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I applied the data used in my thesis considering the legal protection of copyright.
No portion of this thesis has been earlier submitted to obtain a degree for any other training at any educational institution.

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Giorgi Devadze sk

Student's signature

Budapest Business School

Faculty of Finance and Accounting

Finance and development tendencies of oil and shipping corporations

Bachelor's thesis

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Abstract

The present work discusses the main trends in the development of the oil extraction and shipping industry. Its relevance is driven by the extraction and utilization of these vital energy resources.

The purpose of this paper is to introduce stakeholders the current trends in the oil industry, as well as to highlight the problems and challenges in the field.

A main task of this paper is to get to know the oil business with its present and past as the leading energy industry. Besides, delivering information to the interested audience regarding the ongoing innovation in the field. The important place is devoted to the review of the whole oil production cycle (From production to its final sale). Lastly and the most important part will be dedicated to financial analysis of leading shipping company.

The work covers the classification of oil by its composition and transport properties, emphasizes the role of the state in the industry, and compares the interests of private and public companies. The same chapter presents the entire cycle of the oil industry - from its extraction to its realization, each of its stages separately.

The actuality of this topic is caused by all the procedures going in the world market which makes significant impact on the energy source to the industry and its development tendencies. The aim of topic is to represent information about the whole cycle of oil industry and its specific stages as well. The important part of topic will be financial analysis of participant companies in this industry. I will attempt to choose shipping/oil company and analyse financial part with its performance, financial/economic measurements as income, costs, profit, yearly accounts how prices are picked with export/import policies etc. Importance of the topic is determined by current processes going into the modern oil industry which is closely related to the main modern and global source for energy, gas industry and its development tendencies.

Bachelor dissertation "**Finance and development tendencies of Oil and shipping International corporations"** consists of introduction (General characterization) three chapter and with concluding part.

To summarize topic will consist of following parts:

First chapter – About creation and development of Oil and Gas companies with value chain and realization stages. Will be described how oil had become desirable fuel and origins of market shared companies.

Second chapter – "Oil international market" as its stocks, procurement, consumption, prices and export/import with financial analysis

Third chapter – General overview of crude oil transportation industry and financial analyzes of a selected shipping company.

Introduction

Changes of the oil industry in the world market affect the interests of all world economy level. Therefore, it has an impact on country's economic situation, energetic security and the global financial structure as oil market is concentrated globally and all the countries, regardless can or not satisfy their own oil needs are under the influence of world market and they cannot be isolated from it.

Forecasting the oil prices is crucial to understand how oil industry works nowadays. Analyzing of quantitative variables are the key factors in understanding the reasons of price fluctuation on the market. It is important to identify and analyze factors and tendencies, which determine and form the global oil market development paradigm.

Topic actuality. Analyzing actuality of global oil industry has important theoretical and practical meaning. International collaboration in energy sector is the important part of foreign affairs and economic relationship between world's leading countries. Worldwide Understanding of oil market tendencies is the source of forming partnership in energy sector, as well as it is a basis of intra and global economic and safety stability.

The global oil market is a strategic commodity market, due to its leading position in the world's fuel and energy balance, In the significant scale of international trade in hydrocarbons and in countries' efforts to secure energy.

The petroleum industry provides a stream of foreign exchange earnings from liquid hydrocarbon exports to the economy and service sectors, which is responsible for providing the community with livelihoods and raising the standard of living of the population.

Research purpose and objectives. The purpose of this paper is to define the role of international oil and tanker companies in the world, analyze their activities and discuss their perspectives.

To achieve this goal, we will have to:

1) Review origin and development of oil and gas.
2) Review national and international oil companies.
3) Review and analyze the activities of the largest oil corporations.
4) Review and analyze oil supplies, extraction and consumption.
5) Review and analyze shipping companies.
6) Make a financial analyze of shipping company.

Research object: Oil and Shipping international corporations.

Research methods: In the research process will be used macro-economic methods, comparative and statistical analyze, scientific generalization and more.

Chapter 1. Origin and Development of oil and gas companies.

1.1 Stages of oil extraction and realization process.

The global oil and gas industry consists of many firms with different opportunities, shape and size. Book authors, Andrew Ink pen and Michael H Moffett, provide us the main terminology to identify and clarify industry without overabundance:

• **Independent.** "A nonintegrated company generating nearly all its revenue from either oil and gas production or downstream activities. The term independent is sometimes used more narrowly to refer only to oil and gas producers and not downstream firms." (Inkpen, Moffet, 2011, p. 11)

• **Integrated oil company (IOC).** "A company that competes in the upstream, midstream, downstream, and perhaps petrochemicals." (Inkpen, Moffet, 2011) A term IOC is used in both for large corporations as – Shell, BP, Chevron, ExxonMobil, ConocoPhillips as well as small oil corporations Marathon and Eni. (Inkpen, Moffet, 2011, p. 11)

• **International oil company (IOC). "**Oil and gas company that competes across borders. More generally, the term is used to describe the largest oil and gas companies that compete globally and often operate in partnership with NOCs in the NOC's home country" (Inkpen, Moffet, 2011, p. 11). IOCs mostly are involved in oil and gas industry together, because of it describing IOCs we can use term energy company. International oil companies and integrated oil company both use "IOC" acronyms. To meet our goal in this work, IOCs will be used to describe International oil company. (Inkpen, Moffet, 2011, p. 11)

• **National oil company (NOC). "**A company controlled by a national government, usually formed to manage the country's hydrocarbon resources" (Inkpen, Moffet, 2011) Many NOCs can be owned by states as well as private investors. NOCs are state-owned and mostly are under the control of ministry of petroleum or ministry of oil and gas. Some NOCs like Pemex (Mexican Petroleum) operate inside the national borders while some of the NOCs can be seen in the global market as IOCs. The difference can be unclear between IOCs and NOCs as both list their shares and stocks in the global market. (Inkpen, Moffet, 2011, p. 11)

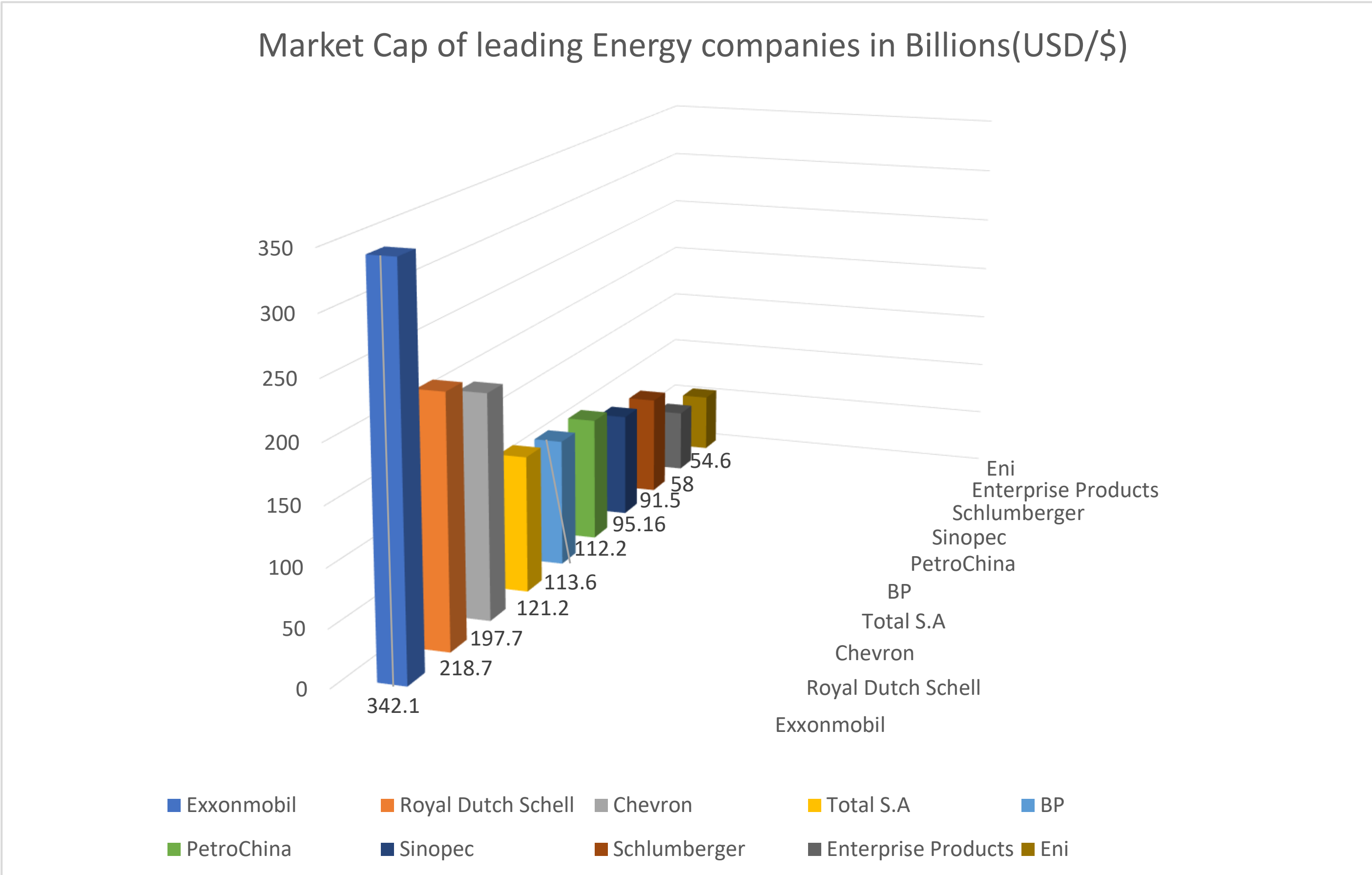

Figure 1.1. World's largest energy firms by market capitalization in Billions (USD/$) as of end-year 2017.
Source: ExxonMobil, Royal Dutch Schell, Chevron, Total S.A, BP, PetroChina, Sinopec, Schlumberger, Enterprise Products, Eni.

The Oil and Gas Industry Value Chain

"A value chain is a set of tools that helps identify independent, economically developed segments of the industry." (Inkpen, Moffet, 2011)

Overall Oil and Gas industry are divided into 3 segments: Upstream, Midstream and Downstream.

