

# Comparative Analysis of Kazakhstan and China: By Human Capital and Competitiveness



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**ABSTRACT.** *The article aims to assess the importance of education and science in the development of the national economy and geopolitical potential through a comparative analysis of the Republic of Kazakhstan and the People's Republic of China in terms of human capital and competitiveness. To achieve this goal, the following tasks are defined: the geographical location, the natural resource potential of the two states, features of the transition to the market, and the importance of human capital in the development of the national economy.*

*To reveal the tasks set, the methods of historical, narrative, geographical modeling, and statistical, comparative analysis were used. The results of the research showed that independence is a key factor in the development of the domestic economy, but human capital and competitiveness are the most important driving forces in the development of the national economy. The author compares the economic and geographical positions of Kazakhstan and China, using the countries with the most national wealth and high competitiveness in the world as an example.*

*The authors conclude that the main reason for the divergence in the level of economic development of the two countries is that China paid maximum attention to science and education after the transition to a market economy and achieved results. In addition, Kazakhstan's identified priorities and growing financial situation in the fields of education and science will be announced in the future. A clear example shows that high competitiveness also affects foreign trade and investment.*

**KEYWORDS:** *political independence, national economy, Kazakhstan, China, competitiveness, human capital, the share of GDP in science, investment, foreign trade.*

## INTRODUCTION

More than 8.1 billion people live in the world as part of almost two thousand different nationalities (Current World Population, 2024). Including a sovereign state of about 200. The rest have a historical territory, a national economy, customs, language, and even culture that cannot create a national state but cannot be created by other people. For them, there is no greater happiness or purpose than self-receipt. And we are a sovereign country. However, this is a more responsible task than gaining independence. Indeed,

for a state occupying the 9th largest territory around the world, occupying the 64th place in terms of population, accounting for only 0.24% of the world's population, including being in a complex geopolitical, strategic place with a national economy based on the production of raw materials, around which large states are located, responsibility is of paramount importance. However, when we say “independence”, we are not saying that we should be 100 percent independent of anything. There are many countries that, despite their political independence, can gain independence in economic, informational, ideological, and military terms. In particular, political independence comes first. But its narrative depends on economic independence. Economic independence is the key to political security. Economic security is a complex socio-economic category that is constantly changing and influencing. Therefore, economic security is the basis of the national security of the state. And for the state, ensuring national security is the main task (Grigoreva & Garifova, 2015). Economic security can be achieved by analyzing the indicators of gross domestic product, national wealth, per capita income, etc. Among them, the national wealth of the state is of particular importance. National wealth is an important indicator reflecting the comprehensive power of the country, which is the result of the material and spiritual labor of a person who was subjected to violence during the development of the state, and the overall natural resource potential of the state. It includes qualifications of citizens, scientific and technical achievements, know-how, cultural values, past experience, etc. Table 1 examines the current and future status of the 10 countries that own the world's wealth.

Table 1. *Present and future of the 10 countries that hold World Wealth*

Level	Country	Wealth, trillion (2018)	Wealth, trillion (2028F)	Approximately, height
№1	USA	60,7	72,8	20%
№2	China	23,6	51,8	120%
№3	Japan	19,1	24,9	30%
№4	India	8,1	22,8	180%
№5	Australia	6,0	10,8	80%
№6	United Kingdom	9,1	10,0	10%
№7	Germany	8,8	9,7	10%
№8	Canada	6,0	7,8	30%
№9	France	5,9	6,4	10%
№10	Italy	3,8	4,2	10%

*Source: Desjardins, 2019*

According to Table 1, it can be seen that among the countries of the world, the most developed are the countries with a large national wealth of states. And this will have many prerequisites for the formation of national wealth. Of these, 3 main factors that make up national wealth: land, natural resource potential; production, technical capabilities, and human capital

The three known to us, such as land, natural resource potential, industrial, technical condition, and human capital, are the main factors that make up national wealth. The gross and aggregate development of these three factors determines the Gross Domestic Product (GDP). GDP is the most important economic indicator that determines the level of development of states.

Let's analyze the comparative priorities of the People's Republic of China and the Republic of Kazakhstan, taking as a basis the two previous ones among these three factors. Thus, an analysis of the causes and consequences of different levels of development between states is carried out.

