A STUDY ON ISSUES AND CHALLENGES PERTAINING TO OIL IMPORTS TO INDIA

A dissertation submitted to Indian Maritime University for the partial fulfilment of the requirement for the degree of MBA Port and Shipping Management

By

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DECLARATION

I, SHRIYA V PARAMESWAR (reg.no:2005304024) student of **School of Maritime Management, Indian Maritime University, Kochi Campus** pursuing **Master of Business Administration in Port and Shipping Management**, hereby declare that this report titled **"A STUDY ON ISSUES AND CHALLENGES PERTAINING TO OIL IMPORTS TO INDIA"** has been prepared by me towards the partial fulfilment of the requirement for the award of the degree of **"Master of Business Administration in Port and Shipping Management"** under the guidance of my project guide **Dr.Yogamala H L.** I also declare that this project report is my original work and has not been copied from any other report previously submitted for the award of any Degree, Fellowship, or other in the similar title.

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CERTIFICATE

This is to certify that the report titled **"A STUDY ON ISSUES AND CHALLENGES PERTAINING TO OIL IMPORTS TO INDIA"** submitted to the School of Maritime Management, Indian Maritime University, Kochi Campus, by, **SHRIYA V PARAMESWAR (reg.no:2005304024**) in partial fulfillment of the requirements for the award of degree of Master of Business Administration in Port and Shipping Management is a record of project work done under my supervision.

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CHAPTER 1

INTRODUCTION

1.1. INTRODUCTION

Oil is a major source of world energy, and it is widely applied and used in the transportation, manufacturing, industrial, and commercial sectors. The majority of household products plastics, and solvents are made with oil and petroleum derivatives. As a result, global oil consumption is always increasing, prompting shipping companies to develop efficient technologies and vessels for delivering this extremely important natural resource around the world.

The oil and gas sector is one of India's eight key industries, and it has a significant impact on all other critical sectors of the economy. Because India's economic growth is strongly tied to its energy needs, the demand for oil and gas is expected to rise further, making the industry attractive for investment. As of 2021, India remained the world's third-largest consumer of oil. To meet the rising demand, the government has implemented a number of initiatives. It has permitted 100 percent Foreign Direct Investment (FDI) in various sectors, including natural gas, petroleum products, and refineries. As evidenced by the presence of Reliance Industries Ltd (RIL) and Cairn India, it now attracts both domestic and global investment.

1.2. OBJECTIVE OF THE STUDY

Primary objectives

- To study about oil importing.
- To know about the transportation of oil trade.
- To study the effectiveness of oil trade in India.

Secondary objective

- To identify how oil trade helps the development of economic growth of the country.

1.3. STATEMENT OF THE PROBLEM

Crude oil price declines are understandably favorable to oil-importing countries such as India. However, lowering oil prices help to ease the economic conditions of net oil importers such as India, which is 70-80 percent dependent on oil imports. It allows importing nations to advance reforms, rationalize oil subsidies and progressively levy carbon taxes. The proposed research aspires to understand how crude oil imports are done in India. This study will address the issues and challenges faced by India in importing oil, the oil price fluctuations.

1.4. SCOPE AND COVERAGE

The scope of the study is to understand the how import, logistics and distribution of oil is done and how the oil trade is done in India. This study

is confined to Oil Imports to India since 2010 till 2021, excluding all other years.

1.5. REVIEW OF LITERATURE

A literature review is an examination of scholarly sources on a particular subject. It gives you an overview of current knowledge and allows you to find applicable theories, methodologies, and gaps in existing research.

According to USA TODAY, "Oil is a natural resource formed by the decay of organic matter over millions of years. And like many other natural resources, oil cannot be produced, only extracted where it already exists. Unlike every other natural resource, oil is the lifeblood of the global economy. The world derives over a third of its total energy production from oil, more than any other source by far. As a result, the countries that control the world's oil reserves often have disproportionate geopolitical and economic power."

According to Akhilesh Sati, Lydia Powell of ORF research and analysis, "Russia, the country to come under Western sanctions in 2022, is not a large source of India's oil imports but it has remained in India's long portfolio of oil importers for over a decade. Russia's share in India's crude imports was less than 1% until 2017-18 when Russia started featuring among India's top 20 oil import sources with a share of about 1.4%. In 2021-22 (April to January), Russia's share in India's oil importers was 2.3%, which put Russia among India's top 10 sources of oil imports."

Union Minister Nitin Gadkari justified that, "the oil prices had gone up within the international market owing to the ongoing war between Russia and Ukraine, which was beyond the Indian government's control."

According to Trading Economics, "The annual wholesale price inflation rate in India rose to 15.08 percent in April 2022 from 14.55 percent month earlier and above market forecasts of 14.48 percent. This was the highest reading since December 1998, amid a broad-based price increase due to disruption in global supply chains caused by Russia-Ukraine conflict."

According to U.S. Energy Information Administration, "By establishing output objectives for its members, the Organization of Petroleum Exporting Countries (OPEC) can have a substantial impact on oil prices. OPEC members possess some of the world's greatest oil reserves. OPEC members controlled around 71 percent of total world proved crude oil reserves (plus lease condensate) at the start of 2020, while they accounted for 36 percent of total world crude oil production in 2020."

The activities that comprise the oil supply chain are divided into three major segments: upstream, midstream, and downstream. The upstream segment includes the exploration and oil production. The midstream is an intermediate segment and consists of the refining activity which includes the transportation of oil from the production site to refineries. The logistical tasks necessary to move the refined products from the refinery to the points of consumption are in the downstream segment *(Leiras, 2006).*

1.6. RESEARCH METHODOLOGY

The strategy used to conduct research is referred to as methodology. The present research involves doctrinal research method. The aim of this type of methodology is to make specific inquiries in order to identify specific pieces of information.

1.7. SOURCES OF DATA COLLECTION

Primary data

Primary data for this study was collected by observation and formal interviews, discussion with professionals.

Secondary data

Secondary data for the study ae collected from various sources:

- Journals
- Different company records
- Books
- Company publications
- Research reports
- Websites. Etc.

1.8. CHAPTERISATION

The present work involves five chapters.

CHAPTER 1: First chapter is dedicated to explain the research methodology

CHAPTER 2: Second chapter is kept reserved to elaborate Oil imports and procedures in India.

CHAPTER 3: A study on oil price fluctuation from 2010 to 2021

CHAPTER 4: Issues and Challenges

CHAPTER 5: Findings, Suggestions and Conclusion

CHAPTER 2
OIL IMPORTS TO INDIA AND PROCEDURES

2.1. OIL IMPORT AND PROCEDURES IN INDIA

India, a country of over 1.4 billion people, imports over 84 percent of its crude oil needs. In addition, India is the world's third largest oil consumer and importer. India's crude oil import expenses are rising due to rising oil prices, more imports, and a drop in domestic oil production.

India meets its oil needs through two sources:

- Domestic oil exploration and production.
- Imports.

