



## Wealth in the 21<sup>st</sup> century: opportunities for the future

G.M. Berdykulova, M. Abdinova, T.V. Ananiev

International Information Technology University

### Abstract

The article is devoted to economic category “wealth” in order to understand the necessity to use the fundamental basis, experience of advanced countries, unique opportunities in the development of intangible assets and intellectual property as new sources of socio-economic development of a person, enterprise and world nations including Kazakhstan. The goal of the manuscript is to determine ways of a nation and human wealth creation under the new environment of the Fourth technological revolution. To reach the purpose the analysis of theoretical states in the field, clarification the content of the category “wealth” in modern literature, the methodology for estimating the world wealth, classification of world countries by the level of wealth per capita, the place of Kazakhstan in the international welfare ranking have been shown. Characteristics of the financial well-being of the population, the structure of income in the Republic of Kazakhstan, the role of knowledge in the post-industrial society, nowadays transformation into the factor of production and practical application have been revealed. Correlation of tangible and intangible assets, types of intellectual property for capitalization, the human and social capital in the system of human wellbeing have been proved. The practical and theoretical value of the research described in the article consists in classifying sources of wealth according to existing methodologies, identifying new sources determined by the capabilities of the Internet, computer and digital technologies of post-industrial society.

*Key words:* Wealth, economic methodology, post-industrial society, social capital, intangible asset, intellectual property.

## 21 ғасырдағы байлық: мүмкіндіктер мен перспективалар

### Түйін

Мақала «байлық» экономикалық категориясын терең түсіну мақсатында кәсіпорындар мен ұлттық экономика, соның ішінде Қазақстан өндірісінде дамыған елдердің іргелі тәжірибесін, материалдық емес активтер мен зияткерлік меншікті дамытудағы бірегей мүмкіндіктерді жеке адамдардың әлеуметтік-экономикалық дамуының жаңа қайнарлары ретінде пайдалану мәселесіне арналады. Зерттеудің мақсаты – төртінші технологиялық революцияның жағдайында баудың жаңа жолдарын анықтау. Зерттеу жұмысының мақсатына жету үшін осы саладағы теориялық жағдайларға талдау жасалып, байлық категориясы нақтыланды, қазіргі әдебиеттердегі «байлық» категориясының мазмұны, байлықты бағалау әдістемесі мен элем бойынша жан басына шаққандағы байлық деңгейі, сондай-ақ Қазақстанның халықаралық рейтингтегі орны көрсетілді. Зерттеу нәтижелері бойынша халықтың қаржылық әл-ауқатының сипаттамалары, Қазақстан Республикасындағы кірістер құрылымы, постиндустриалды қоғамдағы білімнің рөлі, олардың заманауи талаптарға бейімделуі және оларды тәжірибеде қолдануы сараланды. Материалдық және материалдық емес активтердің, зияткерлік меншіктің түрлері, оларды капиталдандырудың, адамның әл-ауқат жүйесіндегі адами және әлеуметтік капиталдың өзара байланысы дәлелденді.

*Түйін сөздер:* байлық, постиндустриалды қоғам, әлеуметтік капитал, материалдық емес активтер, зияткерлік меншік.

## Благосостояние в 21-м веке: возможности и перспективы

### Аннотация

Статья посвящена исследованию экономической категории «богатство» для углубления понимания необходимости использования фундаментальных основ, опыта передовых стран, уникальных возможностей в развитии нематериальных активов и интеллектуальной собственности как новых источников социально-экономического развития человека, предприятий и национальных экономик, включая Казахстан. Цель исследования заключается в определении путей создания богатства в новых условиях четвертой технологической революции. Для достижения цели проведен анализ теоретических положений в данной области, уточнена категория богатства, представлено содержание категории «богатство» в современной литературе, приведена методология оценки мирового богатства, классификация стран мира по уровню богатства на душу населения, показано место Казахстана в международном рейтинге. По результатам исследования определены характеристики финансового благополучия населения, структура доходов в Республике Казахстан, роль знаний в постиндустриальном обществе, их трансформация в современных условиях в фактор производства и практическое их применение. Доказана взаимосвязь материальных и нематериальных активов, видов интеллектуальной собственности и их капитализация, человеческого и социального капитала в системе благосостояния человека.