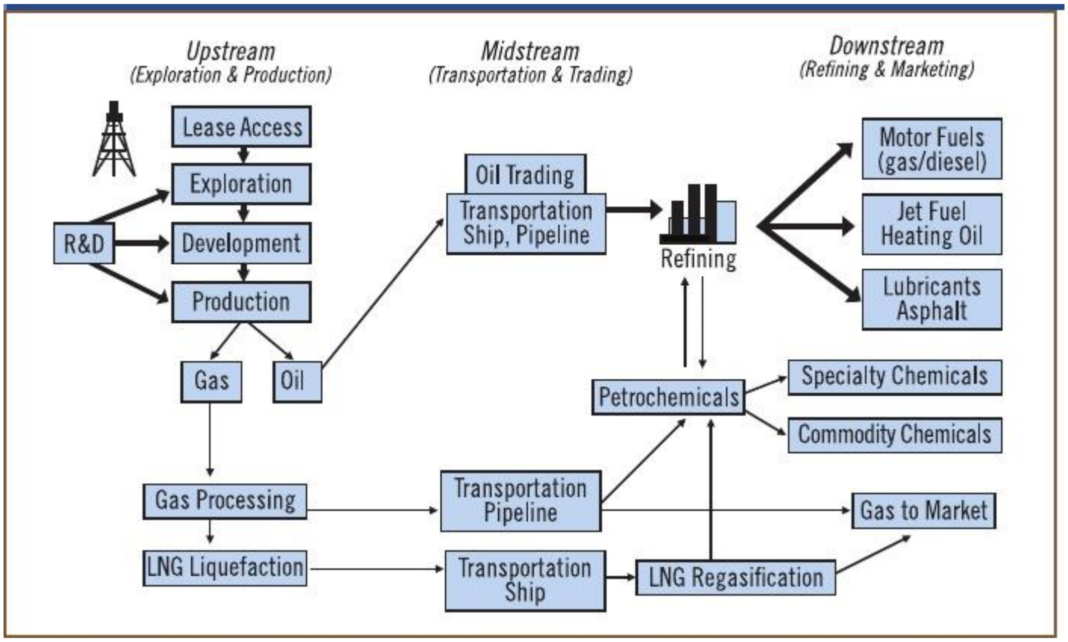

Figure 1.2 Global oil and gas value chain *(Inkpen, Moffet, 2011, p. 21)*

Upstream (Exploration and Production) – Exploration, development and production are upstream activities. After a contract of exploration is conveyed can be started oil discovery which is a process of one. Development stage is very important in discovery of oil and gas which is followed with a long-term process of production. Because Exploration and development might take place where materials are under the ownership of state sovereignty companies must comply with very complicated rules, policies and regulations of government. Many countries give the right of oil development to private companies through negotiation or offering money, services. Private company seeks for profit maximization while government main goal is to increase revenue as much as possible. No wonder that these 2 may come into interest conflict. For this reason, between government and private company is signed a contract concerning how much of resources can be received from the country. (Inkpen, Moffet, 2011, pp. 21-22)

The system of bidding, awarding and then renewing and extending oil and gas right varies across countries. After company gets right of exploration from states it drills a well. Usually companies use financial determination to figure out the well can be left as oil, natural gas production source or just a dry hole. If a well produces so much oil that it covers the cost of exploration and completion then it can be put in production, otherwise it will stay as a dry hole. (22) (Inkpen, Moffet, 2011)

Midstream (Transportation and Trading) – Three activities are included in midstream stage: storing, trading and transporting of crude oil. As shown in figure 1.2, once oil and gas are in production, there is a divergence in the value chain. Crude oil that is produced must be sold and transported from the wellhead to a refinery. Natural gas must also be moved to markets via pipeline or ship; Crude Oil has little or no value until it is processed into products such as gasoline and diesel. Thus, producers of crude oil must sell and transport their products to refineries. The market for crude oil involved many players, including refiners, speculators, commodities exchanges, shipping companies, IOCs, NOCs, independents, and OPEC. Activities on market has become the main page of the news and oil prices benefit from being on the newspapers as weather forecast. (Inkpen, Moffet, 2011, pp. 23-26)

Downstream (Refining and Marketing) – Downstream stage comprises the refining process when crude oil is transformed to variety of useful products as chemical feedstocks, diesel fuel, gasoline, jet fuel, home heating oil. As records show just only in US about 60% of refining products are gasoline. Through retail and wholesale networks products are sold directly to final customers. The volatility of financial performance was always challenge in oil production. The profitability of oil and gas industry is measured by refining margin what is the difference between crude oil price and final product. Different factors support the price fluctuation as worldwide political instability, the weather in Gulf coast states and OPEC decision in cutting or not the oil production. These decisions were not always matching the changes in the price of final oil products which caused large expansion of the margin. (Inkpen, Moffet, 2011, pp. 26-29)

Usually, there are several reasons why the price of finished product does not match with crude oil price. A Petroleum refiner must operate in 2 markets: At the place where he purchases raw materials for well-drilling and exploration and at the marketplace where he sells the finished product. Due to this, a risk of exposure for refiner is higher than the company's risk which operates just on finished product market and offers manufactured product to wholesalers or oil purchasers.

We can set two factors defining the profitability of refiners:

1. The Supply and demand of refining products. In case tight refinery the refining margin is higher. It means that refinery price is higher than crude oil price (Crude oil is used in refining process).
2. Second factor of profitability is supply and demand of refinery and the prices of crude oil.

High crude oil price may increase the price of refining products but at the same time refining margin and profitability can be weak if demand of refining products is weak. In 2005 and 2006 US experience weak refining profitability as crude and refining prices was high. In contrast to the situation in the United States and Europe, new refineries are being built in other countries.

1.2 National oil companies

The interest and having the capacity to influence or control oil and gas industry always will be entwined between market participants. Main stakeholders on oil and gas industry are most commonly government and private organization. A right of exploration, development and production is given by state. At the same time state is and should be very careful while giving away the license for private companies to deal on this sensitive field. Its sensitivity is derived from its meaningfulness and importance in national economy and social stability. Oil is of the most important national economic indicator.

Obtaining oil and gas from a mine is more than a valuable process as it creates the product on what is depended the world economy. A lifestyle of world's population would be different without this product. It is great market indicator and plays huge role in country's national security, wealth and financial forecast.

State and sovereignty defense are critically dependent on oil reserves since the beginning of 20^{th} century. Oil is considered as a driving tool of global economy after the period when wheeled vehicles and means of transportation were created. Generally fossil fuel is the most necessary attribute for movement of automobile or vehicles which structures the nation's army. With that said, Oil plays and always played huge role in states' war machine. Because of the high importance of oil existence for global economy, countries try very hard to save safe the places where crude oil is discovered. Almost every aspect of natural economy is depended on oil and gas, especially infrastructure field. Oil and Gas industry will remain important until the dependence of world's economy will continue being attached to petroleum. (Inkpen, Moffet, 2011)

It is useful to remember that economic development level occurred within a country does not have a big effect on oil discovery and production as mentioned products are not produced to be manufactured. Natural resource is taken out from the earth independently without depending on economic measurements. It does not mean that oil production is very easy process in a technical point of view. Extraction is time consuming and a lot of details are involved to finalize process. But there is no need of high economic development or infrastructure to produce oil and gas and put it on market. Countries as Chad and Papua New Guinea is not listed in the most developed places in a point of infrastructure, but they still produce oil. On the other hand, there are some developed countries like South Korea, Japan and Taiwan still produce oil, although they have a limited amount of resources to extract. Developed electronics and technology help these countries to discover and produce the oil with owning limited amount of reserves. If a nation wants to produce computers, cars or other revolutionary products they need to have skilled labor, support fields, financial and legal services which are not essential for oil and gas production. (Inkpen, Moffet, 2011).

The second factor is rareness and scarcity of this product. As we agreed above Oil resources appears as limited and infrequent. Oil is depletable asset. There is high possibility that it will be gone one day. For this reason, nowadays states try to limit its usage and take care of oil reserves. Beside putting limits, modern economy offers us substitution as electric cars, vehicles and in the future electric planes. This assumption leads oil prices and costs to rise what at the same time is a guarantee of economic rent to the existing companies. It gives the oil companies stability, because entering cost for new competitors on the market is high.

IOCs occupied most of the oil market since the beginning of middle 20th century. After the oil importance had been increased governments and states decided to increase their power and control over the field, which lead in creation of National Oil Companies and lands where oil could be handed over under the state's supervision. Nowadays, in most countries to start or continue oil production companies must get a license or right to operation.

The reserves saved in the ground determines the future of oil upstream oil and gas companies. Oil produces one of the larges export revenues and hand currency for the countries. This lead the states to start control the oil reserves inside country's territory which has a big impact on the goals and strategies of oil majors. (Inkpen, Moffet, 2011)

1.3 International Oil Companies

The most prestigious ratings for different organizations are provided by Forbes list. Below cited (table 1.4-4) list includes dozen of the largest oil conglomerate by their revenue as of 2016 year-end.

***Table 1** – Biggest oil Companies*

Position in Forbes-list	Company name	Location	Exraction (daily, M. Barrel)	Annual income indicator (B, USD)
10	Kuwait Petro Corporation	Kuwait	3,2	70,24
9	Chevron	USA	3,5	110,4
8	Petroleos Mexicanos	Mexico	3,6	86,2
7	Royal Dutch	Netherland	4	234,8
6	PetroChina	China	3,9	214,8
5	Rosneft	Russia	4,66	74,87
4	ExxonMobil	USA	5,3	343,2
3	National Iranian Oil Company	Iraq	6.1	42
2	Gazprom	Russia	8,1	150
1	Saudi Aramco	Saudi Arabia	12,7	1 Billion per day

Source: Forbes magazine. (Forbes, n.d.)

10. Kuwait Petroleum Corporation - Originally company was established in 1934 by two companies BP (today known as British Petroleum) and Gulf Oil Corporation (today known as Chevron). Government took control over the corporation in 1980. The corrections in development of company were made by the war in Persian Gulf and the production increased even more after 1991 when country got liberated. Nowadays, company makes expansion of production capability as a priority, what helps company to stay in the list of top ten.

Company indicator:

- Annual extraction - 912-million-barrel oil and 9.7-Billion-meter gas.
- Daily extraction – 3.2 Barrel
- Export 520 Million barrel.

