Impact of Oil Prices on Economic Growth of India

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Abstract: ***The objective of this paper is to assess the impact of oil prices, on the growth of an economy, taking a specific case of oil importing nations, and to determine the differences about the impact of oil prices of an economy of an oil producing nation. The paper aims to provide a literature review of the impact of change in oil prices and determine the parameters or causes of changes in price, and determine their effect on the economy of the state. The analysis starts by reviewing certain case studies of impact of oil price changes in recent years, and proceeds to a cause effect analysis of certain parameters of the impact of oil. Later, the paper also will analyze the impacts of oil price changes, on various economic parameters like GDP, employment structure, inflation, exchange rates etc.***

Keywords: oil prices, macroeconomics, foreign relations, import, export

1. Introduction

Owing to its strategic nature, oil is an important commodity, affecting world economies. Fluctuations in world oil prices affect countries' current account balances and government revenue. In addition to their effect on aggregates, oil price developments are held responsible for domestic price movements and economic growth, as well as issues related to labor market. Because of the nature of oil, and because of it’s varied field of use, it becomes an important economic indicator. Fluctuation in oil prices both the demand and supply side in equal measure, and conversely, prices of oil are also dependent on investment and consumption. There have been multiple literature texts citing different reasons for the change of the prices of oil. Factors like, prices of crude oil, BOPs and budget deficits of an economy, taxation policies, currency exchange rates, government spending and international relations will affect the supply of oil on a macroscopic scale, especially when supply to oil importing nations are taken for discussion. Another important factor that will definitely impact the demand and supply of oil in the world is the environmental impact. Oil and natural gas volumes located in unconventional reservoirs, such as heavy oil, oil shades, tight gas reservoirs, gas shades, and coal seams, are much larger than what has been produced thus far, primarily from conventional reservoirs. The key to the future will be the development of new technology that allows the industry to produce oil and gas from these unconventional reservoirs in an environmentally acceptable manner. What is important to note is that the scale of impact might differ, but the parameters will be relatively for both oil producing and non oil producing nations. For example, a positive oil price shock will imply a increase in production, and hence a fall in inflation for an oil producing nation, but it will mean a rise of prices, and a fall of oil related production activities for oil importing nations.

Conversely, it is also important to note that there are certain factors that affect the prices of oil in the global market as well. Apart from the general forces of demand and supply, market sentiment is an important factor in oil pricing, essentially because the mere belief that oil demand will increase dramatically at some point in the future can result in a dramatic increase in oil prices in the present as speculators and hedgers alike snap up oil futures contracts. Of course, the opposite is also true. The mere belief that oil demand will decrease at some point in the future can result in a dramatic decrease in prices in the present as oil futures contracts are sold, which means that prices can hinge on little more than market psychology at times. Apart from this, foreign exchange rates play a big part in the determination and fluctuation of oil prices of an economy. Crude oil is quoted in U.S. dollars (USD). So, rise and fall in the dollar or in the price of the commodity generates an immediate change in relation between the barrel quantity and it’s market demand and supply behaviour. Also, oil prices for an oil importing nation will be affected by it’s balance of payments receipts, demographic conditions, etc. This paper, hence aims an impact assessment formula, for the prediction of parameters determining the change of price of oil, and also allows us to equate the fluctuations of the oil market, with respect to change in parameters affecting it, by using techniques like regression analysis, Pesaran’s bound test method, among others.

2. Literature Review: Indian scenario

Oil prices in India have had a rising trend since 2014, followed by an equally sharp drop that was witnessed until 2019. Not having the luxury of owning oil reserves that are self sufficient to cater the population, India has no choice but to be an oil importer. In fact, India is third on the list of the biggest oil importers, after USA and china, importing 5,123,000 liters per barrel per day. A majority of india’s exports are from the gulf or the middle east nations, with Iraq, Saudi Arabia, Iran, Venezuela and Kuwait being the top oil exporters to the state. Studies have shown have shown that, for every 10% increase in oil prices, there is a corresponding 0.1% depreciation of economic growth. But, it has been observed that while computing this relation, most of the available literature used the global crude oil prices as an indicator, and not domestic oil prices. Also, factors like global currency exchange rates, demographic factors, government taxation, government spending and investment, amongst many more factors were not included in many studies. The following sections of the paper will try to highlight certain factors, like the ones stated above and try to equate them to impact on oil prices.

