

Crude Oil Demand and GDP of India (1986-2015)

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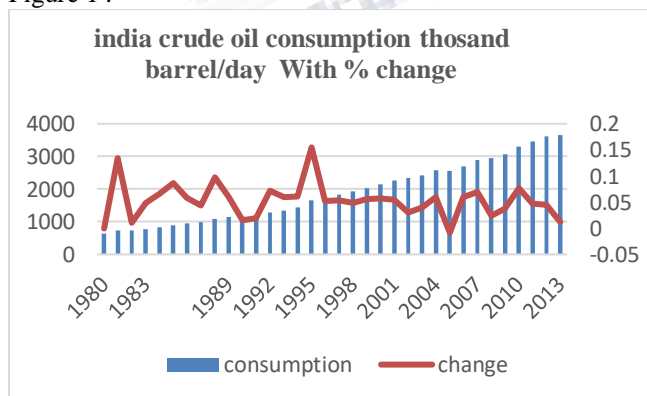
Abstract: - Crude oil demand in developing countries that are not part of the OECD has risen sharply in recent years. While crude oil demand in the OECD countries declined between 2000 and 2010. Over the last 30 years, non-OECD oil demand growth, and by extension global oil demand growth, was driven mainly by India, china and Saudi Arabia, which accounted for 90% of this growth. Recently crude oil demand growth of china has slowed to under 0.35 million bbl/day, compared to an average demand growth of over 0.52 million bbl/day in the 15 years prior to 2015 due to rebalancing of government policy. In this new era of slower Chinese growth, a new competitor has emerged: India, whose crude oil demand increased from 0.33million bbl/day to 0.45million bbl/day in 2015, was the main driver of non-OECD oil demand growth. In this paper an attempt has been made to find an impact of economic growth on crude oil demand in India. we have used the yearly data from 1986 to 2015. Present study also examined that there is a positive correlation coefficient (0.36) between GDP growth rate and crude oil demand in India.

Keywords: India, Oil, Demand, GDP

INTRODUCTION

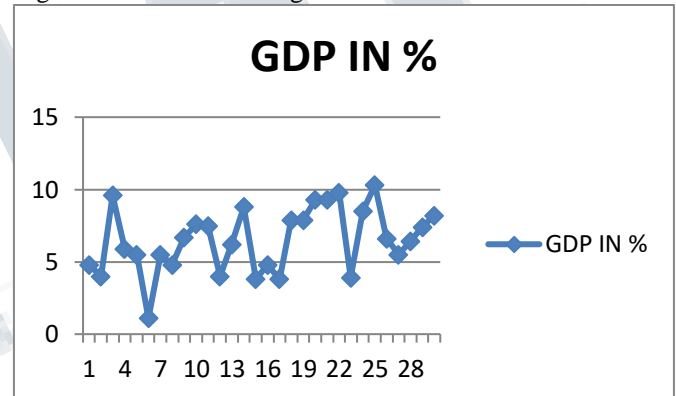
1.1 In 2015, India emerged as the main driver of non-OECD oil demand growth of 0.45million bbl/day, with world demand growth at its strongest since 2010, at 1.8 million barrels per day. Demand of crude oil in India was increasing because of sharp increase in the export of petroleum product in India which counts 17% of the total export. On the other hand international crude oil prices in Indian basket was very low of 49\$/bbl which help to boost the GDP of India. As crude oil has a 12% share of GDP. Historical data (table -1) for India shows that crude oil consumption has been rising at a steady rate (Figure 1). Over the past decade or so (2004–15), the average oil demand growth has been roughly 0.15 million bbl/day annually

Figure 1 .



Source: author's own calculation and compilation.

Figure 2 shows that GDP growth rate in %.



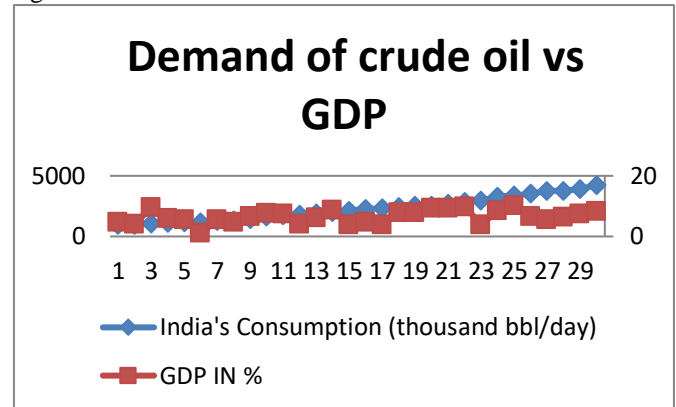
Source: author's own calculation and compilation.

