

**Czech University of Life Sciences Prague**  
**Faculty of Economics and Management**  
**Department of Economics**



**Bachelor Thesis**

**Crude Oil and Natural Gas in Economics of Kazakhstan**

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### **Declaration**

I declare that I have worked on my bachelor thesis titled "Crude Oil and Natural Gas in Economics of Kazakhstan" by myself and I have used only the sources mentioned at the end of the thesis. As the author of the bachelor thesis, I declare that the thesis does not break copyrights of any their person.

In Prague on

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Darya Smelik

### **Acknowledgement**

First of all, I would like to thank my family who supported me while writing this work. I am very grateful to doc. Ing. Mansoor Maitah, Ph.D et Ph.D, whose mentoring was a crucial element for this thesis.

## **Ropa a Zemní Plyn v Ekonomice Kazachstánu**

### **Souhrn**

Tato práce zachycuje hlavní informace a charakteristické rysy produkce ropy a plynu. Také analyzuje nynější trendy a možné příležitosti pro ropné a plynové odvětví na území Kazachstánu. Tato práce poukazuje na světovou úroveň produkce surové ropy a přírodního plynu, vývozu, dovozu a také historický přehled cenové škály a také, které faktory ovlivňují kolísání.

V praktické části jsou prezentovány hlavní tendence na trhu s ropou a plynem v Kazachstánu. Mimo to postřehy a posouzení literatury poskytuje popis hlavních problémů, které se v dnešní době nachází v těchto odvětvích a také popis jejich možných řešení.

**Klíčová slova:** Přírodní Plyn, Ropa, Kazachstán, Trh, Cena, Tendence, Výroba

## **Crude Oil and Natural Gas in Economics of Kazakhstan**

### Summary

The following thesis shows the main specifics and characteristics of oil and gas production. It also analyses the trends and possible opportunities for oil and gas branches on the territory of Kazakhstan. The thesis shows the world levels of crude oil and natural gas production, exports and imports, as well as, historical overview of price ranges and which factors influence their fluctuations. In the practical part, there are presented the main tendencies on the oil and gas markets in Kazakhstan. Moreover, the observations and literature review provides the description of the main problems that occur nowadays in these fields of interest and their possible solutions.

**Keywords:** Crude oil, Natural gas, Kazakhstan, GDP, Import, Export, Production, Trends, Markets

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## 1 Introduction

The oil and gas industry plays a key role in the economics of many countries as they are ones of the most vital natural resources needed for almost every activity carried out by human beings. Nowadays, the prices of oil have been volatile and it is currently at its all time lowest level. The main factors that might be reasons for such fluctuations are presented in the following thesis. It also presents the main characteristics and specifics of these two industries.

Kazakhstan is a large country bordering such huge world powers as China and Russia that have steady positions on the mentioned markets and provide necessary channels for trade, exports and imports depending on the situation and market demands. Kazakhstan has enormous deposits of oil and gas and has a huge potential for developing these spheres of world interest. Today Kazakhstan is ranked as the 12th in the world in terms of proven oil reserves (30 billion bbl; 1 January 2015 est.); and is on the 15th place in terms of proven natural gas reserves (2.407 trillion cu m; 1 January 2014 est.). In this work, there are presented most important data and statistics regarding crude oil and gas production, exports and imports on the territory of Kazakhstan, as well as, the issues that its government and companies face during the business cycles and what are the possible solutions of these problems.

Speaking about the modern world, it is possible to say that oil and gas are the main aspects of the interest as these two resources are finite and valuable for various industries and day-to-day activities such domestic utilities, car driving and manufacturing other multiple products. From this, it follows that if Kazakhstan manages to develop these branches of industry, it can significantly increase and strengthen its budget, national income and position on the world market. This is followed from the fact that GDP of Kazakhstan is tightly interconnected with oil and gas industries as these branches are the mostly financed and invested products. Moreover, Kazakhstan is the second country for national and international investment flows for oil production and exploitation on the former territory of USSR countries.



## **2 Objectives and Methodology**

### **2.1 Objectives**

The aim of this thesis is to identify and present the characteristics of oil and gas production. Hence, there are shown the main laws and factors that influence supply and demand for these two fields. The author of this work provides the analysis of current trends in these sectors in different geographical zones and compares them to the current situation on national market to show the main driving and restricting factors affecting the level of production, trade, export and import. This information is crucial to distinguish the ways for development and increase of oil and gas supplies from Kazakhstan to fortify its economic situation on the world market stage.

### **2.2 Methodology**

For this thesis, there were used different sources of information and mainly literature review was used to compare the different opinions on the certain studies regarding the oil and gas industries. The data were initially reviewed through the university and public library as well as online resources. This work contains the extracts and generalized ideas from academic abstracts, articles, bibliographic databases and found information on Internet search.

To construct the graphs and tables, MS Excel was used to analyze the statistical data provided mainly in BP Annual reports about oil and gas trends and annual outcomes of the trade forces. These reports are available online and are free for public usage.

The information presented in this thesis were gained through the means of induction and deduction and careful analysis of certain phenomena on the interested field and researches carried out previously by academic persons. All taken ideas and results that were cited are marked and the resources are provided for each case.

### **3 Literature review**

#### **3.1 Development and characteristics of oil and gas world market**

The twentieth century is known as “the century of oil and natural gas”. Humanity has entered the XXI century, but decisive role for the development of the global economy still belongs to these natural resources. So energy resources issue to be the most demanded products on the global market. They are of a great economic importance.

In recent years, the role of the world oil market in the world’s economy has been extremely high, the market itself has undergone almost revolutionary changes due to various geopolitical processes: its structure, the degree of liberalization, pricing principles changed from time to time.

##### **3.1.1 Historical overview of oil and gas industry**

The origin of the oil industry descends from the middle of the XIX century. The date of origin is considered to be August 27, 1859, when Colonel Edwin Drake drilled near Titusville (Pennsylvania) the first oil-well that had a commercial success. Later, in 1870, the company «Standard Oil» was officially registered by D. Rockefeller, which became the largest company in the US refining a year later. In 1878 "Standard Oil" controlled 98% of the capacity for the processing and transportation of oil. (Yergin D, 2011)

Since the beginning of the 1880s Pennsylvania oil-field’s power failed to meet the growing demand for oil and oil products, especially due to rising kerosene consumption in Europe. Rapidly growing global economy required a new powerful source of oil, and Russia became such a source. In 1898, Russia surpassed the United States and moved into first place for the extraction of oil in the world.

In Russia, as in the US, the oil industry and the oil market were subjected to monopolization. If American oil trust of D. Rockefeller monopolized the petroleum

refining and supply of oil products on the market, the Russian's monopolization process involved, first of all, oil itself. Oil syndicate of Rothschild- Nobel controlled by 1913 about 80% of the production, processing, transportation and marketing of oil and oil products in Russia.

Since the end of the 1920s, the oil market has been one of the most monopolized in the world of trade. The whole cycle of operations in it, from exploration to distribution of petroleum products to consumers, was practically fully controlled by vertically-integrated companies: International oil cartel, to the policy of which different outsiders tried to adjust. It includes such companies as: «Exxon» (USA, earlier «Standard Oil of New Jersey»), «Royal Dutch Shell» (Netherlands / United Kingdom), «Mobil» (USA, formerly «Standard Oil of New York»), «Chevron» (USA, formerly «Standard Oil of California»), «Texaco» (USA), «Gulf Oil» (USA), «British Petroleum» (United Kingdom). In 1950, the businessman Enrico Mattei introduced the term “7 Sisters”, to describe a group of seven oil companies that influence the global oil market for almost half a century - until 1973. (Parra F. 2004)

The Arabic countries - the largest oil exporters - provided three-quarters of oil production in the world and received at the same time limited revenues from the exploitation of its own oil resources since a large part of the income belonged to various multinational oil companies. In order to change this situation and to defend its interests on the world oil market in 1960 13 major oil exporters founded OPEC. The following countries are members of it: Iran, Iraq, Kuwait, Saudi Arabia, Venezuela, Qatar, Indonesia, Libya, United Arab Emirates, Algeria, Nigeria, Ecuador and Gabon. It took them 10-15 years to nationalize deposits (break concession agreements with Western companies), that is to redirect profits in their favor.

As a result of the oil industry's development, in the period after 1986, the oil market gained characteristics of the global liquid commodity market. This factor accompanied with the intensive influence of the US on Saudi Arabia led to the weakening of OPEC's position.

After the nationalization the bipolar structure of the market was formed: countries of OPEC controlled operations connected with production and sale of oil and oil companies in their turn - operations of transportation, refining and marketing of petroleum products.

### 3.1.2 Main tendencies and key players in oil and gas market

To date, the complete reconstruction of the structure of the world oil market has taken place, having provided significant increase of its diversification and the increase in the variety and flexibility of its mechanisms. Transformation of the market rode in the line of expansion of types of barter transactions, adding new segments to the existing long-term contracts for one-time transactions with cash in oil (the market "spot"), further to the forward and then - to futures transactions it means that market dominance shifted from transactions mainly with oil itself to real transactions primarily with "paper" oil. As a result, by the end of the 80s the global system of exchange trade of oil and oil products was established, primarily being served by three centers (New York - the NYMEX, London - the IPE, Singapore - SIMEX) and working in 24-hour real-time mode (when Exchange in Singapore closes - one opens in London, after closing of which Exchange in New York opens). Today, the greater part of struck bargains belongs to speculative transactions with fictitious product and hedge-contracts. The total volume of transactions of purchase and sale of oil multiply exceeds the number of operations with the actual delivery of goods.

On the major oil contracts' exchanges in London and New York only two sorts of oil are traded- WTI and Brent, and there are several tens of produced sorts. All differences in the characteristics of a particular sort (density, wax additives, etc.) are included in the cost of the given sort. The reference point to the price determination is a quoted marker sort. At the European kerb market the key point is the Brent oil, in the the US - Light Sweet, in Asia - the oil from Dubai (Dubai). The standard for OPEC countries is the so-called "basket" of OPEC (OPEC Reference Basket of crudes), including the proportion of volume of production the basic sorts of oil produced by the

members of the cartel. After coming into force of the latest changes (January 2009) the composition of "basket" is represented by the following sorts:

- Saharan Blend (Algeria);
- Girassol (Angola);
- Oriente (Ecuador);
- Iran Heavy (Iran);
- Basra Light (Iraq);
- Kuwait Export (Kuveyt);
- Es Sider (Libya);
- Bonny Light (Nigeria);
- Qatar Marine (Qatar);
- Arab Light (Saudi Arabia);
- Murban (UAE);
- Merey (Venezuela).

