Impact of Fuel Subsidy on Fiscal Deficit in India

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Abstract:-Fuel Subsidy has not only affected the fiscal position of India but of the whole world. It encompasses a long list of continuing and urgent problems like they distort the market; the subsidized product sells for less than it costs to produce, and so we buy more of it than we would without the subsidy. Making things worse, unsubsidized alternatives are placed a disadvantage, and may struggle to exist, create economic distortions, fiscal deficit, increase air pollution; reduce the competitiveness of alternative fuels and their ability to gain market share. In India, the extent of subsidy is found to be more as compared to other countries because of low level of income, poverty, unemployment etc. Large scale under recoveries of the Oil Marketing Companies (OMCs) are highly destabilizing the Indian Central Government's Finances. Subsidies are provided for kerosene, LPG, and other fossil fuels for the household sector in India. This study intends to study the impact of oil subsidy on the fiscal health of government. The main findings of this study are that there is positive correlation between fuel subsidy and fiscal deficit.

Index terms:- **Fuel subsidy, fiscal deficit, under-recoveries, oil marketing companies (OMCs)**

INTRODUCTION :- According to Peter Voser, Energy: The Oxygen of the Economy, "Without heat, light and power you cannot build or run the factories and cities that provide goods, jobs and homes, nor enjoy the amenities that make life more comfortable and enjoyable."

Energy is considered as the lifeblood of every economy. It is the most important input for all the goods and services of the present modern global economy. For maintaining and improving the living standards of billions of people, energy should be supplied at reasonable price. This helps to increase their disposable income which can be spent in other ways. It also helps to make things more affordable for people by reducing their input costs. (Energy Vision Update 2012). To meet this objective energy subsidies are provided in both the developed and developing countries. Their main objective is to encourage the production of goods and services. (Umar and Umar, 2013). Fossil fuel subsidies affect the end user price. Both consumers and producers benefit from a subsidy as consumers pay less price for their use while producers receive a higher price for than they would under market conditions. (Barany and Grigonyte, 2015). Inspite of these benefits, there are wide - ranging economic consequences of energy subsidies. They lead to fiscal imbalances and crowd- out priority public spending as well as discourage private investment in the energy sector. There are substantial negative externalities from energy subsidies. The overconsumption of petroleum products, coal, and natural gas increases global warming and worsens local pollution. Subsidized fuels encourage high level of vehicle traffic which results in traffic congestion and higher rates of accidents. (Benedict et al. 2013).

First of all it is very essential to define the concept of subsidy and there are many definitions of it, such as:

Article 1 of the WTO Agreement on subsides and countervailing Measures (ASCM) defines a subsidy as a financial contribution by a govt. or any public body within the territory of a member that confers a benefit to a recipient. (WTO, 1994).
The International Energy Agency (IEA) provides a simple definition. In 1999 the IEA defined an energy subsidy as **"**any govt. action that concerns primarily the energy sector that lowers the cost of energy production, raises the price received by producers or lowers the price paid by consumers.**"** (IEA1999).