According to the Ministry of Finance Government of India the annual growth rate of Indian economy is projected to have increased to 7.4% in fiscal year 2014-15 as compared with 6.9% in the fiscal year 2013-14(table-1). In the annual report, IMF forecast, the Indian Economy would grow by 7.5% percent in the 2015-16 fiscal years starting on April 1, 2015, up from 7.2% (2014–15)

Table -1.

years	India's Consumption (thousand bbl/day)	GDP IN %
1986	947.4376	4.8
1987	987.8498	4
1988	1083.783	9.6
1989	1149.781	5.9
1990	1168.334	5.5
1991	1190.319	1.1
1992	1274.907	5.5
1993	1351.07	4.8
1994	1433.274	6.7
1995	1654.673	7.6
1996	1740.919	7.5
1997	1835.491	4
1998	1924.373	6.2
1999	2031.25	8.8
2000	2147.438	3.8
2001	2263.73	4.8
2002	2333.439	3.8
2003	2426.328	7.9
2004	2571.551	7.9
2005	2550.25	9.3
2006	2701.63	9.3
2007	2888.055	9.8
2008	2957.302	3.9
2009	3300	8.5
2010	3380	10.3
2011	3549	6.6
2012	3747	5.5
2013	3789	6.4
2014	3913	7.4
2015	4244	8.2

figure 3



Source: author's own calculation and compilation.

1.2 Literature Review

The recent studies on energy in India has been based on gas (Akhmat and Zaman, 2013); oil (Akhmat and Zaman, 2013); nuclear energy (Akhmat and Zaman, 2013; Wolde-Rufael, 2010); coal (Govindaraju and Tang, 2013); electricity (Abbas and Choudhury, 2013; Akhmat and Zaman, 2013; Cowan and others, 2014; Ghosh, 2002; Nain, Ahmad and Kamaiah, 2015) and aggregate energy consumption (Pao and Tsai, 2010; Vidyarthi, 2013; Yang and Zhao, 2014).

In this research we have examined the impact of economic growth on crude oil demand in India also impact of crude oil demand on economic growth of India.

1.3 Relevance and Objectives of the study

The present study focuses mainly on analyzing the major trends in crude oil demand and GDP of India

1. To examine the impact of crude oil demand on GDP of India.
2. To examine the impact of GDP on crude oil demand in India.

1.4 Methodology and Data Source

The present study is kind of analytical research and is based on secondary data. In this study, data used for the period 1986-2015. Simple regression analysis has been done using MS excel software.

2 Result

2.1 Data – 1

Regression Statistics

Multiple R	0.373012
R Square	0.139138
Adjusted R Square	0.108393

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Standard Error		2.110785	Crude oil demand =f(GDP)	
Observations		30		
ANOVA				
	df	SS	MS	F
Regression	1	20.16308	20.16308	4.5255
Residual	28	124.7516	4.4554	
Total	29	144.9147		
	Coefficients	Standard Error	t Stat	P-value
Intercept	4.583459	0.985644	4.6502	7.21E-05
India's Consumption (thousand bbl/day)	0.000845	0.000397	2.1273	0.0423

Finding of the data-1 shows that there is very low positive correlation(0.36) between crude oil demand and GDP of India. As P value is 0.0423 which is less than 0.05. So we conclude that crude oil demand significantly effect GDP of India. Result also reveals that by making a change of one thousand bbl per day in crude oil demand then GDP will increase by 0.0008%.

Finding of data- 2 also shows that P value is 0.0423 which is less than 0.05. So we conclude that GDP significantly effect crude oil demand in India. Result also reveals that by making a change of one percentage in GDP there will increase in crude oil demand by 164.70 thousand bbl per day.

3 Conclusion

Present study is a kind of analytic research. Recently demand of crude oil increasing with steady rate from 0.33 million bbl per day to 0.45 million bbl per day in 2015. Study also reveals that there is very low positive correlation between crude oil demand and GDP of India. Finding also shows that there is cause and effect relation between crude oil demand and GDP of India.

Reference

- [1] International energy agency (IEA) (2015) retrieved from www.iea.gov
- [2] International economic statistics (IES) retrieved from <http://www.libguides.princeton.edu/internationalecon>
- [3] The world Bank: retrieved from <http://data.worldbank.org>

Source: author's own calculation and compilation.
 GDP=f(Crude Oil demand)

2.2 Data - 2

Regression Statistics	
Multiple R	0.373012
R Square	0.139138
Adjusted R Square	0.108393
Standard Error	932.0296
Observations	30

ANOVA				
	df	SS	MS	F
Regression	1	3931229	3931229	4.525
Residual	28	24323019	86867	
Total	29	28254248		

	Coefficients	Standard Error	t Stat	P-value
Intercept	1211.725	532.222	2.276	0.030
GDP IN %	164.7055	77.42363	2.127	0.042

Source: author's own calculation and compilation.