From a comparative analysis of the priority areas of the two countries, it can be seen that the difference is not very large, but there is an extreme gap in the areas of Distinction (by 3,7,10,11 points). There is a full chance to reduce these differences. This possibility will be fully discussed in this article and will be scientifically proven.

Table 2. *Comparative priorities of the two states*

	<b>Kazakhstan</b>	<b>China</b>
1	Rich in natural resources.	Rich in natural resources.
2	Favorable geographical location. Location in the middle of Eurasia.	Favorable geographical location. It borders both the sea and the land.
3	Political stability.	Political stability and military power.
4	Favorable business climate.	Favorable business climate.
5	Protection of investors' rights.	Protection of investors' rights.
6	Availability of the basis of agroclimatic and agro-production.	Availability of the basis of agroclimatic and agro-production.
7	The vastness of the land area and the small population.	The breadth of the land area and the presence of a sufficient consumer.
8	Mass literacy of the population.	Mostly literacy of the population.
9	Availability of a traditional production base.	The presence of a traditional production base.
10	The goods are consumer, and half-producer.	Producer, exporter, and consumer of goods.
11	Quasi-public sectors and their unproductive work.	The existence of multinational companies and their continuous expansion.

## METHODOLOGY

The reasons and consequences of the difference between Kazakhstan and China in economic and other spheres will be studied through three important factors that make up the national wealth of the two states, comparing the advantages of the two states: geo-economic priorities, potential, geographical location, natural resource potential, economic, social and road transport opportunities, investment climate, etc. Finally, the importance of human capital is considered, as well as the prerequisites for its development. For this purpose, we use historical, narrative, and geographical modeling

(methods of modeling in geography: verbal, graphic, cartographic, mathematical, etc.), and statistical and comparative analysis methods as the basis.

## RESULTS AND DISCUSSION

According to Table 2, Kazakhstan and China were differentiated in such areas as economic, geographical, political and social, education, and culture. Through this, the gaps between the two states were revealed. Now we can consider similar points of the two states. For example:

- The common historical development of socialism;
- Proximity of the geographical environment and natural resource potential;
- The presence of a culture rich in common racial identity and traditions as an Asian people;
- Features of the past epochal identity in the period from the planned economy to market relations, etc.

The level of development of the two countries should have been approximately the same when we analyzed them in terms of “proximity” and “gap” between the two states. However, in Table 1, China is the second richest country in the world. Our location is not specified. What is the reason? The main difference here lies in the three factors (land, natural resource potential, production, technical condition, as well as human capital)-human capital.

The term “human capital” was first introduced into use in the 70s of the last century by the Nobel Prize winner, economist Theodore Schultz. Human capital – the ability and knowledge of people when participating in the production process, the degree of their labor. The costs of human capital – health care, education, and technical education are covered. All abilities in a person are innate and develop with life skills. Such valuable human abilities, which are developed through the appropriate allocation of funds, become the basis of human capital. The development of human capital promotes social production and increases national wealth.

Science has proven that investments in education provide an average of 12-14% of income per year in the future, the development of human capital of the population leads to the achievement of overall economic growth of the country, an increase in human capital by only 1%, an increase in GDP per capita up to 3%. Therefore, today investments in human capital in developed countries of the world are perceived as a traditional business project that will bring large profits in the future. Consequently, the potential of the state’s human capital lies in quality education and science. We can conclude that the more efficiently the university system operates, the more productive the development of the country’s economy will be.

The development of human capital determines the competitiveness of the national economy of the state. As for our question above, the main difference between

Kazakhstan and China lies not in the location of natural factors or production, but in the gap in human capital. If we look at it from the point of view of its natural resources and industrial potential, Kazakhstan would be the richest country in the world with national wealth. As Sheikh Zayed Bin Sultan Al-Nahyan, the former ruler of the UAE, said: “The country is not measured by the size of its territory on the map. The country is really measured by its heritage and culture” (Christie, 2011). An example of this will be the situation of countries with developed competitiveness at the world level, which will be discussed below. When we consider the 10-year development from 2010 to 2020, we have the following results (see Table 3).

