

A STUDY ON THE INCREASING DEMAND FOR PETROLEUM PRODUCTS AND THE NEED FOR CONSERVING PETROLEUM PRODUCTS IN INDIA

Lawrence Mathew

M.A. Economics

Baselius College,

Mahatma Gandhi University, Kottayam, India.

Abstract: The demand for petroleum products is an increasing function of the level of GDP growth rate. When the national income increases, the demand for petroleum products also increases. *The Ratchet Effect* with regards to the consumption of petroleum products are also studied in this paper. So, it is the due time to conserve the petroleum resources for our children or else they would have to suffer the consequences of our actions.

Keywords: Increasing demand for petroleum, the need for petroleum conservation, Ratchet effect.

INTRODUCTION

Oil is a major consumer good as well as a capital good. The demand for crude oil is highly income elastic. We use the refined oil products like petrol, diesel, kerosene, wax, tar etc. in our day to day life. We cannot imagine a day without petroleum products. These petro-chemicals are also used in the production of various other commodities like plastics, varnish, paints etc. The demand for petroleum products are never going to decline unless we find a better superior alternative than petroleum. If not, the petroleum products are going to vanish in a few decades. If we are not careful, the 22nd century would have zero resources to build upon.

OBJECTIVES OF THE STUDY

- To analyze the increasing use of petroleum products in India
- To understand the need for conserving Petroleum products.

METHODOLOGY OF THE STUDY

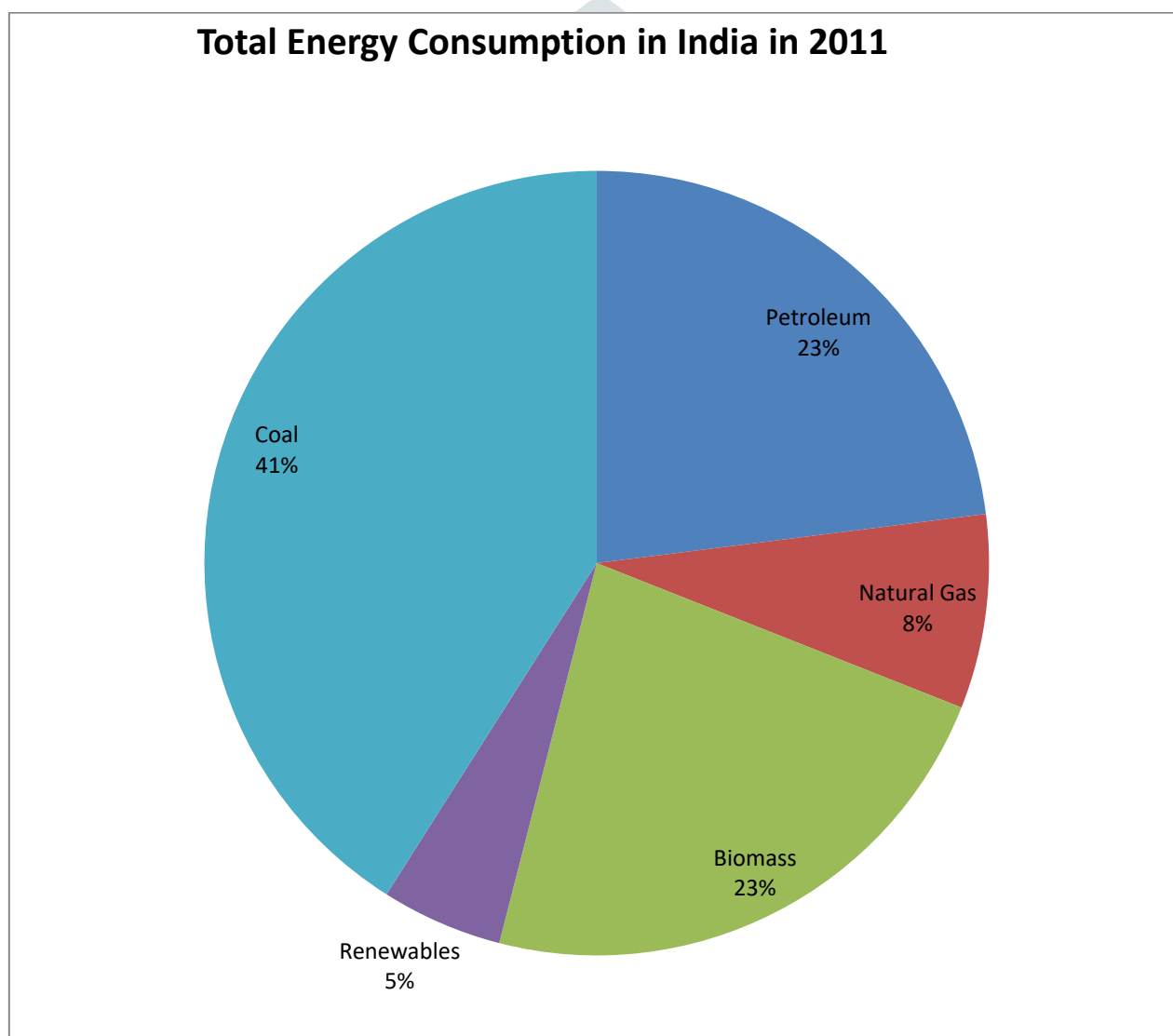
Since the demand for petroleum products is universal in nature, we feel that a micro level study can do justice to the topic. The conservation of petroleum products also requires a collective responsibility. Since it

