A STUDY ON TIME CHARTERING IN TANKER OPERATIONS BETWEEN MIDDLE EAST AND ASIA REGION

Submitted for the partial fulfilment of the requirement for the degree of

MASTER OF BUSINESS ADMINISTRATION

In

International Transportation and Logistics Management

Submitted by

Promit Chakraborty

Reg No. 2003305024

(MBA – International Transportation and Logistics Management)

Under guidance of

Dr. A Mourougane

Associate Professor, SMM

School of Maritime Management

Indian Maritime University

East Coast Road, Uthandi

Chennai – 600119

May, 2022

DECLARATION

I, **PROMIT CHAKRABORTY (Registration No: 2003305024)** hereby declare the project report entitled "***A STUDY ON TIME CHARTERING IN TANKER OPERATIONS BETWEEN MIDDLE EAST AND ASIA REGION***", submitted by me in School of Maritime Management, Indian Maritime University, Chennai Campus under the guidance of **DR. A MOUROUGANE**, Associate Professor, School of Maritime Management, Indian Maritime University, Chennai Campus in partial fulfilment of the requirements of award of the degree **MASTER OF BUSINESS ADMINISTRATION (ITLM)** is a report of original work done by me and the project report has not been submitted either in part or full this or any other university or institution for the award of any degree, diploma or any other titles.

PLACE: Chennai (**PROMIT CHAKRABORTY)**

DATE

ACKNOWLEDGEMENT

It gives me immense pleasure to express my thanks to all those who helped for the successful completion of this project. First & foremost, I thank the God Almighty for his gracious guidance throughout the project work.

My heartfelt sincere thanks to **Dr. A Mourougane,** Associate Professor, School of Maritime Management, Indian Maritime University, Chennai Campus, for his enormous encouragement, help & guidance, throughout the period of my project & led this work to its successful completion.

I express my sincere gratitude to **Dr. B. Swaminathan**, Head & Associate Professor, School of Maritime Management, Indian Maritime University Chennai Campus, the person who needs to be thanked at every stage of my project.

I would like to express my profound senses of gratitude to my faculty members of **School of Maritime Management, Indian Maritime University, Chennai Campus** for giving me an opportunity to take this project.

I would like to sincerely thanks to everyone who has contributed in this effort in numerous ways & their invaluable guidance & assistance through the entire phase of this project.

Finally, yet importantly, I extent my cordial thanks to my beloved parents for their blessing, my friends and classmates for their help and wishes for the successful completion of this project.

CERTIFICATE

School of Maritime Management
Indian Maritime University, Chennai

This is to certify that the project report entitled "***A Study on Time Chartering in Tanker Operations between Middle East and Asia***", submitted to the School of Maritime Management, Indian Maritime University, Chennai Campus, in partial fulfilment for the award of the degree of Master of Business Administration in International Transportation and Logistics Management, is a record of work carried out entirely by ***Promit Chakraborty***, Reg. No. ***2003305024***.

Dr. A Mourougane
Associate Professor
Project Guide
School of Maritime Management
Indian Maritime University
Chennai Campus

External Examiner:

Place: Chennai
Date: 25th May,2022

EXECUTIVE SUMMARY

This study looks into the current time-chartered tanker vessels between Gulf Cooperation Council (GCC) and Asia region. The goal of this research is to look at the role of 'time chartering' in GCC-Asian tanker operations. The breadth of oil commerce between the GCC and Asia is also included in the report. This is an important subject since commerce is at the heart of the GCC's and Asia's increasing ties, which are centred mostly on the crude oil and petrochemicals industries. As major exporters, the GCC and Asia have become critical to the global economy.

Asia has effectively positioned itself as a hub for export-oriented manufacturing, while the GCC continues to be the leading area for energy exports. GCC-Asian commercial links have increased significantly in recent years, mostly replacing commerce between the GCC and western nations. The procedure is underway. Asia has surpassed Europe as the GCC's most significant commercial partner, accounting for more than 57% of overall trade. By the end of 2022, the GCC will have grown into a worldwide commercial bloc, with total goods trade exceeding $1.4 trillion. During the Covid 19 epidemic, when global oil demand fell and ship time charter prices surged, this economic powerhouse suffered a huge hit.

The oil commerce business relies largely on tanker operators between these locations; hence a study of their activities is necessary. This research also looks at the present state of the tanker market. The goal of this research is to investigate the GCC's strategic position in the oil trade with Asia. The analysis will aid in understanding the industry's challenge as well as the options that should be pursued in order to attain efficiency.

TABLE OF CONTENTS

CHAPTER 1

INTRODUCTION

1.1 MARKET INTRODUCTION

The rise of China and India as world powers was unavoidable, with enormous implications for the Gulf area. Based on GDP, population size, military spending, and technical innovation, North America and Europe lag well behind Asia in terms of global dominance.

Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates make up the Gulf Cooperation Council (GCC). The GCC is a significant commercial group with pre-epidemic commerce worth more than $1 trillion. The GDP of the GCC in 2020 was $ 1,418 billion, with Saudi Arabia donating $ 700 billion, accounting for 49 percent of the overall GDP.

The selling of crude oil, petrochemical chemicals, and other commodities is a major focus of trade between GCC nations and Asia. The GCC-Asian trade relationship has developed dramatically over the years, with China accounting for 15.8% of total trade.

More oil is sent to Asia by GCC oil producers than to Europe and North America combined. In reality, the Asian continent receives around two-thirds of GCC oil exports. Individually and collectively, Asian countries rely on Gulf oil. According to OPEC, the Gulf Arab states generated an estimated 13 million barrels per day before the coronavirus outbreak, which plummeted to around 8 million barrels per day. More than a third (about 26 percent) of China's oil exports come from GCC nations. Gulf regions get 45 percent of India's oil exports. The GCC provides around 80% of Japan's oil.

1.2 CHARTERING

In the maritime industry, chartering is a crucial operation. A charterer may possess goods and hire a shipbroker to locate a ship to transport it for a set sum, known as the freight rate. Freight rates can be represented in terms of a per-ton rate across a specific route (for example, iron ore between Brazil and China), in World scale points (in the case of oil tankers), or in terms of a total payment – usually in US dollars – each day for the agreed period of the charter.

A charterer can also be a party without a cargo that rents a vessel from the owner for a certain amount of time and then trades the ship for a profit over the rental rate, or even profits in a high growth market by re-letting the ship out to other charterers. A standard contract form called a charter party is usually used to record the precise fee, length, and terms negotiated between the shipowner and charterer, depending on the kind of ship and the type of charter.

1.3 TIME CHARTERING

A time charter is a contract in which a charterer pays a defined daily hiring fee for the use of a vessel on a semi-monthly or monthly basis for a certain period of time. The charterer chose the kind and quantity of goods to be carried, as well as the ports of loading and unloading, subject to any charter constraints. The charterer is responsible for all voyage-related costs, such as fuel, canal tolls, and port fees. The vessel owner is responsible for all vessel running costs, such as management and crew expenditures, as well as the vessel's capital costs.

Except for specified exclusions such as time lost due to a vessel breakdown or scheduled maintenance, any delays at port or during the journey are the charterer's responsibility.

To summarise, a time charter is the renting of a vessel for a specified length of time; the owner continues to operate the vessel, but the charterer chooses the port and determines the vessel's itinerary. The charterer is responsible for all fuel consumed by the vessel, as well as port fees, commissions, and a daily rental to the vessel's owner.

1.4 TYPES OF SHIPS IN TANKER MARKET

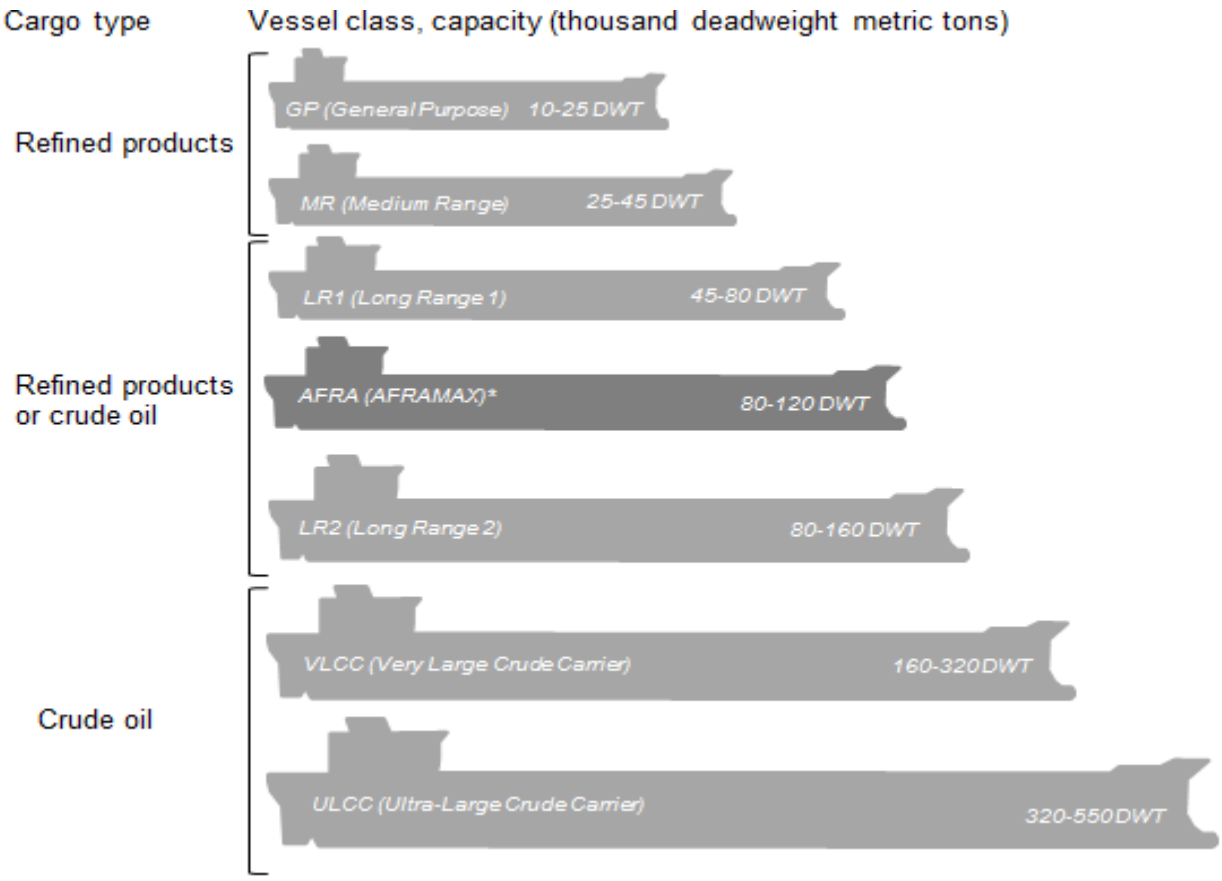


Fig 1.1: Types of Tankers

Source: US Energy Information Administration

VLCCs range in size from 180,000 to 320,000 DWT. VLCCs are very large tankers with dimensions of up to 470 m (1,540 ft), beams of up to 60 m (200 ft), and draughts of up to 20 m. They are capable of going through the Suez Canal in Egypt, and as a result are utilised widely across the

North Sea, Mediterranean, and West Africa (66 ft). However, these ships' usual specifications are 300 to 330 metres in length, 58 metres in width, and 31 metres in depth. They are recognised for their versatility in terminal use and their ability to function in ports with depth restrictions. VLCC costs anywhere from $100 million to $120 million, depending on its age.

ULCCs, or Ultra Large Crude Carriers, are the world's biggest commercial vessels, ranging in size from 320,000 to 500,000 DWT. They require custom-built terminals due of their enormous size. As a result, they can only serve a small number of ports with suitable infrastructure. They are mostly used to transport crude oil from the Persian Gulf to Europe, Asia, and North America across great distances. ULCCs are the world's biggest shipping boats, with conventional specifications of 415 metres in length, 63 metres in width, and 35 metres in depth.

The Aframax is a medium-sized oil tanker with a dead weight tonnage (DWT) of 80,000 to 120,000 tonnes. AFRA, which stands for Average Freight Rate Assessment, is the name of the ship. Shell Oil devised the AFRA system in 1954 to standardise contract conditions. The tanker has a cargo carrying capacity of 70,000 to 100,000 metric tonnes, which is less than Very Large Crude Carriers (VLCC) and Ultra Large Crude Carriers (ULCC). Aframax's typical freight carrying capacity is around 750,000 barrels.

Aframax tankers can service most ports around the world due to their size. These boats serve areas that lack major ports or offshore oil facilities that can accept very large and super large crude carriers. Aframax tankers are ideal for transporting crude oil over short to medium distances. Aframax tankers are often employed in locations with limited crude oil output, such as non-OPEC nations that lack big harbours and canals to handle tankers of the VLCC and ULCC classes.