According to its future and projects the interest of collaboration with Russia is sharply high. (KOC, 2019)

9. From the beginning Chevron was named differently. Chevron corporation is an American multinational corporation, one of the largest companies in the world. Corporation runs and produces in the different parts of the world. He owns several oil refineries. 48% of company's revenue comes from striking oil. As of today, a firm extracts 3.5M barrel. Company has its representatives in 180 countries. Chevron's interest field spreads on the different aspects of oil and gas industry. (Chevron, 2019)

8. Pemex called as Mexican "Black Gold" – Started activity from the beginning of last century, but at that time the activities were performed by British and American companies. In 1938 after a labor strike government reached to the resource nationalization issues. As of 2017 oil extraction in Mexico is 3.6M barrel. Pemex warns that oil reserves will be only enough for next 10 years. (Mexicanos., 2019)

7. Royal Dutch Shell (Holland, GB) – It is an oil and a gas one of the largest companies established in 1907 year after the merge of Royal Dutch Petroleum, Shell Transport and Trading Company of Britain Shell. Furthermore, Shell plans to implement different projects where a priority place will be takes by processing of renewable energy resources. About numbers: shell produces 3.7-barrel equivalent of oil per day and yearly revenue reaches almost 388.4$ billion. (Shell, 2019)

6. PetroChina – It is one of the biggest state-owned Chinese oil company. A firm was established in 1999. In 2018 company oil production was 890.3 Million barrels. At the same year yearly revenue was 2353.59 Yuan what almost equals 332,043,394.55 USD in 2019 with increase perspectives. The reason of revenue increase can be company's activities in Africa, Australia, and Canada. There is assumption that PetroChina has a capacity to become the leader in oil industry. (PetroChina, 2019)

5. Rosneft (Russia) – was created in 1995 year but the main enterprises of company were created yet in early 90s. Nowadays, Rosneft is one of the biggest companies in Russia. (Rosneft, 2019)

4. ExxonMobil – Is an American oil and gas corporation headquartered in Irving, Texas. The company's name always associates with John. D Rockefeller and standard oil. Exxon is a leading

oil and gas company worldwide. Company produces 5.512 Million barrels per day. As of 2018 revenue reached to 20.8 Billion USD. (ExxonMobil, 2019)

3. National Iranian Oil Company is a state-owned corporation which is directed by Ministry of Petroleum of Iran. History of corporation starts from 1901 when William Knox was granted a concession to search for oil what he discovered in 1908. Its production reached 4.6 million barrels in 2016 per day with 42 Billion USD. (NIOC, 2019)

2. Gazprom – Gazprom is a Russian, global leading energy company focused on geological exploration, production, processing and sales. In 1993 pursuant to Russian state's resolution Gazprom gas concern was reorganized into Russian joint Stock company Gazprom. In 2018 Gazprom generated 118.83 Billion USD. Produced 40.9 Million tons of oil and 497.6 Billion cubic meters of natural and associated gas. (Gazprom, 2019)

1. Saudi Aramco – Officially the Saudi Arabian Oil Company, is a leading Saudi Arabian national Oil corporation. Pursuant to Bloomberg by seen accounts Saudi Aramco is one of the largest companies in the world by revenue. History of the company starts from 1933 when a concession agreement was signed by Standard Oil based in California and Saudi Arabia. Based on this agreement was created standard oil company to manage and coordinate the agreement accordingly. Due to published reports by the company, in 2018 revenue reached to 315.27 Billion USD. In 2018 company produced 13.6 Million barrels per day of oil equivalent. Company is focused on maintaining its upstream position continue strategic integration of downstream activities to secure his position on global competitive oil and gas market. (Saudi Arabian Oil Company, 2019)

In addition, Forbes list of the top 20 oil and gas company includes British Petroleum, French Total, Brazilian Petrobras, Qatar Petroleum, ADNOC as Abu Dhabi National Oil company, from Iraq- Ministry of oil, Algerian Sonatrach, PDVSA from Venezuela and Norwegian Statoil.

Table 2 – Revenue of Oil and Gas companies for 2000-2018 Years (Billion $)

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Sinopec	44	47	60	81	107	116	146	141	213	279	344	353	428	421	288	363	414
Shell	218	264	266	307	319	355	458	278	368	470	467	451	421	264	234	305	388
ExxonMobil	204	247	298	371	377	404	477	310	383	486	481	421	394	259	201	237	279

BP	178	232	285	245	274	291	366	240	297	386	381	396	353	223	183	240	299
PetroChina	32	33	39	54	69	81	105	107	163	222	270	277	278	247	230	287	280
Total	102	104	122	117	133	137	160	112	140	165	182	228	212	143	128	149	209
Chevron	98	121	155	198	210	221	273	172	205	254	242	229	212	138	110	134	166
Gazprom		26	32	43	61	73	121	103	118	160	161	163	147	91	87	112	118
Eni	48	57	72	92	108	119	159	115	130	150	163	152	124	74	62	73	83
Petrobras	33	43	52	74	72	88	118	92	120	146	144	141	144	97	81	88	95
Rosneft	3	4	5	24	33	49	69	46	63	92	100	148	147	87	70	101	120
Lukoil	15	22	34	56	68	82	108	81	105	134	139	141	121	85	75	84	127

Source: Companies Annual Reports.

Table 2 is an illustration of revenue gained by oil and gas companies last couple of years. A simple analysis of table shows us how leading oil companies' activities were changing through this period. During 2002-2008 period, annual income was increasing or stayed balanced for almost every corporation. According to Attrill and McLaney "Revenue is simply a measure of the inflow of which accrue to the owners, will result in either an increase in assets or a decrease in liabilities" (Atrill & McLaney, 2006). Revenue can be calculated differently for different type of businesses. In case of revenue calculation for crude we can use following formula:

Revenue= Sales price * Number of units sold.

Throughout this time on market was 2 scenarios, sales price or unit sold growth or increase in both measurements. Inflation.com gives us the data of price change from where we can see that oil prices from 2002-2008 were increasing. But what caused revenue to drop suddenly in 2009? The main reason for this is a financial crisis which is also called as one of the brutal events in financial history.

The financial crisis started in the real estate market in 2006 after default on subprime mortgage started to rise. From the beginning destruction was contained. As time went by a process of deterioration started in markets which led to decrease economic activities. The 2008 financial crisis had a negative effect on oil and gas industry. It led oil prices to fall sharply what was reflected in revenue decrease. Oil price fell from high 147$ in July to a low 33$ in 2009. At the same time Gas price changed from 14$ to 4$. It is obvious for us to see how prices fall in this period. The lower oil and Gas prices due to financial crisis makes picture clear what affected so badly the industry. Beside price impact, tight credit monetary policy limited corporations in capital raise as it stimulated high interest paid by companies which can be considered as cost for firm. (Forbes, n.d.)

Overcoming a financial crisis was hard, but after the event corporations manage to deal successfully restoring process. As displayed on table 2 numbers were increasing through years, if we do not consider some years when some companies have a little decrease in their revenue and operations. Sinopec, a Chinese enterprise established in 2000 has higher income than shell ExxonMobil, BP, PetroChina in 2018 and is on the first place. The second higher revenue gainer as reports show us is Dutch Shell with 388$ Billion. British Petroleum increased its number from 240$ Billion to 299$ billion and occupies 3rd place in 2018, while income of PetroChina decreased from 287 to 280 and still is on 4th place. Surprisingly, An American giant is placed on 5th in the list. As we can see for ExxonMobil revenue started falling from 2014 and continued until 2017 where the number reached to 237$ Billion. From 2017 to 2018 this number changed to 279$ Billion.

Chapter 2. International Oil Market

2.1. Oil reserves, extraction and consumption

The markets of crude oil have been considered mysterious for a long period of time. It is hard to understand or distinguish, whether Crude oil is a tradable commodity, the strategy and tactic for trading world or something that can be understood hardly. But one thing is clear, Oil has extremely big role in world economic. Starting from influential political decision ending to important economic measurements are based on this highly consumed commodity. Another question is related to its price swings. For decades market specialists, even wall street players have same unanswered query, exactly, what condition impacts a creature or changes of crude prices as the fact of swings causes difficulties for them to forecast the oil prices.

While the price is one of the most important characteristics of tradable commodity on markets, we need to have a bit more understanding what sets it. After crude oil is produced it needs to be transported to refinery to get final product which can be sent to final market for sales. The transportation of crude is done by the same producer company or other one depends on situation. The understanding of crude oil price helps to know how the sales of crude works, which is one of the most complex phases of the process. Whether the crude oil price is 60$ or 150$, it is important to have a basic information how it is determined, who is paying the price, what is the role of future markets, and how does the price impact the eventual price of products like gasoline and jet fuel?

The demand for Crude Oil is based on other sources called as derivatives. Let's tree on what is other sources of crude oil and why it is influential in oil price determination. The demand for gasoline, diesel, jet fuel has been rising in economics as in modern society automobiles and vehicles have become the most used means of transportation. Beside them, there are a lot of different mechanics and motors based on petroleum. So, industrialization, capitalism and technological development boosted the consumption of Petroleum. This process started in 19th century and deepened in the following decades until today. Cars, jets, planes, ships and others, all those things increased the demand of crude oil. I mentioned crude oil because the crude is something which gives us final products of petroleum, fuel. If consumption of crude oil derivatives increases, then itself the demand of crude will be increased as highly consumed oil derivatives requires high amount of oil to function.

Above we have covered what generates the oil demand. As been said, innovation, technological development and modern society creates the value of crude oil. Once all these occurred in modern world it is very hard to shift from oil consumption. According to research held in the field, oil price elasticity of demand is very low. The sensitivity of demand compared to price changes is very low. Even though oil price can be increased it does not usually reflect in the same way, high decrease of its demand. For example, it is relatively considered that 1% oil price increase is resulted in low than 1% oil demand decrease. In the short run, it is resulted in the lack of alternative fuels or technologies to substitute oil-based products. As nowadays the technology sharply develops, it introduces us new products which may be considered as a substation of oil in certain fields, but in long-term period. For now, oil price elasticity of demand Is still low.

The supply of oil reflects the ability to move the product to the marketplace to final customers. After oil is extracted, found it needs to be refined and produced into the commodity useful with its further purposes. Oil production process is not just extraction, the product needs to be processed and finalized. In most cases all the process from the beginning to the end Is performed by one company, but it is also possible that several companies would be included in oil production process. The company which finds and extracts the oil, the transportation company which provides the crude oil to refiner and then the manufacturer fulfills the market needs with petroleum, fuel.

Resources used for oil production process Is very high. Nowadays companies have capability of using modern technology, which makes oil production process effective. However, oil market is characterized with supply-side shocks, what affects and results in rapid price changes. This event is caused due to several macro-economic, political or natural variability and disaster. As stated by Inkpen and Moffet If we look back in the history, the supply side effect, price changes are divided into four categories:

- In 1930 massive oil field discoveries caused prices to go significantly down, even below the cost of production. One of the examples of the massive field discoveries is the East Texas discovery. This happened in the beginning of the great recession. (Inkpen, Moffet, 2011)

- At the period when quantities remain restrained. Historically this happened when the organization of the Petroleum Exporting countries restricted the obtainability of crude oil on the market in 1970s and 1980s because of growing market demands as well as political pressure. of course, the limited access to crude oil pushed the prices upward. (Inkpen, Moffet, 2011)
- Some dangerous man-made activities and events which took away the crude oil from the market. Looking back those events are such as Arab-Israeli conflicts and the Persian Gulf War of 1991. The wars and confrontation between states make whole oil value chain process ineffective and puts oil production under the risk. Especially when the conflict is between Oil producing and owning countries. (Inkpen, Moffet, 2011)
- Natural disasters as hurricanes of 2006 that destroyed the US gulf coast and damaged both production facilities and platforms of Gulf of Mexico. As the refining capacities were destroyed by this event, it was hard to discover and refine the oil to fulfill the oil production process. This led to increase the prices of crude oil. (Inkpen, Moffet, 2011)

As classified above oil production process can be very sensitive regarding different occasions. That’s why states do and use every lever, which are under their control to make peace at the places where oil is discovered unless there is not any other political intention.

