

# AN ANALYSIS OF CRUDE OIL PRICE VOLATILITY IMPACTS ON THE ECONOMY

**Dr. Manoj Dolli**

Associate Professor

Dept of Studies and Research in Economics , Post Graduate Centre, Yelburga

## **Abstract:**

Crude oil is the major energy source in the world and also plays a major role in the economic growth and development of the country. Though it is a natural resource, its availability is limited in nature. The majority of the countries in the world depend on other countries that have abundant crude oil. For some reasons, crude oil prices are volatile in nature. During the month of March 2022, the price was 117.25 US dollars per barrel. This is very higher compared to previous months. This will have a negative impact on the economies of imported countries.

**Key words:** Dollars, Rupees, Oil, Impact

## **Introduction:**

Crude oil is a mixture of hydrocarbons. It is one of the most important natural resources in the world and is also a major commercial energy source after coal. It is a mixture of different chemicals, therefore it cannot be used without refining. After the refining process, crude oil was separated into different liquids and gases. These are petrol, paraffin, diesel, gasoline, jet fuel, tar, wax, hydrocarbon gas etc.

However, it is a major energy resource in the world, it is scarce in nature and it is limited to some countries, so the majority of the countries' import of oil from abundant countries. When oil export countries increase or decrease the price of crude oil, it will have an impact on the world economy. According to recent statistics, the United States of America is the major oil exporter, China is the major crude oil importing country in the world. After that, the United States of America was in the second place and India was in the third place.

## **Objectives:**

- To examine crude oil price trends
- To examine the reasons for crude oil price fluctuations

## **Methodology:**

The study is based on purely secondary data. It was collected from newspapers, magazines, government reports, research papers, and annual reports. The study considered crude oil price data from 1987 to 2022.

## **Review of Literature:**

- **Kali Charan Modak and Pallabi Mukherjee (2014)** examined the impact of crude oil price fluctuations on the Indian economy. The main objective of this study was to examine the effects of oil price fluctuations on the growth of the Indian economy using time series data from 2000 to 2014. Multiple linear regression models were used to analyse the data. The study found that there is a significant relationship between the change in inflation and crude oil price change, GDP growth and crude oil price change.
- **Mehta, Manvi, et al. (2019)** studied the declining crude oil prices and their implications on the Indian economy. This research paper studied oil production and the supply of oil and tried to estimate, using various tools, a correlation between oil prices and various economic and market factors. It was observed that the role of inflation is significant in the declining GDP growth of the Indian economy. The two variables of oil prices and GDP in India are negatively correlated.
- **Rahiman et al. (2019)** examined the fluctuations of crude oil prices in their study on ups and downs in the Indian economy - the impact of crude oil prices. The major findings of the study were that crude oil prices have an impact on the BSE Sensex, Nifty 50 and inflation, and there is no significant relationship with the exchange rate and GDP of the country. It was also suggested that India must move from using petroleum products to renewable resources as the processing of crude that has been imported has caused a lot of pollution worldwide.

Crude oil is a type of fossil fuel that occurs naturally. It is an unrefined petroleum product composed of hydrocarbon deposits and other organic materials. The countries which are producing crude oil have set up an organization called OPEC (Organization of the Petroleum Exporting Countries). It is a permanent, intergovernmental organization, created at the Baghdad Conference in

September 1960 by Iran, Iraq, Kuwait, Saudi Arabia, and Venezuela. Currently, it has 13 members (Algeria, Angola, Equatorial Guinea, Gabon, Iran, Iraq, Kuwait, Libya, Nigeria, Republic of the Congo, Saudi Arabia, the United Arab Emirates, and Venezuela). OPEC could bring down prices by increasing oil production and raise prices by cutting production.

The main objectives of the organization were: unification and coordination of petroleum policies among member countries in order to achieve just and stable prices for petroleum producers; ensuring an efficient, economic, and regular supply of petroleum to consuming nations; and an adequate return on investment.