Starting from China in 1961 under the control of subsidies Act 1961, subsidized items include petrol, gas, sugar, rice and other basic items. Government was able to bear the burden of petrol subsidy in the 1970's when the price of oil was under US $ 12 per barrel. The present high oil price is over US $140 per barrel (a 170 percent price hike over a three-year period from US $ 47 a barrel in May 2005 to US $ 127 in May 2008). The govt. is unable to bear the high cost of subsidies. The cost of subsidies has risen from 3% of govt. operating expenditure in 1998 to almost 30% in 2008. (Onn,C. Fong,2010). The 2009 G-20 Leaders Communiqué cities work by the International Energy Agency (IEA) that found that energy subsidies in 2007 exceeded $ 310 billion US in the 20 OECD countries that provide the largest consumer subsidies. Based on these data, the OECD estimated that eliminating these subsidies by 2020 would reduce global greenhouse gas emissions in 2050 by 10% (Burniaux et al. 2009). India imports about 76% of its crude oil. This adds $ 50 billion every year to the import bill of India. The currents rate under recovery of petroleum is Rs.9.5 per litre, of diesel is Rs. 11.3 per litre, of LPG is Rs.380 per cylinder, and of Kerosene is Rs.21 per litre. According to Indian Express estimates the loss to marketing companies is petrol at Rs. 8.74 a litre, for diesel is Rs.9.92 per litre, for Kerosene is Rs.20.53 a litre and for LPG is Rs. 256.35 per cylinder. As per the govt. policy of 2003, the subsidy component by the government has remained constant since 2004-2005 at Rs.22.58 per LPG cylinder and Rs. 0.82 per litre of kerosene. The remaining subsidy is provided by the marketing companies from their own pockets. In 2006-07 the gross under- recoveries of the three oil marketing companies- IOC, BPC and HPC were Rs.28584 crore for kerosene and LPG and Rs.20803 crore for petrol and diesel. (The Indian Economy Blog-January 5, 2008).

Fiscal deficit is the difference between the government's revenues and spending. Large scale under recoveries of the Oil Marketing Companies (OMCs) is highly destabilizing the Indian Central Government's Finances. In 2008-09 the under recoveries of central and state governments were expected to be US$ 42000 million which exceeded total tax collected US$ 37000 million by the petroleum sector. The Central Government is forced to cut petroleum product taxation. The net ability of the petroleum sector to fund current pricing is falling below their revenues. As a result, the central government is forced to consolidate its spending in other areas of its budget. (OECD/IEA, 2009).

Review of literature

Reforming price subsidies has its implications on equity and efficiency aspects and such reforms can be used as guidance to policy makers on how to design and implement sound price subsidy reform that take into consideration both economic and social impacts. According to them rapid reform requires a favourable political and economic environment. In the absence of this, reform should be implemented gradually. The social impact of reform can be reduced by providing special safety net programmes to the poor. Governments can reduce the risk of political disruption by distributing the initial burden of reform fairly and by clearly explaining the cost and benefits to the people . (Gupta,S., et al.2000).

The subsidy regime in India is unduly large, non – transparent, largely input based, poorly targeted, generally regressive, and causing wastage and misallocation of resources. The budgetary subsidies in India provide an estimate of the implicit budgetary subsidies for 1998 – 99, examines recent trends, and discusses critical policy issues in the context of subsidies. (Srivastava, D.K., et al. 2003).

A study on real and distributive effects of petroleum price liberalization found that a reduction in petroleum subsidy in the short run will result in an increase in the price level and a reduction in household consumption. Though the poor and rich both are affected by subsidy reduction but the poor can be protected by providing safety-nets, using some of the fiscal savings generated by subsidy reform. (Clements &Gupta 2003)

The empirical evidence suggest that high budget deficits in transition economics have mainly signaled the problem of fiscal sustainability because the presence of high substitutability between private and public sector in the region. On the other

hand a relatively low level of substitutability between private and public saving is noticed , implying a relatively high correlation between fiscal and external imbalances. Accordingly special emphasis should be paid to the fiscal policy shift in these economics . Indeed, the main element of the economic policy reversal in transition countries should involve a substantial reduction of fiscal deficits in the future in order to reduce the probability of a balance of payments (Currency) crises. (Aristovnic,A.,2004).

The petrol and diesel prices are high inspite of the fact that government is providing subsidies. This has affected the financial health of the government and created hurdles in the path of private sector to invest in the oil sector. The government effort to provide subsidy so that the poor section of the society can also use commercial fuels has made irrational choices among different fuels due to distorted retail prices. The Indian energy market and the economy as a whole would be better off if the government would implement a consistent, transparent and rational fuel pricing system but with a view to political imperatives, this is unlikely to happen in the short – run. (OECD/IEA, 2006).

