CHAPTER II – REVIEW OF PREVIOUS STUDY

Dr. Shefali Dani in his article “Escalating Petrol Prices in India: Repulsive Government Policies and Turbulence in public”, attempted to bring forward the reasons for soaring petrol prices in India. The author has also analyzed the government policies for petrol sector, indentified the major causes for this amplifying rise in petrol prices and explained the adverse effect of rice in the petrol on general public of India. In this article it is found that the rise in the petrol price was mostly because of the rise in the cost of the crude oil and refined products in the international market, the government pricing policy and the absence of compensation to oil companies. He has suggested that the government needs to extend the subsidy to targeted consumers.¹

Uma C Swadimath, Dr.K.H. Anil kumar and Prasanna B.Joshi in their article “Rise And Impact Of Crude Oil Price In India” explained the causes for rise in crude oil prices and the factors that influenced it. They considered petroleum as ‘liquid Gold’ because it is the most essential commodity and the most traded product which influence an economy. They have also said that in India the change in the price of crude oil has been major cause for the rise in inflation rate as it greatly affects the prices of essential commodities and ultimately adversely affecting

common man. They have suggested that to reduce the dependence on crude oil imports India should develop alternative sources of energy like solar and wind energy.²

B. Mahammad Rafee and Dr. A. Hidhayathulla in their article “Relationship Between International Crude Oil Price And The Inflation Rate (CPI) In India From 2011 To 2014” have explained that India meets 70% of its energy needs by crude oil imports. The price of petroleum at the international market influences the prices of domestic petrol and diesel. Any fluctuations in the international crude oil price influence all other macro economic variables and inflation too. CPI (consumer price Index) is said to be a perfect measure of inflation by the economist. So, for the accurate prediction of the relationship between petroleum price and inflation, the CPI inflation was considered for the analysis. The study proposes to use Augmented Dickey-Fuller Test (ADF) unit root test and Granger Causality test. Crude oil price and CP Inflation monthly data from 2011 to 2014 were used to find the exact relationship. Apart from that, the paper focuses on the petroleum pricing policy of India in brief. The study confirms

² Uma e swadimath, Dr. K. H, Anil kumar and Prasanna B. Joshi, “Rise And Impact Of Crude Oil Price In India”, International journal of marketing, financial services and management research, vol 2, january 2013, ISSN 2277-3622.
with the empirical analysis that the consumer price inflation is not influenced by the hike in crude oil price.\(^3\)

B B Bhattacharya, Amita Batra in their article “Fuel Pricing Policy Reform in India: Implications and Way Forward” this paper undertook an examination of the differential impact of international oil prices on domestic inflation and output growth in India under two different scenarios. One scenario is, when domestic fuel prices are allowed a formula-based automatic alignment with international oil prices and the second, when as per current policy, fuel prices have evolved as a consequence of revisions specified periodically by the government. The differential impact analysis has been undertaken in a structural Vector Autoregressive framework using the technique of innovation accounting.\(^4\)

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Akansha Sanjay Jain, Nitish Sunil Patil in their article “Crude Oil Prices and Its Impact on Indian Economy” explained that with rapid economic growth, energy demand in India has been rising rapidly, and India is now the fourth largest consumer of crude oil in the world. Unfortunately, India has to import most of its oil requirement, which puts severe pressure on the economy when the oil prices rise. Thus, estimations of crude oil demand and projections for the future should be useful to policy makers in making appropriate supply arrangements for the future. They also analyzed the relationship trend of production over its consumption and production with import. Then crude prices’ affect on India’s inflation, its importance to Reserve Bank of India, on what its impact on fiscal and trade deficit and Indian oil companies. Finally by considering all these effect and impacts they figure out future hold for India considering crude prices.  

Aksha Memon in her article “Petroleum Prices - Trends And Its Impact On Common Man With Reference To Mumbai” Attempted to understand the causes for rise in petroleum prices and the factors that influence it and its impact on common man. The

basic aim of the study was to point out the rising trends in petrol prices and its effect on
common man. The aim was also to highlight the new technologies that can be used so as
to reduce the consumption of petrol.\textsuperscript{6}

Geeta Gauri in her book titled "Pricing for Welfare; Petroleum Products in
India" did a time series analysis on the consumption pattern of major petroleum
products product-wise and sector-wise and supplemented it with an econometric
analysis of the market structure. The study also contains an analysis of the major
objectives of pricing policy, namely, economic efficiency and distributional equity.\textsuperscript{7}

S.S.Khera and Sucha Singh's book "Oil, Rich Man, Poor Man", Published in
1979 contains an systematic study of the reports of the first three oil price enquiry
committees set up by the Government of India. The book also describes the pricing
system which was prevalent in India following the implementation of the Krishnaswamy
Committee Report. \textsuperscript{8}