**Table 1.1 Top Ten Oil-Producing Countries (barrels per day)**

Country	Monthly Production	Reference Month
United States	11,567,000	12/2021
Russia	10,503,000	11/2021
Saudi Arabia	10,225,000	02/2022
Canada	4,656,000	11/2021
Iraq	4,260,000	02/2022
China	3,969,000	11/2021
United Arab Emirates	2,954,000	02/2022
Brazil	2,852,000	11/2021
Kuwait	2,610,000	02/2022
Iran	2,546,000	02/2022

Source: <https://worldpopulationreview.com/country-rankings/oil-producing-countries>

The table 1.1 data clearly shows that among the top ten oil producing countries, the majority of the oil production comes from three countries: the United States, Russia, and Saudi Arabia.

**Table 1.2 Annual crude oil price trends from 1987 to 2022**

Year	Average Price	Closing	Year Open	Year High	Year Low	Year Close	Annual % Change
2022	\$97.89		\$76.08	\$123.70	\$76.08	\$111.85	48.71%
2021	\$68.17		\$47.62	\$84.65	\$47.62	\$75.21	55.01%
2020	\$39.68		\$61.17	\$63.27	\$11.26	\$48.52	-20.64%
2019	\$56.99		\$46.31	\$66.24	\$46.31	\$61.14	35.42%
2018	\$65.23		\$60.37	\$77.41	\$44.48	\$45.15	-25.32%
2017	\$50.80		\$52.36	\$60.46	\$42.48	\$60.46	12.48%
2016	\$43.29		\$36.81	\$54.01	\$26.19	\$53.75	44.76%
2015	\$48.66		\$52.72	\$61.36	\$34.55	\$37.13	-30.53%
2014	\$93.17		\$95.14	\$107.95	\$53.45	\$53.45	-45.55%
2013	\$97.98		\$93.14	\$110.62	\$86.65	\$98.17	6.90%
2012	\$94.05		\$102.96	\$109.39	\$77.72	\$91.83	-7.08%
2011	\$94.88		\$91.59	\$113.39	\$75.40	\$98.83	8.15%
2010	\$79.48		\$81.52	\$91.48	\$64.78	\$91.38	15.10%
2009	\$61.95		\$46.17	\$81.03	\$34.03	\$79.39	78.00%
2008	\$99.67		\$99.64	\$145.31	\$30.28	\$44.60	-53.52%
2007	\$72.34		\$60.77	\$99.16	\$50.51	\$95.95	57.68%
2006	\$66.05		\$63.11	\$77.05	\$55.90	\$60.85	-0.34%
2005	\$56.64		\$42.16	\$69.91	\$42.16	\$61.06	40.82%
2004	\$41.51		\$33.71	\$56.37	\$32.49	\$43.36	33.37%

2003	\$31.08	\$31.97	\$37.96	\$25.25	\$32.51	4.17%
2002	\$26.19	\$21.13	\$32.68	\$18.02	\$31.21	56.36%
2001	\$25.98	\$27.29	\$32.21	\$17.50	\$19.96	-25.30%
2000	\$30.38	\$25.56	\$37.22	\$23.91	\$26.72	3.73%
1999	\$19.35	\$12.42	\$28.03	\$11.38	\$25.76	112.19%
1998	\$14.42	\$17.41	\$17.93	\$10.82	\$12.14	-31.22%
1997	\$20.61	\$25.55	\$26.55	\$17.60	\$17.65	-31.85%
1996	\$22.12	\$19.83	\$26.55	\$17.33	\$25.90	32.55%
1995	\$18.43	\$17.45	\$20.53	\$16.86	\$19.54	9.96%
1994	\$17.20	\$14.52	\$20.72	\$13.89	\$17.77	25.23%
1993	\$18.43	\$19.03	\$21.05	\$13.98	\$14.19	-27.19%
1992	\$20.58	\$19.43	\$23.03	\$17.89	\$19.49	1.78%
1991	\$21.54	\$26.53	\$32.25	\$17.43	\$19.15	-32.76%
1990	\$24.53	\$22.88	\$41.07	\$15.43	\$28.48	30.40%
1989	\$19.64	\$17.38	\$24.62	\$16.99	\$21.84	27.57%
1988	\$15.97	\$17.77	\$18.54	\$12.58	\$17.12	2.27%
1987	\$19.20	\$18.13	\$22.44	\$15.12	\$16.74	-6.64%

Source: <https://www.macrotrends.net/1369/crude-oil-price-history-chart>

Table 1.2 shows the annual crude oil price from 1987 to 2022. The data clearly shows that every year the price of crude oil is volatile in nature. This will have an impact on the world economy. When the price increases, it is useful to oil export countries and harmful to import countries. Oil price increases lead to a negative impact on import countries' balances of payment because these countries have limited crude oil production and therefore did not reduce their imports when the price increased.