2.1 Factors affecting oil prices in an economy

1) Prices of crude oil

Because oil is a vital quantity (essential good in micro-economic terms), the demand for oil will be relatively inelastic with respect to price. So, initially the demand for oil, especially, for oil imports, will increase with increase in price. This will happen because of two reasons mainly: because of speculation of demand and supply, and how the price might affect oil reserves later on. Secondly, it will also be unaffected initially because of the monopoly nature of oil producing nations, and the lack of self sufficiency of India in terms of oil production. On the micro level, it will affect consumers and companies of oil importing nations because of reduced purchasing power, reduced profits, reduced savings, and restraints on investments and consumption. From a macroscopic perspective, an efficient parameter can be the ratio of value of oil imports to nominal GDP. There are multiple ways of calculating the national income of an economy, one of which is the value added method. We talk about the GDP under the value added method, which is the total amount of goods produced in the domestic territory of a region with respect to a base year.

2) Impact on exchange rates

To understand the impact of foreign exchange rates and oil prices, we need to understand the fact that it is an indirect relationship between the two. To understand it completely, we need to understand about the concept of balance of trade or trade balances. BOT is essentially the net value of imports subtracted from the net value of exports for an economy. Now, for an oil importing nation, when the oil prices increase, this will mean a negative trade balance in the economy, which means the value of imports exceeds the value of exports in the economy. This leads to a depreciation of the value of the currency, and it leads to a loss of purchasing power capacity, hence leading to rise in prices, inflation and a shift of equilibrium in the market. On the other hand, the negative correlation can arise because changes in the US dollar exchange rate negatively affect oil prices. More specifically, exchange rates can change oil prices via its effect on oil supply and oil demand, and via financial markets. 6 First, on the supply side of the oil market, a depreciation of the US dollar might lead oil producers to limit oil supply and raise oil prices to stabilize the purchasing power value of their export revenues in dollars. Second, a depreciation of the dollar might also increase the demand for oil, as oil imports become cheaper in local currency for countries besides the US. Moreover, several countries such as China peg their currency to the US dollar. Dependent on their oil intensity, depreciation could lead to an increase in oil demand driven by higher exports.

3) Government spending and taxation

Studies for India have shown a certain trend, which indicates a rise in government spending and investment for every $10/barrel rise in the oil market. It has been also observed that there is a corresponding increase in the government revenues, which leads to increased spending, majorly through taxes. It has been observed that excise collections from petrol/diesel do not rise but customs duties, GST (goods and services tax), royalties, cess and profit share do, as do the earnings of upstream state-owned enterprises that bring higher corporate taxes, dividends and dividend taxes. Given the current scenario with the implementation of the goods and services tax, there is a more complicated dimension to studying the impact of oil prices on direct and indirect taxes,and to determine and predict a stable trend, the figures of GST collection in FY19 have to be collected and analyzed. The Economic Survey says India’s two underlying macroeconomic vulnerabilities— the fiscal and current accounts— both tend to deteriorate when oil prices rise. “Overcoming the fiscal vulnerability requires breaking the inertia of the tax-GDP ratio. It is striking that the centre tax-GDP ratio is no higher than it was in the 1980s, despite average economic growth of 6.5 percent, the most rapid in India’s history," said the survey. Further and what’s consequential: “The GST could help break this fiscal stasis, with positive spillovers for macro-economic stability," elaborates the survey, adding that there is evidence of a noteworthy increase in the number of tax filers in the demonetization-GST period.