\textsuperscript{6} Aksha Memon, “Petroleum prices trends and its impact on common man with
reference to Mumbai”, an online interdisciplinary, multidisciplinary & multi-cultural
Kumar G Prasanna’s thesis, on “The Critique Of The Petroleum Pricing Policy Of Government Of India” Thesis submitted in June 1997 in Mahatma Gandhi University is major study on pricing of the petrol. In his study he has shown how petrol was priced in earlier days. And then how the system of pricing changed. The objectives of his study were based on economic efficiency, financial viability, and social equity. He used trend series to show the prices of the petrol and consumption in Delhi for the period of 1968-1995. He also used percentage to show the sartorial composition of net profits of public sector enterprises in 1994-95

Dr. A. Hidayathulla and Mahammad Rafee in their article “Relationship Between Crude Oil Price And Rupee, Dollar Exchange Rate: An Analysis Of Preliminary Evidence” Examined the effects of oil price on exchange rate of Indian rupee against US dollar using time series data from 1972-73 to 2012-13. Multiple linear regression models were used to analyze the data. The model result suggested that the import of crude oil continues to rise up when the crude oil future price increases. The oil imports thus became a substantial source of demand for dollar in India’s foreign exchange market. This strong demand contributes to strengthen the dollar against Indian rupee, among the other factors.

Ibrahim Tuhran et al. in their article “Oil Prices and Emerging Market Exchange Rates” examined the dynamic relationship between oil prices and exchange rate of selected emerging economies. The article contributes to the literature in at least three points, first, contrary to the general use of developed economies, the authors opted emerging markets to study the relationship between oil prices and exchange rates. Second, un-parallel to the literature using monetary models to explore the exchange rates with low frequency data, oil is taken as alternative asset class and used daily oil price data to investigate the dynamics of exchange rate of an emerging market. Third, it shows how this relation has changed by comparing the relationship before and after the financial crisis. The study used exchange rates of 13 emerging countries during 2003-10. It used 5 day week daily time series data for the period 01-03-2003 to 06-02-2010. Dated Brent Oil price and the US dollar and the US dollar price of JPM organ emerging market bond index plus (EMBI+) countries exchange rates were sourced from Bloomberg. The study employed three different unit root tests for each returns and each time frame separately. Although the unit root tests sometimes yielded contradictory results, the results indicate that in all time frames all exchange rates returns and oil returns are stationary in levels. The results show that oil price movements get an increased importance after the financial crisis, as oil prices rise there is an apparent depreciation of the local currency against the US dollar and co-movements have increased during the study period. There are number of reasons why this co-movement gets stronger. One reason is that emerging economies have recovered more quickly than developed countries from the crisis increasing oil
prices and created a positive sentiment to emerging economies as they are expected to grow faster than the developed economies.\textsuperscript{11}

Mohammad Shaidan Shaari et al. in their article “The Effects of Oil Price Shocks and Exchange Rate Volatility on Inflation: Evidence from Malaysia” studied the effects of oil price shock on inflation in Malaysia using monthly data from 2005 to 2011. The study used world crude oil price index (in Malaysian Ringgit, RM) consumer price index, CPI (based index value of 100 in year 2005) and exchange rate (RM per $1 US dollar). VAR-VECM and Granger causality model were employed to analyze the data. The empirical findings showed that the co-integration between all variables existed at 5 percent significance level in the long run. But in the short run only crude price affected the inflation. From Granger causality test, it was found that inflation does not granger cause the exchange rate but it does granger cause the oil price. The oil price does granger cause the inflation but it does not granger cause the exchange rate. The exchange rate does not granger cause both of the variables (inflation and oil prices). So, the change in

\textsuperscript{11} Ibrahim Tuhran and et.al (2012), Oil Prices and Emerging Market Exchange Rates” Central Bank of republic of Turkey, Middle East Technical University-MPRA Paper No: 36477, Feb 2012.
crude price changes the inflation. This finding will contribute to Malaysian government in framing policy to control the petrol price to combat inflation.\textsuperscript{12}

Ademola Ojebiyi and David Olugbenga Wilson in their article “Exchange Rate Volatility: An Analysis Of The Relationship Between The Nigerian Naira, Oil Prices And US Dollar” analyzed exchange rate volatility through an analysis of the relationship between the Nigerian Naira, oil prices and US dollar. The model results show that there is a weak, negative relationship between exchange rate and oil price as there are other factors that bring about changes in oil price other than the exchange rate. The activities of cartel pricing and oil speculators too have come to greatly affect the price of crude oil. The results convey that there are other factors that affect the change in oil price apart from the exchange rate. Crude oil price change is usually very sensitive to events around the world and tensions in the oil producing nations. OPEC too affects the price of crude oil by increasing or decreasing the allocations to be sold by the countries.\textsuperscript{13}