Oil types and Criterion

Oil prices are determined by different factors as characteristic, quality, types and usage. It has been said that, exists just one type of crude oil, from which is created other types of products. Investigating a bit more we see that there are 160 different types of crude oil. Every of it has different characteristics and nature. But mainly 2 qualities of crude are: Viscosity (Thickness or density) and sulfur content. According to Inkpen and Moffet “Crude oil with lower density are called light crude and usually yield a higher proportion of more valuable final refined products, such as gasoline and other light petroleum products. The density or weight compared to water is measured by API gravity (American Petroleum Institute). A lower share of light hydrocarbons in crude oil makes crude refining process hard and complicated as it takes effort for oil producer companies to get same proportion of valuable product. Sulfur is a naturally occurring element in crude oil but it is not desirable property and it takes a big effort for refinery process to remove sulfur from the crude oil. Crudes that include high level of sulfur are known as sours and crudes with low level of sulfur is referred to sweat oil. (Inkpen, Moffet, 2011)

As mentioned above there are different types of crude oils. These crudes are different from each other with characteristics or qualities. For this reason, a variety of crudes serve as benchmarks, or oil markers for trading and prices. On the market exists: West Texas Intermediate or WTI, Brent Blend, Dubai, Tahis, Bonnie light. Benchmarks make oil identification process easier, because the benchmark usually includes the types of oils. The most valuable oils are included in WTI and Brent bend benchmark and nowadays it is sold at 5$ or 6$ per barrel. WTI and Brent has sweet/light crude from which is possible to produce gasoline.

Discussion about transportation cost of oil from well to refinery is very important part in determining the crude oil price. To get an oil from well to refinery it needs to be transported and is the important part of the global value chain. It has impact on the price set up and plays a big role in defining the crude value for producers. Not every state has the freedom to have access to the coasts from where they can ship or initiate transportation easily. There are sovereign states enclosed by land whose only coastline lie on closed sea. They are called as landlocked areas when the country is surrounded by different states and has a limited access to seacoasts. The example of landlocked areas is as oil production in south central Russia, Chad in Africa, Bolivia as landlocked in south America. (Inkpen, Moffet, 2011, p. 365)

Building the pipelines is one of the traditional transport methods. We can consider this method effective if the oil producer gets the right of building pipelines in the specific areas by government and secondly if the enough capital is raised. These 2 factors determine whether the method can be efficient or not. But mostly, government gives the right of doing so to the corporations which already has a strong reputation in the field. (Inkpen, Moffet, 2011)

In oil and gas industry we meet a term offshore production, which mean the extraction of oil from sea or getting the natural gas from the sea gas deposit. The offshore production method usage has been growing by the time passes. The main reason of its usefulness is making the transportation easier for oil producers. It allows oil tankers to get an access to ships(vessels) and producing platforms from where they can transport the crude to oil refinery. (Inkpen, Moffet, 2011, p. 365)

Calculation of the oil producing price can be tricky, as it involves transportation cost. According to Inkpen and Moffet, when market prices are competitive most of the time crude refinery prices is backed out transportation cost:

Price producer=Price Crude refinery- Transportation cost

With that said, when the refinery price is 60$ and it takes 15$ to get the oil from well to refinery oil producer sets the price at 45$.

British Petroleum provides us with Statistical review of Energy industry. From this report, we can find the prices change since 2005 until 2018:

Table 3 – Oil Prices:

Year	$ Money of the day	2018 in USD$
2005	54.52	70.1
2006	65.14	81.14
2007	72.39	87.67
2008	97.26	113.43
2009	61.67	72.18
2010	79.5	91.54
2011	111.26	124.2
2012	111.67	122.13
2013	108.66	117.12
2014	98.95	104.95
2015	52.39	55.5
2016	43.73	45.76
2017	54.19	55.52

2018	71.31	71.31

Source: (BP, 2019)

As we can see from the table, in the recent years there were 2 times period when oil price was significantly fallen, during 2007-2009 and 2014-2016 period. From 2005 oil price increased rapidly from 70.1$ per barrel to 113.43$, which was triggered by the effective energy market performance. But early in 2009 during the worst financial crisis of the history prices were fallen to back 72$, this price collapse was followed with crisis, when the world economy crisis. Since after 2010 oil price started recovery and through following years until 2014 it reached to 117.12-104.95$ per barrel. But in 2015 we see another price drop down from 104.95$ to 55.5$. According to world bank report this situation was driven by excessively supply abundant of oil, while deliveries of product were not as successfully completed on the market. This fall is considered as one of the biggest drops in oil prices in oil History. As at 2018 states 71.31$ per barrel. (Worldbank, 2019)

2.2 Oil market Transactions

Crude Oil price is determined by different circumstances as OPEC decision, macro and micro economic factors within country where oil is produced and exported or imported, the decisions made by oil corporations, growth of oil and gas derivatives, for example, demand on cars, planes, jets, locomotives etc. But nowadays, nothing has such a big impact on the oil price as demand and supply of finished fuel products. Particularly request of gasoline or petroleum, which then is supplied to final markets. It is obvious that if there is not demand on the finished products there would not be any reason of producing crude oil. My main goal with help of book authors will be to describe and get in touch closely to formation of finished products demand and supply, what strengthens and increases it. To do my job properly I will need to define and explain what the main crude oil transactions are used mostly by market participants nowadays. What is drawback and advantage each of one, how they are used and what is condition for fulfilling all the transactions successfully. Below I will try to outline three types transactions of oil and gas: Spot, Future markets and contract arrangements.

Spot transactions (Swaps) – “A spot market is a market where goods are sold for cash and are immediately deliverable”. (Inkpen, Moffet, 2011). After reading oil and gas industry book dedicated chapter of spot transaction, it leaves the impression that spot transaction is used to fasten the oil providing transaction between the corporations or countries. A spot transaction includes urgent delivery within a month, and it can also happen before it upon at the price of arrangement. But for some countries it is very hard and sometimes impossible to be involved in specified deal As Nigeria, because from the place is hard to complete the request the transaction. The unique part of the deal is that it includes delivery as well. Experts consider spot transaction as a tool of balancing demand and supply. If oil producer has excess oil reserves and seeks to sell out immediately curtain amount of oil out of reserve, then using spot transaction allows them to perform it in a short amount of time. And when oil company shows market their need of accessing the crude oil they can get the requested product shortly as well. In some cases, a spot transaction comes out with shipment-to-shipment, cargo-to-cargo idea. (Inkpen, Moffet, 2011)

In the past few years, merchant refiners have not got tied their activities to crude oil production network. Instead they were buying a crude oil from producers, refining and selling it to third-party customers. One example of this kind of company is Petroplus in Europe. These companies do not produce the products for their own needs but to just sell it to their customers of higher bidder.

Spot markets are excellent ways and clear signal about the current balance between crude oil supply and demand. When we see the oil, price increased we can say that demand of the products has been increased significantly. While going low prices indicate the high level of oil supply on the markets. There are several regional markets that form spot transactions. One example of this place is Chicago market. Logistic plays a huge in helping the regional markets to become pricing centers. For example, Europe market cannot become pricing center if the products are supplied with help of US facilities. To become a pricing center, the region must have several transportation choices, storage facilities, shipment capabilities and others.

Finally, spot prices are reported and saved on the different financial markets. The prices are available on the webpages, newspapers which have high reputation and benefit with its reliability. Spot prices are changed through its shift of demand and supply. Even though some spot transactions offer the direct delivery, others might offer a delivery in the future too. (Inkpen, Moffet, 2011)

Future contracts (Futures) – “A futures contract is a promise to deliver a quantity of a standardized commodity at a specified place, price and time in the future”. (Inkpen, Moffet, 2011)

Usually, the future contracts, not specifically on oil market, is considered as risk hedger. Future transactions are mostly used to avoid price changes going on oil market. If one party is qualified quite enough to determine how the price will change in the future it may help them to save or gain the money. Future markets are not used for profit maximization but to achieve balance and avoid the dependence on price fluctuations. However future market represents a risk hedger, the delivery under a future contract happen seldom. According to Inkpen and Moffet, the prices offered by buyers and sellers are recorded on New York Mercantile Exchange (NYMEX). With a help of the electronic platform's prices are uploaded with minimal delay. After prices are successfully recorded, they are available daily via internet and exchange platforms and are published in specialty trade publications. The way prices are uploaded to the electronic platform it supports the transparency of the future markets. This transparency is very important and necessary for market to operate in effective way. (Inkpen, Moffet, 2011)

Using basic numerical examples area great source of price discovery and risk management. As mentioned above, NYMEX (Commodity futures exchange operated by CME group) provides price list for futures exchange. Maturity date, also known as an expiration date of future contracts, is the last trading day of futures on the market (On NYMEX futures maturity date is calculated as free days before the following month's 25th trading day. For instance, November 2019 futures contract will become mature on 21st December 2019. Last is related to last price the trade was executed while "Open high" and "Open low" shows us the highest and lowest prices noticed during the trading period. Prior settle displays the last price from the previous trading date. Let's assume, the last price for Dec 2019 was 57.24, for Jan 2020 it will be 57.26 and for February 2020 market will show 57.10, March 56.69, April 56.40. Change column is indicator of differences between last price and prior settle price. In our example, for DEC 2019, if last price of the trading day was 57.07 and from the beginning, we had 57.24 prior settle price, change is 0.17, which we get from deduction of last and prior settle prices. Same applies to other months' future contracts. It is critical to understand the table and indicators of the future markets for successful trade. Price change also can be a measurement of other important market conditions and can be used to describe the situation of supply and demand.

