



A Study on Factors Affecting Petroleum Prices, and Pricing of Petroleum Products Under GST

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ABSTRACT

Petroleum products are products which have been processed from crude oil (Petroleum). Petroleum products include a large number of products like Petrol, Diesel, Liquefied Petroleum Gas (LPG) Kerosene, Asphalt, Paraffin wax, Tar, Plastics, Propane, Sulfur, lubricants, and wax. Each of these products is formed in the process of refining the cured oil. The main aim of refining is to get the main products like Petrol, Diesel, Liquefied Petroleum Gas (LPG) Kerosene, Asphalt, Paraffin wax, and Tar. But some by-products are also formed in the process this includes Plastics, Propane, Sulfur, lubricants, wax, etc.

The price of each product is different from each other. Some products may cost more than the other product this is due to the allocation of joint cost. Joint cost is the cost which has been incurred for producing the products. Mainly it includes the cost until the point of split off. After that, the resulted products may further be processed and sold in the market.

The market price of petroleum products is affected due to many factors in the business environment. Some of the factors affect all petroleum products or otherwise only a few petroleum products. For example change in the price of crude oil and exchange rate will affect the pricing of all petroleum products. Whereas a change in the further processing cost of a product will affect the pricing of that specific product.

The price of petroleum products are changing in day-to-day bases this is due to the transition from Administrative pricing mechanism (APM) to Market Determined Price Mechanism (MDPM). In APM the price is fixed by the administrative authority of the country i.e. the Government will be fixing the price. But at present, the price is fixed by the manufacturing companies so they are adjusting the price as they want.

At present the taxation policy of petroleum products is under the Value Added Tax (VAT). Almost all other products and services are coming under Goods and Service tax (GST).

1. INTRODUCTION AND REVIEW OF LITERATURE

1.1 THE RATIONALE FOR THE STUDY AND MOTIVATION

The petroleum industry plays a critical role in the global economy, influencing various sectors and impacting the daily lives of people worldwide. Understanding the factors affecting petroleum prices and the implications of pricing petroleum products under the Goods and Services Tax (GST) is essential for policymakers, economists, industry stakeholders, and consumers alike. This study aims to delve into these factors and their ramifications, providing valuable insights into economic stability, energy security, and policy effectiveness.

A large number of people are using both the diesel and petrol as a necessary commodity, for making their life's smoother. But many of the common people do not know about the factors determining the price of the said commodities. This study helps to identify different factors and its relationship with final price of the product. Also, this study helps to find the answer for a question. The question is what happens when petrol and diesel come under GST? Who will having gains and loss when compared with the current way for taxation?

1.2 STATEMENT OF THE PROBLEM

The price of petroleum products is changing on a day-to-day basis. The reason for this is unknown to many people. This research tries to understand the cause of these changes and to identify the factors that cause changes in the price of petroleum products. One of the main questions related to petroleum products and taxation is that what will be happening when petroleum products comes under GST. The researcher tries to find the answers to the above-stated questions.

1.3 REVIEW OF LITERATURE

Ministry of Petroleum and Natural Gas, (2018) in its Annual Report 2017-2018. This report covers different topics like Refining, Marketing & Distribution, R&D & New Technologies, Bio-Fuels, Conservation of Petroleum Products, and Pricing etc. It shows how the things wherein the year 2017-2018.

International Energy Agency, (2009) study "Petroleum price taxation and subsidies in India" studies about the system of petroleum product pricing during the term of their study and the micro, macroeconomic, regional and global effects. Also, the study looks into pricing done by the government (APM) and that done by the Companies (MDPM). This helps to understand the impact of the change in the pricing policy by the government in April 2002.

Madan Sabnavis & Urvisha H Jagasheth, (2018) studied what will happen when petrol and diesel come under GST. The present effective tax rates are significantly higher than that of the highest GST slab. Also, they found that the price of the fuels will be decreased to a large extent.

Ian Wallis & David Kennedy, (2006) Studied about the impact of petrol prices on consumption and travel demand in New Zealand. The main objective of the study was to find the relationship between the prices of petroleum products with its consumption.

Raju, (2017) research tries to find the determinants of crude oil price in research done by him in the same name. This study attempts to find the factors which can influence the oil price in domestic or internationally. He found that demand, supply, Oil Producing, and Exporting Countries policies and a mix of other Marco economical and international variables. Like inflation, exchange rate, BRENT crude oil price etc.

