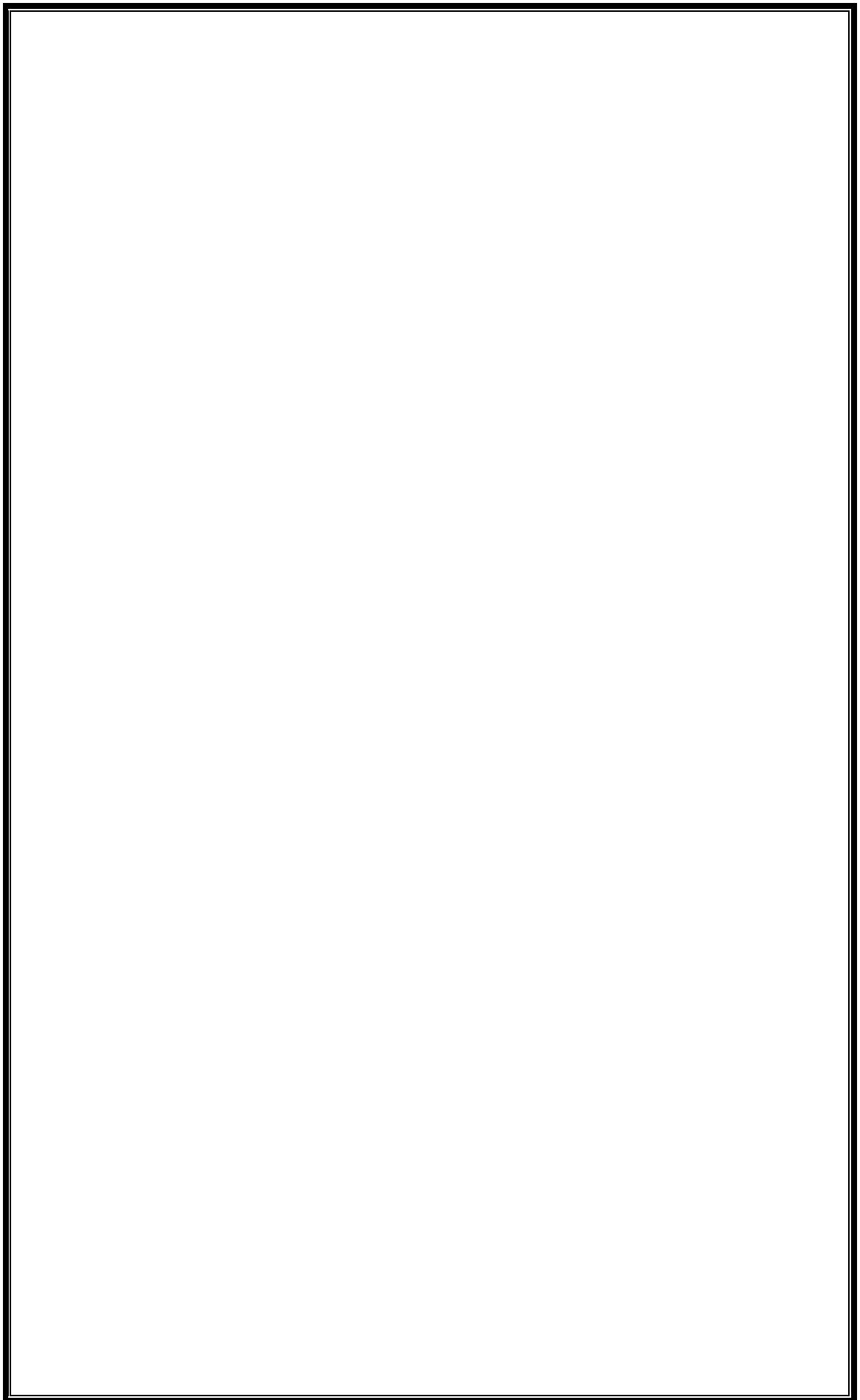
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1.1 INTRODUCTION

Crude oil price has a great impact on the world. They are affected by different components in the economy like inflation, interest rates, politics, etc. In the past two years, the crude oil price is highly volatile. By looking at the result, here can see the change in the Indian market as well. Because of a lead-lag relationship, the price of the crude oil is considered the barometer for the economy. So, there must be a relationship between crude oil price and the stock market in India.

Oil price hike will affect the stock market movements or prices through their effect on expected earnings, it's a theoretical ground by Mr. Jones. Change in oil price is considered a macroeconomic factor for the evaluation of future cash flows. When the crude oil price increases, the production cost of industrial oil-consuming countries also increases.

On a theoretical basis, the oil price changes the stock market occurs in two ways. If there is selling price remains unchanged the increase in oil price leads to an increase in the cost of production which will reduce the earnings of the company. As like this the selling price increases it will affect the earnings of the firm by the fluctuations in the stock market. Thus, the change occurs in the oil price of the firm will adversely affecting the stock market by influencing the earnings of the firms. Again, the hike in the crude oil price will create an inflationary situation in the economy. To manage the inflation the central bank will increase the interest rate which may later affect the profitability of the firm.

The impact of oil prices on the stock market has a great significant impact on economic growth and prosperity, not only on the Indian market but also on the global economy. Both the crude oil prices and stock markets have been the subject of extensive research. Against this background, this study looks at the dynamic impact of crude oil prices on the stock market. The crude oil price generally refers to the spot price of a barrel of benchmark crude oil. In North America this generally refers to the WTI.

Cushing Crude Oil price West Texas Intermediate(WTI), conjointly called Texas lightweight Sweet, a kind of crude used as a benchmark in oil valuation and also the underlying trade goods of latest York Mercantile Exchange's oil futures contracts. WTI could be a light weight crude, lighter than Brent crude. It contains concerning solely 0.24% sulphur, rating it sweet crude, sweeter than Brent crude. Its properties and production web site build it ideal for being refined within the United States., largely within the Middle West and seacoast regions.

West Texas Intermediate has associate API gravity of around 39.6 (specific gravity approx. 0.827) per barrel (159 liters) of either WTI/light crudes listed on the ny Mercantile Exchange (NYMEX) for delivery at Cushing, Oklahoma, or of brant goose as listed on the intercontinental Exchange (ICE, into that the International oil Exchange has been incorporated) for delivery at SullomVoe.

Cushing, Oklahoma, a significant oil provide hub connecting oil suppliers to the seashore, has become the foremost vital commercialism hub for fossil oil in North America. The price of a barrel of oil is highly dependent on both its grade, determined by factors such as crude's specific gravity and its sulphur content, and its location. There are other important benchmarks include which are Dubai, Tapes, and the OPEC basket. The Energy Information Administration (EIA) using the imported refiner acquisition cost, the weighted average cost of all the oil imported into the US, as its "world oil price". The demand for the oil is highly dependent on global macroeconomic conditions. According to the International Energy Agency, oil prices going to high have a large negative impact on global economic growth.

1.2 STATEMENT OF PROBLEM

Like Inflation, market updates, new mergers and acquisition etc. Likewise crude oil makes a huge impact on the Indian Stock Exchange. This study shows how the crude oil effecting the Indian stock market as well as how it affects each sector in the stock market.

1.3 OBJECTIVES

The following are the objectives of the study:

- To know the relation of crude oil price with NIFTY 50 and SENSEX
- To know the impact of crude oil price on sectoral stocks in Indian Stock Market.
- To identify the list of companies that are positively and negatively affected by crude prices

1.4 SCOPE OF THE STUDY

Over the last few years crude oil from the commodity market and stock market have a symbiotic relationship, with nearly every output sector in the global economy relying significantly on oil as an energy source. Crude oil has a big impact on the manufacturing sector. The stock market plays an important part in a country's rising industries and trade which have an impact on the economy. Crude Oil is a commodity having a high demand in all over the world. Crude Oil has a direct and an indirect impact on the Indian stock market.

Many of the companies rely on stable crude oil prices. These comprises of tire, lubricant, footwear, manufactures, refineries and aviation firms. Crude oil is approximately 20% of the India's total imports. Due to the inelastic nature of its demand, increase in crude price leading to high import bills for the country in the short run. From February 14, 2021 Oil price was jumped to eight months high due to US warned the Russian President Vladimir Putin order an invasion of Ukraine imminently. At that time the price of Brent crude futures was \$95.56 barrel and it was hit the peak and the nifty was go down from 15,340 to 15,010. Due to that paint sectors also fell down from 15.72 % to 5.04%. Like that many other sectors also got affected due to the fluctuations happened to crude oil. This study makes ensure which are the sectoral stocks in Indian stock market got affected directly as well as indirectly by the fluctuations in the price of crude oil.

1.5.1 SIGNIFICANCE OF THE STUDY

In the growing economic scenario, crude oil prices has an impact on the growth of the nation. Most of the production industries are highly dependent on crude oil-related products as raw materials. Since they are highly dependent on crude oil, the hike in the oil price will impact the industry in a negative aspect. As the price of crude oil is increasing day by day over the past years, the urge to understand the relationship between crude oil price and the economy has also increased.

As there are fluctuations in the Indian economy, it leads to fluctuations in the Indian stock market as well. Because, the Indian stock market is highly volatile to the changing situations like inflation, changing interest rates, Global events, politics, etc. Russia is well known for its crude oil. As the war between Russia and Ukraine starts, the

impacts have been seen in the crude oil price. In this scenario, the impact of oil price and the stock market have a greater relevance.

By referring to the historical data, there is an inverse effect on the crude oil price and the stock market can be seen. The tire, industries, lubricants, logistics, refineries, airlines, paints, etc. are highly dependent on the oil prices. Thus, huge fluctuations can be seen in these industries. The emergence of new energy sources also affects the fluctuations in the stock market as well as the crude oil prices. Some industries are affected positively and others are affected negatively due to the fluctuations in the price. The research has been made from the point of the investor, and the details regarding the stock prices and fluctuations have been collected and analyzed for this purpose. The research study is an attempt to understand the impact of the crude price on the Indian stock market.

1.6 STOCK MARKET

Indian stock market or share market is a market one of the integral part of the Indian Economy. It is a major part of the financial market. Stock market plays a vital role in the growing industries and commerce of a country which eventually affect the economy. And stock market of such robust economy is the face of the growing market and companies in it. It is a well-organized market for purchase and sale of corporate and other securities to raise capital by pooling funds from different investors. Moreover, it ensures that securities should be traded according to some predefined rules and regulations. London stock exchange is one of the oldest in the world and Bombay stock exchange is the oldest in India.

There are seven stock exchanges in India, out of which there are two indices called NSE and BSE. Most of the trading taking place through these two indices. Stock exchanges follow the same trading hour, trading mechanism, settlement process etc in NSE and BSE. Economic barometer, pricing of securities, safety of transactions, contributes to economic growth, liquidity, proper allocation of capital are the main functions of the Indian Stock Exchange. Bombay Stock Exchange comprises of 5800 listed companies but in the National Stock Exchange consists of 1659 listed companies. Interestingly, from all these firms listed on BSE, only around 500 firms constitute more than 90 % of its market capitalization.

Stock exchanges are fluctuating according to the market variations, FDI, GDP, Political issues, inflation, deflation, crude oil price, introduction a new product listed in the NSE. Stock market is associated with the risks. There are two types of risks called systematic and unsystematic. In these types there are other classification also. Like the market risk, business risk, company risk etc. it may affect the different sections of the stock market. So, there are fluctuations occurring in the Indian Stock Exchange. In the recent years most of the people about 96 percent are using trading accounts to trade and make profits.

NATIONAL STOCK EXCHANGE

NSE (National Stock Exchange) NSE established in 1992, the National Stock Exchange of India Limited (NSE) is the first dematerialised electronic exchange institution in the Indian Stock Market. NSE is the first modern, transparent, and fully automated platform which facilitating seamless electronic trading. NSE is one of India's premier exchanges and ranks fourth globally in terms of the trading volume metrics.

The first stock market successfully integrated all the investors under one roof supporting equity, derivatives, and debt instruments. This feat was possible since it had been the primary securities market in India, providing electronic trading facilities. S&P CNX Nifty (Nifty 50) was introduced because the benchmark index of NSE in 1996. The CNX Nifty signifies the weighted average of the highest 50 companies across 17 sectors.

It was incorporated as a tax paying company and was recognized as a stock exchange in 1993 under the Securities Contracts (Regulation) Act 1956. NSE is the 12th largest security exchange in the world with a market capitalization of more than US\$ 1.65 trillion as on 31 January 2015 (Monthly Reports, World Federation of Exchanges). Moreover, it was the first exchange to provide fully automated screen based electronic trading system. Nifty is the indices to measure overall performance of the National Stock Exchange which comprises of 50 stock indexes. With a base period of November 1995, NIFTY 50 encompasses a base value of 1000 and a base capital of Rs. 2.06 lakh crore (USD 27.28 billion). The stocks included within the NIFTY50 represent a big portion of the NSE capitalization as they contribute to over 50 percent of stocks traded within the exchange within the last six months.

INVESTMENT SEGMENTS

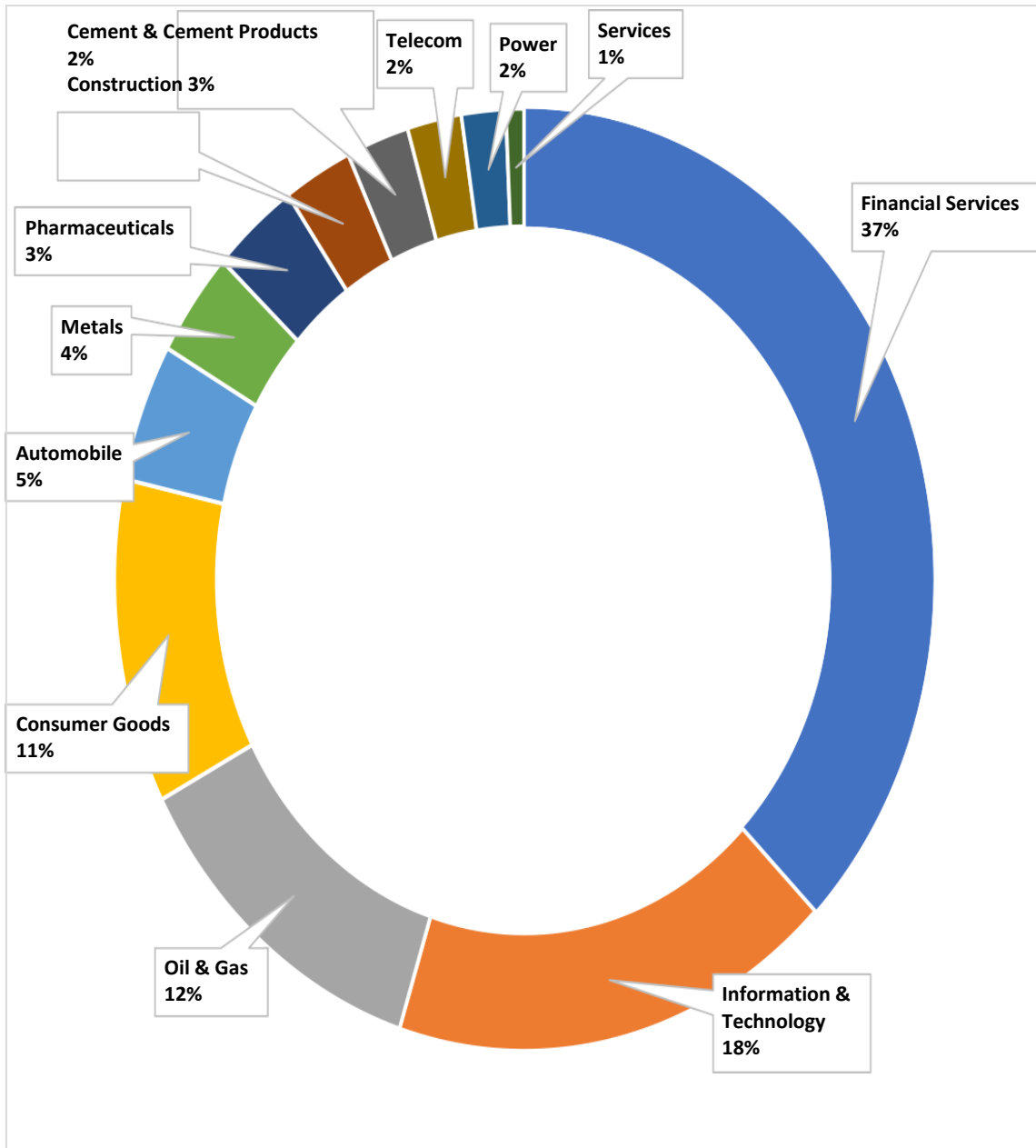
National Stock Exchange of India includes the following investment segments within its fold

- **EQUITY:** Such investments include equities, mutual funds, indices, and others.
- **EQUITY DERIVATIVES:** Derivatives trading on the NSE began with the launch of index futures in 2002. Subsequently, the Dow Jones Industrial Average and S&P 500 were launched in 2011 on this platform. With these methods, the exchange made remarkable traction in equity derivatives trading.
- **DEBT:** The core asset holding in such investment comprises various short-term and long-term bonds, security products, and more. The NSE launched India's first debt platform on 13th May 2013. It aimed to produce investors with a digital, transparent, and liquid platform for all the debt-based instrument trading.

Sectors Listed in NSE By Weightage Wise

SECTOR	WEIGHTAGE IN NIFTY 50 INDEX
Financial Services	37.23%
Information & Technology	17.41%
Oil & Gas	12.30%
Consumer Goods	11.11%
Automobile	4.71%
Metals	3.63%

Pharmaceuticals	3.39%
Construction	2.69%
Cement & Cement Products	2.46%
Telecom	2.13%
Power	1.73%
Services	0.71%



COMPANIES LISTED IN NIFTY 50

SL.NO	COMPANIES	SUBSECTOR
1	Reliance Industries Ltd	Oil& Gas Refining & Marketing
2	Tata Consultancy Services Ltd	IT Services & Consulting
3	HDFC Bank Ltd	Private Banks
4	Infosys Ltd	IT Services & Consulting
5	ICICI Bank Ltd	Private Banks
6	Hindustan Unilever Ltd	FMCG – Household Products
7	State Bank of India	Public Banks
8	Housing Development Finance Corporation Ltd	Home Financing
9	Bajaj Finance Ltd	Consumer Finance
10	Bharti Airtel Ltd	Telecom Services
11	Kotak Mahindra Bank Ltd	Private Banks
12	HCL Technologies Ltd	IT Services & Consulting
13	Asian Paints Ltd	Paints
14	Wipro Ltd	IT Services & Consulting
15	ITC Ltd	FMCG – Tobacco
16	Larsen & Toubro Ltd	Construction & Engineering
17	Bajaj Finserv Ltd	Insurance
18	Maruti Suzuki India Ltd	Four Wheelers
19	Axis Bank Ltd	Private Banks
20	Titan Company Ltd	Precious Metals, Jewellery & Watches
21	Sun Pharmaceutical Industries Ltd	Pharmaceuticals
22	Oil and Natural Gas Corporation Ltd	Oil & Gas – Exploration & Production
23	UltraTech Cement Ltd	Cement
24	Nestle India Ltd	FMCG – Foods
25	Tata Motors Ltd	Four Wheelers
26	JSW Steel Ltd	Iron & Steel
27	Tata Steel Ltd	Iron & Steel

28	Power Grid Corporation of India Ltd	Power Transmission & Distribution
29	Adani Ports and Special Economic Zone Ltd	Ports
30	Tech Mahindra Ltd	IT Services & Consulting
31	NTPC Ltd	Power Generation
32	Hindalco Industries Ltd	Metals – Aluminium
33	Divi’s Laboratories Ltd	Labs & Life Sciences Services
34	HDFC Life Insurance Company Ltd	Insurance
35	Indian Oil Corporation Ltd	Oil & Gas – Refining & Marketing
36	SBI Life Insurance Company Ltd	Insurance
37	Grasim Industries Ltd	Cement
38	Coal India Ltd	Mining – Coal
39	Bajaj Auto Ltd	Two Wheelers
40	Mahindra and Mahindra Ltd	Four Wheelers
41	Shree Cement Ltd	Cement
42	Britannia Industries Ltd	FMCG – Foods
43	Bharat Petroleum Corporation Ltd	Oil & Gas – Refining & Marketing
44	Cipla Ltd	Pharmaceuticals
45	IndusInd Bank Ltd	Private Banks
46	Eicher Motors Ltd	Trucks & Buses
47	Dr Reddy’s Laboratories Ltd	Pharmaceuticals
48	Tata Consumer Products Ltd	Tea & Coffee
49	UPL Ltd	Fertilizers & Agro Chemicals
50	Hero MotoCorp Ltd	Two Wheelers

BOMBAY STOCK EXCHANGE

BSE(Bombay Stock Exchange) is the leading and fastest stock exchange in India as well as in South Asia established in 1875. Bombay stock exchange is the world's 10th largest stockmarket by market capitalization at \$1.7 trillion as of 31 January 2015 (Monthly Reports, WorldFederation of Exchanges). More than 5,000 companies are listed on BSE. The main

index of Bombay stock exchange is Sensex which comprises of 30 stocks. NSE index is called Nifty fifty gives top 50 stock index and BSE's index called Sensex are giving 30 top index only. Both the stock exchange is important for the Indian Capital Market. Both are playing an integral role in the growing of the economy.

Over the past 133 years, BSE has facilitated the expansion of the Indian corporate sector by providing it with an efficient access to resources. there's perhaps no major corporate in India which has not sourced BSE's services in raising resources from the capital market.

Today, BSE is that the world's #1 exchange in terms of the quantity of listed companies and therefore the world's 5th in transaction numbers. The market capitalization as on day, 2007 stood at USD 1.79 trillion. An investor can make a choice from quite 4,700 listed companies, which for straightforward reference, are classified into A, B, S, T and Z groups.

The BSE Index, S&P BSE SENSEX, is India's first securities market index that enjoys an iconic stature and is tracked worldwide. it's an index of 30 stocks representing 12 major sectors. The S&P BSE SENSEX is made on a 'free-float' methodology, and is sensitive to plug sentiments and market realities. aside from the S&P BSE SENSEX, BSE offers 21 indices, including 12 sectoral indices. BSE has entered into an index cooperation agreement with Deutsche Börse. This agreement has made S&P BSE SENSEX and other BSE indices available to investors in Europe and America. Moreover, Barclays Global Investors (BGI), the worldwide leader in ETFs through its iShares A brand, has created the 'iShares A S&P BSE SENSEX India Tracker' which tracks the S&P BSE SENSEX. The ETF enables investors in urban center to require an exposure to the Indian equity market. the primary Exchange Traded Fund (ETF) on S&P BSE SENSEX, called "Spice" is listed on BSE. It brings to the investors a trading tool that may be easily used for the needs of investment, trading, hedging and arbitrage. Spice allows small investors to require a long-term view of the market.

