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The Effects of Crude Price in Indian Economy

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ABSTRACT

Oil prices are always changing. Consumers do not always know what to expect when they pull up to the gas pump to fuel their vehicles or when they need to order heating oil for their homes. The main objective is to identify the effects of crude oil price in India economy and to determine the changes in national income due to price hike of oil. . There are multiple factors in motion that contributed to this increase. Both international crude oil price rise and import dependency on crude oil are the problematic area that may damage the Indian economy. The rising prices of petrol and diesel have been a major concern for the citizens of the country. Petroleum product pricing in India is frequently seen as a black hole of subsidies.

Key words: Petrol, Price Hike, Indian Economy, Factors.

Introduction:

Oil is a commodity, meaning it is a raw material that can be bought and sold. Oil, corn, and gold are examples of commodities. Futures contracts are a type of legal arrangement used to sell commodities. Buyers purchase futures contracts in order to lock in low pricing. They are avoiding the risk of future price increases in this way. Oil prices are constantly fluctuating. When consumers go to the gas station to fill up their cars or need to get heating oil for their homes, they don't always know what to anticipate. Oil is a crucial component of our life, despite price swings. Despite the fact that we only utilise a little amount of crude oil on a daily basis in India, petroleum products such as gasoline and heating oil keep the country functioning. In the year 2017, Because India's economy is growing at a rapid rate, the country's reliance on crude oil imports is growing by the day. There was the dramatic rise in the prices of crude oil to as high as $148/bbl. In the international market in July 2008.In 2014 crude oil price was at low level as $ 84/bbl. Import of crude oil with higher price is increasing the balance of trade deficit in India. The purpose of this paper is to investigate the impact of crude oil price changes on economic growth in India.

Objectives:

- To identify the effects of crude oil price in India economy.
- To determine the changes in national income due to price hike of oil.
- To find out the demand for the petrol and diesel in India.
- To find out the reason for fluctuation of crude oil prices.
- To find out the futuristic price of crude oil.

Review of literature:

Mr. Kali Charan Modak.et.al[1] has studied Indian economy is growing at fast pace so India's dependency in crude oil imports is increasing day by day. To analyse the trend in economic growth and crude oil price and to study the relationship between oil prices & inflation. This study restricts itself to analysing the direct impact of oil prices on the WPI and thereby on the GDP of the country. Sample data is taken from 2000 till 2001 and been considered for the study which has been obtained from the CMIE database. There is a significant relationship between change in GDP growth, WPI change, BOT deficit and crude oil price change. The paper examined the effects of oil price on Indian economy using time series data from 2000-2001 to 2012-13. By the increase in the price of crude oil the inflation increases, Government has to spend too much on subsidy, our exports become weaker, investment decreases and GDP is also affected.

[1] Mr. Kali Charan Modak; Ms. Pallabi Mukherjee;" A Study on Impact of Crude Oil Price Fluctuation on Indian Economy"; Volume – II January 2015; SSN No. 2349-7165 pp.no.16-21

Harnesh Makhija,et.al[2] The relationship of oil price changes with other parameters like employment, economic activity is a significant study that has been researched by many in most of the developing countries. This study examines the effect of crude oil prices on stock market indices. Data from June 2005 to July 2015 is taken for the current research work. Sensex was chosen as representative market index for India and for China Shanghai stock market index SSE composite index was taken. In order to check that time series are stationary or non-stationery ADF test is used. Stock market is often said to be the barometer of one's macro economy, which means that they have a close relationship. In this paper the relationship between stock market indices in emerging economies and crude oil is analysed.

Raghunand S,el.al[3] Oil is a common word that always makes the headlines frequently. It is an essential natural resource for any country. Every country, even the ones that have this natural resource in abundance, struggles to explore and extract more of it at almost any cost and measure. To study the contribution of Crude Oil prices on the BSE index volatility and to study the contribution of Crude Oil prices on the NSE index volatility. The study was concluded using statistical tools: Linear Regression and ANOVA, which helped in providing a basis as well as a structure in performing and concluding the study. The present study analysed the relationship between crude oil future prices, nifty and BSE Energy Index. On performing the Multi Linear Regression, it was found that the volatility of NSE and BSE indices are dependent on the fluctuations of Brent Crude index.

