International Journal of Economic Research

ISSN : 0972-9380

available at http: www.serialsjournals.com

Volume 14 • Number 14 • 2017

Oil Price Volatility and Economic Sustainability

Poonam Chauhan[1]

[1] *Assistant Professor of Marketing at the K.J. Somaiya Institute of Management Studies and Research, Mumbai, India. Email: poonam@somaiya.edu*

ABSTRACT

Oil price volatility hurts both, the importing and exporting country. While most of the research suggests that some countries can benefit by increase in oil prices, this paper brings out evidences that oil price volatility adversely affects different type of economies. It raises debate on economic crises, financial intermediation, demand supply imbalance, role of geopolitical events and weather conditions linked with the risk of oil price volatility. The rise and fall of world oil prices over the last decade have been repeatedly reflected in the boom-bust cycles in oil-exporting and importing countries the world over. The history of price movements demonstrates that policy makers are faced with uncertainties around the trend of prices and the extent to which prices vary around this trend. Dependency on oil-derived fuels in various sectors has left the global economy vulnerable to several macroeconomic side effects. The recent sharp rise and equally sharp fall in crude oil prices offers an opportunity to investigate the responsible factors, the impact and the measures for economic sustainability with oil price volatility.

JEL Classification: E3, E31, E320.

Keywords: Oil price volatility, Geopolitical Issues, Inflation, Risk Mitigation.

1. INTRODUCTION

Crude oil is most important driving force of global economy and changes in price of oil affects economic growth and development around the world. Various studies have been undertaken to explain the behavior of the oil prices as well as to assess the macroeconomic consequences of oil price shocks.

Using a sample comprising developed and developing, service- and industry-based economies as well as net oil exporters and importers, the world bank study shows that in 1986–2011 oil price volatility caused considerable and statistically significant damage to GDP in all the sample countries. (Rentschler J.E, 2013)

The price of oil has been attracting considerable attention for last few decades, as the world has moved towards industrialized economy. In fact, price of oil has witnessed profound fluctuations since 1974. Persistent oil shocks have severe macro economic implications that create challenges for policy making- fiscal or monetary- in both oil exporting and oil importing countries.

Oil price shocks (i.e. sudden changes) can be transmitted into the macro-economy via various channels. In the private sector, a positive oil price shock will increase production costs and hence restrict output – with price increases at least partially passed on to consumers. Moreover, as prices for gasoline and electricity increase, households face higher costs of living, with the poor being particularly vulnerable. (Rentscher J.E,2013)

2. RESEARCH QUESTIONS

Authors of the paper are researching oil price volatility and its impact on economic sustainability based on following questions:

- Why are oil prices so volatile?
- How does oil exporting and Oil importing countries are affected by Oil price volatility?
- How does oil price volatility creates risk for economic sustainability?
- What are the policy measures to mitigate the risk of oil price volatility?

3. METHODOLOGY

The analysis is based on secondary sources of data primarily scholarly articles, news articles and survey reports and social media. Following reports were referred for background study: 'Coping with Oil Price Volatility' by Robert Bacon Masami Kojima 'Mitigating Vulnerability to High and Volatile Oil Prices : Power Sector Experience in Latin America and the Caribbean' by Yépez-Garcia, Rigoberto Ariel; Dana, Julie. 'Understanding the Plunge in Oil Prices: Sources and Implications' by a team led by John Baffes, Ayhan Kose, Franziska Ohnsorge, and Marc Stocker, At world Bank open knowledge repository.

4. REVIEW OF LITERATURE

Demand and Supply Imbalance influencing Oil Price Volatility

A much- noted characteristic of energy markets last decade was that prices were influenced by geopolitics and macroeconomics along with supply and demand fundamentals.

The scale of unrest in some of the biggest energy-producing countries is at historically high levels. Recent events have included the Arab spring, the North African revolution and Iraq, and the stand-off between Iran and the West over its nuclear program. (Carr G, 2012). OPEC has been one of the most effective cartels in any major market in the world. Although OPEC has had periods when oil price sank despite its efforts, notably after the Asian financial crisis of the late 1990s, it has enjoyed spectacular successes. OPEC first brought the world the oil shock, price spike, and long gas lines of the 1970s. OPEC manages supply to manage price. (Kolb R.W, 2011)

Due to the narrow economic base and small absorptive capacity of most oil exporting countries, they are able to accumulate large reserves and enjoy current account surpluses. Such trends could have spillover effects by creating global imbalances through higher prices, liquidity shortages, inadequate global demand and currency devaluations. Higher petroleum prices could produce adverse effects on global stability by redistributing income in favor of oil producing countries and reducing flows of international transactions. (Amer Al-Roubaie,2010)