BSE provides an efficient and transparent marketplace for trading in equity, debt instruments and derivatives. it's a nation-wide reach with a presence in additional than 359 cities and

towns of India. BSE has always been at par with the international standards. The systems and processes are designed to safeguard market integrity and enhance transparency in operations.

BSE is that the first exchange in India and also the second within the world to get an ISO 9001:2000 certification. it's also the primary exchange within the country and second within the world to receive Information Security Management System Standard BS 7799- 2-2002 certification for its BSE On-line Trading System (BOLT).BSE continues to innovate. In recent times, it's become the primary national level securities market to launch its website in Gujarati and Hindi to achieve resolute a bigger number of investors. it's successfully launched a reporting platform for corporate bonds in India christened the ICDM or Indian Corporate Debt Market and a novel ticker-cum-screen aptly named 'BSE Broadcast' which enables information dissemination to the mortal on the road.

In 2006,Bombay exchange launched the administrators information and ICERS (Indian Corporate Electronic Reporting System) to facilitate data flow and increase transparency within the New Delhi market. whereas the administrators information provides a single-point access to information on the boards of administrators of listed firms, the ICERS facilitates the corporates in sharing with Bombay securities market their company announcements.

CALCUTTA STOCK EXCHANGE (CSE)

The Calcutta securities market (CSE) could be a exchange located in Kolkata, India. it's the second oldest stock market in South Asia. The CSE provides its members with opportunities to interchange capital markets and so the futures and options markets of the Bombay exchange (BSE) and thus the National stock exchange of India Limited (NSE). Though the buying and selling of stocks in Calcutta is also traced back to the primary 1800s, there wasn't a code of conduct or permanent place to execute trades. it's said that stockbrokers convened by a arishth on a location that now holds the offices of the quality Chartered Bank in Calcutta.

The earliest record of dealings in securities in India is that the British East Indies Company's loan securities. The official exchange was incorporated in 1908, because the Calcutta exchange Association. At now, it had 150 members. In 1923, the Association became a liability concern. In 1980, the exchange was permanently recognized by India's government under the relevant provisions of the Securities Contracts Regulation Act of 1956. The CSE has since grown to over 900 members and over 3,500 listed companies.

The Exchange's present building, at the Lyons direct Kolkata, was constructed in 1928. In 1997, the exchange replaced its manual trading system with a computerized trading system called C-STAR (CSE Screen-Based Trading And Reporting). C-STAR was subject to a major payment settlement system scam in 2001 that closed down the exchange and resulted within the suspension of 300 CSE members, many of whom were ready to get their licenses back several years later. Many companies delisted from the CSE and joined the BSE or NSE instead. In 2007, the CSE entered a piggyback arrangement with the BSE. Most of the trading in the Indian stock exchange takes place on the BSE and therefore the NSE.

INDIA INTERNATIONAL EXCHANGE (INDIA INX)

This is often the leading international Exchange of India, and it's located at the International Financial Services Centre (IFSC), GIFT city in Gujarat. Prime Minister Narendra Modi inaugurated it on January 9, 2017, and therefore the trading started on January 16. it's not similar to the opposite regular exchange where individual stocks are traded instead here, Exchange and is additionally one among the foremost advanced technology platforms because it runs on the Eurex T7 platform.

Its recognition is valid till December 28, 2020. INDIA INX operated investors who work under distinct time zones. it had been open as a substitute for the offshore banking activities done by Indian companies. The offshore transactions happen in Dubai, Singapore, and port. Before the looks of INDIA INX, people

exchange Naipunnya grad school, Pongam 15 who wanted to require an edge in foreign currency had to attain intent on exchanges abroad which caused a loss of investment domestically. But now, the strategy has become cheap, easy, and fast.

MULTI COMMODITY EXCHANGE IN INDIA

Multi Commodity Exchange India Limited is the national-level, electronic, commodity derivatives exchange. It is also the primary exchange to introduce commodity options in India. MCX offers the benefits of fair price discovery and price risk management to the Indian commodity market ecosystem. Various commodities across segments are traded on the Exchange platform. These include bullion, energy, metals and agri commodities. It is the primary listed commodities market which was made under the regulatory body FMC, but later it had been merged with SEBI. it had been instituted in 2003, and its operation started on November 10, 2003, and is found in Mumbai. it's the foremost comprehensive commodity derivatives exchange in India..In 2018, it completed 15 years, and it touched the height of trading by generating a turnover of \$50 trillion. Recently, they have also launched a web-based app called “ComRIS” for keeping a record of transactions. Because of these achievements, MCX was ranked 7th among the global commodity exchanges. One important thing to know is that companies are not traded here. They just trade in gold, silver, rubber, cotton, crude oil, etc. The stock of MCX is also listed on NSE and BSE.

NATIONAL COMMODITY AND DERIVATIVES EXCHANGE

The National Commodity and Derivatives Exchange (NCDEX) could also be a commodities exchange dealing primarily in agricultural commodities in India. The NCDEX was established in 2003, and its headquarters are in Mumbai. Many of the very best commodity exchanges in India supported value and also the quantity of contracts. it's second only to the Multi exchange (MCX), which is targeted on energy and metals. The NCDEX is found in Mumbai but has offices across the country to facilitate trade. In establishing and maintaining an online commodities exchange for crops, the NCDEX has helped increase market transparency. The exchange assists Indian farmers within the price

discovery process. The NCDEX enables them to cost their goods more accurately whether or not they are not active within the commodities exchange. Exchanges a bit like the NCDEX have also played a key role in improving Indian agricultural practices. By standardizing the quality specifications of varied products through contracts, the NCDEX has raised quality awareness. Farmers in India increasingly concentrate on testing requirements and enacting farming practices that result in consistently high-quality crops.

INDIAN COMMODITY EXCHANGE LIMITED.

It is not a stock exchange, but a SEBI regulated commodity derivate exchange. It's headquarter are based in Mumbai, and it has been registered at SEBI since August 2017. It permits the registered brokers to deal in particular financial instruments across the country. It is recognized as a permanent exchange and is the only Exchange worldwide to launch a diamond derivative contract in 2017. In ICEX pepole have the opportunity to trade in mutual funds and commodity derivates as well.

NATIONAL STOCK EXCHANGE IFSC LIMITED

It is similar to India INX and is located in the International Financial Service Centre, at GIFT city, Gujarat. It is the subsidiary of NSE, and the purpose of launching NSE IFSC was to expand India's financial market and improve the capital brought to the Indian markets. It was established in November 2016, and its SEBI recognition is till May 2022. They do not trade in individual stocks; they just trade in derivate segments such as equity, currency, and commodity. They work in two sessions, and each session is of 8 hours. The first sessions begin from 8 a.m. to 5 p.m., and the second session is from 5:30 p.m. to 11:30 p.m. This was the list of stock exchanges in India that are active. Also, there were 20 stock exchanges in India that got closed. Let us discuss some of them and know the reasons why they got closed.

1.7 CRUDE OIL

Crude oil is a natural commodity formed from plant and animal remains that lived in a marine environment since millions of years ago. After a million of years the remains were covered by different layers of rock, silt and sand. Besides a combination of pressure and heat from those elements it turned that remains into crude oil. Crude oil is also known as fossil fuel or black gold. Actually, it is a naturally occurring commodity and it's a petroleum product composed of hydrocarbon deposits from natural underground pools or reservoirs and it remains liquid at atmospheric pressure and temperature. It has a wide-ranging viscosity and can vary in color to various shades of black and yellow depending on its hydrocarbon composition. Crude can be refined to reduce usable products.

Crude oil is classified into different types like heavy or sweet, heavy or sour, medium or sweet, medium or sour, light or sweet and light or sour. Heavy oils are used for producing industrial products like asphalt and plastics. Sulfur content that falls somewhere between heavy and light in medium crude oil. Light oils are used in diesel, gasoline, and aviation fuel. Because they take less processing. Light or sweet oil is the easiest and cheapest oil to refine. In sour crude has more sulfur and carbon compared to light and it requires more refining thus, it incurs more costs. Investors in the crude oil are generally concerned with the quality and the location of the oil they are investing in. It is due to the crude oil forms differently due to the geographical makeup of the locations. The price of the crude Oil prices is based on geopolitics, natural events, and organizational influences, which, in turn, dictate production, supply, and demand.

Crude oil is used by the users on the basis of its density and Sulphur content. Oil is in different types they are by Sulphur content as either sweet or sour, or by density as either heavy or light. Using these two groups and by creating group in between oil is classified into six classes by those manufacturers and investors.

Crude oil is a very most important and volatile sector in the market. It is the large energy sources in the global. United States, Saudi Arabia Russia, Canada are the crude oil producing

countries in the world. The majority of oil reserves in the world is in the Middle East, at 48 percent of the known and identified reserves. This is followed by North America, Africa, Central and South America, Eurasia, Asia and Oceania and Europe. India is the largest oil importing country. Because here more products are produced and refined from the crude. Many companies are largely relying on fuel such as airlines, tyre and paints. Crude Oil is a vast sector. It is diversified in physical and a derivative market also. The uses of the crude market are wide. The petroleum products like coal, natural gas, gasoline, jet fuel, waxes, lubricating oil or biomass are made from crude oil are made.

Only very few companies are producing the crude oil. Around 80 percent of the crude oil is importing by different countries through waterways in large tankers and rest by inland pipelines. According to the current estimates eighty percent of the crude oil located in the OPEC countries with the bulk of the OPEC oil reserves in the middle east countries is more than fifty per cent of the total of the OPEC.

Risk management of the oil trading are important for the various stakeholders and participants like producers, exporters, marketers, processors and SMEs . Risk strategies and techniques are fossil fuel makes much of the trendy world possible. oil may be a complex mixture formed from over ample years from the remains of plants and animals. Otherwise, it's a fuel which existing in underground reservoirs and pools within the gaps between sedimentary rocks near the surface within the tar sands.

Petroleum products are originated from the crude oil. Petroleum are fuels and the hydrocarbons in the crude oil are contained in the natural gas. There are different products are forming from the crude oil. They are: -

- ❖ **PETROL**– Half of every barrel of crude oil used to generate petrol which is the biggest product revived from the crude oil. Petrol is used to make power for the cars.

- ❖ **DIESEL**– Diesel is a mixture of hydrocarbons with 150-380 c range of boiling points. It is also made from petroleum.

- ❖ **JET FUEL**– It is also a mixture of hydrocarbons with the exact composition which varying depending on the petroleum source. Jet fuel is a minor portion of the crude oil is taking to create jet fuels which is used to power the aero planes.

- ❖ **HEAVY FUEL**– Heavy fuel consists of the residual of petroleum sources after high quality carbons extracted through thermal and catalytic cracking. Because of this reason it is called residual fuel oil.

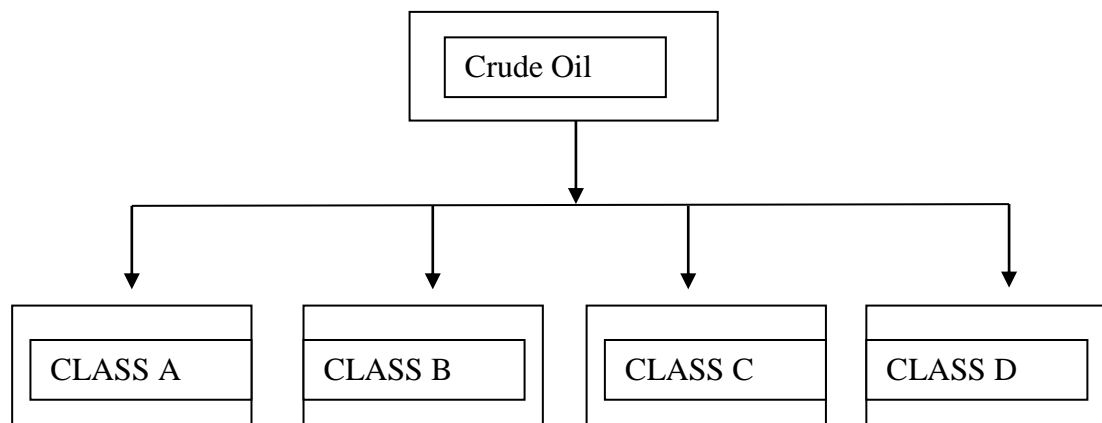
- ❖ **KEROSENE**– It is combustible hydrocarbon which is used in aviation industry. Kerosene is a clear form of hydrocarbons. It is obtained from the fractional distillation of petroleum between 150 – 275c. It has low viscosity.

- ❖ **PARAFFIN** – Paraffin is a more refined and distilled version of the latter. It is better to use at house because at that time it produces less soots when burned.

- ❖ **LIQUID PETROLEUM GASES** – It is the expanded form of LPG. It is also known propane or butane. LPG is a flammable gas which is used for cooking and as fuel for cars.

- ❖ **PETROLEUM FEEDSTOCK** – It is a raw material used to provide reactants to create an industrial reaction. This item made from crude oil after the chemical reactions. Petroleum solvents consists of a liquid hydro carbon that derived from petroleum and petroleum products. These are used in a wide range of commercial products in research and in industries.

- ❖ **LUBRICANTS**- It is refined from crude oil. It is composed of 80-90% petroleum hydrocarbons and its distillate with 10-20% additives to impart specific properties to the oil.
- ❖ Environmental Protection Agency classified crude oil by geography, weight, sulphur content. While the investors are concerned about investing crude oil price. EPA is categorized on the basis of toxic levels and categorized into A, B, C and D.



- **CLASS A**

Class A is an extremely toxic to humans, animals and other organisms. It is a most refined product with high quality. It is highly valuable.

- **CLASS B**

It is less toxic than class A. These are waxy and oily in feel. They stick more firmly to surfaces and as temperature rise, they are more likely to penetrate porous or surfaces.

- **CLASS C**

This type of oil doesn't penetrate porous surfaces as quickly as other types of crude oil. Class C is always brown or black. It has a similar density to water and tends to sink. Class C is less toxic and still harmful to wildlife.

- **CLASS D**

Class D is a heavy crude oil with dark black or brown. If they melt, they coat surfaces, making cleaning up a spill very difficult. Class D is residual oil. It is relatively nontoxic.

FACTORS AFFECTING CRUDE OIL PRICE

- **WEATHER**

In India, the winter season is a season, and it continues for one or two months. The winter season is not well affected in India. But the winter season is adversely affecting other countries like Russia, Canada, Europe, etc. As well as these are the main crude oil producers. During the winter season, the consumption of crude oil will be high. At the same time, the news about winter also makes fluctuations in the price of crude oil.

- **GEOPOLITICAL TENSIONS**

We know trade wars are happening between countries. Recently we saw the Russian-Ukraine war. As well as there were other trade wars that happened between the United States-China, Iran-United States. Any conflict between these countries is interrupted in the supply of oil.

- **US DOLLAR VS FOREIGN CURRENCIES**

The Crude oil on the global market is traded in US Dollars. Fluctuations in the currency can influence the value of the oil per barrel.

- **UNEXPECTED EVENT**

The natural disasters are also a factor that influences the price of crude oil. It affects the refining, selling, and distribution of crude.

- **OPEC RULES DECISIONS**

Algeria, Angola, Congo, Equatorial Guinea, Gabon, Iran, Iraq, Kuwait, Libya, Nigeria, Saudi Arabia, United Arab Emirates, and Venezuela are the eight OPEC countries. They are the major oil-producing countries.

CRUDE OIL AND ITS EFFECTS

India is highly dependent on other countries for importing oil for meeting its energy requirements. Crude oil imports started in 1973. India is the 3rd largest oil exporter. In 1973 India imported only 10% of crude oil. But currently, India requires and imports 85% of its oil. Iraq is the major oil importer to India. They import approximately 23% of oil. Iraq and Saudi Arabia are on the primary list of oil imports to India. Russia is not on the top list. Only 2% of oil is imported from Russia. Comparatively to previous years, Russia imported a high rate of crude oil in April 2022 because of an agreement of oil will import at a discounted price.

Crude oil is also used for other purposes. Plastics are made from crude oil. Crude oil is sent to refineries and used in petrochemical plants and it is turned into the desired output. Due to insulating heat-resistant properties, plastics and other petroleum-based products are used in electronic components. Smartphones and speakers connected to computers and televisions are developed from oil. Clothing, purses, and shoes are made from petroleum-based fibers, especially for their lightweight, durable, and water-resistant properties. Crude oil is also used in beauty and health products, household products, medical products, etc.

The rising prices of crude oil may also create an increase in these areas also. There is a direct relationship between crude oil and these products. During the Russian-Ukraine war, the price of crude oil was very high. At the same time, the price of these products like pharmaceuticals, electronics, and textiles also increased. Importing of oil is actually deficit for India. India has to be independent. India currently introducing new plans to reduce importing of oil from other countries.

COMPANY PROFILE

CapitalVia Global Research Ltd which located in Indore. CapitalVia is an investment advisor company. The company was started at 2006. The founder of the CapitalVia is Rohith Gadia. They have 15 years of legacy and values shape our future helping to strengthen their business, CapitalVia is a pure financial market research and consulting company. The main purpose of the company is offering unbiased technical analysis and solutions for the trading community by experienced professionals. Their long-term goal is to pursuit of innovation and responsible approach will help to make them Asia's most admired financial research and consulting brand. Now the company is running for the reliable efficient responsible delivery of financial research to our consumers and help them create wealth out of their savings. All the individuals the organisation is very respectful an disciplined and committed to work and organization. They maintain the clients by making profit to them. They are mainly providing services on the basis of intraday, BTST, swing strategies.

CapitalVia is reputed organization which diversified its branches into three they are named CapitalVia, Finofy technologies and FinTech. CapitalVia is focused into the domestic clients, Finofy Technologies are focused into international clients and the last one is the FinTech is for broking. CapitalVia is located in Indore, Finofy and FinTech is located in Thane.

CAPITALVIA

CapitalVia is a SEBI registered Investment Advisor company. They providing the services for an investor, for trader, and market segment. For an investor the service is providing on the basis of long term and medium term. In long term there will retirement planning or children's higher education and whatever the long-term goals all that services will be provided. On this basis company classified their service into Focus 2021, prime value packs, delta dominative neuron, Diwali neuron 2021, textile neuron etc.

- **FOCUS 2021-** It is a service for midterm to long term investors. In this product clients get 6-8 stocks based on the fundamental analysis of value investing. They also providing the market update and they providing the stocks for the holding period of 6-8 months. The product cost will be INR 50000.
- **PRIME VALUE PACKS** – This service is for mid to long term investors. Here they providing the portfolio of -12 stocks on the basis of proper analysis. The minimum investment of Prime value packs is 150000
- **DELTA DOMINATIVE NEURON**– This service is ideal for investors who wish to invest for mid to long term investors. In this product clients getting 5 stocks risk is low and minimum investment will be 50000.
- **TEXTILE NEURON**– It is a portfolio of 11 stocks for mid to long term investors who wish to invest in equity market. Their holding period will be 6- 12 months with minimum investment of 50000.

PRODUCTS OF THE CAPITALVIA

- **ALPHA HNI EQUITY-MEGA**

It is an exclusive product designed for the high-net-worth traders they getting a personalized research analyst for their all-tradingneeds. The minimum investment of this product is INR350000 and the risk involve in this moderately high.

- **ALPHA EQUITY CASH**

This product is for high potential traders who expecting high returns from the market. Alpha equity cash is for the intra contra traders in the equity market. A stock trader who wants to get advantage of the intraday price movements of liquid stocks. Company providing this product with minimum investment is INR 60000 and the benefit from this product is they getting 25- 30 signals monthly

- **ALPHA EQUITY OPTIONS**

This product is ideal for an options trader who wants to get advantage of higher leverage and the inherent nature of options. In this product also the minimum investment will be INR 60000 and they getting 25-30 stocks trade in a month. The mode of recommendation they sending messages via SMS.

- **ALPHA MCX**

This product is designed for high potential traders who trade in commodity market/MCX. It is mainly designed for intra and contra. Its minimum investment is INR 75000 along with 20-22 signals monthly.

- **ALPHA COMMODITY OPTIONS**

This is ideal for the traders who trade in MCX options. Here get recommendations in Gold, silver and crude oil. IN this product they getting only 12-15 signals in a month. INR 50000 is the minimum investment and the risk is moderately high.

- **ALPHA FNO PRO**

This product is ideal for aggressive clients who want to trade in high volatile market and capture momentum. IT is designed for active traders in the highly volatile market and capture momentum. Designed for active traders in Future and Option traders in mind, it provides you

27 – 30 recommendations in a month. The minimum investment is 200000rupees. Here they get the benefits Nifty / Bank Nifty Support & Resistance Put Call Ration – Weekly &Monthly update, World Market Update, SGX Nifty Update.

- **ALPHA PREMIUM OPTIONS**

This product is providing for the clients who trade high volatility of index and stock options. It is mainly providing for the persons who trade in intraday or BTST strategies. They providing this service for rupees 200000.

- **ALPHA DELITE**

Alpha Delite is a premium service designed for traders who want to trade in equity, commodity, cash, F&O capture momentum on intraday basis. Here they providing 37-40 recommendations in daily and for this product the minimum cost will be 300000rupees.

- **ALPHA HNI COMMODITY MINI**

It is an exclusive product which is designed for high-net-worth individual traders who will get a personalized research analyst. In this product they getting intraday, short-term traders in commodity trading needs. Here they getting 1-2 signals on daily basis with minimum investment amount with INR 300000.

- **ALPHA HNI COMMODITY MEGA**

It deals for clients looking for personalized solution with dedicated Research Analyst for all their intraday commodity trading needs.It is for the traders who trade in intraday, short term trader's commodity in commodity future and options. They providing 1-2on daily basis. The minimum investment in this product is INR 600000 with 20-22 recommendations in monthly.

- **ALPHA HNI EQUITY LITE**

It is ideal for clients looking for personalized solution with dedicated Research Analyst for all their intraday Equity trading needs. They get recommendations in Equity segments like Cash, Future and Option segment. Here the risk is moderately high and minimum investment cost will be INR 300000.