The energy prices have both direct and indirect effects on the living standard of the population especially the poor. A study in this regard concluded that a 17 % increase, in the prices of energy products leads to 1.75% decrease in real expenditure. This percentage is higher for low income households (2.1%) than for higher income households (1.5%). This implies that the benefits of in producing energy price subsidies would be progressive i.e in percentage terms subsidies would benefits rich households more than the poor households. (Andrfiamihaza & Vecchi 2007).

The report on food and fuel prices provided a first broad assessment of the impact of the surge in food and fuel prices on the balance of payments, budgets, prices and poverty of a large sample of countries. It reviews countries macroeconomic policy responses to date and also discusses International Monetary Fund advice for managing the price increases. (Ter-Minassion,& Johnson, 2008).

A study on the distribution of benefits of subsidy and the impact of subsidy reform on the households welfare in developing countries, found that a $0.25 per litre increase in fuel prices results in a 6% decrease in households income . Also, the benefits of subsidies are very unequal as they are mostly enjoyed by the rich people as compared to poor people . The impact for gasoline and electricity are strongly progressive whereas the kerosene impact is strongly regressive. The government may protect the poor people through effective safety net programmes. (Granado et. al. 2010).

In India fuel subsidy is a heavy burden on the resources of the govt. but it does not fully reach to the targeted group. Most of the benefits of subsidy are enjoyed by the rich sections of the society. It also has ecological effects due to over – use of fossil – fuels. They also affect the national and oil marketing companies as they result in large under – recoveries. While reforming the subsidies the poorest section of the society should be taken into consideration and the public should consulted and informed properly. (IISD, 2012).

Objectives of the study:-

1) To analyze the trends in fuel subsidy.
2) To evaluate the impact of fuel subsidy on fiscal deficit.

Hypotheses of the study:-

1. India's fiscal deficit is positively correlated with availability and accessibility of fuel subsidy.

Research Methodology: - The present study is descriptive as well as evaluative. Given the nature of the study, data has been collected from secondary sources such as publications of RBI, IMF and, World Bank, Journals, articles for completing the present study. As the data in this study does not follow the assumption of normal distribution, spearman's correlation has been applied for evaluating the impact of fuel subsidy on fiscal deficit. After calculating the results using SPSS, we found the value of correlation as 0.5 which states that there is positive and moderate correlation between fuel subsidy and fiscal deficit. As one increases the other also increases and vice- versa.

Pricing of Petroleum Products:- Petroleum products play a pivotal role in all the economies of the world. As they are key primary source of energy, government involvement is necessary in production, pricing and distribution. (GoI, 2013). The government encourages rational energy pricing. Rational energy prices lead to a demand supply match. Under pricing of energy to the consumer leads to fiscal imbalances, leakages and inappropriate use. On the other hand, under pricing of energy to the producer reduces the incentive to invest in the energy sector and increases reliance on imports. (Economic survey 2012-13). Kirit Parikh discussed different methodologies used in petroleum product pricing such as import parity price, export parity price and trade parity price in drafting the Integrated Energy Policy in 2006. Different countries have tried alternative forms of above methods at different periods and developed their own pricing policy. The government of India has also tried different methodologies. The below is the chronology of petroleum product pricing methodologies that have been used in India from time to time:

Pre-1975 : Import Parity Pricing (IPP) in pre-1975 era (Damle; Talukdar; and Shantilal Committees)

Post-1974/75: Oil Prices Committee (OPC, Krishnaswamy, 1974) – cost plus basis (also called administered price mechanism or APM): crude oil cost + refining cost + 15 % return on capital employed (RoCE)

1984: Oil Cost Review Committee (OCRC, Iyer, 1984) – revised the RoCE element to weighted average of (a) cost of borrowing and (b) 12 % post-tax return on net worth. Oil Pool Accounts maintained by Oil Co-ordination Committee (OCC): Crude Oil Price Equalisation (COPE) Account, Cost and Freight (C&F) Account, Product Price Adjustment (PPA) Account