Dr. K. Soundarapandiyan,el.al[4] Oil is a magic word that always makes news. There is hardly a nation that does not seek this indispensable natural resource. A country that already possesses crude oil wants more. They struggle to explore it at almost any cost. To understand the impact of Crude Oil Prices an Indian Economy and to find out if the crude oil price has an impact on CPI and GDP. Crude oil price is an important parameter for refining industries, which has a bearing on economy, because it is vital input for productivity. The paper is analytical in nature. The data for the study between 2001 and 2015 was retrieved from reliable secondary sources. The statistical tools such as Regression, Co linearity and intercorrelation were used to infer the data. Since the Crude Oil price is less than 0.05, We reject the null hypothesis at 5% level of significance, we conclude that there is significant difference between Crude Oil price and GDP. India's imports of oil are increasing. Our dependence has reached 80% and is likely to keep growing. At the same time 2008 saw an unprecedented rise in oil price on the world market. Oil price volatility has also increased

Dr Samik Shome [5] et.al. Has attempted to study the changing fuel prices on a daily basis which is coined as dynamic fuel pricing. This new pricing policy initially started on May 1, 2017 in five cities. The paper has two specific objectives is to identify the pre and post impact of dynamic fuel pricing in Indian petroleum industry and to examine if there are any issues related to abnormal prices caused due to the policy change and the reason behind it. This study is conducted through empirical analysis based on secondary sources collected from the IOCL website and for the analysis Mean Adjusted Pricing Method (MAPM) is used to find the average abnormal petrol price fluctuations. The sample size is conducted on the five metropolitan cities of India viz. Delhi, Chennai, Bangalore, Kolkata and Mumbai. The tools used are Mean Adjusted pricing Model (MAPM) is used to find AAP and the hypothesis is tested using t-statistic. There may be some factors which can impact the price fluctuations in the petrol prices, all the external factors like political, economic, technological, environmental and legal and there is not much significant change in the behaviour of the Indian market in context of dynamic fuel pricing policy.

Dr. Shefali Dani[6]**,** has attempted to bring forward the reasons for soaring petrol prices in India. Crude oil is the most essential commodity and also the most traded product which influences an economy. The purpose of this study is to understand the government policies for petrol sector and identify major causes for this amplifying rise in petrol prices and its adverse effect on general public of India. Descriptive type of research is used. The sample size is from 2010-2013.The tool being used to see the rise in price is twin deficit hypothesis. The main reason behind increase in the petrol prices is the rise of dollar against rupee. Petrol hike directly or indirectly affects all the major sectors like transportation, textiles, auto, FMCG etc., for manufacturing & transportation and this affects the prices of daily essential commodities which are transported on a daily basis. The government needs to extend subsidy to the targeted consumers in such a manner which does not impinge on the freedom of oil companies to set prices in the market place.

Aswin Sivarajan.et.al[7] aimed to understand the causes and impacts for the rising prices in recent times that have been influencing the economy as whole and provide solution to cope with this externality. The objective of this research is to find out the impact of rising fuel prices on the city of Bangalore and to understand and break down the pricing policy of the government. The paper have relied on primary data through questionnaires and secondary data were used to find the causes behind the fuel price increase. The tool used is questionnaire. The increase in Fuel prices directly impacts those industries that use oil as an input – Fertilizers, Wax, Tires, paints, and footwear's, cements, construction etc. and the stock market is also not left untouched. The major suggestion is that government can state the problem to US government since the intermittent factor for rising prices is actions on the Iran agreement that has led to increased demand for oil. Thus the rise in Fuel Prices that the country has been witnessing is attributable to a number of factors.

MM Rohani.et.al[8] has studied that due to the rising of oil prices, the costs of travel for private vehicle users are therefore increasing. The study was conducted based on the objective of studying the impact of rising fuel prices on three types of trip patterns of Malaysians who are living in the city areas. Data used was primary data which was gathered from a survey conducted in Malaysia, during the data collection, 400 questionnaires were distributed in highly populated areas in Johor, Kuala Lumpur, Melaka, Perak, Selangor and Kelantan. The tool used is questionnaire. From the survey

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[2] Harnesh Makhija;P.S. Raghukumari; **"A Study on Impact of Oil Prices on Emerging Market Stock Indices";** IOSR Journal of Economics and Finance; e-ISSN: 2321-5933, p-ISSN: 2321-5925; pp.no 35-40