DOMESTIC OIL EXPLORATION IN INDIA

The Indian oil and gas business dates back to 1889, when the first oil resources were discovered near the town of Digboi in the state of Assam. On March 31, 2018, India's crude oil reserves were assessed to be 594.49 million tonnes (MT). India imports 84 percent of its oil needs and hopes to reduce that to 67 percent by 2022 by replacing it with indigenous exploration, renewable energy, and ethanol fuel. In 2019, India was the second largest net crude oil (including crude oil products) importer, with 205.3 Mt imported.

India's domestic crude oil production output declined by 5.2 percent by March 2021, with producers extracting 30,491.7 thousand Metric Tonnes (TMT) of crude oil and Crude oil production fell by 2.3 percent in August 2021.

2.2. RESERVES

India had estimated crude oil reserves of 587.335 million tonnes (MT) as of 1 April 2021, a 2.65% decrease from the previous year. The Western Offshore has the most reserves (37%), followed by Assam (27%).

REGION	CRUDE OIL RESERVES (IN MILLION METRIC TONNES)	SHARE OF OIL (%)
Coal Bed Methane	0	0
Tripura	0.07	0.01
Arunachal Pradesh	1.52	0.25
Nagaland	2.38	0.39
Andhra Pradesh	8.15	1.35
Tamil Nadu	9	1.49
Rajasthan	24.55	4.06
Eastern Offshore	40.67	6.73
Gujarat	118.61	19.63
Assam	159.96	26.48
Western Offshore	239.2	39.6
Total	**604.1**	**100**

Table 2.1: The table displays India's estimated crude petroleum reserves by state/region as of *March 31, 2017*

2.3. STRATEGIC PETROLEUM RESERVES

Building petroleum reserves such as underground tank storage, above-ground tank storage, and fully developed and ready-to-exploit in situ reserves is a profitable proposition for an oil-importing country like India since oil exporters charge excessive prices when oil demand is less than supply. The Indian Strategic Petroleum Reserve (SPR) is an emergency fuel storage with a total capacity of 5 million tonnes or 31.5 million barrels (5.0 million cubic metres) of strategic crude oil, enough to last 10 days**,** and is managed by the Indian Strategic Petroleum Reserves Limited. Strategic crude oil storages are located underground in

Mangalore, Visakhapatnam, and Padur (Udupi district, Karnataka), having easy access to the east and west coast refineries.

2.4. PRODUCTION

Since 2011-12, India's domestic crude oil and natural gas production has been steadily declining. In 2020–21, India produced 30.49 MTs of crude petroleum, a 5.21 percent decrease from the previous fiscal year. Over the previous decade, crude oil and natural gas production fell at compound annual growth rates (CAGRs) of 2.44 percent and 5.47 percent, respectively.

2.5. OIL IMPORTS

India is the world's second largest oil importer after China, and it is heavily reliant on imported crude oil. Crude oil net imports increased from 171.73 MTs in 2011–12 to 226.95 MTs in 2020–21. Despite its reliance on imports, India has established adequate processing capability to create a variety of petroleum products throughout the years. India is 82.8 percent reliant on crude oil imports. Due to a lack of adequate petroleum reserves, India will have to rely heavily on crude oil imports in the near future until its renewable energy resources such as solar, wind, hydro, and bio-mass are adequately exploited to achieve energy security by replacing petroleum product consumption, which is also a major contributor to air pollution.

OIL IMPORTS BY NATION OF ORIGIN

In 2020, India was the world's third largest crude oil importer. In 2020, the country is expected to spend 4.84 lakh crore (US$64 billion) on crude oil imports. In 2020, the 15 main sources of crude oil imports into India were as follows.

Rank	Country	Import value
1	Iraq	$14.9 billion
2	Saudi Arabia	$12.5 billion
3	United Arab Emirates	$7.8 billion
4	Nigeria	$5.3 billion
5	United States	$3.7 billion
6	Kuwait	$3.3 billion
7	Venezuela	$2.3 billion
8	Mexico	$2.2 billion
9	Angola	$1.4 billion
10	Qatar	$1.3 billion
11	Kazakhstan	$1.3 billion
12	Brazil	$1.2 billion
13	Oman	$944.6 million
14	Russia	$927.2 million
15	Malaysia	$914.8 million

Table 2.2: Representing the oil importing countries to India

2.6. MODES OF TRANSPORTATION:

There are numerous modes of transportation, each of which is becoming increasingly significant. Because of advancements in exploration and extraction techniques (such as offshore drilling), oil is being found and retrieved in more remote regions around the world. This, combined with rising demand for petroleum products, has resulted in oil extraction and

refining being located distant from where people use gasoline, diesel, and kerosene. Because of the separation of supply and demand, transportation is critical in the petroleum sector.

There are several methods for transporting vast amounts of oil around the world, each with its own set of advantages and disadvantages. The following sections cover several modes of oil transportation:

- **Marine vessels** - Marine oil tankers and barges are capable of transporting petroleum all over the world. Because these vessels can carry a large amount of fuel, the cost per barrel to transport this oil is quite low. These tankers are also the sole option to transport crude oil across oceans. Larger tankers are typically utilised to transport this gasoline on a worldwide scale, transporting petroleum from one continent to the next. Barges are similar to tankers; except they are much smaller and do not have any means of propulsion. Tugs are frequently used to push or tow barges. This renders barges unsuitable for transporting oil over long distances. Because barges perform poorly in rough seas, they are only employed in calmer waterways. These barges, however, are often utilised for transferring gasoline over shorter distances.

- **Pipelines** - Pipelines transfer crude oil from wells to refineries and storage facilities. Pipelines are thought to be the most cost-effective way to transport oil on land. The oil is first collected at the wellhead or another location where the oil is kept. It is pushed from the wellhead across the land via a pipe and released at its destination, which is often a refinery. Pipelines, on the other hand, can be used to transport previously refined fuels such as gasoline, diesel, and even jet fuel from a refinery to distribution facilities or a consumer. These pipelines are not merely a straight line of

pipe, but incorporate a variety of components. These pipelines will include booster pumps to keep the gasoline going over long distances, inspection sites to ensure that no pollutants enter the fuel, and even other collecting and delivery points along the way. Although the construction of these pipelines is expensive and time-consuming, the operating expenses are much lower than those of other modes of transportation. Furthermore, the amount of labour required to transport this oil is minimal. Pipelines are the most efficient way to transfer oil over a land mass.

- **Rail transport** - Oil can also be delivered on long cargo trains outfitted with special tanker cars, and rail transport is most typically employed in locations where pipelines do not exist. Rail cars, unlike oil tankers, can only transport huge amounts of oil in many cars and only hold a big volume of crude oil in a small number of storage tanks. Following extraction, oil is put into these railcars and transported to the refinery via pre-existing lines. Despite the fact that more cars are necessary to transport considerable volumes of oil, rail is a relatively cost-effective method of transporting oil. Similar to pipelines and oil tankers, rail can also be used to transport refined petroleum products to distribution locations.