1998: Dismantling of APM, closure of oil pool Market Determined Pricing Mechanism (MDPM) – From April 1, 1998, moved to adjusted import parity pricing for controlled (MS, HSD, SKO, ATF, LPG) products. Prices / markets decontrolled for industrial products (Naphtha, FO, LSHS, Bitumen, Paraffin)

2002: MS and HSD deregulated in 2002

2006: Trade Parity Pricing (TPP, Rangarajan, 2006) for MS and HSD (with weight of 80 % IPP and 20 % Export Parity Price (EPP))

2010: Continue with TPP (Parikh Committee, 2010) for HSD, market determined pricing for MS – Government takes an inprinciple decision to move to market determined pricing both at refinery gate and retail level for HSD at an appropriate time

Recently Finance ministry has proposed to use Export Parity Price. (Chavda, 2013).

Import parity price and Export parity price are determined from the FOB price (at Arab Gulf, in USD per barrel). EPP is the price in USD/bbl converted into INR/litre. Three more elements namely, (ocean) freight, insurance, and customs duty are included in IPP (a barrel contains approximately 159 litres. EPP and IPP both may change due to change in either the (USD-INR) exchange rate or fluctuation in FOB price (USD/bbl) or, both. The existing policy of TPP gives 80 and 20 percent weight to IPP and EPP respectively. (Anand, K. Mukesh, 2012).

Subsidies on petroleum products: - Fuel subsidies in India are a significant burden on fiscal health of the government. The average cost of these subsidies is 1.4 percent of GDP since 2008. Fuel subsidies in India are regressive in nature as the benefits are mostly enjoyed by the higher income groups. (IISD, 2014).

The year wise fiscal subsidy in rupees crores on PDS Kerosene & Domestic LPG under Subsidy Scheme 2002 is shown in table 1:

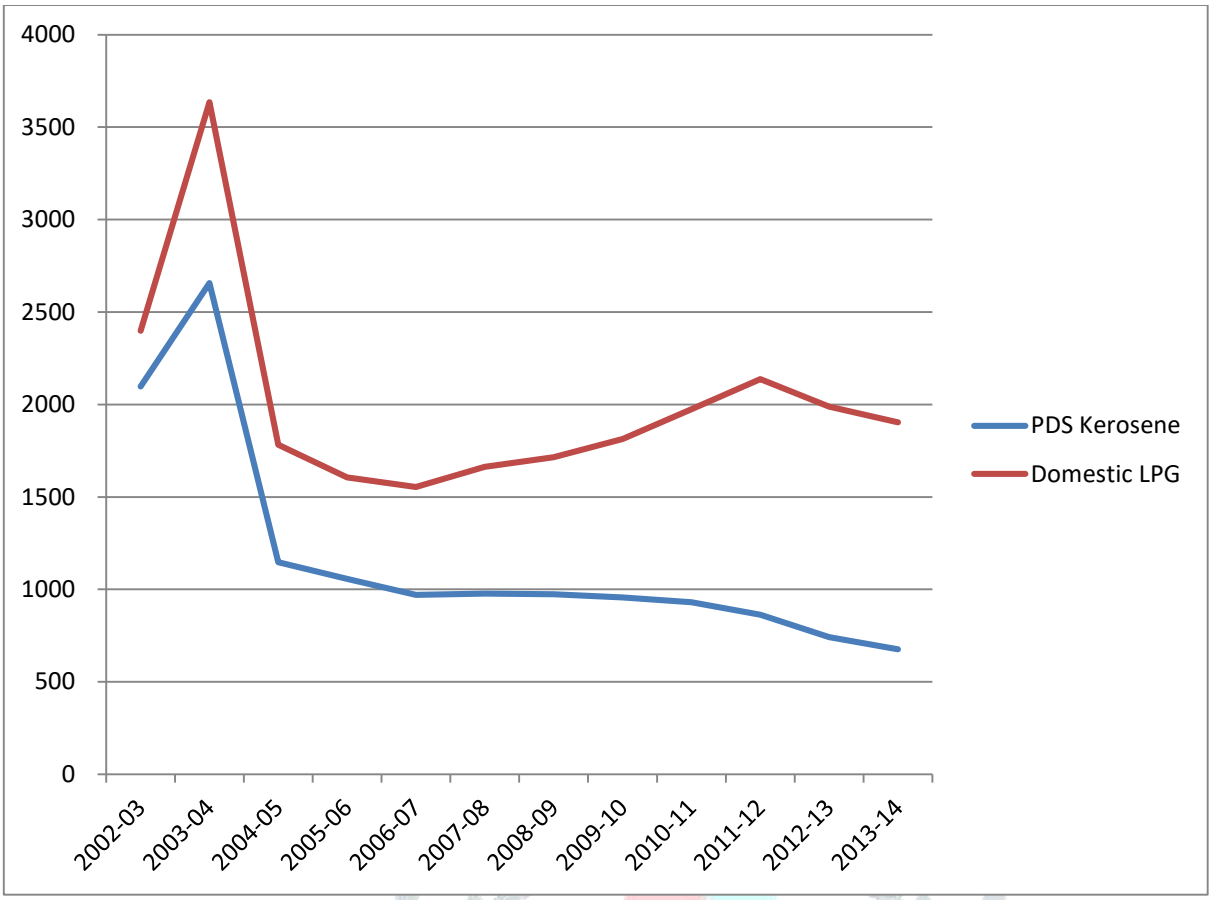
Year	PDS Kerosene	Domestic LPG
2002-03	2098	2398
2003-04	2657	3635
2004-05	1147	1783
2005-06	1057	1605
2006-07	970	1554
2007-08	978	1663
2008-09	974	1714
2009-10	956	1814
2010-11	931	1974
2011-12	863	2137
2012-13	741	1989
2013-14	676	1904
2014-15*	-	2272