Fattouh, (2007) discusses three main approaches for analyzing oil prices: non- structural models, the supply-demand framework, and the informal approach. The non-structural models rest on the theory of exhaustible resources. The supply-demand framework uses behavioral equations that link oil demand and supply to its various determinants. The informal approach focuses on the specifics of oil market history in explaining oil prices.

Ahmed Atil, Duc Khuong Nguyen, & Amine Lahiani, (2014) studied about how the cost of the crude oil price is allocated with two of its main joint product in the research titled as "Asymmetric and nonlinear pass-through of crude oil price to gasoline and natural gas prices. The result of the study shows that the oil price affects the two joint products in an asymmetric and nonlinear manner

Jyoti Parikh, Pallav Purohit, & Pallavi Maitra, (2005) studied the demand projections of petroleum products and natural gas in India. Also based on their findings they had forecasted the demand for 2011-2012 in two cases when GDP growth six% and eight% then production will be 147 and 162 million tons in case of petroleum products. In the case of Natural gas, the estimates will be 46 and 49 billion cubic meters when six percent and eight percent during 2011-2012.

1.4 IDENTIFICATION OF RESEARCH GAPS RESEARCH GAP

A number of studies have been conducted in the area of checking the relationship between different factors affecting that affect the petrol pricing around the world. And the result varies from place to place due to some local factors which may not be affecting the pricing mechanism worldwide. In this study the researcher compares the relationship between the pricing of petrol and diesel with Exchange rate and crude oil price. Along with this the researcher tries to find out what may happen when the petrol and diesel prices comes under GST.

2.RESEARCH METHODOLOGY

2.1 SCOPE OF THE STUDY

The scope of the study is to understand the relationships existing between the pricing of petrol and diesel with different determinants of the same and to find what will happen to the petrol and diesel prices when it comes to GST when the current rates are used.

2.2 RESEARCH OBJECTIVES

1. To identify the factors affecting petroleum product pricing.
2. To understand how GST will affect the pricing of petroleum products.

2.3 RESEARCH DESIGN

This research deals with different factors affecting the petrol and diesel price in India. Also tries to find out the effect of GST on the prices of petrol and diesel when it comes under Goods and Service Tax.

2.4 METHODS OF DATA COLLECTION AND VARIABLES FOR STUDY

Variables Used For Analysis Are:

1. Independent variables

Independent variables include Exchange rate and Cured oil price.

2. Dependent variables

Dependent variables include petrol and diesel prices.

Type Of Data Source

The study is done based on the secondary data collected from different reports, research papers, journal etc.

Sample Data

The data used for the study includes the past five years of petrol, diesel , exchange rate and crude oil prices