- **ALPHA MCX SWING**

The traders who want to trade positional in the commodity market. It is only for short term traders in the commodity market. The minimum investment of the Alpha MCX Swing is 150000. And the benefits of this product is 6-7 recommendations daily.

- **ALPHA HNI EQUITY**

It is for the clients who looking for personalized solution with dedicated research analyst for all the intraday equity trading needs with a minimum investment 300000 rupees.

- **ALPHA IPO**

It is designed for active investor who Invest in Each IPO. The risk included in this is medium. The Exclusive Research Report will be provided on the day of launch of IPO. It is ideal for IPO investors.

- **EQUITY DERIVATIVE PACK**

This product is designed for traders who like to trade exclusively in equity derivatives i.e., stock futures and options only. Both buy and sell calls will be given in this product. Here the risk is high and the cost is also high.

- **ALPHA OPTIONS**

It is for the traders who trade in options. It is designed by keeping active traders in mind it provides you 15 -20 recommendations in a month through SMS. The minimum investment amount is 70000.

- **MCX PRO**

This product is ideal for the clients who interested to trade in energy and base metals. Here the minimum investment will be INR 75000. It is mainly for the traders who trade in intraday and short-term trader in commodity market.

- **COMMODITY FUTURES**

Here the product is apt for the clients who looking for intraday and short term in commodity market. This is ideal for the traders who trade in Bullion, energy, and base metals.

For this product the minimum investment is 100000 rupees as a benefit they getting daily recommendations and market updates.

- **FOREX PACK**

This is for the traders trading in currency pairs. Here also the minimum investment will be 100000 and it is only for intraday traders. Intraday recommendations in forex are four currency pairs.

- **COMMODITY BULLION**

It is for the traders who trade in bullion i.e. gold and silver only with minimum investment of 150000.here the traders getting recommendations through SMS.

FINOFY TECHNOLOGIES

Finofy Technologies is an international company. They are handling the Malaysian clients. Finofy technologies is providing a research based financial products which includes high quality signals and recommendations. Their primary focus is to assess their customer's risk profile and financial needs carefully before suggesting any of their financial products. Finofy's products are classified into Bursa Malaysia and SGX, Hong Kong, world indices. Bursa Malaysia is the stock market of Malaysia. It is also known as Kuala Lumpur Composite Index. For the Malaysian clients finofy providing some products called Bursa prime, Shariah Pro, Warrants Pro, Bursa Pro, Bursa swing, Bursa prime lite, Bursa Privilege, Warrants prime.

- **BURSA PRIME**

Bursa prime is ideal product for a trader who wants to get a advantage from stock movements in Bursa Malaysia by trading in customized signals. In bursa prime they get Shariah and non shariah stocks. Here the risk is moderately high and minimum investment of 40000RM.

- **SHARIAH PRO**

It is for the shariah traders who trade in Bursa getting intra and contra recommendations from senior research analysts. As per Shariah clients get 15-20 signals a month with a minimum investment of 10000RM.

- **WARRANTS PRO**

Warrants pro is for the traders who trade in volatile market and get advantages from fast movements in warrants. But the risk suitability is high. The clients who buy the warrants pro they getting 15-20 signals a month weekly market update also.

- **BURSA PRO**

It is ideal for the clients who wants to take benefit of overnight movement in Busra. And the clients getting intra and contra recommendations from experts for trading specifically in mid-cap and small cap stocks with BTST strategy with moderate risk and minimum investment of 10000 MYR.

- **BURSA SWING**

It is the product of minimum investment of 20000RM and for the traders who want to traders with swing strategy by holding stocks in Bursa Malaysia. Here the clients getting 5-7 counters daily with proper market updates.

- **BURSA PRIME LITE**

Bursa Prime Lite is the product designed for traders to take benefit of customized recommendations from market experts. From this product clients getting shariah and non shariah stocks. The minimum investment for this product is 35000 MYR.

- **BURSA PRIVILEGE**

From this product clients get consulting in midcap, blue chip, penny stocks based on intra, contra or swing strategies. For bursa privilege the risk is moderate to high and the minimum investment is 100000RM. From these products clients get customized signals.

- **WARRANTS PRIME**

Getting recommendations in INDEX warrants and stock warrants with customized recommendations. The product mainly focuses on the risk calculated trading in HSI warrants as well as stock warrants. The minimum investment will be 30000MYR with high risk.

- **MAGNUS FOREX**

Magnus Forex is the product for the traders who trading in forex. From magnus forex product clients getting recommendations in all major and minor currency pairs based on the

proper analysis. Here the minimum investment will be 1000USD. As well as they getting 22-30 signal a month.

- **MAGNUS COMEX**

It is the recommendation for traders who trade in metals and energy based on the technical analysis. The product is designed for traders to take benefit of movements in gold, silver and crude which are actively traded in comex market. One of its features is minimum investment is 1000USD, 22- 30 signals a month and daily market updates.

- **FOREX PRIVILEGE**

Forex privilege is the product for all traders who traded in all currency pairs. This is ideal for clients looking for personalized solution with dedicated financial analyst for all their forex trading needs. Here the minimum investment is 5000 USD with customized recommendations and daily market updates.

- **COMEX PRIVILEGE**

It is same as forex privilege but it is for the traders who trading in Comex and take benefit of movements. Comex Privilege is the minimum investment of 5000 USD and getting customized recommendations.

- **INDICES PRIVILEGE**

Indices privilege is ideal for the clients who looking for a personalized solution with dedicated financial analyst for all clients trading needs. The minimum investment amount is 5000USD and minimum 12 recommendations in a month.

CHAPTER – II

LITERATURE REVIEW

2.1 REVIEW OF LITERATURE

Many people are doing research and study even now about the crude oil and India as well as crude oil price and the Indian stock market. There have been a large number of studies stating relationship between oil prices and stock return. Most of these studies have reported significant effects of oil price changes on stock return.

Kapusuzoglu and Chittedi—They were conduct a study about the connection between the oil prices and stock prices in India from April 2000-June 2011. Their study reach at the conclusion of that the changes of stock prices in India have a significant impact on the changes of oil prices. But a change within the oil prices doesn't have impact on stock prices.

Sahu, Mondal and Bandopadhyay (2013&2014) - They investigates about dynamic relationship between oil price stocks in Indian exchange. They consider petroleum prices in rupee terms during the amount from 2001 through 2013. The cointegration model result indicates the existence of long-term relationship between the 2 variables. Again, vector error term of VECM shows a protracted term causality moves from Indian securities market to grease price but not the other way around. The impulse response function analysis reveals that a positive shock in oil price has alittle but persistence and growing positive impact on Indian securities market within the short run.

Hosseini, Ahmad and Lai (2011)- He conducted a study on India for the period from January 1999 to January 2009. By means of multivariate cointegration and vector error correction model technique, they conclude that there are both long and short run linkages between macroeconomic variable and stock exchange index in both countries.

Jones and Kaul (1996) - stock markets shows that only the Saudi and Omani markets have predictive power of oil price increase. They examined the reaction of stock returns in four developed markets (Canada, Japan, the UK, and therefore the US) to grease price fluctuations on the premise of the quality income.

dividend valuation model. The study found that for the US and Canada exchange reaction may be accounted entirely thanks to impact of oil shocks on cash flows. However, some studies have shown that the link between oil and economic activity isn't entirely linear which negative oil price shocks (price increases) tend to possess larger impact on growth than positive shocks do. Thus, we should expect that oil prices equally affect stock markets in a very nonlinear fashion.

Kotak securities—According to them, the increase within the crude makes an impression in rupee. On 24 May 2018, the rupee closed at 68.34 against the US dollar. This is often a near 18-month low for the rupee, and only 0.6% faraway from its the bottom of 68.825, in line with a Live mint report. Additionally, if oil prices remain at these high levels, the rupee is further expected to depreciate by the year end. Rupee depreciation features a reverberating effect on the Indian economy and even the exchange. To arrest the rupee's fall, the RBI often takes some steps.

Arezki et al. (2017) - Their study implies, a straightforward macroeconomic model, which explores the results of a change in world GDP growth, a change within the efficiency of oil usage and a change within the supply of oil. This analytical framework integrates the four views of the drivers of the oil market into a model supported the basics of demand and provide. Their analysis suggests that an era of prolonged low oil prices is probably going to be followed by a period where oil prices overshoot their long-term upward trend.

Bhattacharjee (2013) - He has considered 124 data sets of petroleum and WPI and performed correlation which resulted that there's direct correlation between them. Further, the author considered Grangers' Cause Test to review whether oil prices change inflation. It resulted that the variables selected are bidirectional i.e., the fossil oil price change Granger causes inflation and contrariwise. The author also tested oil with capital and labour productivity, which ascertained that an increase in energy prices would lead to decline in productivity of existing capital and labour.

Punati and Raju (2017) – they need found in their research through econometric technique that Brent oil prices, index of business production, charge per unit and inflation determine the fossil oil prices.

Hamilton (2008) - In his study “Understanding fossil oil Prices” has concluded that oils’ future and spot prices differ during a minimum extent, however if such difference is caused by news, the long run prices in every horizon move together within the same direction. The author has further studied that oil is price and income elastic and would quieten down price elastic over time, during which case the anticipated price would increase. so as to extend oil from a field, methods like drilling wells, pumping in water or carbonic acid gas is employed to take care of pressure. However, it becomes difficult to continue extraction at the identical rate and hence new geographical areas are found for extraction. He also concluded that price speculation, OPEC monopoly pricing, strong world demands, geographical limitations are increasingly important contributions of the scarcity of oil.

Soundarapandiyan and Ganesh (2017)- In their study they mention that there's an inter correlation between CPI and rock oil price and contrariwise. there's a transparent indication that whenever the CPI increases there's decrease in fossil oil price and the other way around. it had been also found that there was significant difference between fossil oil price and GDP and no significant difference between CPI and GDP.

Kumar &Shipra (2018)- They have indicated that the causes of fall in oil prices are majorly due to the monopoly of OPEC countries. In short run, the price volatility is due to market expectations, however for long run, it is underlying demand and supply conditions. Further, the decline in oil prices is sometimes due to new technologies as cost of exploration and extraction reduce. Increase in dollar rates are also one of the reasons for fall in oil prices. Further, their study has determined that oil forms a major part of the Indian commodity basket and therefore its volatility will impact the Indian economy as a whole. However, decline in crude oil prices have helped the government to manage finances better as it reduces the subsidies provided towards petroleum products.

Raghunand S R & Dr. Smita Kavatekar - The study concluded that there is a significant yet weak impact of crude oil on Indian stock market. Though the Indian economy took major reforms such as Demonetization, it was noticed that this event did a very minute impact to the Indian scenario. This shows that the Indian market can fight against major economic changes and therefore it should not let external factors ruin its fluency.

Hindustan times- According to their evaluation changes in crude oil prices not only impact the energy sector stock market returns and volatility but stock market return and volatility of all other sectors. Moreover, investors should consider the source of crude oil price changes/shocks while making investment decisions and should be more cautious if crude oil price changes are demand driven. Finally, the health sector seems to be a good investment option against high volatility in the crude oil market

Maghyereh and Aktham (2004) – They examined that oil stocks have no significant impact on stock index returns in emerging economies. The results also suggest that stock market returns in these economies do not rationally signal shocks in the crude oil market.

Nidhi Sharma and Kirti Khanna (2011) – He analysed on Crude oil price velocity & stock market ripple. In the case they have taken 10 years data and consider New York Stock Exchange, Bombay Stock Exchange (BSE) and London Stock Exchange. Test are used correlation and regression. They found OPEC benchmark and its relation with selected crude oil benchmarks and stock markets. In this the researcher has found that there is no significant impact of OPEC on stock market and other oil benchmarks.

Nader Naifar and Mohammed Saleh Al Dohaiman (2013) – From his examined he Find that the dependence structure between inflation rates and crude oil prices is asymmetric and orients toward the upper side during the recent financial crisis.

Chaker Aloui and Rania Jammazi (2009) - He examined from his findings shows that rises in oil price have a significant role in determining both the volatility of stock returns and the

probability of transition across regimes. As a result of his study. He concludes a long-term relationship between stock market index and international oil price in the period of examination was found in other words, it has been observed that Indian stock index is cointegrated with crude price. This result obtained interprets that relevant variables act together in the long term. Relationship between stock market index and international oil price in the period of examination was found in other words, it has been observed that Indian stock index is cointegrated with a crude price. This result obtained interprets that relevant variables act together in the long term.

Aloui et. al., (2008), investigated the effects of crude prices on stock returns and his findings provide evidence that crude prices play a crucial role in forecasting the stock market behaviour

Sadorsky (1999), examined the relationship between crude price volatility on stock market returns and the economic activity in US by using an unrestricted VAR. The study confirms that both the crude prices and the volatility in crude price play a significant role in affecting economic activity.

Sandorsky (1999) and Papapetru (2001), empirically showed that a crude stock has a negative and significant initial impact on the stock returns.

Maghyereh and Akttam (2004) contradicted the view of Jungwook and Ronald (2008) by using VAR models and concluded that the crude price shocks have no significant impact on index returns.

Ono (2011) examined the influence of crude oil prices on BRIC stock markets. He concluded that the stock returns of China, Russia and India have a positive impact and the Brazil stock returns do not show any statistical significance.

Akomolafe and Danladi (2014), investigated the association between company's stock returns and variations in crude oil returns. They adopted the co- integration and VECM to analyse the relationship. The result proved that the banking sector responds mostly to change in oil price.

In an investigation by **Kollias et. al., (2011)**, found the covariance between company returns and oil returns in war time period. Chen (2010), investigated the relationship between high oil prices and its impact on stock market returns by taking S&P 500 Price Index as proxy. The findings of the study revealed that there is high probability of a bear market emergence as a result of increase in crude prices.

An empirical study conducted by **Perk and Ratti (2008)**, showed that the increases in crude prices have a negative impact on returns in the developed stock markets. In an investigation by Huang et al. (1996), by using an unrestricted VAR model, found no statistical evidence of an association between crude prices and the S&P500 index. Chen et al. (1986), and Apergis and Miller (2009), reported the similar findings in the developed stock markets.

Awerbuch and Raphael (2006), reported that increase in crude price and volatility in crude decreases economic growth of an economy by increasing inflation. Somoye and Ilo (2008), found that crude oil, inflation and exchange rate helps to determine the stock returns in Nigeria.

In an empirical study by **Chaudhuri and Daniel (1998)**, claimed that oil price impacts the stock market in long-run.

In a study conducted by **Evangelia (2001)** found the relationship between crude oil prices, debt instrument rates, Greece employment condition, and stock market prices, the study also suggested that the economic activity and employment were affected by changes in crude oil moment.

Bhunia (2013), pointed out that crude oil price, domestic gold price, stock market index movements and countries exchange rates are integrated in long run in India

O'Neill et al. (2008) find that oil price increases lead to reduced stock returns in the United States, the United Kingdom and France, Huang, Masulis, and Stoll (1996), however, found no negative relationship between stock returns and changes in the price of oil futures.

Chia-Lin Chang, Michael McAleer and RoengchaiTansuchat (2011) presented empirical research on Conditional Correlations and Volatility Spill overs between Crude Oil and Stock Index Returns. In the case they have taken 12 years data and consider world market Bahrain, Indonesia, Mexico and Venezuela. France, UK and Japan. (WTI and Brent markets, and the FTSE100, NYSE, Dow Jones and S&P500stock index returns). They input models like CCCmodel, DCC model. They found Consistent with the very low conditional correlate

J. Isaac Miller and Ronald A. Ratti (2008) presented empirical research on Crude Oil and Stock Markets: Stability, Instability, and Bubbles. In the case they have taken 37 years data and consider Canada, France, Germany, Italy, U.K. and U.S stock market. They put VECM model. This finding supports a conjecture of change in the relationship between real oil price and real stock prices in the last decade compared to earlier years, which may suggest the presence of several stock market bubbles and/or oil price bubbles since the turn of century. Ions between the volatility of crude oil returns and stock index returns using the CCC model.

Irene Henriques and Perry Sadorsky (2007) presented on Oil prices and the stock prices of alternative energy companies. In this case they have taken 7 years data and consider Algeria, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, United Arab Emirates, and Venezuela of these market.

Amalendu Bhunia (2012) explained on Association between Crude Price and Stock Indices: Empirical Evidence from Bombay Stock Exchange. In the case, 10 years data taken and also consider BSE relationships between BSE 500, BSE 200 and BSE 100. Unit root, co-integration and causality test are considered. Results One way causality relationship from all index of the stock market to crude price, but crude price was not the causal of each of the three indexes

Kilian Lutz and Park Cheolbeom (2007) illustrated the response of aggregate U.S. real stock returns may differ greatly depending on whether the increase in the price of crude oil is driven by demand or supply shocks in the crude oil market.

Nidhi Sharma and Kirti Khanna (2011) analysed on Crude oil price velocity & stock market ripple [a comparative study of BSE with NYSE & LSE. In the case they have taken 10 years data and consider New York Stock Exchange (NYSE), Bombay Stock Exchange (BSE) and London Stock Exchange (LSE). Test are used correlation and regression. They found OPEC benchmark and its relation with selected crude oil benchmarks and stock markets. In this the researcher has found that there is no significant impact of OPEC on stock market and other oil benchmarks.

Syed Abul Basher and Alfred A. Haug and Perry Sadorsky (2011) shows relationship between oil Prices, exchange rates and emerging markets equity prices. They include world market countries

Hui-Ming Zhua, Su-Fang Li and Keming Yu (2011) examined that there is long-run Granger causality between crude oil shocks and stock markets for the OECD and non-OECD panel, and it is concluded that the asymmetric dynamic adjustment behaviour is indeed evident for these countries. Further research should be directed to investigate the country-specific mechanisms by which crude oil prices and disaggregated energy prices affect economic growth and stock prices

ChakerAloui and Rania Jammazi (2009) findings that rises in oil price has a significant role in determining both the volatility of stock returns and the probability of transition across regimes.

Jose Alvarez-Ramirez, Jesus Alvarez and Eduardo Rodriguez (2008) examined that the market is tending towards efficiency regime at long time horizons, results do not exclude the possibility of market inefficiencies at short time horizons by using auto-regressive fractionally integrated moving average (ARFIMA). Nicholas Apergis and Stephen M. Miller (2008) illustrated the response of international stock market returns do not respond in a large way to oil market shocks by using VAR and VEC.

Mohamed El HediArouri (2011) examined any changes on crude oil move stock markets in Europe. Moreover, for some sectors we find strong evidence of asymmetry in the reaction of stock returns to changes in the price of oil.

Yue-Jun Zhang and Yi-Ming Wei (2011) examined on empirical results show that the overall shocks are significant, and in the up (down) stock market a positive (negative) impact of oil price risk on stock returns is found.

Robert W. Faffa and Timothy J. Brailsford (1999) examined on Find that long-term effects persist, although hypothesize that some firms have been able to pass on oil price changes to customers or hedge the risk.

Wensheng Kang and Ronald A. Ratti (2014) examined onthe impact of oil price shocks on the stock market return and volatility relationship by using VAR and SVAR.

Nader Naifar and Mohammed Saleh Al Dohaiman (2013) examined on Find that the dependence structure between inflation rates and crude oil prices is asymmetric and orient toward the upper side during the recent financial crisis.

Li Liu, FengMa and Yudong Wang (2014) examined on find that the forecasting accuracy can be improved after adding oil variables to the traditional predictors. The forecasting gains relative to the benchmark of historical average are statistically and economically significant using by time-varying parameter (TVP).

Imad A. Moosaa and ParamSilvapulle (2000) examined onprice– volume relationship in the crude oil futures market using linear and nonlinear causality testing.

Hui- Ming Zhu, Rong Li and Sufang Li (2014) examined on that the dependence between crude oil prices and Asia-Pacific stock market returns is generally weak, that it was positive before the global financial crisis.

WalidChkili, ChakerAloui and DucKhuong Nguyen (2014) examined on find that investors in the US markets should have more stocks than crude oil asset in order to reduce their portfolio risk.

Christian Conrad, Karin Loch and Daniel Rittler (2014) examined on find that variables that contain information on current and future economic activity are helpful predictors of changes in the oil–stock correlation.

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evident for these countries. Further research should be directed to investigate the country-specific mechanisms by which crude oil prices and disaggregated energy prices affect economic growth and stock prices.

Maghyereh and Aktham (2004) examined that oil shocks have no significant impact on stock index returns in emerging economies. The results also suggest that stock market returns in these economies do not rationally signal shocks in the crude oil market.

Nidhi Sharma and Kirti Khanna (2011) analysed on Crude oil price velocity & stock market ripple [a comparative study of BSE with NYSE &lse]. In the case they have taken 10 years data and consider New York Stock Exchange (NYSE), Bombay Stock Exchange (BSE) and London Stock Exchange (LSE). Test are used correlation and regression. They found OPEC benchmark and its relation with selected crude oil benchmarks and stock markets. In this the researcher has found that there is no significant impact of OPEC on stock market and other oil benchmarks.

Rumi Masiha, Sanjay Petersb and Lurion De Melloc (2011) examined on co integrating relationship to be stable and find that the linear error correction model to be more favourable than an asymmetric 2 period Markov switching model.

WalidChkili, ChakerAloui and DucKhuong Nguyen (2014) examined on find that investors in the US markets should have more stocks than crude oil asset in order to reduce their portfolio risk.

Christian Conrad, Karin Loch and Daniel Rittler (2014) examined on find that variables that contain information on current and future economic activity are helpful predictors of changes in the oil–stock correlation.

CHAPTER – III

RESEARCH METHODOLOGY

RESEARCH DESIGN

The current research is based on secondary information. As a research methodology, a quantitative approach is chosen. Because all of the factual information and knowledge gathered is numerical, the methodology used in this study is quantitative.

DATA COLLECTION

The study conducted by use of secondary data. Data collection from secondary sources such as investing.com, www.nseindia.com, money control.

TOOLS AND TECHNIQUES

SPSS software for analysing the objectives by the help of techniques as correlation, Spearman's Rank correlation are using for determining the highest sectors which get effected by movements of crude oil. SPSS Software is used as a tool for the best comparing and to analyse the data.

PERIOD OF THE STUDY

The study was conducted from 14th July 2022 to 08th September 2022

HYPOTHESIS FOR THE STUDY

This study is conducted to test the following the hypothesis.