South American oil cargo exports to the US Gulf region via the Caribbean, North African exports to Southern Europe via the Mediterranean, exports from former Communist states to Northern Europe via the Black Sea and the North Sea, and South East Asian exports to the Far East are among their main areas of operations.

1.5 REVIEW OF THE LITERATURE

Transportation is a global sector, and its potential is inextricably linked to the level of global financial mobility. A higher degree of monetary development would generally lead to greater interest in modern natural substances, whereas a lower level of monetary development would lead to less interest. Oil is the primary source of operating costs for marine transportation and is inextricably linked to cargo prices. Because marine transportation plays such an important role in the global economy, accounting for 80 percent of all trade goods, it is an important predictor of monetary development and serves as a growth engine. Sea transportation is a cost-effective and efficient means of transporting large volumes of goods, enabling global commerce and monetary development.

The unexpected resurgence of the COVID-19 outbreak is a haphazard occurrence in transportation. The new interest shock caused by Coronavirus has caused a huge disruption in the global economy, resulting in a decrease in interest in transportation administrations. Following this remarkable interest-side shock, which would indicate a shift in the interest curve under traditional financial theory, oil cost prospects went negative for a short period of time, resulting in exchange potential open doors.

1.6 OBJECTIVES OF THE STUDY

The study will be focused on the following objectives:

1. To study time chartering in tanker operations between Middle East and Asia
2. To study the effect of Covid 19 and uncertainties on time chartering rates in tanker routes between Middle East and Asia.

1.7 SCOPE OF THE STUDY

The research is based on secondary data gathered from a variety of sources. This research focuses on tanker time charter prices between the Middle East and Asia. It also touches on the oil commerce between these two regions. Over the last few years, commercial links between the Middle East and Asia have increased significantly, mostly substituting for trade between the Middle East and western nations. Energy exchange between these regions is expected to rise dramatically in the coming years as the United States strives for energy independence. In the future, Asia might account for up to 90% of Middle Eastern oil exports.

However, in recent years, the impact of global uncertainty, whether political or economic, has had a significant impact on the energy flow between key world areas. This study investigates the impact of this problem on tanker charter pricing on routes between the Middle East and Asia.

1.8 LIMITATIONS OF THE STUDY

Although enough efforts were taken to ensure the benchmark study, but following were the significant limitations faced:

i. Due to busy atmosphere prevailing in the industry, sufficient data could not be collected.
ii. LPG/LNG chartering have not been covered.
iii. Limitation in collecting data of 'oil tanker chartering' in Middle East regions.
iv. Online references sometimes mismatch with one another therefore accuracy of regions presented in thesis is limited.

1.9 METHODOLOGY OF STUDY

1.9.1 Exploratory research

The sort of research chosen for the current topic's investigation is exploratory in character. The rationale for this is that exploratory research is often undertaken to gather insights and familiarity in preparation for further exploration.

A literature search, asking specific people about their experiences, focus groups, and case studies are all examples of exploratory research. The researcher focused on previously published research papers on the issue as well as shipping news stories for this investigation.

1.10 DATA COLLECTION

Data collection is an important step and determines what type of data a researcher should be focusing on. For the purpose of the study, the researcher has focused on secondary data.

1.10.1 Secondary Data

Data that is collected from primary data i.e., they are already existing somewhere, which have already been collected and analysed by someone else. The secondary data may either be published data or unpublished data are available in:

1. Various publications of the government
2. Technical and trade journals
3. Books, magazines and newspapers
4. Reports and publications of various associations
5. Reports prepared by research documents

1.10.2 TOOLS USED

The analysis is based on secondary data gathered from a variety of sources, including government agencies, newspapers, magazines, cover letters, and publications. Simple statistical techniques such diagrams, pie charts, tables, and bar graphs were utilised to analyse the data acquired in order to create the conclusions.

1.11 CHAPTERIZATION

The complete study project is divided into four chapters. The first chapter, an introduction, highlights the significance of the research project and outlines its aims, scope and limitations, methods, and literature review.

Chapter 2 is devoted to a study of the contemporary oil market, in which the major crude oil producers and consumers are introduced, and historical data is collected and analysed. It provides information on crude growth trends over the last ten years as well as the country-by-country distribution of crude imports in key Asian nations.

Chapter 3 examines the tanker market's time charter prices and the tendencies that have emerged. The influence of pandemic and overstock on the link between time charter rates and oil prices is investigated.

In chapter 4, the research summary and findings are provided, followed by references.

CHAPTER 2

OVERVIEW OF OIL PRODUCERS AND CONSUMERS

2.1 GULF COOPERATION COUNCIL

The Gulf Cooperation Council, also known as the Arab Gulf Cooperation Council (AGCC), was created on May 26, 1981. It was formerly (and still is) known as the Gulf Cooperation Council. Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates form the Gulf Cooperation Council (GCC), a political and economic union of Arab states surrounding the Persian Gulf.

The GCC's goal is to bring its members together around common goals and shared political and cultural identities based on Islamic principles. The council's presidency is rotated every year. Dr Abdullatif Bin Rashid Al Zayani is the GCC's Secretary General. Saudi Arabia and the United Arab Emirates dispatched ground soldiers to Bahrain in response to the revolt. Kuwait and Oman chose not to send troops. Saudi Arabia suggested that the GCC create a confederation in December 2011. The initiative has been met with opposition from other countries. Jordan, Morocco, and Yemen have all expressed interest in joining the organisation.

2.1.1 KINGDOM OF SAUDI ARABIA

Saudi Arabia is the world's largest oil exporter. The kingdom's domination of international crude oil markets remains unquestioned due to its relatively high production levels, accounting for approximately 13% of world output and 35% of total OPEC output in 1991, and, more importantly, its minimal domestic demands. Saudi Arabia has become the "swing producer," balancing world oil demand and supply, despite its

reluctance to do so. Saudi oil production policy, within restrictions, can therefore have a significant effect on international pricing. Since the early 1970s, the monarchy has periodically used its hegemony to influence oil prices, mainly to advance its goals of long-term oil consumption and industrialised world economic stability.

Oil income accounted for 73 percent of overall budgetary revenues in 1991, making it the most important domestic output sector. Although precise figures for sector development spending were unavailable, some estimates put the yearly number between US$5 billion and US$7 billion, or less than 10% of overall budgetary spending. Saudi Aramco's export oil profits, of which a major percentage is allotted to the government, accounted for 90% of total exports in 1991. The oil business was relatively unimportant to the economy in terms of job creation; the capital-intensive nature of the oil industry needed few workers—less than 2% of the working force in the early 1990s.

Saudi Arabia was a significant actor in coordinating OPEC and other oil-producing nations' successful 1999 push to boost the price of oil to its highest level since the Gulf War by regulating petroleum output and supply. Despite receiving an estimated 54 percent of Saudi Arabia's crude oil exports in 2020, Saudi Arabia remained the second largest petroleum exporter to the United States, after only Canada. Saudi Aramco has three key strategic goals at the moment. To begin with, keeping Saudi Arabia's spare oil production capacity is critical to the kingdom's political and economic clout. In order to free up petroleum for export, it must also increase gas supply (including perhaps shale gas) to reduce domestic demand. It also needs to strengthen its economic connections with developing Asian nations like China and India.

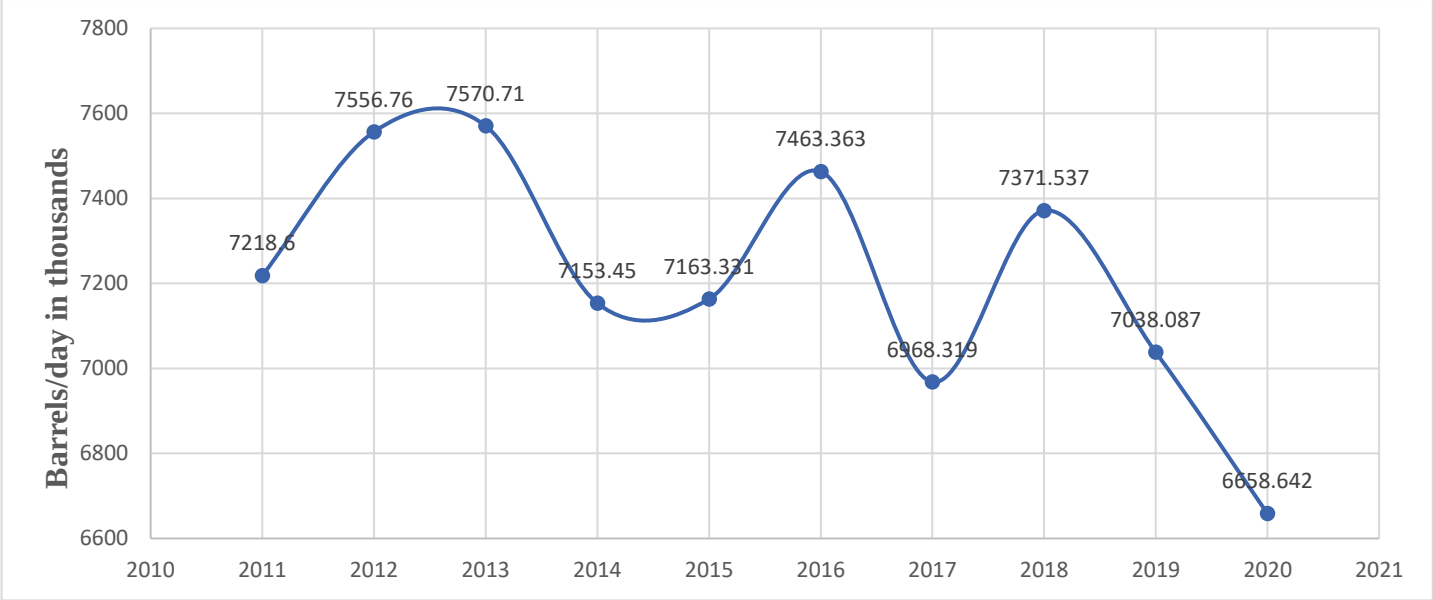


Fig 2.1 – Saudi Arab crude oil export

Source: www.ceicdata.com

Saudi Arabia is expected to export 7.5 million barrels of crude oil per day (bbl/d) in 2020. Saudi Arabia's crude oil exports, as well as the majority of its refined petroleum product and natural gas liquids (NGL) exports, were destined for Far East Asia. Saudi Arabia shipped 1.4 million barrels per day of total petroleum liquids to the United States, accounting for 16% of total crude oil imports. Saudi Arabia was the second-largest petroleum exporter to the United States at the time, after only Canada. Japan (1.1 million bbl/d), China (1.1 million bbl/d), South Korea (0.8 million bbl/d), and India (0.7 million bbl/d) were the other big Saudi consumers in 2020.

Saudi Arabia revised its benchmark for pricing crude oil shipments to the United States in January 2010. Saudi Arabia, which had been using the West Texas Intermediate (WTI) crude oil price since 1994, has shifted to the Argus Sour Crude Index (ASCI), partly because the ASCI is seen as more indicative of the sour crude market on the United States Gulf Coast. Saudi Arabia's main export partners include the United States, China, Japan, South Korea, India, and Singapore. According to the Energy Information Administration, Saudi shipments

to the United States dropped to 989,000 barrels per day last year, the lowest level in 22 years, from 1.5 million barrels per day the year before.

Saudi oil sales to China, however, increased by about a million barrels per day last year, nearly double from the previous year. China currently buys a fourth of its oil from the monarchy.

2.1.2 United Arab Emirates (UAE)

The UAE's economy is dominated on petroleum, which was first exported in 1962. Previously an impoverished area, the region had the world's highest per capita income of $19,120 in 1983. On all of the emirates, the vast wealth has been invested in capital projects and social services. The production of petroleum is concentrated on Abu Dhabi and Dubai. Because of its petroleum exports, the UAE has a substantial trade surplus.

Abu Dhabi is the largest and richest in terms of oil, followed by Dubai, the commercial capital, Sharjah, Ras al-Khaimah Fujairah, and Umn al Qawain. Except for Fujairah, which is a coastal strip on the Gulf of Oman beyond the Strait of Hormuz, each emirate's principal cities and villages are all on the southern beaches of the Arbian Gulf.

Abu Dhabi is the only one of the seven emirates that can be classified as an oil state like Kuwait or Qatar. Abu Dhabi, like those two, has expanded into petrochemicals and other oil-related businesses. The second-richest emirate is Dubai. Although its oil income is currently only a fourth that of Abu Dhabi, Dubai maintained itself as the region's principal commerce and smuggling port in the years before Abu Dhabi became wealthy. It boasts a big dry-dock complex, one of the busiest airports in the Middle East, and a significant free trade zone at Jebel Ali, in addition to being one of the key business hubs of the Gulf today.