Individual agents' actions and trade strategy shows us how to see the prices on the futures market. The main idea of futures market is to be able to determine in advance how the price will be changing through the period until the end of contract. The party will get the profit if price is determined correctly by them. To describe it better, assume Oil LLC company decided to participate on the crude future market. Spot price at the signing time is 57.07$ per barrel. Agents of our company think that prices will increase to 58.07$ after the future contract will be signed and the supplier will be responsible to fulfill their liabilities. This transaction guarantees Oil LLC company to purchase 100-barrel oil with the price of 57.07$ with hope of it increases to 58.07$ at the time of completeness and Oil LLC buys the contract, this is called as Long position. If the market provides the output a firm has aimed, the value of the contract is high for them as it gives gain to company after the contract maturity. According to Inkpen and Moffet the value provided by this contract can be calculated as:

Value = Contract principal * (Spot price – Future price)

= 100*(58.07-57.07) =100$

We can say, that the value this contract brings to company is 100$ and is profitable for the party purchased the contract. Price changes play a huge role on the future market, as it is decisive factor for the firm to get profit as desired from the beginning of signing the contract. Otherwise if market suffers with dropping down the prices, the value of the contract will go down as well. Assuming Oil LLC company considers the price to drop down from 57.07$ to 55.07$ at the maturity date. In this situation Oil LLC company will sell the futures contract and will make a short position on the market. For Oil LLC company, the futures contract value will be calculated:

Value = Contract principal * (Spot price – Futures price)

Value = -100*(57.07-55.07) =100$

As we see company in both cases got the same value of 100$. The company will gain the money from this transaction. These 2 examples demonstrate the difference between Long and Short positions. This price changes allow Oil LLC to get profit with selling crude oil in the future with successfully determined prices, with it dropping down or going up. (Inkpen, Moffet, 2011)

NYMEX and exchange platforms allow traders to include deliveries while signing the futures contract. But as different sources inform us, exchange market includes excessively small amount of contract which includes deliveries. But in my work, I would give some insight how the future prices become physical prices while delivery will be agreed upon contract. NYMEX futures contracts are traded every month for 18 months. The parties trading on future market may agree of deliveries after future contract maturity. At the same time futures prices are directly connected to prices on physical market. Future contracts which are still tradable will lead to delivery. Usually, one party offers delivery in the contract or both parties together with help of agent or independently agree to deliver the product. Used spot price, meaning, delivery price is the price amount agreed on the date of futures agreement but not at the date of actual delivery. Including deliveries in the contract makes future contract more flexible as if parties make a beneficial agreement between each other. But logically delivery can be more enough for the party gets the product after futures maturity. In such situation, a company does not have to search for other companies which can complete the transaction. But as said, this option should be beneficial for both parties, otherwise exchange market gives an opportunity to companies to look for acceptable proposal for them. (Inkpen, Moffet, 2011)

Table 4 – Futures market NYMEX

Month	Options	Charts	Last	Change	Prior Settle	Open	High	Low	Volume	Hi / Low Limit	Updated
DEC 2019	OPT		**57.07**	**-0.17**	57.24	57.40	57.40	56.25	303,395	No Limit / No Limit	10:18:02 CT 11 Nov 2019
JAN 2020	OPT		**57.11**	**-0.15**	57.26	57.38	57.40	56.28	80,149	No Limit / No Limit	10:18:00 CT 11 Nov 2019
FEB 2020	OPT		**56.99**	**-0.11**	57.10	57.22	57.23	56.14	35,227	No Limit / No Limit	10:18:02 CT 11 Nov 2019
MAR 2020	OPT		**56.69**	**-0.08**	56.77	56.77	56.94	55.88	22,102	No Limit / No Limit	10:18:00 CT 11 Nov 2019
APR 2020	OPT		**56.33**	**-0.07**	56.40	56.32	56.56	55.50	10,385	No Limit / No Limit	10:17:54 CT 11 Nov 2019

Source: (CME Group , 2019)

Contract transactions (Options) – According to Downey "Options can be viewed as insurance against the price of oil moving or down and, just as with insurance, an upfront premium payment is required from the option buyer to the seller. The formal definition of an oil option is that an option is the right but not the obligation to buy or sell oil at a set price in the future. On other words, you have an option whether to buy or sell oil at a set price in the future." (Downey, 2009)

The options are the most common transaction type on oil market. To better understand how options market work, see the example. Market consists of 2 parties, buyers and sellers. The option buyers always have right to buy or sell the oil at specified price on the future date. We need to pay attention that it gives right but not obligation to option buyers just as it is an obligation for option seller to buy or sell the product. This is because contract sellers have the right to write the conditions on the paper and then sell it. For instance, if you buy option which you return if oil price goes above 90% then you have right to buy or sell the product, but if it does not payoff then you can just not transact the contract. Comparing it with swaps and futures, once the agreement is achieved it does not give any option to anyone to quit from the deal. In case of Swap, if you do not get paid off after oil price goes above 90$ you have not choice, but to fulfill the agreement, same applies to future markets just with different contract conditions.

Option buyer should transact the premium amount within 2 dates after the trade dates. Premium is the amount of money option buyers must pay for buying the contract. Money paid after trade date will not be paid back to buyer unless the return of the contract will not exceed the premium amount. Therefore, buyer hope that the payoff of deal will be higher than premium paid for buying the option. On the other hand, option seller will have unlimited losses despite the premium received as the contract condition fulfillment is the obligation for buyer. (Downey, 2009)

There are 2 types of options on the market: Call and Put option. While defining the options we need to define the strike price. According to Downey "The price at which an option payoff begins is referred to as the strike price. (Downey, 2009) Let's describe both separately. Call option – It is related to buying the product. When the party is a purchaser of deal with right of buying the oil. Call option gives the right to buy agreed product with strike price on the specified date. Put option – is related to selling the product. When option purchaser has the right to sell a product at the strike price on the specified date. The difference between these deals is that call option is when option purchaser buys the product while in case of put option the owner sells the product. (Downey, 2009)

I would like to include an example of option transaction to better understand the concept:

- Call options – Assume, oil option price agreed is 110$ and premium paid by buyer is 5$. If at expiry date oil price goes up more than 110$, option buyers have a chance to pay off the premium amount or even get more money.
- Put option – Assume, oil price agreed is 90$ and premium paid by buyer is 5$. If at expiry date oil price goes up more than 90$, option buyer will lose the money, as they must sell the product with less price than market price. In this case, if exists better condition, they would rather quit from deal and sell the oil on better terms. While option seller will get a premium amount.

Very important part while discussing oil and gas industry is finding the customers. It is crucial to find a final customer for oil and gas producer companies otherwise it will just increase their reserves and will decrease the value of company in the eyes of shareholders. On oil market, the producers have not control over dictating or controlling the oil and gas prices, because as discussed above prices are set by supply and demand and volatile in time. Oil must be sold and transported to its final customer before the asset will become undervalued.

Oil refiners are the part of transaction who must purchase the crude oil and transfer it to saleable commodity. Sales can be done by the refiners by itself or by specially sales dedicated teams. To make sales by themselves, corporations should create the departments, teams or branches within a corporation, which will support the sales process. They will work on product development and company's selling strategy. Making successful sales require qualified employees and salespeople, who will promote product and company as well. This also requires funds. Otherwise the oil supplier company can choose another option of hiring specialist firms, who already have experience of developing marketing strategy in the field. In that case oil producers, refiners who sell their product to customers do not have to make effort of thinking about sales. Some one of the biggest corporations as BP, Chevron are major oil traders and can sell their products to smaller E&P firms. (Inkpen, Moffet, 2011)

After reading the material, the main characteristic and for me very important thing to better understand the oil options is that seller always have the obligation to buy or sell the product. From my understanding, it is because the option seller acts as a writer of contract. It has right to drop down the conditions of options contract, but at the same time it gives the obligation but not option to fulfill terms. Option buyer can be product seller(put) or buyer (Call). It is risky for option seller to participate in this deal, that is why it requires better market understanding for them. But what happens if the option buyer decides not to buy product? Does that mean the option seller is under risk of keeping the product to themselves? First, option seller gets premium amount and second, they can use other transaction types to sell the product reserved.

Below is the table demonstrating the export and import of oil throughout the years. List contains information about amount of barrel was Imported/exported from 2007 to 2017. As we can see US is the leader on the global oil industry. As the highest importer US hold first place of the list. During these years country imported and exported thousands of barrels on the world market. As numbers are high, country position cannot be surprising for anyone, as United States is the leader in the modern economy. This value tells us a lot about the country. As describe above, Whole oil production process requires strong infrastructure. As said, to be oil producer country it does not require to have leading economy, but to become the first importer and exporter of the worldwide oil market through years without changing the place on the list, it requires very strong economic indicators. The highest amount US imported during this period is 13632 thousand barrels. And the highest amount US exported is 5540 thousand barrels. In terms of Import numbers were changing, increasing or decreasing, what is not visible on the export data. Export numbers were just increasing from 2007 until 2017. Yearly growth rate for import from 2006-2016 is -3.0%, while in 2017 it increased to 14.9%. Export yearly growth rate from 2006-2016 is 14% and in 2017 the number shows 8.2%.

There was not slight change in worldwide import/export from 2006 until 2014, when from 2016 and 2017 it increased significantly compared to previous years.

Table 5 – Oil Export and Import

Barrel per day in Thousands	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Yearly growth rates		
Import												2017	2006-2016	Part 2017
US	13632	12872	11453	11689	11338	10587	9859	9241	9451	10056	**10077**	0.2%	-3.0%	14.9%
Europe	14034	13885	12608	12201	12272	12569	12815	12855	13877	13817	**14060**	1.8%	0.2%	20.8%
China	4172	4494	5100	5886	6295	6675	6978	7398	8333	9214	**10241**	11.1%	9.0%	15.2%
India	2924	3066	3491	3749	3823	4168	4370	4155	4380	4912	**4947**	0.7%	6.5%	7.3%
Japan	5032	4925	4263	4567	4494	4743	4637	4383	4332	4180	**4142**	-0.9%	-2.2%	6.1%
Rest of World	17598	17282	17332	17143	17717	17862	20085	21261	22103	22617	**24125**	6.7%	3.7%	35.7%
Total World	57392	56524	54247	55234	55938	56604	58744	59293	62477	64795	**67592**	4.3%	1.7%	100.0%
Barrel per day in Thousands	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	**Yearly growth ratees**		
Export												2017	2006-2016	part 2017
US	1439	1967	1947	2154	2495	2682	3563	4033	4521	4873	**5540**	13.7%	14.0%	8.2%
Canada	2457	2498	2518	2599	2798	3056	3296	3536	3836	3887	**4201**	8.1%	5.3%	6.2%
Mexico	1975	1609	1449	1539	1487	1366	1347	1293	1323	1376	**1279**	-7.1%	-4.1%	1.9%
S. & Cent. America	3570	3616	3748	3568	3755	3830	3790	3939	4107	4144	**3993**	-3.6%	1.2%	5.9%
Europe	2305	2086	2074	1949	2106	2193	2578	2512	2968	2966	**3281**	10.6%	2.8%	4.9%
Russia	7827	7540	7257	7397	7448	7457	7948	7792	8313	8354	**8611**	3.1%	2.1%	12.7%
Another CIS	1538	16800	1790	1944	2080	1848	2102	2012	2021	1847	**1974**	6.9%	3.5%	2.9%
Saudi Arabia	8101	8357	7276	7595	8120	8468	8365	7911	7968	8515	**8238**	-3.2%	0.2%	12.2%
Middle East	12198	12415	11744	11976	12188	11742	12242	12699	13537	14950	**15680**	4.9%	1.8%	23.2%
North Africa	3341	3268	2943	2878	1951	2602	2127	1743	1701	1697	**2155**	27.0%	-6.3%	3.2%

West Africa	4961	4712	4531	4755	4759	4724	4590	4849	4880	4396	**4470**	1.7%	-0.9%	6.6%
Asia Pacific	6004	5392	5631	6226	6088	6299	6307	6450	6780	7297	**7641**	4.7%	4.8%	11.3%
Rest of World	1675	1385	1340	653	663	338	491	524	525	494	**528**	7.0%	-9.6%	0.8%
Total World	57392	56524	54247	55234	55938	56604	58744	59293	62477	64795	**67592**	4.3%	1.7%	100.0%

Source: BP Statistical review of world energy (BP, 2019)

Finally, Understanding and analyzing the trends going on Oil market is crucial to create better picture of Energy industry, as one of the leading fields in world economy. From the beginning of the chapter I was trying to describe what triggers price set up on the market. Was said, that first and the main factor of price determination is the characteristic of Oil, what type of oil we consider, what is quality and other factors. There are a lot type of crude oil and every of them have different nature. Crude oil type, which is used to produce more valuable products as gasoline and there are crude oil types which are used to produce fewer valuable products. As usual process in economy, prices are also connected to supply and demand. Changes in both gives us the clear picture of the situation on energy market. But at the same time, Oil demand is less sensitive with price changes than other commodity products, because of its unique nature and usefulness. During many years, oil price change could not affect hardly the demand, because it has been very hard to substitute this product. The most useful machines, vehicles, jets, cars, planes are running on fuel. Nowadays, technological development offers us all those machines to run without fuel or gasoline, as based on electric energy.