\textsuperscript{13} Ademola Ojebiyi and David Olugbenga Wilson, “Exchange rate volatility: an analysis of the relationship between the Nigerian Naira, oil prices and US dollar- Master of International Management, Gotland University, Spring semester 2011
Syed Abul Basher et al., in their article, “Oil Prices, Exchange Rates And Emerging Stock Markets” investigated the dynamic relationship between real oil prices, exchange rate index for major currencies, emerging market stock prices, interest rates, global real economic activity and oil supply. The results of this paper support to some extent that oil prices respond to movements in exchange rates. Further, the result reported in the paper offered some support for higher oil prices affecting exchange rates in the short run. In particular, positive oil shock leads to immediate drop in the trade weighted exchange rate. On the other hand, oil prices respond negatively to an unexpected increase in oil supply and oil prices respond positively to an unexpected increase in demand. These results are consistent with the prediction from a demand and supply model for the oil market. Oil prices respond positively to positive shock in emerging stock markets, and respond negatively to the positive shock. These results are important in establishing that in addition to global supply and demand conditions for oil, oil prices also respond to emerging economy equity markets and global capital markets.¹⁴

Mukhriz Izraf Azman Aziz, in his article, “Oil Price And Exchange Rate: A Comparative Between Net Oil Exporting And Net Oil Importing Countries” estimated the long run effect of oil price and real interest rate differential on real exchange rate

for a monthly panel of 8 countries from 1980 to 2008. Data are sourced from International Financial Statistics (IFS) published by IMF. Real exchange rate is constructed by using domestic price level and price level in a foreign country. Real exchange rate is equal to nominal exchange rate (foreign price level/domestic price level). Real oil prices are defined as the price of Dubai crude oil as expressed in US dollar. The panels tests are based on within dimension approach (that is panel co-integration statistic) like v-statistic, panel p-statistic, panel lpp-statistic and panel ADF-statistic. The paper has found evidence of non-stationary for the three series for all groups of countries. For real oil price and real exchange rate, the series contain unit root as all panel unit root tests fail to reject the null hypothesis of unit root at 1 percent level of significance. For real interest rate differential, it appears to be weekly non-stationary especially for oil exporting countries and panel of eight countries as the null hypothesis of unit root can only be rejected at 10 percent significance level by most unit root tests. The paper has shown evidence of long-term relation between the three series and of causality running from real oil price to the real exchange rate.15

15. Mukhriz Izraf Azman Aziz, “oil Price And Exchange Rate: A Comparative Between Net Oil Exporting And Net Oil Importing Countries”. Lancaster University, August 2009
Pradeep Agrawal in his article, “India's Petroleum Demand: Empirical Estimations and Projections for the Future” estimates demand relations for crude oil, diesel, and petrol for India for the period between 1970–71 and 2010–11 using the ARDL co-integration procedure and uses these estimations to project demand for these products up to 2025 under various scenarios of gross domestic product (GDP) growth (with a mean of 7 per cent) and oil prices. Our projections show that over 2011–2025; demand for crude oil is likely to increase by about 90 per cent, for diesel by about 110 per cent, and for petrol by about 165 per cent under likely future growth scenarios. The corresponding annual growth rates come to about are 4.7 per cent for crude oil, 5.4 per cent for diesel, and 7.2 per cent for petrol.\textsuperscript{16}

M. Anandan, S. Ramaswamy and S. Sridhar, in their article, “Crude Oil Price Behavior and Its Impact on Macroeconomic Variable: A Case of Inflation” They have analyzed the impact of international oil prices and domestic oil price pass-through policy on major macroeconomic variables in India with the help of a macroeconomic simulation model. They conclude that a significant part of the decline in the oil pass-through around

\textsuperscript{16} Pradeep Agrawal, India's Petroleum Demand: Empirical Estimations and Projections for the Future’’ Institute of Economic Growth, working paper number 319, 2012
the world is explained by the reduction in the effects of exchange rate changes on inflation and by declining oil intensity.17

Dr. Rajendar Patil and Dr. Ashlyn Antony in their article titled, “Impact Of Oil Prices On Fx - Spot Market In India” explained that after the World War II, oil consumption in India has increased significantly. On other hand there have been great efforts to reduce the consumption of oil, by using other forms of energy. India’s major portion of the import bill payment goes to oil bill. This article shows how important role an oil pricing in international market play to control the inflation of the country. The central bank like India needs to alter its fiscal policy if there is vast change in oil price.18

Mr. Rahul Sharma, Dr. R Jayaraj & Dr. Arvind Kumar Jain, in their article, “A Review of Petrol and Diesel Pricing Policy in India” reviewed the present pricing policy of Petrol & Diesel in India and the challenges pertaining to the present pricing policy. They also explained that The present petroleum products pricing policy of the


