

# Oil Prices Impact on Energy Policy of Kazakhstan

K. Gabdullin, Y. Bek Ali, N. Aldabek

**Abstract**—This paper explores oil prices changes impact on energy policy of Kazakhstan in 2001-2009. It involves the role of oil income to the economic development, process of diversification of internal and external energy policy of Kazakhstan, and the changes in oil law towards subsoil users.

**Keywords**—diversification, internal energy policy, external energy policy, high oil prices, modernization

## I. INTRODUCTION

IN 1991 after Soviet Union collapsed Kazakhstan was assigned a task towards modernization of economy. Oil industry played the main role in modernization. The share of oil in industry is 49%, in GDP is 15%. In structure of imports the share of oil is 60%. Oil prices growth affected favorably to economy of Kazakhstan and energy industry. Exports incomes growth influenced to Astana decision for diversification of Energy, routes of oil transportation according to strategy of many vectors in Foreign policy of Kazakhstan.

This paper studies the role of oil prices change towards the diversification of energy policy of Kazakhstan. The research aims to study influence of oil prices growth for the change of energy strategy. How do oil prices influence to State budget income and social-economic development? How do oil exports income affect to the production and oil infrastructure development? How do high oil prices influence to the change of oil law in produce division? How do oil exports affect to the change in strategy of modernization refineries and other energy sectors?

## II. OIL PRICES AND ECONOMIC MODERNIZATION OF KAZAKHSTAN

Since 2001 “period of high oil prices” has been started when oil price grew from 24 dollars for barrel in 2001 to 147 dollars in 2008. Average annual price reached 97.26 dollars exceeding history maximum of 96.26 dollars in 1980 in conversions of dollars in 2008 [1]. Oil prices have been demonstrating high growth dynamics since 2001. Oil prices growth is related with rapid increase of demand in Asia and other factors (War in Iraq, Nuclear program of Iran, terrorist activity and the convulsions of nature).

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High oil prices promoted to dynamic growth of Kazakhstan’s economy. GDP of Kazakhstan grew from 22.15 in 2001 to 115 billion dollars in 2009 and demonstrated rates of increase by 9% per year. GDP per capita grew from 1491 dollars in 2001 to 7140 dollars in 2009. Thus, from 2001 to 2009 GDP grew for 5 times, GDP per capita grew for 4.8 times.

TABLE I

| OIL PRICES AND GDP GROWTH OF KAZAKHSTAN IN 2001-2009 |   |                        |                                |                                   |
|--|---|------------------------|--------------------------------|-----------------------------------|
| Year   | Oil prices<br>doll. for<br>barrel,<br>(tone)* | Rates of<br>increase** | GDP in<br>billion<br>dollars** | GDP per<br>capita in<br>dollars** |
| 2001   | 24.44<br>(179)                                | 13.7                   | 22.15                          | 1491                              |
| 2002   | 25.02<br>(183)                                | 9.8                    | 24.64                          | 1658                              |
| 2003   | 28.83<br>(211)                                | 9.3                    | 29.75                          | 2068                              |
| 2004   | 38.27<br>(280)                                | 9.4                    | 42.3                           | 2714                              |
| 2005   | 54.52<br>(399)                                | 8.5                    | 56.8                           | 3737                              |
| 2006   | 65.14<br>(477)                                | 10.7                   | 81.7                           | 5338                              |
| 2007   | 72.39<br>(531)                                | 8.9                    | 102.8                          | 6639                              |
| 2008   | 97.26<br>(713)                                | 3.3                    | 108.5                          | 6920                              |
| 2009   | 61.67<br>(452)                                | 1.2                    | 114.9                          | 7140                              |

1 tone – 7.33 barrels

Source: \*BP Statistical Review of World Energy. 2011

\*\* Казахстан в 2010 г. Статистический ежегодник. Астана, 2011.

High oil prices promoted to rapid growth of oil exports from 31.4 dollars in 2001 to 66.1 dollars in 2009. Exports cost grew from 8.63 to 43.19 billion dollars where income from oil exports grew from 4.25 to 26.21 billion dollars. The share of oil in exports grew from 49 to 60%. The State budget grew from 5.07 to 23.84 billion dollars, where oil income to budget increased from 810 million to 7.95 billion dollars. The share of oil to State budget income grew from 16 to 33%. If the exports of oil grew only for 2,1 times due to the growth of oil prices oil exports income grew for 6.1 times, and total exports grew for 5 times. The State budget grew for 4.7 times from which oil income to budget grew for 9.18 times [2]. Thus, oil became the main profit in Kazakhstan.