H₀₁ : Crude Oil's price does not impact the price of sectoral stocks.

H_{A1}: Crude Oil's price impacts the price of sectoral stocks.

LIMITATIONS OF THE STUDY

Due to the time frame is quite long some sectors only started after three or four years from 2011. So, there is only nine or seven years of data taken for that kind of company stocks. Here the all most data are taken from secondary sources. So, the accuracy of the data will be less.

CHAPTER – IV

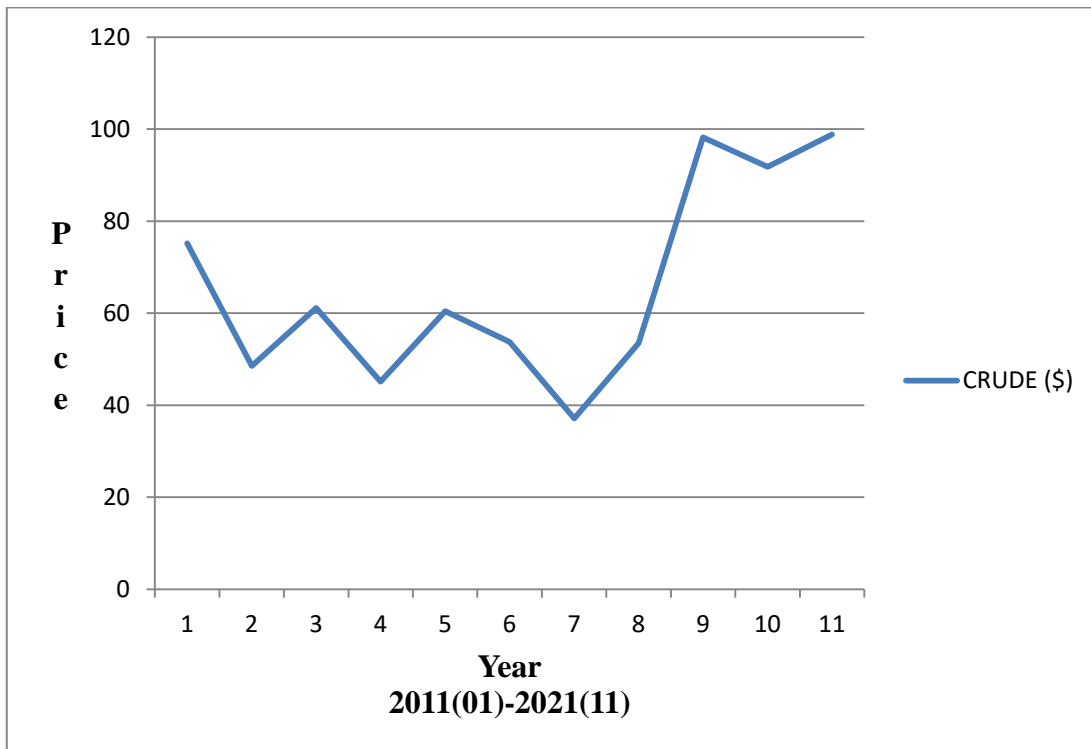
DATA ANALYSIS AND INTERPRETATION

4.1 PRICE FLUCTUATIONS OF CRUDE OIL

Table No 4.1- Showing price fluctuations of crude oil from 2011-2021

YEAR	CRUDE (\$)
2021	75.21
2020	48.52
2019	61.14
2018	45.15
2017	60.46
2016	53.75
2015	37.13
2014	53.45
2013	98.17
2012	91.83
2011	98.83

Fig No 4.1 - showing price fluctuations of crude oil from 2011-2021



Interpretation

The above chart (Fig 4.1) showing the crude oil movements from 2011 to 2021. In starting of the 2011 the crude oil's high price was 103.41 and closed at 96.97. The chart showing the crude was fell down at 2015 and in 2016 it again comes down. Because in 2015 the Dollar price was at a 12 year high against Euro. This rise was put pressure on the market. Because commodity price is quoting at Dollars. So, it will fell when the US Dollar is strong. But in the end of the December 2021, it is gone down to 73.95.

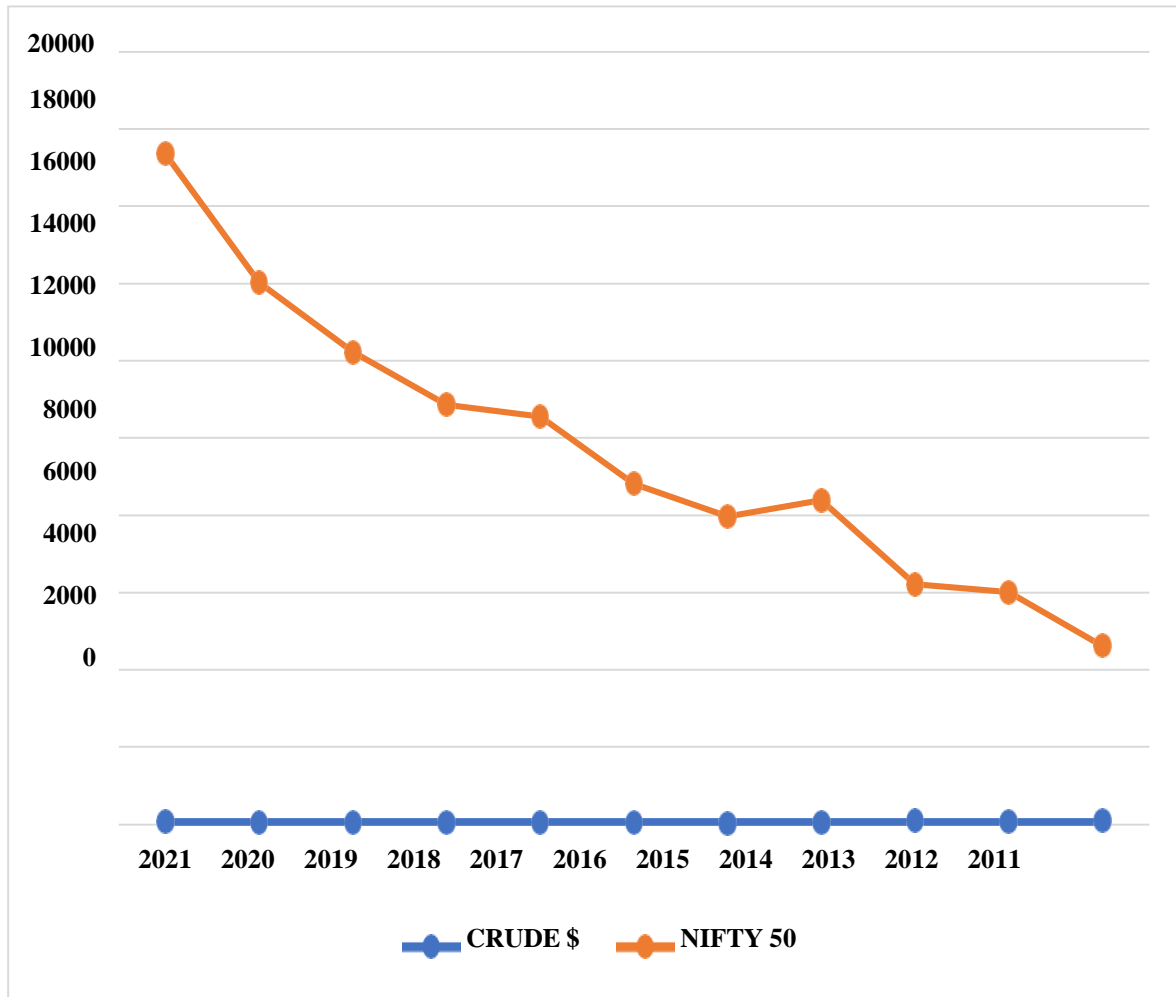
For this study here taking 10 years statistical data of Nifty fifty and crude price data also. From this analysis it shows how is crude affecting the nifty fifty or not. Karl Pearson's correlation is the technique here using for analyse how crude oil affecting Nifty fifty, Sensex and other sectors also.

4.2 PRICE OF NIFTY 50 AND CRUDE OIL

Table 4.2 – Showing the price of nifty 50 and crude oil

YEAR	CRUDE (\$)	NIFTY 50
2021	75.21	17354
2020	48.52	14018.5
2019	61.14	12226.65
2018	45.15	10859.9
2017	60.46	10558.8
2016	53.75	8815.8
2015	37.13	7963.2
2014	53.45	8395.45
2013	98.17	6211.5
2012	91.83	6016.5
2011	98.83	4624.3

Fig 4.2 – Showing the price of nifty 50 and crude oil



Interpretation

Variables	Nifty	Crude
Nifty	1.00	-.414
Crude	-.414	1.00

The table 4.2 showing the price of crude and nifty from 1st January 2011 to 31st December 2021. There we can see according to the price of the crude nifty price also changing. The

fig.4.2 showing the price movements of the crude and nifty fifty. Because of the nifty fifty's bigger figures, it is little difficult to analyse the chart to how it affects. Here we putting the collected data into Karl Pearson's statistical technique which measures the relation between crude and nifty fifty. Pearson's correlation coefficient (r) is a measure of the strength of the association between the two variables. The first step in studying the relationship between two continuous variables is to draw a scatter plot of the variables to check for linearity. The correlation coefficient should not be calculated if the relationship is not linear. Pearson's correlation coefficient (r) for continuous data ranges from -1 to +1. Positive correlation indicates that both variables increase or decrease together, whereas negative correlation indicates that as one variable increases, so the other decreases, and vice versa.

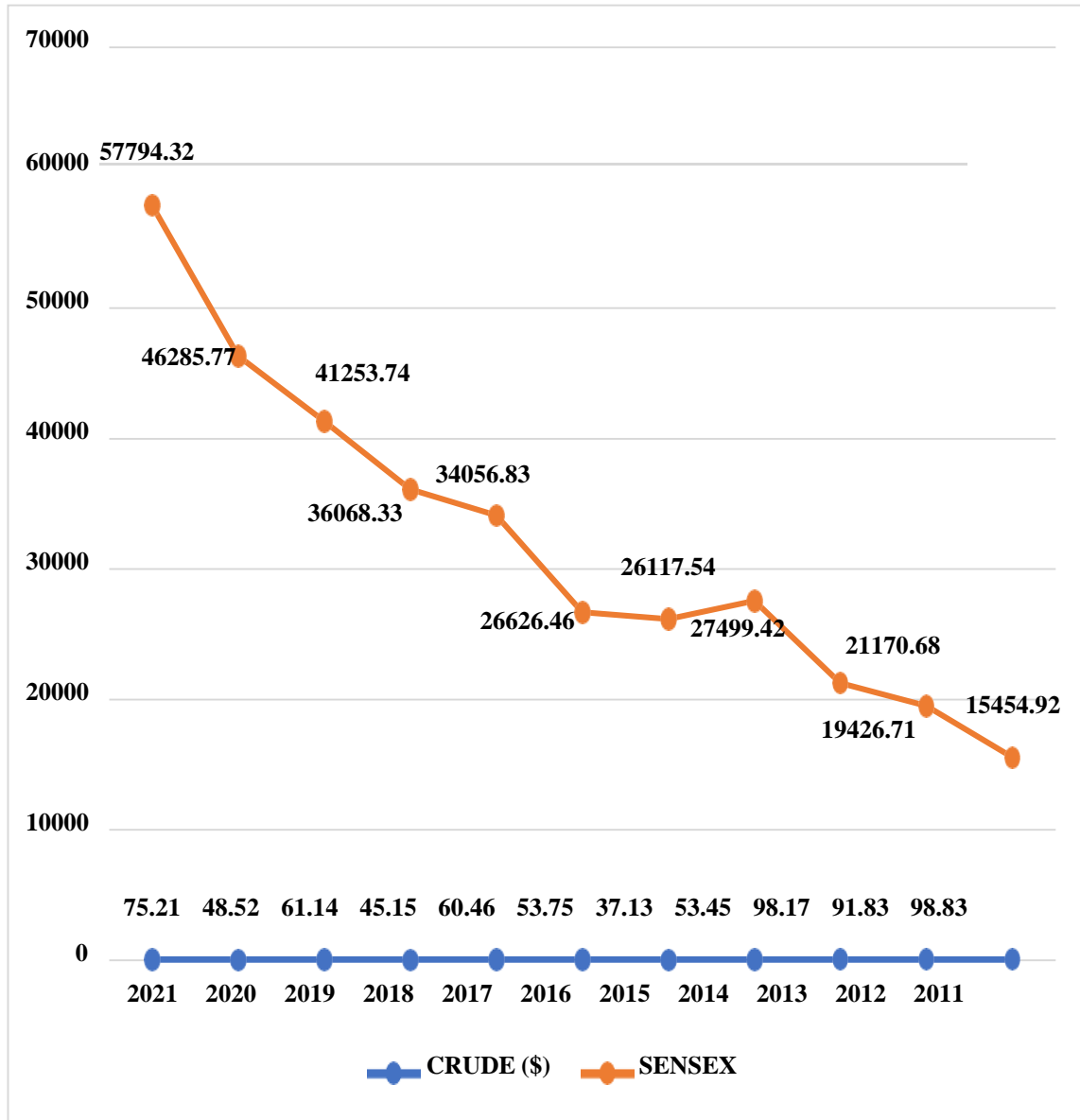
Here from the Pearson's correlation is -0.414 which means nifty fifty have moderate degree of correlation with crude oil price. When the crude oil price was increases nifty fifty will be decreased by 0.414 times. In this case when NSE is 1.000000 and crude oil is -0.414. Then when Crude oil is -0.414 and NSE is 1.000000 so on. Thus, there is negative correlation between NSE and Crude oil. The crude line is oppositely related to the movement of the Nifty.

4.3 SENSEX AND CRUDE

Table No.4.3– Showing price movement of Crude and Sensex

YEAR	CRUDE (\$)	SENSEX
2021	75.21	57794.32
2020	48.52	46285.77
2019	61.14	41253.74
2018	45.15	36068.33
2017	60.46	34056.83
2016	53.75	26626.46
2015	37.13	26117.54
2014	53.45	27499.42
2013	98.17	21170.68
2012	91.83	19426.71
2011	98.83	15454.92

Fig No.4.3 Showing price movement of Crude and Sensex



Interpretation

Variables	Sensex	Crude
Sensex	1.00	-.388
Crude	-.388	1.00

Here Sensex is moving downtrend while crude oil increases. As well as Sensex increases when the crude decreases. From the 2015 Sensex start to rise till 2021 because of the Dollar became strong against Euro. So, the chart (fig.4.3.) showing Sensex and crude are in negative relationship. After the analysis the table Karl Pearson correlation coefficient is showing 0.388. When the crude oil decrease the Sensex will be increase by -.388.

There are many sectors and industries are depending on the crude oil and its by-products. Here only taking two companies from one sector to show how the crude oil price was affected that each company. So, this data showing how each company are affected when the crude price was changed.

4.4 AUTOMOTIVE SECTOR

Apollo Tyres

Apollo Tyres is a Indian multinational company which focused in tyre's manufacturing. It was established in 1972 headquarters in Gurugram. Onkar Kanwar and Neeraj Kanwar are the key people of Apollo tyres. Apollo tyres is one of the most leading manufacturing companies in tyres and tubes. They started their production at Perambra in Kerala in the year of 1977. The main purpose of their company is enabling excellence. They focused in the production of truck tyres in India They expanded their business across India. Driving progress and together are the vision of the Apollo Tyres. They are the first Indian tyre company to launch exclusive branded outlets for truck tyres and also the first Indian company to introduce radial tyres for the farm category. They are listed the company is the national stock exchange and Bombay stock exchange. Now its current market price in NSE is 245.30 and in BSE is 245.55.

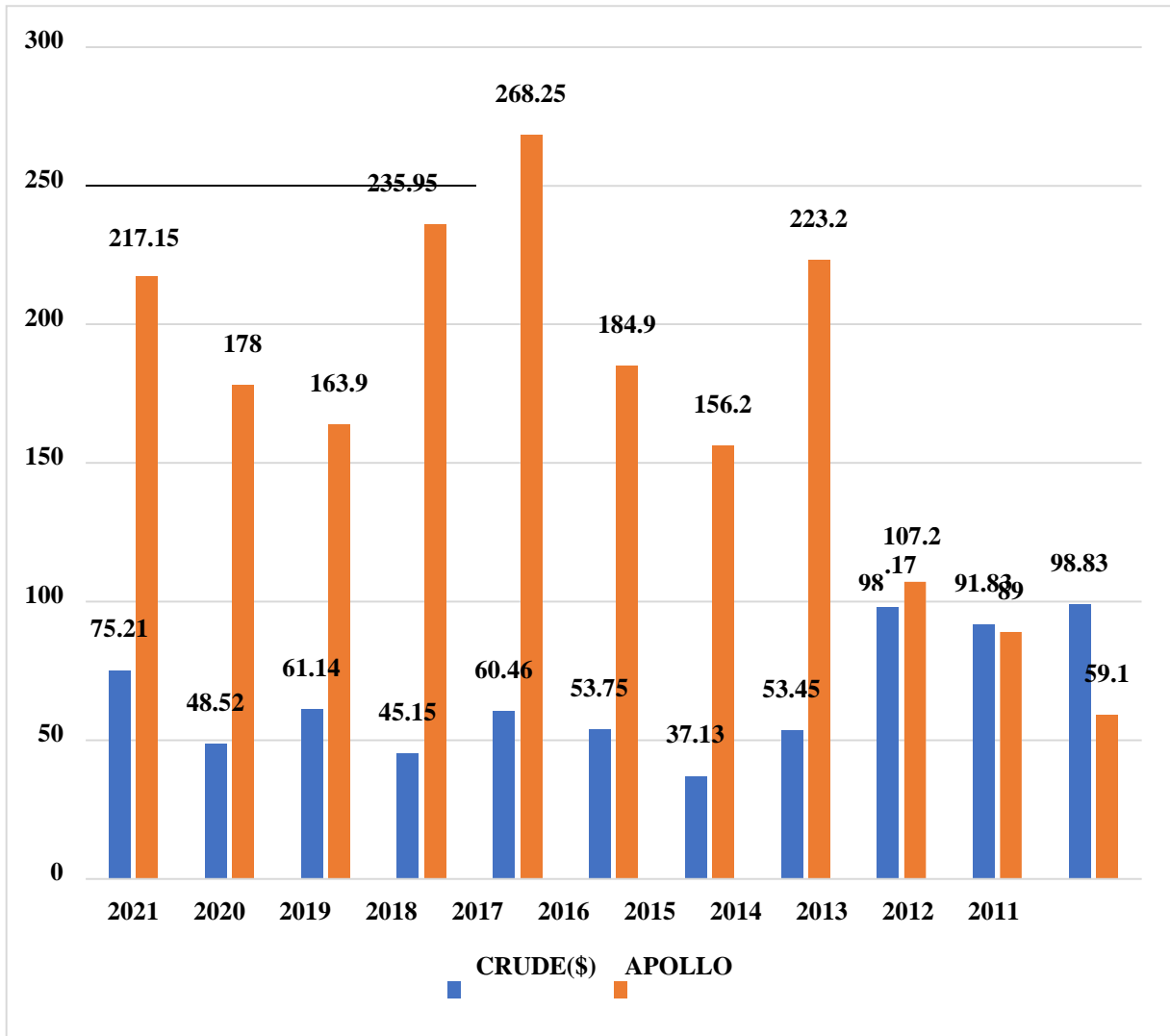
Apollo Tyres uses Corporate Social Responsibility as a business model. Corporate Social Responsibility helps the company to maintain a relationship with environment and to the people. So, the companies are accountable to the society. Here the apollo tyres company extended their services to healthcare for trucking community, Solid waste management and sanitation. Livelihood for the under- privilege women and biodiversity conversion, Disaster relief. It makes a relief and interest on about the company. Its diversity its business to more businesses. They also took the initiate for philanthropy. Apollo Tyre's management system are providing safety absolutes which means to address the risk of the value chain. For this system they are providing proper training and classes. Through the program of speak up they are intended to reinforce the new safety measures.

Apollo tyre's promoters holding is huge than non-promoters. But in the case of non-promoter's case foreign institutional have the large holding than promoters. The capital structure of the authorized capital of the Apollo tyre is 75 and the issued capital is 63.51. From the 2015 onwards company increased the amount of dividend from 75 to 200. In 2021 the dividend per share of the Apollo tyres is 3.50.

Table No.4.4. Showing the price of Apollo and Crude

YEAR	CRUDE(\$)	APOLLO
2021	75.21	217.15
2020	48.52	178
2019	61.14	163.9
2018	45.15	235.95
2017	60.46	268.25
2016	53.75	184.9
2015	37.13	156.2
2014	53.45	223.2
2013	98.17	107.2
2012	91.83	89
2011	98.83	59.1

Fig No.4.4 – Showing price movement of Apollo and Crude oil



Interpretation

Variables	Apollo	Crude
Apollo	1.00	-.687
Crude	-.687	1.00
Result from SPSS Ver.26		
Correlation is significant at the level of 0.010(1- tailed)		

The above table 4.4 is showing the price changes of last 11 years from 1st January 2011 to 31st December ,2021. The Fig.4.4 is showing the price movements of the Apollo tyres in the last 11 years. On the basis of the table 4.4 and chart 4.4 shown and analyse the relationship between crude and Apollo tyres using the statistical technique called Karl Pearson's correlation.

