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SELECTION OF THE OPTIMAL WAY OF DEVELOPMENT FOR THE OIL DEPENDENT ECONOMY OF KAZAKHSTAN

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Abstract

The report describes the current problems in the country's economy, characteristic of Kazakhstan's economy. This is shown by the high dependence of the country's economy on natural resources and changes in prices for them. In the past, rapid development of natural resources, in particular hydrocarbons, allowed the country to maintain high growth rates. However, because of the expected low oil prices in the foreseeable future and the transition of hydrocarbon production to the stage of the plateau, this driver of growth has dried up. The article also discusses possible ways of finding new drivers of growth.

Keywords: Economic Growth, Oil Dependency, Kazakhstan, Hydrocarbons, Government Policy

JEL Classification: G38, Q01, Q32, Q38, Q48

1. Introduction

At present, Kazakhstan is at the crossroads of its further development. On the one hand, the outstripping development of the oil and gas industry and other extractive industries was unsustainable in the long term. The growth rate of the country's economy, and the standard of living of the population along with it, fell sharply as world prices for raw materials fell. During the time of outstripping development of the raw materials industries, many manufacturing industries that could become drivers of growth have gone into oblivion or have fallen into decay, and no, their ability to quickly revive, despite the authorities' attempts to reverse the situation.

The expected long-term decline in world prices for oil and other raw materials, the rapid development of alternative energy sources in the world in the conditions of the existing structure of the national economy, deprives the country of the chances of achieving not only high but also average growth rates of the economy in the near future.

As a result, the whole system of public administration in the country is experiencing a systemic crisis, ranging from the growing hole in the state budget, a reduction in real salaries of employees, and ending with a sharp rise in inflation, unstable exchange rate of Tenge, the fall of the real welfare of the population. All this indicates the unfavorable economic situation in the country.

The authorities are at a loss. They do not know what to do, and try to sell to foreign investors everything that remains valuable by the state, such strategic assets as the national companies Kaztelecom, Aktau International Sea Trade Port, National Mining Company Tau-Ken Samruk, Atyrau Oil Refinery Plant, Pavlodar Petrochemical Plant, Kazpost, country's or regional monopolistic companies, such as air company Air Astana, the Electric companies East Kazakhstan Regional Energy Company, Mangistau Electricity Distribution Company, Aktobe Thermal Power Station, the machine-building plants Kirov Machine-Building Plant, Semiplatinsky Machine-Building Plant, Kazakhstan Aviation Industry, infrastructure facilities, such as airports in Atyrau, Aktobe, Palodare and Transtelecom. As reflected in the Privatization Program, a total of 215 large enterprises are expected to be sold (Samruk-Kazyna, 2016a).

However, the sale of strategic assets is tantamount to a refusal of the country of their future independent development. A sale of large enterprises of monopolies will only lead to an increase in the level of monopolization of the economy and a sharp decrease in its international competitiveness. These facts indicate that the state has a very difficult financial situation now, and, most importantly, that the selected model of raw development is completely exhausted itself in all respects.

2. Current features of Kazakh's economy

Despite repeated statements about accelerated industrial development, the country's economy remains as before a mining and consumer economy. Country does not produce much of the products from the manufacturing industry except for agricultural products and extraction of mineral resources from the bowels of the earth.

The current model is based on extraction and export of raw materials. Rich resources and rising prices for commodity exports have contributed to its fairly long-term use. This allowed the consumption to grow at a rate much higher than the growth of production. If oil production for 1991-2015 has grown by about 3 times, dollar revenue has increased by about 7.7 times since 1991. Incomes of the population in real terms increased approximately 3.9 times, and GDP - 2.2 times. Obviously, this model cannot be called sustainable, since the basic principle is not observed: a country should not spend more than it produces.

The measures taken by the state in recent years have been able to reverse the trend towards the de-industrialization of the country, which began with the country's independence in 1991 and lasted until 2011. Nevertheless, they could not dramatically change the structure of the economy (Figure 1).