The volatility of oil prices is inherently tied to the low responsiveness or "inelasticity" of both supply and demand to price changes in the short run. Both, oil production capacity and the equipment that use petroleum products as their main source of energy are relatively fixed in the near-term. It takes years to develop new supply sources or vary production, and it is very hard for consumers to switch to other fuels or increase fuel efficiency in the near- term when prices rise. Under such conditions, a large price change can be necessary to re-balance physical supply and demand following a shock to the system. (Eia, 2015)

The plummeting price of oil recently is the major energy story in the world. There are varied reasons for this down slide in oil prices. One is that high prices spurred companies in the US and Canada to start drilling for new hard to extract crude in North Dakota's shale formations and Alberta's oil sands. Then, over the last year, demand for oil in places like Europe, Asia, and the US began tapering off, thanks to weakening economies and new efficiency measures. Also the OPEC, the biggest oil cartel in the world did not cut back on production, leading to free fall in oil prices. (Plummer B, 2015)

Prices became much more volatile, primarily fluctuating upwards, as repeated supply shocks hit the system and the Chinese economic bubble keep demand robust. (Michael Lynch,2015)

Geopolitical Events influencing Oil Price Volatility

In October 1973, several Arabic members of the Organization of the Petroleum Exporting Countries (OPEC) announced that in response to U.S. support for Israel during the 1973 Arab–Israeli war, they would place an embargo on oil exports to the United States. That action caused real oil prices to soar from $12 to $53 per barrel within four months. Later in the 1970s, political turmoil in Iran and the Iran–Iraq war again rattled the market and by January 1981 pushed the real price up to $95. Eventually, oil prices fell back to earth with a thud, bottoming out at $21 per barrel in July 1986. The roller coaster ride of prices has continued more recently. After oil prices skidded to a low of $12 per barrel in December 1998 in the wake of the Asian financial crisis, oil stabilized again around $30 during 2000–2004 before a breathtaking ascent that reached $145 per barrel by July 2008—only to dip below $40 per barrel again before the end of 2008. (Smith, J. L, 2009).

The most recent and significant factors, in terms of crude price impacts, are the uprising in Egypt and Suez Canal security ,these geopolitical factors are likely to continue creating various degrees of risk to the supply side. (Nieto.F, 2013). Despite one of the biggest jumps in oil production by countries outside the Organization of Petroleum Exporting Countries since the 1980s, elevated outages have kept prices high alongside rising geopolitical tensions. (Yep E, 2014). Libya was a major oil exporter before its civil war in 2011. Unrest in the country has slashed crude production to just one-tenth of its normal level of 1.5 million barrels a day. Analysts and investors were bidding up Brent crude out of fear of potential energy-supply disruptions or sanctions against Russia in such an event. (Berthelsen, C.,2014).

The recent surge in U.S domestic oil production is already having geopolitical effects that include greater leverage to implement sanctions on Iran and reduced influence of OPEC. (PR Newswire,2013)

There is no argument against the fact that fears of terrorism and war are adding dollars to the price of each barrel of oil sold. Political unrest and uncertainty leads to spiraling prices and affects major oil-producing and oil-consuming nations.

Oil Price Volatility and Economic Impact

Countries heavily dependent on imported oil to power a significant portion of their electricity generation are especially vulnerable to high and volatile oil prices. In net oil-importing countries worldwide, high and volatile oil prices ripple through the power sector to numerous segments of the economy. As prices move up and down, so does the cost of electricity production, which has far-reaching effects on the economy, fiscal and trade balances, businesses, and household living standards.(Yépez-Garcia, Rigoberto Ariel; Dana, Julie. 2012)

Sharp oil price changes-either increases or decreases-may reduce aggregate output temporarily because they delay business investment by raising uncertainty or induce costly sectoral resource reallocation. (Guo, H., & Kliesen, K. L. (2005)

Fiscal policy in oil-centered economies is facing specific challenges, both in the long run, as regards intergenerational equity and fiscal sustainability, and in the short run, as regards macroeconomic stabilization and fiscal planning. Most oil exporting countries follow fiscal expansion that adds to inflationary pressure. (Omojolaibi, J. A., & Egwaikhide, F. O. (2014).

The researchers have empirically investigated the role that oil prices play in determining fiscal policy in oil-exporting countries. They have derived andestimated a fiscal policy equation that links government spending not only to oil price shocks, but also to oil price volatility and the skewness of oil price changes. The findings showed that in the long run, higher oil prices induce larger government size. In the short run, however, government expenditures rise less than proportionately to the increase in oil revenues, reflecting increasing prudence in fiscal policy in oil producing countries. (El Anshasy, A. A., & Bradley, M. D., 2012).