Thus, the world oil market was gradually transformed from a market predominantly "physical" (trade cash oil) into the market primarily "financial" (trade oil contracts), offering its members a wide range of security price risks' tools, depleted on various securities market segments and derivatives.

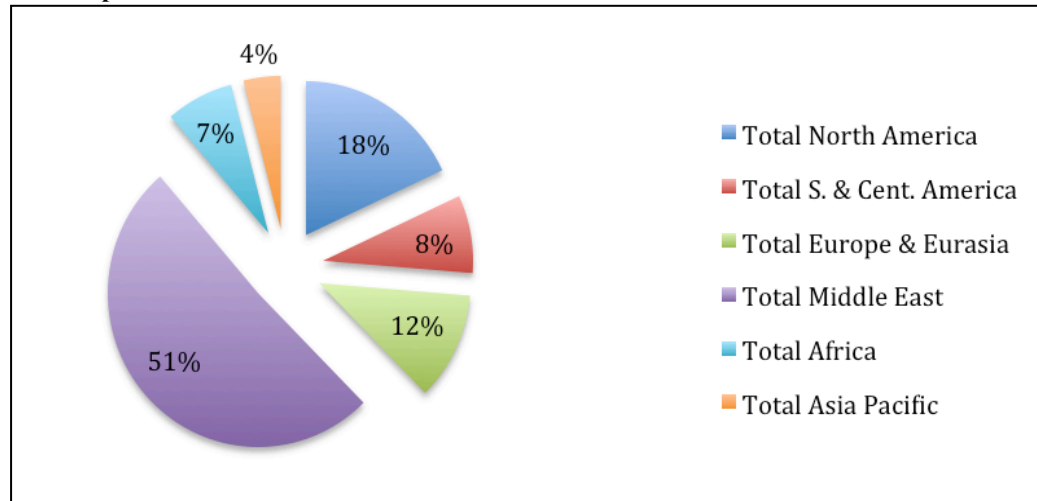
### 3.1.3 Global leaders in oil and gas market

In the face of growing demand for oil in the world market, the geography of its production in the world is primarily determined by the actual availability, scope and quality of the oil fields in these regions, as well as the existing mining capacity and appropriate infrastructure to transport oil.

It is estimated that more than 3/4 of the world's proven oil reserves today are concentrated in the countries - members of OPEC, and nearly 9/10 - in states that belong to the developing countries, although some of them, such as Saudi Arabia,

Kuwait, the UAE are ahead of even the industrialized countries according to national revenues per head. Kazakhstan has 1,8% share of total (30 thousand million barries).

**Figure 1 Total proved reserves Crude oil 2014**



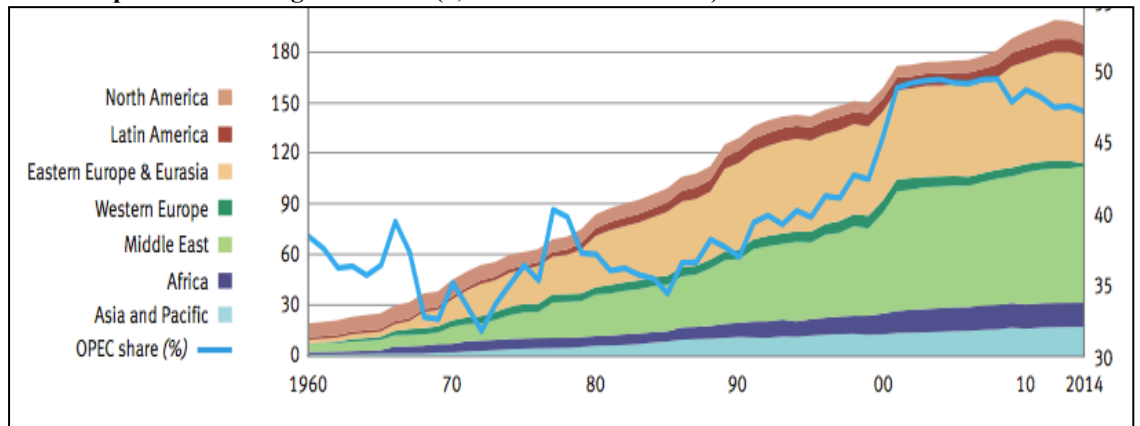
Source: Based on data from BP's 2015 Statistical Review of World Energy

On this chart we see that 51% of proven oil reserves fall for the Middle East. Among them the leading are the following: Saudi Arabia - 15,7% (267), Iran - 9,3% share of total (157,8 thousand million barreis), Iraq - 8,8% (150), Kuwait - 6,0 % (101,5), United Arab Emirates - 5,8% (97,8).

In contrast to the global existing oil market today, the natural gas market is not so mature and is in the initial stage of its development, and today it is a collection of regional markets, which are in complex interaction with each other. However, the share of the natural gas in the world balance of primary energy resources continues to grow.

The volume of proved reserves of natural gas on Earth is 187,1 trillion cubic metres according to the end of 2014 (BP Statistical Workbook, 2015).

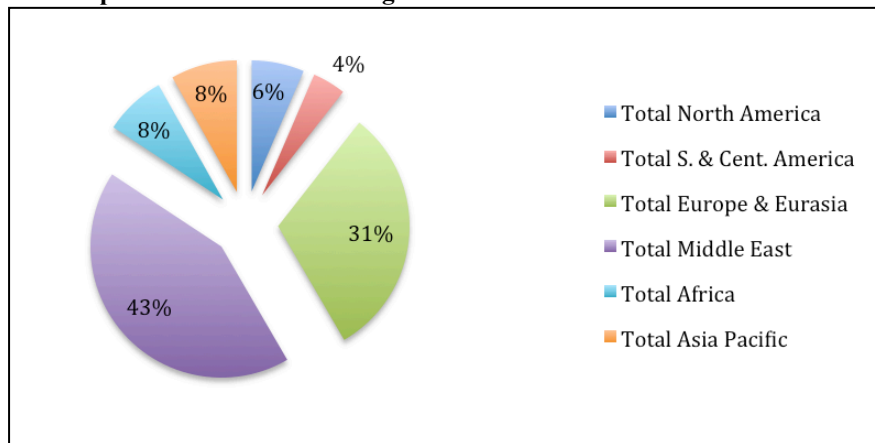
**Figure 2 World proven natural gas reserves (1,000 bn standard cu m)**



Source: Based on data from BP’s 2015 Statistical Review of World Energy

Middle East, Africa and former Soviet Union countries possess about 81% of world gas reserves. The remaining 19% is distributed between North and South America, as well as countries in the Asia-Pacific region. The countries’ distribution of gas supply is more unsteady.

**Figure 3 Total proved reserves Natural gas 2014**



Source: Based on data from BP’s 2015 Statistical Review of World Energy

The largest countries in terms of gas reserves are: Iran - 18,2% (34 trillion cubic metres), Russian Federation - 17,4% (32,6), Saudi Arabia - 13,1% (24,5), Turkmenistan - 9,3% (17,5). Kazakhstan ranks 15th, accounting for 0,8% (1,5) of all proven reserves.

### 3.2 Prices on oil and gas products and by-products

The level of global oil prices is the most important external factor determining the state budget, balance of payments and the state of the economy. As it has already been mentioned, for forming pricing for many sorts of oil on the market, a sample mark (marker grade of oil) is used. In the period from 1945 to 1983, the standard oil was Arabian Light, in the years 1984-2016 - Brent.

The process of development of the oil industry is closely linked to the important role played by large companies (monopolies) in the industry. The leading position is occupied by the "Seven Sisters" among the previously mentioned oil monopolies. Due to this, the cartel could establish a monopoly price for crude oil and petroleum products. The price of oil was low, which suited the monopoly for several reasons. First, the low price of oil allowed to displace coal completely, as the predominant resource of that time. Only cheap oil could dramatically changed the energy balance of the developed capitalistic countries, especially in Western Europe. Another reason - a successful competition against the "outsider companies." This is due to the presence of a strong position in the region of the Middle East (about 90% of crude oil production in the area) (Petroleum Economist. 1974), where the average cost of oil production at that time was about 10 cents per barrel. This price was ten times lower than the average for the decade, oil prices per barrel (1.00-1.40 dollars. Per barrel) (Petroleum Economist. 1974). The third reason was the cost of the oil which monopolies paid to the Government of producing countries - "royalti" (12.5% of the crude oil prices) and income tax on profits from oil production. Thus, the oil monopolies were not interested in higher prices for crude oil, as well as the leading industrialized nations importing liquid fuel. First, cheap oil in many aspects favoured the increasing economic growth rates of developed Western countries. Second, the cheap oil supplanted coal as a more environmentally friendly raw material, thus solving environmental problems. Thirdly, the low prices of imported crude oil gave the industrialized States to impose ready-made oil high indirect tax. The proportion of tax in the price of finished petroleum products in the countries OECD in the 1960s was on average 60% (Petroleum Products Prices. OPEC. Vienna. 1984).



Thus, the low price of oil up to the 1970s. was a monopoly price of the "International oil cartel" companies in terms of support from the major oil-importing countries actually ignoring the interests of developing country-producers. After creating the OPEC in 1960 oil price was set at the official meetings of the Organization according to the developed system of international long-term contracts.

After a period of relatively stable oil prices up to 1970, we observe the first rise in prices in 1973 - early 1974. As a consequence of the war of the "Judgment Day" - the 18-day military conflict of Israel and a coalition of Arab states. Thus, for the year the price increased from US \$ 3.29 to 11.58 dollars per barrel (by Statistical review of World Energy, 2015). This oil crisis, also known as the "oil embargo" was the first energy crisis and is still considered the largest one.