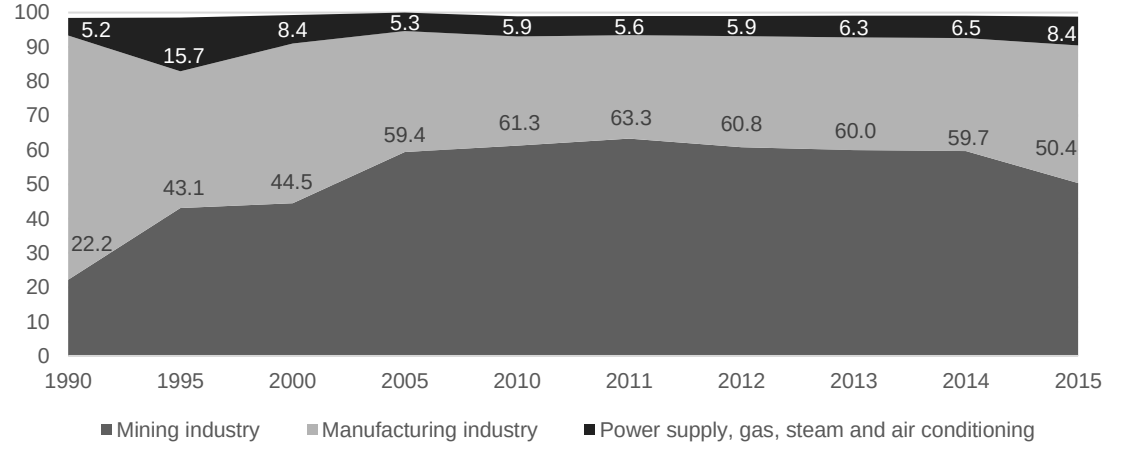

Figure 1. The structure of Kazakhstan's industry for 1990-2015

Source: Author's calculation based on Agency of Kazakhstan on Statistics (2000, 2010) and Committee on Statistics (2016a).

It is no coincidence that since independence in 1991, the country has turned from an industrial-agrarian into a purely agrarian-raw material power. According to the level of economic development, the country has not risen up, but on the contrary - it has slid to the bottom - to simpler forms of management. This can be traced in the fall of all the main indicators of socio-economic development, such as GDP per capita, the rate of real growth in the economy, the stability of the national currency, inflation, the country's accumulated investment position, growing current account deficit and budget, country debt, etc. (Table 1).

Table 1. Changing of key indicators of the economy of Kazakhstan in 2012-2015

Key indicators	Unit of measure	2012	2013	2014	2015
Real GDP growth	%	4.8	6.0	4.2	1.2
GDP per capita	$ 000	12.4	13.9	12.8	10.5
CPI (in relation to Dec. of last year)	%	6	4.8	7.4	13.6
Average Annual Exchange Rate	Tenge/$	149.1	152.1	179.2	221.7
Index of physical volume of investments	%	4.1	6.9	4.2	3.7
Current account balance	Bln. $	1.1	1.2	6.0	-5.5
Budget deficit*	% GDP	-2.9	-2.0	-2.7	-2.2
Intern. Investment. Position, net	Bln. $	-35.3	-33.3	-40.2	-41.9
External debt (with inter-company debt)	% GDP	65.8	63.4	71.1	83.4

Note: *It is shown after the transfer of funds from the National Fund.

Source: Author's calculation based on Committee on Statistics (2016b) and National Bank of Kazakhstan (2016).

The reason is that the level of added value in the agrarian and raw material economy is significantly lower than in the industrial-agrarian economy, which is related to the level of processing of raw materials. In the agrarian and raw material economy, the reproduction chains are shorter than in the industrial-agrarian economy, and the absence of the final links in it implies a lower efficiency of processing raw materials.

However, the question arises: "Why was the decline in the qualitative level of development not accompanied by a decline in the quantitative standard of living in the 2000s?" Moreover, during this time, there was a rise in the economy and an increase in the standard of living of the population?

This is because this increase was due to rich resources, rapid extraction of raw materials from the bowels of the earth and favorable raw material prices on the international market. The emphasis on accelerated production of oil and other minerals helped Kazakhstan show high economic growth over a period from 1999 to 2010, significantly improve the living standards of the population and ensure the high loyalty of the country's electorate to the existing neopotic system. However, this could not go on forever. It is not possible only to take, giving nothing in return. In order to live well, you need to create something and produce it by yourself, rather than being always consumers of nature, future generations or external investors.