- **Trucks** - Tanker trucks are another form of oil delivery technology, although they function similarly to rail transportation in that considerable amounts of oil require numerous huge trucks with equipped oil storage tanks. Trucks are often used to transport modest quantities of oil over short distances and are rarely utilised to transport crude oil. Trucks are more typically utilised to transport refined petroleum like gasoline to distribution points like gas stations. Trucks, on the other hand, can

operate more freely because they simply require streets to drive and do not rely on established railways.

- **Tugboats -** Increased demand for oil has resulted in deeper drilling, with larger drilling rigs positioned further offshore, justifying the construction of larger and more powerful tugs and larger barges.

2.7. IMPORT LICENSING REQUIREMENTS

✓ Import declaration

Importers must submit an import declaration in the prescribed bill of entry format, detailing the full value of imported items.

Import Licenses (where applicable)

Import licenses must accompany all import paperwork (for example, ex-factory invoices, freight documentation, and insurance certificates). This allows customs to clear the documentation in time for imports.

✓ Letter of credit or L/C

In order to record payment for imports, importers must submit a copy of the L/C. This document is often confirmed with the issuing bank.

Inspections are not required for all consignments prior to clearance, and inspections may be waived for known importers. An appointment with the clearing agent(s) helps avoid delays in the present customs process. Documentation requests/requirements are generally substantial, and delays are common.

Delays in clearance cost time and money, as well as additional detention and demurrage fees, making it more expensive to operate and invest in India. Importers seek shipment

release against a performance bond for delayed clearances; providing a bank guarantee for this purpose is a more expensive option. Indian Customs recently expanded its operations to 24 hours a day to achieve more prompt import clearances. (*The international trade administration U.S. department of commerce)*

LICENCE FOR IMPORT OF PETROLEUM

Petroleum, other than petroleum that may be stored without a license under sections 7, 8, and 9 of the Act, may not be imported into India unless a license is given under these rules:

Provided that, such Petroleum products may also be imported by a person not having a license if adequate advance arrangements are made by such person to receive and store the imported petroleum products in licensed premises.

Petroleum exempted. –

(1) Nothing in this chapter applies to petroleum Class B or petroleum Class C comprising in a ship's stores and manifested as such;

(2) Nothing in rules 14,19 and 26 shall apply to petroleum imported by the Defense Forces of the Union. *(International Safety Systems)*

IMPORTATION BY SEA

- **Ports into which petroleum may be imported. –**

(1) Petroleum shall not be imported into India by sea except through the ports which are duly approved for this purpose by the Ministry of Shipping, Government of India, in consultation with the Chief Controller and declared as Custom's ports by the Commissioner of Customs.

(2) Notwithstanding anything contained in sub-rule (1), the Commissioner of Customs may, on the recommendation of the Chief Controller, allow import of petroleum Class B or petroleum Class C, otherwise than in bulk, through any other port.

(3) Adequate firefighting facilities as per OISD Standard-156 shall be provided at the ports handling petroleum.

(4) Person(s) desirous of seeking approval in respect of proposed facilities for unloading of petroleum for the purpose of import under sub-rule (1) or of making modifications in the existing facilities shall submit to the Chief Controller an application along with –

a) specification and plans drawn to scale in quadruplicate, clearly indicating-
    i. surroundings and all protected works within 500 metres of the unloading facilities on all sides showing therein the location, available draft, navigation channel, turning circle, route of transfer pipeline(s),
    ii. mooring or berthing facilities, service platform/berth, mode of unloading, firefighting facilities, illumination arrangements, navigational facilities, control room, spill collection/ containment arrangements etc., and
    iii. piping and instrumentation diagram of the petroleum pipeline(s) at the unloading area;
b) comprehensive project report elaborating the scheme and methodology of import, safety and security features including those mentioned in (a) (i), (ii) and (iii) of this sub-rule;
c) Environment Impact Assessment and Risk Analysis Report indicating qualitative and quantitative risks, probable failure scenarios, LFL distances and consequent hazards and damages with damage distances and remedies recommended;

d) scrutiny fee of rupees two thousand, and

e) copies of clearances obtained from the following authorities. –

(i) Ministry of Shipping or State Maritime Board as the case may be.

(ii) Ministry of Environment and Forests or State Pollution Control Board, as the case may be, and

(iii) Commissioner of Customs.

(5) Unloading of petroleum in bulk shall be either by mechanized arm or by armoured hose as approved by Chief Controller. All hoses, pipes and other appliances used in unloading of petroleum shall be electrically and mechanically continuous and duly tested as per codes/standards.

- **Declaration by the master of the ship carrying petroleum or by the ship's agent.**

(1) The master of every ship carrying petroleum shall deliver to the pilot before entering any port approved under sub-rule (1) of rule 16, a written declaration in Form I under his signature: Provided that no such declaration is necessary if the agent of the ship deliver such a declaration signed by him to the Conservator before the arrival of such ship.

(2) The pilot shall make over the said declaration to the Conservator without delay and the Conservator shall forward the declaration to the Commissioner of Customs of the port with all convenient dispatch.

- **Anchorage of ships carrying petroleum. –**

(1) Every ship having petroleum on board shall be anchored at such anchorage as the Conservator shall specify in this behalf and shall not leave such anchorage without

the general or special order of the Conservator and subject to such conditions as may be specified in such order.

(2) The anchorage shall in no case be the same as that for vessel laden with explosives and shall be at such distance from the anchorage for vessels laden with explosives as to render it impossible for a fire originating at the former anchorage to affect vessels at the latter: Provided that nothing in this rule shall apply to ships having on board petroleum Class C.

- **Production of certificate and licence for import. –**

(1) Every person desiring to import petroleum shall furnish personally or through his agent to the Commissioner of Customs. –

a) certificate of storage accommodation in Form II signed by such person or his agent; and

b) the licence or an authenticated copy of the licence for the import and storage of such petroleum: Provided that nothing in this rule shall apply to the importation, otherwise than in bulk of petroleum exempted under sections 7, 8, 9 and 10 of the Act: Provided further that the furnishing of a licence under clause (b) shall not be necessary for the importation of petroleum class C in bulk in quantity exempted under section 7 of the Act.

(2) Notwithstanding anything contained in sub-rule (1) a person may import petroleum Class A in bulk, even if –

i. he is not holding a licence for storage at the port of importation; or

ii. the storage accommodation in the premises licensed in his name is not sufficient to hold the quantity of petroleum intended to be imported: Provided in both cases adequate advance arrangements to the satisfaction of the Conservator are made by the importer to distribute the petroleum from the post of import to premises licensed to store such petroleum.

- **Permission of Commissioner of Customs to land petroleum. –**

(1) No imported petroleum shall be landed except with the permission of the Commissioner of Customs.

(2) If the Commissioner of Customs after receiving-

a) of the testing officer's report on the petroleum;

b) the certificate of storage accommodation in Form II if required under rule 19; and

c) the licence or an authenticated copy of the licence if required under rule 19, 18 and after making such further inquiries, as he deems necessary, is satisfied that the petroleum can be lawfully imported and that there is suitable accommodation for it, he shall permit it to be landed.

