Impact of Oil Inflation on the Indian Financial Markets and Indian Macroeconomic Landscape

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Abstract - **Considering the fact that India imports nearly two thirds of crude from the international markets , the implications of price volatility is far reaching on India's external trade, balance of payments, currency stability, interest rate scenario and India's overall macroeconomic management including India's financial sector. Such a huge dependency upon imported crude has given rise to the concept of imported inflation, wherein high international prices get seeped into our economy and creates pressure. High inflation compels the Reserve Bank of India to stiffen the rates which in turn discourages firms to take up more expansion plans. This affects the quality of earnings and this in turn makes the stocks come under pressure. Moreover, high inflation forces the investors to demand more premium as insulation from inflation which raises the cost of equity. Moreover with high policy rates, bond markets come under pressure too because at times of high rates, existing bond holders (including banks and financial institutions) tend to liquidate their bond holdings because they suffer treasury losses. This article attempts to study the impact of imported inflation emanating from volatile crude oil prices and supply shocks upon India's overall macro economy as well as India's financial markets.**

Key words: **Imported inflation, Current account deficits, Equity markets, Bond markets, Interest rates**

I. INTRODUCTION TO INFLATION IN INDIA AND ROLE OF OIL

In simple terms the term inflation refers to an economic condition wherein the general price levels rise persistently over a period of time and due to this there is erosion in the purchasing power of money. India for long has been gripped by persistent high levels of inflation. Inflation is primarily caused by two factors. Inflation from the demand side (known as demand pull inflation) and inflation from the supply side (known as cost push inflation). Demand sided inflation is caused mainly when due to the overheating of the economy caused when the aggregate demand for the goods and services far outstrips the supply of the same. This happens mainly due to increase in the income levels, improvement in the standard of living, change in preference etc. Supply side inflation is caused primarily when demand remains constant (almost) but the supply of the goods and services are disrupted. This mainly happens because of the hindrances caused in timely supply of goods and services including raw materials, finished goods, other inputs, labor etc due to the poor supply chain management. Erratic monsoons too are one of the major contributors to inflation in India as India is primarily an agro based economy. It is very unfortunate that in India, inflation is primarily from the supply side due to poor infrastructural set up. Inflation acts as a regressive tax for the masses. Another factor that has for long kept the inflation prolonged in India is her heavy reliance upon imports. India mainly imports crude oil, heavy machinery and gold from international markets. Import payments are the major source of outflow of resources. India lags behind in exports so foreign reserves do not accumulate much and whatever is accumulated, goes into payment for imports. This has for long exerted tremendous pressure upon the Indian rupee and so its value is depressed for long. With inbuilt weakness in Rupee, its value has been low and made the domestic goods and services costly. In a bid to suppress inflation, the reserve bank of India has traditionally kept the interest rates high so that it may discourage easy money flow in the economy and thereby prevent the economy from getting overheated. However the with persistent inflation and high degree of unemployment, the savings rate of the Indian economy is low. So consistently keeping the interest rates high chokes the economic growth. A better approach of battling the inflation will be to tackle it from the supply side by investing more into infrastructure, logistics, employment creation etc. India has to be resilient from within and should strive towards minimizing her dependence upon imports and start manufacturing such goods and services which are of international standards and are competitive. This will bolster the value of the domestic currency by earning more forex reserves and with the home currency gaining strength, inflation will automatically come down.