Such a policy has led to a radical change in the structure of the country's economy. Because of the outstripping growth of the raw materials industries, many manufacturing industries that could become drivers of growth under other conditions have gone into oblivion or declined (Table 2). This includes chemical and petrochemical industry, engineering, light industry, etc. Now their shares in the production structure are very small, so that they can be counted as drivers of growth in the future.

On the contrary, the role of the mining sector, particularly the oil sector turned out to be hypertrophically bloated. Strong dependence on the extraction of several resources has led to high volatility in the development of the country's economy. Moreover, if economies with a diversified structure are coping well with falling oil or other resources (for example, the US economy, the UK), then the economy of Kazakhstan immediately begins to sneeze (Table 1).

Another feature of the raw material economy is its low labor intensity, in contrast to the processing industries, which are characterized by high labor intensity of production. In the country's extractive industry, only 284,000 people worked in 2015, which was only 3.1% of the total number of employees. Although this industry provided 17.4% of GDP (Table 3), as well as 50% of budget revenues and 60% of the country's exports (Standard & Poor's, 2016).

Table 2. The structure of Kazakhstan's industry by value in 1990-2015

	1990	1995	2000	2005	2010	2015
Industry – total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Mining industry	**22.2**	**43.1**	**44.5**	**59.4**	**61.3**	**50.4**
Coal and lignite mining	3.1	7.2	1.5	1.2	1.1	1.4
Production of crude oil and natural gas	2.6	10.8	39.3	50.4	51.2	39.4
Metal ore mining	16.5	25.1	3.0	3.8	5.4	5.0
Manufacturing industry	**71.1**	**39.8**	**46.5**	**35.2**	**31.8**	**40.0**
Food industry	22.3	15.9	12.1	7.9	7.0	9.0
Light industry	15.6	2.5	0.0	0.0	0.4	0.6
Chemical and petrochemical	14.4	12.8	5.3	6.7	6.1	8.9
Metallurgical industry	16.5	15.1	20.3	13.0	13.2	14.3
Machine building and metalworking	15.9	7.4	3.1	4.4	3.9	5.6
Power supply, gas, steam and air conditioning	**5.2**	**15.7**	**8.4**	**5.3**	**5.9**	**8.4**

Source: Author's calculation based on Agency of Kazakhstan on Statistics (2000, 2010) and Committee on Statistics (2016a).

Table 3. Share of mining industry in Kazakhstan's GDP

	2010	2011	2012	2013	2014	2015
Share in employment	2.2	2.4	2.5	2.8	3.3	3.1
Share in GDP	24.0	22.7	21.3	19.7	19.6	17.4

Source: Committee on Statistics (2016c).

Therefore, the high growth of the commodity economy, which is usually accompanied by symptoms of Dutch disease and the ruin of processing enterprises due to the high exchange rate of the national currency, does not solve, but on the contrary, creates problems with unemployment. It is necessary to look not at the change in the number of unemployed, but on the number of the unemployed, taking into account the self-employed, since most of them do not have a regular and stable income for a normal life, and therefore they differ little from the former. If they are taken into account, the unemployment rate in Kazakhstan will not be 5%, but from 8.5% to 10.5% (Committee on Statistics, 2016b).

The next feature of the raw material economy is the receipt of unearned income or natural rent associated with the exploitation of a rare resource, such as raw materials. As a result, the whole country "sat down" on unearned income, that is, began to eat what it did not earn. This is evidenced by the negative international investment position of Kazakhstan (Table 1), which now amounts to - (-) $42 billion.

All the vices of the existing model of economic development, which foreign scientists call one word "crony capitalism" (Haber, 2002; Kosals, 2006), are due to the named features. This is a type of capitalism, in which the main role plays not the merits of person, but his belonging to a particular clan or team; not his knowledge and talents, but the thickness of his wallet. Not his honesty, but his ability to show off in public; not his ability to make right decisions, but his admission to high offices.