Other part was dedicated to analyzing the most common oil market, commodity transactions as Swaps, Futures, Options contracts. How the prices of contracts are created, the role of price change expectations in decision-making process to buy/sell contracts or participate in exchange market or not at all. Those exchange markets provide transparent price list history to carry out successful investigation to deepen investment capabilities. These markets totally make trade process faster, easier once the contract details are provided. And helps trader parties to make profit based on the contract agreements, what is mostly determined by price volatility.

Chapter 3. Oil Transportation and Financial Analysis of shipping company

1.1 General overview of oil transportation

Oil transportation process is important part of oil value chain. After crude is extracted from wellhead, it needs to be transported to refinery, from where crude oil is transformed in useful commodity which can be supplied to the final marketplace. But to provide from refinery to final customer for further purchase and usage it also needs to be transported safely. Mentioned safety, because oil is very sensitive product that requires attention to avoid damage. Overviewing the process, it is convincing for us that transportation process takes very important process of crude oil production process. Oil can be transported by tanker, truck, pipeline, train.

Oil transportation can be attributed to challenges and difficulties due to political factors, geopolitics or to its hard-to-reach nature as wellheads have mostly inconvenient locations. According to Inkpen and moffet, the challenges associated to oil transportation can be demolished:

- Distance. The distance course the mode of crude oil movement. It has been stated that, short distance transportation is performed by trucking, medium size is by barge or train, and the long-distance transportation is done by tanker or pipeline. Below we will make financial analysis of Teekay, leading shipping company possessing the largest tankers for crude oil transportation.
- Geopolitics and ownership. As mentioned above geopolitics plays a big role in transportation process as hard-reachable wellhead needs to be accessed, from where oil can be moved to the appropriate place. Many organizations, corporations, firms, state authorities are involved in this process.
- Environmental safety and security. Crude oil transportation requires big attention and caution as because of its burning nature. In the history of oil transportation there were accidents of supertankers, railways, exploded pipelines and others. All this requires a high standard of security and safety to avoid dangerous consequences.
- Impact on price and producers. We specified in previous chapters that oil transportation has impact on price determination. Oil producer price is determined by deducting the transportation cost from its refinery price. The lower is transportation cost more benefit gets one of the crude oil transaction party. It depends which side decides to make transportation, seller or crude oil buyer. For example, if crude oil buyer decides to perform transportation with low price, it will be beneficial for buyer. If crude oil seller decides to transport in lower

price, then it is beneficial for seller as they can perform the transportation in lower price and can get advantage of it in price determination.

As said above, long-distance transportation is realized with using oil tankers by shipping corporations. Usually, these companies possess ships as known tankers or supertankers with professional employees which provide transportation service to oil producers and refiners. After overviewing oil industry, below in the next subchapter I would like to pick one of the largest shipowners, Teekay corporation to provide readers a general overview of company's business and make detailed financial analysis.

1.2 Financial Analysis of Teekay Corporation

Teekay corporation is one of the largest shipowner company in the world with headquarter in Hamilton Bermuda. The company was established in 1973 and developed from regional shipping company to the world's largest marine energy transportation, storage and production companies. The company specialize in crude oil, LNG and LPG tankers and based on its several subsidiaries provides the energy where it is needed. The vision of the company is "Bringing energy to the world with Teekay Spirit", very interesting fact about the shipping part for me was that all crude oil tankers are named with Spirits, for example Athen's spirit. The Values of the company is "Safety and Sustainability – Safety first", "Passion – We love our spirit", "Integrity – We do what is right", "Reliability – we deliver", "Innovation – We embrace change", "Teamwork - We are team players". From the values and vision, we can see how responsibly and seriously corporation is looking to the business they do.

The company carries out its business activities in the Transportation and Logistics industry, which is nowadays very competitive place to be, especially when it is related to crude oil transportation.

In this chapter our goal will be to provide financial analyze of Teekay Corporation. To achieve my goal will be needed to provide information regarding:

1. Balance Sheet

2. Income Statement
3. Cash flow statement

These 3 financial statements are mostly used to provide financial picture of a company to investors. For this reason, companies, especially large corporations make annual reports every year to provide information to external users how a firm can stay financially healthy. This information is available on corporations' webpage and can be found in the exchange market related database. The fact that many companies operate on the exchange market nowadays for them to keep reporting is crucial as it may have a huge impact on their performance on financial market. Investors usually make their decisions based on analyzing financial statements, particularly purchasing company's stocks, shares. That is why, in the developed economies, governments require from companies to provide exact financial positions of a company to save investor's interests, otherwise the exchange market will become subject of the speculation which will not end up successfully for neither party and finally it will affect economy as well. After understanding the statements and relating it to corporation we will be able to provide further financial ratios:

1. Profitability ratios
2. Efficiency ratios
3. Liquidity ratios
4. Leverage ratios

Balance Sheet – According to McLaney the balance sheet is a statement of the financial position of a business at a specified point in time and helps to set out financial position of a business. Balance sheet is great tool to understand how the company is stable as it describes company's ownership in numbers. Usually company needs funds, assets to perform the business activities while claims are great source of getting assets. To be more specific, balance sheet is divided by one side Assets and other side Claims as equity and liabilities. On the one hand assets are good for business while claims are against the business. To understand it better we need to describe how the assets and claims are structured and what are their characterizes.

Assets – An asset is essential resource held by a business. To consider something as an asset it must be have following characteristics:

- It must have probable future benefit. Anything which is considered to provide some future benefits to company can be considered as assets. For example, equipment which is used in production is asset, because it is used to produce other products which can help in sales and increase the revenue of a company. Also, equipment can be sold anytime it is needed which is source of income for the company. (Atrill & McLaney, 2006)
- The firm must have the right to control resource. Business cannot consider resource as an asset unless it does not have access to it any time. For example, for shipping companies for operation they need to use ports, where they will be able to perform their activities, which is very valuable resource. But the port cannot be considered as their asset as it is not in their direct ownership, while ship is included in this part. (Atrill & McLaney, 2006)
- The benefit should come from some past transaction. The item can be considered as an asset if business already holds the right to use the one. Planned purchase of some resource in the future cannot be considered as asset now as this item does not give any value to the company for now. It can be considered as an asset after it becomes under the business right and is able to provide some value to the company. (Atrill & McLaney, 2006)
- It should be available to measure item in monetary terms. This is very important characteristic for asset. The financial position of a business is shown in numbers and to make measurement more specific and understandable it needs to be specified in currencies as monetary terms. For example, if a company owns ship, it needs to be valued in currency financial position is set, that can be foreign or local currency. Which currency to use is depended on what is the scope of the business. For example, large corporations which incorporate on exchange markets, mostly make their calculations in USD or in EUR as because for investors, or other parties it is easier to access and understand the value of the company. While some companies may choose to make their asset value calculations in local currencies.

Asset does not need to be physical item, it can be also non-physical item, that's is why balance sheet creator uses tangible and intangible asset. "Assets that have a physical substance and can be touched are referred to as Tangible asset. (Atrill & McLaney, 2006) "Assets that have no physical substance but which, nevertheless, provide expected future benefits are referred to intangible assets" (Atrill & McLaney, 2006)

Assets are classified as Current and Non-current. Atrill and McLaney defines current asset as "Assets that are held for the short term". To consider something as current asset for the company it needs to meet following 4 criteria:

1. It serves the operating cycle. Operating cycle is considered as short-term sale or consumption.
2. It is short term. Mostly, in short-term is meant under 1 year of possession.
3. It is for trading.
4. They are cash or cash-equivalents, characterized with short-term investments. (Atrill & McLaney, 2006)

While non-current assets are assets that do not meet the criteria described for current assets. They are held for long-term use.

Claims - "A claim is an obligation of the business to provide cash, or some other benefit, to an outside party". We say to an outside party, because most of resources for company is found from its outside providers, it can be cash, funds and other benefits. Outsiders are shareholders, banks, investment companies, funds who possess resources and can give access to funds to different companies for operation. Funds are given with condition of its future benefit. For example, when shareholder decides to invest money in certain company's capital, he is expecting the benefit from this company to receive from the profit generated. Same applies to banks when they give loans to businesses, they give out money with expectation that debtor will pay some interest during agreed duty period. (Atrill & McLaney, 2006) Claims are represented with equity and liability:

- Equity – "This represents the claim of the owner(s) against the business". But how owner can have claim against the business? To answer this question, it needs to be agreed that Owner and business is two separate party. When financial statement is prepared, it is not created for owner but for business and resources contributed by owners are appeared as claims on balance sheet. It also referred as owners' capital in the firm. After owner's contribution to the firm, the one is waiting for some benefit from business to provide as it can be dividends, share from profit and other. (Atrill & McLaney, 2006)

- Liabilities – “Liabilities represent the claims of all individuals and organizations other than the owner.”. Liabilities are got from past transactions as supplying goods or lending money to the business. (Atrill & McLaney, 2006)

In general, preparing balance sheet is related to different challenges. The most importantly it needs to follow generally accepted rules to keep reliability of the statement of a company’s financial position. There are several rules for keeping reliability. With the help of McLaney I will try to list and describe must follow rules in accounting for balance sheet creators:

1. Business entity convention – As mentioned above, the owner and the business entity must be distinguished from each other. The statement of financial position is prepared for an entity itself and the accounts related to owners should be included in the balance sheet. (Atrill & McLaney, 2006)
2. Money Measurement convention – Said above, the assets and everything which is under the company’s possession and place on balance sheet must be reflected and measured in currency. (Atrill & McLaney, 2006)
3. Historic cost convention – While preparing balance sheet, through historic cost convention assets are shown on the balance sheet at a value that is based on their historic cost. A lot of balance sheets are prepared when specifying historical cost of included assets. While some people consider recording historic costs of assets difficult to measure and instead, they prefer to choose current cost of the assets. (Atrill & McLaney, 2006)
4. Going concern convention – This concern holds the idea that business which prepares balance sheet will continue operations in the future for forecasted period. If business makes transaction that puts this convention under suspicion, for example selling out non-current assets without reasonable explanation must be included in the balance sheet. When business sells out non-current asset and pays out short-term debts it shows that a firm is not in good shape. While all these transactions are recorded on the balance sheet, it will be easier for statement reader to understand the trends going around the business. (Atrill & McLaney, 2006)
5. Dual aspect convention – This convention states that each transaction has two aspects. When buying some equipment asset may increase, but cash will decrease. It is also called as double-entry bookkeeping. (Atrill & McLaney, 2006)

6. Prudence convention – States that financial statements should be prepared in accordance with surrounding events that will affect the business transaction. Every current or future loss caused by some transaction must be recorded on the balance sheet. For example, if business buys goods with the purpose of reselling it with higher price in the future, but the value of goods will decrease in time, the prudence convention requires a business to record the loss immediately, but not after the transaction is completed. Profits on the other hand are not recognized until it is not realized. This convention protects balance sheet from overstatement as because of owners' optimism. (Atrill & McLaney, 2006)
7. Stable monetary unit convention – "Holds that money, which is the unit of measurement in accounting, will not change in value over time.". This convention tries to make sure that value of the money will not fluctuate widely in the future as it will directly affect the assets measure in curtain currency. Inflation can be one of the reasons of decrease or increase in value of currency. (Atrill & McLaney, 2006)

Balance sheet is based on the following calculation:

Assets = Equity + Liability

After describing the structure and characteristics of balance sheet we need to move in analyzing financial position of Teekay corporation (Currency used is $USD in thousands).