(3) If the Commissioner of Customs is satisfied that any petroleum imported otherwise than in bulk is not intended to be stored in India but is intended to be dispatched immediately after landing to any place outside India, he may waive the requirements of rules 14 and 19 and by written order permit subject to such conditions as he may specify such petroleum to be landed for the purpose of immediate dispatch to that place. The Commissioner of Customs shall ensure that the goods are immediately

moved to destination country. In the event of road breaches etc. occurring maximum time of 30 days may be allowed from the date of landing of the goods up to the date of dispatch to the destinations outside of India.

(4) Nothing in this rule shall affect the power of the Commissioner of Customs to detain the petroleum under any other law or rule for the time being in force.

- **Landing of petroleum Class B or petroleum Class C in anticipation of the testing officer's report. –**

(1) Not with standing anything contained in Rule 20 where the consignee furnishes a guarantee to re-ship the petroleum if the testing officer's report proves unfavourable, the Commissioner of Customs may in anticipation of the testing officer's report permit any petroleum which he believes to be petroleum Class B or petroleum Class C to be discharged into boats or to be landed.

(2) The permission granted under sub-rule (1) shall be subject to the conditions that the boats into which the petroleum is discharged shall remain at such place as the Conservator may specify or that the petroleum shall be landed at a landing place duly specified for the purpose by him and stored in an installation licensed under these rules.

- **Unloading of petroleum in bulk. –**

Subject to the provisions of Part II of Chapter III, petroleum imported in bulk shall be discharged into storage tanks on shore either 19 directly or by means of barges or lighters specially constructed for carrying petroleum in bulk and only at such places as the Conservator may by general or special order direct.

- **Unloading of petroleum otherwise than in bulk. –**

(1) Subject to the provisions of Part II of Chapter III, petroleum imported otherwise than in bulk shall be landed either at jetties provided for the purpose, or in barges or lighters and only at any such places as the Conservator shall direct.

(2) No petroleum contained in containers shall be landed unless such containers are free from leakage and are of such strength or construction as not to be liable to be broken or to leak except in cases of gross negligence or extraordinary accident: Provided that petroleum contained in containers, which do not satisfy the requirements of this sub-rule, may subject to provisions of Part II of Chapter III and to such conditions as the Conservator may impose, be landed at separate landing place approved for the purpose.

Transshipment of petroleum. –

Petroleum may be transshipped from one ship to another for conveyance to any other port, whether within or beyond the territory of India subject to the provisions of Part II of Chapter III.

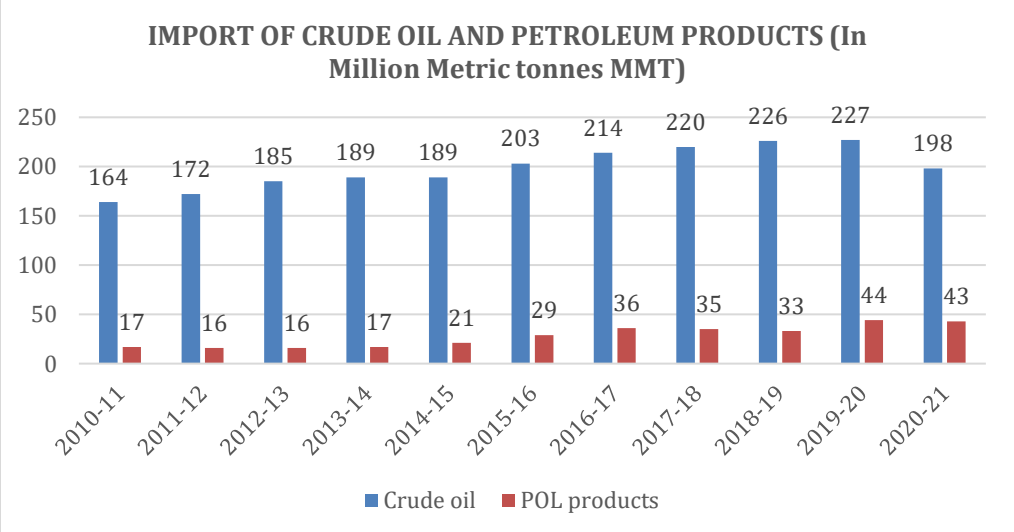
CHAPTER 3
DATA ANALYSIS AND INTERPRETATION

DATA ANALYSIS

3.1. Table representing Import of crude oil and petroleum products (in million metric tonnes) from 2010 – 2020.

Year	Crude oil	POL products
2010-11	164	17
2011-12	172	16
2012-13	185	16
2013-14	189	17
2014-15	189	21
2015-16	203	29
2016-17	214	36
2017-18	220	35
2018-19	226	33
2019-20	227	44
2020-21	198	43

Fig 3.1: Data representing crude oil imports to India from 2010- 2020



Interpretation:

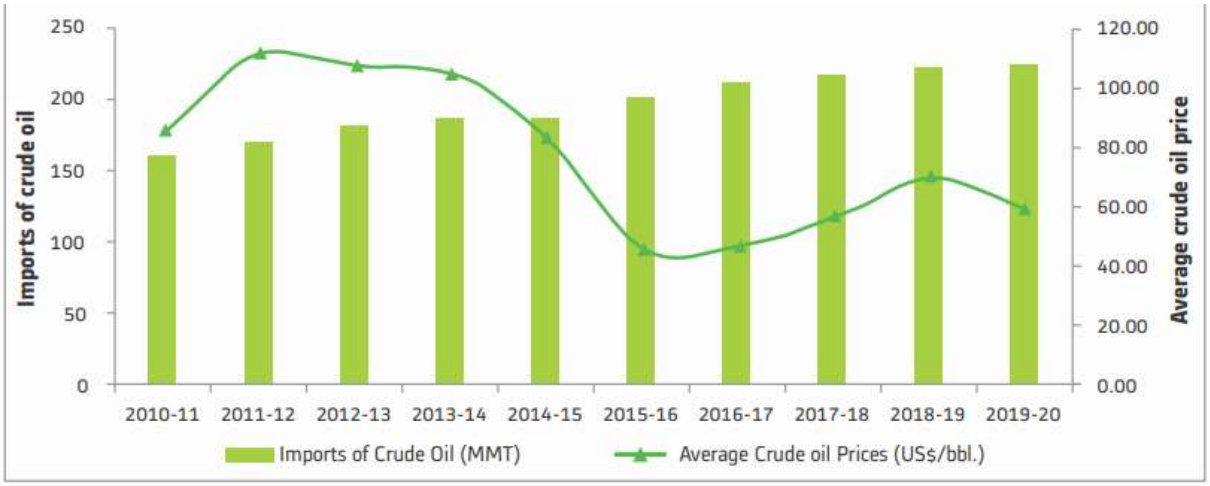
From the above data, we can see that the year 2019 had the highest import of crude oil to India with 227 MMT and the year 2021 had the lowest crude oil import of 164 MMT.