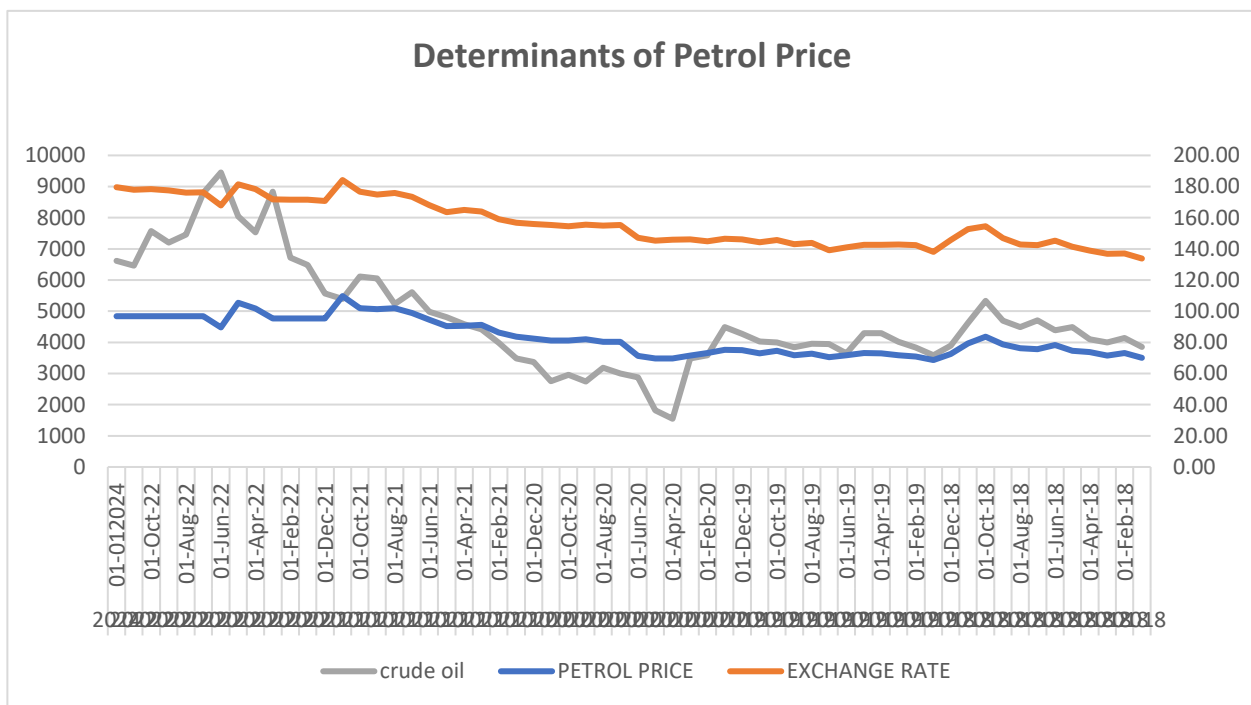
3.DATA ANALYSIS AND INTERPRETATION

3.1 TECHNIQUES FOR DATA ANALYSIS

The methods implemented for data analysis include the use graphs, charts, tables and mathematical calculations.

3.2 Analysis and Interpretation of Determinants Of Petrol And Diesel Price

An analysis is done on the prices of petrol and diesel and other determinants of the price of the same and its relationship. All these prices are changing

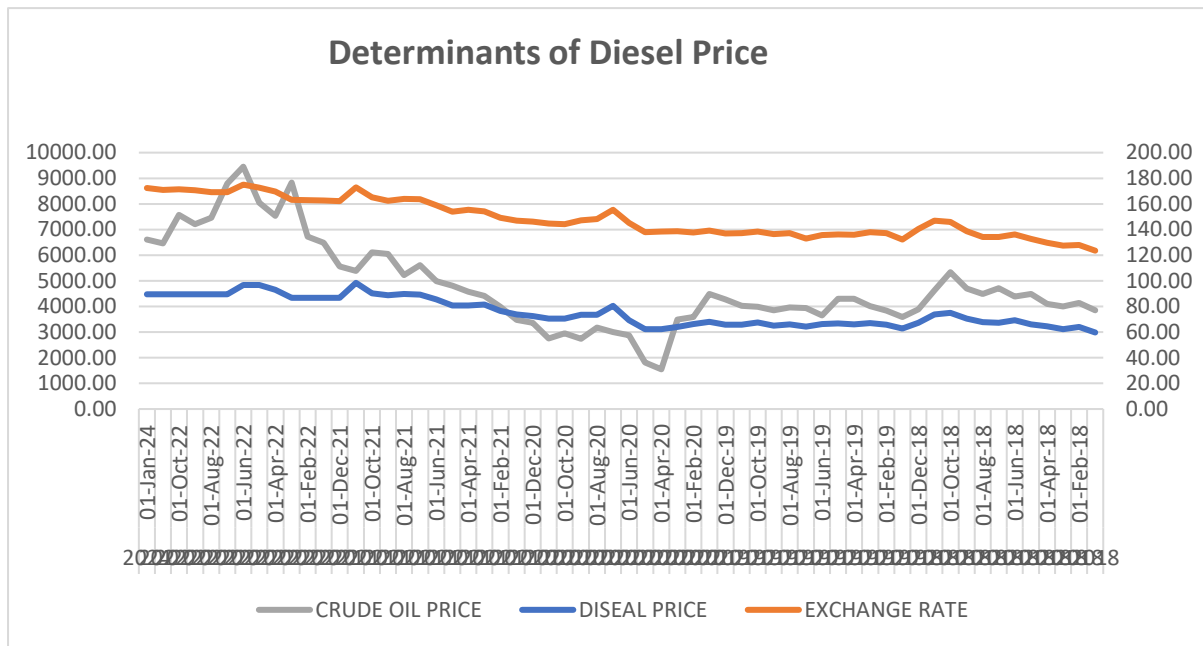


almost every day. Following information are derived by analysing the price history of petrol, diesel, exchange rates and crude oil over 5 year (except 2023). Starting from 1/1/2018 and ending with 1/3/2024 on monthly bases (prices on the 1st day of each month).

Interpretation

This chart shows the changes in the petrol price, exchange rate, and crude oil price. From the chart, we can understand that the exchange rate is somewhat constant than other elements. Also, when crude oil price falls there is a chance of a fall in petrol price but only at a lesser rate. But when the crude oil price increase it is more likely to increase the petrol price also.