Table 3. *Present and future of the 10 countries that hold World Wealth*

<b>2010-2011</b>	<b>2011-2012</b>	<b>2012-2013</b>	<b>2013-2014</b>
Switzerland Sweden Singapore United States Germany Japan Finland	Switzerland Singapore Sweden Finland United States Germany Netherlands	Switzerland Singapore Finland Sweden Netherlands Germany United States	Switzerland Singapore Finland Germany United States Sweden Hong Kong
<b>2014-2015</b>	<b>2015-2016</b>	<b>2016-2017</b>	<b>2017-2018</b>
Switzerland Singapore United States Finland Germany Japan Hong Kong	Switzerland Singapore United States Germany Netherlands Japan Hong Kong	Switzerland United States Singapore Netherlands Germany Hong Kong Sweden	United States Singapore Germany Switzerland Japan Netherlands Hong Kong
<b>2014-2015</b>	<b>2015-2016</b>	<b>2016-2017</b>	<b>2017-2018</b>
Singapore United States Hong Kong Netherlands Switzerland Japan Germany	Singapore Danmark Switzerland Netherlands Hong Kong Sweden Norway	Switzerland Sweden Denmark Netherlands Singapore Norway Hong Kong	Denmark Switzerland Singapore Sweden Hong Kong Netherlands Taiwan

*Source: Global Competitiveness Report, 2020*

Among the countries listed in the table above, countries other than the United States have very low territorial and natural resource potential. Singapore, even Hong Kong, are urban administrative units. Switzerland, which did not win the world championship until 2010 - 2017, is a landlocked country in central Europe.

The land area is 41,285 square kilometers. The population is 8.5 million (2020). This makes it clear that the size of the land area and the abundance of natural resources are not the main factors in multiplying the national wealth of the state and increasing GDP.

In comparison, we will consider the relations between Kazakhstan and China concerning this competitiveness. The importance of this topic is also given a place in school textbooks. Paragraph 56 of the country studies section of the textbook “Geography” in the natural and mathematical direction of Grade 11, written according to the updated programs called “Competitiveness rating of Kazakhstan”. Currently, the competitiveness of countries of the world is calculated using the unified Global Competitiveness Index. It considers the three most important indices and its 286 indicators (see Table 4).

Table 4. *Integral indicator of the competitiveness of states (GCI)*

Basic factors	Efficiency factors	Innovative factors
1. Institutes 2. Infrastructure 3. Microeconomics 4. Health and primary education	1. Higher education and vocational training 2. Market efficiency 3. Technological readiness	1. Innovation ability 2. Level of Business Development

*Source: Kaimyldinova, Abdmanapov, & Abilmajinova, 2020*

A unique international organization that calculates and evaluates the competitiveness of states is called the World Economic Forum. Based on the forum's data for 2019, the United States, Singapore, and Germany were the top three in 141 countries of the world, while Kazakhstan took 55th place. According to the topic of our article, if we analyze the indicators indicated in the textbook, Kazakhstan ranks 57th in terms of “Skills” in the field of education and science. And in “The innovation capability” it took 95th place. If we consider the People's Republic of China (PRC) in the corresponding indicators, it took the 28th, 64th, and 24th places (Global Competitiveness Report, 2020). If we compare the two neighboring countries for these 3 indicators, then in terms of overall competitiveness, the PRC is among the previous 30 countries, and our country is among 60. From this, we can see that the Chinese state is 2 times more powerful than us in terms of competitiveness. If we look at education and science, innovation, we will see two different results. One, in terms of qualifications, we are ahead of China. China ranks 8th after the US. But they are ahead of us in terms of innovation. 71 countries are located between China and our country. The presence of a huge gap in this innovation area is one of the main reasons why our country's national economy lags behind China or remains a consumer of Chinese goods.

Concerning competition, these indicators have not changed much in recent years. However, there are changes in the “five-degree risk” factors. For example, in 2023, experts on these factors indicated five risk factors for Kazakhstan as follows: 1. Geoeconomic confrontation, 2. Rapid and/or sustained inflation, 3. Geopolitical contestation of resources, 4. Interstate conflict, 5. Severe commodity price shocks. For China, it was as follows: 1. Geoeconomic confrontation, 2. Natural disasters and extreme weather events, 3. Rapid and/or sustained inflation, 4. Infectious diseases, 5. Geopolitical contestation of resources, 6. Asset bubble burst, 7. Digital power concentration. As demonstrated, both

countries share commonalities; however, notable differences also exist. These variations can be attributed to the distinct economic and social contexts of each country (Global Risks Report 2023, 2023).