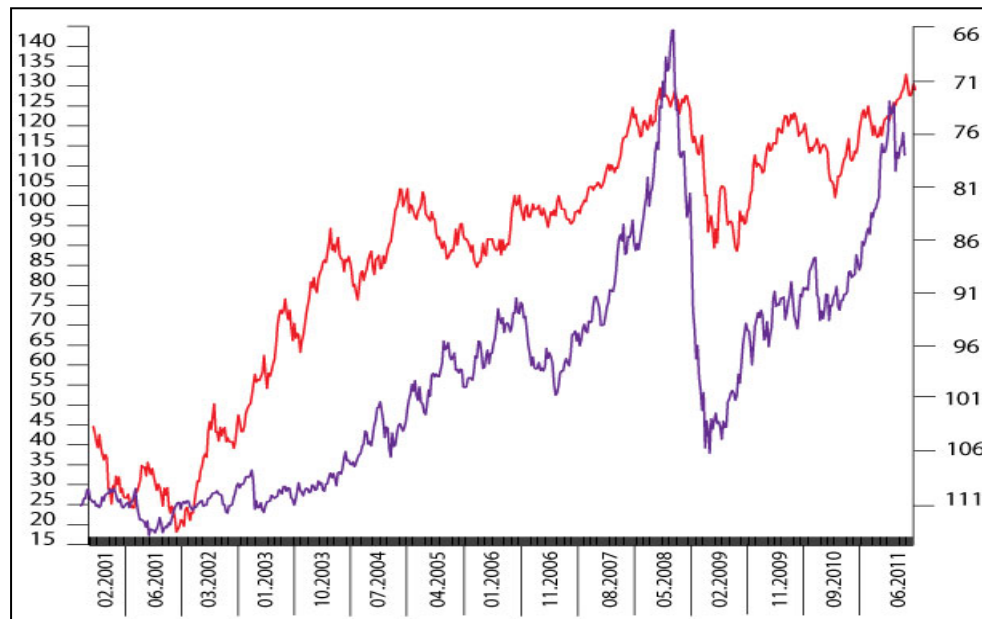
Another factor that undoubtedly influenced the change in the situation on the oil market was a decrease in oil consumption in the industrialized countries as a result of energy-saving policies. Even in 1973-1974 a sharp jump in oil prices and disruption in its supply, related to the oil embargo of the Arab countries, forced representatives of business communities and governments of the capitalist countries-importers of oil to think about more careful use of energy resources. On average, OECD countries' energy consumption in 1974-1975 decreased by 4.6%. ([Electronic resource] Access: [www.oecd.org](http://www.oecd.org)). 1974-1978 years were relative calm for the oil market after a rough 1973. Price for this period increased from US \$ 11.58 to 14.02 dollars per barrel.

Then we can observe an unprecedented for that time the rise in oil prices - in 1981 it was \$ 35 per barrel, as a result of the Iranian revolution and the Iran-Iraqi conflict (1978-1979). In terms of current prices, the average price of oil in 1980 corresponded to \$ 104 per barrel, from the data BP Statistical Yearbook of. In fact, that expensive oil cost occurred only twice in history - then and in 2008, 2011-2013. To stop the panic on the market was possibly only in December 1986, when the OPEC meeting in Geneva agreed on exporting quota at 17.3 million barrels a day and "estimated price" of \$ 18 per barrel. In the next few years, the oil remained at \$ 15-18, and inflation-adjusted prices

were low in fact prior to the 2000s, with the exception of 1991, when the Iraq-Kuwait war in the Persian Gulf caused a short-term jump in prices.

Since 2000, the price of oil is mainly influenced by the exchange rate, gold price and quotation of securities, and is formed on the derivatives exchanges in close connection with the rate of the US dollar as the global reserve currency, over 30% of financial worldwide assets are fallen to its lot. We can see the dependence in which the weakening of the dollar price the price of oil increases, offsetting losses of its "devaluation." Conversely, the strengthening of the dollar makes the price oil decreases.

**Figure 4 Fluctuations of Prices**



Source: International Energy Agency (IEA)

In 2000 we can see a rise in prices to 35 dollars per barrel. The high level of world prices was due to the sustained growth of the world economy (global GDP growth in 2000 was 4.7%) and active measures to regulate the volume of OPEC oil production by member countries of the organization. The next significant price increase was recorded in 2005, when the price increased from \$ 25 per barrel to 60 dollars per barrel. The main causes of this situation were the high growth rates of the world economy, particularly the US and China's economy, and the inability to increase production to meet the growing demand for oil. Maximum was reached in July 2006 was 78.40 dollars per

barrel. In February 2008, the Brent crude oil price for the first time in history exceeded the threshold of \$ 100, and later its historical maximum - 143.95 dollars per barrel. Start of the global financial crisis of 2008 led to a collapse in prices - up to 33.73 dollars (26 December). Since mid 2009 the price began to rise slowly. In winter 2010, oil prices was stabilized at a level of 70-80 dollars per barrel. In early 2011, the Brent barrel because of the outbreak of the political crisis in Libya again became expensive than 100 dollars, after reaching a level of 124-126 dollars. The growth of world prices, due to a sharp reduction in Libyan oil supply, could be held in due to supplies from strategic reserves by the International Energy Agency (IEA) and the US (about 90 million barrels in mid-2011).

Prior to 2012 the cost of Brent fluctuated between \$ 105-115 per barrel. After reaching a peak (128.14 dollars), the price began to fall due to the economic problems in the Eurozone, exacerbated by the crisis in Greece. However, it later returned to the level of 100-115 dollars per barrel. The annual average price in 2012 was \$ 111.63 dollars.

In 2013-2014 the price was at the level of 107.56 dollars per barrel, down to the end of 2014 on a mark 55.27 dollars per barrel as a result of lower oil prices of export's contracts of the world's largest suppliers Saudi Arabia and Iran. Thus, for the year, oil prices fell by 51%.

In early 2015, the prices returned to the level of 60 dollars per barrel, after which the price fluctuated between \$ 55-60 USD. The maximum value of the price of the Brent crude in 2015 was recorded in May - 66.33 dollars per barrel. Later, oil quotations resumed their fall, which was caused by the crisis on the stock market in China, by plans of Iran to increase oil exports after the lifting of sanctions and the data that the United States continue to introduce new production capacity in the system. Further on, the growth in many other countries, mostly in China, also slowed down. In August 2015 prices fell for the first time below \$ 50 per barrel, and later stabilized at \$ 45-48. It became a huge issue for all countries, which economy was mainly dependent on oil production. During this period of time, there was a deficit of oil on the world market

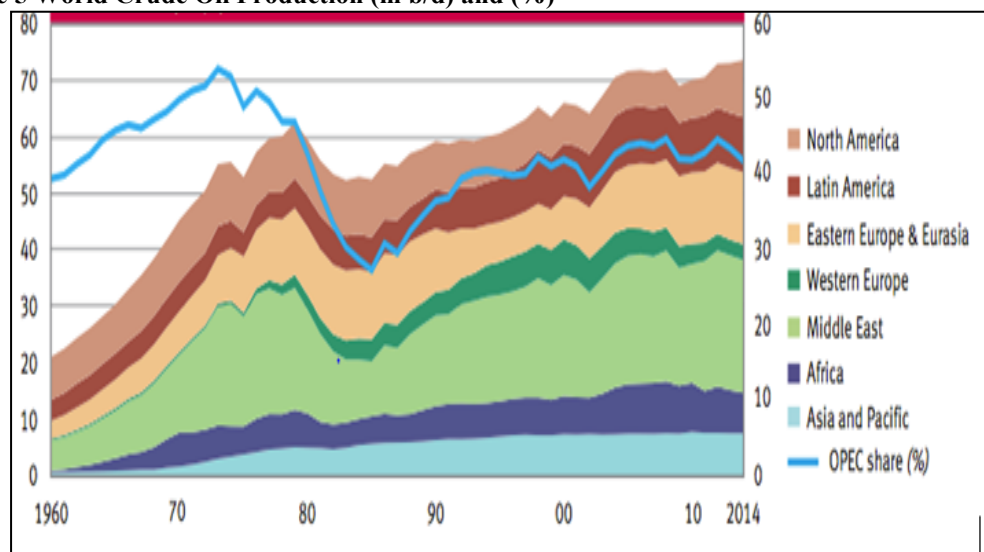
and this made the prices to increase fast. However, the sudden growth of oil production provided the daily supply of 93,8 million barrels. For the first time during this recessive period, supply exceeded demand that made prices to significantly and rapidly fall down. Appendix 1 shows the historical overview of the price fluctuations.

### 3.3 Total volume of gas and oil industries and production of oil

One of the basic economic realities of oil production is that its location is often located far from its markets. Two-thirds of the crude oil reserves are located in either the Middle East or in Russia, while 90% of the oil is actually consumed in other regions.

In 2014, the main producers among different regions were: Middle East (23,514 Mbbl), Eastern Europe and Eurasia (12,782 Mbbl), North America (10,061 Mbbl). After these four main leaders, the other regions, which supplied oil, were America (9,726 Mbbl), Asia and Pacific (7,422 Mbbl), Africa (7,160 Mbbl), Western Europe (2,752 Mbbl). Total World crude oil production in 2014 is 73,420 Mbbl, of which OPEC is 30,682 Mbbl. Below, there is shown a Figure 5 representing the world crude oil production with notifying the levels of production of different regions.

**Figure 5 World Crude Oil Production (m b/d) and (%)**



Source: Based on data from BP's 2015 Statistical Review of World Energy

The largest countries-producers of oil in the world are the United States, Saudi Arabia, Russia, Canada, China, UAE, Iran, Iraq, Kuwait and Venezuela. The following Table 1 represents some statistics regarding the oil production in previously mentioned countries:

**Table 1 The leading countries in Oil production (thousand barrels daily)**

Country	Oil production 2014 г., thousand barrels	Change 2014 over 2013, %	2014 share of total, %
US	11644	15,9%	12,3%
Saudi Arabia	11505	0,9%	12,9%
Russian Federation	10838	0,6%	12,7%
Canada	4292	7,9%	5,0%
China	4246	0,7%	5,0%
United Arab Emirates	3712	0,9%	4,0%
Iran	3614	2,0%	4,0%
Iraq	3285	4,6%	3,8%
Kuwait	3123	-0,5%	3,6%
Venezuela	2719	1,1%	3,3%
<b>Total World</b>	<b>88673</b>	<b>2,3%</b>	<b>100,0%</b>

Source : Extracted from the statistical Review of World Energy, 2015, BP

In the United States, that became the world leader in 1975 for the first time, in 2014 the level of daily production amounted to 11644 thousand barrels. Since 2011, American oil production increased by 48%, while Russia and Saudi Arabia reached only 3% growth each. The US became the first country that increased its oil production by more than 1 million barrels per day during three consecutive years (BP statistic, 2015). Meanwhile, the US is also the largest consumer of oil in the world. The largest oil companies of the country are Exxon Mobil and Chevron Texaco.

On the second place, there is Saudi Arabia, which accounts about 77 oil and gas fields and pools. The oil industry of the country is nationalized. It means that the

Supreme Petroleum Council (Supreme Petroleum Council) is in charge of all transactions concerning this field. The largest oil company is Saudi Arabian Oil Co. (Saudi Aramco) and the petrochemical biggest company is Saudi Basic Industries Corp. (SABIC). In 2014, the daily oil production in Saudi Arabia amounted to 11505 thousand barrels.