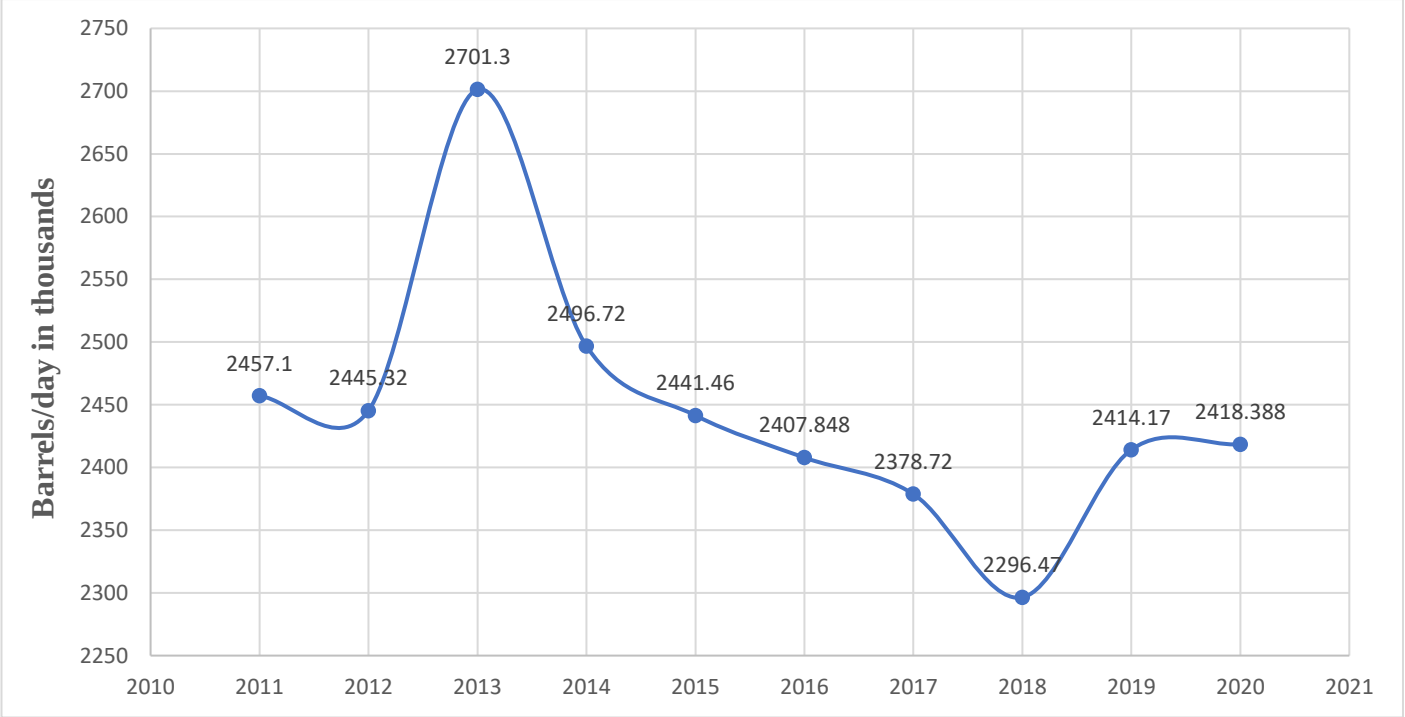


Fig 2.2 – United Arab Emirates oil export

Source: www.ceicdata.com

According to the UAE Ministry of Petroleum and Mineral Resources, the UAE's maximum sustainable daily capacity of oil production (the highest rate of production that can be sustained daily for a year under current exploitation circumstances) is 2 million barrels per day. It has a daily output capacity of more than 3 million barrels. The UAE has proven oil reserves of 98.3 billion barrels in 2000, making it the world's third biggest behind Saudi Arabia and Iraq. In June 2000, the UAE's proved oil reserves were projected to constitute about 10% of the world's proven reserves. The UAE's oil reserves are expected to last more than 122 years based on current daily oil output of 2.2 million barrels per day.

Main Asian export partners of UAE: Japan-15.3%, India 13.4%, Iran 10.5%, Thailand 5.6%, Singapore 5.5%.

2.1.3 QATAR

Qatar's electricity is to blame for its power difficulties. Qatar is a member of the Gulf Cooperation Council. In terms of population, power generation is enormous. Qatar is a major natural gas producer, and its output has grown since 2005. Petroleum is the backbone of Qatar's economy, accounting for more than 70% of total government revenue, 60% of GDP, and 85% of foreign exchange gains. Oil reserves of 15 billion barrels (588,000,000) are expected to maintain production at present levels for another 23 years. Qatar's per capita GDP is among the highest in the world, thanks to oil. Long-term objectives include off-shore petroleum extraction and economic diversification.

Because oil fields are expected to be fully exhausted by 2023, oil output will not last long at peak levels of 500,000 barrels (80,000 m3) per day. Large natural gas deposits, however, have been discovered off Qatar's northeast coast. Qatar has the world's third largest proven gas reserves, at about 250 million cubic feet (7000 km3). The completion of Phase I of the $1.5 billion North Field gas production strengthened the economy in 1991. Qatar's gas project started exporting liquefied natural gas (LNG) to Japan in 1996. Additional billion-dollar phases of North Field development are at different stages of planning and development.

Qatar's large industrial projects include a refinery with a daily capacity of 50,000 barrels (8,000 m3), a fertiliser factory for urea and ammonia, a steel mill, and a petrochemical facility, all of which are headquartered near Umm Said. All of these businesses run on gas. The majority are joint ventures between European and Japanese companies and Qatar General Petroleum Corporation, a state-owned company (QGPC). Qatar's oil and gas sector relies heavily on US equipment, and US corporations are helping to develop the North Field gas field.

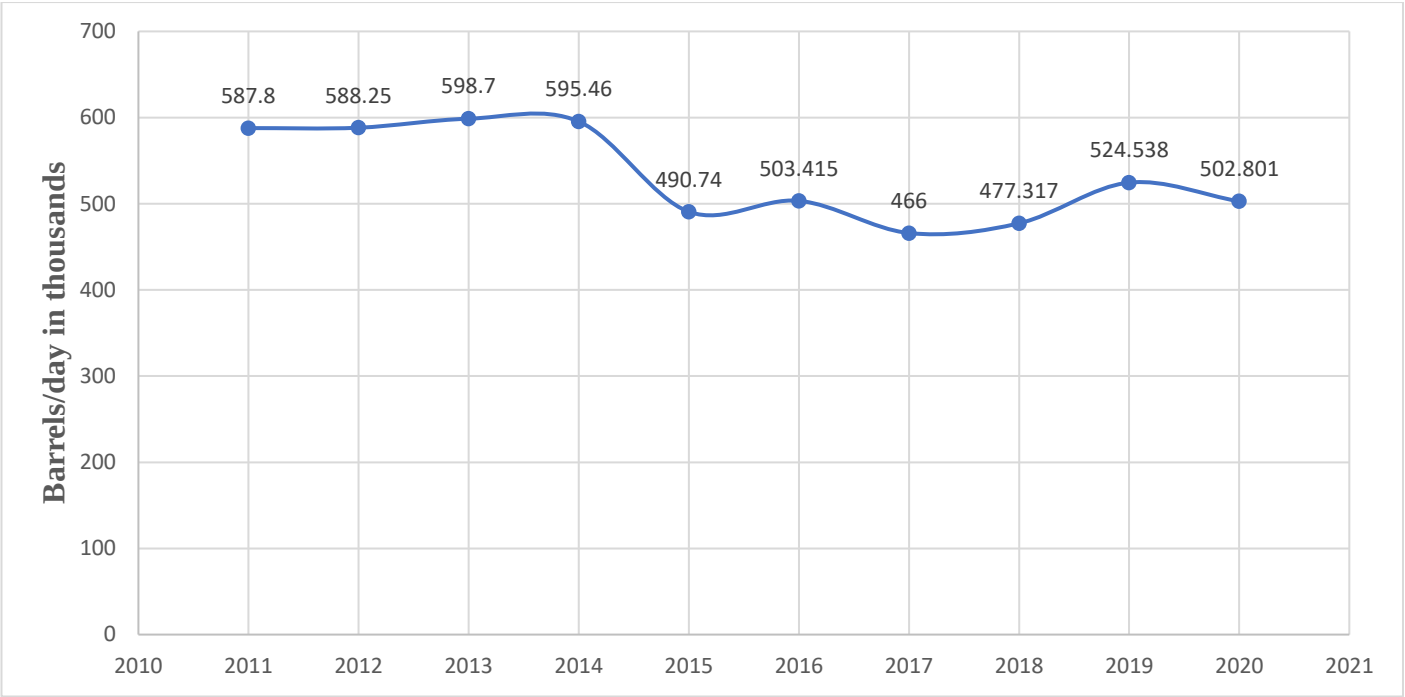


Fig 2.3 – Qatar Crude oil export

Source: www.ceicdata.com

Qatar shipped 0.58 million barrels, according to the OPEC Annual Statistical Bulletin 2020. According to GCC estimates, Qatar exported all of its oil to Asian markets and the bulk (86%) of its refined products to Asian nations. Japan receives the majority of Qatar's refined goods (60 percent or more).

Main Asian export partners of Qatar: Japan-26.6%, South Korea-19%, India-12.0%, Singapore-5.7%, China-5.4%

2.1.4 OMAN

Oman's proven petroleum reserves comprise 5.5 billion barrels, making it the world's 24th biggest. Petroleum Development Oman (PDO) extracts and processes oil, with proved oil reserves remaining relatively stable despite diminishing oil output. All oil and gas infrastructure and projects in Oman are overseen by the Ministry of Oil and Gas. From 972,000 to 714,800 barrels per day, production dropped by more than 26%. Oman has 849.5 billion cubic metres of natural gas reserves, which places it 28th in the world.

In 1964, oil was discovered in the heart of what is now Fahud, in the western desert. In August 1967, the Petroleum Development Oman (PDO) commenced production. PDO is 60 percent owned by the Omani government and 40 percent by foreign investors.

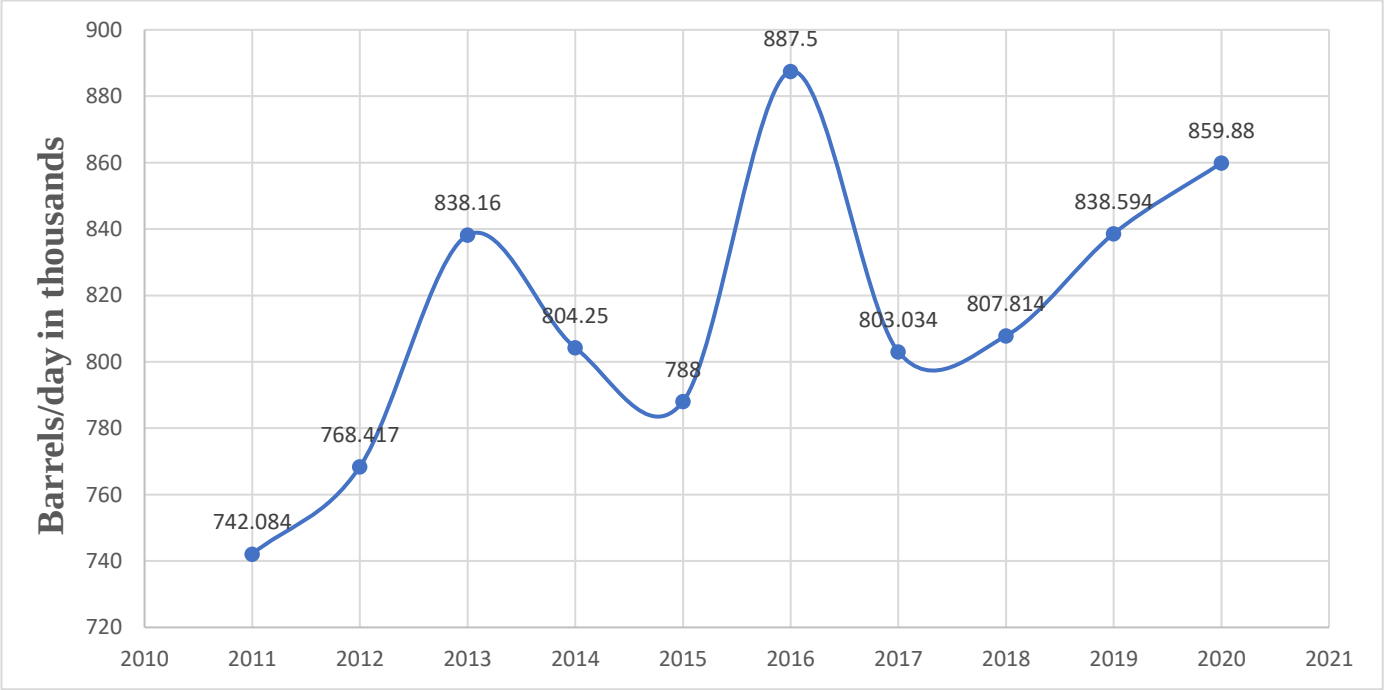


Fig 2.4 – Oman Crude oil export

Source: www.ceicdata.com

Oman lacks the vast oil reserves that several of its neighbours have. Nonetheless, it has discovered more oil than it has produced in recent years, with total proved reserves exceeding 5 billion barrels) by the mid-1990s. Exploration and production in Oman are costly due to the country's complicated geology.