Here the Pearson's correlation is -0.687 . It shows strong negative correlation between crude price and Apollo Tyres. Besides that the significant value is 0.010 which is below the acceptable value. So the correlation is showing there is a significant relation is existing between the Apollo tyres price and crude oil's price

4.5 J. K TYRE

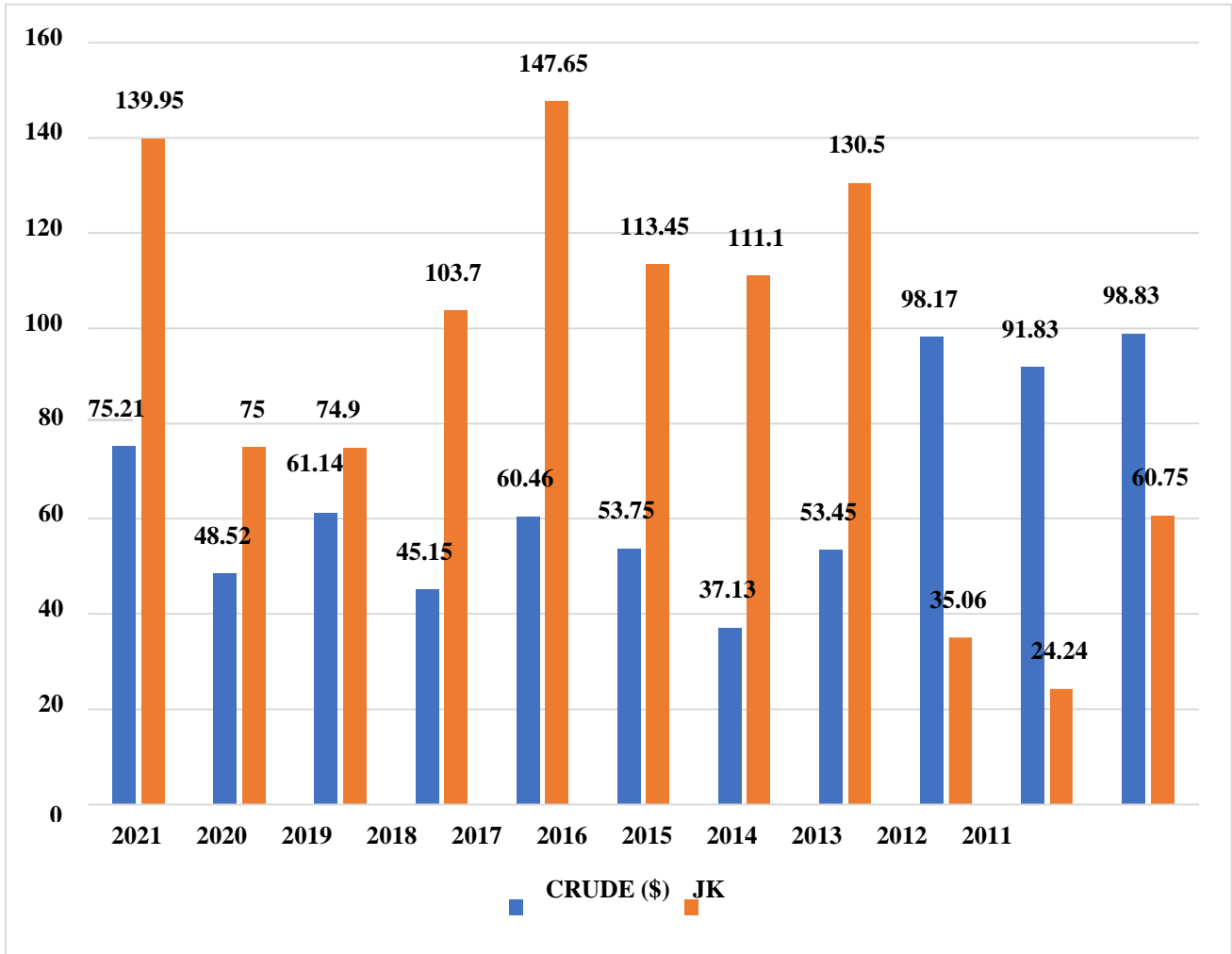
JK Tyre is India first ever smart tyre technology and that they also introduced Tyre Pressuring Monitoring System (TPMS). It offers TREEEL sensors which monitors the tyre's statistic including pressure and temperature. It founded within the year of 1951. JK tyres is stands for JuggilalKamlapat Ji Tyres and industries limited. Arun Kumar Bajoria is that the President of the JK Tyres. JK tyre is one among the leading company in bus, truck and cars .They are progressing to be amongst the foremost trusted companies with a worldwide tyre brand. JK Tyre has been at the forefront in driving innovation and excellence within the tyre industry through introduction of ground- breaking technologies and products that cater to diverse business segments within the industry. JK providing the four services are warranty policy, Heal the wheel, tyre car centre and fleet management. Social responsibility of the JK Tyres is when the covid pandemic period was a worldwide crisis for all. At that point also JK Organization has committed INR 10 Cr for the fight against Covid-19. Over the past few weeks several initiatives are implemented. JK Tyres may be a responsible corporate and giving back to the community and central to the culture of the corporate.

In 2011 JK tyre got the award Gold Award from Quality Circle Forum of India (QCFI) 2011-2012 and Kaizen gold award forum CCQFCI,2011-2012. The cashflow of JK from operating activity is year by year it increasing. In the last year the profit also increased from 85.17 to 395.6. When the cashflow from operating activity it showing the company generated good number of profits in that year. The operating profit ratio of the JK tyre in the year of 2011 is 34.56 which is 8.16 percentage increase from the 2010. The authorized capital of the JK tyre is 125, the issued capital is 49.25 and the paid-up capital is 29.25. So JK tyre manufacturing company is a one of the successfully running business in India and Mexico.

Table.No.4.5– Price movement of JK and Crude

YEAR	CRUDE(\$)	JK
2021	75.21	139.95
2020	48.52	75
2019	61.14	74.9
2018	45.15	103.7
2017	60.46	147.65
2016	53.75	113.45
2015	37.13	111.1
2014	53.45	130.5
2013	98.17	35.06
2012	91.83	24.24
2011	98.83	60.75

Fig No.4.5 – Price movements of JK and Crude



Interpretation

Variables	JK Tyres	Crude
JK	1.00	-.620
Crude	-.620	1.00
Result from SPSS Ver.26		
Correlation is significant at the level of 0.021(1- tailed)		

The chart 4.5 is showing the movement of the crude oil price and JK tyres. Fig.4.5 shows while crude start to fell down, JK tyres is moving uptrend. From the statistical table 4.9 it also showing the negative results. As per Pearson correlation it is -0.620 . It showing strong negative relationship between them. Hence the crude decreases JK tyres will be increased by 6.20 times. As well as the p –value is showing crude’s price and JK Tyre’s price have a significant relation between them. From these two companies’ stocks of tyre industry from the automotive sector the when the crude oil price was down the sectoral stocks start to move uptrend. So, it shows a negative relationship between crude oil price and JK Tyre and Apollo tyres.

4.6 SUGAR SECTOR

BalrampurChini Mills Ltd

Balrampur Chini Mills Ltd is the largest sugar manufacturing company in India which established in 1975, Kolkata. Vivek Saraogi is the Chairman and Managing Director of the Balrampur Chini Mills. He is the former president of the Indian Sugar Mills. Balrampur Chini Mills is one of the first sugar manufacturing company which is diversifies its business to distillery and cogeneration. Their innovative approach to manufacturing has enabled to create a wide range of products like Ethanol, Alcohol, Molasses and Bagasse to power generation. Balrampur Chini Mills have the crushing capacity of 77500 tonnes and for the distillery capacity 560kl per day and the cogeneration capacity is 176MW. With a view to enhance ethanol production capacity in the country, the central government has notified two interest subvention schemes in 2018 and 2019 for molasses-based distilleries, under which interest subvention at the rate of 6% per annum or 50% of the rate of interest charged.

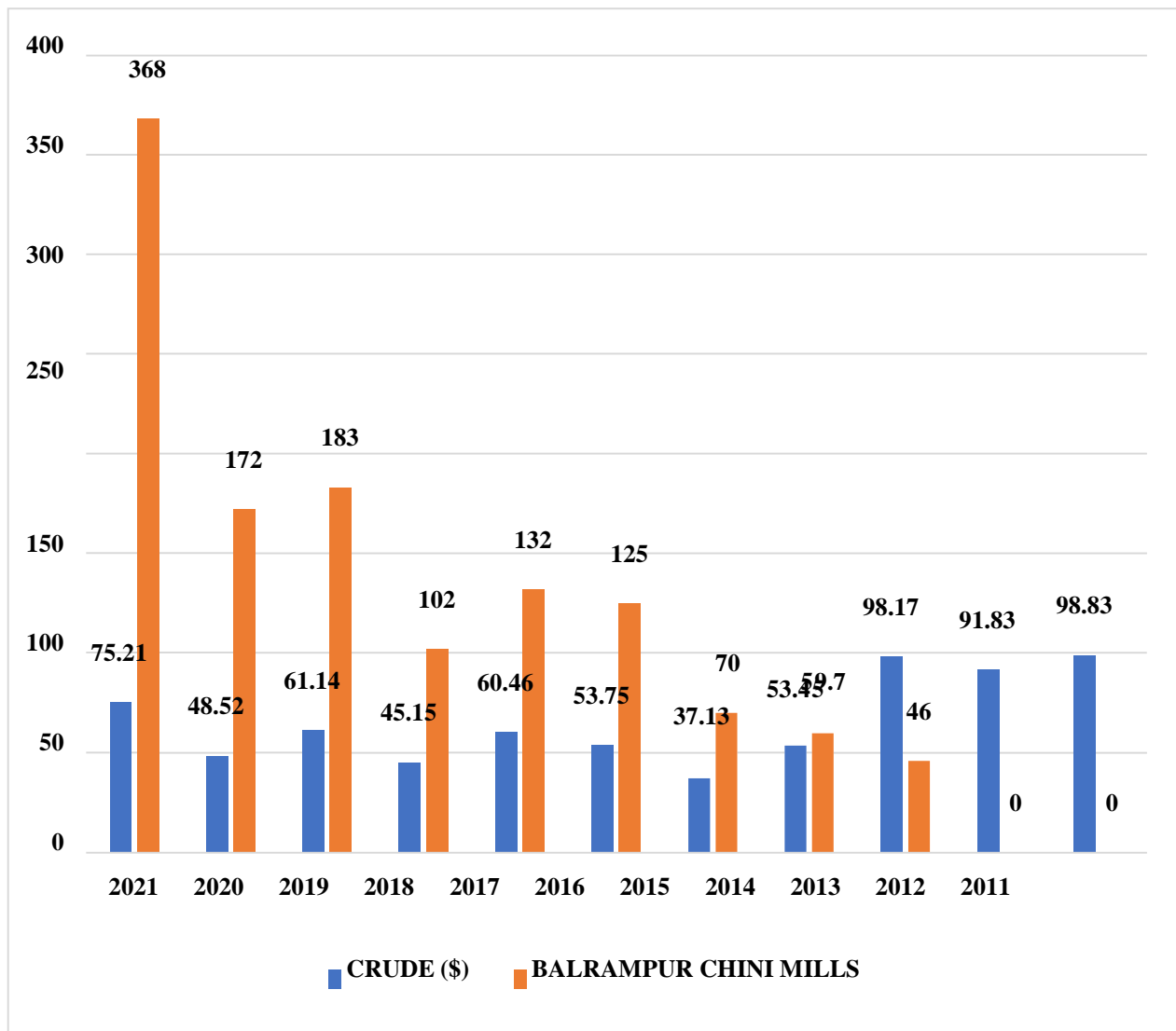
The products produced by the company are ethanol, sugar, alcohol, power, bagasse Agri inputs. Sugar is an integral part of the human diet and 80% of the people are using this ingredient in their daily life. Sugar industry is the largest manufacturing company in India. Balrampur Chini operates ten sugar factories across the cane rich belts of eastern and central Uttar Pradesh. The company acclaimed for being one of the most efficient sugar manufacturers in the country and for the best sugar quality standards. For this they enabled coherent operations and strict quality checks. They engaged in the mechanised farming for the better yields. The company's distillery capacity is majorly dedicated to the production of ethanol for blending with petrol and is supplied to oil marketing companies. For this Balrampur Chini have four distilleries in Balrampur, Babhnan, Mankapur and Gularia with distillery capacity of 560 KLPD. The company strives to improve its operational efficiency and scale output that would aid in larger benefit of all stakeholders. The earning per share of the Balrampur Chini is 25.22.

Balrampur Chini is also produces bagasse. It is a primary source of fuel in sugar mill. It is used as a biofuel for the production of heat, energy and electricity.it is usually combusted in furnaces to produce steam for power generation.BalrampurChini believes that green strategies are necessary for industrialoperation and are a catalyst for innovation. The company has a co-generation capacity of 278.47megawatts. Bagasseis another waste of the sugar manufacturing fuel.it is used as a fuel source for sugar mills themselves for producing renewable energy thereby reducing the usage of fossil fuels and contributing to the reduction of greenhouse gases.

Table No. 4.6 – Showing Price Fluctuations of Balrampur Chini Mills and Crude

YEAR	CRUDE (\$)	BALRAMPUR CHINI MILLS
2021	75.21	368
2020	48.52	172
2019	61.14	183
2018	45.15	102
2017	60.46	132
2016	53.75	125
2015	37.13	70
2014	53.45	59.7
2013	98.17	46
2012	91.83	0
2011	98.83	0

Fig No.4.6 – Showing price movement of Balrampur Chini Mills and Crude



Interpretation

Variables	Balrampur Chini Mills	Crude
Balrampur Chini Mills	1.00	.164
Crude	.164	1.00
Result from SPSS Ver.26		
Correlation is not significant at the level of 0.336(1- tailed)		

In the case of the Balrampur Chini Mills the fig 4.6 showing a positive relationship between them. The statistics also showing the same. As per Pearson's correlation coefficient it is .164. Between the two crude and Balrampur Chini have only a small correlation. But the significant level is 0.336 which is above the acceptable value 0,05. It means there is no significant relation between the Balrampur Chini's price and Crude oil's price.

4.7 DALMIA BHARAT SUGAR AND INDUSTRIES LTD.

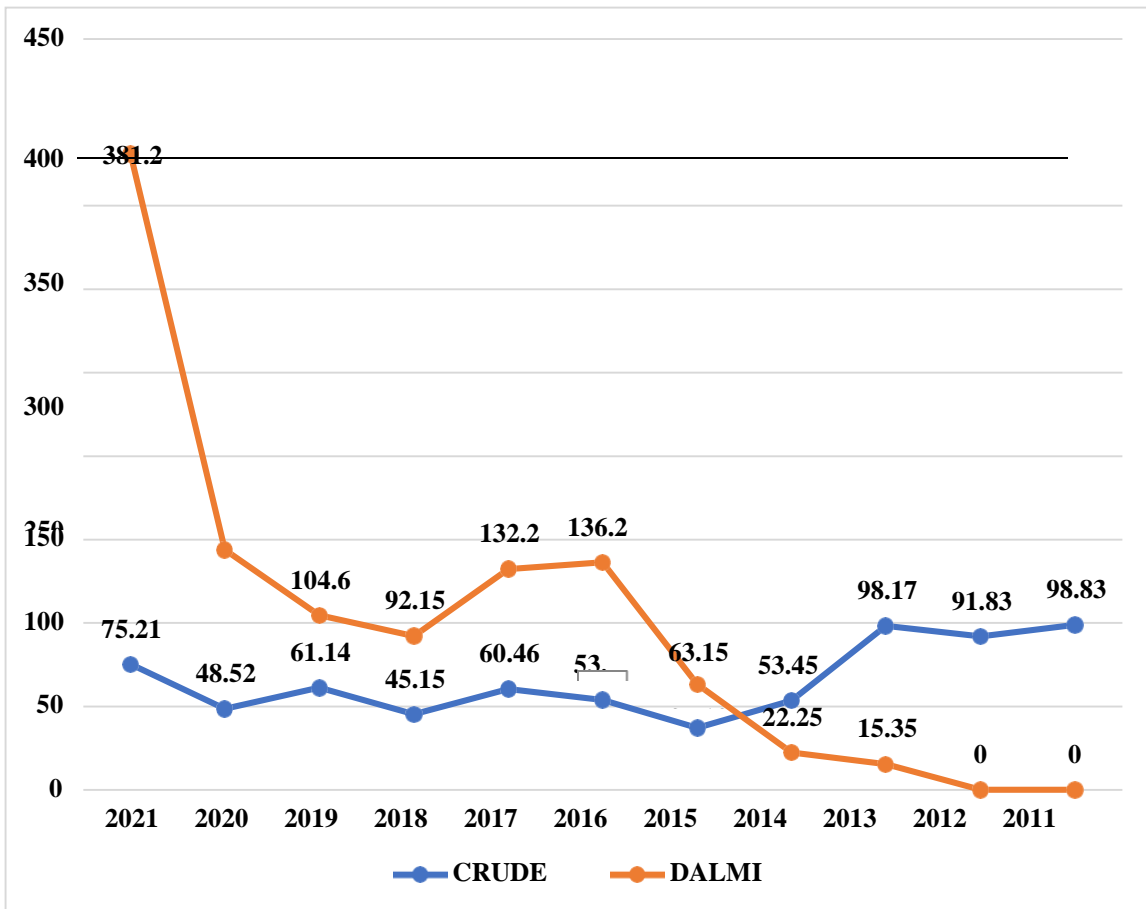
Dalmia is an Indian Conglomerate. Dalmia is diversified its business to different industries sugar industry is one of them. Now Dalmia Sugar is a leading fastest growing sugar industry. It has a robust quality system. After having received wide acceptance for its world-class systems it now produces high quality sugar which has found wide acceptance in markets in all over India. Dalmia is under the leadership of the Gautham Dalmia. It is consistently performing well beyond the expectations. Their vision is to be amongst the top two players in the sugar industry based on EBITDA. It is a major producer of the green power in the sugar industry. They are taken up several initiatives to derive sustainable growth through water conservation and alternative energy solutions. This led to a everlasting competitive advantage and efficiency in all aspects of operations. They are working with strong cultural connect, commitment and jashaa over last 80years. Now Dalmia is a leading contributor to global sustainability efforts through their philosophy of clean and green is profitable and sustainable.

The total cane crushing capacity of the corporate is 35500TCD which makes it one in every of the leading sugar manufacturing producers in India. Dalmia could be a fully integrated player with 120MW of co-generation capacity and a distillery of 255klpd together with incineration boilers. It also facilitates for processing of raw sugar. Dalmia sugar may be a preferred sugar supplier Brand enhancing institutional giants like, coco cola, PepsiCo, Mondelez, Britannia, Walmart, Dmart etc. They also export their products to Indonesia, Malaysia, land etc. Dalmia haunted several initiatives to drive sustainable growth through conservation and energy solutions. This has led to the lasting competitive advantage and efficiencies altogether aspects of operations. Their integrity guides them to run successfully.

Table No. 4.7 – Showing price fluctuations of Dalmia and Crude

YEAR	CRUDE (\$)	DALMIA
2021	75.21	381.2
2020	48.52	143.9
2019	61.14	104.6
2018	45.15	92.15
2017	60.46	132.2
2016	53.75	136.25
2015	37.13	63.15
2014	53.45	22.25
2013	98.17	15.35
2012	91.83	0
2011	98.83	0

Figure No. 4.7 – Showing price movement of Dalmia and Crude



Interpretation

Variable	Dalmia	Crude
Dalmia	1.00	.124
Crude	.124	1.00
Result from SPSS Ver.26		
Correlation is not significant at the level of 0.375(1- tailed)		

From Sugar sector here took two company stocks as called BalrampurChini and Dalmia Bharat Sugar Industries Ltd. In the case of the interpretation of Balram , while the crude oil is increasing sugar price gone up and when the crude is decreasing sugar went down. From the Fig. 4.7 in the year of 2017 to 2018 when the crude if moving down at the same time Dalmia's price also down. The table 4.7 the statistics of Karl Pearson correlation is saying there is not that much relation between sugar and crude. In the case of Dalmia the correlation coefficient is -.124. i.e. there is only low degree relationship is existing.

That means the crude oil market and sugar sector have only a small relation. The price of the crude oil is not much affected the sugar industry. Besides that the significant level of the correlation is showing there is no significant relation between them. Because the tolerable significant level here is 0.375 ,it is above the acceptable value.

4.8 PAINT SECTOR

ASIANPAINTS

The company has come a long way since its beginning in 1942. Four friends who were willing to require on the world's, most famous paint companies operating in India at that point set it up as a partnership firm. Over the course of 25 years, Asian Paints became a company force and India's leading paints company. Driven by its strong consumer-focus and innovative spirit, the corporate has been the market leader in paints since 1967. Asian Paints became a company force and India's leading paints company. Driven by its strong consumer-focus and innovative spirit, the corporate has been the market leader in paints since 1967. Today, it's double the dimensions of the other paint company in India. Asian Paints manufactures a large range of paints for decorative and industrial use and also offers wall coverings adhesives and services under its portfolio. Asian paints is that the India's largest and Asia's third largest and world's largest paint industry. It incorporated at 1945. Asian paints is running successfully over these years.

Most people choosing Asian paints thanks to expert advice, providing trained professionals, dust free mechanised painting, superior finish, full home cleaning painting and Asian paints warranty. they're providing services like safe painting services interior design service, colour consultancy online, large painting project, wood solution and waterproofing solutions design wall makeover, quick home makeover. For the designing they providing experienced designers. Asian paints diversified their business into a large range. Now they're doing paints and textures, wallpapers, decorations, consultations on colours, materials, interior walls and that they also started business on health and hydrines like sanitizers, anti-bacterial paints, floor cleaners etc.