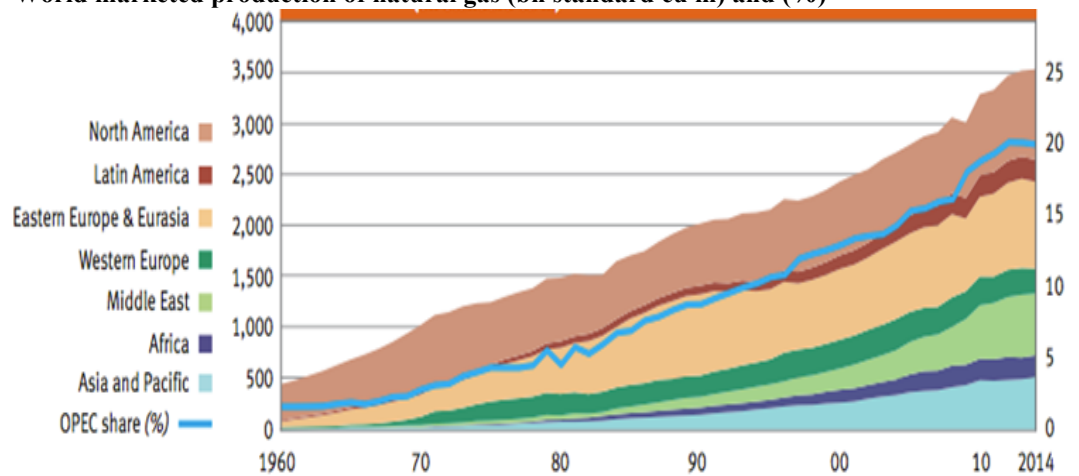
The top three also includes Russia, on the territory of which the oil is extracted from 2000 oil and gas fields. In 2014, the daily level of production was 10838 thousand barrels. The largest increase in oil production during the last year was observed in the United States (15.9%), Canada (7.9%), Iraq (4.6%) while the world average growth was only 2.3% per year. According to the International Energy Agency, the ratio of oil production by countries remains generally unchanged, that is to say the country shares in world production of oil is changing very slightly.

### 3.3.1 Production of Natural Gas

Natural gas production in the last decade is raising rapidly with an average growth of 3-4% per year. The most significant replenishment of natural gas in the world market should be expected due to the growth of its production and exports in the Middle East and Africa. Firstly, that is because of their high availability of hydrocarbons deposits and fields, and secondly, due to the neighbouring location to the main markets, and the last but not the least reason for such expansion is the relatively low cost.

Figure 6 represents the world production of natural gas, moreover, there are also presented the world leaders in this industry.

**Figure 6 World marketed production of natural gas (bn standard cu m) and (%)**



Source: Based on data from BP’s 2015 Statistical Review of World Energy

The following Table provides the basic overview of natural gas production in different countries.

**Table 2 Leaders in natural gas production in 2014**

Country	Natural gas 2014 r., billion cubic feet per day	Change 2014 over 2013, %	2014 share of total, %
US	70,5	6,1%	21,4%
Russion Federation	56,0	-4,3%	16,7%
Qatar	17,1	0,4%	5,1%
Iran	16,7	5,2%	5,0%
Canada	15,7	3,8%	4,7%
China	13,0	7,7%	3,9%
Norway	10,5	0,1%	3,1%
Saudi Arabia	10,5	8,2%	3,1%
Algeria	8,1	2,2%	2,4%
Indonesia	7,1	1,7%	2,1%
<b>Total World</b>	<b>334,8</b>	<b>1,5%</b>	<b>100,0%</b>

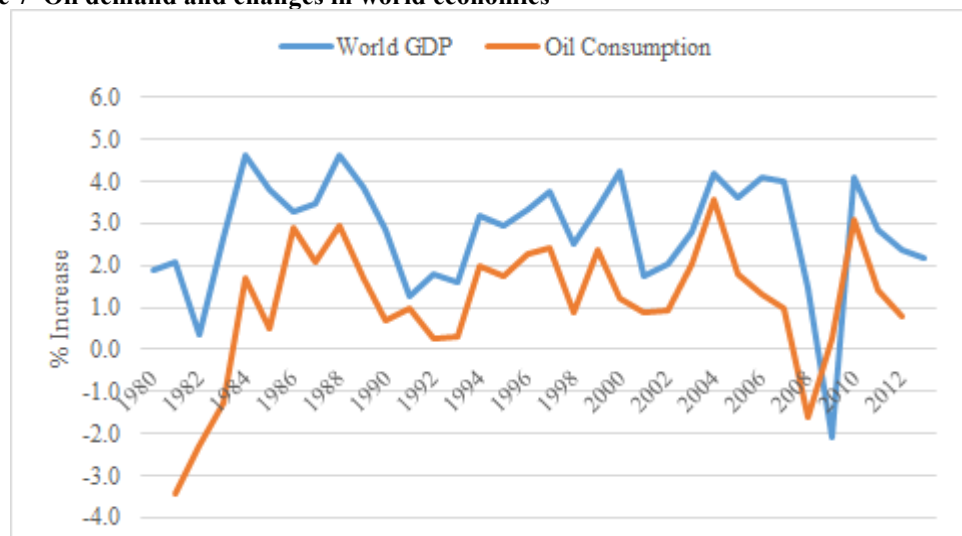
Source: Extracted from Statistical Review of World Energy, 2015, BP

The world leaders in gas production are the United States (70,5 Bcf) and Russia (56,0 Bcf). By the total volume of oil and natural gas the United States is far ahead from Russia and in 2013 it started to be the first country in oil and gas production around all the world. For the first time, USA has become the largest gas producer in 2009 and until now it still stays on the same place (BP statistic). In sum, the United States and Russia account for 38% of global natural gas production. The top ten gas producing countries also includes Qatar, Iran, Canada, China, Norway, Saudi Arabia, Algeria and Indonesia. The largest increase in the last year of production was observed in Saudi Arabia (8.2%), China (7.7%), the USA (6.1%), the world average growth accounts 1.5% per year.

### 3.4 Global Consumption of Oil and Gas

The main factor shaping the global demand for oil is the global economic growth. This factor has recently led to a steady rise in global oil demand. Meanwhile, the slowdown in global economic growth inevitably leads to a drop in world oil prices. So when global GDP growth rates is less than 3% per year (this situation was observed in 1991, 1993, 1998, 2001, 2008), world oil prices steadily fell down and their annual decline exceeded 10%. On Figure 7 , it is seen the interconnection between the level of GDP and oil consumption.

**Figure 7 Oil demand and changes in world economics**



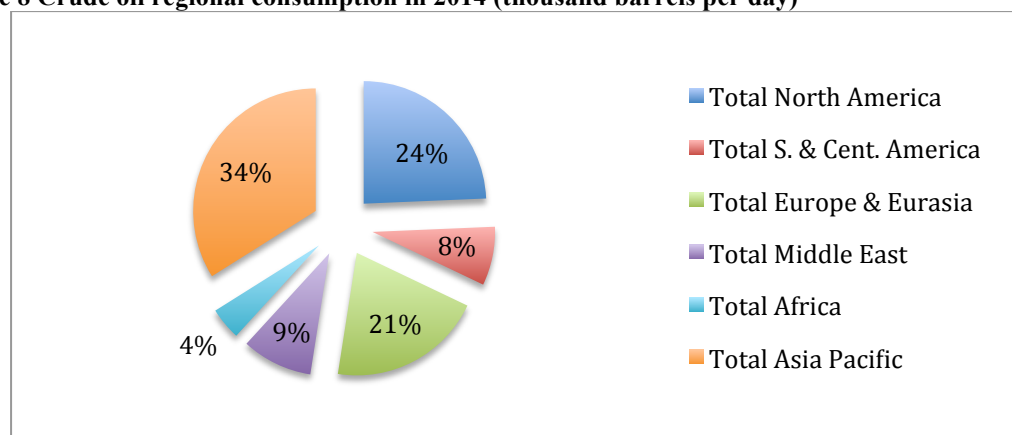
Source: Based on data from BP's 2015 Statistical Review of World Energy



Another possible factors having the impact on global oil demand are climatic conditions. Lower temperatures during the heating season lead to a relative increase in the global demand for oil and gas. State tax policy also influences the level of demand - in particular the total level of taxes on petroleum products. For instance, in some Western European countries, the tax share in the price of gasoline is up to 70-75%. Moreover, the possibility of military action in the critical areas of oil fields can lead to excessive demand for oil to replenish its commercial reserves, which can be used in case of reduction in oil supply (Yergin D, 1999).

Traditionally there are three dominant centers of world oil consumption which are Asia-Pacific, North America and Western Europe. On Figure 8, the percentage share is observable for those countries and other leading regions.

**Figure 8 Crude oil regional consumption in 2014 (thousand barrels per day)**



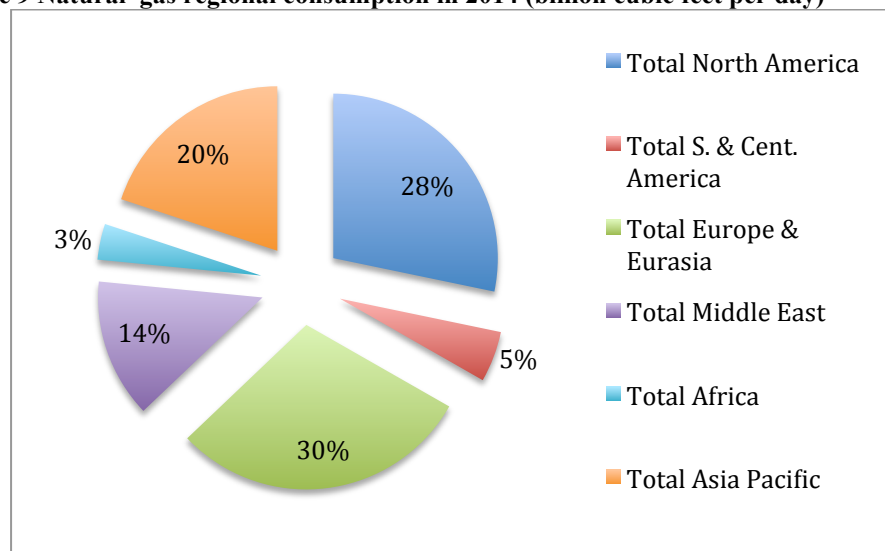
Source: Based on data from BP's 2015 Statistical Review of World Energy

The largest Asian oil consumer is China, which accounts for 12.8% of world consumption (including China Hong Kong SAR). The second in the volume of consumption is Japan, which share represents the 4.7% of world consumption. The second major center of consumption is North America, where the United States accounts for 19.9%. Europe (excluding countries of the former Soviet Union) accounts for 16.1% and the largest European oil consumer-country is Germany, which amounts

2.6% of world consumption. In general, the total volume of world oil consumption in 2014 amounted to 92,086 thousand barrels daily.