When considering the reason why China has achieved such a result, it was necessary to first pay attention to the general state of development of their education system since 1949 (the time of the creation of the PRC). Since the founding of the People's Republic of China in 1979, the sphere of education and science has become the most popular and low-profile industry. The reason for this was various political campaigns across the country. These continuous political, social, and cultural revolutionary campaigns have made economics and the science and technology industry more stable. Only by the decision of the 11th regular 3rd General Meeting of the Central Committee of the Communist Party of China in 1978, in connection with the transition to market economic reforms, the education and science sector was recognized and approved as one of the 4 main directions of development. Then gradually began to develop.

If we consider the current state of development of the Chinese education and science industry in 3 structurally different directions, we can conclude that:

*The general situation in basic education was also high.* In 70 years of development since the founding of the PRC in 1949, basic education (including preschool education, compulsory education, and secondary school education) has achieved excellent success. For example, by 2018, there were 504,800 basic education schools with more than 235 million 910 thousand students across the country. According to this indicator of the development of education, it reached the average level of middle and high-income countries. As a result, Chinese Basic Education has become the largest and most common field of education in the world.

Preschool education has developed rapidly. Over 70 years of development, preschool education has developed significantly. For example, in 2019, the number of kindergartens operating throughout the country was 266,700, where more than 18 million 639 thousand preschool children (ages 3-6) and more than 46 million 564 thousand children are brought up. More than 4 million 531 thousand teachers and employees work in these institutions. The total level of preschool education coverage in the state reached 81.7.

*The “big, but not strong” problem of higher education institutions is still relevant.* Secondary school education is distinguished by a steady increase in the rate of admission of Primary School students to secondary schools. In this regard, it exceeds the average level of high-income countries in the world. For example, in 2018, the enrollment of Primary School students in secondary school as a result of testing reached 94.2%. Given that this ratio was 43.8% in 2003, we can see that the rate of development is very high. However, the GER or GEI<sup>1</sup> rate of admission of so many graduates to universities is 40 %.

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<sup>1</sup>Gross Enrolment Ratio or Gross Enrolment Index – This is an indicator of Education. It was used in the declassification of the UNESCO Education Index E. Ratio of the number of students at different levels of Education (Primary, Secondary School,

This is a quote from the report of Mr. Chen Zhu, Chairman of the Standing Committee of the People's Republic of China, which has been held for several years.: *“Since the beginning of the new century, the country's higher education has achieved incredible results. It ranks first in the world in terms of the number of students and second in terms of the number of universities. And the general acceptance rate is 40 %. This is higher than the global average. It meets the needs of the population in higher education and provides the personnel and intellectual demands necessary for economic and social development. But in general, in the higher education of our country, the problem of "big, but not strong" is still relevant. This issue is relevant not only in terms of the rationality of the distribution and structure of higher education resources but also in terms of the quality of training, scientific research, and innovation opportunities, international competitiveness, and influence with developed countries”* (Chen Zhu, 2016).