*Ключевые слова:* богатство, постиндустриальное общество, социальный капитал, нематериальные активы, интеллектуальная собственность.

## Introduction

The functioning of any economic system at the macro level, called the national economy of a country, has the ultimate goal to meet the needs and requirements of all system's participants including the population of a given country.

The results of the functioning of the national economy are assessed historically by the value of products manufactured for the year in terms of the «gross domestic product» indicator. On its basis, the structure of the country's economy and the structure of various industries are determined. In addition, an international classification of countries is also produced on its basis, the typology of which includes generally developed and developing countries. Indicators of economic growth rate complement gross domestic product for the year and gross domestic product per capita. These indicators are adopted for the general determination of the condition of the national economic system.

Since the second half of the last century, taking into account the shortcomings of calculating the gross domestic product, which does not reflect the country's welfare level, the international organizations began to calculate such indicators as the human development index, the world happiness index and the global wealth index. All these indicators make it possible to characterize the progress of the country in the most general form.

At the same time, a wealth of human is not in a broad agenda of economic research. Whereas Adam Smith, one of the greatest economists, called for the creation of private property, which in the conditions of a capitalist society allows creating an individual wealth. In this regard, turning to the topic of wealth, research seems relevant and requires its development.

## Methodology

The implementation of the research was based on the standard procedure of the research methodology, which includes the definition of the object and subject of research, the formulation of the goal and objectives of the research, and using suitable research methods to find answers to the questions posed and ways to solve problems existed.

The goal of the paper is to study a wealth of nation and human in order to find ways of prosper in the terms of new knowledge society and digital economy.

The fundamental contradictions in understanding the nature and sources of wealth, poor performance of Kazakhstan in the rank of world wealth reports, insufficient theoretical and methodological development of the category, and extremely low level of Research & Development, innovation activity and legal support for

capitalization of intellectual ways for prosperity have been identified.

To answer questions what is wealth? What are the sources of wealth? Where is wealth in the 21<sup>st</sup> century? How a wealth is calculated? What is the place of the Republic of Kazakhstan in world wealth rank? What are the sources of wealth in Kazakhstan? What type of possessions, properties and assets maybe capitalized in post-industrial society by household and human in Kazakhstan? The desk research of wealth as an economic category and study the contemporary concepts and theory of post-industrial society, cognition method of dialectics, comparative analysis of existed methodology of the national wealth calculation and international experience of intangible assets of advanced world companies, analysis of world and Kazakhstani statistics formed the methodological basis of the study. The hypothesis that wealth fundamentals remain unchanged and the technological revolution and digital transformation of all spheres of activity fit into the concept by introducing new types of property and capital was confirmed by the study.

## Results

### *What is the wealth?*

In recent years, individual studies of scholars have noted the importance and priority of the indicator “national wealth” and its role in decision-making by the government and its authority bodies in the direction of improving the true well-being of the country's inhabitants.

The category “wealth” has been appeared from the moment of the formation of socio-economic relations in society and basic socio-economic values in various historical eras. Wealth was defined as:

1. A property sufficient for a prosperous life.
2. An abundance of funds aimed at enhancing happiness.
3. An ethical category “virtuous wealth”.
4. A set of means for the activities of human being, government and households, which also makes it possible to engage in service to society, creativity, research and art.
5. Money and accumulated property.
6. “Cosmopolitan wealth” - the sum of the national wealth of the countries of the world to measure world wealth.

Scholars of our time turn to the topic of welfare and wealth, their role in the life of society, determining the meaning of these categories, typology and calculation methodology (Table 1).