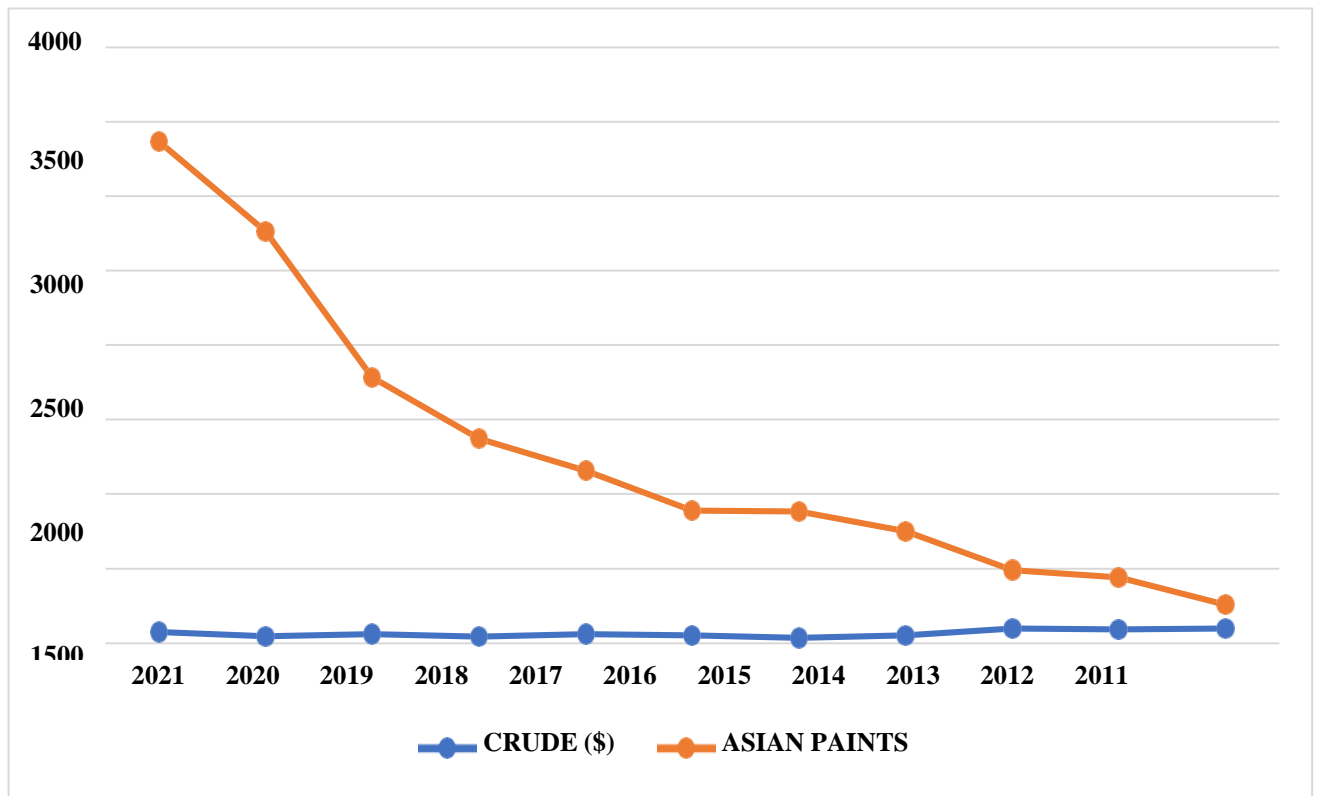
Asian paints are the largest paint manufacturing ring company and listed in stock exchange. It listed in national stock exchange and Bombay stock exchange. Currently Asian paint is running at more than 3000 rupees. Cashflow from operating activity is increasing year by year. In the last year the cashflow from operating activity is 3459.50. When comparing to the

year 2020 it was increased by 1052.03. And in 2019 it was 2395.25. At the same time the profit before tax also increasing by year by year. When the company can generate and meet the expenses for the daily activities then they can generate profit as well.

Table No.4.8 – Showing price fluctuations of Asian paints and Crude

YEAR	CRUDE (\$)	ASIAN PAINTS
2021	75.21	3365.7
2020	48.52	2764.5
2019	61.14	1784.95
2018	45.15	1373.05
2017	60.46	1158.5
2016	53.75	891.05
2015	37.13	883.55
2014	53.45	752.3
2013	98.17	490
2012	91.83	443.26
2011	98.83	259.23

Fig.4.8 – Showing price movement of Asian paints and Crude



Interpretation

Variables	Asian paints	Crude
Asian paints	1.00	-.314
Crude	-.314	1.00

Result from SPSS Ver.26

Correlation is not significant at the level of 0.173(1- tailed)

The Fig 4.8 showing the little changes in the crude made in Asian paints. After the analysis of relation, we got the correlation is -0.314 . The correlation range is actually from $+1$ to -1 . $+1$ showing the positive relationship and the $-$ is showing the negative correlation. Here their relation was lies at -0.314 i.e. Asian paints are negatively correlated to crude oil. But there is only a moderate degree of relationship is existing. The significant level of the correlation showing there is no significant change occurring to the price of Asian paints due to the changing price of crude oil. Because the p-value is less than acceptable value.

4.9 KANSAI NEROLAC PAINTS LTD.

Kansai Nerolac is one in every of the biggest paints & coatings companies in India having a major presence in industrial and ornamental paints sectors. They embarked their journey in 1920 as Gahagan Paints and polish Co. Ltd. at Lower Parel in Bombay. In 1930, three British companies merged to formulate Lead Industries Group Ltd. Kansai Nerolac is one amongst the most important paints & coatings companies in India having a major presence in industrial and ornamental paints sectors. Kansai Nerolac Paints Ltd (KNPL), a subsidiary of Kansai Paints Co Ltd, could be a paints and coatings company. It offers a broad range of products such as decorative paints and coatings to offices, homes, hospitals and hotels, and industrial coatings to various industries. The company's products find application in automotive, chemicals, construction, general industrial and agricultural sectors.

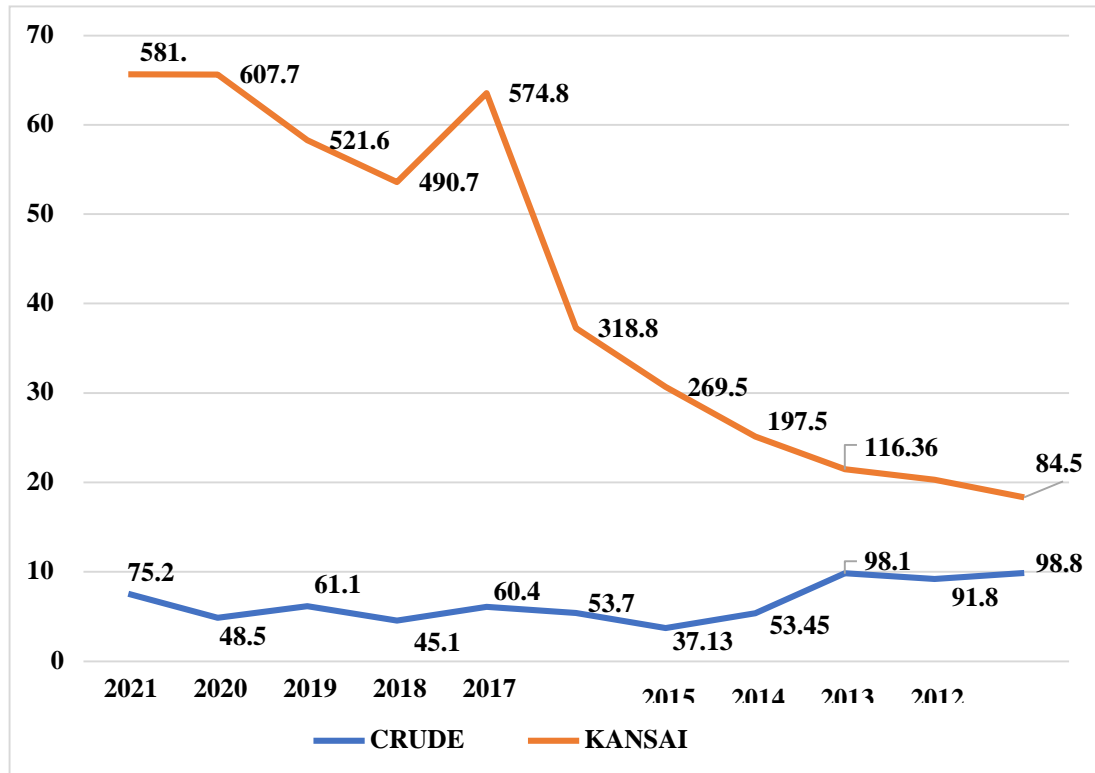
Kansai was incorporated at 1920 as Gahagan paints and Varnish company. Later it merged as Kansai Nerolac. Now it is a leading paint company in India. In India Kansai is situated in different states like Assam, Goa, Gujarat, Haryana, Madhya Pradesh, Himachal Pradesh, West Bengal, Orissa, West Bengal, Rajasthan etc. The company engaged in a manufacturing of automotive coating, general industrial coating, high performance coating, and powder coating also. But their all-brand names such as Excel, Beauty, Impressions, Suraksha. Kansai technically collaborated with two companies kansai paint company and Oshimo Kogyo company of Japan. Companies research and development mainly focuses on improving its manufacturing processes and innovate company's product.

In 1920 company was incorporated. In 1930 lead group industries established by the merging of three British companies and after three years that it acquired 100% of the Gahagan paints and in 1976 after the acquisition of the GoodlassNerolac paints it became part of the Tata Forbes group. And in 1983 it enters into technical collaboration with kansai paint company and then they went to public listing. In 2012 Kansai Nerolac paints got awarded for Best Vendor Performance.

Table No.4.9 – Price fluctuations of Kansai Nerolac and Crude

YEAR	CRUDE (\$)	KANSAINEROLAC
2021	75.21	581.5
2020	48.52	607.75
2019	61.14	521.65
2018	45.15	490.75
2017	60.46	574.85
2016	53.75	318.87
2015	37.13	269.53
2014	53.45	197.55
2013	98.17	116.36
2012	91.83	110.98
2011	98.83	84.54

Figure No.4.9 – Price movement of Kansai Nerolac and Crude



Interpretation

Variables	Kansai Nerolac	Crude
Kansai Nerolac	1.00	-.552
Crude	-.552	1.00
Result from SPSS Ver.26		
Correlation is significant at the level of 0.039(1- tailed)		

In paint industry 55% of the raw materials are used from crude oil. So of course, the rise in the crude oil adversely affects the paint industry. When the crude oil is increased paint price will be down and vice versa. As per the statistical table 4.9 the Pearson correlation is showing -

.552. Here it shows a high degree of relationship between the crude and Kansai Nerolac. There is a negative relationship between the paint industry and crude. From the fig 4.9 it shows also a clear variation in the movement of the crude affecting the paint industry.

From these paint sector, two companies are taken and estimated the relationship is negatively correlated. But the p-value of the Asianpaints is 0.173 it saying there is no significant change and the Nerolac showing there is significant change in the price of Kansai Nerolac due to the fluctuations in the price of crude oil

4.10 AVIATION SECTOR

JET AIRWAYS

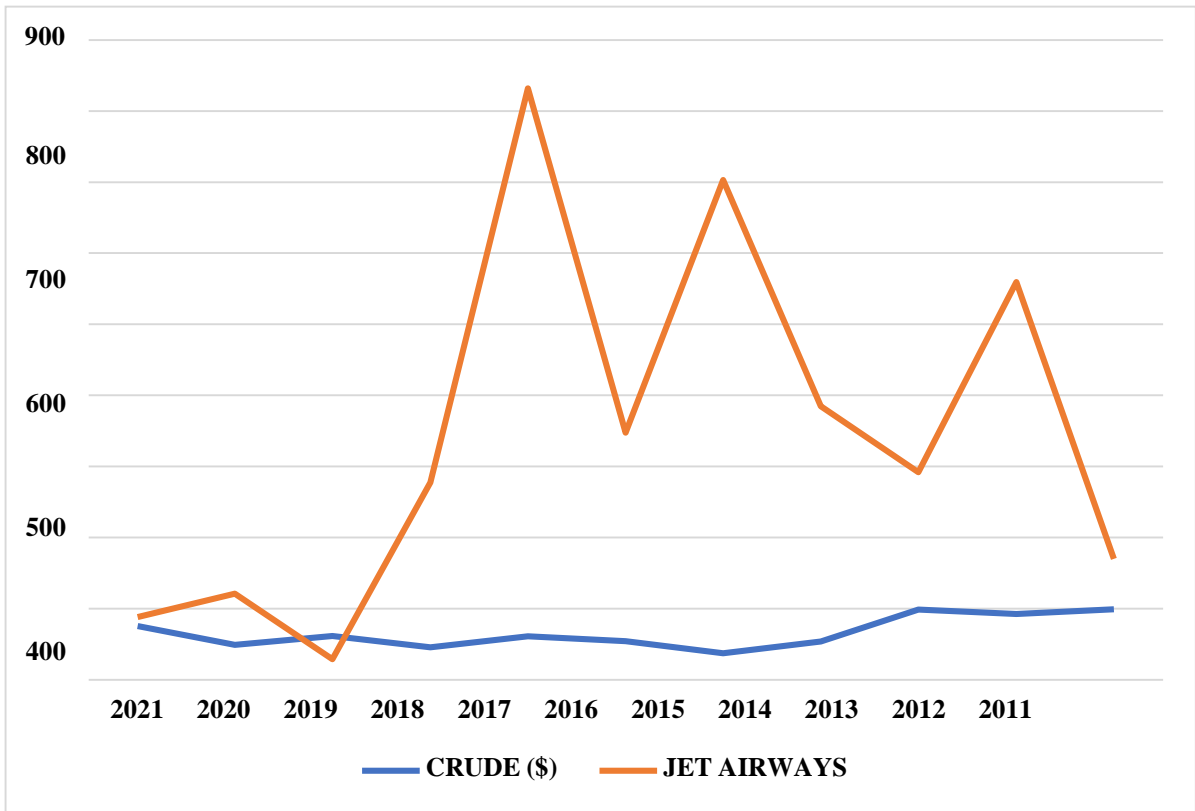
Jet Airways was launched as a premium air travel in 1993. Jet Airways was one of the largest airlines in India with hubs at Mumbai, Delhi, Chennai and Amsterdam airports. It flew over 65 countries in world like Europe, Middle east, southeast Asia etc. Jet Airways is awesome as the tagline 'The Joy of Flying'. The carrier operated an extensive domestic and regional network within the subcontinent, and previously operated services to Europe, the Middle East, Southeast Asia and North America. Jet Airways closed reservations to international services, effective 12- Apr-2019. Subsequently, the carrier suspended all operations from 17-Apr-2019 citing financial issues. Jet Airways launches its first inter-continental flight by linking Mumbai with London Heathrow by a non-stop day flight here on May 23, 2005.

The company underwent a corporate insolvency resolution process under the law. After several rounds of bidding, the Jalan-Kalrock Consortium emerged as the successful resolution applicant for Jet Airways in June 2021, giving the airline a new lease of life and paving the way for its revival. They are creating the history of restarting the company again after the suspended operations for a long time. They running by their golden principle as Do unto others as you would have them do unto you. Put yourself in the shoes of the other, and do the right thing every time, using decency, compassion, empathy, logic, a strong moral compass, and common- sense.

Table No.4.10 Showing price fluctuations of Jet Airways and Crude

YEAR	CRUDE(\$)	JET AIRWAYS
2021	75.21	87.9
2020	48.52	120.95
2019	61.14	29.05
2018	45.15	277.45
2017	60.46	831.95
2016	53.75	347.6
2015	37.13	702.85
2014	53.45	384.5
2013	98.17	291.9
2012	91.83	559.3
2011	98.83	170.05

Fig No.4.10 – Showing price movements of Jet Airways and Crude



Interpretation

Variables	Jet Airways	Crude
Jet Airways	1.00	-.194
Crude	-.194	1.00
Result from SPSS Ver.26		
Correlation is not significant at the level of 0.284(1- tailed)		

In the aviation sector the movement of the crude and jet airways. Whenever the crude is increasing jet airways will be coming down. Karl Pearson's correlation coefficient is also showing only a small level of negative relationship when measuring the correlation by entering data. It estimates a low degree relationship between the two. Here as per the results it is showing the correlation as -0.194 . But the significant level is 0.284 which is above the acceptable value. So this study showing their relation has no significance. Besides that the operation of Jet Airways was suspended for the last few years. So the price of the crude oil is not that much affected.

4.11 INTERGLOBE AVIATION LTD.

Interglobe aviation is the largest passenger airline with a market share of 56.9 percent. Their journey began in 2006. In the year of 2021 it is 1979.55. It is mainly run on the basis of three pillars offering low fares, being on time, delivering a courteous and hassle-free experience. It is an airline service provider in India. The company serves as a low-cost carrier through its Indigo brand. Indigo airlines cater to its customers through an official website and the IndigoGo App, enabling them to book airline tickets and travel packages. Its segments are Air transportation services and other income. The company earns its revenue predominantly through passenger ticket sales of the domestic airline operation.

As per the ranking of the world's best airline by Skytax as well as it also Indigo is voted as the fifth best low-cost airline in 2021. Skytax awards are based on customer surveys where airlines are ranked based on votes from travellers worldwide. They enhance the engagement with their passengers to augment their travel experience. Interglobe is a growing air travel with 279 aircraft with a network of 97 destinations worldwide. As an corporate governance they established a reporting system in all stakeholders can freely express clients concern via whistle blowing.

Table No.4.11 – Showing price fluctuations of Interglobe aviation and Crude

YEAR	CRUDE(\$)	INTERGLOBE AVIATION
2021	75.21	1979.55
2020	48.52	1723.3
2019	61.14	1333.55
2018	45.15	1165.05
2017	60.46	1205.5
2016	53.75	821.45
2015	37.13	1234.9

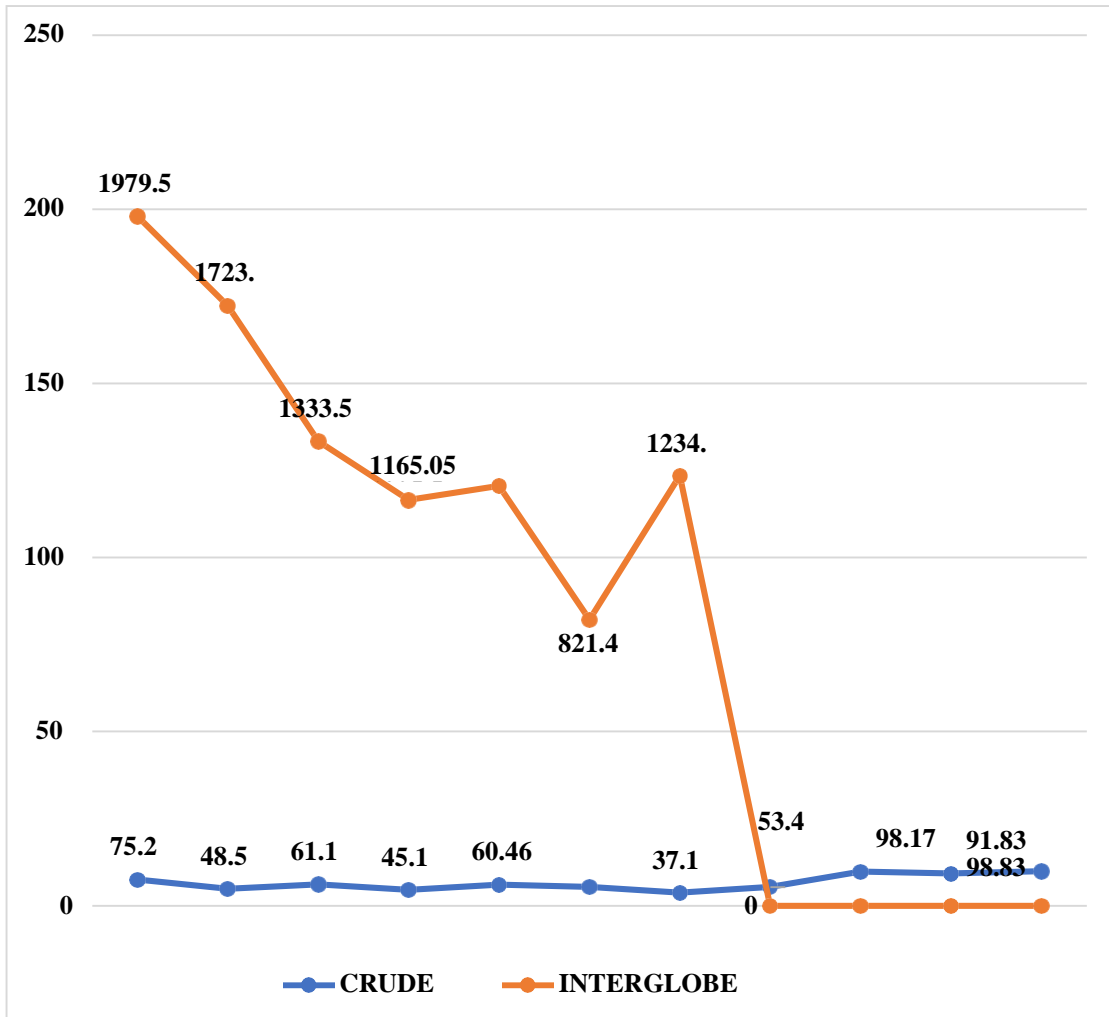


Fig No.4.11 – Showing price movements of Interglobe Aviation and Crude

Interpretation

Variables	Interglobe Aviation	Crude
Interglobe Aviation	1.00	.486
Crude	.486	1.00

Result from SPSS Ver.26

Correlation is not significant at the level of 0.134(1- tailed)

For the analysis of interglobe aviation here taken eleven years of data for every company. But here got only seven years of data of Interglobe aviation. Because Interglobe aviation is listed and gone to the public in 2015. Here the same airways are running through the petroleum derived jet fuels. The fuels are extracted from the crude oils. Whenever the crude price is increasing the aviation price is increasing and when the crude is fell down aviation stocks price is going down. From this chart Fig.4.11 represents a clear positive relationship between aviation sector and crude. Table 4.11 Pearson's correlation estimated at .486, it means a moderate degree of relationship lies between crude and Interglobe aviation. The p-value of these variables are above the acceptable value 0.05. Jet Airway's significant value is 0.284 and Interglobe aviation's is 0.134. So both are above the acceptable value and their relation is insignificant.