Main export partners: China 31.9%, Japan 12.9%, United Arab Emirates 10.1%, South Korea 10.0%, Thailand 4.4%, Singapore 4.4%

2.1.5 KUWAIT

Kuwait is a tiny, open economy with proven crude oil reserves of 96 billion barrels and 15.3 square kilometres. Kuwait has limited arable land, making it difficult to rely on agriculture. Oil prices increased in 1999, reducing the budget deficit from $5.5 billion to $3 billion, and prices are predicted to stay stable throughout the 2000s. It established Kuwait's first free-trade zone in 1999 and is still in talks with international oil corporations about developing reserves in the country's north. Kuwait has the Middle East's second-freest economy.

Kuwait Petroleum Corporation (KPC) is an integrated international oil company that includes Kuwait Oil Company, which produces oil and gas; Kuwait National Petroleum Company, which refines and sells domestically; Petrochemical Industries Company, which produces ammonia and urea; Kuwait Foreign Petroleum Exploration Co., which has several concessions in developing countries; Kuwait Oil Tanker Co., and Santa Fe International Corridor. The latter, which KPC bought outright in 1982, offers the company a global footprint in the petroleum business.

KPC purchased a 19 percent stake in British Petroleum in 1987, which was later reduced to 10%. KPC sells its goods in Europe under the Q8 brand and is interested in the US and Japanese markets.

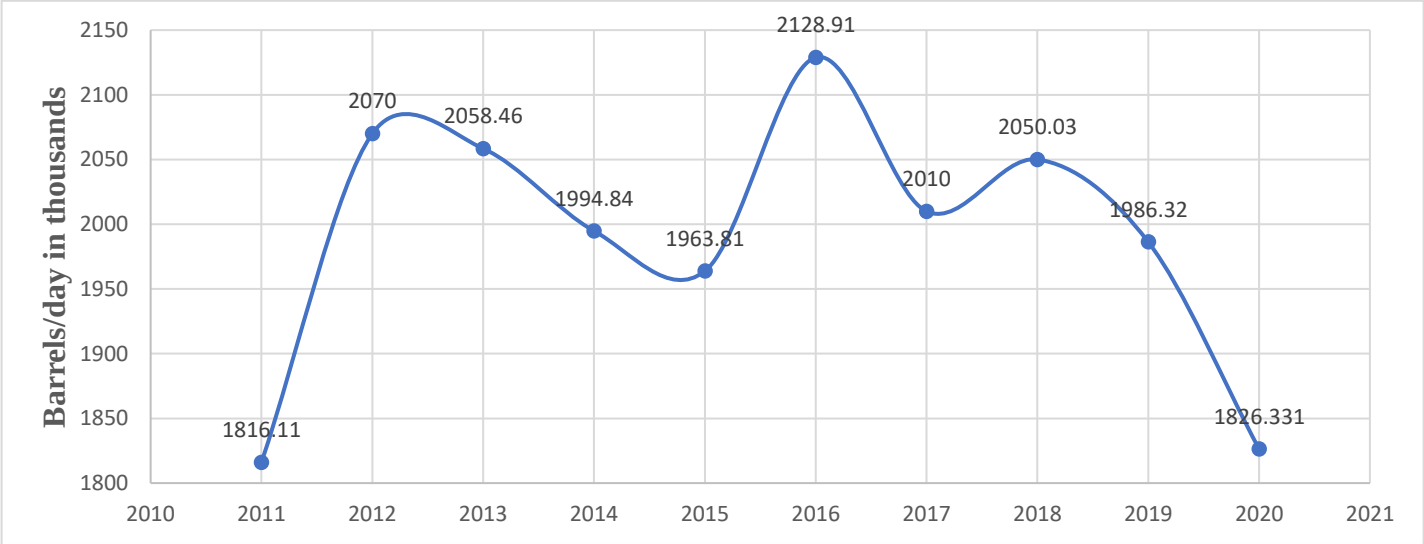


Fig 2.5 – Kuwait crude oil export

Source: www.ceicdata.com

Kuwait has about 94 billion barrels (14.9 km3) of recoverable oil reserves. Estimated capacity, before the war, was about 2.4 million barrels per day. During the Iraqi occupation, Kuwait's oil-producing capacity was reduced to practically nothing. However, tremendous recovery and improvements have been made.

Main export partners: South Korea-16.0%, India-15.7%, Japan 13.4%, United States 11.7%, China-9.2%, Singapore 4.2%

2.1.6 BAHRAIN

Bahrain has less oil than its neighbours and hence exports less oil. Because of this, as well as the country's poor agricultural circumstances, the government has pursued a growth plan that has resulted in Bahrain having one of the most diverse economies in the Gulf. Bahrain's simple average MFN applicable tariff was 5.3 percent in

2008, down from 7.8 percent when the Gulf Cooperation Council single external tariff was implemented in 2001. When preferences are taken into account, the country's trading policy becomes more open, as the simple average of applicable tariffs drops to 4.9 percent.

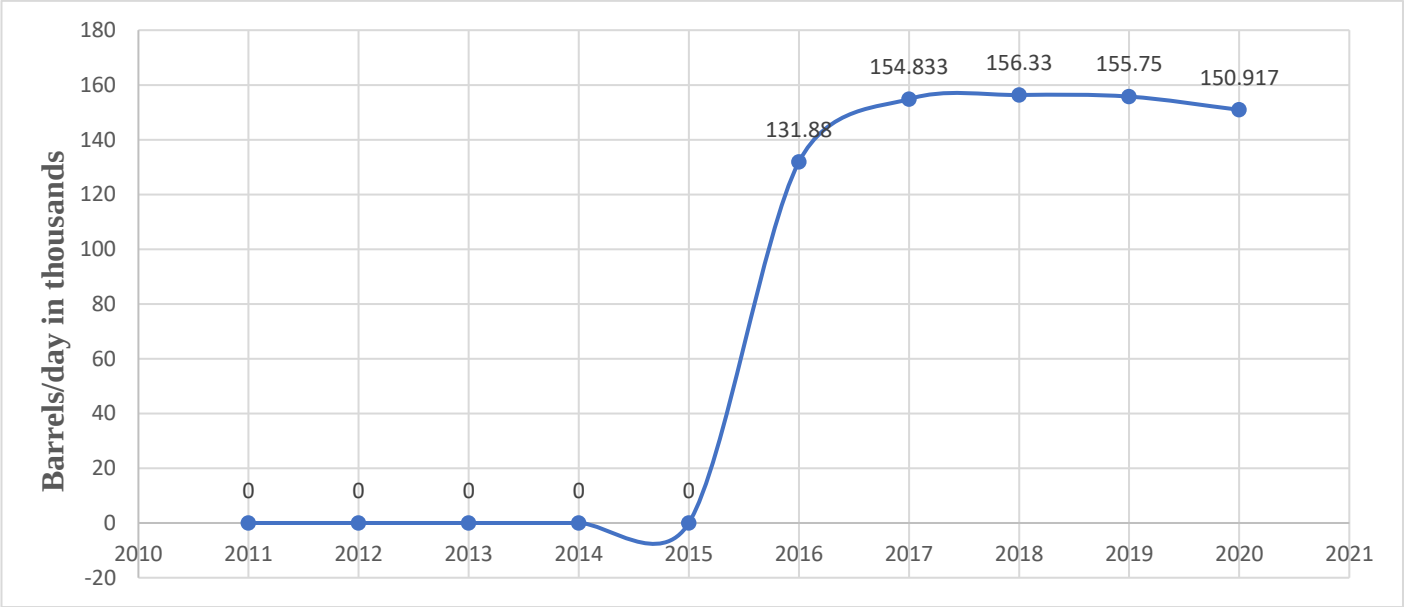


Fig 2.6 – Bahrain Crude Oil export

Source: www.ceicdata.com

Bahrain has a maximum MPN imposed tariff of 65 percent, which is lower than the regional average of 112.5 percent (excluding alcohol and tobacco). The wedge between bound and imposed tariffs (the overhang), which measures the government's trade policy space, has not altered significantly in recent years, and it was 28.9% in 2008. Bahrain rated 112th in terms of service trade liberalisation, owing to its enormous oil reserves and tiny population. Bahrain's GDP per capita is $27,300. Despite its capacity to feed its population solely on its oil riches, Bahrain has taken steps to diversify its economy. It has expanded its refining capabilities beyond its own oil output.

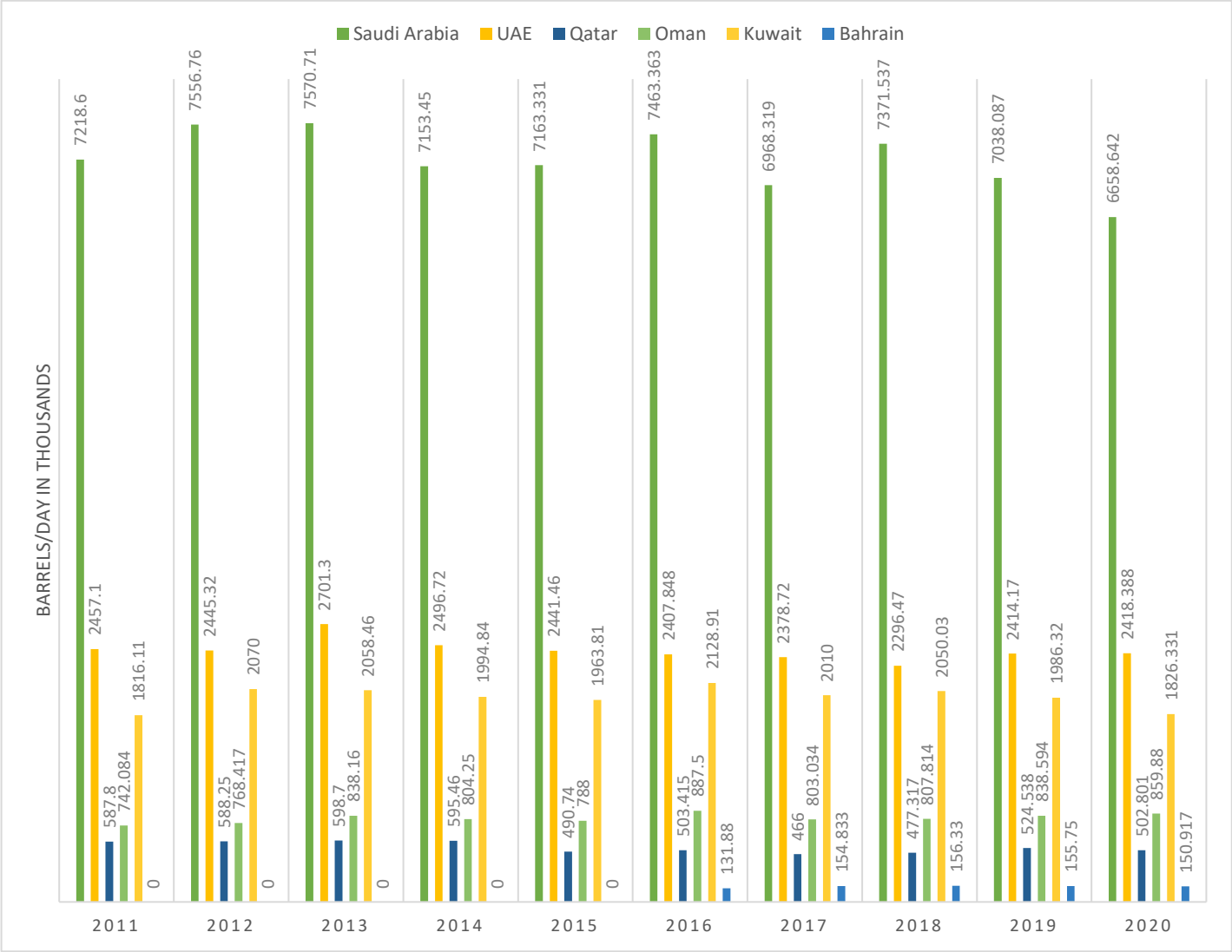


Fig 2.7: Consolidated graph of GCC producers

Source: www.ceicdata.com

2.2 MAJOR OIL COMPANIES OPERATING IN GCC REGION

- **SAUDI ARABIA**

  State Companies: Saudi Aramco, Samaroc, Petromin, Petromin Lubrication Oil Refining Co(Laberef) [Mobil Oil Corp holds a minority interest in this company]

  Major Foreign Oil Company Involvement: Mobil, Shell

- **UAE**

  State Companies: Abu Dhabi National Oil Company (ADNOC) has controlling interest in 21 domestic oil and natural gas companies.

  Joint Ventures: Abu Dhabi Co for Onshore Oil Operations (ADCO) is held by ADNOC) and a consortium comprising British Petroleum (BP) (9.5%), Shell (9.5%), Total (9.5%), Exxon (4.75%), Mobil (4.75%), and Partex (2%). Abu Dhabi Marine Operating Company (ADMAOPCO) is held by ADNOC (60%) and a consortium comprising BP (14.7%), Total (13.3%), and Japan's Jodco (12%); Zakum Development Company (ZADCO operated by ADNOC (88%) and a consortium (12%) comprising BP, Jodco, and Total.