Current high and volatile prices are making it harder for oil importers to budget for energy costs. Volatility has also hurt economic growth, investment and trade, and several developing countries have lost ground in the poverty fight as a result. Millions of people slid back into poverty as a result of rising oil prices and a higher cost of living. (The World Bank,2008). The transport industry is suffering massively due to price levels of oil and its derivatives, but what is really killing off some companies is the range that the prices have moved in the period of time, rather than the price itself. (Seddon, K., 2008).

Oil booms have resulted in increases in wealth accompanied by large current account surpluses and Gross Domestic Product (GDP) growth among the oil exporters. However the slump in oil prices severely dampens the economic activity as well.

Both Colombia and Venezuela are poised to face rising pressure on their export growth due to falling oil prices and sluggish crude production growth. This will only be exacerbated by slow oil production growth in both countries. (Emerging Markets Monitor. (2014).

The findings of Thank God, A. O., & Maxwell, I. A. , demonstrated that fluctuations in oil prices do substantially affect the real exchange rates and interest rate in Nigeria.(2013).

Most EU Member economies are considered to be vulnerable to oil during the last years of the time period under consideration. This can be explained by the fact that Europe's main oil suppliers is Russia with a share of 26 percent of oil exports to the EU countries and Middle East countries with a total share of 30 percent. (Christos V. Roupas, Alexandros Flamos, John Psarras, 2009)

Policy Implications: Towards Economic Sustainability

In order to reduce a country's structural exposure and vulnerability to price volatility, policy makers have various long-run policy instruments at their disposal. This includes measures such as decreasing the fossil fuel share in the national energy portfolio, increasing energy efficiency, and developing structural and technological alternatives to make production processes less fossil fuel intensive. (Rentschker J.E, 2013)

Among the many options available for mitigating the commodity price risk, the least used are market-based instruments. The hedging instruments used range from the basic types such as forward contracts, futures, options, to complex combinations (e.g. collars, over-the-counter, tools, among others.) depending on the end user's strategy to shift risk.(UNCTAD, 2011) At the peak of high oil prices, nearly all developing countries intervened with price-based policies to mitigate the price increase on the world market for at least one fuel. Many governments alsomade use of targeted subsidies and tax reductions, usually aimed at agriculture, public passenger transport and goods transport (such as for the trucking industry (Barsky, R., & Kilian, L. 2004).

Strong public financial management is the first and best solution to the economic and fiscal policy challenges posed by volatile oil prices and dependence on oil revenue. However, many countries in sub-Saharan Africa, including the oil producers, do not manage their public finances well because their administrative and institutional capacity is limited. A few of oil-producing countries have tried to compensate for these deficiencies by setting fiscal rules and passing fiscal responsibility legislation, establishing oil funds, and using budgetary oil prices. (Robert York and Zaijin Zhan, 2009).

The research suggest that economic activity and prices respond very differently to oil price shocks depending on their types. In particular, an oil supply shock has a limited impact, while a demand shock driven by global economic activity has a significant positive effect in all four Asian countries examined during research. Finding includes that policy tools such as interest rates and exchange rates help mitigating the effects of supply shocks in Japan and Korea; however, they can be more actively used in response to demands shocks. (Cunado, J., Jo, S., & Perez de Gracia, F, 2015).

Sustainability initiatives increasingly will focus on limiting the risk volatile fuel costs pose to profits, not just reducing a company's carbon footprint. (Szakonyi, M. (2012).Government's agenda increasingly campaign for sustainability. The Companies that are proactively pursuing this goal will be less vulnerable to regulatory changes.

5. CONCLUSION

Oil price volatility has been responsible for cyclical fluctuation in economic activities globally. Oil price shock is one of those rare factors which plays significant role in sustainability of the economy. It has been

held accountable for recessions, periods of excessive inflation, reduced productivity and lower economic growth. This phenomenon cannot be analyzed by movement of demand and supply alone, there are other geopolitical events that leads to disruptions and creation of uncertainty in oil markets. The low factor productivity has been attributed to high oil prices. Oil shocks have been cause for inflation. The economic effects could become substantial, unless governments are able to reduce oil usage. Several different approaches to coping with oil price volatility like hedging, security stocks, price-smoothing schemes, and reducing dependence on oil is being considered. The mitigation measures include energy conservation drives and diversifying energy portfolio. Governments should continue to pursue measures to equip the economy for future oil price shocks

References

Amer Al-Roubaie, (2010). AN ASSESSMENT OF INTERNATIONAL LIQUIDITY AND HIGHER OIL PRICES, World Journal of Enterprenuership, Management and Sustainable Development, Vol. 6, No. 3, 2010.

Barsky, R., & Kilian, L. (2004). Oil and the Macroeconomy since the 1970s (No. w10855). National Bureau of Economic Research.

Berthelsen, C. (2014, Apr 14). Oil prices rise on geopolitical risk; geopolitical risk dominates market, with new worries over stability in ukraine and libya. Wall Street Journal (Online)

Carr, G. (2012, 02). WEIGHING UP GEOPOLITICAL RISK. Energy Risk, 9, 18-21.