II. IS INFLATION ALWAYS BAD FOR THE ECONOMY?

No. In fact in common economic parlance it is often said (and is evident from the ongoing recessionary effect from the two severe crises of sub- prime mortgages and euro zone default) that inflation is a better evil than deflation. little bit of creeping inflation is good for the economy as it encourages more and more firms to enter the market for the incentive of earning profits. This keeps the economy ticking and production level increase which involves setting up of new capacities, purchase of inputs and most importantly creates employment for the masses. This brings about all round development of the economy. In this sense a bit of overheating of the economy is actually a stimulant. Most importantly, with the development with all the markets, the financial markets too become broadened on the back of a robust financial system and when people start getting real returns from the financial instruments, their dependence on physical assets like gold and real estate reduces which indirectly eases the pressure from imports. Recent examples of developed economies like the U.S, Euro zone and Japanese economies aptly uphold this explanation. In the wake of severe financial crisis, these world economies almost froze under recession and as a result interest rate and the unemployment rate touched all time low. Massive bouts of monetary easing in the form of bond buying programmes by their respective central banks were undertaken to stimulate the economy back into life and create employment. The idea was to spark up the dormant economies with little inflation and suddenly high interests were something they were looking up to with a lot of expectation in their eyes. Inflation turns evil when it is unbridled and becomes galloping. At this point the wage price spiral sneaks in along with a rise in the input prices. Firms enjoy the profits during inflation only when they are able to extract increased prices for the goods sold by them in the market and when they are not paying higher wages to the workers or paying increased prices for the input materials. This invariably helps them to earn more profits. Firms lose the incentives of further production when they find the impact of inflation reflecting in the input prices and in higher wages demand. It happens so because when the suppliers and the wage earners find the pinch of rising prices, they demand higher prices from the firms. The restrictions with the firms are that due to huge competition, they are not able to raise the end prices beyond a point and so their margins suffer. More ever at times of high inflation, consumers tend to consume less and save more or shift their preference to essential things. This acts as a dampening force or disincentive for the firms and they either cease to exist or halt their production; thereby inflicting the danger of unemployment upon the work force. Moreover, the central bank responds to such a situation by increasing the interest rate to curb excess liquidity and halt the demand which in turn makes the cost of capital costly for the existing and new firms. This again is regressive for the economy, as firms shelve off their production or expansion plans because they find it financially unviable to go ahead with production at times when people halt their demands due to exorbitant prices. So in some way, too much of persistent galloping inflation leads to deflation like condition in the long run and hence is undesirable for the economy.

III. CONCEPT OF IMPORTED INFLATION AND ROLE OF OIL

Inflation is said to be 'imported' when it is caused due to the rise in prices of imported commodities. It is well known that crude oil is one of the three main items which is imported by India. Almost 75% to 80% of the oil needs of India is satisfied by imported crude from international markets. Almost three quarters of the oil demands are fulfilled by importing oil from the international markets. Two factors mainly determine the price of crude imports. First, the international price of Brent crude oil barrel (1 barrel=160 liters of crude oil) and secondly, the value of the domestic currency as computed by the prevailing exchange rate against the U.S. Dollar. It is so because crude is denominated in the international markets in U.S. Dollar.

When such a huge quantity of oil is being imported then it becomes quite obvious that any fluctuation in either of these two variables or in both the variables is bound to be reflected in the final price of the import prices. When the price of the crude shoots up in the international markets due to increased demand or curtailed supply owing to geopolitical tensions, a supply shock gets transmitted across all the oil importing economies and the per barrel cost of crude rises exorbitantly. To make the condition worse, if the Indian Rupee is under pressure against the U.S, Dollar, then the final price paid for the crude imports is torturously high. This rise in the price of crude at the entry point itself gets transmitted in its final price and this increases the cost of transportation and finally prices of all goods and services is hiked because crude is one of the most important input of production. Thus such inflation is known as imported inflation.

Some of the reasons for the volatility in oil prices in India are as follows:

Production & Demand: Demand for oil in India has increased at a rate much faster than its supply. As already observed, recent improvement in the overall economic activities across all the sectors viz. manufacturing, agriculture, transportation, aviation, roadways etc has created a mammoth demand for oil, which India has to import from overseas thereby exposing the domestic oil prices to sharp volatility.