When we analyze the state of China's development over these 70 years, we see that the focus is on compulsory education and secondary education. For a state still developing economically and socially, with a very large population, it was not possible to focus on the education of children before learning. At the same time, the field of higher education has also been affected by the political campaign. Poor and ignorant people had a better chance of going to university. And it was difficult for the descendants of rich people to get an education. Moreover, the public space of the teachers was kept to a minimum. In the article “Intellectuals: from the Stinky Ninth to How It Became an Important Part of Socialist Construction” by Y. Wang, it is said that intellectuals suffered the most during the Cultural Revolution. According to him, the persecution of intellectuals during the “Cultural Revolution” reached a terrible level. According to the investigation, in 1968, 1909 families of scientists from the Chinese Academy of Sciences were killed, and 229 scientists were killed. In the Beijing branch of the Academy, 131 of the 170 high-ranking scientists were persecuted. More than 60 scientists were tortured to death at Fudan University. About 1,000 specialists from Peking University were isolated on various charges. A case was filed against about 1,000 people at the famous Qin Hua University. Of the 360 employees of the Shanghai Institute of Plant Physiology, 142 were charged with “suspicion”. In short, education became a crime, intellectuals became criminals. They have become people at the lowest level of society (Qiang, 2017). In August 1966, about 100 people were persecuted in the same city of Beijing, and tens of thousands of people were killed in various circumstances during the August massacre, which lasted 2 months, and involved education workers, teachers, and scientists. The red active youth had the right to kill without questions, investigations, trials, or to seize their property. Bodies were transported to the crematorium day and night (Wang, 2004). Historically, the position of people who worked in the field of education and science has long been lower. For example, *“The Yuan dynasty once divided people into ten classes. In order from the upper class to the lower class: dignitaries, Petty dignitaries, monks, Taoist adherents, artisans, workers, pastoralists and hunters, prostitutes, scholars, and beggars”* (Qiang, 2017). If we believe what the author wrote, We will see that even in ancient Chinese society the place of the intelligentsia was very low. Their place was

University) to the total number of people who must enroll at the corresponding levels. [www.un.org/indicators](http://www.un.org/indicators) methodology



even lower than that of prostitutes, only before the beggars. It can be seen that one of the main reasons why education, which has such a low public place, has not received support from the authorities and the dark population, has become a globally developed industry in just 30-40 years after the reforms, is the correct attitude and support of the state authorities. For example, the share of GDP in the field of education and science is also growing every year. According to this indicator, it is comparable to the leading countries of the world. The global average for 2018 was 4.9%, while China's position over the past 8 years has been close to this average.

The statistical announcement on the implementation of national education funding in 2022 was recently released. According to the announcement, the total national investment in education funding in 2022 will be 6132.914 billion yuan, which will exceed 6 trillion yuan for the first time, an increase of 5.97% over the previous year. The national financial education funding was 4847.291 billion yuan, an increase of 5.75% over the previous year, and the proportion of GDP was 4.01%, which was "generally not less than 4%" (Li, 2023). **In 2023, the national R&D expenditure will exceed 3.3 trillion yuan, an increase of 8.1% over the previous year** (Yin Hejun, Minister of Science and Technology: In 2023, China's R&D investment will exceed 3.3 trillion yuan, 2024). **China's GDP has not fallen below 4 percent for many years. Even on the side of the pandemic, it maintained the same level. For example, the growth was 4.01% in 2020, 4.00% in 2021, 4.01% in 2022, and 4.02% in 2023** (GDP for the full year of 2023 increased by 5.2% year-on-year, 2024).

Regarding the educational landscape in Kazakhstan, the 2018 census reports the existence of 131 higher education institutions. Among these are 10 national, 31 state, 14 non-civil, 1 AEO, 1 international, 18 joint-stock, and 56 private institutions. In 2017, Kazakhstan's total education expenditures constituted 3.7% of the gross domestic product (GDP). The proportion of government spending on higher education has remained consistently low, at 0.3% of GDP, while expenditure on science does not exceed 0.2% of GDP. (Skiba & Efimova, 2018).

According to academician Orazaly Sabden, the amount of funds allocated for Science in the country was 0.13% of the gross domestic product (GDP). This is the lowest figure in 28 years. We need at least 2% of GDP to be allocated to science, so as not to leave more developed countries. Knowledge can be achieved at the global average when we have at least 4%. At least 6% of young people can be trained for free at all levels (Sabden, 2018). In 1980-1985, there were about 1,700 natural disasters in the world. And in 2010-2015, the number of natural disasters exceeded 3700. That is, in a short time, the number of natural disasters has doubled. About half – of accidents are related to water. 40 thousand scientists completely broke away from science in the difficult period of the '90s. Although some institutions have survived, science as a whole has been greatly weakened as a single system.

On GDP growth in Kazakhstan in 2019, the growth was 4.1% and amounted to 27.7 trillion tenge. In 2020, the growth was 2.6% and amounted to about 14 trillion tenge, Ruslan Dalenov said (VVP Kazahstana sokratilsja na 2,6 % v 2020 godu [Kazakhstan's GDP shrank by 2.6% in 2020], 2021).