Note:- The subsidy scheme was discontinued w.e.f. 1 April 2015.

*In 2014-15, no payments have been made. Amount shown is released in 2016-17 which is partial amount of claims pertaining to 2014-15.

Source:-ppac.

This table is shown with the help of figure 1 below:-



PDS kerosene subsidy and domestic LPG subsidy firstly showed the increasing trend, then steeply falling. After that increasing at a decreasing rate.

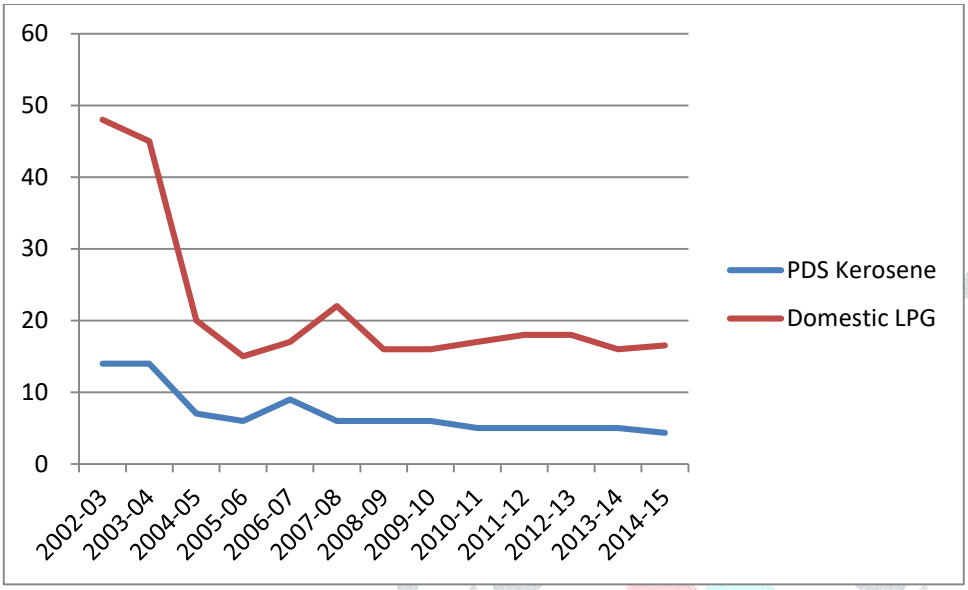
The year wise freight subsidy for far-flung areas under Freight Subsidy Scheme 2002 is presented in table 2 below:-