From 2016 to 2017 there is eye-catching fall in total assets of a company from 12,814,752$ to 8,092,437$. During this time decrease could be seen in both current and non-current assets at the same time. Current assets fall from 1,281,434$ to 832,711$, non-current assets from 9,138,886$ to 5,208,544$. Cash and Cash equivalents and accounts receivable takes very big part of the balance sheet as cash equivalents and decrease in these two lines make a big difference. From 2016 to 2017 accounts receivable line was decreased by 135 498$, which means that company had a good collection period or smaller amount of goods were sold in credit. But interesting thing which captured my attention was that, despite account receivable was decreased, instead of increasing cash it was decreased from 567,994$ to 445,452$. The first assumption can be made from this is that company tried to pay out its liability. After checking liability list on the balance sheet I could see that total current liabilities, which are mostly related to loans and interests paid was decreased from 1,646,460$ to 1,364,932$ and total liabilities decreased from 8,476,357$ to 5,212,781, from my understanding, I would say that the corporation used its cash received from debtors to cover their current liabilities. Same applies to restricted cash, which was changed from 107,672$ to 38,179$. From 2017 to 2018 there was not big change in total assets as it was from 2016 to 2017 as it increased from 832,711$ to 898,021$. (Teekay Corporation, 2019).

Table 6 is very good illustration of changes in assets and liabilities through these 3 years. yearly reports show that numbers significantly changed from 2016 to 2017. During this year company settled most of its current and long-term liabilities by decreasing its assets and significant decrease of its equity and as discussed above through using cash collected from receivables. As it seems in 2017-2018 company's main goal was to pay out current liabilities as it decreased from 1,364,932$ to 686,129$ while current assets were increased. There was not any big change in company's equity. From 2016 to 2018 company used its asset to pay out their liabilities, which lead to also decrease total equity of a corporation.

Table 6 – Balance Sheet of Teekay corporation**,** Annual reports

	2016 (USD, in thousands)	2017 (USD, in thousands	2018 (USD, In thousands)
Current Assets	1,281,434	832,711	898,021
Long term assets	11 533 318	7 259 726	7 493 649
Total Assets	12,814,752	8,092,437	8,391,670
Current liabilities	1,646,460	1,364,932	686,129
Long-term liabilities	6 829 897	3 847 849	4 838 513
Total Liabilities	8,476,357	5,212,781	5,524,642
Total Equity	4,089,293	2,879,656	2,867,028
Total Equity and liabilities	12,814,752	8,092,437	8,391,670

Source: (Teekay Corporation, 2019), Teekay corporation Annual reports

Income Statement – Even though income statement and balance sheet are interrelated both statements show different aspects of the firm. If balance sheet is the illustration of financial position of the business income statement deals with the flow of wealth into the enterprise. A statement of showing wealth is measurement of how much revenue company has accumulated during curtain period and what was the cost of the activities from which the revenue arises. To say shortly, Income statement shows us the revenue and cost generated in specific period. According to McLaney and Atrill "The purpose of the income statement – or profit and loss account, as it is sometimes called – is to measure and report how much profit (wealth) the business has generated over a period". Gross profit is got after cost deduction from revenue. If revenue is higher than cost occurred in the specified period that means the company accumulated profit, otherwise if cost is higher than revenue company has loss over a period.

Revenue can be generated by different ways as sales of goods, fees of services, interest received, while cost is opposite of revenue and represents the outflow of benefits from the company. This outflow might decrease assets or increase liabilities which will finally affect the profit of the organization. Cost can be raised from sales or cost of goods sold; salaries and wages; rent and rates; insurances and other.

Table 7 is income statement illustration of Teekay Corporation through years 2016-2018. The table contains main lines of income statement with the help of income statement structure. As we agreed above the main part of the statement is Revenue and Expenses, from which is calculated gross and after net profit.

Table 7 – Teekay Corporation income statement (At the end of year, USD, In thousands):

	2016	2017	2018
Revenues	2,328,569	1,880,332	1,707,758
Vessel expense	(1,944,279)	(1,873,632)	(1,543,439)
Income from vessel operations	384,290	6,700	164,319
Interest expense	(282,966)	(268,400)	(254,126)
Interest income	4,821	6,290	8,525
Realized and unrealized losses on non-designated derivative instruments	(14,852)	(38,854)	(35,091)

Equity income (loss)	61,054	(37,344)	85,639
Foreign exchange gain (loss)	6,140	(26,463)	(6,548)
Loss on deconsolidation of Teekay Offshore	(7,070)	(104,788)	-
Other loss	(2,013)	(53,981)	(39,013)
Net (loss) income before income taxes	(38,023)	(516,840)	111,132
Income tax expense	(19,724)	(12,232)	(24,468)
Net (loss) income	(57,747)	(529,072)	86,664
Net (income) loss attributable to non-controlling interests	(21,490)	365,796	(209,846)
Net loss attributable to shareholders of Teekay Corporation	(79,237)	(163,276)	(123,182)

Source: (Teekay Corporation, 2019), Annual reports.

Starting from the beginning revenue over 3 years have been decreasing since 2016. Operating revenue reduction in 2016-2017 was higher than 2017-2018. The main source of expense for company is related to vessels: operating expenses, amortization, general and administrative expenses and others. During 2016-2017 vessel, related expense reduction was lower than revenue reduction, which helped company to show positive value of income after vessel expense in 2017 with amount of 6,700$. In 2018 Teekay gained lower revenue than in 2016, 2017 with amount of 1,707,758 what is 172 574$ less than in 2017 and 620 811 less than in 2016. While income after vessel expense in 2018 was 157 619 less than in 2017 and 219 971 less than in 2016. Numbers tell us that 2017 year was not so successful from vessel operations. The income generated this year was not high, but at the same time company accumulated high vessel expense which decreased company's operating income. Next part of income statement is related to show non-operating income (loss) during specified year. In 2018 company did a good work to keep positive their net income before tax, which was negative in the previous year's even though in 2016 income after operating costs was higher than in 2018. Finally, in these 3 years company in 2018 had positive Net income after tax than in previous 2 years, that says us that in 2018 a firm well-managed with its revenues and expenses. That means that in this year company is well-prepared with its liabilities to shareholders than in 2017 and 2016.

Cash flow statement – Cash Is king. "The cash flow statement is, in essence, a summary of the cash receipts and payments over the period concerned, all payments of a particular type, for example cash payments to acquire additional non-current assets or other investments, are added together to give just one figure that appears in the statement" (Atrill & McLaney, 2006). Cash flow statement shows to statement reader the inflow and outflow of cash during specified period, mostly at the end of the year. Cash flow statement is considered as very important financial measurement as cash is crucial factor to keep business operations. Shortly, cash flow consists of 3 parts: cash flow from operating activities, cash flow from financing activities and cash flow from investing activities.

Table 7 – Cash flow statement of Teekay corporation (In USD, In thousands)

	2016 (USD, Thousands)	2017 (USD, in Thousands)	2018 (USD, Thousands)
Net operating cash flow	676,546	544,264	182,135
Net financing cash flow	(195,610)	284,309	434,786
Net investing cash flow	(663,456)	(1,081,641)	(530,523)
Decrease in cash, cash equivalents and restricted cash, end of the year	(49,587)	(253,068)	(46,535)
Cash and cash equivalents and restricted cash, beginning of the year	854,829	805,242	552,174

Cash, cash equivalents and restricted cash, end of the year.	805,242	552,174	505,639

Source: (Teekay Corporation, 2019), Annual reports

Net operating cash flow – In 2017/2018 company had significant reduction of operating cash flow, even though statement shows that company in 2018 started with -57747 USD loss than in 2017 529072 USD. This event was caused because non-cash related operating expense was lower in 2018 than in previous year and the amount added back to revenue which was copied from income statement was not high enough. at the same time non-cash related income was reduced during this time.

Net-financing cash flow – Conversely, Company's Net finance cash flow looks better started from 2016 to 2018 as from -195610 USD it has been increased to 434,786 USD year by year. As company's cash flow statement states positive change related to cash inflow was caused by decreased expense from long-term and vessel related financings. Other financial activities as dividends paid have not so big influence on number improvement.

Net investing cash flow – As we can see on Teekay's cash flow statement during last three years cash outflow from investing activities was highest in 2018 with (1,081,641 USD) amount. Higher cash outflow was related to investment in expenditures and vessels and equipment. On the one hand this investment activity decreased cash held by company, but this also is considered as investment in the company which is probable investment in future revenue at the same time. In 2018 as in 2016 company did not invest as high amount as it did in 2017 to vessels and equipment on which are based most of the company's activities.

Finally, after comparing these 3 years we can see that from 2016 to 2018 cash held by company was decreasing. There were several reasons of what caused cash outflow during this period which were mentioned in the analyzing section. The main cause of decrease in cash outflow was reduction of operating cash inflow what happened in 2018 what was caused because of reduced non-cash related expenses added-back to revenue. In 2017 the main reason of this reduction was company's investment strategy to put money in their tangible assets which are the main source of the company's future revenue. During these 3 years we cannot see any bad decision made by company which caused the revenue reduction. Conversely the main reasons for cash outflow was the money invested in revenue generating assets for future purposes and in 2018 reduced non-cash related expenses. From this analyzes we can say that following years in cash flow forecasting should be better if during this period company has not made any decision caused reversed outcome.

After analyzing financial statements, it is good time to put out effort in analyzing company's financial ratios, to measure and understand better how company was performing during this period.