18. Dr. Rajendar Patil1 and Dr. Ashlyn Antony, “Impact of oil prices on fx - spot market in India” national monthly refereed journal of research in commerce & management, ISSN 2277-1166, volume no.1, issue no.5,page number 42-44
OMCs threatens the healthy development of petro-retail sector and growing burden of under-recoveries, which reached an all-time high of Rs.1,38,541 crore in 2011-12, which put stress on government finance due to subsidies provided on it. As the major share of the Indian petro-retail market structure is in the hands of the public owned OMCs which makes it concentrated market. These oil companies drag international prices into domestic pricing structure, whereas under recovery is not equal to loss for the oil companies. Oil companies follow the pricing policy that is unfavorable to consumers.19

Sana Samreen’s research paper titled, “Global Oil Industry And Indian Economy: An Analyses From 1970s Up to Global Recession (1970-2008)” focuses on the state of the global oil industry and its implications on the Indian economy. The paper begins with the description of the current global oil market in terms of the major producers and consumers of oil. The supply is described in terms of crude oil supply which is dependent on the availability of oil reserves and the supply of petroleum products for which the refining capacity is also a contributing factor. On the demand side the paper focuses on the key sectors in terms of end use of oil and has looked at the current and projected future values of demand for oil in these sectors. The paper further looks at how imports are used to cover the trade gap and the major sources of these imports. Finally

19. Mr. Rahul Sharma, Dr. R Jayaraj & Dr. Arvind Kumar Jain, “A Review of Petrol and Diesel Pricing Policy in India ‘international journal of arts, humanities and management studies, ISSN NO. 2395-0692, Volume 01, No.9, September 2015, page number 87-94.
the paper proceeds to look at the likely effect of future demand supply gap on the future balance of trade and the various monetary policy measures to be taken to mitigate the negative effect on India’s economy.\textsuperscript{20}

Arul Edison Anthony Raj, S. Karpagam, and P. Thiyakesh, in their article titled “Assessment of Present Economic Scenario in India A Study on the Factors Situation Influencing Petroleum Industry” deals with the present economic scenario in Indian petroleum industries. It analyzes the reason for hike in petroleum product price level and provides the corrective measure to reduce the cost of product as much as possible. With today's unstable and extremely focused worldwide market, escalated by demand for advanced items from requesting clients, governments have begun to understand the volatile nature of petroleum prices. Domesticated utilization of petroleum items in 2011-12 enlisted a development of 5% (as contrasted with 8% GDP development). In view of provincial utilization of petroleum items, import dependence for oil in India was 76% in 2011-12 and dependent up on the relative development

sought after and preparation, it is evaluated that oil dependence will be as high as 85 % in 2020.\textsuperscript{21}

Vishal Sood, Dr. Ira Bapana, Dr. N.K. Totala and H. S. Saluja in their article, “Crude Oil And Indian Capital Market: An Empirical Analysis” attempted to study the relationship between returns of crude oil S &P CNX Nifty and S&P CNX Nifty companies futures to study whether crude oil S&P CNX Nifty companies future returns and stationary and to study impact on returns of S&P CNX Nifty companies futures and S&P CNX Nifty in crude oil returns, to study whether returns of crude oil, S&P CNX Nifty and of S&P CNX Nifty companies futures are serially correlated, to study volatility caused by of S&P CNX Nifty companies future and S&P CNX Nifty in crude oil returns to study whether returns of crude oil, S&P CNX Nifty and of S&P CNX Nifty companies futures prices are normally distributed. They concluded that crude oil and S&P CNX Nifty is significantly correlated. It is also conferred that there exit unit root among crude oil, S&P CNX Nifty and S&P CNX Nifty companies future.\textsuperscript{22}


\textsuperscript{22} Vishal Sood, Dr. Ira Bapana, Dr. N. K. Totala and H. S. Saluja, pacific business review international journal, volume 6, issues 7, January 2014, pp 20-35.
Anurag Dugar’s article titled, “Marketing Of Petrol In India – Transformation Of An Undifferentiated Low Involvement Commodity Into High Involvement Brands”, covers the process followed by the petrol selling companies to ‘change the mindset’ of a nation with the second largest population in the world; and simultaneously, the evolution and conversion of a ‘very low involvement commodity’ into ‘high involvement brands’. They conducted an in-depth analysis of the Indian Petrol market, specifically retail market – with reference to a government policy and changes made in it over the years; the past and present consumption and production pattern of petrol in India and the quantity of import of petrol and its effect on balance of payment position of India. The study also aims to trace the trends in the petroleum marketing in Indian context, i.e., to understand the changing dynamics of marketing in the Indian petroleum industry, taking a case of Indian Oil Corporation.23

A. Aparna in her research work titled, “Impact of Oil Prices on the Indian Economy” attempted to study the impact of crude oil price on the Indian economy by considering Gross Domestic Product (GDP), Index of Industrial Production (IIP) and Wholesale Price Index (WPI) as the relevant variables. Vector Auto Regression (VAR) has been used to analyze the objective since a direct causal relationship could not be

established. The result shows that any positive change in the crude oil price has an immediate negative impact on the increment in the GDP and IIP whereas it affects the WPI positively.²⁴