Table 5. *Comparison of the GDP of two states*

<b>Kazakhstan</b>	<b>China</b>
2019	2019
Growth – 4.1 % 27.7 trillion tenge (66.7 billion US dollars)	Growth – 6.1 % 100 trillion yuan (14.34 trillion US dollars)
<b>2020</b>	<b>2020</b>
2,6 % 14 trillion tenge	2.3 % 101 trillion yuan
Compare: 1 US dollar. = 415 tenge	1 US dollar. = 6.5 yuan
<b>2023</b>	<b>2023</b>
23 trillion 582 million tenge	5,2 % 126 trillion yuan
Compare: 1 US dollar. = 455 tenge	1 US dollar. = 6.9 yuan

*Source: GDP for the full year of 2023 increased by 5.2% year-on-year, 2024*

If we compare the amount of GDP of the two countries in this table in 2019, we will see that China's GDP is 215 times larger than our country's GDP. This makes it clear that China's funding for science is a huge amount of money. Even if we raise the percentage of GDP allocated to science in our country to the level of 4.04% (2019), it is obvious that China will not reach the 4.04% allocated by China. To be equal, the total amount of our GDP will also have to grow 215 times. Could he? It is also possible, we will tell you why at the end.

The school textbook does not disclose the ability of the two countries to compete. It may not even fit into the school curriculum. However, a broad consideration of other important indicators related to science and education is necessary for both applicants and scientists. With this comparison, we get the result as follows (see Table 6).

Table 6. *Comparison of the positions occupied by China and Kazakhstan in some indicators of World Competitiveness*

<b>Indications</b>	<b>PRC</b>	<b>RK</b>
Re-preparation	38	77
Vocational training	41	90
Professional skills of graduates (schoolchildren and students)	35	95
Qualification of schoolchildren	24	78
Qualification of university students	57	107

Critical thinking in teaching (learning style assessment)	25	48
Research and literature	12	109
Professional relationship between business (production) and universities	27	70
Digital communication between teachers and students in primary education	27	74
By the share of funds spent on science and education in GDP	15	101
According to the publication of scientific publications that have sources	13	111

*Source: Global Competitiveness Report, 2020*

China is ahead of us, no matter what industry we take. In some industries, it is more than 2 times, in some industries it is even 8-9 times more. In particular, China is ahead of us in terms of research and literature, the share of funds spent on science and education in GDP, and the publication of scientific publications with evidence-based sources. The main reason for this is the extremely low funding for the field of science. For example, in authoritative scientific publications with international sources, based on an analysis at the end of 2020, the order of the previous five countries is as follows US, China, UK, Germany, and Canada. These five countries have their share, respectively: 32.89 %, 31.40 %, 10.42 %, 8.665.89, and 5.89%. These five countries account for 89.26% of the total (Statistical Data of Chinese S&T Papers, 2020).

Every year, Kazakhstan increases the allocation of funds for education and science. In December 2019, the program Science Development 2020-2025 was adopted. It is planned to allocate 11.5 billion tenge. However, for a long time, especially during the last economic and social crisis from the sovereign, the number of people engaged in science in the country has sharply decreased. Leaving for other countries and subsistence farming was the main reason for the decline in people in this area. That is why the number of scientists in the country is small (including pseudo-scientists). The number of scientists in the country per 1 million population is 662. And this figure is 2852 people in Russia, 1805 in Belarus, and 4256 in the United States (Mukhanbetqali, 2020). Our government faces the challenge of increasing the number of young people coming to science and funding science. This is because the increase in finances does not solve all the problems. People should have other benefits, such as improving their public place, status, providing money at a very low rate in obtaining housing, placing their children on the waiting list for kindergartens, playing sports, receiving medical care, and other public consumers. In addition, in general, the Kazakh society should develop respect for employees in the field of education and science. In the emergence of this public respect, there will be a direct influence of the country's authorities. As soon as the authorities begin to look at people who develop their knowledge and science correctly, the people will be treated the same way.