3.2. Table showing Import of Crude Oil and Crude Oil Prices.

Year	Import of Crude Oil (MMT)	% Growth in Import of Crude Oil	Average Crude oil Prices (US$/bbl.)	% Growth in Average Crude oil Prices
2010-11	163.60	2.72	85.09	21.97
2011-12	171.73	4.97	111.89	31.50
2012-13	184.80	7.61	107.97	-3.50
2013-14	189.24	2.40	105.52	-2.27
2014-15	189.43	0.10	84.16	-20.25
2015-16	202.85	7.08	46.17	-45.14
2016-17	213.93	5.46	47.56	3.02
2017-18	220.43	3.04	56.43	18.65
2018-19	226.50	2.75	69.88	23.84
2019-20	226.95	0.20	60.47	-13.46
CAGR 2010-11 to 2019-20 (%)	-	3.7	-	-3.7

P: Provisional

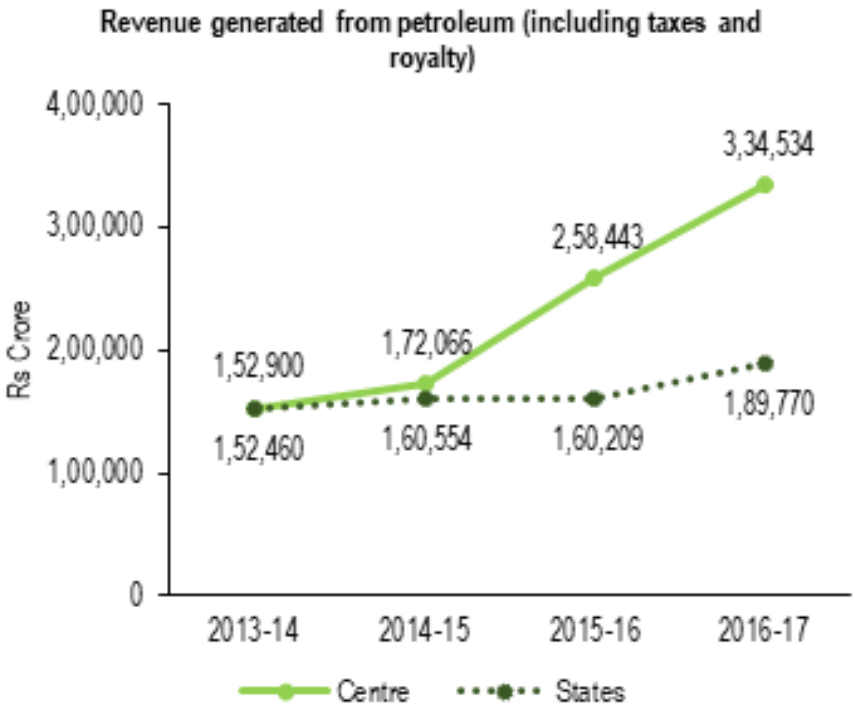
Fig 3.2.: Graph representing Quantity of Crude Oil Imports and Average International Crude Oil Prices (Indian Basket)



Interpretation:

Import of crude oil during 2019- 20 was 226.95 MMT valued at Rs.717001 crore as against import of 226.50 MMT valued at Rs. 783183 crores in 2018-19 which marked an increase of 0.2% in quantity terms but 8.4% decrease in value terms as compared to the import of crude oil during 2018-19. The prices of crude oil have shown a declining trend after July 2014. Since the price of crude oil in the international markets are quoted in US dollars, the Indian Rupees – US dollar exchange rate plays a vital role in the Indian context.

Fig 3.3.: The graph below depicts the trend in total petroleum revenue collected by the federal and state governments (including receipts from taxes, royalties, and dividends).



(Data sources: Petroleum and Planning Analysis Cell; Central Board of Excise and Customs; Indian Oil Corporation Limited; PRS)

Interpretation:

Data shown in the graph includes tax collections (from cesses, royalties, customs duty, central excise duty, state sales tax, octroi, and entry tax, among others), dividends paid to the government, and profit on oil exploration. The revenue collected by the central is greater than the state with Rs.3,34534 and Rs.1,89,770 in the year 2016-17.

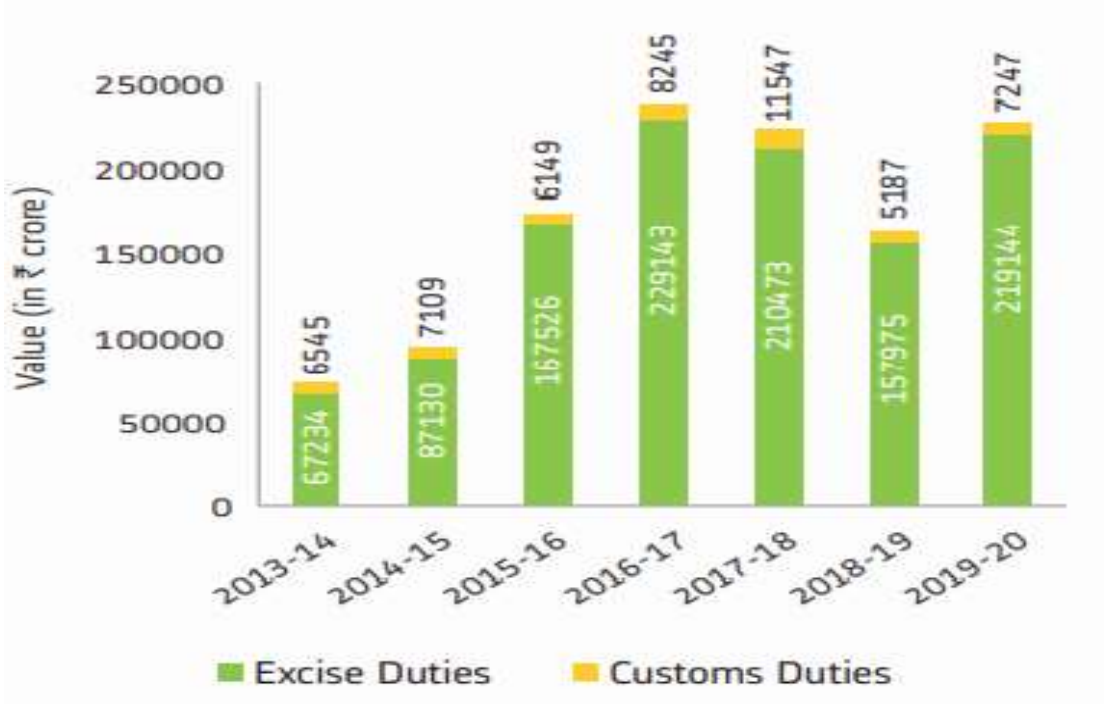
3.4. Table showing Realization of Excise and Customs duties from Crude Oil and Petroleum Products.