The largest region of natural gas consumption is Europe and Eurasia, which is the 30% of global consumption. Major consumer countries in the region are Russia (12%) and Germany (2.1%). The second highest consumption is observed in North America, where the United States presents 22.7% of the global consumption of natural gas. On the third place, there is the Asia-Pacific region, where the leaders are China - 5.5% of world consumption (including China Hong Kong SAR) and Japan with the index of 3.3%. Figure 9 shows the earlier stated country shares in the consumption of natural gas.

**Figure 9 Natural gas regional consumption in 2014 (billion cubic feet per day)**



Source: Based on data from BP's 2015 Statistical Review of World Energy

That is to say that the overall level of natural gas consumption was 328.3 Bcf (billion cubic feet per day) in 2014 and it was not relatively different from the volume consumed during the previous years.

### 3.5 Export and Import in gas and oil industry

Oil and gas industry for many countries plays the role of one of the most important sectors in the economy. These countries receive their primary income from

mainly oil and gas exports. Such transactions fill in national budget and give the opportunity to develop other sectors of the economy.

If we talk about the oil trade, it is worth noting that most popular and safe way of international oil transfer is the usage of oil tankers. Additionally, talking about the cheapest and environmentally friendly way to transport oil, it is possible to say that the usage of pipelines is the one and this way is used quite widely around the world nowadays.

The largest oil-exporting regions are Middle East (17073 thousand barrels daily), Former Soviet Union (5921 thousand barrels daily) and West Africa (4296 thousand barrels daily). Contrary, the largest importers of oil are Europe (8974 thousand barrels per daily), USA (7338 thousand barrels daily) and China (6209 thousand barrels daily). Table 3 shows the levels of import and export among various countries.

**Table 3 Import and Export of crude oil in 2014**

	Thousand barrels daily	
	Crude Imports	Crude Exports
US	7338	339
Canada	600	2985
Mexico	‡	1135
S. & Cent. America	445	3294
Europe	8974	232
Former Soviet Union	2	5921
Middle East	230	17073
North Africa	194	1248
West Africa	4	4296
East & Southern Africa	221	187
Australasia	530	241
China	6209	8
India	3809	1

Japan	3383	‡
Singapore	916	6
Other Asia Pacific	4826	718
<b>Total World</b>	<b>37682</b>	<b>37682</b>

Source: BP Statistical Review of World Energy, June 2015

According to the statistical overview from BP Global, it was studied that the world' exports of oil and oil by-products tend to increase from 1999 till the present time. However, only in 2007 there has been a slight decline due to the global economic crisis.

From the Middle East, the oil supply goes to the Asia-Pacific region, as well as in North America and Europe. Most of the oil is exported from Russia to Europe. Key OPEC oil importers are European countries, Asia-Pacific and North American countries. Saudi Arabia is a major importer of oil from the United States and Japan.

Speaking about the trade of natural gas, it is worth noting the specifics of its transportation. Liquefied natural gas (CNG) or liquefied petroleum gas (LPG) is cleaned and prepared oil or separate from the natural gas, liquefied under pressure or cooling to facilitate storage and transporting. For transportation of gas in this manner, it is necessary to stretch the pipeline to the seaside, build the fluidizing gas plant on the shore, a port for tankers and, of course, tankers themselves (LNG carriers are special vehicles for transportation of gas in the liquefied state). This type of transport is considered to be economically viable at the remoteness of the consumer of liquefied natural gas over 3,000 km. However, currently the main type of transportation of natural gas is the usage of pipelines - the gas which is at a pressure of 75 atmospheres is being moved through the pipes with diameter up to 1.4 meters. In the area of pipeline gas, suppliers are tightly connected to their customers and consumers of the particular gas line. In the both cases, the prices of delivery are determined by long-term contracts and the price of gas is calculated basing on the cost of oil. The following Table 4 gives the statistics of import and export using different types of transportation (described earlier in the text).

**Table 4 Trade of Natural Gas Pipeline and Liquefied Natural Gas in 2014**

	Billion cubic metres			
	Pipeline imports	LNG imports	Pipeline exports	LNG exports
US	74,6	1,7	42,3	0,4
Canada	21,8	0,6	74,6	-
Mexico	20,5	9,3	0,0	-
Trinidad and Tobago	-	-	-	19,3
Other S. &Cent. America	17,8	21,4	17,8	5,8
France	27,4	7,1	1,1	0,6
Germany	85,0		10,1	-
Italy	46,9	4,5	0,2	-
Netherlands	23,2	1,1	44,1	0,6
Norway	0,0		101,1	5,3
Spain	15,4	15,5	0,6	5,1
Turkey	41,1	7,3	0,6	-
United Kingdom	32,9	11,3	10,6	-
Other Europe	90,0	5,3	10,8	2,0
Russian Federation	24,2	-	187,4	14,5
Ukraine	17,5	-	-	-
Other Former Soviet Union	32,1	-	69,3	-
Qatar	-	-	20,1	103,4
Other Middle East	27,2	5,4	9,6	27,5
Algeria	-	-	23,5	17,3
Other Africa	8,5	-	10,8	31,2
China	31,3	27,1	-	-
Japan	-	120,6	-	-
Indonesia	-	-	9,5	21,7

Malaysia	2,9	2,4		
South Korea	-	51,1	-	0,2
Other Asia Pacific	26,5	43,9	20,0	78,6
<b>Total World</b>	<b>663,9</b>	<b>333,3</b>	<b>663,9</b>	<b>333,3</b>

Source: BP Statistical Review of World Energy, June 2015

Currently, the most important exporters of pipeline gas are Russia (187,4 bcm), Norway (101,1 bcm), Canada (74,6 bcm), the Netherlands (74,6 bcm) and the United States (42,3 bcm). The main LNG suppliers are Qatar (103,4 bcm), Indonesia (21,7 bcm), Trinidad and Tobago (19,3 bcm). The leading LNG importer is Japan (120,6 bcm.) and the largest importer of gas pipeline is Germany (85,0 bcm). Furthermore, despite the fact that USA is a major exporter, it also occupies one of the leading position in gas import. Although there was the discovery of large deposits on the United States territory, the imports remained almost on the same level as before. At the moment, gas import from Canada is not much more expensive than the consumption of its own gas. However, the efficient transporting of gas from recently discovered fields requires the construction of new pipelines that is quite expensive and that is why the American government tries to use the already existing infrastructure for gas transfers. Therefore, before the construction of a new pipeline, the import from Canada is the only option. This situation is a good example of the dependence of imports and exports on the presence and degree of development of state infrastructure for oil and gas supplies.

#### **4 Role of Oil and gas industry on Kazakhstan economy**

Oil and gas branch is the main component of the fuel and energy complex of Kazakhstan and is the foundation of the national economy, providing a significant part of gross domestic product, budget revenues and foreign exchange earnings to the country. Oil and gas complex is the driving force of social and economic reforms carried out in the republic and the conductor of innovative contemporary and management decisions.

#### 4.1 The role of oil and gas in the formation of GDP and the national budget.

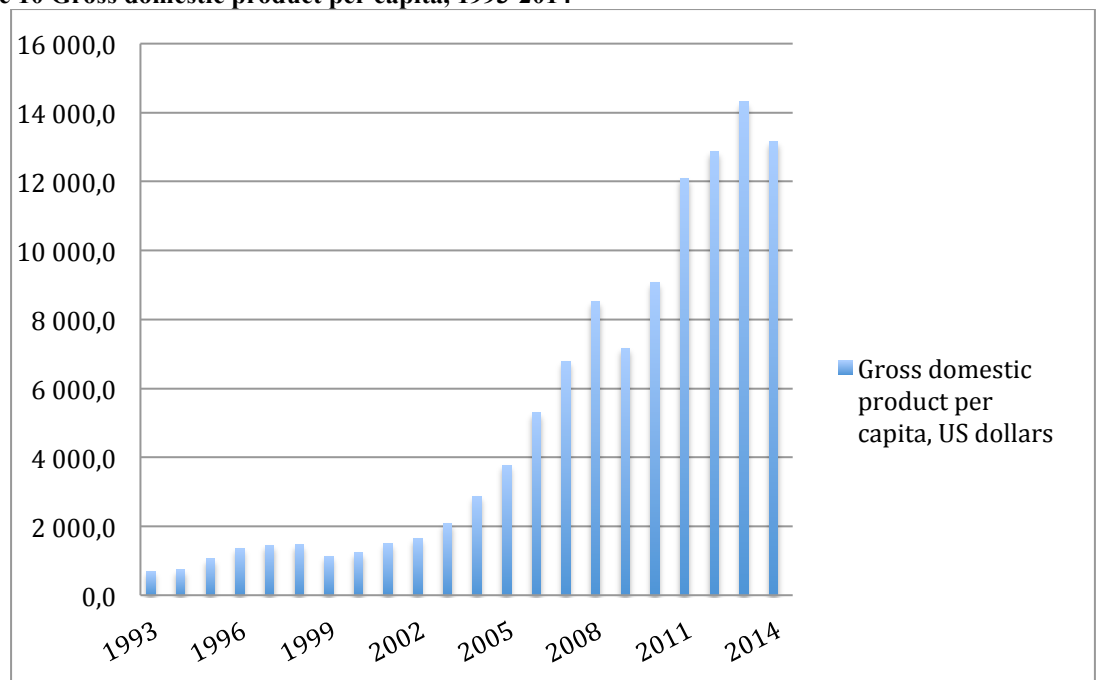
Any national economy in its development aims to achieve economic growth - increase in the rate of growth of gross domestic product. In the case of economic development of Kazakhstan as a sovereign state we can distinguish two main periods. Events, 1992-1999. - This is the complexity of the transition period, the years of the country's exit from the crisis. The gap of economic ties between enterprises of the former Soviet Union adversely affected the economic situation of the country. Kazakhstan was a supplier of natural resources to the manufacturing industry, and after the collapse had to build an entirely new economic model and system based on the principles of a market economy. Under these circumstances, it was needed to build an effective management structure, to meet the needs of the transitional period, to carry out fundamental reforms in the economy, to curb inflation, to stabilize the social situation, to form a system of governance, including the sphere of law and order. In this period of time an active policy with the aim to create an attractive investment climate had been done, what soon brought billions of dollars of foreign investment from the United States, the Netherlands, Great Britain, Italy and Russia. Since 1997, stable investment growth was achieved, which was significantly higher than GDP growth. The latest technology and modern production and management experience penetrated the industry.