Profitability ratios – "Profitability ratios provide an insight to the degree of success in achieving this purpose" (Atrill & McLaney, 2006). In this section we will use 4 profitability ratios in 2018 to better describe how business was managing to use their assets to generate high profit most recently.

- Return on shareholder's funds

$$ROSF = \frac{Net\ profit\ after\ taxation\ and\ preference\ divideng}{Ordinary\ share\ capital\ plus\ reserves} \times 100$$ (Atrill & McLaney, 2006)

$$ROSF = \frac{-79{,}237}{(2{,}867{,}028+2{,}879{,},656)/2} \times 100 = -2.7\%$$

In 2018 company got loss from its operating activities, which is reflected in this ratio. Teekay's operating activity was not profitable in 2018, this information of course is not attractive for owners and investors as this creates the picture that company is not profitable and cannot meet the needs of investors. To better understand what caused negative influence on ROE we should calculate other profitability ratios.

- Return on capital employed:

$$ROCE = \frac{Net\ profit\ before\ interest\ and\ taxation}{Share\ capital + Long\ term\ loans} \times 100$$

$$ROCE = \frac{-38{,}023}{8{,}092{,}437 + 8{,}391{,}670} \times 100 = -0.4\%$$

Similarly, with ROSF, ROCE is very low and even negative as income generated before tax by company was negative in 2018.

- Net profit margin:

$$Net\ profit\ margin = \frac{Net\ profit\ before\ interest\ and\ taxation}{Sales\ revenue} \times 100$$

$$Net\ profit\ margin = \frac{-38{,}023}{1{,}707{,}758} \times 100 = -2.2\%$$

In 2018 company was not able to generate the profit. Very unattractive picture for investors.

- Gross profit margin:

$$Gross\ profit\ margin = \frac{Gross\ profit}{Sales\ revenue} \times 100$$

$$Gross\ profit\ margin = \frac{164{,}319}{1{,}707{,}758} \times 100 = 9.6\%$$

After gross profit calculation is visible that company's ability to catch up with their costs is very low. We got negative ROE, ROA, net profit margins because the income generated by company during year was not in proportion of costs company got from their yearly activity. To improve these ratios for next year, it is crucial for company to reduce their costs or if it is not possible, they need to increase their income as much as possible for healthier financial ratios. From all this information we can say that company's profitability in 2018 was not good. If this tendency will continue it will have bad impact for company on financial markets and it will become unattractive for investment as investor's main goal investing their money in company is to gain as much profit as possible.

Efficiency ratio – "Efficiency ratios examine the ways in which various resources of the businesses are managed" (Atrill & McLaney, 2006). To avoid providing incorrect information we would not include the payable and inventory turnover ratio analyzes as exact information cannot be found on financial statements for formula calculation. This is because of company's specific business activities.

- $Average\ settlement\ period\ of\ receivable = \frac{Trade\ receivables}{Credit\ sales\ revenue} \times 365$

$Average\ settlement\ period\ of\ receivables = \frac{174{,}031}{1{,}707{,}758} \times 365 = 36{,}5$ (In 2018)

This number of 36.5 days for collecting the receivables is not a bad figure. Company somehow manages successfully to collect the money, which leads us to think that company has quite enough strict collection strategy which ensures the cash inflow for the company, which is very important indicator on corporations' activities.

- $Sales\ revenue\ to\ capital\ employed = \frac{Sales\ revenue}{Share\ capital+reserves+non-current\ liabilities}$

$$Sales\ revenue\ to\ capital\ employed\ ratio = \frac{1{,}707{,}758}{8{,}391{,}670 - 686{,}129} = 0.22\ times$$

Below we will calculate the same ratio for Teekay's main competitor Gaslog to better understand how effectively company operates on the market:

$Sales\ revenue\ to\ capital\ employed = \frac{618{,}344}{5{,}174{,}807-669{,}405} = 0.13\ times$ (Gaslogltd, 2018)

Teekay corporation had higher revenue on assets than its main competitor, that means that Teekay corporation in 2018 was more effective on the market with getting higher revenue than Gaslog and they used their assets better than competitor. In this case Teekay corporation is more attractive for investment than Gaslog.

Liquidity ratio – "Liquidity ratios are concerned with the ability of business to meet its short-term financial obligations" (Atrill & McLaney, 2006). In this section we will calculate Current ratio to better understand how company is able to settle short-term obligations. Acid ratio calculation for Teekay corporation is hard and, in this section, we should avoid the calculation for not making any mistake in numbers. Acid test ratio uses same formula as current ratio with one difference that inventories are deducted from current assets in the same formula as below. Calculation of acid test ratio would be effective for manufacturer companies when they have high levels of inventories, but Teekay corporation mainly deals with crude oil transportation service, which makes hard to determine whether corporation keeps/have inventory or not.

- $Current\ ratio = \frac{Current\ assets}{Current\ liabilities}$

  $Current\ ratio\ in\ 2017 = \frac{832{,}711}{1{,}364{,}932} = 0{,}61$

  $Current\ ratio\ in\ 2018 = \frac{898{,}021}{686{,}129} = 1.31$

The ideal ratio for all business is 2, but as all business differ from each other every type of business may have different ideal ratios. In 2018 a firm had a significant reduction of total current liabilities and a bit increase in total assets, which resulted in higher ratio in current year than previously. Balance sheet shows us that main reason this ratio looked better in 2018 was the reduction of "Current portion of long-term debt" line. In 2018 company was stronger to deal with its current liabilities than in 2017, which is a good sign of firm's healthy operations.

Financial gearing ratios- "Financial gearing occurs when business is financed, at least in part, by borrowing instead of by finance provided by the owners (the shareholders) as equity". (Atrill & McLaney, 2006). In his section to get better understanding of the borrowings company have we will calculate following ratios: Gearing ratio and interest cover ratio.

- $Gearing\ ratio = \frac{Long\ term\ (non-current) liabilities}{share\ capital+reserves+long+long-term\ liabilities} \times 100$

$$Gearing\ ratio = \frac{4{,}838{,}513}{2{,}867{,}028} \times 100 = 168{,}7\%\ (in\ 2018)$$

$$Gearing\ ratio = \frac{3{,}847{,}849}{2{,}879{,}656} = 133{,}6\% \text{ (In 2017)}$$

Gearing ratio from 2017 to 2018 was increased. Meaning that the proportion of long-term liabilities to its capital was increased as well. From the numbers we can also see that during this period change in equity was not high, while company increases long-term liability in their funds.

- $Interest\ cover\ ratio = \frac{Operating\ profit}{Interest\ payable}$

$$Interest\ cover\ ratio = \frac{164{,}319}{254{,}126} = 0.64\ times\ (In\ 2018)$$

$$Interest\ cover\ ration = \frac{6{,}700}{268{,}400} = 0.02\ times\ (in\ 2017)$$

This ratio measure how company can cover their interest from their operational income. It also determines how company is stable for lenders. We can see that the company does not perform well in that case, as operating profit in both years was less than interest company must pay out to lenders. In 2018 the ratio is better but still is very low. This picture may create difficulty for business to access the funds in the future from its lenders.

Summary

1. Global energy industry has very important place in the world economy. The industry has been developing through many years started from mostly 20th century and still has very big place in countries' economy. Beside economic factors it has political load if we look at the recent history. The main tendency during last decades of oil and gas industry is increasing oil consumption of China and India as it was recorded in our table 5. Particularly 2006-2017 oil consumption in China has been increasing from 7.8 Million to 12.8 Million barrels per day and comprises 13% of world consumption. In the same the consumption in India increased from 2.9 Million barrels to 4.7 Million barrel what is 4.8% of world's oil consumption. Correspondingly, in the list of large oil corporations are represented 2 Chinese company: Sinopec, which revenue in 2002-2018 years was increasing from 44 to 414 billion USD and PetroChina's revenue from 32 to 280 billion USD.
2. The main tendency of oil and gas industry in 21st century is better correlation difference for oil companies of developing countries as: Saudi Arabico (Saudi Arabia), Petroleos de Venuezuela S.A (Venezuela), PetroChina (China), Petrobras (Brazil).
3. The price of crude oil is directly connected to the global financial and political situation. At the same time price of crude oil determines the variability of oil corporations' revenue. In last decade, there were 2 time-periods when price of crude oil was fallen. From 2003 until 2008-2009 crude oil price was increasing significantly and it reached to 97.26$, but in 2008, suddenly the price eased to the point of 2003. The main reason was the global economic and financial crisis happened in 2008, where financial markets collapsed, and economies found hard to recover without successful governments' intervention. Financial market collapse was followed by recovery process starting from 2009 to 2013-2014. In this period Crude oil prices were increasing with high speed, because of economic development trends going in high population countries as China and India which lead to increased demand of crude oil. But after 2013-2014 sudden drop of demand in these countries caused big reduction of global crude oil demand, while supply of crude oil became excessively high than demand. Abovementioned process decreased oil value which also affected the multinational oil corporations and oil exporting countries.
4. The revenue of leading shipping company Teekay Corporation is closely related to the situation in global economic and energy industry. Particularly in 2003-2008 years as the size of crude oil market was increasing the revenue of Teekay corporation was doubled and reached to 3.2$ Billion. During economic downturn in 2008-2009 revenue was decreased to 2.1 Billion. Reducing tendency continued until 2015 when revenue reached up to 2.5$ billion. Surprisingly historical maximum of revenue generation company got at the end of 2008 during the process of global economic collapse, but at the same year company finished with historical loss with amount of 500$ Million due to highly increased operational and financial costs.
5. In the latest 2018 year the financial ratio shows us that Teekay corporation, even though is leading crude oil shipping company, is not attractive with its profitability as company finished on the loss. The main reason for negative profitability ratios is connected to high expenses with what is characterized the company. The main challenge for shipping

companies are the vessel related expenses, which is extremely high compared to the revenue shipping company generated. To increase the profitability of the company is needed to generate high revenue, what is mostly related to 2 factors: 1. Company's ability to be competitive in the industry and 2. Market providing competitive opportunities to the company. After comparison of previous years, we can see that company is able to generate high revenue (with some fluctuation in numbers) but is not able to control operating expenses. How to increase the revenue in proportion of expenses occurred during operation is one of the main challenges for shipping companies.

6. Sales revenue generated by Teekay Corporation and Gaslog Was not in proportion of assets they possess, which showed us that both of corporations are not successfully able to gain as much revenue as possible from their assets. Teekay corporation has 0.22 ratio while main competitor Gaslog had 0.19 sales revenue to capital employed ratio. This may say us that Shipping corporations are not able to use well the assets to generate higher revenue or it can be the indicator that the marine industry requires assets to operate on market but cannot promise companies as high revenue as holding the assets.
7. The main challenge for shipping companies as illustrated on the Teekay corporation's example is vessel related operating expenses, which reduces the revenue generated by company during curtain period and affects net income from operating activities what is interconnected and reflected on financial ratios negatively.

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