(Value in ₹ Crore)

Products	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20 (P)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
A. Excise Duties							
Motor Spirit	23404	29279	52297	67182	66991	52777	76070
Kerosene Oil	380	315	272	391	93	0	0
High Speed Diesel Oil	27321	42592	101178	147915	136422	99852	132242
Light Diesel Oil	330	289	261	295	69	0	0
Furnace Oil	828	604	435	477	81	0	0
Petroleum Gases and Other Gaseous Hydrocarbons	2017	1998	1903	2091	1416	44	1681
Aviation Turbine Fuel	1203	1063	1623	1521	1920	2540	2002
All others	11751	10989	9558	9271	3480	2762	7149
Total (A)	**67234**	**87130**	**167526**	**229143**	**210473**	**157975**	**219144**
B. Customs Duties							
Crude Petroleum	433	423	455	507	135	0	668
Petroleum Products	6112	6686	5694	7738	11413	5187	6580
Total (B)	**6545**	**7109**	**6149**	**8245**	**11547**	**5187**	**7247**
Grand Total (A+B)	**73780**	**94239**	**173675**	**237675**	**222020**	**163162**	**226391**

Source: Central board of Indirect Taxes & Customs (CBIC)

Fig 3.4.: The graph below depicts realization of Excise and Customs duties from Crude Oil and Petroleum Products.



Interpretation:

Excise and customs duty paid on crude oil and petroleum products on the basis of their respective Central Excise Tariff Heads (CETH). Excise and customs duty pain is highest in the FY2016-17 with Rs.237675 compared to Rs.226391 crores in the year 2019-20.

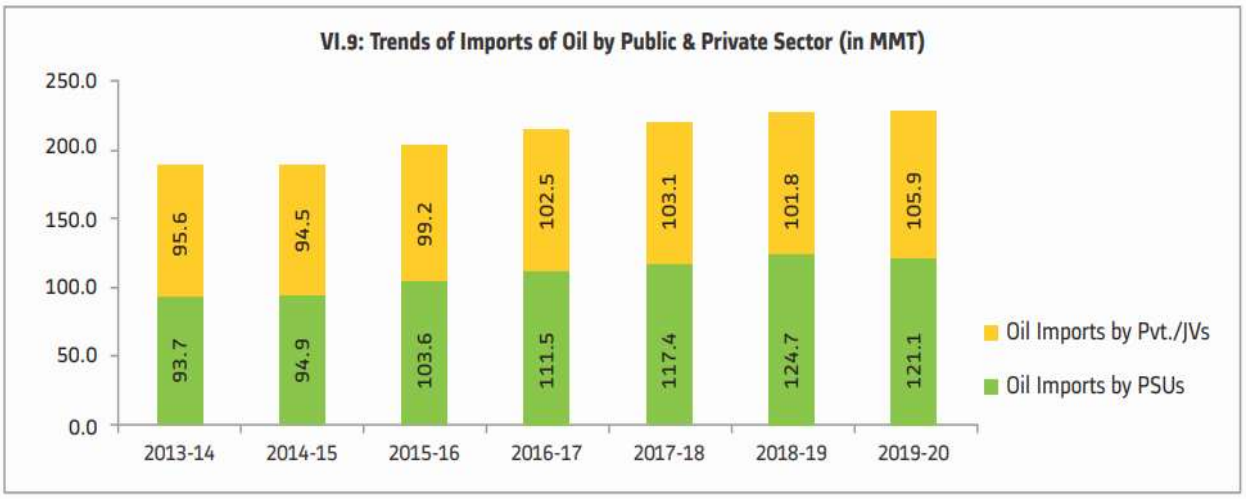
3.5.: Table showing import of crude oil and petroleum (in million US$)

Import/Export	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20 (P)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crude Oil Import	**142962**	**112744**	**63972**	**70196**	**87803**	**111915**	**101376**
Product Import							
LPG	6144	5955	3922	4775	5849	7178	7070
Petrol	248	375	648	239	91	445	1357
Naphtha	982	744	1463	1240	1261	1391	941
Aviation Turbine Fuel	0	114	135	163	178	200	45
Kerosene	0	29	25	0	0	0	0
Diesel	74	108	92	438	660	360	1632
Lubes	2122	2067	1439	1276	1860	1910	1673
Fuel Oil	942	599	363	273	499	696	1650
Bitumen	132	262	279	242	293	309	510
Petcoke	664	870	853	1174	1709	1494	1374
Others[1]	1158	1015	733	793	1237	2358	1438
Total Product Import	**12466**	**12138**	**9952**	**10614**	**13637**	**16341**	**17689**
Total Import	**155427**	**124882**	**73924**	**80810**	**101440**	**128255**	**119065**

Interpretation:

The above table interprets the import of crude oil and petroleum to India (in million dollars). The year 2013-14 recorded the highest import of crude oil and petroleum worth 155427 million dollars compared to the year 2019-20, which valued at 119065 million dollars.

Fig 3.6.: Graph showing trends of imports of oil by public & private sector.



Interpretation:

Oil imported by public sector is more during the year 2018-19 with 124.7 MMT compared to the year 2019-20 with 121.1 MMT. Whereas, oil imported by private sector is more during the year 2019-20.

CHAPTER 4
ISSUES AND CHALLENGES

4.1 ISSUES AND CHALLENGES:

Oil is one of the most important energy sources, accounting for 27.3 percent of world energy consumption in 2015. (*According to the BP Statistical Review of Energy ,2016)*, oil and gas supplied 38.8 percent of worldwide primary energy consumption in 2015, 0.4 percent more than in 2014. Because oil is a finite resource, it will not last forever. At the end of 2015, the oil reserve to production ratio was 50.7, implying that at current production rates, oil would last around 51 years. As a result, scientists are working around the clock to investigate alternative energy sources.

A boom that started in the early 2000s culminated in an abrupt decrease in crude oil prices in June 2014. However, the drop in crude oil prices is not a new phenomenon. There had been numerous changes in crude oil prices prior to the June 2014 dip. The average spot price of crude oil reached $52 per barrel at the end of December 2016, up from a low of $29.8 per barrel at the end of January 2016.

Reasons: The major causes for the drop in crude oil prices are rapid expansion of unconventional supplies, a shift in OPEC policy following a period of high prices, market mood, and increased demand in Asia-Pacific. *(Sanjay Kumar Kar, Rajiv Gandhi Institute of Petroleum Technology)*

Key Drivers of Crude Oil Price:

Crude oil price fluctuations are caused by a variety of factors. The following are some of the important factors:

1. **Dynamics of Demand and Supply -** Oil prices rose comfortably above $80 per barrel between 2010 and 2014, owing primarily to rising oil demand in countries such as China and geopolitical instability in important oil nations such as Iraq. Oil prices rose during this period for a variety of reasons, including a supply shortage from traditional oil fields. As a result, the oil price was subject to volatility.

   As oil prices rose, so did interest in and investment in unconventional oil exploration and production. As a result, the shale oil and gas revolution gained traction in the United States. Significant progress was achieved in Canadian oil sands exploration and production throughout the time.