TABLE II

EXPORTS OF CRUDE OIL AND INCOME TO THE STATE BUDGET KAZAKHSTAN  
IN 2001-2009

|  | 2001 | 2003  | 2005  | 2007  | 2009  |
|--|------|-------|-------|-------|-------|
| Exports of oil in million tones*                           | 31.4 | 42.3  | 51.3  | 56.6  | 66.1  |
| Exports oil income in billion dollars**                    | 4.25 | 7.01  | 17.39 | 28.12 | 26.21 |
| Total exports income in billion dollars**                  | 8.63 | 12.93 | 27.85 | 47.75 | 43.19 |
| The share of oil in total exports in percentage            | 49   | 54    | 62    | 59    | 60    |
| State budget income in billion dollars**                   | 5.07 | 6.95  | 11.26 | 19.64 | 23.84 |
| State budget income from oil in billion dollars***         | 0.81 | 1.61  | 4.35  | 7.99  | 7.95  |
| Share of oil exports to state budget in billion dollars*** | 16   | 23    | 38    | 40    | 33    |

Source: \*BP Statistical Review of World Energy. 2011

\*\* Казахстан в 2010 г. Статистический ежегодник. Астана, 2011.

Oil exports income promoted to the modernization of economics. "Strategy plan of development of Kazakhstan to 2020" was approved. It involves diversification of economy.

Diversification of oil consists of stimulating non raw materials sector i.e. the extension of manufacturing industry in total structure of economy, mechanical engineering industry development, oil-chemical and atomic industry development, biotechnology, pharmaceuticals, food, textile, agriculture, information technology, and infrastructure industry [3].

### III. OIL FACTOR IN ENERGY POLICY OF KAZAKHSTAN

Oil prices growth stimulates investment activity in Kazakhstan. Direct investments to Kazakhstan grew from 4.6 in 2003 to 18.4 billion dollars in 2009. Investments to production of oil grew from 2.1 in 2003 to 4 billion dollars in 2009, and to geological exploration from 965 million dollars in 2003 to 8.87 billion dollars in 2009 [4]. Thus, investments to economy grew for 4 times, where the share of oil production grew for 1.9 times and geological exploration for 9.2 times.

TABLE III

| DIRECT INVESTMENT TO ECONOMY AND OIL SECTOR IN MILLION DOLLARS | 2003 | 2005 | 2006  | 2007  | 2008  | 2009  |
|--|------|------|-------|-------|-------|-------|
| Total economy  | 4624 | 6416 | 10623 | 18453 | 19809 | 18428 |
| Crude oil production   | 2114 | 1657 | 2003  | 5049  | 2622  | 4001  |
| Geological exploration   | 965  | 3311 | 5414  | 6643  | 7565  | 8870  |

Source: Казахстан в 2010 г. Статистический ежегодник. Астана, 2011.

High oil income influences to Energy policy of Kazakhstan. In 2008 Kazakhstan accepted the Energy Strategy of 2010-2014 for the diversification of energy which consists of internal and external energy policy:

Internal Energy policy involves:

- rise of oil production;
- extension of geological exploration;
- pipeline infrastructure development;
- refinery and oil-chemical industry development;
- atomic and renewable, wind, geothermal, solar energy, and hydro development;
- growth of State share in oil-field exploration by reconsideration oil laws;

External Energy policy consists of:

- diversification of oil exports, i.e. extension of directions in oil transportation;
- development of energy cooperation with Russia, China, EU, US, Turkey, Iran, India, and Japan [5].

Crude oil production grew from 40.1 in 2001 to 78.2 million tones in 2009 i.e. for 95%. Astana plans to increase production to 150 million tones by 2005. It intends to develop the largest oil-fields. In 2004 the decision was accepted to direct 29 billion dollars for the development of Kashagan oil-field. The reserves are 38 billion barrels where 9-13 billion barrels was recognized as recoverable. By 2015 production must be achieved 56 million tones per year. In 2002 oil exploration and production began in Kurmangazi oil-field. The reserves are 7 billion barrels [6]. In 2003 State program of Kazakhstan sector of Caspian Sea development began to work. Since 2001 Kalamkas-more, Kayran, Aktoti and South-West Kashagan oil-fields were found with reserves of 14 billion barrels.