Christos V. Roupas, AlexandrosFlamos, John Psarras, (2009) "Measurement of EU27 oil vulnerability",International Journal of Energy Sector Management, Vol. 3 Iss: 2, pp.203 – 218.

Cunado, J., Jo, S., & Perez de Gracia, F. (2015). Macroeconomic impacts of oil price shocks in Asian economies. *Energy Policy*,*86*867-879. doi:10.1016/j.enpol.2015.05.004.

Eia.2015.Energy & Financial Markets,WHAT DRIVES CRUDE OIL PRICES? Retrieved Jan 2015 from http://www.eia.gov/finance/markets/spot_prices.cfm.

El Anshasy, A. A., & Bradley, M. D. (2012). Oil prices and the fiscal policy response in oil-exporting countries. Journal Of Policy Modeling, 34605-620. doi:10.1016/j.jpolmod.2011.08.021.

Emerging Markets Monitor. (2014). Emerging Markets Monitor, 20(43), 1-24.

Guo, H., & Kliesen, K. L. (2005). Oil price volatility and U.S. macroeconomic activity. Review - Federal Reserve Bank of St.Louis,87(6), 669-683.

Kolb, R. W. (2011). Geopolitical threats to world energy markets. The Journal of Social, Political, and Economic Studies, 36(2), 154-196.

Michael Lynch.(2015). That will reduce oil price volatility, Forbes/Energy Retrieved on Jan2016 fromhttp://www.forbes.com/sites/michaellynch/2015/09/02/what-will-reduce-oil-price-volatility/#16a211983117.

Nieto, F. (2013, Jul). Geopolitical events sustain NGL prices. Midstream Business, 3, 7.

Omojolaibi, J.A., & Egwaikhide, F.O. (2014). Oil price volatility, fiscal policy and economic growth: a panel vector autoregressive (PVAR) analysis of some selected oil-exporting African countries. OPEC Energy Review, (2), 127. doi:10.1111/opec.12018/abstract.

Plumer, B. (2015). "Why oil prices keep falling-and throwing the world into turmoil retrieved from from http://www.vox.com/2014/12/16/7401705/oil-prices-falling.

Rentschler J.E. (2013). "Oil Price Volatility, Economic Growth and the Hedging Role of Renewable Energies." Policy Research Working Paper 6603, World Bank, Washington, DC.

Rentscher J.E. (2013). Oil Price volatility – its risk on economic growth and development

Retrieved from http://blogs.worldbank.org/developmenttalk/oil-price-volatility-its-risk-economic-growth-and-development

Retrieved on Jan 2015 from http://blogs.worldbank.org/developmenttalk/oil-price-volatility-its-risk-economic-growth-and-development

Robert York and Zaijin Zhan, (2009). Fiscal Vulnerability and Sustainability in Oil-Producing Sub-Saharan African Countries ,IMF working Paper retrieved from https://www.imf.org/external/pubs/ft/wp/2009/wp09174.pdf

Seddon, K. (2008). Oil price volatility: A global issue. Motor Transport , 15.

Smith, J. L. (2009). World Oil: Market or Mayhem?. Journal Of Economic Perspectives, 23(3), 145-164. doi:10.1257/jep.23.3.145

Szakonyi, M. (2012). THE END OF CHEAP OIL. (cover story). Journal Of Commerce (15307557), 13(14), 8-11.

ThankGod, A. O., & Maxwell, I. A. (2013). Macroeconomic impact of oil price levels and volatility in Nigeria. International Journal of Academic Research in Economics and Management Sciences, 2(4), 15-25.

The U.S. tight oil boom: Geopolitical winner or long-term distraction? (2013, Aug 22). PR Newswire Retrieved from http://search.proquest.com/docview/1426765941?accountid=31551

The World Bank. (2008).Volatile Oil Prices Subject of Forum, retrieved Nov 2015 from http://www.worldbank.org/en/news/feature/2008/03/10/volatile-oil-prices-subject-of-forum

UNCTAD, (2011). "Policy actions to mitigate the impact of highly volatile prices and incomes on commodity dependent countries, and to facilitate value addition and greater participation in commodity value chains by commodity-producing countries" retrieved from http://unctad.org/en/docs/cimem2d14_en.pdf

"Yépez-Garcia, Rigoberto Ariel; Dana, Julie. (2012). Mitigating Vulnerability to High and Volatile Oil Prices : Power Sector Experience in Latin America and the Caribbean. Washington, DC: World Bank. © World Bank. https://openknowledge.worldbank.org/handle/10986/9341 License: CC BY 3.0 IGO."

Yep, E. (2014, May 26). Oil futures ease lower; price volatility to continue amid supply issues and geopolitical tensions. Wall Street Journal (Online)