is a universal issue, we have opted for the analysis of the secondary data already available. The theoretical framework of Relative Income Hypothesis (especially the Ratchet Effect) is also used in this study.

THE INCREASING FOR PETROLEUM PRODUCTS IN INDIA

The demand for petroleum products are increasing day by day in India. The number of vehicles is also increasing. The major share of our fuel demand is met through fossil fuels. It is explained using the figure below.

Fig1. The Total Energy Consumption in India in 2011



Source: EIA, International Energy Statistics

As per the International Energy Statistics, the fossil fuels petroleum and coal together meet nearly 75% of the total energy demand of our country. Petroleum and natural gas contribute more than 30% to the growing energy demands. While the renewable sources only account for 5%.

Another astonishing fact to consider is that among the developing countries, India has the highest energy consumption. This is explained using the bar diagram below.

Fig2. The Energy consumption among major developing economies by 2035 is shown.

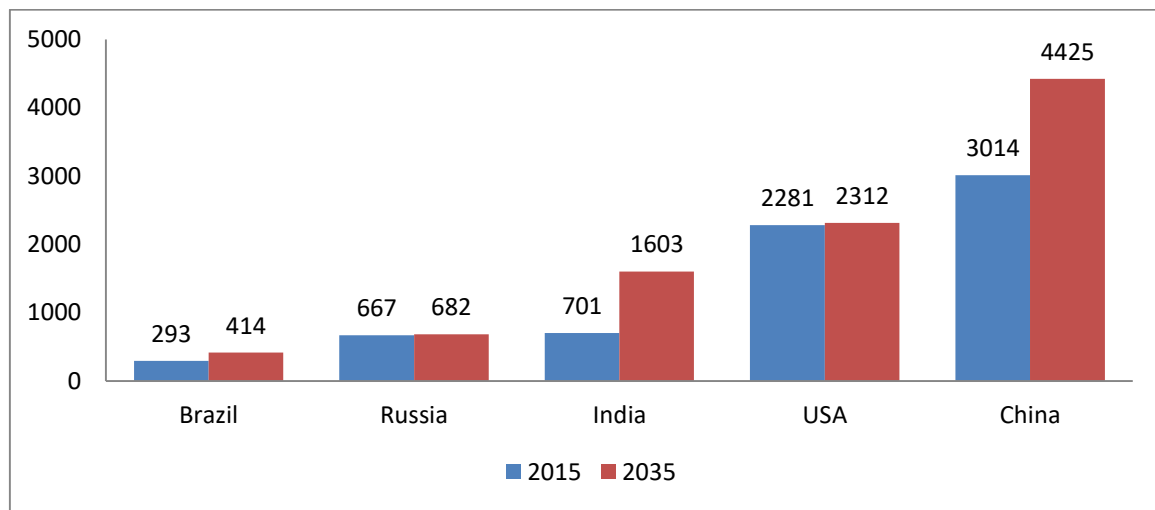


Table1. Expected% change in energy consumption by 2035 in different countries is shown.

Countries	% change 2015-35
Brazil	41
Russia	2
India	129
USA	1
China	47

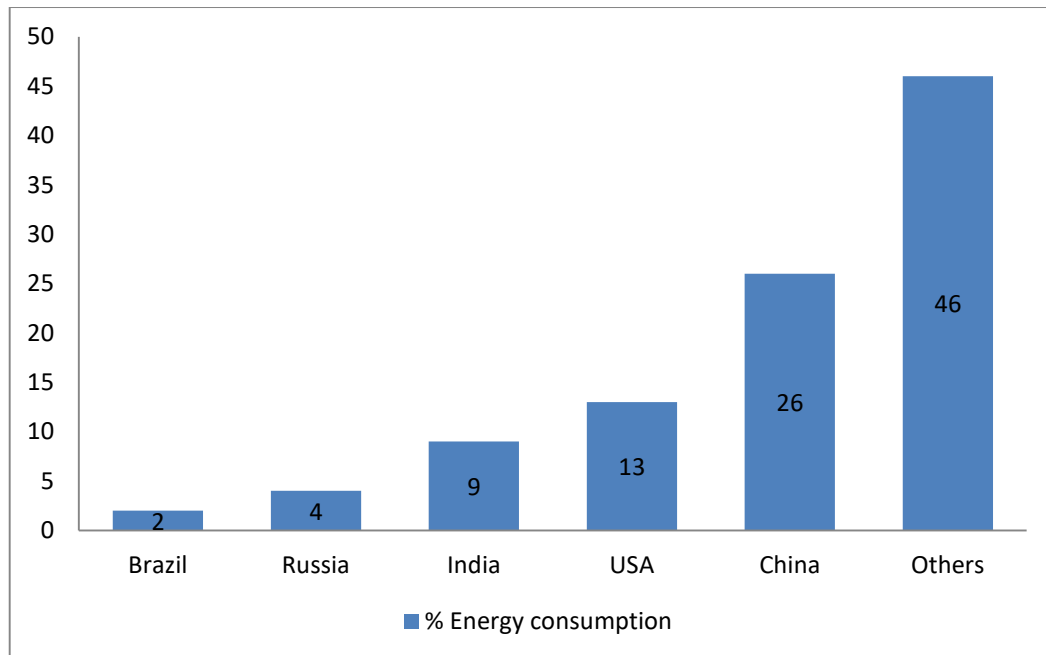
Source: Petroleum Conservation Statistics

As per the report above, India had a high energy consumption demand with 701 million tons in 2015. As per the projection, it is going to increase to 1603 Mt. in 2035. The growth rate of energy demand would be much more than that of the other developed and developing nations.

The problem with this is that the demand for petroleum is unlimited, but the supply of petroleum is limited. As per Kenneth Boulding, the earth is a space ship economy with limited resources. The basic economic problem of scarcity or unlimited wants given limited resources can be applied here as well.

Also, India's share of global demand would rise to 9% by 2035.