Anne Maduka, Helen Ihonre and Lesbrey Anochiwa in their article, “Impact Of Deregulation Of The Downstream Oil Sector On Economic Growth In Nigeria’’ sought to investigate the impact of deregulation of the downstream oil sector on the Nigerian economy using nominal GDP as a proxy for economic growth in Nigeria. The findings of the study however show that regulation through the variables that are affected by it have significant impact on economic growth. Therefore a system of controlled deregulation implemented in phases will allow the government to put in place all infrastructure and development to bring about total deregulation of the downstream oil sector in Nigeria in future.²⁵

Dr. Anshul Sharma, Mr. Gurmeet Singh, Ms. Manisha Sharama and Ms. Pooja Gupta in their article “Impact Of Crude Oil Price On Indian Economy” attempted to

24. A. Aparna, “Impact of Oil Prices on the Indian Economy’’ research note for management review, ISSN : 0971-1023, volume XXIII, October- November 2013, pp 141-147

compare the effects of crude oil price on Indian economy because India’s imports of oil increasing. Our imports’ dependence has reached 80% and is likely to keep growing. At the same time, 2008 saw an unprecedented rise in oil price in the world market. Oil price volatility has also increased through the future oil prices are difficult to predict, they are generally expected to raise. The oil prices have significantly since the of the 21st century. Theoretically, one can judge the impact of an oil price shock. The immediate cause of the price shock is increase in the cost of production due to increased fuel cost. Whenever there is an overall inflation on the economy, the cost of production would also rise causing a degree in supply. On the other hand, inflation implies a fall in the purchasing power of people. In short, oil price fluctuation has adverse effects on the economy; the paper seeks to find out the impact on the Indian economy.26

Sanjeev Gupta, Benedict Clements Kevin Fletcher and Gabriela Inchauste in their paper, “Issues Domestic Petroleum Pricing In Oil Producing Countries,” discuss issues relating to the domestic pricing of petroleum in oil producing countries. It finds that in major oil exporting countries, government policy keep domestic prices below

26. Dr. Anshul Sharma, Mr. Gurmeet singh, Ms. Manisha sharma and Ms. Pooja gupta, “Impact of crude oil price on Indian economy ‘international journal of social sciences and interdisciplinary research, ISSN :2277-3630, volume 4, April 2012, pp 95-99
free market levels, result implicit subsidies that equaled 3% of GDP on an average, in 1999. Moreover, the paper argues that these petroleum subsidies are inefficient and inequitable- entailing substantial oppournity costs in term of foregone revenue or productive spending – and also proclitcial, complicating macroeconomic management Nonetheless, the elimination of petroleum subsidies is often politically difficult, although countervailing measures and publicity campaigns can help engender support for reform²⁷

Syed Atif Ali et.al in their article, “Impact Of Oil Prices On Food Inflation In Pakistan” examined the effects of high speed diesel oil prices on food sector prices in Pakistan using multiple linear regression. The food includes rice, Maize, wheat, chicken and cooking oil which are dependent variables in the study. The independent variables are high speed diesel. It is hypothesized that there is a significant relationship and positive effect of oil prices on food inflation. The study concludes with a support of hypothesis that there is a highly significant effect of oil prices on food inflation.²⁸

²⁷. Sanjeev gupta, Benedict elements Kevin fletcher and Gabriela inchauste, “Issues domestic petroleum pricing in oil producing countries’ ‘international monetary fund 2002 working paper,

Benjamin Wong, in his research article “Inflation Dynamics, Inflation Expectations and the Role of Oil Shocks”, found the impact of different oil shocks on US inflation and inflation expectations since 1970’s. The findings confirm that oil supply shocks have never been a major factor, demand side shocks in the oil market generally are rather been more important in explaining inflation dynamics and movements, inflation expectations. The authors said that exogenous political events induce oil shocks that are more inflationary. The author concludes that demand shocks in the oil market have a much larger role in inflation and inflation expectations. The response to oil supply shocks that raise real oil prices by the same magnitude doesn’t appear to exhibit time variation invoking a hypothetical thought experiment where demand side shocks in the oil market raise the real oil price by a fixed magnitude (say 10%) and shows a large drop off in the response of inflation and inflation expectations.29

Surjit Bhalla, in his article “Developing Trends” studied that across most countries, emerging and developed, the best indicator of overall inflation (as measured by GDP deflator) is the consumer price index (CPI). Policy makers in India, including the RBI have been erroneously using the whole sale price index (WPI) as a surrogate for underlying inflation even when its ability to accurately forecast overall inflation, as close

to zero, especially in the presence of information on CPI inflation. A new national CPI index has been released with urban and rural all India components since Feb. 20th 2011. Inflation in India for the last thirty years is strongly correlated to international inflation which in turn is correlated to commodity prices over which domestic monetary policy has little control, each $10 rise in oil price increases inflation by about 0.5% for emerging markets, including India. For developed economies, the effects are muted - each $10 in the price of oil raises the inflation rate by only 0.03 per cent.\textsuperscript{30}