The consequences of the crony-capitalism and nepotism are extremely destructive. They create permissiveness and absolute power, glamorous life and begging at one pole, and

lack of rights and dependence, colorless need and despair on the other pole. They do not give employees a better life, because no matter how much they work, it is difficult for them to get out of the grip of need. They do not allow businessmen to use full own creative potential, because they know that a successful business can be simply taken away from them if any of the officials put their eyes on them. They do not allow state officials to work in good faith since their low salaries are not sufficient to feed their families. They do not allow honest politicians to rise up the career ladder, since such a system, where contacts by acquaintance and familiarity solves everything, rejects them. In addition, most importantly, this model discourages people from honest and productive work, as it deprives them of the hope that their labor will be fairly paid.

This model forces talents and businessmen to "vote with their feet," which leads to an outflow of smart innovative ideas and capital from the country to more developed countries, where their talents and capitals are in high demand. It leads to total corruption since the signing of any piece of paper requires a reciprocal gratitude, otherwise, the matter will be stalled on an equal footing.

Is it possible that any country with distorted incentives of people to work and initiative will prosper in the long term? Of course not. The extracting country, while the treasury contains money, and the subsoil has rich resources can do it, until these resources run out. Nevertheless, rich natural resources tend to be depleted. For this reason, this model is devoid of the future, because at its core, it relies more on rich resources, and high world prices for raw materials, rather than talents, conscientious work of people and competent management.

Crony capitalism is symptomatic of a disease that leads to the fact that rich resources become neither a blessing for the inhabitants of the country, but a curse for them. The term "resource curse", used in relation to resource-rich countries, has occurred for this reason. However, this disease affects not all countries with rich resources. Some countries were able to avoid this disease, for example, Norway, Malaysia, Saudi Arabia, the United Arab Emirates, etc. (Inozemtsev, 2016). This proves that the problem is not the rich resources themselves, but the management model used by different countries. Of course, the choice of the model depends on the level of consciousness of the people, their moral values and the level of cultural development. Therefore, we should not be deceived. By the type of model we use, we are not much different from Nigeria or Venezuela, but we are still very far from Norway and Great Britain.

3. The price of oil will not rise and will remain at the same level

The second question that we would like to raise is a durability of the named model. Does it have a future in Kazakhstan?

If you look at the profile of oil production, Kazakhstan is now at the stage of the plateau - or maximum production, after which a sharp decline in production usually follows (Figure 1).

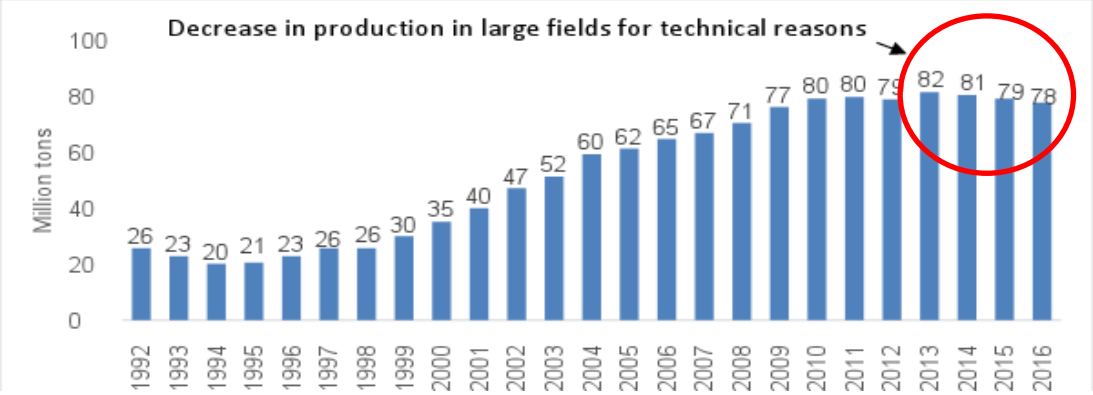

Figure 1. Oil production in Kazakhstan (1991-2016)

Source: Sheikin (2015), Samruk-Kazyna (2016b),

This is well described by the Hubert curve (Figure 2). The fact that in recent years, oil production in the country does not increase further indicates the outlet to the plateau. This means that oil production will not only increase, but, in contrast, may fall in the future. The only thing that somewhat delayed the fall is the introduction of the Kashagan field. However, this postponement directly depends on the price of oil. If they are not high enough, then the fall will continue.