4) Foreign relations

Foreign relations, being of the subjective nature that they are, have a lot of determining factors. Oil is specifically important for relations with the middle-east and oil importing nations, and any shift in policy is usually proceeded by a change in the tariff structure of exports, duty regulations, among others, depending on the direction of shift of policy. Considering the amount of ambiguity present when dealing with foreign relations, speculation becomes an important factor to deal with. Recent loss of ties of Saudi Arabia and Iran, USA's removal from the JCPOA, and events like the Arab spring, and their chain effect, have impacted exported prices from the middle east, and affected their production and selling capacity to a great extent. It is important to note that apart from policy speculation, financial speculation plays a big part too. Moments after USA’s withdrawal from the JCPOA and re-imposing of sanctions on Iran, oil prices in the global prices surged, indicating that the global oil market probably speculated a decrease in oil supply from the middle east, and hence a rise in prices was observed due to the forces of market equilibrium. Factors like MFN (most favoured nation) status, and engagement of WTO and UNCTAD laws is also a parameter for speculation for change in oil prices.

2.2 Impact of oil on economic parameters

1) Impact on GDP

GDP, also known as gross domestic product, is the market value of final goods and services produced within the domestic territory of a country in one year, undiminished by depreciation and net indirect taxes. Now, this is calculated by calculating the value of goods at every stage of production minus the intermediate consumption at each stage of production. Now an increase in oil prices, will affect India, which is an oil importing nation on the grounds that due to an increase in import prices, the intermediate consumption at every stage will be reduced, because of which the value added at each stage of production will reduce. This will lead to a decrease in the GDP, and economic growth will be affected.

2) Inflation

In layman terms, inflation is the rise in prices of an economy. During the1970s, oil prices and inflation shared a direct and a heavily significant ratio in terms of inter-dependency to one another. A rise in oil prices was usually equated to a rise in inflation. This was mostly because lack of resources, and an increased in secondary sector with special emphasis on oil. But, in the 21st century, the relation has lost a of it's strength, but the relation remains relatively the same with respect to inter-dependence. Increase in oil price will cause an increase in the cost of variable goods, which will end up cause an asymmetric upward price shock in the production sector. This will lead to a rise in inflation.

3) Fiscal deficit

Fiscal deficit is the difference between the total revenue and total expenditure of the government. It is an indication of the borrowings of the government. Crude oil imports volumes have been steadily increasing at around 4.5% per annum. Since India is an import heavy nation, it is bound to be affected by the global oil price scenario. An increase in oil prices, will strain the government's cash reserves, and will be responsible for the negative change in the difference of receipts and expenditure. To compensate for this, the government will have to increase it's borrowing capacity, which will result in an increasing fiscal deficit. An increasing fiscal deficit means that the government is borrowing more than it is spending, and on a macro-economic scale, it is vulnerable to falling into a debt trap. Hence, increasing oil prices, will have a negative impact on the economy's fiscal deficit.

4) Employment and welfare

Considering the nature of use of oil, and it's sectors of usage, research analysis has shown that a rise in the oil price will lead to an average decline in wages for all types of workers. Analysis for employment impact is done on two fronts. Firstly, differentiation takes place on a sectoral basis, depending on the usage of oil on different sectors of the economy, namely the primary, secondary, and the tertiary sector. Secondly, we differentiate between the different types of workers, based majorly on whether they are skilled or unskilled, and their varying experiences and skill-sets. Research analysis has shown that during an upward oil price shock, almost all sectors are affected, and wage cuts are seen in virtually in all sectors of the economy. Also, in the short run, it is important to note that oil price upward shocks do lead to wage losses and an increase in unemployment in the short run, but even in the short run, the wages of skilled laborers are found to have increased. Hence, as in the short run, unemployment will increase, and wages will decrease, but in the long run, there will be a change in the demand of the type of labour, and demand can be seen shifting towards skilled labour more.

3. Conclusion

This paper has tried to highlight the basis of the behaviour of oil importing, with analysis done with respect to the observed behaviour of the Indian economy. The paper has described factors determining the change of oil prices in the economy, and corresponding market behaviour. Also, finally the paper has defined the impact of oil price shocks, on the economy, considering factors important for determining economic development.