[3] Raghunand S ; Dr.Smita Kavatekar; **"A Study on the Impact of Crude Oil Prices on the Indian Stock Market";** IJRAR- International Journal of Research and Analytical Reviews; VOLUME 6 , ISSUE 1 , JAN.– MARCH 2019; E ISSN 2348 –1269; PRINT ISSN 2349-5138 pp.no258-263

[4] Dr. K. Soundarapandiyan; Dr. M. Ganesh; **"An Analytical View of Crude Oil Prices and Its Impact on Indian Economy";** OSR Journal of Business and Management (IOSR-JBM); e-ISSN: 2278-487X, p-ISSN: 2319-7668 ; pp.no.23-28

[5] Dr. Samik Shome; Urmi Khatri; Divya Joshi; Saurabh Mehndiratta," **Dynamic Fuel Pricing in India: An Event Study Methodology";** International Journal of Management Studies · Vol.–V, Issue –4(6), October 2018, ISSN (Print) 2249-0302 ISSN (Online) 2231-2528; pp.no 32-37.

[6] Dr. Shefali Dani; **"Escalating Petrol Prices in India: Repulsive Government Policies and Turbulence in Public**", IOSR Journal of Economics and Finance (IOSR-JEF) e-ISSN: 2321-5933, p-ISSN: 2321-5925.
Volume 4, Issue 6. (Jul-Aug. 2014), pp.no. 31-35

[7] Aswin Sivarajan; Biwin P Mathew; Anush Gowda; Andrea Thomas," **Rising Fuel Prices in Bangalore - Causes and Impact",** International Journal of Research and Analytical Reviews October 2018, Volume 5, Issue 4, E-ISSN 2348-1269, P- ISSN 2349-5138, pp.no.211-219

[8] M M Rohani and N Pahazri**," Survey on how fluctuating petrol prices are affecting Malaysian large city dwellers in changing their trip patterns",** IOP Conf. Series: Earth and Environmental Science 140 (2018) 012085 **,**doi :10.1088/1755-1315/140/1/012085

conducted, there was a reduction in the frequency of personal vehicle usage for all three types of trips. The reduction in the rate of trip frequency observed were between 2 – 7%, further investigation conducted also found that, there was a tendency among respondents who used personal vehicles as the main mode of transport decided to leave their vehicles at home, and shifting to public transport when the fuel price was increased. The major suggestion is riding bicycle as an alternative can also be taken into consideration. This study also found that Malaysians have the tendency to shift to a more economic mode of transport such as riding motorcycle and public transports.

Research methodology:

The research type is descriptive. The data type used is secondary data. It was collected from various journals, books and publications. Descriptive type of research is used.

Statement of problem:

India is currently facing rising price of its fuel - Petrol and Diesel. There are multiple factors in motion that contributed to this increase. This proposed research aspires to look into the major causes that have contributed to this rise, whether the Government has a major role to play.

Scope of study:

National oil companies are able to produce 23-24% of India's total requirements of crude oil. The production of crude oil from public sector enterprises in India has been decreasing due to old and the maturity of the fields. India is not self-reliance on crude oil production; therefore, it is necessary and inevitable to import the crude oil to bridge the gap between demand and supply. Therefore, both international crude oil price rise and import dependency on crude oil are the problematic area that may damage the Indian economy. It is estimated that the import dependence of India associated with crude oil is expected to 94% by the end of 2030. Therefore, there is an urgent need to look holistic picture of whether the changes in Indian crude basket prices have any implication on Inflation and GDP growth, or is there any link between Indian crude oil basket price change and Inflation or Inflation is the cause of concern for slowdown of GDP growth, what should be our strategy to meet the growing demand of crude oil for economic growth. The desire of the study is to understand, how the increase in Indian basket price of crude due to raise in international crude oil prices impact the economic indicators like inflation and GDP growth. The study is essential for both – knowledge and to help in solving problems of businesses arising out due to inflation, predicting the future price signal in relation to the business environment and economic growth.