Year	PDS Kerosene	Domestic LPG	Total
2002-03	14	48	62
2003-04	14	45	59
2004-05	7	20	27
2005-06	6	15	21
2006-07	9	17	26
2007-08	6	22	28
2008-09	6	16	22
2009-10	6	16	22
2010-11	5	17	22
2011-12	5	18	23
2012-13	5	18	23

2013-14	5	16	21
2014-15	4	17	21

The subsidy scheme has not been extended beyond 2014-15 by MOP&NG. It is discontinued w.e.f. 1st April 2015.
Source:- ppac

This table is shown with the help of figure 2 below:-



This is the extra amount of subsidy which is provided for far- flung areas and is called fright subsidy.

Impact of Fuel Subsidy on Fiscal Deficit:- The main objective of fuel subsidy is to protect the poor from high and volatile international fuel prices. But government often fails to achieve this objective. From the data presented below in table, it is clear that the percentage of fuel subsidy in fiscal deficit kept on rising. It was highest in 1996-97 as 27.87 percent of fiscal deficit fallowed by 2000-01 which was 20.18 percent. After that fuel subsidy showed a decreasing percentage. This was due to some reforms taken by the government in this sector such as dismantling of APM system, deregulation of petrol prices from June 2010 and diesel prices from October 2014.

Table 3:- Year wise Fuel Subsidy and Fiscal Deficit in India (Rupees Crores)

Year	fuel subsidy	fiscal deficit	Fuel subsidy as % of Fiscal Deficit
1992-93	5686	40173	14.15
1993-94	6596	60257	10.94
1994-95	6560	57703	11.36
1995-96	9360	60243	15.53
1996-97	18600	66733	27.87
1997-98	7480	88937	8.41
1998-99	8370	113321	7.38
1999-00	17714	106724	16.59
2000-01	23091	114369	20.18
2001-02	11140	140955	7.90

2002-03	6265	145072	4.31
2003-04	6351	123273	5.15
2004-05	2956	125794	2.34
2005-06	2683	146435	1.83
2006-07	2724	142573	1.91
2007-08	2820	126912	2.22
2008-09	2852	336992	0.84
2009-10	14951	418482	3.57
2010-11	38371	373592	10.27
2011-12	68484	515990	13.27
2012-13	96880	490190	19.76
2013-14	85480	502858	16.99
2014-15	63427	512628	12.37
2015-16**	30000	532000	5.63
2016-17*	26947	535618	5.03

Source:- indiastat.com

*Actuals

** Budget estimates.

Testing of Hypothesis

Null Hypothesis H_0 :- India's fiscal deficit is not positively correlated with availability and accessibility of fuel subsidy.

Alternative Hypothesis H_1:- India's fiscal deficit is positively correlated with availability and accessibility of fuel subsidy.

Result of Correlations

			fuel subsidy	fiscal deficit
Spearman's rho	fuel subsidy	Correlation Coefficient	1.000	.465*
		Sig. (2-tailed)	.	.019
		N	25	25
	fiscal deficit	Correlation Coefficient	.465*	1.000
		Sig. (2-tailed)	.019	.
		N	25	25

*. Correlation is significant at the 0.05 level (2-tailed).

Source:- Author's calculation using SPSS.