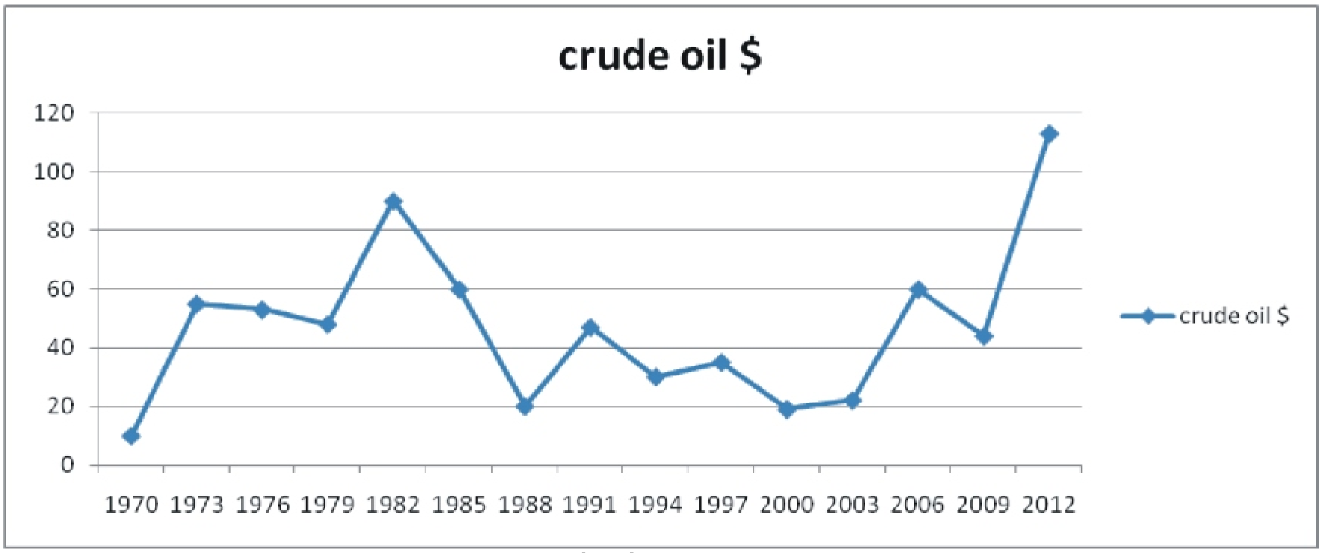
Inventory: Besides India, many other countries too are heavily reliant upon oil supplies to meet their overgrowing fuel needs. Due to the wild gyrations in the fuel prices, all the countries try to build up strategic inventories in oil reserves so as to insulate themselves against any sharp increase in price in the future. This move of theirs creates an overall pressure on the prices of oil.

Geopolitical risks: Geopolitical risks are another factor responsible for rise in the prices of oil in the international markets. Recent examples are tensions of India with Iran, Arab spring crisis etc. Moreover since the OPEC takes a call regarding the crude output and export linked trades, oil prices are always vulnerable to geopolitical risks and supply shocks.

Natural disasters, possibility of war, terrorist attacks: Though not many significant, still natural disasters, political deadlocks like the recent Russian aggression towards Ukraine, unprecedented terrorist attacks cause supply side disruptions and spike in the price of crude oil.

There are a number of evidences to support bidirectional or unidirectional causality between energy consumption and economic growth. Despite intensive study available on causal relationships between energy consumption and economic growth, there have been some studies specifically addressing the causal relationship between oil consumption and economic growth. The direction of causality between oil consumption and economic growth has significant policy implications for countries, enjoying implicit generous subsidies for energy.. Numerous studies have been conducted to examine the relationship between energy consumption and economic growth; the overall findings show that there is a strong relationship between energy consumption and economic growth.

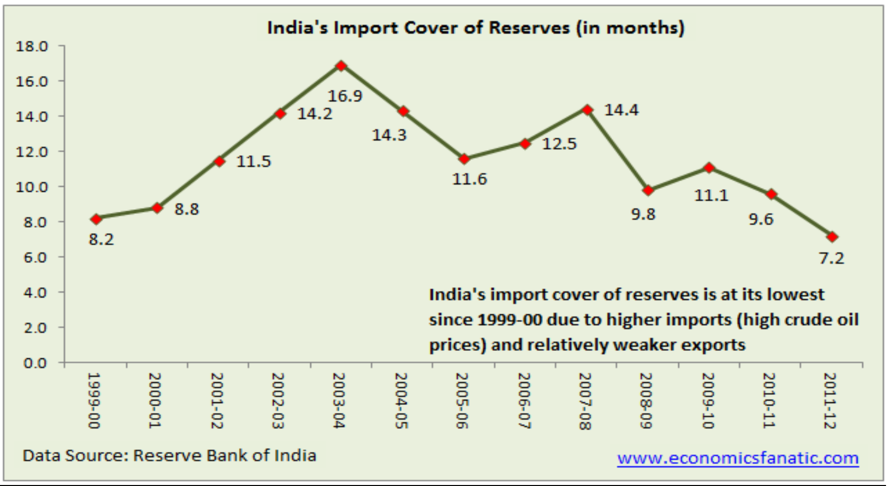
History of crude oil price movements:



Source: International Trade Department, IOCL & PPAC.