Factors affecting rise of crude oil prices:

The rising prices of petrol and diesel have been a major concern for the citizens of the country. There are a number of factors that affect the fuel prices in India. Some of the most important factors that affect the prices of fossil fuels in India can be summed up as follows:

Cost of crude oil:

Crude oil or unrefined oil is a commodity of the international market. The changes in the price of this commodity directly affect the price of petrol and diesel in our country. Whenever there is a change in the demand and supply of crude oil, the prices vary. In addition to that, international political relations and future reserves and supplies also have direct effects on the price of crude oil.

Price charged to dealers:

The crude oil is acquired and distributed by the Oil Marketing Companies (OMCs). The price charged by the OMCs to the dealers is an important deciding factor of the price of the fossil fuels. This price is also based on a number of factors which include the freight charges, the refining cost, and so on.

Commission for dealers:

The Oil Marketing Companies or OMCs pay a commission to the fuel dealers. The petrol pump owners have their earnings, cost, and profit covered in this commission. This is one of the components which make up the price of the fuel.

Central excise duty:

The central government levies the excise duty on petrol and diesel. It should be kept in mind that the central excise duty is a pre-defined amount of money and not a percentage. Thus, the duty does not fluctuate with the price of the fuels. Over the past few years, the Government of India has increased the excise duty manifold. The current duty charged on petrol is Rs.32.98 per liter and that for diesel is Rs.31.83 per liter. This amount is constant irrespective of the rise or fall in the price of the crude oil.

Sales Tax or Value Added Tax (VAT):

This tax is imposed by the respective state governments. The VAT or sales tax is calculated after taking a few other factors into consideration such as the excise duty charged by the center, the commission of the dealers, and so on.

Taxes imposed by the government:

The Government of India imposes a tax on both petrol and diesel. There are certain policies on the basis of which, the center might change the tax structure. The change in this structure is mainly base on the marginal returns from the fossil fuels and the recovery of losses. The price of the fuels also changes on the basis of these taxes.

Demand for fuel:

With the number of two-wheelers and four-wheelers steadily increasing on the Indian roads, the demand for both petrol and diesel has been increasing as well. As the oil refinery companies in India have to acquire crude oil from the international market in order to process the same into petrol and diesel, the supply cannot be always fulfilled. When the supply is less and the demand is more, as per the laws of economics, the price of both the fuel is bound to increase.

Consumption ratio of refineries:

The crude oil imported to India are sent across to the refineries for processing. If the number of refineries is lower, then the overall quantity of petrol or diesel which will be available for sale will also be lower. This would also mean that the supply will be lower, which in turn, will make the price of the fuel higher.

Valuation of INR against USD:

One major factor that is responsible for the alteration of prices of petrol and diesel in India is the value of the Indian Rupee against the American Dollar. The crude oil which is refined for petrol and diesel is bought from the international market and the transaction is done in dollars. Thus, the strength of the USD against INR is a direct factor. If the American Dollar is stronger, the cost of purchasing crude oil will be higher. This will mean that the price of the finished products will also be higher.

Effect of Oil prices on Indian economy:
An increase in the price of oil is bad for many economies. For instance, let's consider the effects on the Indian economy.

High Import Dependence: India is a developing country. As a result, their energy consumption is very high. Also, India does not have its own sources of oil. As a result, it imports more than 80% of its oil requirement. Hence, if the prices of oil double over the period of a year, the import bill of the nation will also double in the same period. India has paid over $110 billion in order to import oil in the year 2017. This figure is likely to double even if the exchange rate is held constant.

Exchange Rate Woes: The Indian rupee has already depreciated against the United States dollar. This is because people are trying to change their rupees for dollars. If the price of oil increases, the government will also be forced to exchange rupees for dollars. Since the import bill is going to be double as compared to last year, it will put tremendous pressure on the rupee. The end result will be a further severe drop in the value of the rupee. The drop in the value of the rupee will force the government to sell even more rupees. This will end up creating a vicious cycle that will bring the economy to a grinding halt.

Hurt the Economy: Many sectors of the Indian economy are dependent on the prices of fossil fuels. For instance, the auto sector is a major contributor to employment in the country. However, since the prices of fuels have risen so much, people are refraining from buying any new cars. This is impacting the profit margins of these companies which is indirectly having a spillover effect on other sectors of the economy as well. Just like automobiles, people have reduced the purchases of generators or any other products which use fossil fuels as inputs.