In the period after 2000 there was reconstruction and modernization of the economy, as well as the elimination of the country's budget crisis. The main external factor contributing to the growth of the national economy was to improve the conjuncture of the world market for major export commodities of Kazakhstan. As internal factors that have had a positive impact on economic growth, made a stable political situation in the country, were macroeconomic stability, increase in domestic demand as a result of higher living standards and a favorable investment climate.

The essence of the current stage of development of the country is implementation of multi-vector steps leading in all directions. Here can be brought one integrated

indicator of progress: "In 1994, GDP per capita was just over seven hundred dollars. By 1 January 2011, it has grown more than by 12 times and exceeded 9 thousand dollars. We expected to reach such a level only by 2015. World experience shows that in the first 20 years of independence, any country hasn't reached such a result. For example, GDP per capita in South Korea for the first twenty years of sovereign development increased by 3 times, Malaysia – by 2 times, Singapore – by 4 times, Hungary – by 5 times, Poland – by 4 times " (Speech of President of Kazakhstan – Nursultan Nazarbaev – to citizens, 2011; Sevostyanova, 2013).

**Figure 10 Gross domestic product per capita, 1993-2014**



Source statistical review stat.dov.kz

Kazakhstan is the country with the higher income than average one. In 2013, GDP was 13 thousand US dollars per capita. In 2014, there was observed the much slower growth of rates and high levels of inflation in Kazakhstan. Real GDP growth had declined from annual 6% in 2013 to 3.9% in the first half of 2014. This reduction is due to inherent limitations in the oil industry and Russian economic downturn. In general, however, it is possible to observe positive dynamics of growth of GDP per capita.



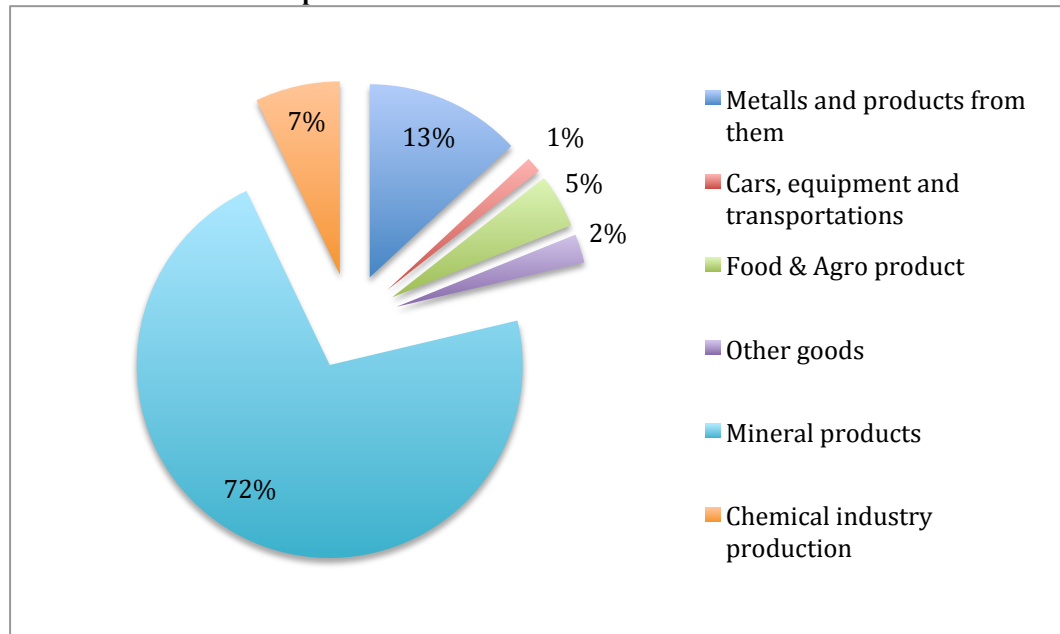
#### 4.1.1 Values of exports and imports on the market of Kazakhstan.

Nowadays Kazakhstan is by far one of the largest oil producers in the world. In 1899, in the first field Karashungul which was being developed in Kazakhstan was received first oil gusher, with the help of which the history of oil had begun on the national arena. During the next 50 years, they had developed and manufactured many fields due to the increased technical capabilities. (Christopher M., 2011)

Today Kazakhstan is ranked the 12th in the world in terms of proven oil reserves (30 billion bbl; 1 January 2015 est.); and the 15th place in terms of proven natural gas reserves (2.407 trillion cu m; 1 January 2014 est.). Among the CIS countries Kazakhstan occupies the second place after Russian oil reserves and the third after Russia and Turkmenistan gas reserves. Oil and gas regions of the republic, which embrace 172 oil and 42 condensate fields, occupy about 62% of the territory of Kazakhstan. More than 90% of oil reserves are concentrated in the 15 largest fields such as Tengiz, Kashagan, Karachaganak, Uzen, Zhetybai, Janajol, Kalamkas, Kenkiyak, Karazhanbas Kumkol North Buzachi, Alibekmola, Central and Eastern Prorva, Kenbai, Royal. Approximately 70% of hydrocarbon reserves are concentrated in the west of the country. (Source: Ministry of Oil and Gas of the RK).

Crude oil is processed by the three refineries in the country: Pavlodar, Shymkent and Atyrau. It should be noted that the total power of the country refineries is 17 million tonnes and their loading is carried out only by 30-40% in recent years. This is due to the lack of hydrocarbon raw materials, which are mainly exported.

**Figure 11 Trade Structure of Export in 2015**



Source: statistical review stat.gov.kz

Figure 11 represent the majority of export minerals products in 2015 year. Also, there are now three gas processing plants in the country with a total capacity of 12.3 billion m<sup>3</sup> of gas per year: Kazakh, Tengiz and Zhanazhol. The basis of the gas industry of the country are transit trunk gas pipelines with a total length of more than 10 thousand km which pass through the territory of the eight regions of Kazakhstan. The main transit routes are the "Central Asia - Center", "Bukhara - Ural", "Orenburg - Novopskov" with an annual output of about 100 billion m<sup>3</sup> of gas transit each year.

#### 4.1.2 Dependence national currency from the prices of Crude oil.

The high export orientation of the oil industry and a significant share of the oil sector in budget revenues show increasing dependence of economic welfare of the country on the situation on global markets and changes in world oil prices. This dependence is very harmful to the sharp fall in world prices (for example, a sharp drop in oil prices in 1998 was the trigger mechanism of the financial crisis and the end of 2008 seriously shaken the financial position of the country).

How exactly does fall in oil prices impact on the budget of Kazakhstan? The share of revenues from the oil sector grew steadily in the RK budget. Today in the consolidated budget of Kazakhstan there are 44% of the oil share. In The Standard & Poor's report the share of the oil sector is specified as 25% of GDP. And it is clear: more than 60% of export revenues in Kazakhstan account for the sale of oil. During a short-term drop in oil prices Kazakhstan can survive fairly painless: the volume of gold and currency reserves of Kazakhstan (the funds of the National Bank and the Kazakh National Fund (Kazakhstan Decree of the President of the Republic of Kazakhstan dated August 23, 2000 № 402 "On the National Fund of the Republic of Kazakhstan" was created by the National Trust, by analogy with other countries, where a significant part of the revenues generated from the proceeds from the export of natural resources.) reached 104.2 billion dollars to October 1, 2014, accounting for 46% of GDP. However, even at a fairly high price of oil, rate of deceleration of GDP growth in Kazakhstan was going - according to the Kazakh statistics Committee, the growth was amounted to only 4% for the first 9 months of 2014.

Countries like Kazakhstan, where the basic activity is the production of oil and gas, receive income from the sale of oil and gas for export in foreign currency, and this is the main source of economic development of these countries. Consequently, there is a relationship between world oil prices and the economy of these countries, which is reflected in the value of the national currency in the relation to the US dollar (hereinafter - the dollar) through foreign exchange inflows into the economy. With oil trading, the price on the world stage is determined in dollars, according to the Bretton-Woods Agreement of 1944, therefore, the national currencies of the countries which are export-oriented on oil and gas, are tied to the dollar.

Also, American economists Radhames Lizardo from the University of South-East Adventist and Andre Mollica from the University of Texas - Pan American investigated the effects of changes in international oil prices on the value of the dollar in relation to the national currencies of Canada, Mexico and Russia. American economists have come to the conclusion - "the long-term rise in oil prices leads to a depreciation of the value of the dollar against the national currencies of Petroleum Exporting Countries".

From this we can conclude that Kazakhstan needs an alternative way of accumulating oil fund commodity windfall, and not in the form of foreign currency and securities, but in the way of the creation of oil reserves - the so-called 'liquid currency. "To reduce the effects of falling oil prices (as we know, they are cyclical: after the rise, as a rule, will be fall), for the reliability and stability of the economy are needed strategic oil reserves. (Dzhantureyeva E., 2014)

#### 4.1.3 SWOT analysis of Oil and Gas industry in Kazakhstan

The following SWOT Analysis shows which advantages and disadvantages Kazakhstan has in oil and gas industry and what can be developed to overcome certain threats.

##### **Strengths:**

- Dynamic and constructive domestic and foreign policies of Kazakhstan, which provide political stability and help to maintain high rates of economic development;
- Favorable investment climate and a high level of investment activities;
- Rich in natural mineral resources and economically attractive composition for in-depth processing;
- Have an integrated oil and gas transportation infrastructure that connects Asian and European markets and there is a potential for the development of new oil and gas transporting systems;
- Well-developed legal framework in the sphere of subsoil-use;
- An established system of contract regulations of subsoil use.