Fig3. India's share in global energy demand in 2035 (Est.) is shown

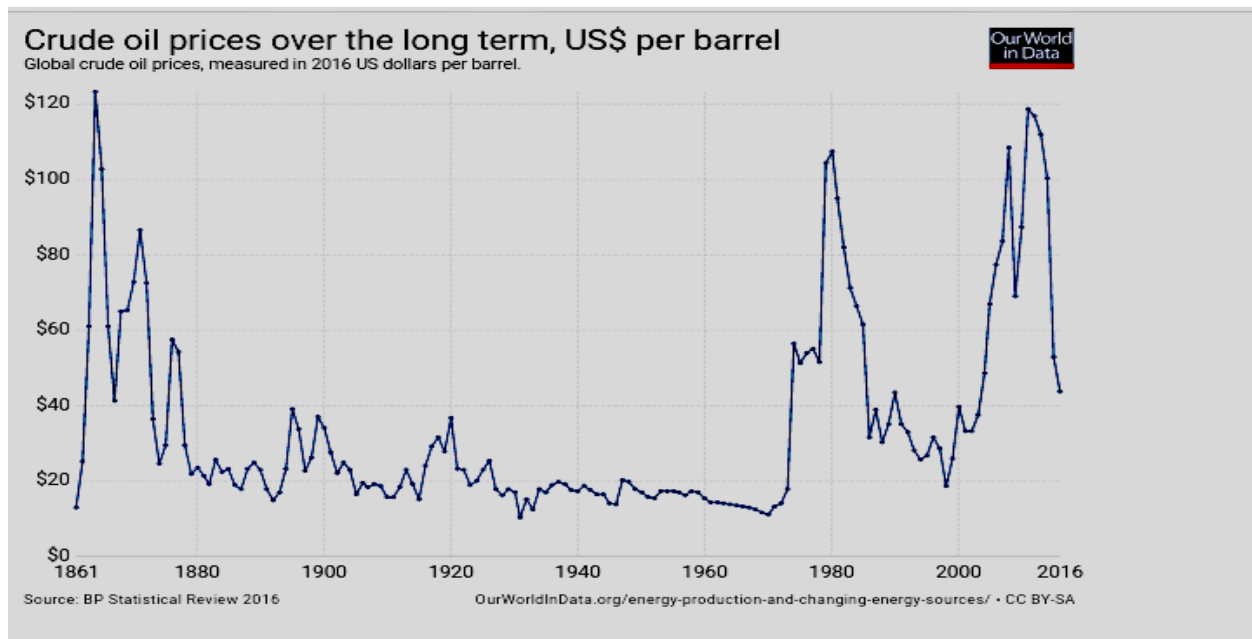


Source: Energy Information Association

By 2035, India would be in the 3rd place in terms of Global energy demand behind China and USA. Even though, there is an increase in the demand for energy, the supply would not increase to meet the demand. More than 70% of the oil demand is met through imports. We can only imagine the burden of oil imports on our Trade deficit especially on the Current Account.

Since the inception of OPEC, the prize of crude oil has kept on fluctuating. It has more or less shown an increasing trend over the years. But the astonishing fact to consider is that even amidst the increase in prices, the demand for crude oil has not decreased much. This is because it is relatively price inelastic in nature. The OPEC which is functioning as a cartel has a monopoly power in determining the prices and supply of crude oil.

Fig 4. Time series data of Crude Oil Prices in the International market is shown.