Discretionary Spending: Higher fuel prices are taking a toll on the Indian consumer. On the one hand, their incomes are not rising because there is a recession in several industries in the market. On the other hand, a rise in fuel prices is eating up a major portion of their income. Rising fuel prices are leading to significant inflation. Hence, their discretionary spending is also being lowered. The end result is the aggravation of the vicious cycle that has already been mentioned above in this article.

Crude Oil Price has a direct and indirect correlation with India's economy (Oil Price & India's Economy)

In recent times we saw how crude prices, that is Brent and Nymex prices went up. And this had an impact on the Indian economy. So, what exactly is the relation between Crude oil price hikes and the Indian economy?

80% of the demand of crude oil in India is fulfilled through imports of crude oil. *For example*, if we are consuming 100 barrels of crude oil, then we are importing 80 of those barrels from outside. This means that there is only 20% production of crude oil done through our domestic facilities. So, we have a huge demand from the foreign markets. And that is why it is impacting our import bill on such a large scale. And because of high import bill, we can see its effect on higher prices, What is Fiscal Deficit, current account deficit and other things.

Crude Oil Impacts on: –

Current Account Deficit (CAD) –

- CAD = Imports – Exports
- If imports are more than exports, then we can see a Current Account Deficit.
- For calculation of this, the average price taken by the Finance Ministry was $65 per barrel.
- After May-June, the Brent oil price went up to $80 per barrel. So, this $20 per barrel had a impact for a few months.
- So, on average basis, we were incurring $10 per dollar of extra cost, which had an effect on the CAD of 43 bps. That is our CAD was increasing by 0.43%. This amounted to an extra bill of $12.5 billion.
- Thus, as our CAD was increasing, INR was depreciating in comparison with other foreign currencies.

Government Response – To tackle this and control the increasing CAD, the government passed on the price hike in crude to the consumers. When consumers are getting the impact of increased price, then the result of that is higher inflation.

- **Inflation**
  - When inflation is high, automatically interest rates are also on the higher side. When the interest rates go up, profitability of companies comes down. Thus, it will have an negative impact on the corporate profitability.
  - One can see how all this is a vicious circle.

And for the next 10-15 years, we are completely going to be dependent on the crude oil prices. The reason is that we still do not alternative energy resources on which the vehicles be able to run. Though there are many R&D done for this, electric cars coming in to picture, new policies been made; but still it will need more 10-15 years to replace crude oil.

Suggestion:

There always remains uncertainty for the availability of crude oil at stable prices. Crude oil is the most important ingredient which controls the prices of other fuels in the energy mix. Crude oil prices remain an important economic variable inflicting inflation and cause substantial damage to GDP growth of the economy of oil importing country like India. This study adds to the existing literature by bringing an awareness of the importance of the impact of crude oil prices on Indian economy. The objectives and the hypotheses of the study have brought about certain conclusions with respect to the study. The study confirms that crude oil prices have inflationary effect, which plays a significant role in rising whole sale price index of Indian economy. Crude oil prices have positive impact on Whole sale price index (WPI), Karl Pearson Correlation coefficient between crude oil price and inflation (WPI) is positively correlated and is equal to 0.829. Our double log regression model shows that the crude oil price elasticity of inflation 0.27. The analysis of variance indicates that F- statistic is 446.17 and p-value is 1.42584E-42 is highly significant against the critical value of F- distribution 3.89 for 5% level of significance. Therefore, the null hypothesis is rejected and the alternative hypothesis "The crude oil price plays a significant role in rising the inflation (WPI) of Indian economy" is accepted.

Conclusion:

Petroleum product pricing in India is frequently seen as a black hole of subsidies. Economists and oil companies complain about the impacts those subsidies have 265 on public finances, financial performance of oil companies and demand-side management. The petroleum product pricing in India is more complex than the one-way flow of subsidies. It distorts product prices and encourages unhealthy substitution of subsidized products for other products which are more efficient. It dampens price signals and discourages energy conservation. It creates vast distortions and makes good governance almost impossible. It also threatens India's international competitiveness in long run. With the abolition of APM, the current market economy has tried to address the above short comings in product pricing and to deliver efficient pricing. Therefore, the product price should be free and fair enough for oil refining and marketing companies so that investments in refining and distribution are not distorted and efficiencies are rewarded at the same time some variant must be kept in pricing for the end consumer for the beneficiary of social sector particularly economically poor people of India.