Determinants of Diesel Price



Interpretation

This chart shows the changes in the diesel price, exchange rate, and crude oil price. From the chart, we can understand that the exchange rate is somewhat constant than other elements. Also when crude oil price falls there is a chance of a fall in diesel prices but only at a lesser rate. But when the crude oil price increase it is more likely to increase the diesel price also.

Effect On Price of Petroleum Products When the Current Taxation Policy Changes

Petrol

Currently, the petrol price is taxed under VAT and Excise duty. The value of tax and duties charged on petrol is contributing a large

Table 3.3 Price Buildup Of Petrol (Price In Delhi 16-March-24)

Elements	Petrol price
Base price	55.42
Freight	0.20
Price charged to dealers(excluding excise duty and vat)	55.62
Excise duty	19.90
Dealers commission	3.81
vat	15.39
Retail selling price	94.72

The above table shows the calculation of the retail selling price of petrol in Delhi as on 16/03/2024. The retail selling price of petrol was Rs. 94.72/ Liter which includes Excise duty, Dealers’ commission, and VAT is charged as different tax and duties collected by the state and central government.

When Petrol Comes Under GST The Expected Results Are As Follows:

	0%	5%	12%	18%	28%
Base	55.42	55.42	55.42	55.42	55.42
freight	0.20	0.20	0.20	0.20	0.20

Commission	3.81	3.81	3.81	3.81	3.81
Price before tax	59.43	59.43	59.43	59.43	59.43
GST	0	2.971	7.131	10.697	16.640
Sales price	59.43	62.401	66.561	70.127	76.07
CGST	0	1.485	3.5658	5.348	8.320
SGST	0	1.485	3.5658	5.348	8.320

This table shows the different sales price for petrol under different GST rates when Base price, freight, and commission remain constant. The GST collected by the seller is divided into CGST and SGST. SGST is paid to the state of the consumer of the product and the CGST is paid towards the central government.

When the highest GST rate (28%) is charged on the product even then the sales price will be only Rs. 76.07 whereas in the current system the price is Rs. 94.72. So the difference will be about Rs 18.65. That means that when petrol comes under GST the consumers can expect a good fall in the price.

From the table itself, we can say that there is a huge difference in the sales price even at the highest GST applicable.

Effect on Tax Collection

Central Government

In the case of State government, they are charging Excise Duty on petrol when it comes under GST, they will be receiving a part of GST as CGST. Which will be half of GST.

Table 3.7 Difference In Revenue of Central Government Petrol Under Current Tax Policy And GST In Different Cases

	0%	5%	12%	18%	28%
CGST	0	1.485	3.5658	5.348	8.320
Current- 19.90					
Difference with collection	-19.90	-18.415	-16.3342	-14.552	-11.58

This table shows the difference in the tax collection made by the central government from petrol when it comes under GST with the current system of taxation, under different rates. In all the cases the tax collected under GST is lower than tax collected under the current system

State government

In the case of the Central government, they are charging VAT on petrol. When it comes under GST, they will be receiving a part of GST as SGST. This will be half of GST.

Table 3.8 Difference In Revenue Of State Government Petrol Under Current Tax Policy And GST In Different Cases

	0%	5%	12%	18%	28%
SGST	0	1.485	3.5658	5.348	8.320
Current - 15.39					
Difference with current collection	-15.39	-13.905	-11.8242	-10.042	-7.07

This table shows the difference in the tax collection made by the State government from petrol when it comes under GST with the current system of taxation, under different rates. In all the cases the tax collected under GST is lower than tax collected under the current system.

That means when the people enjoy the benefit of converting current taxation policy to GST because of the cost reduction that comes with the shift of taxation policy. But the revenue of both the central government and the state will be reduced with a huge amount. This will be affecting the proper performance of the government.

Diesel

Currently, the petrol price is taxed under VAT and Excise duty. The value of tax and duties charged on petrol is contributing a large

Table 3.9 Price Build-Up of Diesel (Price In Delhi 16-March-24)

elements	price
Base price	56.16
freight	0.22
Price charged to dealers (excluding excise duty and vat)	56.38
Excise duty	15.80
Dealer commission	2.62
vat	12.82
Retail selling price	87.62

The above table shows the calculation of the retail selling price of diesel in Delhi as on 16/03/2024. The retail selling price of diesel was Rs. 87.62/ Liter which includes Excise duty, Dealers' commission, and VAT is charged as different tax and duties collected by the state and central government.