Table 1 - The content of the category “wealth” in modern literature

| Author  | Reference to literature  | Content of wealth  |
|---|--|--|
| A.I.Akbergen  | Understanding of wealth and labor as social values of modern society<br>KazNU Bulletin. Philosophy series<br>Culturology series. Political Science Series.<br>No. 1 (46). 2014   | Social value of wealth, transformation of labor, professionalism, education, and social justice  |
| Group of authors.<br>The World Bank<br>Washington, D.C. | Where is the Wealth of Nations?<br>Measuring Capital for the 21st Century.<br>Global Wealth Report 2019<br><a href="https://www.credit-suisse.com/about-us">https://www.credit-suisse.com/about-us</a>   | Produced capital, natural resources and human resources  |
| David N.Weil  | Capital and wealth in the 21st Century.<br>American economic review. vol. 105, no. 5,<br>may 2015<br>(pp. 34-37)   | The value of human capital and wealth passed on to a new generation  |
| Steven Rosefelde  | Comparative Economic Systems:<br>Culture, Wealth and Power in the 21st<br>Century.<br><a href="https://www.wiley.com/en-ae/">https://www.wiley.com/en-ae/</a>  | An individual search for usefulness can be defined from the standpoint of cultural studies; political goals may take precedence over public welfare; business misconduct can be socially harmful   |
| Avent, Ryan   | The Wealth of Humans: Work, Power, and Status in the twenty first century.<br><a href="https://www.amazon.com/Wealth-Humans-Status-Twenty-first-Century/dp/1250075807">https://www.amazon.com/Wealth-Humans-Status-Twenty-first-Century/dp/1250075807</a>  | Some countries are rich and getting richer, while others are growing more slowly or hit a ceiling due to the social capital<br>We cannot expect to restructure the world without a wrenching rethinking of what an economy should be   |
| Thomas A. Stewart                                       | The Wealth of Knowledge: Intellectual Capital and the Twenty-first Century   | The transformation of intangible capital into real wealth  |
| John H. Langbein  | The Twentieth-Century Revolution in Family Wealth Transmission.<br><a href="https://core.ac.uk/download/pdf/234133287.pdf">https://core.ac.uk/download/pdf/234133287.pdf</a>   | Human capital and financial assets   |
| Kanbur and Stiglitz                                     | Distribution of Wealth and Income: New Theories Needed for a New Era<br>Published 2015, Economics  | Differences between capital and wealth. Creation of equal conditions for future generations, but inequality of income  |
| Cherkovets V.N.   | To the system of substantiating the macro results of social production.<br><a href="https://cyberleninka.ru/article/n/k-sisteme-obosnovaniya-makrorezultatov-obschestvennogo-proizvodstva">https://cyberleninka.ru/article/n/k-sisteme-obosnovaniya-makrorezultatov-obschestvennogo-proizvodstva</a>   | Problems of indicators of real economic growth of national wealth and sustainable growth of welfare  |
| E.V.Pilipenko and Yu.V.Batalov                          | Evolution of the concept «wealth»: from Aristotle to the knowledge economy.<br><a href="https://cyberleninka.ru/article/n/evolyutsiya-ponyatiya-bogatstvo-ot-aristotelya-do-ekonomiki-znaniy">https://cyberleninka.ru/article/n/evolyutsiya-ponyatiya-bogatstvo-ot-aristotelya-do-ekonomiki-znaniy</a> | The role of spiritual production in wealth creation  |
| M.V. Ledeneva   | Modern estimates of the magnitude and structure of world wealth  | Analysis of existing methods and methodologies for calculating the national wealth of the world countries  |
|   | <a href="https://cyberleninka.ru/article/">https://cyberleninka.ru/article/</a>  | The aggregate value of all economic assets (non-financial and financial) at market prices held at a particular date by residents of a given country, minus their financial liabilities to both residents and non-residents<br>The total value of non-financial economic assets at market prices held at a particular date by residents of a given country, plus the balance of their financial claims on non-residents |

Thus, the theoretical provisions of the wealth category and modern ideas of scholars are associated not only with the material aspects of human life, but also with its social aspects, such as lifestyle, norms of behavior, culture and morality.

To prove the hypothesis of the paper, it is necessary to explain on what concept the authors stand. We apply in our investigation on scheme of wealth done by Adam Smith.

Smith's scheme of the wealth of nations can be represented as follows (Figure 1).

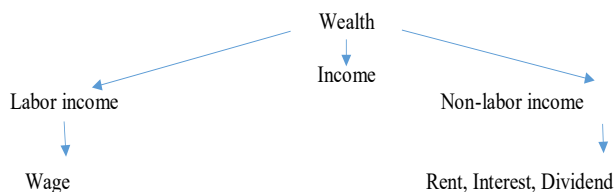


Figure 1 - Scheme of the wealth by Adam Smith

Note - Compiled by the authors from the source [1].