#### Factors contributing to the fluctuation of crude oil prices:

Oil prices are strongly influenced by the global economic scenario. During the COVID-19 pandemic period, the price fell continuously for the first time in history because of less demand. After that, it slightly increased but continuously increased during the year 2022. According to the official data, the price of crude oil (Indian Basket) has risen by \$8.32 per barrel (8.50 percent growth) in the last 10 days between April 11 and April 21, 2022. The rise has been mainly due to volatility in the international crude oil market following the Russia-Ukraine war.

According to economic fundamental theory, the price level of a commodity refers to the market's continuous adjustment result between the effective supply quantity and the effective demand quantity of that commodity. (Yan, L., 2012). The major factors contributing to the fluctuation of oil prices are:

1. Production of crude oil is the most important factor in variations in prices. When production increases, prices generally decrease, and when production decreases, prices will increase.
2. The demand for crude oil is the second important factor. If the demand for crude oil increases, the price also increases.
3. Interantional issues like war will affect crude oil prices.
4. The Cartel of the OPEC members

#### Determining the Crude Oil Price

The determination of oil prices is mainly fixed by the OPEC countries, but it is difficult to determine due to several factors, such as the high uncertainty relating to the development of the resource and investment required, the nature of the resource, the scarcity of the resource, high pressure by the resource producers and refineries due to their monopolies, the inelastic demand for oil as it is needed to fuel economic growth, etc. However, there are three major factors determining oil prices, i.e., the oil supply, especially from OPEC and other alternative fuel supplies like shale gas, etc.; the access to future supply, which is the reserves available in various exporting countries; and the third factor is the demand from various countries. (Mehata Manvi et al., 2019).

## **The impact of crude oil price fluctuations on the economy**

The tendency towards high oil prices has been one of the key reasons for recession, excessive inflation, poor productivity, and lower economic growth (Barsky & Kilian, 2004). According to Bhattacharya & Bhattacharyya, 2001, the hike in oil prices typically generates cost-push inflation that leads to a decline in output and a shift in terms of trade.

Therefore, when the price of oil increases, the cost of dependent industries will also increase. This cost will finally be passed on to consumers. The price of the commodity will increase, which leads to increased inflation and reduced industry profit, which finally reduces the growth rate of the country.

There are several impacts of crude oil price fluctuations. These are:

1. Impact on the current account deficit of the country
2. Increases the inflationary pressure.
3. Imbalance of fiscal health
4. Adverse effect on the fiscal deficit
5. Negative impact on the imported country's exchange rate

### **Conclusion:**

Crude oil was the scarcest natural resource but, because of the scarcity of other resources, the majority of countries import from major oil producing countries around the world. Price of oil has been volatile in nature. This will impact on the imported country's economy.

### **Reference:**

- Modak, M. K. C., & Mukherjee, M. P. (2014). A Study on Impact of Crude Oil Price Fluctuation on Indian Economy.
- Mehta, M., Mamania, R., Mehta, M., Ali, M., Bhatt, N., & Agarwal, Y. (2019). Declining crude oil prices and its implications on the Indian economy.
- Rahiman, H. U., & Kodikal, R. (2019). Ups and downs in the indian economy: The impact of crude oil prices. *Int. J. Sci. Technol. Res.*, 8(8), 846-857.
- Yan, L. (2012). Analysis of the international oil price fluctuations and its influencing factors. Yan, L. (2012). Analysis of the international oil price fluctuations and its influencing factors.
- Barsky, R. B., & Kilian, L. (2004). Oil and the macro economy since the 1970s. *Journal of Economic Perspectives*, 18(4), 115-134.
- Bhattacharya, K., & Bhattacharyya, I. (2001). Impact of increase in oil prices on inflation and output in India. *Economic and Political weekly*, 4735-4741.
- [https://www.opec.org/opec\\_web/en/](https://www.opec.org/opec_web/en/)
- <https://worldpopulationreview.com/country-rankings/oil-producing-countries>