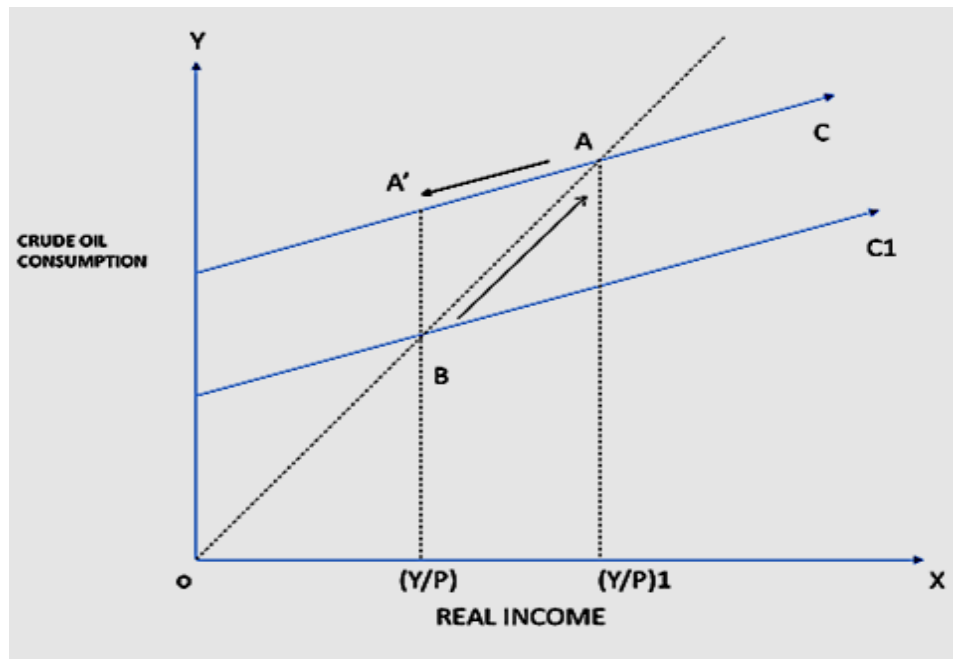


Source: BP Statistical Review 2016

The above figure shows the price fluctuations of crude oil. After the establishment of OPEC, we can generally see an upward trend in oil prices. Post 2016, the price of crude oil began to fall due to the discovery of Shale Gas in USA.

Even though, there is a fluctuation in the price level, the demand for crude oil does not fluctuate much. This can be explained using the **Ratchet Effect**. James Duesenberry in his Relative Income Hypothesis has mentioned about the ratchet effect related to consumption. This means that consumption is irreversible to fall in income. As income increases consumption also increases less than proportionately. But when income falls, the households do not reduce consumption. They try to maintain the same level of consumption and reduce consumption by a very less margin. The same can be applied to the case of petroleum products. As the price of Petroleum products increases, the real income of the households falls. But the consumption of petroleum products does not fall as much. This is because a minimum level of luxury has been attained and we do not wish to go down from that.

Fig 5. The Ratchet Effect and consumption of Petroleum Products is shown.



Suppose the real income of households increased from Y/P to $(Y/P)1$, they would buy a new car. The car runs on Petrol. The consumption of petrol increases from C to $C1$, i.e. the consumer moves from point B which is in a lower consumption curve C to point A which is in a higher consumption curve $C1$. It did not increase to A' because the consumer wanted to maintain a constant APC. Thus, the consumption of Petrol increased to A .

However, if there is a rise in petrol prices, the real income of the household falls down to Y/P . But, the consumption of petrol does not fall down to B , which was the initial consumption point. The households bought the car for their comfort (luxury) and they can't sell the car because of rise in petrol prices. To continue using the car, they have to fill petrol. When a family builds a habit of riding a car, they can't suddenly shift to using public transport. They remain in the same consumption curve at point A' and their consumption does not fall down to B which is in a lower consumption curve. This is the Ratchet Effect and it is the reason why the consumption of Petroleum products remains more or less constant irrespective of the change in price.

CONCLUSION

We can conclude that there is an increasing demand for petroleum products in India. We are an emerging economy. Therefore, there is a very high demand for the petroleum products. But there are supply

constraints. The majority of oil requirements are met through imports. The various estimates project that the demand for petroleum products are going to increase. But we don't have enough sources to meet that demand. The major reason for the increasing consumption of oil even after price hike is due to ratchet effect. We need to find alternative energy sources. If not, the future of our children would be in jeopardy.

BIBLIOGRAPHY

[1] *International Energy Statistics*, U.S. Energy Information Administration.

[2] *Oil and Gas Sector Report*, June 2017.

[3] *Our World in Data*, BP Statistical Review, 2016.