### How wealth is calculated?

It should be noted that the topic of wealth is not sufficiently developed not only theoretically, but also methodologically. The World Bank carried out the first estimation of national wealth at the end of the twentieth century on its individual elements. Currently, there are two directions of the methodology for estimating the world wealth. The first one is according to the UN concept and the second one is according to the broader concept of the World Bank. According to the UN version for the System of National Accounts, the composition of national wealth includes financial and non-financial assets. The World Bank methodology calculates national wealth as the sum of natural, produced and human capital together with formal and informal institutions [2]. The structure of national wealth includes the following elements based on the various sources (Figure 2):

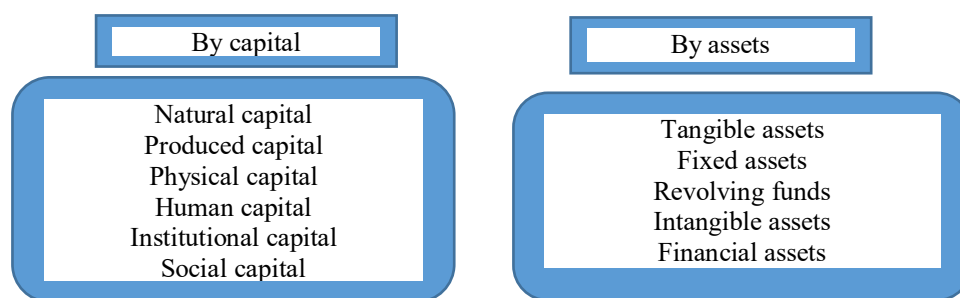


Figure 2 - Elements of the national wealth structure according to various methodologies

Note - Compiled by the author from the sources [2, 3]

These methodologies reflect the accumulated wealth and expended resources of the world countries. Russian scientists use the approach of the FBK audit and consulting company. According to this methodology, monetary estimation of a country is carried out according to its economic potential. Ultimately, the value of a country is represented by the sum of the economic potential of individual sectors of the economy, calculated using the discounted income method and considered as the future income of the economy. Since 2011, the Credit Swiss Research Institute has been publishing the Global Wealth Report. The authors of the report offer “a comprehensive portrait of global wealth, covering all regions and countries, and the entire spectrum of wealth from rich to poor”. According to the Credit Swiss classification, the countries

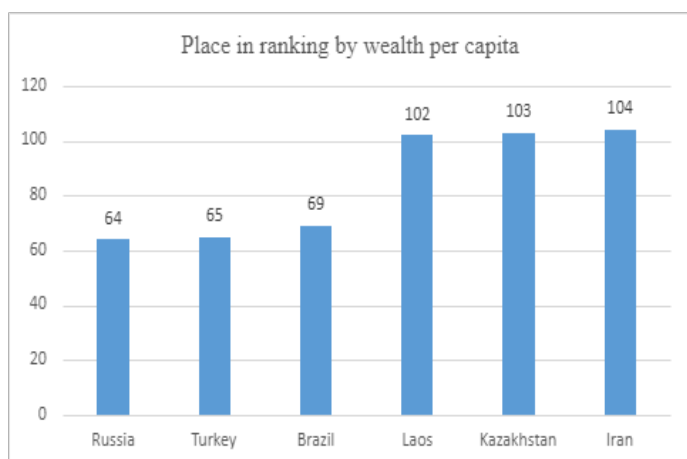
of the world are represented by four groups of countries according to the level of wealth per capita (Figure 3) [3].

In 2018, Kazakhstan belongs to the fourth group of countries with wealth below 5,000 US dollars per capita [4]. In 2019, Kazakhstan moved from the fourth group of “poorest countries” to the third group. The wealth of a country resident is 5,312 US dollars [3].

The Allianz Group is one of the world's leading providers of integrated financial services. The annual report publishes the state of global wealth based on the assessment of countries' financial assets and household wealth [6]. According the report, global financial assets raised from EUR 90 trillion in 2008 to EUR 160 trillion in 2018, or an increase was 78% in 10

years. During this period, households tightened spending and boosted global savings growth by 22% to over EUR 2.7 trillion. Thus, the estimation of world wealth and the ranking of countries are carried out by various organizations and according to their own methodologies. The value of countries national wealth estimation and changing its level allows us to determine the condition of nations' economic well-being for monitoring in the long term and managing the development process through national asset portfolios.