India's crude oil import bill crossed USD100 billion with the global price stays firm at USD 100-USD 120 a barrel. It has upset the delicate fiscal balance, expand deficit, increasing the subsidy bill that continues to bloat year after year and fuel inflationary expectations. Rising crude oil prices has impacted inflation whether the government absorbs the burden or passes it to the consumer by increasing prices of petroleum products. If the government acts as a buffer, the oil subsidy bill will rise and affect fiscal deficit. This will indirectly fan inflation. The recent strengthening of crude oil prices could impact economic growth momentum in the country for the current fiscal. The main factors that would be responsible for economic growth moderation in 2013-14 would be crude oil prices and RBI's tightening of monetary policy in response to oil prices. Rising crude price will lead higher inflation and higher inflation attracts monetary tightening. Monetary tightening would lead to a squeeze on aggregate demand, impacting economic growth. There will be an impact on the price level and on inflation. Its magnitude will depend on the degree of monetary tightening and the extent to which consumers seek to offset the decline in their real incomes through higher wage increases, and producers seek to restore profit margins.

The graph below paints a very grim picture regarding the falling Import cover over the years due to rising international crude oil prices, unabated demand for imported crude oil and a weak domestic rupee due to a very tepid growth in export earnings. A substantial amount of precious forex earnings has been going towards the payment of the crude oil import bills.



Source: http://www.economicsfanatic.com/2012_05_01_archive.html

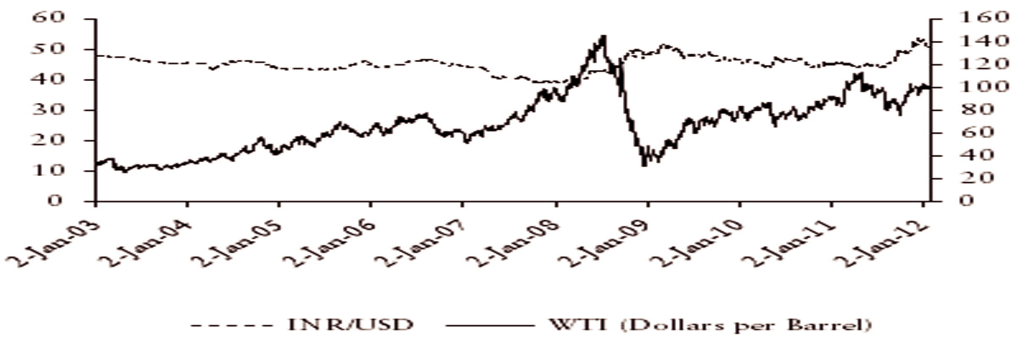
The chart above gives the Import cover of Reserves for India from 1999-00 to 2011-12. India's import covers of reserves (in months) from 1999 to 2012. It is extremely important for the Indian economy to increase the forex reserves by conserving and earning them through up scaled exports. A huge forex reserves is very important for strengthening the domestic currency and in containing inflation.

A weak Rupee induced inflation has a disastrous impact on the stability of the Indian financial market. India should also try very hard to reduce her dependency on crude imports besides making an effort towards increasing her exports to rest of the worlds.

IV. Impact of oil on the Indian equities markets

In most of the cases, there exists an inverse relationship between the movements of the oil price and the returns of the equity markets. As the oil prices rises, the equity markets react to this price rise negatively. The inverse relationship is justified as follows: when the oil price goes up because of a supply-side shock, the cost of doing business rises and stock price factors this to account for the drop in earnings. Firms find the wage price spiral setting in and due to increased transportation costs, the cost of production goes up considerably. This ultimately reflects in the increased price of the finished goods. Oil supply shock induced inflation has a cascading effect across the earnings of almost all the companies. The corporate earnings drop suddenly and the stock markets start looking expensive due to the increased P/E ratio. Moreover due to the inflation arising out of such a supply side shock of oil, people apprehend a rise in their expenses and a corresponding fall in their savings rate. They tend to curtail their expenditure on certain non essential goods and start saving instead. This reduces the demand for the products of a number of companies and as a result their earnings collapse. At the time of supply shock triggered inflation, central banks tend to increase their key rates thereby choking off the demand. This again has a depressing effect on the margins of the companies because the financing costs go up. From the investor's point of view too, this changes their investment preference. Investors factor in the fact that with the increase in the key operating expenses and interest costs, the corporate earnings shall come under stress. Working under this apprehension, they decide to sell their equity holdings and transfer the proceeds to more safe and yielding bank deposits which offer better risk free rates due to the increase in policy rates by the central banks. The entire stock market undergoes an auto correction and falls due to the supply side inflation shock caused by sudden rise in the price of crude. Being heavily dependent upon oil imports (75% to 80%) for fulfilling her energy needs, supply disruptions not only throw the equity markets out of gear but also affect the currency markets negatively. Due to the rise in international crude oil prices, India needs to pay more in terms of Dollar which the oil companies buy from the banks. Such huge import bill caused due to high crude prices and a depreciating Rupee causes significant current account deficits and further weakens the rupee thereby making the impact of the domestic inflation even more pronounced. There is a tendency for the oil price and the exchange rate to move in opposite directions.