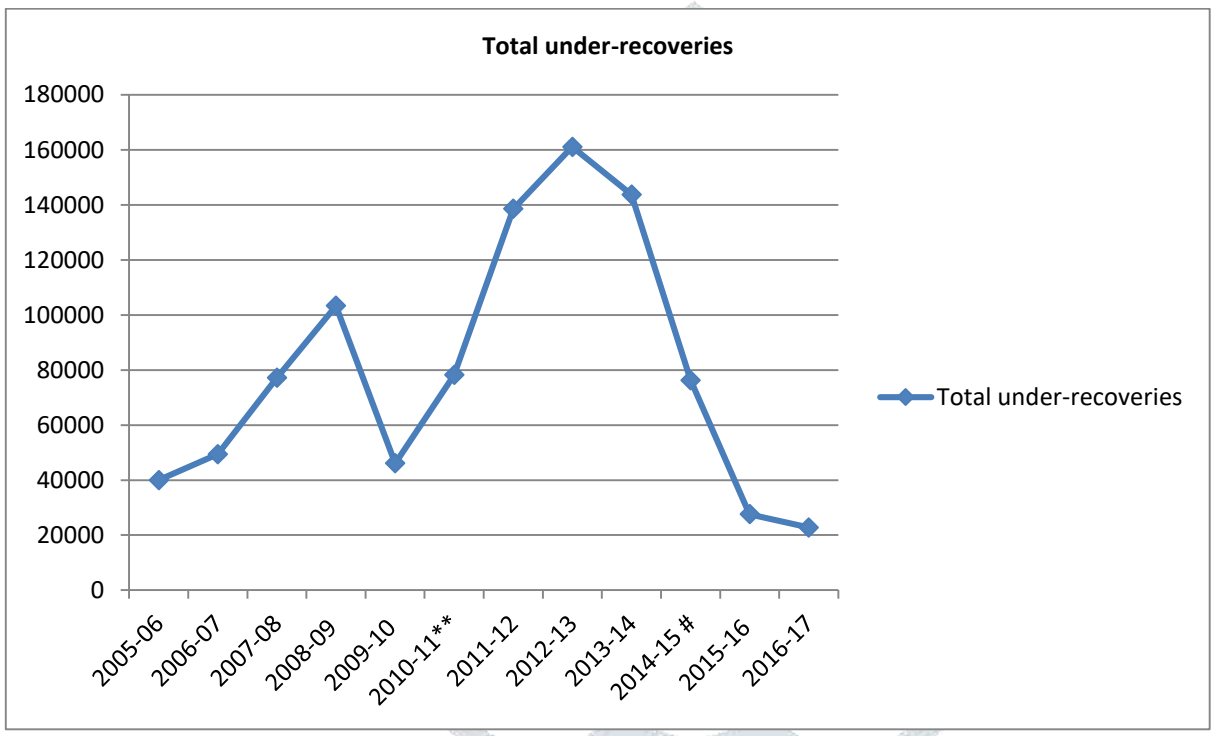
The value of correlation between fuel subsidy and fiscal deficit is 0.5 which indicates that there is positive and moderate correlation between the both. The p – value is 0.02 which is less than 0.05. This means that there is presence of a relationship

between the fuel subsidy and fiscal deficit. The correlation is significant at the 0.05 level (2- tailed). Thus we reject null hypothesis and do not reject alternative hypothesis and conclude that fuel subsidy is positively correlated with fiscal deficit.

A Note on Under-recoveries

Under recovery is the difference between the trade parity refinery gate cost of refined product paid by OMCs and their managed sale price. The total under recoveries in FY 2008-09 were over USD 25 billion. The GoI has issued hundreds of billions of Indian rupees to OMCs to deal with these under recoveries since 2005. The government has issued off budget "out bonds"- debt securities to OMCs for the liquid cash. In FY 2008-09 GoI has issued close to USD 20 billion on oil bond debt to OMCs. The fiscal impact of these under recoveries is very acute. The result of this was that India's fiscal deficit doubled from 5.7% of GDP in FY 2007-08to 11.4% in FY 2008-09 in nominal terms. (OECD/IEA, 2010).