Our scientists have nowhere less than scientists from other countries. We know that under Soviet rule, science and education were well-developed in Kazakhstan, and

conditions for scientists were well-created. The effect has not yet been interrupted. A bunch of our scientists at that time are still in the middle of us. The number of articles published by our scientists in international scientific journals has increased with the focus on the field of Science in the country. For example, between 2011 and 2019, 28,973 articles were published in Web of Science, and 33,116 articles were published in Scopus. In 2019, 3,704 articles were published on the Web of Science (8.7 times more than in 2011), and the number of articles published on Scopus increased by 8.5 times more than in 2011. This is a good indicator. If we increase the funding of Science and its position in society, we will see that this figure will increase. Based on this indicator, we occupy 87 places out of 122 countries, and soon we will be able to reach the forefront (Nysanbek, 2019).

Since the Republic of Kazakhstan and the People's Republic of China are neighboring countries, relations between the two states cover many areas. "One of these agreements is the agreement of the Ministry of Education and Science of the two states on "cooperation in the field of Education" in 2003 and the agreement on "opening of the first Confucian Institute in Kazakhstan" in 2006 (<https://www.gov.kz>). These adopted agreements promote mutual cooperation in education between states. Taking advantage of this opportunity, Kazakhstan's youth, among other countries, are implementing the idea of studying in China. China's success in the field of education and science attracted the youth of the world. According to statistics from the Ministry of Education of the PRC, in 2019 there were 2956 public and 784 private universities in China, and the total number of students there is more than 40.2 million (Measures for the University's Enrollment and Training of International Students, 2017). While the Chinese authorities actively sent their students and teachers abroad in the early stages of market reform, now more and more foreign students are coming to China.

For Kazakhstani students, China has the status of the largest host country after Russia. 28 thousand Kazakh students study in Russia and more than 50 thousand in other foreign countries (Baitasov, 2019). Interstate and interdepartmental agreements in the field of education with China date back to the 2000s. For example, in 2003-2004, 20 Kazakh students studied in China under the Intergovernmental exchange program, and in 2018 the number of students reached 17,600 (Serikkaliyeva, Nadirova, & Saparbayeva, 2019). Of these, 14 thousand Kazakhstani students are studying at universities in China based on government grants (Mamyshv, 2019). Currently, educational grants and benefits are the only contributing factor to the flow of foreign students. Also, according to the trajectory of the Silk Road Project "One Belt, One Road", each grant holder studying from 18 countries in Asia, Europe, and Africa will be allocated from 20 thousand to 30 thousand yuan per year (Guruleva, 2017).

According to statistics, Kazakhstani young people studying in China Study in humanitarian specialties such as international relations, World Trade, Business, etc., as well as technical specialties such as oil exploration and Production, Mechanical Engineering, and Construction. At the same time, studying in rare and completely

absent specialties in Kazakhstan is becoming a trend for studying abroad (Measures for the University's Enrollment and Training of International Students, 2017) in any case, if it is possible to get an education in a Chinese University, then there are their main reasons for the desire to continue working there.

The main thing is that domestic education is not of high quality. It is influenced by the above-mentioned insufficient funding for education and science, lack of training in new branches of science, poor equipment of the technical and material base of the University, inability to find a good job even after studying, and other reasons.

Secondly, education in China is relatively affordable both geographically and economically.

Thirdly, there is a current need for cooperation between the two countries in the field of Education. For example, China is currently implementing several large infrastructure projects in Kazakhstan, and this requires attracting specialists of various specialties in the profile of these projects, which are absent or scarce in the labor market of the Republic.

Fourth, the emergence of China as the world's second-largest economy can be attributed, in part, to the aspirations of our nation's youth who envision their prosperous future there. In terms of competitiveness, specifically the "innovation capability" indicator, Kazakhstan is ranked 95th, whereas China holds the 24th position. Friedrich August von Hayek articulated this notion succinctly: "... it was believed that creativity, entrepreneurship, and innovation contribute to the prosperity of society, which was possible only in a society with free markets" (Hayek, 1976). In any case, the education of Kazakh youth in China has both beneficial and detrimental aspects. On the positive side, students have the opportunity to study and practice abroad, engage in significant Chinese projects in Kazakhstan, and contribute to the development of domestic industries and scientific research. However, a notable downside is the potential for this trend to cause talented individuals to disengage from their home country. This phenomenon poses a significant threat to modern Kazakh society, which already faces challenges due to its relatively small and slowly increasing population. For instance, in 2018, Almaty TV reported a growing trend of Kazakhstani citizens relocating abroad, with official data from the Statistics Committee indicating that approximately 40,000 Kazakhstanis emigrated that year. This figure rose to 43,000 in 2019, and 21,000 within the first nine months of 2020. Most emigrants were of Russian, Ukrainian, and German descent, with Kazakhs comprising 37% of the total. A significant proportion of this 37% were young individuals aged between 25 and 37 (Nysanbek, 2019).