The following chart highlights this relationship:

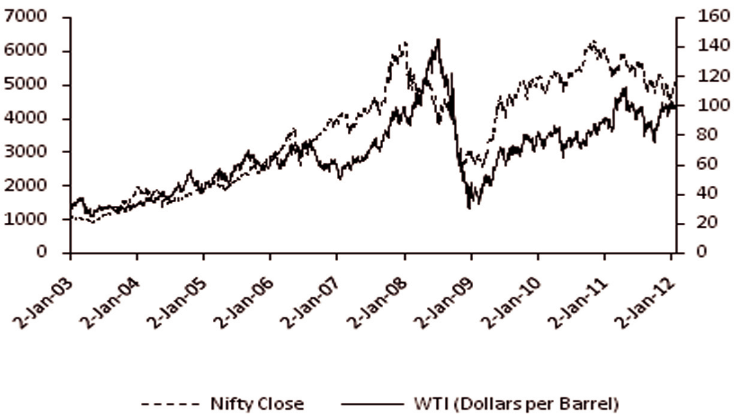


Source: Manish Kr; The impact of oil price on India stock & FOREX markets, ICRA bulletin, Money & finance, February 2014; Pg No. 63

Since a few years, the demand for oil from the emerging economies has been rising as compared to the developed economies. Moreover, after the crude prices hit a rock bottom in 2008-2009, due to severe recession induced fall in demand from the developed world, the OPEC curtailed supply and gradually with the increase in demand, the crude prices too started moving north.

The impact of oil price rise upon the stock markets however is less pronounced in case of periods of growth. During period of high economic growth, the equity markets usually react positively to rise in crude oil prices. This happens so because of the change in investor's perception towards the corporate performance and the growth of the overall macro economy. Investors correlate the growth in demand of crude oil with economic growth and link it with prosperity and increased production. They assume this to be an indicator of heightened demand of goods and services and with an overall growth of all the sectors of the economy. Investors factor this sentiment in the stock prices by making buying decisions of equity stocks. They feel that it's better to buy into the shares at the current juncture rather than buying them when they shall be expensive. The basic assumption which they make is that companies are demanding more oil because they want to produce more goods to cater to the increased demands from consumers, which is a very reliable metric for economic development. This lays the foundation for a bull run and buying demands increases the price of the stocks as well as the P/E ratios. Thus, when oil prices increase due to increased demand from companies, it is taken positively by the equity markets and they become pricey.

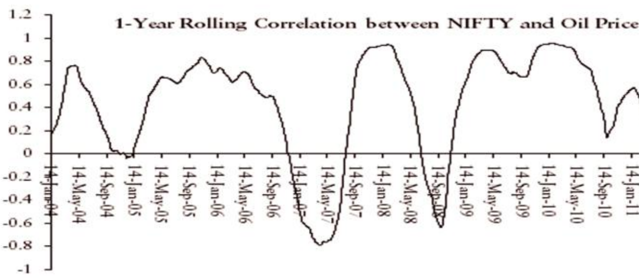
Oil price movements and the movement in S&P CNX Nifty:



Source: Manish Kr; The impact of oil price on India stock & FOREX markets, ICRA bulletin, Money & finance, February 2014; Pg No. 61

The graph above shows how the stock price index (S&P CNX NIFTY Close) has moved over time vis-à-vis the international oil price (WTI, US$/bbl). This chart shows that most of the time the oil price and the stock market index moved in the same direction, suggesting a positive relationship between oil price and the Indian stock market.

Correlation between stock prices and the S&P CNX Nifty:



Source: Manish Kr; The impact of oil price on India stock & forex markets, icra bulletin, Money & finance, February 2014; Pg No. 63

The graph above shows that the correlation changed from positive to negative and vice versa during the period between 2004 and 2011, the correlation being positive for the larger part of this time period. Since the earlier part of this period was one of reasonably high growth.