2. **Global Economic Growth -** The Global Economy In 2015, global economies struggled due to weak aggregate demand, decreasing commodity prices, and increased financial market volatility. (*According to OPEC's monthly oil market report for February 2016)*, the global economy has slowed in previous months, causing predictions of global GDP growth for 2016 to be revised downward. Brazil and Russia's deepening recessions have slowed global growth. Slower growth in China and India further worsened the economic picture.

3. **Policy changes in OPEC -** OPEC, or the Organization of Petroleum Exporting Countries, is the primary driver of oil price changes. Algeria, Angola, Congo, Equatorial Guinea, Gabon, Iran, Iraq, Kuwait, Libya, Nigeria, Saudi Arabia, the United Arab Emirates, and Venezuela are members of OPEC as of 2021**.** OPEC nations control approximately one-third of global crude oil production. The

consortium sets production levels to meet global demand and can influence the price of oil and gas by increasing or decreasing production. However, OPEC's share of global oil supply has declined, mainly due to increased oil production from unconventional sources in the United States and Canada, as well as biofuel production. OPEC's capacity to balance the market through production cuts or increases is dwindling. Nonetheless, a significant reduction in OPEC production would have had an effect on crude prices. Throughout the early 2010s, OPEC's "desired" crude oil price range gradually grew to $100-110/bbl, up from $25-35/bbl in the early 2000s.

As a result of this approach and increased unconventional oil output, OPEC agreed to limit production, and the organization's share of global supply has rapidly dwindled. To defend market share, numerous OPEC members began offering discounts to Asian oil importers in the third quarter of 2014, signaling OPEC'S intentions to abandon price targeting.

With the goal of reversing the trend, OPEC decided to reduce output by up to 1.2 million barrels per day, to 32.5 million barrels per day, beginning January 1, 2017. Furthermore, OPEC is attempting to persuade non-OPEC producers to reduce output in order to raise oil prices to a significant level.

4. **Impact of geo-political events -** Political instability has historically influenced oil-producing countries. OPEC countries have frequently been the source of global geopolitical upheaval. Until 1980, crude oil prices remained stable, with very small fluctuations. Crude oil prices crossed the $100 barrier shortly after the Iran-Iraq War

in 1980, and have since risen past the $60 mark. The Asian financial crisis in 1998 reduced crude oil prices to $20, which then increased following the financial crisis era of 2007-2009. The Arab Spring of 2011-2012 aided crude oil prices in returning to the $100 threshold. It is reasonable to argue that geopolitical events have a significant impact on global crude oil trace and price determination.

5. **Appreciation of US dollars -** Oil is bought and sold all around the world in US dollars, which makes it more expensive to buy in nations other than the US. This, in turn, reduces global demand and puts more downward pressure on oil prices.

6. **Russia- Ukraine war** - The rise in global fuel costs since the start of the Ukraine conflict has exacerbated India's problems, and the need for competitive sourcing has naturally intensified. Russia has offered discounted crude oil and other commodities to India after the United States and its allies slapped sanctions on Moscow in response to President Vladimir Putin's decision to attack Ukraine. In March alone, Russia exported 360,000 barrels of oil per day to India, roughly four times the 2021 average. Geopolitical changes have put our energy security in jeopardy. Energy from alternate sources has frequently been more expensive, and the price increase following the Ukraine conflict has exacerbated India's problems.

Consequences of fall in crude oil prices

Oil is the primary driver of all development efforts, and any drop in oil prices has a wide-ranging impact on growth and inflation. Falling oil prices and activity have direct implications on both importers and exporters, as well as indirect repercussions via trade and other commodity markets, regulatory reactions, and investment uncertainty.

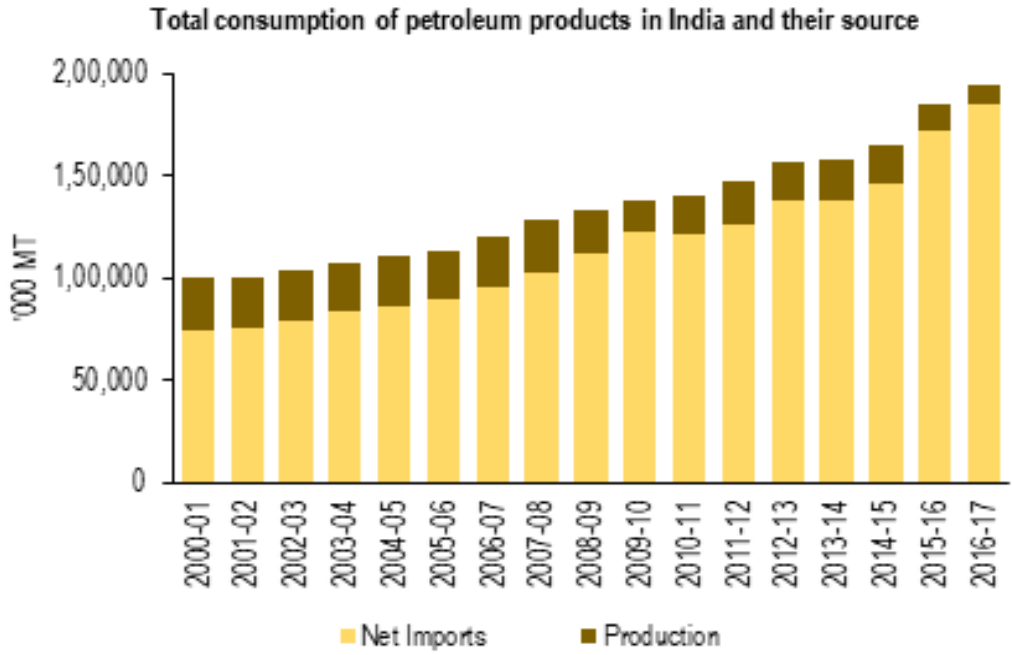
Impact of Oil exporting countries

Between June 2014 and January 2015, oil prices fell by more than 57 percent, raising concerns about major oil producers' capacity to tolerate a sustained period of lower pricing. Oil prices were required to balance their individual pain thresholds. Their breakeven pricing demonstrates the same. Low oil prices have an immediate negative impact on exporters, which is exacerbated in some circumstances by financial market pressures. (*Sanjay Kumar Kar, Rajiv Gandhi Institute of Petroleum Technology).*

Impact of rising crude oil prices in India

Refining crude oil yields important fuels such as diesel and other byproducts such as gasoline, kerosene, and so on. As a result, when crude oil prices rise, diesel prices rise as a direct result. Crude oil is now essential for the development of a developing country like India. Crude oil not only serves as the foundation for industrial development and scientific developments, but it also has a significant impact on the global economy and our country in particular.

India is one of the world's largest importers of crude oil; we import approximately 80 percent of our crude oil, the price of which is determined by oil-rich nations. The



Organization of Petroleum Exporting Countries (OPEC) controls the price of crude oil by assessing the production capacities of Middle Eastern companies as well as global demand for crude oil. A change on either side of the scale results in an increase or decrease (in very rare cases) in crude oil prices. Gasoline costs are rising as a result of the current global increase in fuel use. Because an increase in global crude oil prices has a negative influence on India's budget deficit, it has a negative impact on the Indian National Rupee's (INR) global appraisal. Not only that, but it has an immediate influence on the stock market.