## CONCLUSION

Is it feasible for us to achieve a GDP comparable to that of China? To address this query, we must ask: "Why?" If our youth continue to migrate abroad for education and

choose to remain there, while others pursue opportunities far from their aspirations, then matching our GDP with that of China becomes virtually unattainable. Kazakhstan possesses significant potential for economic development and leadership in the scientific domain. However, several critical issues must be addressed to realize this potential. They are:

- *Corruption;*
- *Lack of a statesmanlike idea;*
- *Long-term colonial consequences;*
- *Production adapted for the enrichment of raw materials;*
- *Failure of the financial and banking system to support domestic production;*
- *Low population, corresponding to the vastness of the territory;*
- *Continuous devaluation and inflation;*
- *Low state support in the field of Science and education;*
- *The influence of factors such as shortage of specialist personnel, etc.*

Should the state address these issues promptly, the aforementioned problems would resolve themselves. The French thinker, writer, and historian Voltaire famously stated, “One great man is enough to save the state.” This notion underscores the impact of capable leaders whose qualifications, dedication to the populace, and commitment to statesmanship have historically guided their nations through crises, preventing collapse and elevating them to developed world status. For instance, during the Great Depression of the 1930s in the United States, President Franklin D. Roosevelt, alongside his economic advisor John Maynard Keynes, introduced state regulation of the market economy, countering Adam Smith’s previously dominant vision of self-regulating markets. Keynes’ theory significantly contributed to overcoming the economic crisis of that era (Keynes, 1936). Similarly, post-World War II Germany, described by contemporary journalists as a “huge garbage dump” with millions of destitute citizens, was revitalized under the leadership of Chancellor Konrad Adenauer and his Minister of Economy, Ludwig Erhard. Erhard’s theory of the positive relationship between strong production, economic growth, and a high standard of living rapidly restored the German economy (Erhard, 2009). China, initially an agrarian developing nation, underwent a significant transformation under the leadership of Deng Xiaoping, emerging as a middle-developed country within two decades. Similarly, Mustafa Kemal Atatürk established the foundational framework for the existence and advancement of the Republic of Turkey. In Malaysia, Mahathir Mohamad played a pivotal role in elevating the status of the Indigenous Malays, transitioning them from a marginalized, low-income social class to active participants in an industrialized nation. Numerous such individuals serve as prominent examples of transformative leadership.

Kazakhstan is progressively enhancing its investment in scientific research. During a meeting commemorating “Science Day” on April 12, 2023, President K. Tokayev highlighted that the state had allocated 625 billion tenge for science over three years and plans to continue increasing these funds. President Tokayev outlined five key directives

for the development of domestic science. The first directive emphasizes leveraging scientific potential to predict natural and man-made disasters to mitigate the effects of climate change. The second directive focuses on maximizing the positive impact of science on progressive economic development. The third directive aims at advancing artificial intelligence. The fourth directive addresses the development of university science and the resolution of accumulated issues in scientific infrastructure. Lastly, the fifth directive seeks to enhance the potential of scientific personnel for the advancement of science (Vystuplenie Kasym-Zhomarta Tokaeva na zasedanii Nacional'nogo soveta po nauke i tehnologijam pri Prezidente Respubliki Kazahstan [Speech by Kassym-Jomart Tokayev at a meeting of the National Council for Science and Technology under the President of RK], 2024).

In conclusion, if the leadership in Kazakhstan, including the president, prime minister, ministers of industry, and officials at all levels, demonstrated a strong sense of loyalty and responsibility towards their citizens, the principles of statesmanship for the common good would dominate. Consequently, this would enhance the competitiveness of the populace. Under such circumstances, Kazakhstan would undoubtedly be among the ranks of developed nations.

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