OIL AND GAS – Diesel

SWARAJ ENGINES

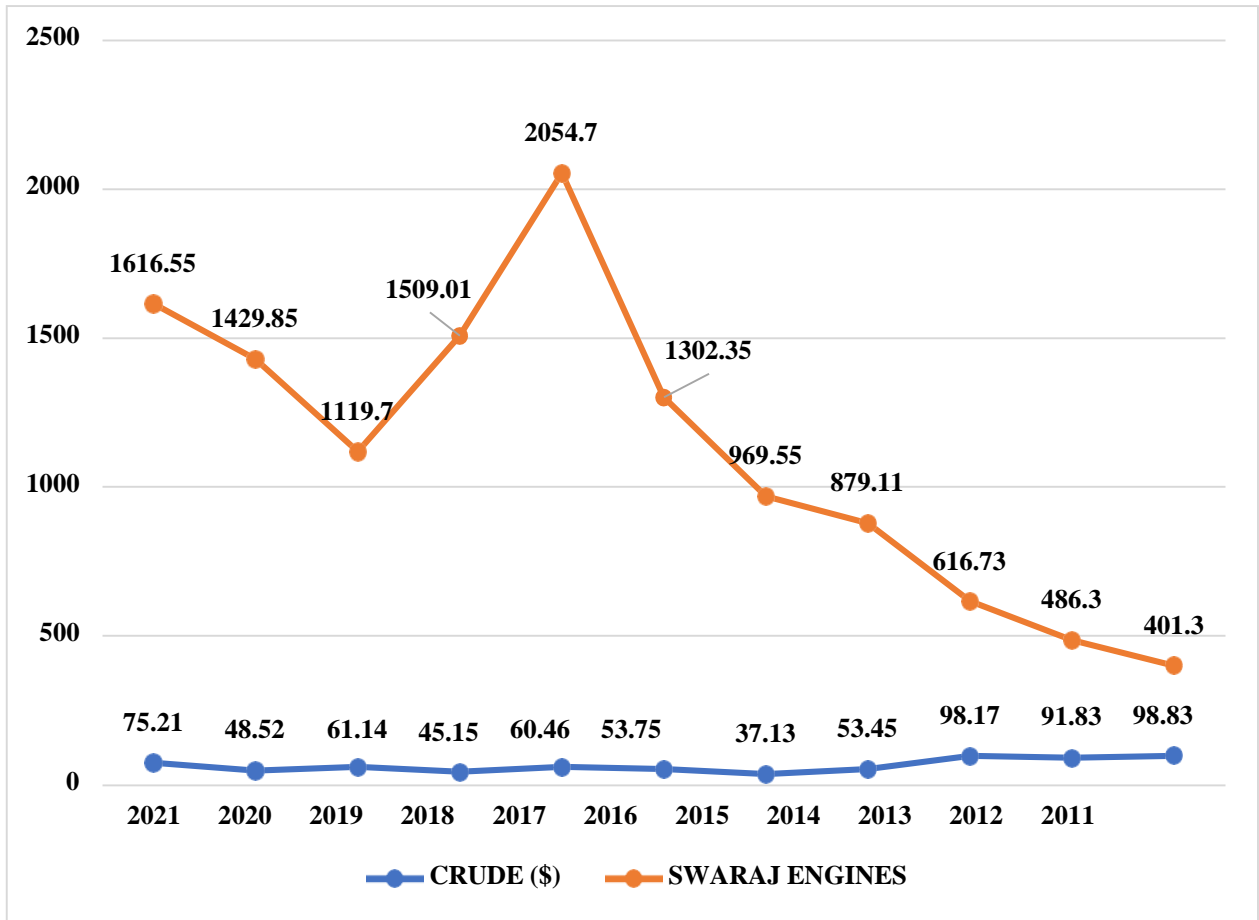
Swaraj engines was established at 1989. Swaraj Engines Limited is an India-based company, which is primarily engaged in the business of diesel engines, diesel engine components and spare parts. It manufactures diesel engines for fitment into Swaraj tractors, which are manufactured by Mahindra & Mahindra Ltd. (M&M). It supplies diesel engines in the range of approximately 22 horsepower (HP) to 65 HP. It is also manufacturing hi-tech engine components. The Company has supplied approximately 1.2 million engines for fitment into Swaraj tractors. It is promoted by erstwhile Punjab Tractors limited (since merged with Maharaj and Maharaj ltd.) and Kirloskar oil engines Ltd in 1985 SEL is into manufacturing and supplying od diesel engines in the range of 22HP to above 65 HP. The company is equipped with highly productive and precise quality analysing machines. It is also manufacturing high engines. Its turnover already crossed.

Swaraj Engines plant has the facilities to produce any model of swaraj product mix equipped with latest Hi-tech machines, ergonomically friendly material handling system MMC etc, equipped with 66KVA substation for preventing power interruptions there are the features of the Swaraj Engines. Its growth started from the first two engine rolled out in 1989, then they move to manufacture the three cylinders move to free then again start to manufacture the key components in the LCV business. They have the best infrastructure facilities like Makino A71nx machine, Universal length measuring machine., contour tester, Mazak machine etc. Recently 54 BHP engine was developed in 2015. Swaraj Engines are doing so many corporate social responsibilities such as initiatives for he skill development, initiative to women empowerment, livelihood earning support to differently abled children. Medical facilities, Swachh Bharat initiatives in adopted Villages – maintenance of public toilets and household garbage collections etc.. So now Swaraj Engines are on of the leading companies

Table No.4.12 - Showing price fluctuations of Swaraj Engines and Crude

YEAR	CRUDE(\$)	SWARAJ ENGINES
2021	75.21	1616.55
2020	48.52	1429.85
2019	61.14	1119.7
2018	45.15	1509.01
2017	60.46	2054.7
2016	53.75	1302.35
2015	37.13	969.55
2014	53.45	879.11
2013	98.17	616.73
2012	91.83	486.3
2011	98.83	401.3

Fig No. 4.12 – Showing price movement of Swaraj Engines and Crude



Interpretation

Variables	Swaraj Engines	Crude
Swaraj Engines	1.00	-.557
Crude	-.557	1.00
Result from SPSS Ver.26		
Correlation is significant at the level of 0.031(1-tailed)		

Fuels are mainly generated from the crude oil. So whatever changes occur to the crude will indirectly affecting to the fuel industries. Swaraj Engines price movement is showing also the same. when crude shows a slight changes to move uptrend swaraj engines start to fell down. Even after analysing the data . From the table 4 .12 Karl Pearson's correlation is -0.557 showing high degree of negative relationship between the diesel industry and crude. So, crude oil changes highly impacting the price movement of diesel industries. As well as the significant level is below the acceptable value. So it showing there is a significance in the relation of crude price and Swaraj Engine's price.

Oil and Natural Gas Corporation Ltd.(ONGC)

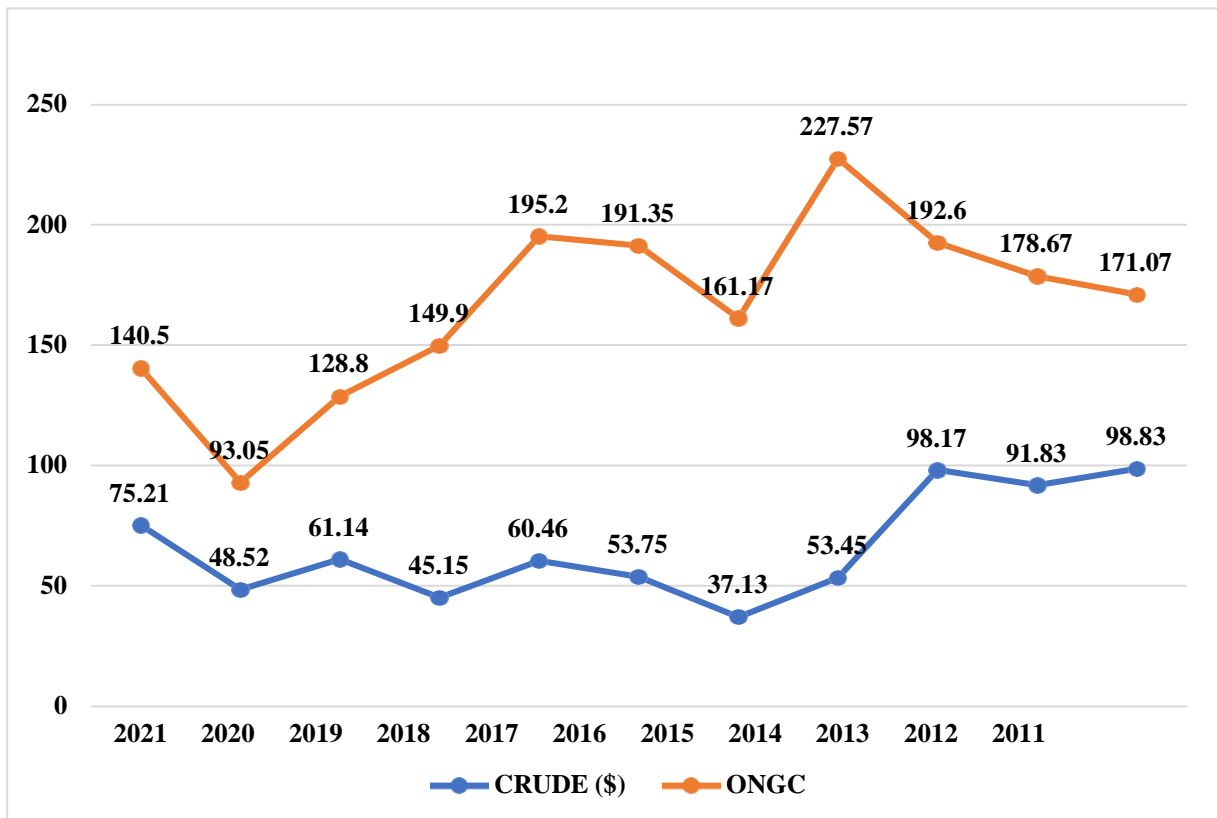
Maha Ratna ONGC is the largest crude oil and natural gas company in India. Crude oil is the raw material used by the downstream companies like IOC, HPCIL etc. ONGC is a unique distinction of being a company with in house service capabilities. ONGC has also implemented an enterprise-wide ERP implementation by the name of Project ICE. ONGC is one of the largest E&P Company in India with in-house service capabilities in all the activity areas of exploration and production of oil & gas and related oil-field services. The state-of-the-art technologies inducted and absorbed over the years such as depth domain processing, stratigraphic inversion, advanced volume-based interpretation tools, stochastic lithofacies modelling using neural network, spectral decomposition, geo- statistical modelling, etc. ONGC embarked upon realignment of its multi-faceted business activities through the powerful medium of Information Technology.

The IT mission was realigned 'To develop an integrated, flexible and standardized Information Technology architecture to position ONGC towards fundamental competitive advantage'. The existing standalone applications (UFSO – for Financial Management, SHRAMIK for Human Resource Management, IMMS for Material Management etc) and other legacy information systems were brought together under a common ERP platform. Thus, Project ICE, Information Consolidation for Efficiency was born, out of the strategic vision of the ONGC's board, particularly that of Mr. Subir Raha, the then C&MD with the motto of "One Organisation, One Data and One Information".

Table No.4.13 – Showing price fluctuations of ONGC and Crude

YEAR	CRUDE (\$)	ONGC
2021	75.21	140.5
2020	48.52	93.05
2019	61.14	128.8
2018	45.15	149.9
2017	60.46	195.2
2016	53.75	191.35
2015	37.13	161.17
2014	53.45	227.57
2013	98.17	192.6
2012	91.83	178.67
2011	98.83	171.07

Fig.No.13 - Showing price fluctuations of ONGC and Crude



Interpretation

Variables	ONGC	Crude
ONGC	1.00	.221
Crude	.221	1.00
Result from SPSS Ver.26		
Correlation is not significant at the level of 0.257(1-tailed)		

The fig 4.13 showing positive relationship between the crude and ONGC. ONGC shares gain on higher price of crude oil. Crude oil is the main raw material for producing petroleum products. So whatever changes happen to the crude price it will directly affecting the price of ONGC and diesel and petroleum-based products. On the basis of the analysis Table 4.13 showing the Pearson’s correlation coefficient is .221. That is there is a positive correlation lies between the ONGC and

Crude price. But the p-value is showing above the acceptable value. i.e, there is insignificant relation is existing between the crude's price and ONGC's price

4.14 SAVITA OIL TECHNOLOGIES LTD -Lubricants

Leading Indian provider of petroleum-related specialties is Savita Oil Technologies Ltd. The business sells a variety of goods, with a focus on Transformer Oils, White Mineral Oils, Lubricating and Automotive Oils, and Specialty Polymer Products. (Petroleum jellies, waxes, and emulsions). Additionally, Savita has a division for renewable energy that includes a portfolio centred on wind energy. Savita's main offices are in India, however 75 nations around the world are home to our partners and goods.

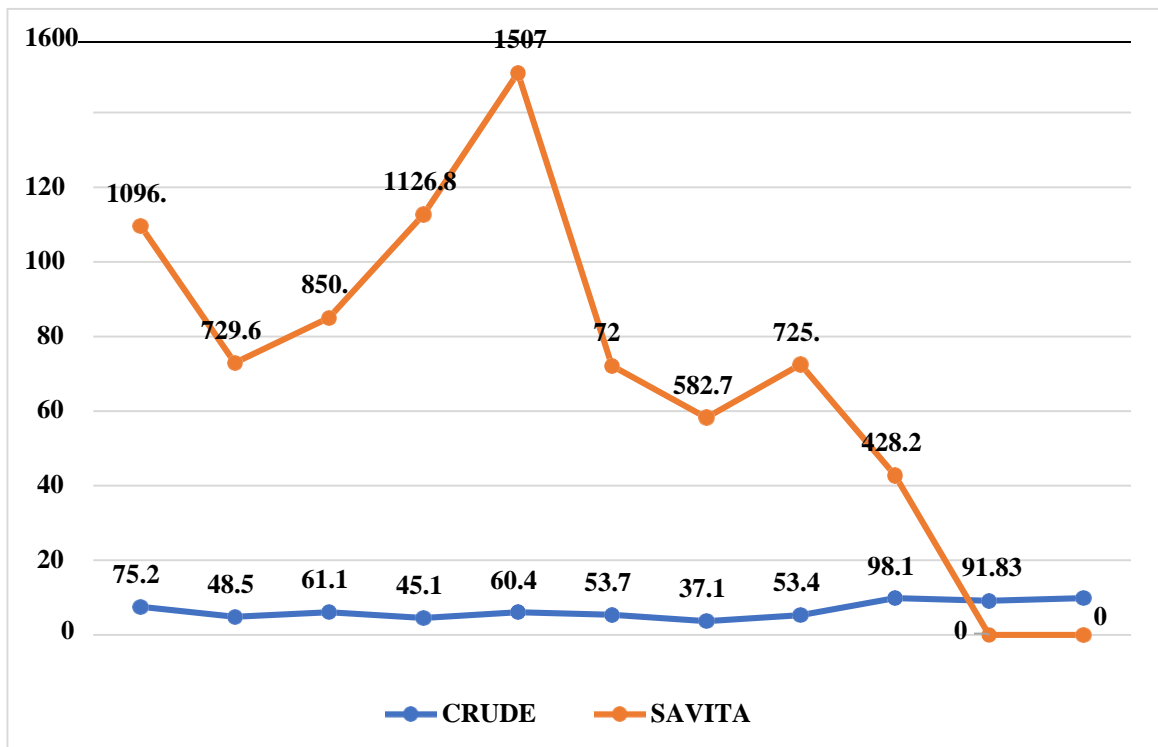
Their desire to deliver product solutions at Savita is motivated by their clients' needs created specifically for them. As they work to adjust to the market's shifting conditions Savita Oil company's core principles are forging lasting connections with all of their stakeholders regardless of the circumstances stakeholders. Bonds Build Businesses is a principle they at Savita recognise and uphold as it relates to.

Table No.4.14 – Showing price fluctuations of Savita Oil and Crude

YEAR	CRUDE(\$)	SAVITA OIL
2021	75.21	1096.9
2020	48.52	729.65
2019	61.14	850.4
2018	45.15	1126.85
2017	60.46	1507

2016	53.75	722
2015	37.13	582.75
2014	53.45	725.4
2013	98.17	428.25
2012	91.83	0
2011	98.83	0

Fig No.4.14 – Showing price movements of Savita Oil and Crude



Interpretation

Variables	Savita Oil	Crude
Savita	1.00	-.146
Crude	-.146	1.00
Result from SPSS Ver.26		
Correlation is not significant at the level of 0.354(1- tailed)		

Lubricants are extracted from the crude oil. But as per the analysis it only shows a small negative relationship between the crude oil and Savita oil. The fig.4.14 also shown the negative movement against the crude. The Table showing the Pearson's correlation is -.146. i.e. low degree negative relationship between them. But the p-value of these variables are above the acceptable value which means there is no significant relation between the Savita Oil and crude.

4.15 GAS – HPCL

HPCL was established in 1974. Its headquarters in Mumbai. It is a state- owned natural gas and oil company with Navaratna status. The logo of the HPCL is Hindustan Petroleum and its slogan is Future full of energy. The president owns 51.11 shares in HPCL. HPCL has the second largest share of product pipelines in India with a pipeline network of more than 3370 kms for transportation of petroleum products and a vast marketing network consisting of 14 Zonal offices in major cities and 128 Regional Offices facilitated by a Supply & Distribution infrastructure comprising Terminals, Pipeline networks, Aviation Service Stations, LPG Bottling Plants, Inland Relay Depots & Retail Outlets, Lube and LPG Distributorships. HPCL owns & operates 2 major refineries producing a wide variety of petroleum fuels & specialties,

one in Mumbai (West Coast) of 7.5 Million Metric Tonnes Per Annum (MMTPA) capacity and the other in Visakhapatnam, (East Coast) with a capacity.

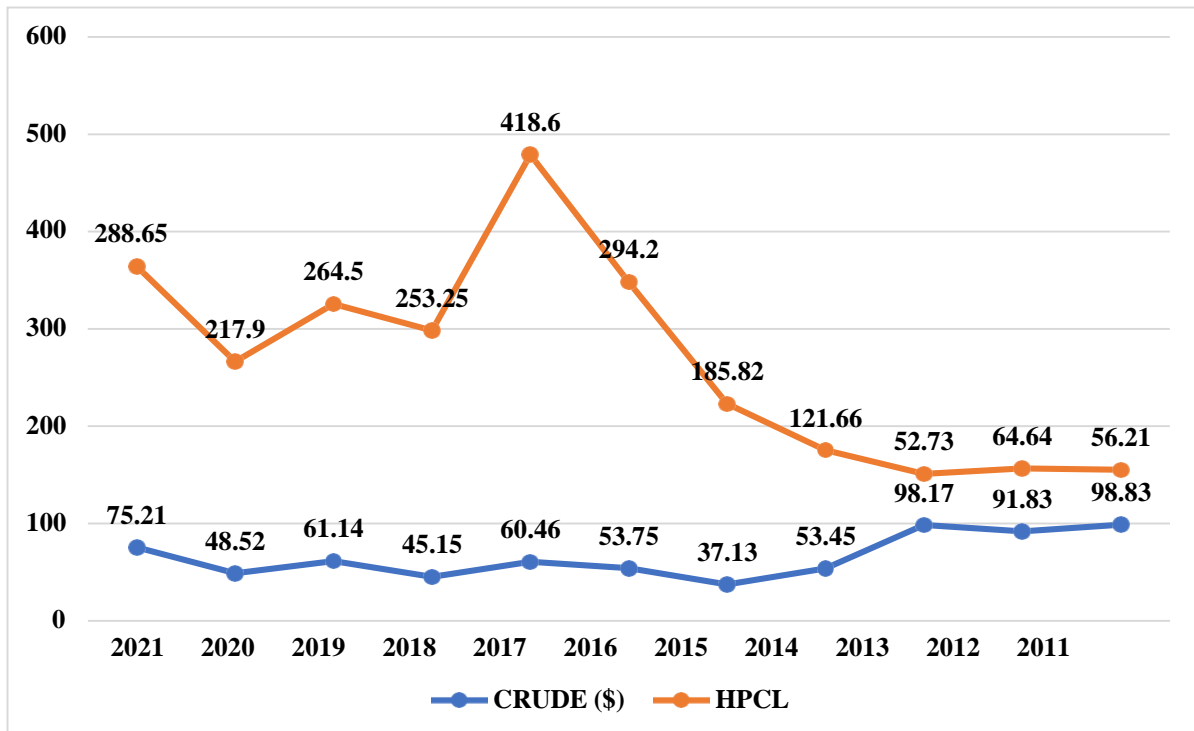
HPCL is listed on the Bombay stock market (BSE) and National exchange (NSE), India. HPCL owns & operates 2 major refineries producing a large kind of petroleum fuels & specialties, one in Mumbai (West Coast) of seven.5 million Metric Tones Per Annum (MMTPA) capacity and the other in Visakhapatnam, (East Coast) with a capacity of 8.3 MMTPA. HPCL also owns and operates the most important Lube Refinery within the country producing Lube Base Oils of international standards, with a capacity of 428 TMT. This Lube Refinery accounts for over 40% of the India's total Lube Base drilling. HPCL together with M/s Mittal Energy Investments Pte. Ltd. is working a 11.3 MMTPA capacity Refinery at Bathinda with 48.99% equity and also holds an equity of about 16.95% within the 15 MMTPA Mangalore Refinery and Petrochemicals Ltd. (MRPL). HPCL is committed to realize the economic, ecological & social responsibility objectives of sustainable development consistently through varied operations and activities. HPCL's focus areas are within the fields of kid Care, Education, Health Care, Skill Development & Community Development, touching lives of weaker section of society. HPCL got National award for the excellence within the cost management. HPCL have an enormous marketing network which consists of 1 zonal offices in major cities together with 1013 regional offices.

Table No.4.15 – Showing price fluctuations of HPCL and Crude

YEAR	CRUDE(\$)	HPCL
2021	75.21	288.65
2020	48.52	217.9
2019	61.14	264.5

2018	45.15	253.25
2017	60.46	418.6
2016	53.75	294.2
2015	37.13	185.82
2014	53.45	121.66
2013	98.17	52.73
2012	91.83	64.64
2011	98.83	56.21

Fig No.4.15 – Showing price fluctuations of HPCL and Crude



Interpretation

Variables	HPCL	Crude
HPCL	1.00	-.575
Crude	-.575	1.00
Result from SPSS Ver.26		
Correlation is significant at the level of 0.032(1- tailed)		

On the basis of the analysis table 4.15 showing -.575 which is a negative relationship between the crude and HPCL. the fig 4.15 seems like a positive relationship but actually the statistics showing the negative relationship. Karl pearson correlation is estimated as -.575. Kotak Institutional Equities said in a note that the spike crude prices, even though temporary, will be negative for downstream OMCs such as BPCL, HPCL, and IOCL, and Castrol. Here the HPCL have a significant relation with the crude oil price. Because the significant level of HPCL is 0.032 which is the less than the acceptable value 0.05.

4.16 CONSUMER NON – DURABLE - LEATHER INDUSTRY

RELAXO FOOTWEARS LTD.