It is critical to consider how this chain affects the end user. The end user buys diesel rather than crude oil, but not at the same price that the government does after crude oil refinement. The government imposes taxes on imported fuel at both the federal and state levels. According to the Constitution, the federal government has the authority to tax the production

of petroleum products, while states have the authority to tax their sale. Petroleum is exempt from the Goods and Services Tax (GST) until the GST Council determines.

Over the years, the central government has employed levies to limit large changes in the retail price of diesel and gasoline. When global crude oil prices have risen in the past, duties have been reduced. Excise charges have been raised since 2014, as global crude oil prices have dropped. As a result of the duty increases, the central government's revenue from taxes on petrol and diesel climbed at a 46 percent annual rate between 2013-14 and 2016-17. During the same time period, state total sales tax collections (from gasoline and diesel) climbed by 9% every year. (*Analyst at PRS Legislative Research)*

4.2 Factors influencing Indian fuel prices:

The price increases of petrol and diesel have been a major source of anxiety for the country's residents. Fuel costs in India are influenced by a variety of factors. Some of the most important factors influencing fuel costs in India are as follows:

- ***Cost of crude oil***: Crude oil, often known as unrefined oil, is a commodity traded on the international market. Changes in the price of this commodity have a direct impact on the price of petrol and diesel in our country. Crude oil prices fluctuate in response to changes in demand and supply. Furthermore, worldwide political connections, as well as future reserves and supplies, have a direct impact on crude oil prices.
- ***Cost of Refining:*** Cost to refine gasoline varies **between $. 40 and $. 70 per gallon**, depending on whether summer or winter formulas are being used.
- ***Price charged to dealers***: The Oil Marketing Companies acquire and distribute crude oil (OMCs). The price charged by OMCs to dealers is a major determinant of the

pricing of fuels. This price is also determined by a number of factors such as freight charges, refining costs, and so on.

- ***Commission for dealers**:* Oil Marketing Companies, or OMCs, pay fuel retailers a commission. This commission covers the gas pump owners' earnings, costs, and profit. This is one of the factors that contribute to the price of fuel
- ***Central excise duty:*** The excise charge on gasoline and diesel is levied by the central government. It should be noted that the central excise charge is a fixed sum of money rather than a percentage. As a result, the duty is not affected by fluctuations in fuel prices. The Government of India has significantly increased excise duty in recent years. The current duty on petrol is Rs.32.98 per litre, while the duty on diesel is Rs.31.83 per litre. This amount remains constant regardless of whether crude oil prices rise or decline.
- ***Sales tax or value added tax (VAT)***: The respective state governments levy this tax. The VAT or sales tax is computed after a few other elements are taken into account, such as the excise duty charged by the centre, the dealer commission, and so on.
- ***Taxes imposed by the government***: The Indian government levies a tax on both gasoline and diesel. The central government may adjust the tax structure based on particular policies. The marginal returns from fossil fuels and the recovery of losses drive the change in this structure. The price of gasoline fluctuates as a result of these levies.
- ***Demand for fuel***: With the number of two-wheelers and four-wheelers on Indian highways continuously increasing, so has the need for both petrol and diesel. Because Indian oil refineries must purchase crude oil from the foreign market in order to turn it

into gasoline and diesel, supply cannot always be guaranteed. According to economic logic, when supply is limited and demand is high, the price of both fuels will rise.

- ***Consumption ratio of refineries***: The crude oil imported into India is transported to refineries for processing. If the number of refineries is reduced, the total amount of petrol or diesel available for sale will be reduced as well. This would also imply that the supply would be reduced, raising the price of the gasoline.
- ***Valuation of INR Vs. USD***: The value of the Indian Rupee against the American Dollar is a crucial element that influences fuel and diesel pricing in India. The crude oil that is refined for gasoline and diesel is purchased on the international market in dollars. As a result, the strength of the USD relative to the INR is a direct factor. The cost of acquiring crude oil will rise if the US dollar strengthens. This will result in a greater price for the finished products.

CHAPTER 5
FINDINGS, SUGESSIONS AND CONCLUSION

5.1. FINDINGS:

- ✓ The year 2019 had the highest import of crude oil (QUANTITY) to India with 227 MMT and the year 2021 had the lowest crude oil import of 164 MMT.
- ✓ The prices of crude oil have shown a declining trend after July 2014.
- ✓ The revenue collected by the central is greater than the state with Rs.3,34534 and Rs.1,89,770 in the year 2016-17.
- ✓ Excise and customs duty paid is highest in the FY 2016-17 with Rs.237675 compared to Rs.226391 crores in the year 2019-20.
- ✓ The year 2013-14 recorded the highest import of crude oil and petroleum worth 155427 million dollars compared to the year 2019-20, which valued at 119065 million dollars.
- ✓ Oil imported by public sector is more during the year 2018-19 with 124.7 MMT compared to the year 2019-20 with 121.1 MMT. Whereas, oil imported by private sector is more during the year 2019-20.
- ✓ India aims to commercialise 50% of its SPR (strategic petroleum reserves) to raise funds and build additional storage tanks to offset high oil prices.
- ✓ The Government has allowed 100% Foreign Direct Investment (FDI) in upstream and private sector refining projects.

5.2 SUGESSIONS:

- ✓ The future energy requirements of India are so vast that it would be impossible to outline every potential, but a few stand out. Global players in oil, gas, and chemical logistics would enter the Indian market via joint venture or acquisition.
- ✓ Given the capital intensity of petroleum, gas, and chemical logistics, well-capitalized, reputable, and professionally managed enterprises can deliver petroleum, gas, and chemical logistics infrastructure at a significantly lower cost, provide logistics services at a lower cost, and respond much more flexibly and quickly than state-controlled oil firms.
- ✓ They should be urged to take advantage of this chance to increase their return on capital employed.

5.3 CONCLUSION

India, which imports over 80% of its crude requirements, has no pricing control over raw commodities. The demand of the end products would affect the demand of the intermediary products. Duties and taxes are sovereign functions over which the oil business has little influence. The other primary expenses are operating and transportation expenses, which are controllable. A price changes in oil are unavoidable. Previously, numerous causes contributed to fluctuations that exceeded the expectations of producers, investors, and analysts. Demand-supply changes, war, and OPEC policy interventions are all crucial variables that have contributed to significant fluctuations in oil prices.Large price variations have a significant influence on oil trading nations. Price increases have a negative impact on oil-importing countries while helping exporting countries boost their economies. Existing initiatives are frequently abandoned, and new projects are delayed. Lower oil prices, on the other hand, enable importing countries to pursue reforms, rationalize energy subsidies, and gradually charge carbon taxes contribute significantly to expenses in the oil business with low margins.

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