Another perception of the investors is that when the stock market is rising under the anticipation of economic development and reduced price levels (due to supply of goods against the increased demands), the rates offered by the banks generally tend to be low. As a result investors find it less yielding to keep money in banks and when the markets are on a rise generating superior returns, they get tempted to take the additional risk and invest in the equity markets. At times of high economic growth, equity markets exhibit fundamentally strong results due to better corporate outlook and robust economic recovery. Hence, the rise in oil prices should be inferred from both, the demand side and the supply side. While the supply shocks induced oil prices are detrimental because of their negative outlook, the demand side triggered oil price rise exhibits a fundamentally strong robust economic outlook.

V. IMPACT OF OIL ON THE INDIAN BOND MARKETS

Just like oil prices have a bearing upon the equity markets, the bond market too gets affected by the oil price fluctuations. There exists an inverse relationship between bond yields and bond prices. Whenever the bond yields rise from the current level, the price of the bond precipitates which causes a loss for the existing bondholders. It happens so because when the yields rise, the existing pre determined cash flows are discounted using the higher discounting rate, which makes the present values of the bond, prices less. On the contrary, when the yields fall, there is a profit for the bondholders as existing cash flows now get discounted using a lower discount rate which makes the present value of the bond prices rise thereby making it profitable for the existing bondholders.

Oil prices generally rise under two conditions. First if there is a supply shock arising from reduced supplies or geopolitical risks etc, and second it rises on the back of increased demand from the companies. The first condition highlights the supply shocks while the second one is the indication of demand side price pressure. Supply sided oil price hikes are regarded negative from the point of view of its impact over the macro economy. This acts as an impediment for the economic growth. In case of oil price rise from due to the supply sided constraints, the huge import bills create a fiscal and current account deficits. To overcome the runaway inflation and to bridge the fiscal gap, the central bank has to issue government bonds to suck up the excess liquidity from the market to discourage demand and curb the inflationary pressure upon the economy. This action increases the rates in the economy and investors invest their savings in these G-secs to avail the high coupons. This is detrimental for both the equity and the bond markets. The impact of high rates upon the equity markets has already been studied. In case of bond markets too, this is catastrophically because the existing bondholders shall be suffering due to the reduced price of the bonds because of the increase in bond yields, because the new investors shall be investing in the long term bonds at a higher coupon rates. Thus high oil prices arising from the supply disruptions, cause losses in the bond markets

On the other hand if the price of the oil is due to the increased demand, then it signals economic prosperity across the entire macro economy. In this case the equity markets too respond positively. An increased demand of oil is a signal of augmented production activities which keeps the supply matched against the demand thereby keeping the inflation tamed. In this case (if the economy does not show signs of overheating) the central bank does not interfere with the rates and does not disturb the liquidity. Under such conditions, not only the equity markets get encouraged but also the bond markets generate profits because due to easy liquidity conditions and subdued interest rates, the yield to maturity of the long term bonds increases. Thus under this condition, increased oil prices and increased bond yields signal easy liquidity conditions , future economic growth and an growth in nominal GDP.

However it needs to be seen cautiously that inflation from either of the sides, demand or supply should not percolate deep into the economy else it will increase the cost of services and purchases in the economy which will leave the investors with very little amount of saving. Again this too is dangerous because with depleted savings, investments in bonds shall dry up and this shall be reflected in low yields due to economic stagnation (as happened in the U.D where the rates touched historical low). So, higher petroleum prices should be monitored cautiously and should not be the reason for inflation and subsequent shallow level of savings in the economy, which is not good for both, the economy as well as the financial markets.

VI. CONCLUSION

This article was an attempt to study the impact of oil prices on the overall macro economy of India. It has been observed that oil price does affect all the critical areas of the Indian economy and it is also suggested that the Government of India makes some serious attempts to reduce the supply side bottlenecks in order to try and contain the supply side inflation. This has become very necessary because India mainly suffers from the supply side inflation due to supply side bottlenecks and poor infrastructure. If crude prices rise from the supply side, this will destabilize the economy caused by high inflation and high interest rates. Both the deficits will increase and India's total debt, equity markets and bond markets shall suffer badly. On the other if supply infrastructure is improved then even in times of crude price rising owing to increased demands, economy won't be overheated because of timely mobilization of resources, increased incomes due to Government project spending, increased savings and a benign interest rate environment. The GDP growth shall take place in real terms. This shall not only strengthen the economy but also the financial markets and most importantly, the debts raised by the Government shall be used for capacity creation instead of consumption. This will eventually improve India's debt servicing capacity as well and shall play a vital role in attracting foreign investments.

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