When Diesel Comes Under GST The Expected Results Are As Follows:

	0%	5%	12%	18%	28%
Base	56.16	56.16	56.16	56.16	56.16
freight	0.22	0.22	0.22	0.22	0.22
Commission	2.62	2.62	2.62	2.62	2.62
Price before tax	59	59	59	59	59
GST	0	2.95	7.08	10.62	16.62
Sales price	59	61.95	66.08	69.62	75.62
CGST	0	1.47	3.54	5.31	8.31
SGST	0	1.47	3.54	5.31	8.31

This table shows the different sales price for the diesel under different GST rates when Base price, freight, and commission remain constant. The GST collected by the seller is divided into CGST and SGST. SGST is paid to the state of the consumer of the product and the CGST is paid towards the central government.

When the highest GST rate (28%) is charged on the product even then the sales price will be only Rs. 75.62 whereas in the current system the price is Rs. 87.62. So the difference will be about Rs 12. That means that when diesel comes under GST the consumers can expect a good fall in the price.

From the table itself, we can say that there is a huge difference in the sales price even at the highest GST applicable.

Effect On Tax Collection

Central Government

Table 3.13 Difference In Revenue Of Central Government Petrol Under Current Tax Policy And GST In Different Cases

	0%	5%	12%	18%	28%
CGST	0	1.47	3.54	5.31	8.31
Current- 15.80					
Difference with collection	-15.80	-14.33	-12.26	-10.49	-7.49

This table shows the difference in the tax collection made by the central government from diesel when it comes under GST with the current system of taxation, under different rates. In all the cases the tax collected under GST is lower than tax collected under the current system.

State Government

In the case of Central government, they are charging VAT on diesel. When it comes under GST they will be receiving a part of GST as SGST. This will be half of GST.

Table 3.14 Difference In Revenue Of State Government Petrol Under Current Tax Policy And GST In Different Cases

	0%	5%	12%	18%	28%
SGST	0	1.47	3.54	5.31	8.31
Current – 12.82					
Difference with current collection	-12.82	-11.35	-9.28	-7.51	-4.51

This table shows the difference in the tax collection made by the State government from diesel when it comes under GST with the current system of taxation, under different rates. In all the cases the tax collected under GST is lower than tax collected under the current system.

Interpretation

When the highest GST rate (28%) is charged on the product even then the sales price will be less than the current sales price of petrol diesel. That means that when petrol and diesel come under GST the consumers can expect a good fall in the price.

4. Findings and recommendations

4.1 Research Outcomes and Findings

1. Identified followings elements: Crude oil price, Exchange rate, Taxation, OPEC policy, Demand, Transport cost, Commission and Refining cost as the main factors affecting the price of petrol and diesel
2. The exchange rate is having a positive relationship with petrol and diesel price.
3. Crude oil price has a positive relationship with petrol and diesel prices.
4. Pricing of petrol and diesel is a complex process and it is done based on a lot of factors.
5. A substantial amount of tax is collected by the Central government and the state governments price of petrol and diesel.
6. When the current system of taxation changes to GST then the price of petrol and will be having a somewhat big fall.
7. The fuel tax burdens of the general people will be lowered due to reduced rates of tax collected by the government.
8. The change to GST will be badly affecting the central and state government revenue collected from fuels.
9. Under GST the price of the product will be the same in any part of India. This will be possible by avoiding the current VAT system and fixing a fixed rate in which the supply will be taxable

4.2 Recommendations

1. To convert the current taxation policies to GST which result in the fall in the price of petrol and diesel. And so, the people will not be charged with throat cutting amount as tax.
2. Before making the conversion, the government has to consider its position after making such a change. Because the government is collecting a lot of money from the general public as fuel tax, by charging high rates of tax. When the products come under GST the maximum rate of tax is 28 percent even at that point the government will be facing a huge reduction in tax collected from fuel as fuel tax.
3. The reduction in price result in demand for petroleum products. Petrol and diesel are used by all the sectors, as a result the whole economy will be having a movement towards boom. This is results in getting additional tax revenue from other sectors. In this way the governments can mitigate their losses

4.3 Limitations of the study

- The study was limited to the petrol and diesel prices in Delhi.
- The study was limited to the past 5 years data.
- The study is limited to petrol and diesel prices for one day because the price will change each day
- The study is limited to petrol and diesel prices and their changes under GST.

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