The year wise total under recoveries are shown with the help of line graph below in figure 3:



Note:
*** Under recovery on Petrol is only upto 25th June'2010.*
 # Under recovery on Diesel is only upto 18th October '2014.

Source:- PPAC

From figure 3, it is clear that under-recoveries have shown an increasing trend except in 2009-10 when they reach the lowest. Under-recoveries are highest from 2010-11to 2012-13. Diesel is the cause of under-recovery for most of the years. Under – recovery on petrol is upto 2010 and diesel is upto 2014. Thus they are showing downward trend after that.

Conclusion:- Fuel subsidies are a significant burden on the finances of the government. They discourage private investment in the energy sector, increase air pollution, and encourage high level of vehicle traffic which results in traffic congestion and higher rates of accidents. Moreover, subsidies are mostly regressive in nature as most of the benefits are enjoyed by the richer sections of the society. They also results in large amount of under-recoveries of the OMCs. Thus subsidies in India do not reach to the targeted group. They should be reformed and the poor should be protected by the effective safety net programmes.

References

Aristovnik, A., 2004. Public Sector Stability and Balance of Payments Crisis in Selected Transition Economics, WDI, EIU, EBRD .

Andriamihaja, N, and G Vecchi, 2007. An evaluation of the welfare impact of higher energy., prices in Madagascar.Africa Region Working Paper Series No.106(Washington: The World Bank).

Anand, M., 2012. Diesel Pricing in India: Entangled in Policy Maze.

Babu,K. Romesh.2010. Uncanny Idea of Fuel Subsidies in India.

Benedict et al. 2013. Energy Subsidy Reform Lessons and Implications, IMF

Barany and Dalia, 2015. Measuring Fossil Fuel Subsidies, ECFIN Economic Brief, ISSN: 1831-4473.

Business Line.

Coady,D.,et. al., 2010. Petroleum Product Subsidies: Costly, Inequitable, and Rising. IMF Staff Position Note, SPN/10/05 (Washington: International Monetary Fund).

Coady,D., et. al, 2006. The Mgnitude and Distribution of Fuel Subsidies: Evidence from Bolivia, Ghana, Jorden, Mali ,and SRI Lanka. (WP/06/247).

Clements Benedict, H. Jung and S. Gupta, 2003. Real and Distributive Effects of Petroleum Price Liberalization: The Case of Indonesia.(WP/03/204).

Chavda, K. 2013. Fuel Pricing Policy and Notional Subsidy.

https://swarajyamag.com/longform/fuel-pricing-policy-notional-subsidy

Dr. Shenoy, V. Bhamy. 2010. Lessons Learned from Attempts to Reform India's Kerosene Subsidy.

Gupta, S.,et al.,2000. Equity and efficiency in the reform of price subsidies: A Guide for Policymakers. (Washington : International Monetary Fund).

Government of India Report on Economic Affairs.2004. *Ministry of Finance, Department of Economic Affairs* : 2004.

Granado,J. A. del, D. Coady, and R. Gillingham, 2010. The Unequal Benefits of Fuel Subsidies: A review of Evidence for Developing Countries. IMF Working Paper No.10/202.

India outlook 2011

IISD, 2012. A citizen's Guide To Energy Subsidies in India.

OECD Economic outlook No.76, Oil price developments: Drivers, Economic consequences and policy responses.

OECD/IEA,2006.Petroleum Product Pricing in India.

Onn,C. Fong, 2010. Caught in the middle income trap.

Srivastava, D.K.,et al.2003. Budgetary Subsidies in India. National Institute of Public Finance and Policy, New Delhi.

Ter-Minassian, T., M. Allen and S. Johnson, 2008. Food and Fuel Prices- Recent Developments, Macroeconomic Impact, and Policy Responses. IMF (Fiscal Affairs, Policy Development and Review and Research Department)

World Bank Group Energy Sector (2010).