- **BAHRAIN**

  State Companies: The Bahrain National Oil Company (BANDCO) wholly owned by the Bahrain Government, and is the holding company for the Bahrain Petroleum Company (BAPCO).

Major Foreign Company Involvement: Harken Oil of Grand Prairie, Texas who is backed in part by Bass Enterprise Production Company of Fort Worth, Texas.

- **KUWAIT**

State Companies: Subsidiaries of Kuwait Petroleum Corp include Kuwait Oil Co (KOC), Kuwait National Petroleum Co., Petrochemical Industries Co. (PIC), Kuwan Oil Tanker Co. Kuwan Foreign Petroleum Exploration Co and Kuwait Petroleum International (KPI, London).

Major Foreign Oil Company Involvement: British Petroleum Co Plc, Chevron, Getty Oil Co. Gulf Oil, Japan's Arabian Oil Ca (AOC), Mobil Corp, Royal Dutch Shell, Shell International Petroleum Co. Ltd, Texaco, Total.

- **OMAN**

State companies: Petroleum Development Oman Lad. (PDO) controls all oil resources. Oman Oil Company (OOC) is the overseas investment arm of the Ministry of Petroleum until recently headquartered in Houston and headed by John Deuss.

Major Foreign On Company Involvement:

There are two American concessionaires: Occidental Gulf and Amoco. Ashland Oil manages Onur's sole refinery, and U.S. firms left Oman's crude.

- **QATAR**

State Companies: The Qatar General Petroleum Corporation (QGPC)

Major Foreign Oil Company Involvement: ARCO Qatar Inc (as operator for a consortium of Germany's Wintershall AG and Preusag AG, British Gas Co. and Gulfstream Resources Canada Ltd of Calgary); Chevron Overseas Petroleum (Qatar) Ltd and its partner Magyar Olaj Gazi (MOL); the Hungarian Oil & Gas Co Ltd, Elf Petroleum Qatar.

2.3 MAJOR OIL CONSUMERS IN ASIA

2.3.1 China

China has risen enormously in recent years, becoming the world's most productive nation. The country is also densely inhabited, with both affluent and poor people living alongside. Furthermore, the country's infrastructure is first-rate, and a sizable portion of the population can afford to purchase automobiles to utilise on these roads. The rapid expansion is due mostly to the fact that the majority of citizens are extremely hardworking, and many sectors have sufficient staff. Due to these causes, the country's oil consumption is considerable, with an estimated daily consumption of 9, 400, 000 barrels.

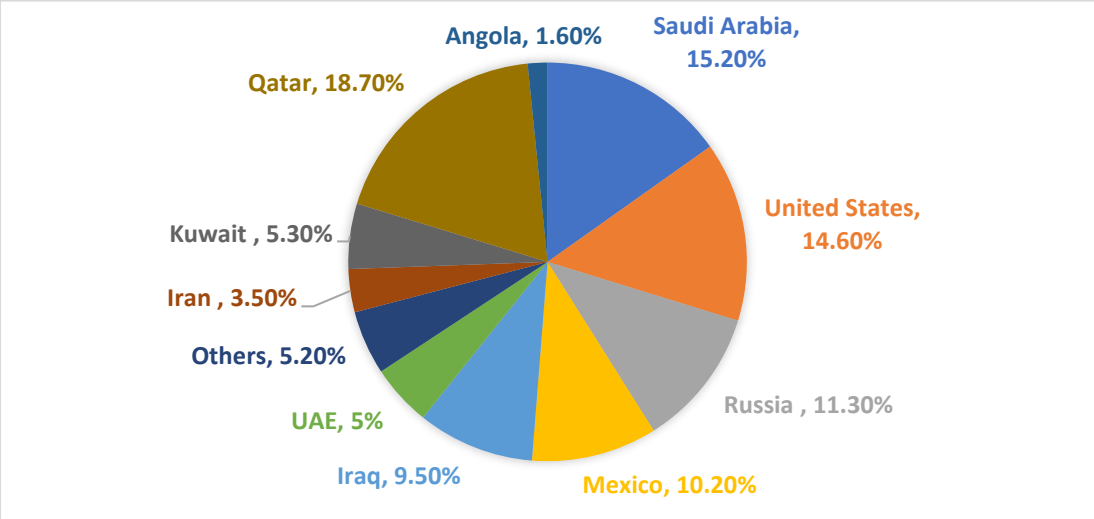


Fig 2.7 – Country wise distribution of oil import of China

Source: Global Trade Tracker

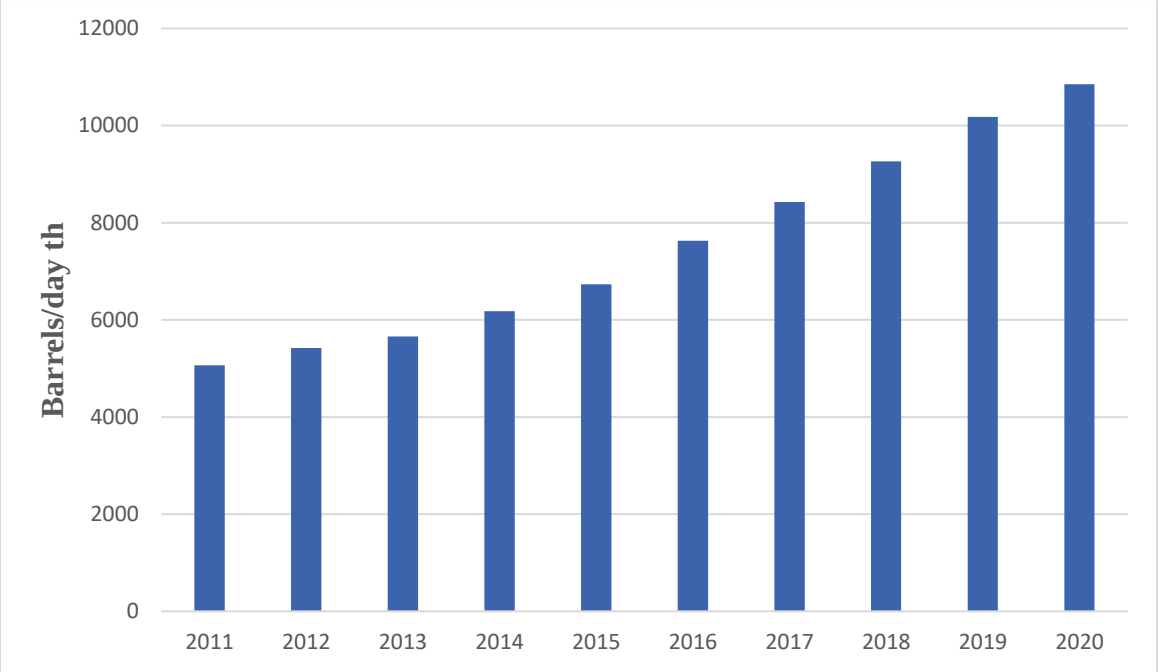


Fig 2.8 – Year wise growth of oil import of China

Source: www.ceicdata.com

2.3.2 Japan

Japan is likewise a densely populated country, with the majority of its citizens enjoying economic security. The nation is also quite productive, with several industries located around the country. In addition, Japan is noted for having efficient transportation systems, which leads to a growth in the number of automobiles on the road. All of these aspects of the economy require large amounts of oil, making it a major oil user. The country's daily oil consumption is estimated to be 4, 452, 000 barrels.

According to Fig 2.9, which shows the percentage wise distribution of countries from where oil is imported. Saudi Arabia and United Arab Emirates contribute the largest share of oil to Japan , 36% and 29% respectively. United States and Mexico together contribute around 7% while Russia contributes around 8%.

According to Fig 2.10, we see the oil imports of Japan stay constant more or less up to 2017, after which we see gradual decrease in 2018 and

2019 due to Japan's push towards lesser polluting vehicles and electric vehicles.

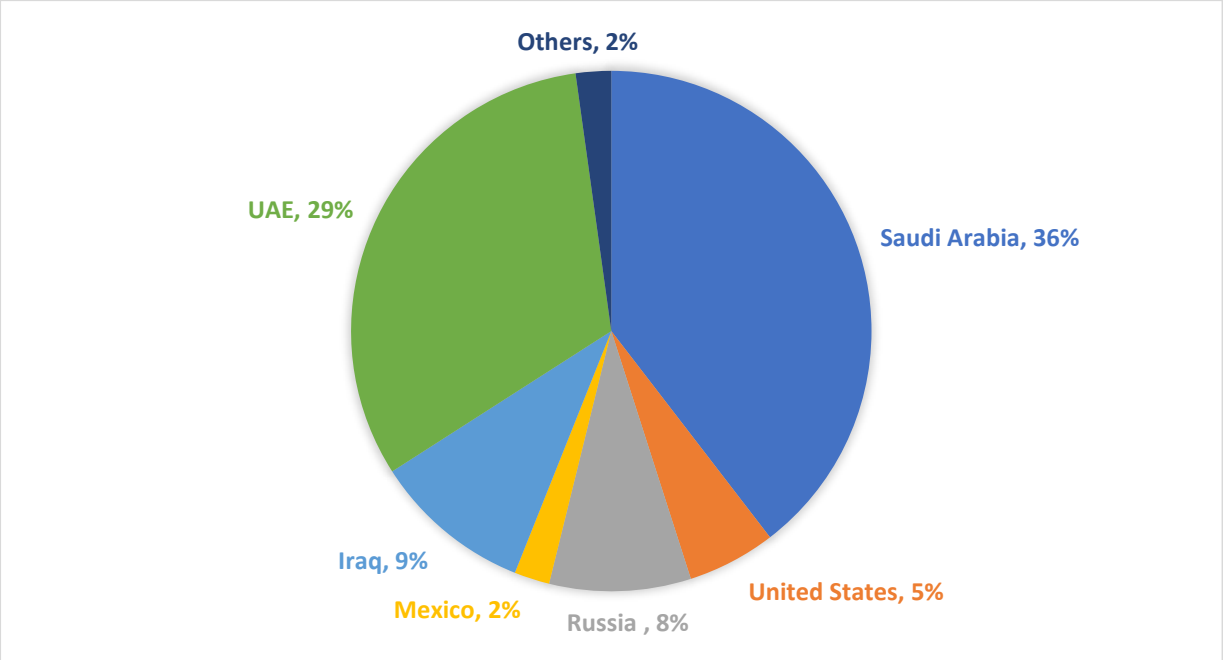


Fig 2.9 – Country wise distribution of oil import of Japan

Source: Global Trade tracker

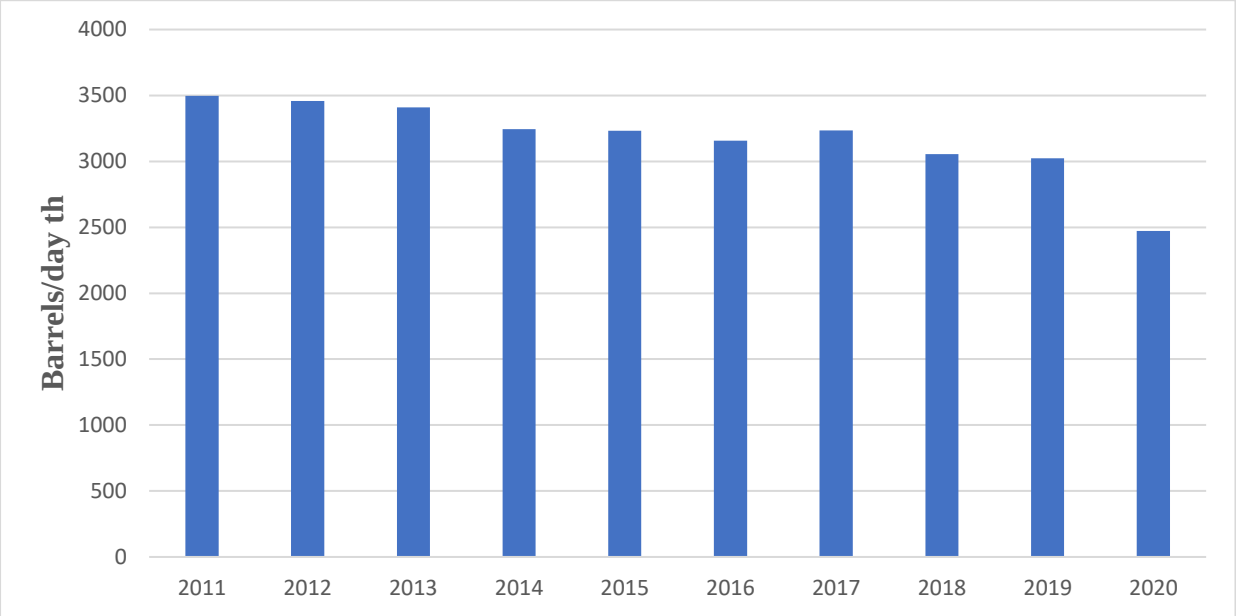


Fig 2.10 –Year wise growth of oil import of Japan

Source: www.ceicdata.com

2.3.3 India

India is a large nation in terms of geography and population, and it is also home to a large number of poor people who rely on oil for a variety of daily activities. As a result, the country requires large amounts of oil to meet the needs of its large population. The daily oil consumption of India is 3,182, 000 barrels.