“Addressing The Key Fiscal Risk of Petroleum Subsidies Is Critical in Better Fiscal Marksmanship,” the Survey said. The overall subsidy bill of the government, it said, was likely to overshoot the target of Rs.1.79 lakh crore this financial year due to higher crude oil prices. The government had put the petroleum products subsidy at Rs.43, 580 crore, food subsidy at Rs.75, 000 crore and fertilizer subsidy at Rs.60, 974 crore, taking the total subsidy bill to Rs.1, 79,554 crore for 2012-13.\textsuperscript{31}

With recent reforms in Diesel Prices and Efforts at Expenditure Re-Prioritization, The Medium-Term Fiscal Consolidation Plan Is Credible, and could yet again yield macro-economic dividends in terms of higher growth and price stability,” the survey said. “The short-run action needed to remove impediments to implementation of projects in infrastructure, especially in the area of energy, includes clarity in terms of NELP. The long-term strategy should focus on issues like petroleum price distortion and natural gas pricing. The government appreciates the economic role of rational energy pricing. Rational energy prices provide the right signals to both the producers and consumers and lead to a demand-supply match, providing incentives for reducing consumption on one hand and stimulating production on the other,” 32

David P. Byrne, in his article titled “Petrol Price Cycles” provides an overview of the burgeoning academic literature on petrol price dynamics and cycles. This article first discusses the empirical literature on price cycles in petrol markets. In light of the empirics, it then presents theories of competition and consumer demand in petrol markets that help us understand the many facets of petrol price cycles. This article largely emphasizes studies of firms’ behavior, and the supply-side of petrol markets. An open area for research on petrol markets lies on the demand-side. There are few estimates of the price elasticity of demand for petrol in the literature.33

Varun Narang, in his article “Impact Of Fall In Oil Prices On Share Prices Of Indian Companies” attempted to study the impact of crude oil price on the share prices of companies in India. Data of a few oil, tyre, plastic and paint companies are taken to show the change in share prices of these companies in 2014 because for all these companies crude is a raw material. The share prices of JK tyres, Apollo tyres, Asian paints, ONCG, MRF Tyres, Bharat Petroleum Corporation and Sintex were taken for study. Share prices of many companies were 52 week high in this period. Shares of companies like Apollo tyres, Sintex industries and BPC saw a high growth during this period.34

A review Paper titled “Analysis Of The Impact Of High Oil Prices On The Global Economy” presented by International Energy Agency reviews show how oil prices affect the macro-economy and assesses quantitatively the extent to which the economies of OECD and developing countries remain vulnerable to a sustained period of higher oil prices. It summarizes the findings of a quantitative exercise carried out by the IEA in collaboration with the OECD Economics Department and with the assistance

34. Mr. Varun Narang “Impact Of Fall In Oil Prices On Share Prices Of Indian Companies” EPRA international journal of economic and business review, P- ISSN : 2349-0187 e- ISSN : 2347-9671, volume 3, issue 1, pp 161-164
of the International Monetary Fund(IMF) Research Department. The results of the simulations presented in this paper suggest that further increases in oil prices sustained over the medium term would undermine significantly the prospects of continued global economic recovery. Oil importing developing countries would generally suffer the most as their economies are more oil-intensive and less able to weather the financial turn oil wrought by higher oil-import costs.\footnote{35}

A Study titled “Petroleum Prices, Taxation And Subsidies In India” conducted by International Energy Agency, examines the current pricing mechanism and taxation and subsidy regime on four key petroleum products (petroleum, diesel, domestic kerosene and domestic LPG). In the study, the implications of current arrangements in each of these markets for central and state government revenues and expenditures, for India’s macro-economic positioning as well for upstream and downstream sector development are examined in detail. This paper covers some of the preliminary findings of the study being undertaken by the Secretariat, and identifies areas of interest emerging from initial work. It briefly describes petroleum product pricing practices as they have evolved since

\footnote{35. International Energy Agency reviews “Analysis of the Impact of High Oil Prices on the Global Economy” may 2004.}
2002, and looks at the impact of managed prices since crude oil prices began (until recently) climbing steadily, in terms of growing under-recoveries to OMCs.36