Relaxo is a footwear company which established in 1984 which is headquatered at India. Relaxo is the largest footwear company in India. Now it is amongst the top 500 most valuable companies. Relaxo is an iconic brand synonymous with rubber slippers it is the most versatile footwear for all segments of society. Relaxo Footwears Ltd (Relaxo) involves in the manufacturing and selling of footwear and accessories. The company offers a variety of footwear such as slippers, sandals, casual shoes, sport shoes, bellies, flip flops, flats, wedges and school shoes. Relaxo's products are marketed under brands including Relaxo, Casualz, Kids Fun, Boston, Hawaii, Flite, Sparx, Schoolmate and Bahamas. The company caters its products through physical stores, distributors, retailers, wholesalers, brand outlets and online platforms. Its manufacturing units are located at Haridwar, Bhiwadi and Bahadurgarh, India. The company also manages a network of retail outlets located in different states of India. Relaxo is headquartered in New Delhi, Delhi, India. Relaxo also operates more than 350 strong network of own retail outlets with availability on all major e-commerce portals as well. It has 8 manufacturing facilities with a capacity to produce approximate 7.5 lakh pair/day.

The products of the Relaxo: -

- Relaxo – An iconic brand synonymous with rubber slippers. Relaxo has earned decades of trust cutting across genders, age and class making it the most versatile footwear for all segments of society.

- Casualz – Casualz offers foot hugging, all day comfort that make your feet cruise along.it is ideal for walking companion for people bracing the pressures of everyday.

- Flite - Flite is a popular range of fashionable and semi formal slippers. It is for everyday wear.it makes them comfort and confidence.

- Sparx – Sparx is the one of the most loveable fashionable brands in India.Sparz reflects style, dynamism spirit of young India.

- Bahamas – For the ever-restless youth change is the only constant.it endorsed by Salman khan. The colourful range of Bahamas casual flip flops exude the spirit of freedom, fun and modernity of youth.

- Boston - A brand that marries craft and comfort with a masterstroke of perfection. Boston stands for elegance for men who are walking towards their success in their professional life.

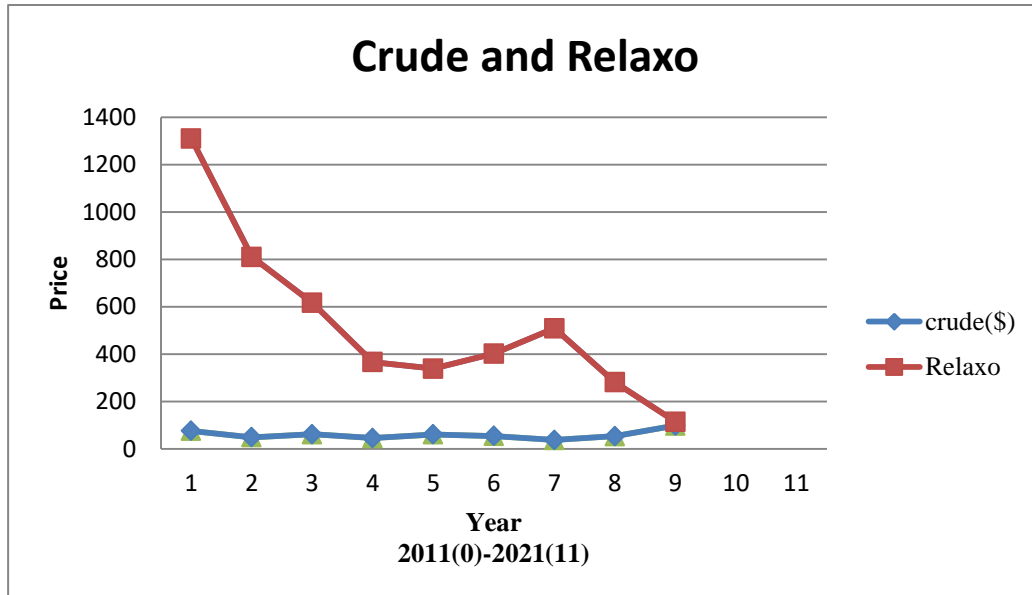
- Mary Jane – It is a dream of every woman to have footwear wardrobe. Combining style and quality. The stylish footwear makes a woman put her best foot forward with panache.

- Kids fun - Brimming with energy, children, need footwear that can be as their spirit. For the kids it has be a fun. Because it offers a world of footwear to keep pace with the young champs.

Table No.4.16 – Showing price fluctuations of Relaxo and Crude

YEAR	CRUDE(\$)	RELAXO
2021	75.21	1309.5
2020	48.52	809.7
2019	61.14	615.75
2018	45.15	366.4
2017	60.46	338.7
2016	53.75	401.95
2015	37.13	508.45
2014	53.45	281.02
2013	98.17	114.38

Fig No.4.16 – Showing price movements of Relaxo and Crude



Interpretation

Variables	Relaxo	Crude
Relaxo	1.00	-.295
Crude	-.295	1.00
Result from SPSS Ver.26		
Correlation is not significant at the level of 0.463(1- tailed)		

A Study on The Impact of Crude Oil on Indian Stock Market

Leather industry are dependent on the crude oil. Because the rubber are made from crude oil. From the Fig.4.16 while crude oil's price falling down Relaxo going to increase. After the analysis got the correlation is -.295. That is leather industry have a low degree relationship with the crude oil price. Karl Pearson Correlation is showing how it is related with one another.but the p-value is above the acceptable value because here the significant value 0.463 which is above the acceptable value 0.05.Therefore there is insignificant relation wth the crude.

BATA INDIA LTD.

Bata Ltd. may be a privately owned global shoe manufacturer and retailer headquartered in Ontario, Canada. Bata founded in 1894. the corporate is led by a 3rd generation of the Bata family. With operations in 68 countries, Bata is organized into four business units. Bata Canada, based in Toronto, serves the Canadian market with 250 stores. Based in Paris, Bata Europe serves the eu market with 500 stores. With supervision located in Singapore, Bata International boasts 3,000 stores to serve markets in Africa, the Pacific, and Asia, Finally, Bata geographic region, operating out of capital of Mexico, sells footwear throughout geographic area. All told, Bata owns quite 4,700 retail stores and 46 production facilities. Total employment for the corporate exceeds 50,000. Bata is that the largest footwear and leader within the footwear industry. This company is listed within the public at 1973.

The company is engaged within the business of producing and trading of footwear and accessories through their retail and wholesale network. Their products include leather footwear rubber/canvas footwear and plastic footwear. Incorporated as Bata Shoe Company Private Limited in 1931, the corporate was founded initially as a tiny low operation in Konnagar (near Calcutta) in 1932. In January 1934, the inspiration stone for the primary building of Bata's operation - now called the Bata. within the years that followed, the general site was doubled in area. Bata's smart looking new stores supported by a variety of higher quality products are aimed toward offering a superior shopping experience to its customers. Bata Industrials was founded within the 1970s in response to a selected demand from the marketplace for footwear for professionals. Since then, Bata Industrials has evolved to become a designer, producer and marketer of safety footwear and socks therefore exclusively targeting the professional user markets.

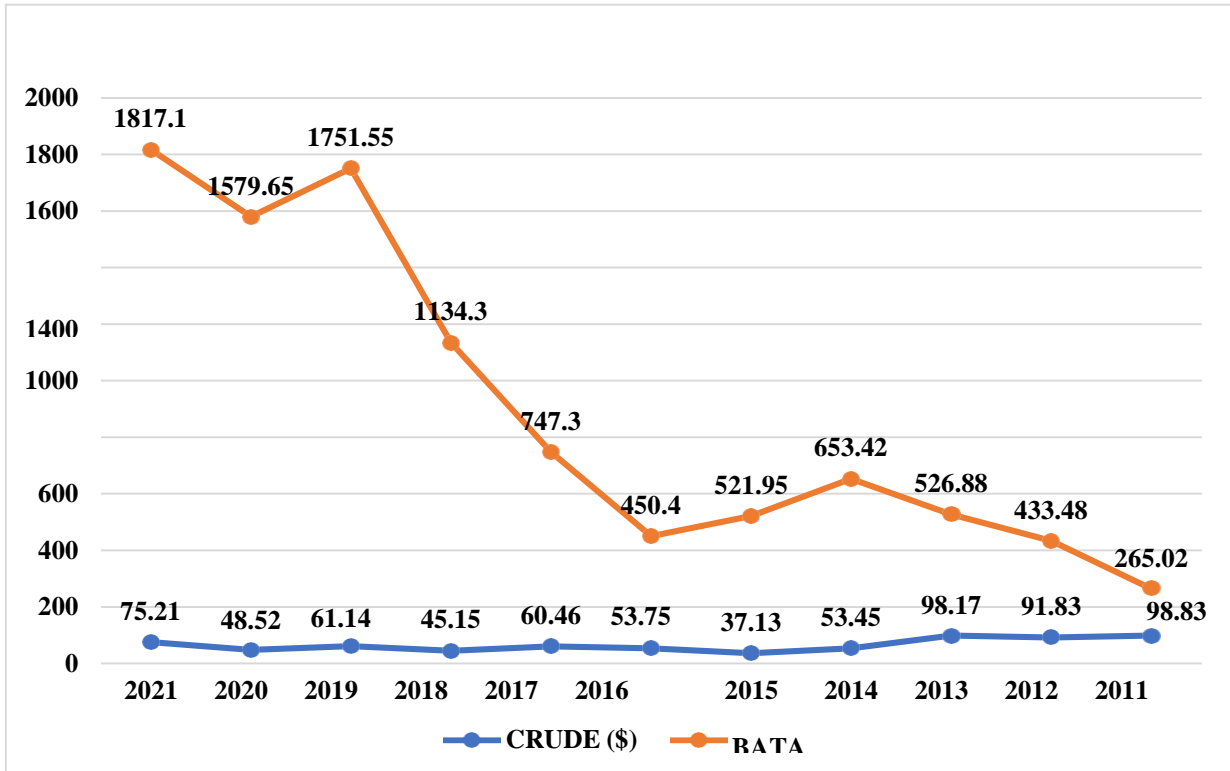
The Bata shoe business began to experience steady growth, so that by 1912 it was employing 600 full-time workers plus another few hundred who worked out of their homes in neighboring villages. Tomas Bata now began to exhibit another side to his personality, the social idealist. Because there was a shortage of housing in Zlin for his new workers, he

constructed new homes, which he rented at cost. He also offered inexpensive meals in factory cafeterias and free medical care. He even built a new hospital to care for his workers. However, as soon as they began to earn higher incomes, area merchants raised prices. In answer, Tomas Bata opened his own less- expensive company stores to ensure that his employees were able to enjoy the fruits of their success. He also took steps to identify management talent among the ranks of his workers and instituted a training program that was ahead of its time.

Table No.4.17 – Showing price fluctuations of Bata and Crude

YEAR	CRUDE(\$)	BATA
2021	75.21	1817.1
2020	48.52	1579.65
2019	61.14	1751.55
2018	45.15	1134.3
2017	60.46	747.3
2016	53.75	450.4
2015	37.13	521.95
2014	53.45	653.42
2013	98.17	526.88
2012	91.83	433.48
2011	98.83	265.02

Fig No.4.17 – Showing price movements of Bata and Crude



Variables	Bata	Crude
Bata	1.00	-.295
Crude	-.295	1.00
Result from SPSS Ver.26		
Correlation is not significant at the level of 0.189(1- tailed)		

Interpretation

Here Bata also showing the same. On the basis of the data collected Karl Pearson technique estimated there was a negatively correlation existing between the Bata and Crude. The correlation coefficient is -.295. The price of the crude in the first year 2011 was 98.83 and the

batá's was 265.02. In the end of the December 2021 crude was 75.21 and the Bata was increased to 1817.10. Here we can see how it is negatively correlated to crude oil.

But both the relation of companies selected from the leather sector are actually insignificant .Because Relaxo's significant level is 0.463 and Bata's is .189. So both are above the acceptable value. Therefore relation of these companies with crude's price is insignificant.

From the analysis of all charts and the results from Karl Pearson's correlations it shows there is a negative relationship between the nifty fifty, BSE SENSEX and sectoral stocks. When the crude oil price changes to decreasing all the sectoral stocks nifty fifty and BSE Sensex becomes to rising uptrend. As well as while crude is increasing the others will be start to decrease , crude fell down in 2015 due to the Dollar become strong against Euro. Because crude oil is a common commodity in global market the changes in the global market will affect the crude oil. Then the crude oil 's commodity price affects the nifty fifty, BSE Sensex and other sectoral stocks which dependent on crude oil and its by-products. So, these will be change to uptrend or downtrend according to the changes in the crude oil. But only two stocks are positively correlated with the price changes of the crude oil. One is InterGlobe Aviation and ONGC. One is aviation sector and the other is petroleum product. Both are directly related with the crude oil price changes. Most of the other stocks showing a negative relationship between the crude oil price and nifty fifty, BSE Sensex and the sectoral stocks which dependent to crude.

This table showing the results and its interpretation of regression analysis conducted in SPSS. Regression is a statistical technique to formulate the model and analyze the relationship between the dependent and independent variables. It aims to check the degree of relationship between two or more variables. Here this table showing is these fourteen sectoral stocks got impact or not impacted from the changes occur in the crude oil's price.

AUTOMOTIVE SECTOR					
Company name	R Square	Adjusted R Square	B	Sig. value	Durbin Watson
Apollo Tyres	0.472	0.414	-2.041	0.061	1.087
JK Tyres	0.384	0.315	-1.174	0.269	1.01
Result from SPSS Ver.26					

Interpretation

Here Apollo Tyres and JK Tyres are the two companies taken from the automotive sector. From the analysis Apollo Tyres have no significant change in the price of Apollo tyres due to the price of crude's price. So there is no impact with the crude's price. Jk Tyres also have no significant change which means there is no impact. While consider the R^2 of the two stocks in this automotive sector more than half of the reason of reducing the price of stocks price is due to other reasons not because of the fluctuations occurring in the crude's price. Because both tyres have a significant value is 0.061 and 0.269 which is above the acceptable value. i.e the automotive sector is not impacted from the fluctuations in the crude's price.

SUGAR SECTOR					
Company name	R Square	Adjusted R Square	B	Sig.value	Durbin Watson
Balrampur Chini Mills	0.067	-0.037	-1.233	0.442	0.753
Dalmia Bharat Sugar and industries Ltd	0.048	-0.058	-1.085	0.518	0.773
Result from SPSS Ver.26					

Interpretation

From the Sugar sector two companies are selected that are Balrampur Chini Mills and Dalmia Bharat Sugar and Industries Ltd. Balrampur Chini Mills has a significant value of 0.442 and Dalmia has the significant value of 0.518. Both are above the acceptable value. It implies that there is no impact with the changing price of crude oil. It showing Food and Beverage sector are not got impacted from the crude's price changes.

PAINT SECTOR					
Company name	R Square	Adjusted R Square	B	Sig.value	Durbin Watson
Asianpaints	0.099	-0.001	-14.198	0.346	0.269
Kansai Nerolac	0.305	0.288	-5.244	0.078	0.606
Result from SPSS Ver.26					

Interpretation

Here both companies are selected are from the paint sector are below the acceptable value. Asianpaints's significant value is 0.346 and Nerolac's significant value is 0.078. It's results showing there is no significant change in the price of stocks in the paints sector. Because both sectors are above the significant value 0.05. Therefore is no impact happenend to the paint sector's stocks due to the price change of crude oil.

AVIATION SECTOR					
Company Name	R Square	Adjusted R Square	B	Sig.value	Durbin Watson
Jet Airways	0.038	-0.069	-2.287	0.567	1.605
InterGlobe Aviation	0.236	0.083	14.947	0.269	1.354
Result from SPSS Ver.26					

Interpretation

Two companies are taken from the aviation sector that are Jet Airways and InterGlobe Aviation. Here one sector called Jet Airways was above 0.567 and the InterGlobe Aviation is 0.269. Jet Airways showing there is no significant change due to the crude's price. But in InterGlobe aviation has a significant change in the price due to the fluctuations in the crude's price. So here is the only need to take the significant change of InterGlobe aviation because Jet Airways was suspended for its operations for the last few years. Therefore Aviation sector have a huge impact from the changing price of crude oil.

OIL AND GAS SECTOR					
Company Name	R Square	Adjusted R Square	B	Sig.value	Durbin Watson
Swaraj Engines	0.333	0.259	-13.571	0.063	1.201
ONGC	0.049	-0.057	0.375	0.513	0.897
Savita Oil	0.337	0.263	9.153	0.061	1.083
HPCL	0.331	0.256	-3.092	0.064	1.416
Result from SPSS Ver.26					

Interpretation

These four companies are working in two different industries but it comes under the same sector called Oil and Gas sector. After the analysis results showing there is no significant change in the price of stocks in the oil and gas sector due to the fluctuations in the price of crude oil. Because all the sectors are above the acceptable value 0.05. Besides that R square is also above the 0.04. i.e,4 % of the price of these sectoral stocks can be explained by the fluctuations in the price of crude oil. Only 33% can be explained it is due to crude oil's price. Remaining part is occurring due to other reasons .Therefore Oil and Gas sector does not impacted by the crude price.

LEATHER/SYNTHETIC SECTOR					
Company Name	R Square	Adjusted R Square	B	Sig.value	Durbin Watson
Relaxo	0.155	0.062	-6.882	0.23	0.546
Bata	0.087	-0.014	-7.708	0.378	0.389
Result from SPSS Ver.26					

Interpretation

Here Relaxo Footwears and Bata are the two companies taken from the Leather/synthetic sector. From the analysis Relaxo Footwears have a no significant change in the price of its share due to the price of crude's price. So there is an no impact with the crude's price. The R^2 is 15% which means only 15% is the reason that crude's price impacting the Relaxo's price. Remaining 85% is impacting the Relaxo's price due to other reasons. As well as the Bata's R^2 is only 8% Bata also have no significant change which means there is no impact. Because both tyres have no significant value is 0.23 and 0.378 which is above the acceptable value. i.e the leather/synthetic sector is not get impacted from the fluctuations in the crude's price.

After the regression analysis the results showing that the sectoral stocks are not got impacted from the fluctuations in the crude's price. This analysis showing there is no impact for the

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sectoral stocks like Automotive sector, Sugar stocks, Paint industry, Oil and Gas industry, Airways industry, Leather sector etc. So here the alternative hypothesis is rejected and null hypothesis is accepted. i.e, crude oil's price does not impact the sectoral stocks. During crude oil's price is decreasing, some sectoral stocks are increasing or decreasing. But it is not because of the fluctuations in the price of crude , it is due to other reasons. So this entire study is showing there is no significant change occur to the sectoral stocks due to the changing price of crude oil. The impact of crude oil price hike not get impacted to the movements of the sectoral stocks. Therefore the null hypothesis is accepted.

CHAPTER – V

FINDINGS, SUGGESTIONS AND CONCLUSION

FINDINGS

- Most of the sectors are negatively correlated to the price changes of the crude oil
- Interglobe aviation and ONGC stocks prices are positively correlated to the crude oil price change.
- If crude price goes uptrend ,ONGC share prices are increasing. ONGC are producing the petroleum products from the crude so the rising in the price of the crude oil make hike in the ONGC's price also.
- Flights are run by fuels and that fuels are extracted from the crude oil. So it also directly related to the price of crude oil.
- Sample stocks selected from each sector and make an analysis or the relation between crude price and its share price.

COMPANY STOCKS	CORRELATION	RANK
Apollo	-0.687	7
Balram	-0.259	3
Nerolac	-0.552	5
Indigo	0.486	1

ONGC	0.221	2
HPCL	-0.575	6
Bata	-0.295	4

- Aviation sector is highly related with the price fluctuations of crude oil. But as per data analysis there is no significant change with the issues of hike in the price of crude oil
- ONGC is highly related with the price movements of the crude oil. ONGC are manufacturing the petroleum products like petrol, diesel, kerosene, naphtha cooking gas, LPG.
- Sugar industry is also related with the changes in the price of crude. But it is insignificant to the changing price of crude oil.
- Tyre industry is least related to the after effect of price movements in the crude oil.
- Apollo tyres and HPCL were highly negatively correlated with the crude oil price changes.
- If the price of the crude increases ONGC and GAIL will gain profit. That changes boost these sectors to an extent. Except the InterGlobe Aviation and ONGC all other sectors are showing negative relationship with the crude.
- Karl Pearson correlation showing above both National Stock Exchange's index NIFTY 50 and Bombay Stock Exchange's index Sensex are negatively correlated to the crude oil price movements.

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- Whenever the crude oil price increases NIFTY 50 will be decreased by 0.414 times and the Sensex will be decreased by 0.388 times.
- Apollo, JK tyres , Balrampur Chini Mills, Dalmia Sugar, Asian paints, Nerolac, Jet Airways, Swaraj Engines, Savita Oil, HPCL, Relaxo, Bata are negatively correlated with the crude oil prices.
- Therefore as per the data analysis it showing there is relationship between crude and sectoral stocks.
- But as per the regression analysis ,sectoral stocks have no significant change occurred due to the fluctuations in the price of crude oil.
- Sectoral Stocks taken here have only maximum 40% and some stocks have only less than 10% impact is affected from the changing price of crude. It is clearly defined by the R^2 of the each sectoral stocks.

SUGGESTION

- Ethanol is producing from the petroleum product which is made from the crude oil. Stepping up ethanol production can help reduce the import of crude oil and prove to be an extra means of earnings for sugarcane farmers. So, it helped the sugarcane farmers to earn more money as well as it helps to reduce deficit in the balance of payments. It also helps to increase stocks price of sugar industries which produce ethanol.
- As well as instead of leather we can use other shoes like vegan shoes, synthetic shoes AKA Faux Leather or Canvas shoes. It helps to reduce the use of leather. So, if the crude price increases or decreases the footwear industry will not relate. It helps the footwear industry make stable even when the hike occurs in crude oil price.

CONCLUSION

This research presented the evidence of the effect of crude oil prices on the Indian stock market. Sugar manufacturing industries and Information sectors have a positive relation on the Indian stock market. As ethanol becomes an ingredient in petrol manufacturing, it leads to an increase in the share price of the stock. When the value of the Indian currency began to reduce as part of the import of crude oil, it has affected positively the IT sector. So, the sugar industries and IT sector have a positive relationship with the crude oil price.

The industries like paint, cement, tyre, Airline, etc. have crude oil as their major raw material. But the changes in the price of crudeoil is not impacting the price of these sectoral stocks.Only less than 40% is the impact happens to these stocks.. So, as the cost of crude oil increases the share price of these industries began to decline. These were clearly represented in the graph. But actually there is no significant change to the sectoral stocks.

So, there are some industries that are positively impacted by the crude oil price and negatively related by the crude oil price. The industries which use crude oil as the major raw material will be impacted negatively by the stock market.This study helps the investors to make a better portfolio on the basis of the variables. An expanded study can be made by taking macro-economic factors to determine the price of the share in the Indian stock market.

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