##### **Weaknesses:**

- Historical problems of pollution and utilization of associated petroleum gas and other components;
- Dependence on transit countries to enter markets in Europe and third countries;
- Lack of investment resources due to the high capital intensity of projects and the crisis in the financial markets;

- High depreciation of oil and gas assets, refineries;
- Low depth of oil processing and oil products comparing to European standards (dismatch);
- Dependence on Russian oil and natural gas supply from Uzbekistan and Russia;
- Insufficient development of Caspian Sea infrastructure and the absence of a developed gas transportation system needed to supply natural gas to the northern and central areas of the internal market;
- Low share of national participation in developing oil and gas fields;
- Insufficient government funding of regions for the republic gasification projects;
- Difficulty to ensure the necessary volumes of gas for the production of petrochemical products in the presence of attractive opportunities for subsoil exports;
- Disagreements with "Gazprom" for the provision of equal access to the gas transportation system of Russia for the transportation of Kazakh gas to the third countries and establishing a fair market price for Kazakh gas;
- A significant proportion of transport costs in the final price of Kazakh petrochemical products;
- Complicated hydrologic and climatic conditions.

**Opportunities:**

- The trend of growing energy demand in comparison to the growth of new hydrocarbon reserves and limitations of the world hydrocarbon reserves;
- Availability of the projected demand for petrochemical products in the international market in the certain regions (Central and Eastern Asia) including the delivery of off-take;
- The presence of a number of prospective sites in search of hydrocarbons;
- The desire of the world major oil producers to provide the economically justified price levels;
- High demand for hydrocarbons as a resource for the various modes of transport - petrochemical industry;
- The output of high value-added products, including consumer goods;

- Integration with the Caspian region (Russia, Turkmenistan, Azerbaijan, Iran).  
The opportunity to participate in the program of development of the western regions of China.

- Increasing of the supply of Kazakh goods and services and employment;
- Development and modernization of related industries - engineering, construction industry, service companies, the Navy.

**Threats:**

- The risks of technological accidents;
- Oil production in environmentally sensitive zone on the Caspian Sea;
- The high pressure reservoir and high content of hydrogen sulphide in oil;
- Unsustainable mining, non-compliance with the requirements from technological documents approved and neglected by the subsoil users;
- Possible changes in policy and tariffs for oil and gas transit from transit countries;
- Delays in the timing of projects and appreciation of their value;
- Reducing of the volume of Central Asian gas transit;
- The development of gas transportation projects, bypassing the territory of the republic;
- Saving raw materials and fuel industry trends;
- The imbalance in the approach to the development of offshore hydrocarbon fields and the development of coastal infrastructure;
- Increasing of the number of inputs of petrochemical plants on the regional level leads to the growing competition;
- Restriction of oil supplies from Russia or the imposition of export duty on such supplies;
- A possible gas shortages due to supply constraints from Uzbekistan and Russia;
- Increased concentration of individual investors in the industry;
- Lack of personnel, technical staff and specialists - engineers, middle and senior managers.

## 4.2 Problems faced by Kazakhstan in oil and gas industry

Nowadays, Kazakhstan faces several problems that currently influence the overall economic situation as well as gas and oil markets. As it was said before, Kazakhstan GDP is directly interconnected with these two fields. Below there are presented some issues that affect supply and demand of oil and gas products and by-products and possible solutions of these situations.

### 4.2.1 Investments as key factor for solving the problem

In 1993, in Kazakhstan the first major organizational structures became to establish, which largely determined the further development of the oil and gas sector of the country. In April of the same year the Government of the Republic of Kazakhstan signed a long-term (for 40 years) agreement with the US Company Chevron to establish a joint venture to develop one of the richest field Tengiz. ([www.tengizchevroil.com/ru/about/tco\\_history.asp](http://www.tengizchevroil.com/ru/about/tco_history.asp)) The agreement really demonstrated the trust and confidence of foreign investors in the economic opportunities of sovereign Kazakhstan. Currently, "Tengizshefroyl" JV is the largest oil producer of the republic.

In 1995 a number of regulations came into force, which were designed to facilitate the attraction of foreign investments into the Kazakh oil and gas sector. So, on April 18, 1995 there was adopted the Decree of the President of the Republic of Kazakhstan "On Oil Operations," and on June 28 - the RK President's decree having the force of law "On Oil". Decree on oil began to regulate relations arising from the conduct of petroleum operations on the territory under the jurisdiction of the Republic of Kazakhstan, including sea and inland waters. Decree of the oil was first introduced license-contract system of transmission Kazakh subsoil for use. As the Kazakh lawyers said, Decree on oil had the most serious impact on the concept and content of subsequent regulations on subsoil use. The procedure of subsoil use, laid down in this decree, began to be applied to operations within the mineral resource sector in relation to all minerals. (Effimoff I., 2000)

Kazakhstan Law naming "On investments", according to international experts, is

one of the best investment laws among the countries with economies in transition. For comparison, we can take Russia, whose oil and gas market is also attractive for investment. Fiscal burden, according to Paying Taxes 2012, in Kazakhstan is 28.6%, while in Russia - 46.9%. Tax from dividends for Kazakhstan residents is 5% (up to three years of ownership of shares and interests, with the ownership of more than three years - a zero rate), while in Russia - 9%. Opening of representative offices in Kazakhstan allows to provide the optimization of business taxes and to accumulate profits; for investors is profitable to open branches and subsidiaries of industrial companies and to post production.

Currently the domestic oil market has a number of large foreign companies representing more than 45 countries in the world, including USA, UK, France, Italy, Switzerland, Germany, Russia, Japan, China and others. In total, in the period of 2000-2014, the oil and gas industry has been invested 150.1 billion dollars, including 18 billion dollars was spent for geological exploration.

**Table 5 Investment flow in Kazakhstan, million dollars, 2014**

Country	Million US dollars
Netherlands	49,006
United Kingdom	24,713
China	18,285
USA	17,904
France	8,653
British Viirgin Islands	6,338
Russia	5,316



Japan	5,138
Switzerland	3,297
Austria	2,581

Source: National Bank Of Kazakhstan

The greatest investment activity is shown by such large companies as "North Caspian Operating Company" (18%), JV "Tengizchevroil" (15%), JSC "Mangistaumunaigas" (12%), JSC "CNPC-Aktobe" (11%), JSC "UMG" (8%), JSC "EMG" (4%), JSC "PetroKazakhstan Kumkol Resources" (3%), JSC "Turgai - Petroleum" (3%), JSC "Karazhanbasmunai" (2.5%), and FC "Buzachi Operating Ltd" (2%). (Dzhantureyeva E. 2014)

Also, in the territory of Kazakhstan are oil in various fields following European companies:

- Italian Eni (Agip - commercial brand of the company), (Karashyganak, Kashagan)
- French Total (Kashagan)
- German Royal Dutch Shell (Kashagan)
- English British Gas (Karashyganak)
- Spanish Repsol YPF (South Zhambai)
- Romania's Petrom (Tasbulat, Aktas, Turkmenistan)
- Danish Maersk Oil (Dunga)

You can not underestimate the contribution of the development of Kazakhstan's oil industry in Asian oil companies:

- India's Mittal Investments (Karakuduk, North Buzachi Zhambai, Satpayev)
- India's ONGC Videsh Ltd (Satpayev)
- Turkmen Kazakhturkmunai (Saztyube, Yelemes)
- Japanese company Impex (Kashagan).

It is worth to mention, that the results of 2014 show Kazakhstan to keep the best position in investment among countries of Central Asia. According to the investment climate indicator, Kazakhstan occupies the 50<sup>th</sup> place among the two hundred countries.

#### 4.2.2 Corruption as significant factor of market failures and its solutions

At this point, you can highlight a problem of corruption, which affects the efficiency of the state management. According to the «Transparency International» (TI), in 2015 Kazakhstan ranked 123 out of 168 countries on the Corruption Perceptions Index. In Kazakhstan, the corruption in the first place associated with the activities of public servants who are endowed with adequate powers to control issues. One of the sectors of the economy, which itself is influenced by corruption sdelok- oil and gas industry. An example would be the recent corruption case involving a German company «ThyssenKrup», which in 2012 was a defendant in the Kazakhstan project for the construction of artificial islands in the Caspian Sea. The prosecutor's office of the city Essen, where raspoloagetsya headquarters «ThyssenKrup», conducts an investigation, during which 14 employees of the company may be charged with giving large bribes in Kazakhstan. (Interim report for exploring informal network, 2013). Another object of the possible impact of corruption - the Republic of Kazakhstan National Fund, established by the Decree of the President of the Republic of Kazakhstan dated August 23, 2000 № 402 "On Natsioanlnom Fund of Kazakhstan." (MinFinKz) The purpose of this fund is to ensure stability of social economic development of the country, reducing the dependence of the republican and local budgets on the situation in world oil prices. In order to avoid encroachment on the financial assets of the Fund, the Fund may be getting going to recognize the object of criminal law protection that will strengthen state control to ensure the legality of a national fund allocation, ensure the reduction of corruption. It is worth mentioning the incident January 23, 2013, where an expanded government meeting on summarizing 2012, the President of Kazakhstan Nursultan Nazarbayev was troubled "disappearance" of \$ 10 billion. Allocated from the National Fund for the Stabilization program of 2009-2010 during the implementation of anti-crisis program.

With regard to the reports, then they must clearly and provides information on how much tax is paid by oil and mining companies, and how much revenue the state receives. However, transparency in reporting to the public can only be achieved by increasing public control over the activities of officials.

## 5 Conclusion

It is hard to overestimate the importance of the oil and gas sector in the economy. Oil prices affect many economic indicators and long-term economic policies, as well as the general well-being of people during their daily routine. Oil and gas are the factors describing the country economic position in the world and affecting the level of GDP of the state. Due to correctly and wisely accepted policies in Kazakhstan towards the oil and gas industry in the period after gaining its independence, the economy of this country has regained the stability of a positive development and economic growth. World interest in the oil and gas sector of Kazakhstan is growing from year to year and so the investment flows are going up and being contributed to the discovery of new deposits and the increase in mineral production capacities. As a result, Kazakhstan has entered the world oil and gas market and currently is occupying a leading position, especially on the territory of CIS market. As it was stated before, nowadays, Kazakhstan is the second largest oil reserve and the third largest gas reserves.

The study found that the main share of the country's exports are mineral resources. The share of revenues from the oil sector in the state budget is growing. Today, they account for 44% of the consolidated budget. However, there is a problem, such as corruption, where the National Fund of the state may hide real statements. The transactions relating to the oil and gas sector, have also been observed to be corrupted. In this situation, the solution is to improve the legislative and regulatory framework and to stricter penalties for corrupt activities. One of the most important factors in the prosperity of the oil and gas industry is investments to Kazakhstan. Constructive internal and external policy of Kazakhstan provides the political stability and, consequently, a favorable investment climate. Summarizing the results of the study, it is necessary to say, that oil and gas play an important role in the economy of Kazakhstan. Under favorable conditions on the international market oil and gas, Kazakhstan will increase the number of fields and the amount of production, create new and improve the available oil refinery output, and as a consequence, increase the export of hydrocarbon resources, thus ensuring the development of other sectors of the economy.