Second, the likelihood that in the short and long term world oil prices will rise to the highest level where they were two years ago, are practically absent. In the short term, the United States, under the new president, Donald Trump, who stands for a powerful US, and a strong dollar and has a negative attitude to all kinds of regional trade unions (RBK, 2016). With the appreciation of the dollar, oil prices are declining. A decrease in regional trade could lead to a slowdown in the growth of the world economy, which will mean a global decline in demand, and hence world commodity prices. Therefore, in the short-term (less than 1 year), oil prices are unlikely to increase. On the contrary, a more realistic scenario will be their decline.

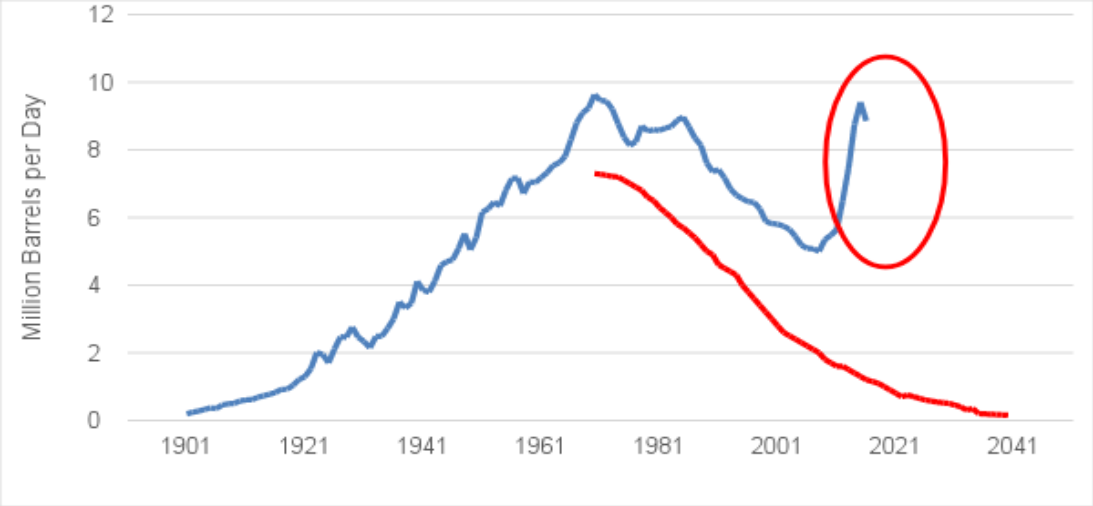

Figure 2. Oil production and Hubbert forecast in the USA
Source: Rose (2015), EIA (2017)

Another medium-term (2-7 years) constraint on rising oil prices is the fact that the production of shale oil begins to be profitable at an oil price above $50 per barrel, and the highest share of production costs is operating costs. They account for 60% of all costs for its extraction, in contrast to 10% in the extraction of traditional oil.

For this reason, when oil prices fall below $50 per barrel, the production of shale oil is quickly curtailed, and when prices exceed the mentioned level, production is also quickly restored (Dmitriev, 2016). At the same time, the volume of shale oil reserves is many times greater than that of traditional oil reserves. This circumstance does not allow oil to rise above $ 50 per barrel in the medium term.

In the long run (more than 7-10 years), the rapid development of alternative energy will restrain the growth of prices for fuel and energy resources. Therefore, Lazard experts calculated that the cost of solar energy is now 5.6 cents per 1 kWh, and wind energy - 1.4 cents. At the same time, the cost of gas is 6.1 cents, and the cost of coal is 6.6 cents per kilowatt. Of course, without taking into account government subsidies, energy from solar stations would be somewhat more expensive - 7.2 cents, and from wind farms - 3.7 cents (World of Technology, 2015). Thus, in the United States now, the cost of wind energy on new electricity is lower than gas and coal. As for solar energy, its cost without subsidies is slightly higher than gas and coal energy. However, engineering developments for solar and wind energy do not stand still.