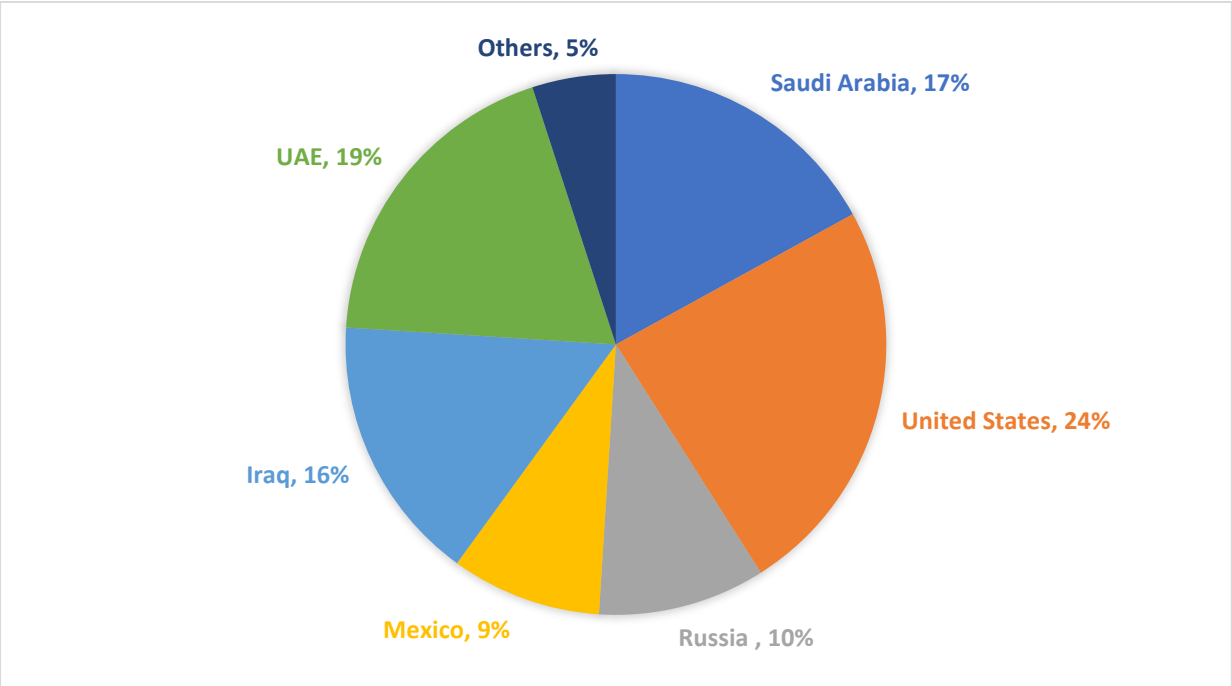


Fig 2.11 – Country wise distribution of oil import of India

Source: Global Trade Tracker

According to Fig 2.11, the major oil contributors of India are United States (24%), United Arab Emirates (19%), Saudi Arabia (17%), Iraq (16%) and Russia (10%). India being a country with high oil consumption shows a similar trend in Fig 2.12.

We can see a gradual increase in the oil import of India over a 10-year period. India imported over 4500 thousand barrels/day in 2018 and kept the same level of oil import in 2019. 2020 saw a major decline in oil

import, down to 3700 thousand barrels/day due to the coronavirus restrictions and lockdowns.

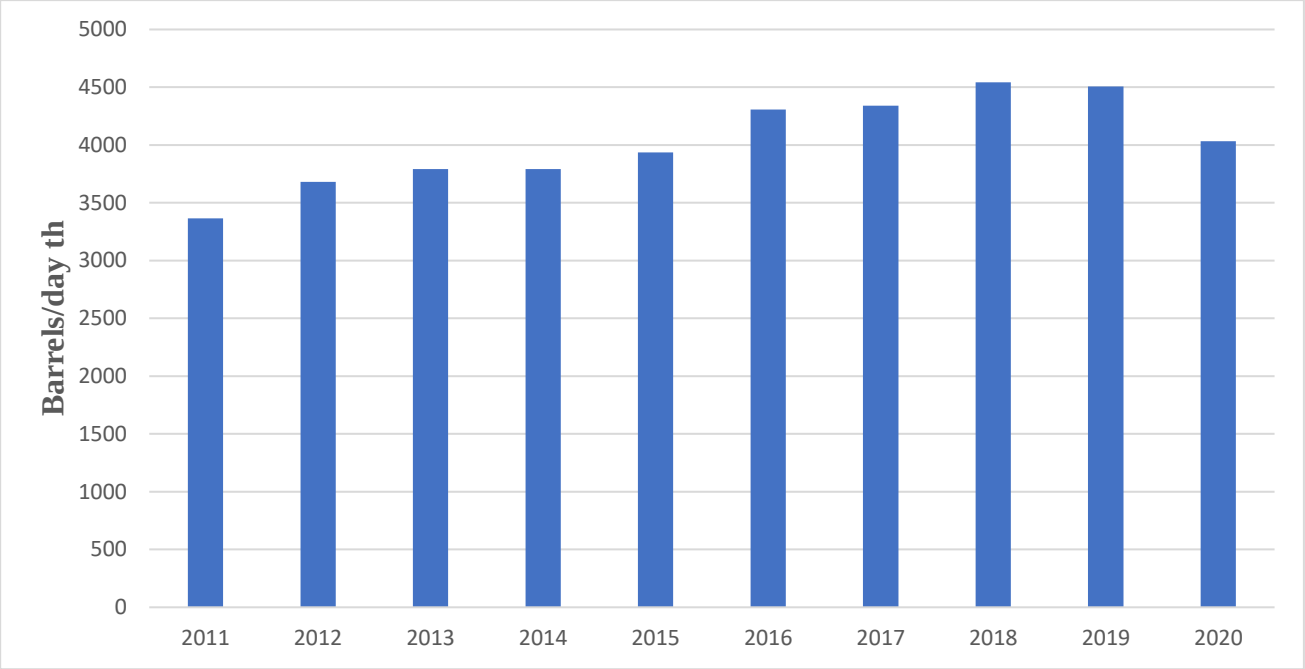


Fig 2.12 – Year wise growth of oil import of India

Source: www.ceicdata.com

2.3.4 South Korea

South Korea is an Asian country with a population of about fifty million people. In the recent two decades, the country has seen significant improvement in terms of infrastructure, industry, and overall economic growth. These changes have been accompanied by a rise in population, with more resources available to meet the growing demand. These advances have resulted in an increase in oil consumption, with South Korea currently consuming 2,195,000 barrels per day.

In Fig 2.13, we can see the country wise distribution of oil contributors to South Korea, majority of which being Saudi Arabia (27%) followed by United States (14%). South Korea has also seen a gradual increase in the oil consumption over the past 10 years. They imported over 3000 thousand barrels/day in 2017 and similarly in 2018, owing to

their rapid industrialization and booming automobile industry, as shown in Fig 2.14.

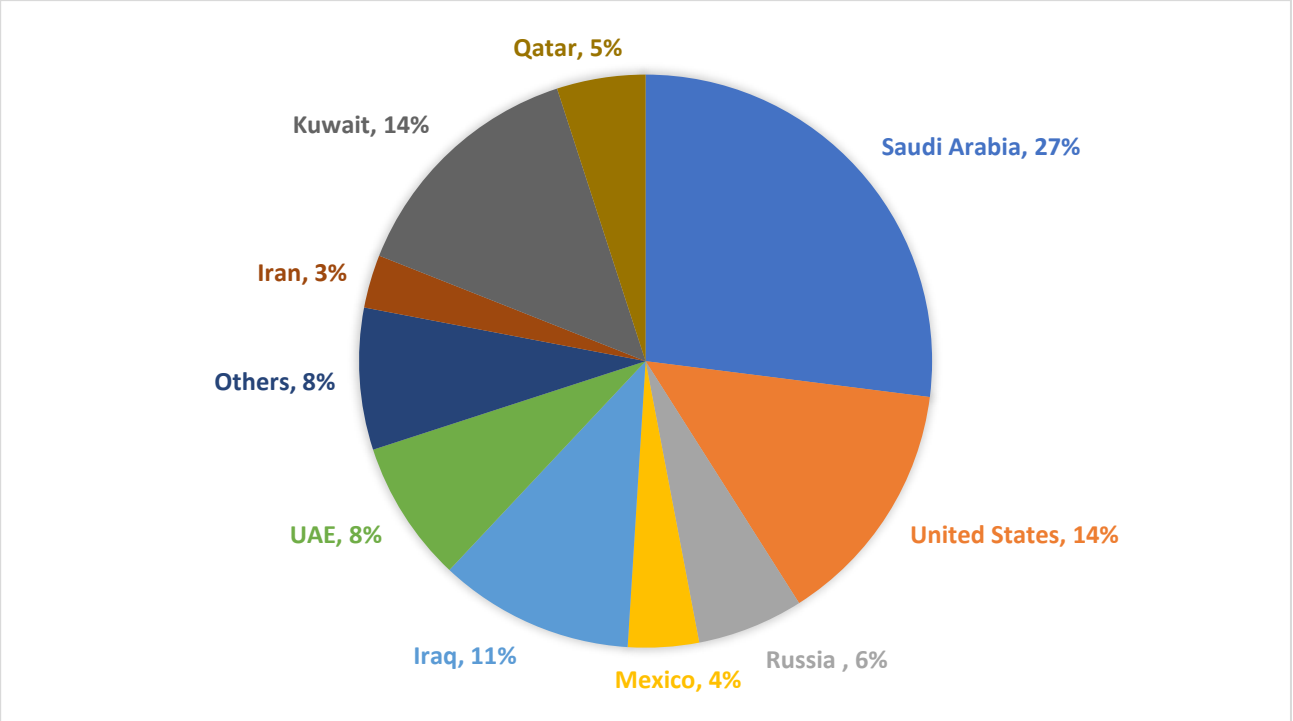


Fig 2.13 – Country wise distribution of oil import of South Korea

Source: Global Trade Tracker

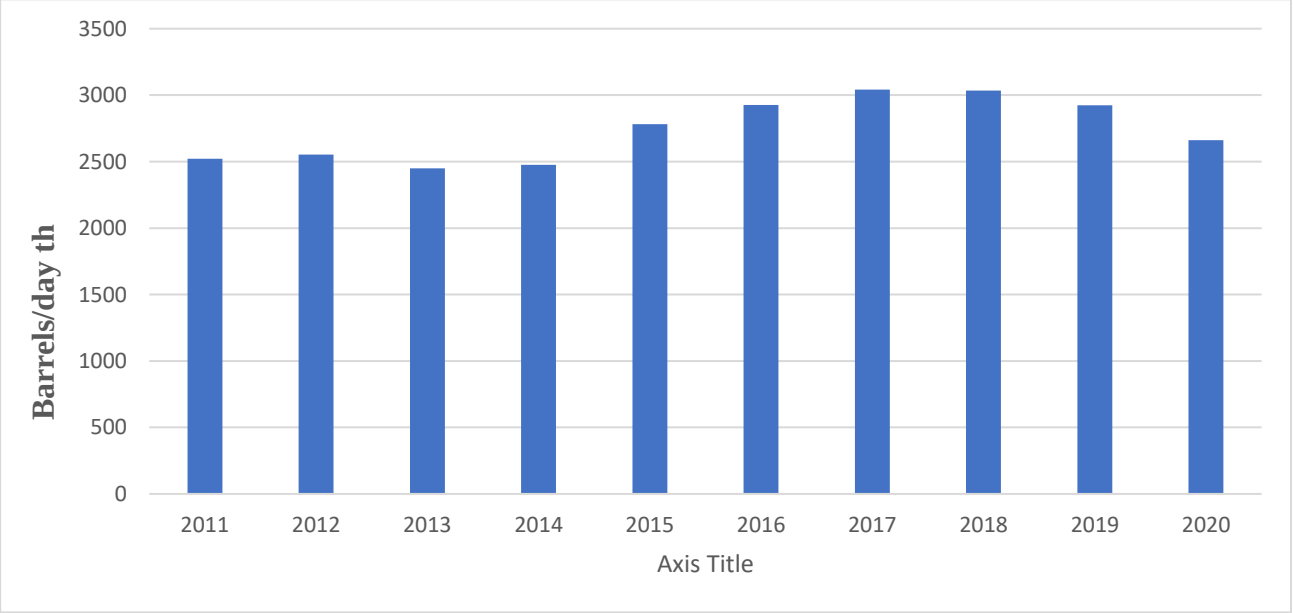


Fig 2.14 – Year wise growth of oil import of South Korea

Source: www.ceicdata.com

2.4 THE MAJOR TANKER OPERATORS IN GCC-ASIA REGION

2.4.1 Teekay Corporation

Established in 1923, Teekay has developed on a regional shipping company into one of the world's biggest marine energy transportation, storage and production companies.