Prof. B.V. Lande and Dr. S.V.Kongre, in their article “Technical Challenges For Ethanol Blending Policy In India” looked at India as one of the fastest growing economies of the world, with its gross domestic product (GDP) growing at an average annual rate of seven percent since 2004. The increase in consumption of fossil fuel as economies grow and depletion of such fuels has prompted a search for alternatives worldwide. In the last six months, petrol prices have been hiked five times because of devaluation of rupees as compared to Dollar in the international market. This results in the hike in petrol & diesel prices, making the life of common man miserable. It is very important that blending ethanol with petrol and diesel will reduce import dependence on crude oil, saving on foreign exchange outflows. In this paper, facts supporting use of ethanol and petrol blends and also technical challenges for effective implementation of Ethanol – petrol blends have been discussed.37

36. International Energy Agency reviews “Petroleum Prices, Taxation and Subsidies in India” June 2009

37. Prof. B.V. Lande and Dr. S.V.Kongre, “Technical Challenges For Ethanol Blending Policy In India”, International journal of engineering research work, ISSN: 2321-7758, volume 3, 2015, pp 294-297.
Johnson N. Munyua and Mary Ragui in their work in progress research have presented paper “Drivers Of Instability In Prices Of Petroleum Products In Kenya looked for identification of the factors hindering stability of the prices of oil products in Kenya and corrective action that can be taken to address them. The study adopts an exploratory approach using a descriptive survey design, which will ensure ease in understanding the insight and ideas about the problem. The main instruments for data collection are a semi-structured questionnaire and face-to-face standardized interview. Multiple regression analysis is carried out to establish relationships of the independent variables to the dependent and enable modeling of the factors hindering stability of the prices of oil products in Kenya.³⁸

Labys W.C in his article “Globalization, Oil Price Volatility, And The U.S. Economy” observes that higher oil prices can lead to higher inflation, lower corporate profits, higher unemployment and reduced national economic growth. Higher price

volatility can lead to a reduction in investment, leading in turn to a long term reduction in supply, higher prices, and even reduced macroeconomic activity.\textsuperscript{39}

Regnier, E. in his article “Oil and Energy Price Volatility” found that oil and energy price volatility increased following the 1973 oil crisis. This increase was accompanied by an increase in price volatility for all commodities. In the late 1970s, however, price volatility for most products returned to pre-1973 levels, while oil price volatility continued to increase.\textsuperscript{40}

Bacon R. & Kojima M, in their article “Coping With Oil Price Volatility”, Found that taxes make up a sizable fraction of retail fuel in Cambodia. Taxes on petroleum products are a major source of government revenue because it is one of the easiest ways to get revenue: collecting fuel taxes is relatively straightforward and there is generally a robust relationship between consumption of fuels as a group and income - consumption tends to go up at the same rate as income.\textsuperscript{41}

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\end{itemize}
Hossain in his article “The Modern Theories Of Public Economics’ looked at how petroleum products should be priced based on efficiency and equity and did not look into how taxes affect the pricing of petroleum products, which is a critical factor in the current study. The study did not make any specific suggestions for how a balance between taxing and prices of petroleum which can be ensure is stability of prices of petroleum products.42

Mabro. R. in his article titled “The International Oil Price Regime, Origins, Rationale and Assessment” observes that petroleum prices do not always move at the same rate – be it up or down – as crude oil prices. The prices paid by consumers for a petroleum product may differ significantly from the ex-refinery price because of excise and value-added taxes which, in many countries amount to a hefty imposition. This had a major effect on the financing of oil purchases as the cash outflow required now included taxes payable up front on products at the point of entry. The indirect impact of the requirement that petroleum taxes to be paid at the point of product entry and its financing implications further complicate the impact of taxes on prices of petroleum products.43

42. Hossain, “The Modern Theories of Public Economics International Oil Price Regime Origins Rationale And Assessment”

Dale, O. In his article “The Relationship Between The Exchange Rate And Oil Prices In Canada” observes that economic models generally found a negative, but sometimes insignificant relationship between energy (or oil) prices and the Canadian dollar, due to the offsetting impacts unique to energy prices, since the relationship between stronger prices of other non-energy commodities which Canada exports, was strongly positive. However, the study found that the price of oil is dominated by the U.S. dollars.44

Nayef, S. and Abdullah, A. in their article “Impact Of Exchange Rate Variation On The Direction Of Trade Flows: Evidence From The Case Of Kuwait” investigated the impact of real exchange rate volatility between Kuwait and its major trading partners on their bilateral trade volume. The findings show that the impact of Kuwait Dinar (KD) exchange rate volatility vis-à-vis major trading partners is estimated to positively influence export flows. An explanation of the positive findings is that since oil and natural gas represent almost above 90 percent of Kuwait exports and global demand is inelastic, then any appreciation in KD exchange rate should not have an effect on

Kuwaiti exports. Therefore, any appreciation of KD vis-à-vis major currencies means an appreciation for the U.S. dollar initially; indicating that oil prices become overvalued.45