## 6 References

- Aven, T., & Vinnem, J. E. (2005). On the use of risk acceptance criteria in the offshore oil and gas industry. *Reliability Engineering & System Safety*, 90(1), 15-24.
- BHATTACHARYYA, Subhes C. *Energy economics: concepts, issues, markets and governance*. Springer Science & Business Media, 2011.
- Bradshaw, M. (2010). A new energy age in pacific Russia: lessons from the Sakhalin oil and gas projects. *Eurasian Geography and Economics*, 51(3), 330-359.
- Bremmer, Ian. "The end of the free market: who wins the war between states and corporations?." *European View* 9.2 (2010): 249-252.
- Dorian, James P., Shakarim F. Zhanseitov, and S. Hartono Indriyanto. "The Kazakh oil industry A potential critical role in Central Asia." *Energy policy* 22.8 (1994): 685-698.
- Effimoff, Igor. "The oil and gas resource base of the Caspian region." *Journal of Petroleum Science and Engineering* 28.4 (2000): 157-159.
- Ericson, Richard E. "Eurasian natural gas pipelines: the political economy of network interdependence." *Eurasian Geography and Economics* 50.1 (2009): 28-57.
- Gel'man, Vladimir, and Otar Marganiya. *Resource curse and post-Soviet Eurasia: Oil, gas, and modernization*. Lexington Books, 2010.

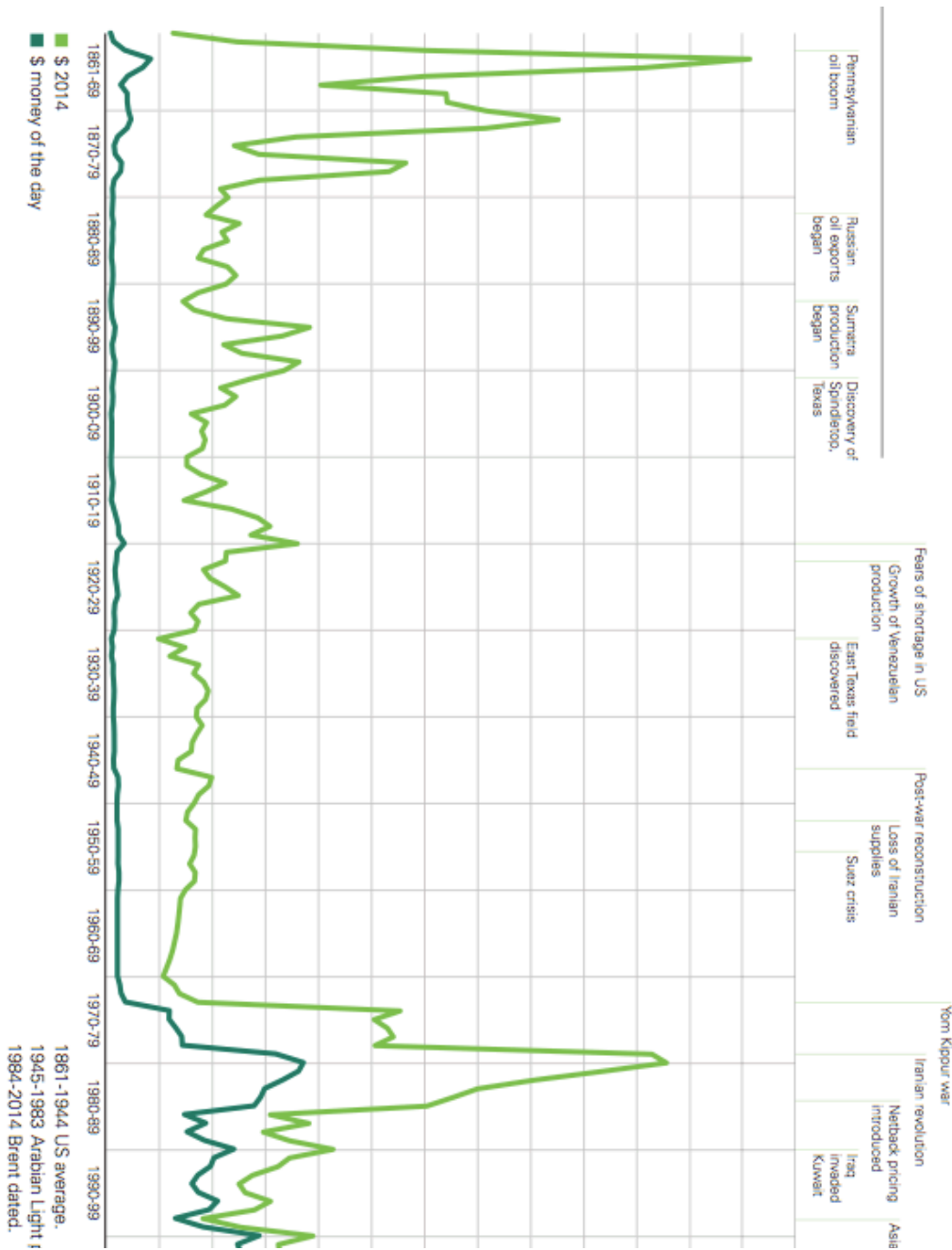
- CHIMA, Christopher M. Supply-chain management issues in the oil and gas industry. *Journal of Business & Economics Research (JBER)*, 2011, 5.6.
- Christoffersen, Gaye. *China's intentions for Russian and Central Asian oil and gas*. National Bureau of Asian Research, 1998.
- Inkpen, Andrew C., and Michael H. Moffett. *The Global Oil & Gas Industry: Management, Strategy & Finance*. PennWell Books, 2011.
- Kaiser, Mark J., and Allan G. Pulsipher. "A review of the oil and gas sector in Kazakhstan." *Energy Policy* 35.2 (2007): 1300-1314.
- Kersey, Alan D. "Optical fiber sensors for permanent downwell monitoring applications in the oil and gas industry." *IEICE transactions on electronics* 83.3 (2000):
- Kutan, Ali M., and Michael L. Wyzan. "Explaining the real exchange rate in Kazakhstan, 1996–2003: Is Kazakhstan vulnerable to the Dutch disease?." *Economic Systems* 29.2 (2005): 242-255.
- Luong, Pauline Jones, and Erika Weinthal. *Oil is not a curse: ownership structure and institutions in Soviet successor states*. Cambridge University Press, 2010.
- Mitchell, John, Valérie Marcel, and Beth Mitchell. *What next for the oil and gas industry?*. Chatham House, 2012.
- Olah, George A., Alain Goeppert, and GK Surya Prakash. *Beyond oil and gas: the methanol economy*. John Wiley & Sons, 2011.
- RAMOS, Sofia B.; VEIGA, Helena. Risk factors in oil and gas industry returns: International evidence. *Energy Economics*, 2011, 33.3: 525-542.
- Tissot, Bernard, and D. Welte. *Petroleum formation and occurrence: a new approach to oil and gas exploration*. Springer Science & Business Media, 2012.
- WILLIAMS, Cynthia A. Civil society initiatives and soft law in the oil and gas industry. *NYUJ Int'l. L. & Pol.*, 2003, 36: 457.
- Yergin, Daniel. *The prize: The epic quest for oil, money & power*. Simon and Schuster, 2011.

## Online Resources:

- <http://stat.gov.kz/>
- <http://www.bp.com/en/global/corporate/energy-economics/statistical-review-of-world-energy.html>
- <http://www.adilet.gov.kz/en>
- [http://www.tengizchevroil.com/ru/about/tco\\_history.asp](http://www.tengizchevroil.com/ru/about/tco_history.asp)
- <http://www.worldbank.org/ru/country/kazakhstan>
- <http://www.eia.gov>
- <http://budget.kz>
- <http://www.government.kz>
- <http://www.akorda.kz>
- <http://www.worldbank.org>

## 7 Appendix 1 - Crude oil prices 1861-2014 (USA dollar per barrel)

Source: BP Statistical Review of World Energy, June 2015





## 8 Appendix 2 - Trade movements of 2004-2014 (thousands barrels daily)

Source: BP Statistical Review of World Energy, June 2015

Thousand barrels daily	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
<b>Imports</b>											
US	12898	13525	13612	13632	12872	11453	11689	11339	10587	9792	9221
Europe	12538	13261	13461	13953	13751	12486	12094	12208	12488	12662	12601
Japan	5203	5225	5201	5032	4925	4263	4567	4494	4743	4573	4333
Rest of World	18651	19172	20287	22937	23078	24132	25160	26120	26930	29216	30581
<b>Total World</b>	<b>49290</b>	<b>51182</b>	<b>52561</b>	<b>55554</b>	<b>54626</b>	<b>52333</b>	<b>53510</b>	<b>54160</b>	<b>54748</b>	<b>56243</b>	<b>56736</b>
<b>Exports</b>											
US	991	1129	1317	1439	1967	1947	2154	2495	2682	3564	4099
Canada	2148	2201	2330	2457	2498	2518	2599	2798	3056	3279	3535
Mexico	2070	2065	2102	1975	1609	1449	1539	1487	1366	1347	1290
S. & Cent. America	3233	3528	3681	3570	3616	3748	3568	3755	3830	3756	3929
Europe	1993	2149	2173	2273	2023	2034	1888	2053	2174	2356	2293
Former Soviet Union	6440	7076	7155	8334	8184	7972	8544	8569	8285	9001	8932
Middle East	19630	19821	20204	19680	20128	18409	18883	19687	19581	19787	19761
North Africa	2917	3070	3225	3336	3260	2938	2871	1945	2596	2124	1762
West Africa	4048	4358	4704	4830	4587	4364	4601	4637	4557	4417	4431
Asia Pacific†	4189	4243	4312	6004	5392	5631	6226	6088	6299	6142	6223
Rest of World	1631	1542	1359	1656	1363	1323	637	646	322	472	481
<b>Total World</b>	<b>49290</b>	<b>51182</b>	<b>52561</b>	<b>55554</b>	<b>54626</b>	<b>52333</b>	<b>53510</b>	<b>54160</b>	<b>54748</b>	<b>56243</b>	<b>56736</b>

†Excludes Japan. Excludes trade between other Asia Pacific countries and India prior to 2007.

North and West African exports excludes intra-Africa trade.

**Note: Annual changes and shares of total are calculated using thousand barrels daily figures.**