2.4.2 MOL (Mitsui O.S.K. Lines, Ltd) Tanker ship Management

MOL crude oil fleet includes very large crude carriers (VLCCS) of more than 200,000 and small-size tankers called Aframax tankers, contributing to the safe delivery of crude oil around the world.

2.4.3 Nippon Yusen Kaisha (NYK)

NYK has offices worldwide, but for this survey, we have only included the tankers managed by NYK Ship Management, Singapore and TMM in Tokyo. The Singapore and Tokyo offices manage 22VLCCs, four Aframaxes and six chemical product carries between them plus x LPG camers and one LNGC NYK's order book is shown as three VLCCs, Aframax, three chemical product tankers and three LNGCs.

2.4.4 Veta International Marine

The Dubai-based company also has a large order book of six 317,000 dwt tankers.

2.4.5 Hyundai Merchant Marine (HMM)

The South Korean conglomerate operates a mixed fleet of tankers, as well as having significant LNGC interests including long term-chartered vessels, HMM operates 15 VLCCs, three Suezmaxes, five Aframaxes, six MR types and six chemical tankers of various sizes.

2.4.6 Maersk Tankers

Ma Tackers is division of the APM group There is also tonnage bareboat and time chartered both in and out on a regular basis.

We can see that the major oil producing country in the Gulf Cooperation Council (GCC) is Saudi Arabia producing over 6.6 million barrels/day in 2020. It drives the controlling interest in the GCC drawing in the maximum revenue. United Arab Emirates follows in the second position with over 2.2 million barrels/day produced and in the third position is Kuwait following closely with over 1.8 million barrels/day production. Oil consumption has been steadily rising in Asia as is apparent with China importing over 10000 thousand barrels/day and India importing over 4000 thousand barrels/day. Although due to the Covid 19 pandemic and the restrictions and lockdowns enforced in Asian countries, the demand fell off, a sharp decline from the steadily increasing trend from past 5 years. The crude market reached all time highs in 2020 due to the oversupply from Middle East and VLCCs were being used as crude storage facilities as the onshore facilities were all at maximum capacity. There are major operators in the tanker operations between Middle East and Asia serving many major ports such as MOL Tanker ship management, NYK Tankers, Hyundai Merchant Marine etc.

CHAPTER 3

ANALYSIS OF THE TANKER MARKET

This chapter contains the detailed analysis of the tanker market with respect to crude oil and its transport. The relation between tanker time charter rates and the oil prices with the backdrop of a worldwide pandemic and a global economic uncertainty is highlighted and analysed. The trend followed by time charter rates is also analysed in this chapter. The supply and demand balance in terms of deadweight carried and tonne mile demand is also highlighted.

3.1 CRUDE MARKET ANALYSIS

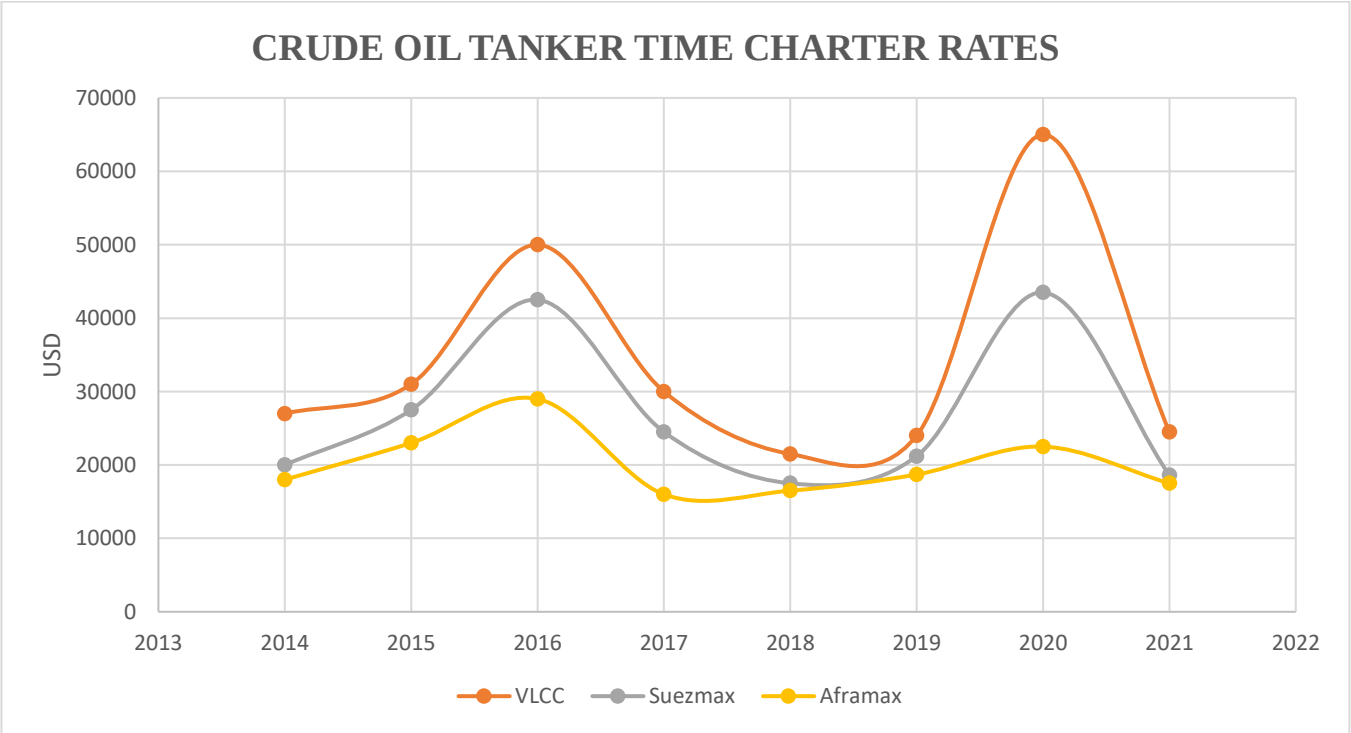


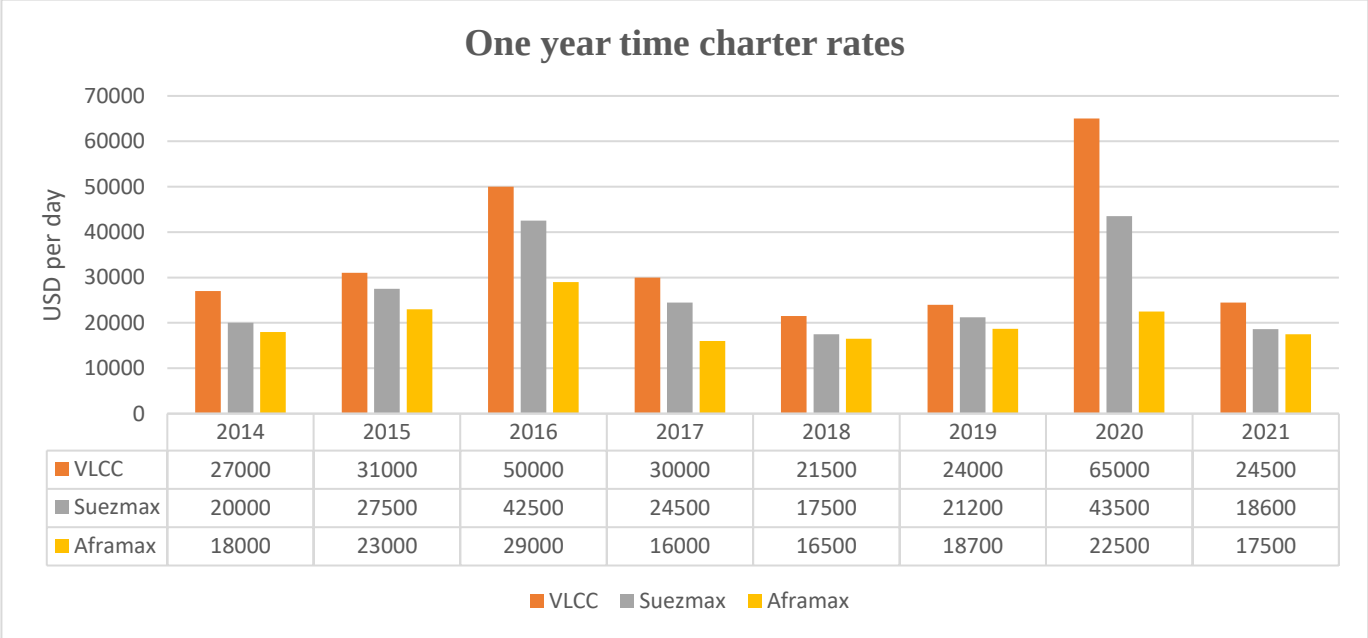
Fig 3.1 Crude oil tanker time charter rates

Source: Cyprus Shipping News

According to the Cyprus Shipping News' Shipping Market Review, time charter prices progressively rose from their lows in 2018, before geopolitics interfered in September 2019, driving rates into exceptionally profitable territory. The fourth quarter of the year saw high interest rates as well. They progressively dropped, however, due to deteriorating market fundamentals. The rates were also lowered by removing transitory impacts. As the OPEC+ coalition disintegrates, rates are rising despite otherwise grim market fundamentals such as fleet overcapacity. On March 27, 2020, the VLCC's one-year TC rate was USD 58,750 per day.

Over a ten-year period, Fig 3.1 depicts the evolution of time charter rates and their variance among the three tanker sizes (VLCC, Suezmax, and Aframax). Time charter fees have ranged from $30,000 in 2014 to about $50,000 in 2016, notably for VLCC tankers. Between 2017 and 2019, many geopolitical variables, such as the Saudi-Russian crude oil price war, had an impact on time charter prices. The cost of a time charter ranges from $17,000 to $28,000. Due to the significant supply push from Saudi Arabia amidst the covid 19 pandemic limitations, time charter rates hit an all-time high of $68,000 in 2020. Time charter rates have begun to decline in 2021, with an estimate of roughly $26000.

3.2 FREIGHT RATES



	2014	2015	2016	2017	2018	2019	2020	2021
VLCC	27000	31000	50000	30000	21500	24000	65000	24500
Suezmax	20000	27500	42500	24500	17500	21200	43500	18600
Aframax	18000	23000	29000	16000	16500	18700	22500	17500

Fig 3.2 One Year time charter rates (USD per day)

Source: Danish Ship Finance

Despite a significant reduction in global oil demand, the crude tanker business is expected to generate outstanding profits in 2020. Oil markets sailed into unknown territory in the first half of the year. The average daily VLCC TCE spot prices were USD 62,000, up 50% from 2019. This increase was fuelled by a 20-30% drop in global oil demand in March-April, as Saudi Arabia increased supplies in response to Russia's refusal to comply with accords requiring lower output. Due to the global oil supply being robust to change and onshore oil facilities being completely depleted, this resulted in a fleet reduction as vessels were employed for floating storage. At the same time, measures made to control the Covid-19 epidemic resulted in a drop in global oil consumption. Crude oil tankers were commonly employed as floating storage. At their peak in May, more than 250 boats (12 percent of the

total) were active in floating storage activities. By July, the figure had fallen to 8% and has been quite stable since then.

For a brief while, it resulted in record-high tanker earnings. As the unwinding of floating storage outpaced the rebound in oil demand, freight prices have been continuously declining since then. China boosted the market in June-July by taking advantage of the cheap oil price to replenish stocks. In August-September, similar numbers were recorded, although most Aframax and Suezmax tankers had returned from floating storage by then.

In Fig3.2, the one-year time charter rates for the VLCC, Suezmax and Aframax tankers are considered. This graph remains consistent with Fig 3.1 and follows the same general trend showing maximum time charter rates for almost all size of vessels in 2020. By late 2020, as the tankers which were used as oil storage began to return, the time charter rates began to drop and return to the levels seen in pre pandemic era.

3.2.1 Time Charter rates have seen a cyclical increase

As the petroleum tanker market is influenced by Saudi Arabia's enormous supply push, time charter prices have experienced a cyclical spike. Despite low worldwide demand owing to the Covid 19 limits, oil output has been constantly increasing, necessitating the storage of excess oil in appropriate facilities. During the first half of 2020, around 10% of the VLCC fleet was employed as a storage facility, allowing the surpuls oil to be stored.