Therefore, according to BNEF, it is expected that by 2026 solar energy for utilities will become competitive in most countries of the world. The cost of photovoltaic solar power plants

will fall almost twice for 25 years, although prices for fossil fuels will become higher. Solar energy will eventually become so cheap that the need for new power stations on fossil fuels will disappear. Some existing coal and gas stations that burn billions to maintain infrastructure will be closed due to low profitability (World of Technology, 2015).

Thus, in the foreseeable future, oil prices, at best, will remain at $50 per barrel, and in the worst case may fall even lower. Therefore, low oil prices are a new reality in which the Kazakh economy will have to develop in the future, whether it wants it or not and there is nothing to be done about it.

4. The new reality - what it will mean for the country's economy?

The new reality forces the country's authorities and the population to tighten their belts. In these conditions, the growth rate of the economy and the standard of living of the country can also drop dramatically. Now, transfers from the National Fund of Kazakhstan, where since 2001 the country's revenues from the oil sector have been accumulating, to the budget artificially support their levels. However, the fund's resources are not limitless. At the current rate of their use, they can be used maximum of 4 to 5 years. If this continues, the possibility of a hard landing for the economy and the population is not ruled out. It can lead to the scrapping of the old governance structure based on nepotism and thoroughly corroded by corruption.

However, on the other hand, everything is not as bad as it seems at first glance, and may even be favorable. First, the subsequent correction of the standard of living will bring the income of the population in line with what they really deserve. This will increase the investment attractiveness of the country for the development of new types of production and, first, processing and service. Therefore, subsequent generations will be able to live better than the current generations, as it should be according to the evolution of society, and not its degradation.

Secondly, it ensures that the national resources of the country will go less cheaply abroad since at low oil prices the interest of foreign investors in their current active production will decrease. This gives a chance, despite the fact that long terms of contracts with key foreign investors - about 40 years, that in the future these resources will basically remain in the ground and will be used by new generations more productively, namely, not for burning as fuel, but for production of high-quality and diversified petrochemical products. This will increase the revenues from oil production by several tens or hundreds of times than the country is satisfied with now.

Thirdly, Kazakhstan is one of the few countries in the world that have a high potential for solar and wind energy. There are many sunny and windy days here than in many other countries of the world. Therefore, Kazakhstan can become one of the world leaders in the production of such types of energy, including equipment for it.

The location of Kazakhstan in temperate latitudes (40-55°N), as well as a small average coverage of the sky with a general and especially lower cloudiness, determines the high values of the inflow of solar radiation into its territory. The number of sunny hours is about 2,600 hours. For comparison, the average amount of sunny hours in Vietnam is 2,200 hours, China - 2,500 hours, in Germany, Great Britain, Norway, and Japan - less than 1,000 hours in year (Tsyba and Kuzmin, 2017).

The energy potential of the wind in the territory of Kazakhstan is estimated at 1.8 trillion kWh-hours per year (Antonov, 2014), which in 19 times higher than the consumption of all fuel and energy resources of the country. The economic potential is about 110 billion kWh-hours (Antonov, 2014), which is 1.2 times more than the annual domestic energy consumption of Kazakhstan. By the magnitude of wind speed in Kazakhstan, the three main regions: northern with average wind speed of 4.5-5.5 m/s, western (near-Caspian) with speed of 5.5-7 m/s and southeast with speed of 5.5-6 m/s have been identified. These regions occupy about 40% of the territory of the country (Tsyba and Kuzmin, 2017). The speed of launching wind farms used in the world begins, as a rule, from 4 to 5 m/s.

5. It is necessary to find a new driver of economic growth

There is no doubt that the export of gas, oil, coal and metal will continue to be the main source of foreign exchange earnings for the country. However, from the engine of growth, it turns into nothing more than a way to maintain the country's balance of payments in a stable state. New growth requires new sources. Investing in the extraction of oil and gas in new fields is meaningless now. The cost of aggregate oil production is now higher than the potential price in this market. For this reason, it does not make much sense to develop deserts or shelves in order to increase the extraction of raw material exports, since this will not accelerate the rate of economic growth.