Yang, J.L. in his article “Analysis Of Prospects Of The China Petroleum Futures Market” focused on the future of petroleum future markets and observed that China itself was a monopoly in the supply of oil in the country and therefore not cushioned against price fluctuations. Chinese National Petroleum Corporation (CNPC) and China Petroleum and Chemical Corporation (“Sinopec”) provide the major oil supply in the domestic market. The study looked at the imports dependence ratio (imports/consumptions) from 1998 (141%) to (45.56%) in 2008. Thus, if China keeps relying on imported oil, it could face great risks in supply and prices due to spill-over effects.46


Reza, V., Nazanin, N. and Karim, E. in their article “Effects of Oil Price on Government Expenditures in Iran” observe that the changes in oil prices, in the 1970s, were often influenced by oil marketing companies and dealer profit margins. It was observed that the market was controlled by huge oil companies which were known as seven sisters and had the huge market power on production, refining, and distribution of oil. The oligopoly structure precluded them from price competition and provided them with a strong economic incentive not to increase the price. They kept the price stable and low because they made huge profit from the variety of products derived from crude oil. However, the market has swayed toward oil-exporting countries because of a wave of nationalizations in oil exporting countries that led to the decline influence of seven sister companies and disintegration of oligopoly structure in the oil market. 47

Twimukye, E. and Matovu, J.M. in their article “Macroeconomic and Welfare Consequences of High Energy Prices in Uganda” find that Uganda’s downstream oil sector was liberalized in 1994, price controls and bureaucratic resource allocation were abolished, and a new petroleum supply act promulgated in 2003. This led to licensing of several companies, including international oil companies like Shell, Total, and Caltex. Although the sector is fairly competitive with even smaller firms operating, the market is dominated by the few international ones including the ones mentioned above. The persistently high prices of petroleum products in spite of the fall in the world crude prices have raised alarms in the population that the industry may be poorly regulated, making players to collude to cheat motorists.48

Naveed, I.S.in his article, “Measuring The Impact Of Changing Oil Prices And Other Macro Economic Variables On GDP In The Context Of Pakistan’s Economy” studied measuring the impact of changing oil prices, and other variables like consumption, government expenditure and average exchange rates, domestic investment, inflation and foreign domestic investment on GDP in the context of Pakistan’s economy. This study provides a good foundation for further studies on stability of prices of

petroleum product in that it looked at various measurable effects of stability of prices of oil. Though the study was carried out in Pakistan, and the country may not be comparable to Kenya in terms of economic development, the variables can be used as a basis of study for future studies in Kenya.49

Hamilton, in his article, ‘Oil and Macro economy Since World War II’, investigated the impact on the US economy. His evidence suggests that crude oil prices have a strong relationship with the US business cycle and tends to highlight cost-push inflationary effects, while the research of Berndt and Wood (1975, 1979) as well as Wilcox’s (1983) indicates the complementarity between energy prices and capital in the US economy is rather strong, both before and after 1973. Hence, oil price rise lead to shocks which may have a stronger effect than generally believed.50

49. Naveed i.s 2010 “Measuring the impact of changing oil prices and other macroeconomic variables on GDP in the context of Pakistan economy” international; research journal of finance and economics.
These results were later carried forward by Mork (1989) and Hooker (1999) who argued that a symmetric and nonlinear transformations of oil prices restore that relationship, and thus the economy responds a symmetrically and nonlinearly to oil price shocks. Later Hamilton (2000) reported clear evidence of nonlinearity-oil price increases is much more important than oil price decreases. An alternative interpretation was proposed based on the estimation of a linear functional form using exogenous disruptions in petroleum supplies as an instrument. His study shows that oil shocks play a crucial role in determining macroeconomic behavior because they disrupt spending by consumers and firms.\textsuperscript{51}

Hamilton extended his research work (2003, 2005, and 2009) and presented empirical evidence suggesting that oil price shocks have been one of the main causes of recessions in the United States. Others, including Barsky and Kilian (2004), argue that the effect is small and that oil shocks alone cannot explain the U.S. stagflation of the 1970s. Taking a more intermediate position, Bernanke et al. (1997) argue that an important part of the effect of oil price shocks on the U.S. economy results not from the change in oil prices per se, but from the resulting tightening of monetary policy.\textsuperscript{52}

In the same line of research, Blanchard and Gali (2007) present evidence showing that the dynamic effect of oil shocks has decreased considerably over time, owing to a combination of improvements in monetary policy, more flexible labor markets, and a smaller share of oil in production. Their results indicate that a 10 percent
increase in the price of oil would, prior to 1984, have reduced U.S. GDP by about 0.7 percent over a 2–3 year period, while after 1984 the loss would be only about 0.25 percent. In contrast to the extensive literature on the impact of oil prices on the U.S. economy, there has Outside the U.S., studies of the relationship between oil prices and the macro-economy have almost exclusively been confined to other OECD members, with results suggesting that they tend to be affected in broadly the same way as the U.S. but less strongly.  