Oil production growth and large oil-fields development of Caspian sea offshore demand appropriate infrastructure. Thus, in 2006 the Transport Strategy for 2015 was accepted, that aims for the development of infrastructure which suppose the construction of new export routes. Currently, main pipelines in Kazakhstan are Tengis-Novorossiysk (Caspian pipeline consortium), Kalamkas-Uzen-Atirau, Atirau-Samara, Zhanazhol-Kenkiyak-Orsk, Pavlodar-Shimkent, Karakoyin-Kumkol, Atasu-Alashankou. Moreover, priority route is Baku-Tbilisi-Ceyhan oil pipeline. Oil-pipelines extend up to 5.8 thousand kilometers with capacity of 120 million tones [7].

#### A. Caspian Pipeline Consortium

The most important export route is Caspian Oil-Pipeline Consortium. In this project Russia (31%), Kazakhstan (21%), Oman (7%), Chevron (15%), ExxonMobil (7.5%), "LUKArko" Russia (12.5%), "Mobil Caspian Pipeline Company" (7.5%), "Rosneft"/"Shell" (7.5%), Agip (2%), "BritishGas" (2%), "Eni" (2%), "Oryx" (1.75%) take part.

First line of pipeline (value 2.1 billion dollars) was put into operation in 2003. Its capacity is 28 million a year. Total value of pipeline is 4 billion dollars which grow its capacity to 67 million tones a year. Oil exports from Tengiz, Karachaganak, Arman, Alibekmola and Martishi oil-fields via Russia to Novorossiysk and further to Europe markets through this Consortium.

In 2011 Kazakhstan exports 28 million tones of oil. It plans to increase it to 52 million tones by 2020.

#### B. Uzen-Atyrau-Samara

This pipeline begins from Uzen oil-field, it continues to Atirau oil-refinery which joins with Samara pipeline. Its capacity is 15.75 million tones. Maximum pipeline capacity is 30 million tones. Pipeline holders are in Kazakhstan territory (Kaztransoil) and in Russia (Tatneft).

Kazakhstan exports 15 million tones by that pipeline.

#### C. Kazakhstan-China Oil Pipeline

The construction of the pipeline began in 1997. The first section of pipeline from the Aktobe region's oil-fields to the Atyrau was completed in 2003. The construction of pipeline from Atasu to Alashankou was finished in 2005. The construction of Kenkiyak-Kumkol section was completed in 2009.

The pipeline was constructed by the China National Petroleum Corporation and KazMunayGas. The longway of Atasu-Alashankou section is 2,238 kilometers. Pipeline cost 700 million dollars. Capacity might be upgraded to 400 thousand barrels daily. The section started to supply oil in 2006. Kenkiyak-Kumkol section was 792 kilometers. It has transportation capacity 10 million tones a year.

This section expected to reach oil to Kumkol in 2011. From Alashankou oil was supplied to China market.

In 2011 Kazakhstan expects to export 11 million tones by growth to 20 million tones by 2020.

#### D. Actau-Baku-Tbilisi-Ceyhan

Caspian oil exports by tankers from Kazakhstan port from Aktau to Baku. The length is 300 kilometers, possible supply upto 10 million tones a year. After that Azerbaijan provides transportation of oil via Trans-Caucasian till Turk port Ceyhan by capacity 100-120 million tones a year. The length is 1768 kilometers. Capacity is 50 million tones a year. Project value is 3.9 billion dollars.

BP (30.1%), State Oil Company of Azerbaijan (25%), Chevron (8.9%), Statoil (8.71%), Eni (5%), Total (5%), Itochu 3.4%, ConocoPhillips (2.5%), Inpex (2.5%) are shareholders.

In 2003 Kazakhstan joined to this project. Kazakhstan concluded inter-government agreement with Azerbaijan part on commerce circumstances of the project. It intends to found company "Actau Baku" which will supply oil by Baku-Tbilisi-Ceyhan pipeline.

Kazakhstan will be able to export 20 million tones a year by Baku-Tbilisi-Ceyhan pipeline. In 2011 Kazakhstan intends to export 9 million tones in prospect supply of 12 million tones in 2020 [8].

Strategy of oil infrastructure development involves tankers construction. In 2005-2006 three kazakhstan tankers "Astana", "Almaty", "Aktau" were set afloat. Port Aktau has been reconstructed. Its export capacity were brought to 10 million tones. From that port oil are dispatched to Baku, Mahachkala and Iran port Nekka. In 2009 about 80% of oil transported by pipelines, 12% by rail, and 7% by water.

Notwithstanding dynamic growth of oil production, consumption is growing slower from 8.7 million in 2001 to

12.1 million tones. The growth was only 39%. It is related with insufficient capacity of refineries and orientation of foreign companies produced oil in expansion exports to the detriment of internal market. There are three refineries Atirau, Pavlodar, and Chimkent. Total potential of refineries is 18.5 million tones. But its capacity is only 10 million tones.