The resumption of sustained growth and the prevention of the risk of sliding into long-term stagnation are now the main issues of the economy. The previous stage was based on the growth of raw materials production and outstripping consumption growth over GDP, but under the current conditions, the old model does not work, as oil prices will eventually not grow in the future.

In our opinion, infrastructure and housing construction, the development of SMEs, and the agro-industrial complex can become new drivers of growth in the economy under new conditions. It is necessary to invest the main investments here. Since these are the sectors that can develop independently of the external market situation. Moreover, they provide employment for the population; ensure its food security and shelter over the heads. Necessary conditions for their transformation into drivers of growth should be the correct policy of the state in relation to them.

Such a policy will make it possible to launch a new development model in place of the previous model, which will allow the economy of Kazakhstan to develop steadily, regardless of the long-term external conjuncture.

6. Conclusion

In conclusion, we would argue that the development of the minerals and hydrocarbons led to a certain temporal stability of the created crony political system, despite the fact that it does not ensure high employment, does not create strong incentives for productive work, and leads to an extremely uneven distribution of limited resources. Such a situation is possible only up to a certain limit, as long as the country has rich reserves of unused resources, and world and domestic prices allow their profitable development.

The sharp decline in global commodity prices, significantly accelerated the mentioned processes, and created a crisis in the raw material economy, as the saying goes, "out of the blue." In the presence of a developed manufacturing industry, a decline in prices would contribute to the growth of the economy and the welfare of the population. However, in the conditions of the deformed economy, they have led to the intensification of the crisis phenomena in the economy, which so far has overcome thanks to constant and ever-growing injections from the National oil fund. Nevertheless, the National oil fund, as well as assets of the state that it can sell, are not unlimited. Therefore, the raw material economy has no any prospects in the future.

The new way for Kazakhstan is seen in the development of the new economy, which primarily relies not on the extraction of resources, but on their processing, not on the development of natural resources, but on the development of people's knowledge and skills, not on using nature-destroying technologies, but on using of nature friendly technologies.

All necessary conditions are available in Kazakhstan for choosing a new path. This is the level of education of people, and natural conditions (the availability of rich solar and wind energy), and the level of openness of the economy, and the opportunity to learn from experience of other countries that have already gone by this way.

Moreover, the Law of Kazakhstan "On Support for the Use of Renewable Energy Sources", as well as the regulatory documents necessary for its implementation, came into force in 2009. Kazakhstan also joined the International Renewable Energy Agency and ratified its charter in Bonn on January 26, 2009.

The state encourages the use of renewable energy sources by Bytyrbekov (2014):

- guaranteeing connection to electric grids,
- guaranteed purchase of electricity at fixed tariffs for 15 years,
- releasing the import of technological equipment, components, spare parts and raw materials to it from customs duties for the term of the investment contract (up to 5 years),
- provision of full-scale grants,
- providing the preferences for taxes (0 corporate income tax rate, land tax, property tax),
- providing the investment subsidies in the amount of compensation up to 30% actual costs for construction and installation works and purchase of equipment.

The approved fixed tariffs are subject to annual indexation taking into account inflation in the order established by the Government of Kazakhstan.

The Merke Hydro-Electric Plant and the first Wind power plant ("WPP") in Erementau, Akmola region, and the first Solar-powered plant ("SPP"), were put into operation in 2010-2011 and 2012, respectively (Drobinsky and Kadkin, 2012). The Kordai WPP with a capacity of 21 megawatts was launched in 2014. By 2020, 34 renewable energy facilities, including wind farms, hydroelectric stations and solar power plants, will be commissioned in the country. The total capacity of the new power plants will be 1362.34 megawatts. The share of such power plants in total electricity production should reach 3% in 2020 and 10% in 2030 (Bytyrbekov, 2014). Now, this share is less than 1%, while in the EU countries in 2015 it was about 16.7%, and by 2020 - will reach 20% (Eurostat, 2017).

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