In 2021, time charter prices are expected to fall further, reflecting the market's overcapacity. VLCCs had a one-year time charter rate as low as USD 18,000 per day, while Suezmaxes were roughly USD 16,000 per day. Increased tonnage demand halted the drop. As a result, one-yeartime charter prices rose, first in the VLCC market, then in the

Suezmax and Aframax segments. The most dramatic rise was seen in VLCCs, which increased by more than 50%. In the first ten months of 2021, global oil consumption was 4.5 percent lower than in the same period of 2019, nevertheless restrained by border crossings and regional closures. Long-distance maritime shippers continue to reduce product masses to prevent price hikes, which has lowered demand for Raw Network by 7%.

Despite the fact that most crude oil transportation is focused in the volatile commodities market, the one-year TC market is stable and serves as a medium-term appearance agent. Cargo prices are unlikely to stay high until 2020, given the nature of the spike, and shipowners are prepared to adapt their vessels to present pricing.

The Covid-19 epidemic has reduced global oil consumption, but the war between Russia and Ukraine has put global oil supply under strain. Oil consumption has progressively increased since Covid, but crude network demand has been low as oil supply has failed to keep up with demand. However, the delivery of commodities is expected to continue in the longer future, increasing the quantity of marine demand. Geopolitical threats are projected to upset the way crude oil is currently marketed, rising demand for tonnes of tones in the short to medium term, as Western nations look to replace Russian oil with oil from other parts of the world.

Both the amount of products and the cost of shipping were changing. The current prices reflect the lower demand for Crude Tanks that has resulted from a lack of product availability from oil-producing countries. Because of the improved supply-demand balance in the oil market, tank owners expect higher future income, therefore second-priced prices are still high. Owners have been discouraged from acquiring new ships, preferring instead to acquire used ships.

3.3 SUPPLY AND DEMAND

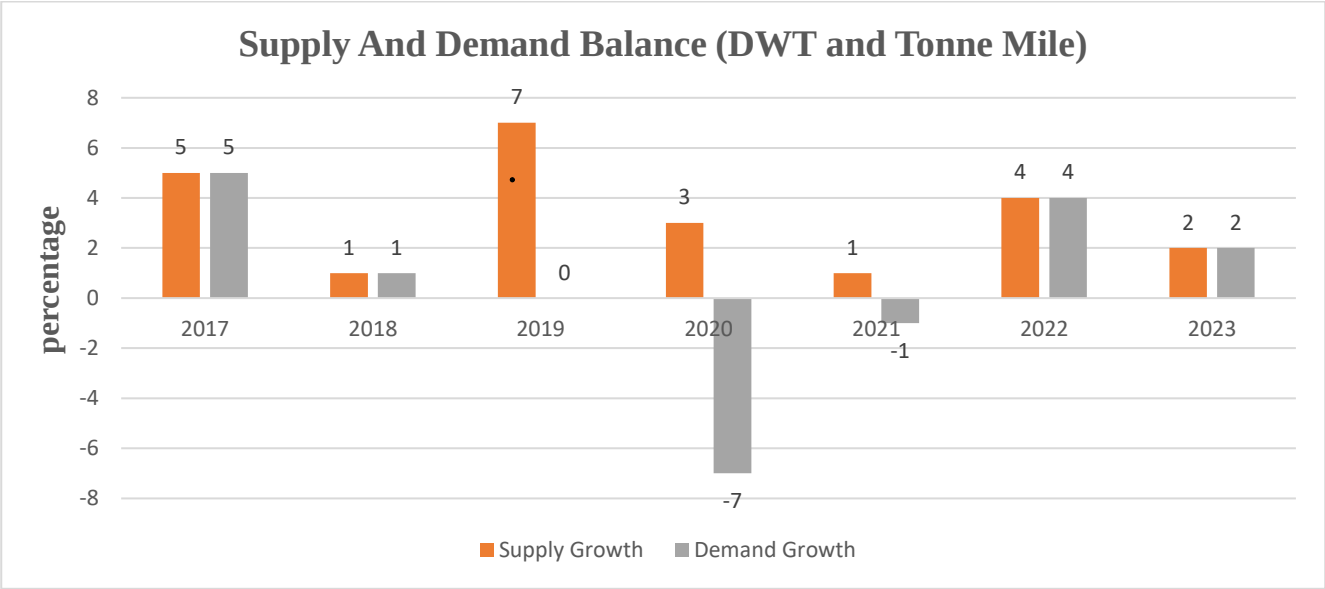


Fig 3.4 – Supply and demand balance (DWT and Tonne mile)

Source: Danish Ship Finance

The tonne-mile demand for seaborne crude oil decreased by 1.2 percent in 2021. The major cause for this was a 1% decrease in long-haul trade. The fleet rose by 1.4 percent this year, resulting in a decrease in fleet efficiency. Slow steaming enhanced fleet utilisation slightly in 2021, but not enough to make up for lost volumes. In anticipation for winter, use increased toward the end of the year, however volumes remained well below those of 2019.

Tonne-mile demand is expected to climb by 7.5 percent in 2022 and 3.3 percent in 2023 as the Russia-Ukraine conflict affects crude oil trade flows. With roughly 10% of the fleet moving exclusively between Russia and Europe/North America, the Aframax category is the most susceptible.

A large number of the exposed Aframax tankers may be absorbed if China and India opt to increase their oil purchases from Russia owing to significant price reductions. The US and Europe may potentially start sourcing goods from the Middle East, especially if Iran's sanctions are

lifted. In general, inefficiencies in oil trade flows will extend journeys, increasing the tonne-mile need for larger vessels.

In comparison to prior years, the oil tanker fleet saw a drop in deliveries. Approximately 16 million dwt joined the fleet in 2013, nearly 10 million dwt less than the previous year. During the first three quarters of the year, the unfavourable market situation resulted in 10 million dwt departing the fleet, with 8 million dwt scrapped, the highest amount since 2003. The rest were mostly replicas of warships that had been withdrawn from the fleet. Until 2010, removed boats accounted for at least two-thirds of the total number of vessels departing the fleet; however, in the previous two years, there has been much more scrapping than removals.

Aside from scrapping, the poor fleet increase was due to a high rate of postponements and cancellations, which accounted for about half of all orders due to be delivered in 2013. At the start of the year, deliveries expected for 2020 were over 30 million dwt, including 18 million dwt VLCCs, 10 million dwt Suezmaxes, and 2 million dwt Aframaxes. A total of 6 million dwt was rescheduled for a later delivery date, while another 9 million dwt was cancelled.

After years of relatively rapid growth, fleet growth has slowed to below 1.4 percent in 2021, and the orderbook has reached an all-time low of 8% of the fleet. According to the current orderbook, fleet growth will be 4.2 percent in 2022, 3.1 percent in 2023, and 0.1 percent in 2024.

Because of the drop in US and European crude oil imports from West Africa, the crude oil is now accessible on the Asian market. Asia is a big fan of West African crude oil because it may be combined with other crudes. With the addition of a light/sweet West African crude oil, additional high-quality goods are produced. As a result, Asia boosted its crude oil imports from Africa by 9 million tonnes in 2018-2020, accounting for 44% of its total imports. The great distance of this specific route helped to boost distance adjusted demand. Overall, Asia Pacific

imported 22 million tonnes of crude oil, mostly from Africa, the Middle East, and South America. China is mostly responsible for this, as it continues to grow its refinery capacity and crude oil stocks.

3.4 TANKER TRADE ROUTES

The Middle East is by far the world's greatest oil exporting region. Because of its geographic location, the Middle East has multiple long-haul routes connecting it to major importing regions such as the Far East and North America. Long-haul routes account for a large portion of tonne-miles demand. Obviously, an increase or reduction in Middle Eastern exports will have a significant impact on tanker freight.

We have selected the routes connecting Middle East and Asia in both dirty and clean tankers trade routes.

1. TD2 – Middle East Gulf to Singapore
2. TD3 – Middle East Gulf to Japan
3. TC1 – Middle East Gulf to Japan
4. TC5 – Middle East Gulf to Japan

3.4.1 Route Characteristics

1. TD2 – Ras Tanura to Singapore

This trade route exists between Ras Tanura, Saudi Arabia and Singapore. Mostly VLCC vessels are plying on this route. Singapore is a major oil importing country in Southeast Asia and this constitutes a major tanker route. Due to bigger vessels like VLCC plying on this route, the volume of crude carried in this route is also large.

2. TD3 and TC1 – Ras Tanura to Chiba

The TD3 (crude) and TC1 (clean) routes run from Ras Tanura, Saudi Arabia, in the Middle East Gulf to Chiba, Japan, on the east coast of the country. VLLCs and LR2s pass across the Strait of Malacca on their way east. The Strait of Malacca, which connects the Indian and Pacific Oceans, is a major commerce chokepoint. According to the EIA (2017b), the strait carried about 16 million barrels of crude oil and oil products per day in 2016. On this route, the Strait of Hormuz is also a major bottleneck. In terms of cargo tonnage handled, the port of Chiba is Japan's second biggest.

3. TC5 – Ras Tanura to Yokohama

This route exists between Ras Tanura, Saudi Arabia and Yokohama, Japan. Mostly Panamax vessels of around 55,000 metric tonnes ply on this route. This is an important tanker route as it contributes to the movement of refined petroleum product which are needed for developing countries.

CHAPTER 4

SUMMARY AND CONCLUSION

4.1 SUMMARY

Time charter rates in 2020 were unusually expensive due to Saudi Arabia's decision to put enormous amounts of overstock onto the market amid the Covid 19 pandemic and the Easter European war, which created worldwide economic uncertainty.

The oil tanker market was in decline at the end of 2019. However, as a result of record-high demand from China and a slowing fleet growth, prices climbed at the end of the year.

The VLCC is still the most popular vessel type. Overall, the seaborne crude oil trading market in 2020 grew at a negative rate, particularly in the first half of the year. As a result, in the second half of 2020, market fundamentals improved, causing spot rates to briefly climb.

Seaborne crude oil trade is expected to rise by roughly 2-3 percent over the next several years under current conditions.

Asian imports dominated crude oil demand on the high seas. China increased imports the most in 2021, followed by India, Japan, and South Korea. Total Chinese crude oil imports grew by 7% (17 million tonnes) in 2020, primarily to increasing refinery capacity in the country.

Imports from India also helped to boost demand, as the country's refinery capacity expanded, resulting in an 8% (10 million tonnes) increase in demand in 2021.

In 2021, Saudi Arabia was the world's leading producer and exporter of total petroleum squid, as well as the world's biggest holder of

crude oil reserves and the world's second-largest crude oil producer after Russia.

4.2 CONCLUSION

According to the report, GCC countries will control around 83 percent of global oil reserves in the future, and Asia has a significant oil demand. India's current consumption is expected to more than triple to 9.3 million barrels per day by 2025.

In 2035, China's oil demand will increase by 80% from present levels to 17.5 million barrels per day. This will cause a significant change in future oil supplies, which are likely to travel eastern as Asian demand develops. The massive surge in demand may mostly be attributed to China and India.

According to this study, the Asian region has a high need for oil, and the market will remain stable and only grow. Oil consumption in Asia will rise over the next few decades, according to a survey of marine experts. Shipping is a derived demand, which means that the need for the goods it conveys determines its demand. If cargo market demand is stable and projected to grow in the future, time chartering is the best solution.

The petroleum tanker company saw enormous gains in 2020 as time charter prices climbed. This was caused by a massive oversupply in the Middle East, particularly in Saudi Arabia.

The ongoing eastern European conflict between Russia and Ukraine, as well as the Covid 19 epidemic, which led in bans and lockdowns in various countries, caused a decline in oil consumption in several countries, leading rates to climb and the Baltic Dirty Tanker Index to reach 1,000.

REFERENCES

1. Khan, K., Su, C. W., Tao, R., & Umar, M. (2021). How often do oil prices and tanker freight rates depend on global uncertainty? *Regional Studies in Marine Science*, *48*.

2. Michail, N. A., & Melas, K. D. (2021). Covid-19 and the energy trade: Evidence from tanker trade routes. *Asian Journal of Shipping and Logistics*.

3. Xu, L., Shi, J., Chen, J., & Li, L. (2021). Estimating the effect of COVID-19 epidemic on shipping trade: An empirical analysis using panel data. *Marine Policy*, *133*.

4. Moiseev, G. (2021). Forecasting oil tanker shipping market in crisis periods: Exponential smoothing model application. *Asian Journal of Shipping and Logistics*, *37*(3), 239–244.

5. Hjertaker, E., Martin, M., & Stafseng, S. (n.d.). *Forecasting Time Charter Equivalent Oil Tanker Freight Rates-determinant driven, route-specific Markov regime-switching models*.

6. Alizadeh, A. H., & Talley, W. K. (2011). Vessel and voyage determinants of tanker freight rates and contract times. *Transport Policy*, *18*(5), 665–675.

7. Danish Ship Finance. https://www.shipfinance.dk/research/shipping-market-review/

8. Cyprus Shipping News. https://cyprusshippingnews.com/

9. Hellenic Shipping News. https://www.hellenicshippingnews.com/category/report-analysis/weekly-tanker-time-charter-estimates/

10. Baltic Exchange. https://balticexchange.com/en/data-services/market-information0/tankers-services.html