High oil prices stimulate refineries and oil chemical industry development. Importance of high technology processing industry construction was determined in the Message to Kazakhstan people of 2007. National Industry Oil-chemical Park in Atirau region was formed. Moreover, investment project of gas-chemical complex in 800 thousand tones propylene and 450 thousand tones polyethylene was prepared. Project estimates are 6.3 billion dollars. Astana plans modernization of refineries and bitumen plant construction in Atirau.

TABLE IV  
PRODUCTION AND CONSUMPTION OF OIL IN MILLION TONES

|             | 2003 | 2005 | 2007 | 2008 | 2009 |
|-------------|------|------|------|------|------|
| Production  | 52.4 | 62.6 | 68.4 | 72.0 | 78.2 |
| Consumption | 10.1 | 11.3 | 11.8 | 12.8 | 12.1 |

Source: BP Statistical Review of World Energy. 2011

High oil prices impact on nuclear and renewable energy development. In 2006 Astana decided to build several nuclear reactors in the West, North and South region. Total capacity of reactors is 870 Mwt. Moreover, "Conception of conversion to stable development in 2007-2014" was accepted. It provides to introduce ecologically clean energy including development of wind, solar, small hydro, and biofuel energy.

At the same time external energy policy of Kazakhstan is changing. Because of Kazakhstan is local situated from the main oil markets and since Soviet Union period being as a raw material adjunct of Moscow Astana exported oil via Russia pipeline infrastructure. Till 2001 oil is exported to the external markets by Atirau-Samara oil pipeline and mixed with comparatively lower quality Russian oil that reduced its value and depended mostly from Moscow. Kazakhstan oil has been established quota in 10-15 million tones. After having been constructed Caspian Pipeline Consortium, Kazakhstan-China and Baku-Tbilisi-Ceyhan pipelines situation cardinally changed. Its quota has increased and tariff to Kazakhstan oil equaled with Russian oil via Russia. Astana also plans to export oil to South Asia market via Iran.

Oil income growth promotes Kazakhstan government to be participating in prospective projects by amending in oil law and growing budget income from subsoil users. Main regulatory legal acts regulating oil sector are considered to be laws "On oil" and "On subsoil and subsoil users". Law "On oil" that came into force on 28 June of 1995 considers that oil which is contained in subsoil is a State property and after its extraction its property is defined the act which is concluded between Kazakhstan government and subsoil users. It includes several contracts in realizing oil operations: concession based in payment tax and royalty in the form of agreement on production division [11]. Second regulatory legal act regulating law relations in subsoil using is law about subsoil and subsoil using which was accepted in 27 January of 1996.

According the law foreign citizens and legal persons use rights and bear responsibility in subsoil using equally with citizens and legal persons of Kazakhstan [12].

In 2004 changes were in tax system. The rent tax on export crude oil was accepted and fixed another order of tax calculation on super profit. According to it in 2004 new tax on super profit from mining companies was introduced. Object of taxation is part of clean income exceeding 20% from amount of admissible check. Rent tax on oil exports provides for slide scale of rates – from 1% in price of 19 dollars per barrel and to 33% in price 40 dollars and more [13]. Thus, the taxes grow proportionally to oil prices. The higher price of oil is the more tax to state budget. The amendment to taxation allowed to grow tax from 15-17% to 25-27%.

In the aim of more state participation in prospect oil projects in 2005 was accepted amendment to law about subsoil and subsoil using which establishes priority law of Kazakhstan in buyback share in oil projects realized in the country [14]. New amendment to the law using inserted in 2008 gives the right to the state in case of emerge of threat to national security as a result of subsoil users action to reject contract on subsoil using [15]. It allowed to buyback 33% share from oil company PetroKazakhstan to national company KazMunayGaz and to rise its share till 18% in Kashagan oil-field development. The share in oil production of Kazakhstan greatly increased from 11 to 25% in total production in the country.

#### IV. CONCLUSION

The research concludes that the high oil prices grow production and export income which modernize its economy and stimulate reforms in Energy and change its policy. Rapid growing oil income increase the State budget and its investment to social-economic development and modernization of energy sector by developing oil-fields and production, refineries, chemical sector, pipeline infrastructure, nuclear, hydro and other renewable energy and expanding export routes to different markets. Moreover, high oil prices change law towards oil subsoil users by growing tax to excess profit and expand the role of state in oil sector.

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