It is known that the rapid development of technology, the growth of incomes, and the cheapening of goods have raised overall consumption. Since the middle of the twentieth century, global consumption of copper, electricity, meat, steel and timber has almost doubled; the number of personal cars and the level of cement use increased 4 times, the volume of air travel - 32 times, the level of use of plastic materials - 5 times, aluminum - 7 times.



| A. Group of countries | Wealth per capita, in US dollars |
|-----------------------|----------------------------------|
| First                 | Over 100 000                     |
| Second                | 25 000-100 000                   |
| Third                 | 5000-25 000                      |
| Fourth                | below 5 000                      |
| B. Country            | Place in ranking                 |
| Russia                | 64                               |
| Turkey                | 65                               |
| Brazil                | 69                               |
| Laos                  | 102                              |
| Kazakhstan            | 103                              |
| Iran                  | 104                              |

Figure 3 - Classification of world countries by the level of wealth per capita

Note - Compiled by the author from the source [5]

World meat production increased by 7, 3 times from 44 million tons in 1960 to 320 million tons in 2017 [7]. Household consumption of meat and meat products increased by 6.8 over the year and amounted to 77.9 kg on average per capita in 2018. Whereas in 2005 44.5 kg were consumed per capita, the growth is 175.2%. In the world, meat consumption is 35 kg per person. In Australia and the USA, leading in this indicator, meat consumption is 116 and 115 kg per capita, respectively.

The indicator of the level of well-being is the ownership of a car. Starting in 1950, the number of cars began to double approximately every ten years. By the beginning of the nineties, the number of private cars in the world had doubled on average compared to the middle of the century. In 2009, the world vehicle fleet consisted of 980 million units of equipment, in 1986 - from 500 million, and in 1970 - from 250 million [8].

Currently, the United States, which has become the first country in the world in terms of consumption, has 799 passenger cars per 1000 inhabitants, and in Kazakhstan - 299. According to the Association of the Kazakhstan Auto Business (AKAB), in the country in 2019 there were

3,755,890 passenger cars registered. , which is 82.2% of the total vehicle fleet [9]. In 2000, the number of vehicles in the country did not exceed 1.3 million. Of these, there were 1,298,000 passenger cars. Then 14.8 million citizens were registered in Kazakhstan [10]. The level of motorization was 88 cars per 1000 people. In 2010, the level of motorization in Kazakhstan was 189 cars per 1000 inhabitants of the country with a population of 16.3 million people [11]. Thus, the number of cars in private ownership in the Republic of Kazakhstan since 2000 has increased 2.9 times, and the level of motorization has increased 3.4 times.

Housing is becoming a “commodity of prestigious demand” in a consumer society. Therefore, people strive to acquire comfortable houses and apartments not only for convenience, but also for social status. In fact, this is a basic human need for protection from adverse environmental factors of a natural, social and man-made nature. The Global Living Report 2020 has identified 39 cities in the world with the most expensive residential real estate. Of the cities of the CIS, Moscow is in 27th place with a housing price of \$ 294,680. Hong Kong tops the list with a housing

price of \$ 1,254,440, New York at 10th, Casablanca at 39th with \$ 649,030 and \$ 57,292, respectively [12].

Domestic studies of real estate prices in the cities of Kazakhstan revealed that in both capitals of the country the highest housing prices are 50,262 and 64,505 US dollars, respectively, in Nur-Sultan and Almaty (Figure 4).



Figure 4 - Comparative prices for the most expensive housing in Kazakhstan and the world

Note - Compiled by the authors from the source [3, 14, 15]

Experts from the research company New World Wealth have compiled a list of countries with the largest private capital Global Wealth Migration Review 2019. As noted in the report, the global private capital index of the top 10 countries grew to \$ 204 trillion in 2018, which is 74% of the global private capital index. A total of 184 trillion US dollars of private capital in the world and 510 000 multimillionaires.

#### What is the wealth of Kazakhstani?

A historical perspective on wealth in Kazakhstan after the collapse of the USSR provides the following insight. Transition to market economy and capitalist economic system in 1991 was explained by inefficiency of planned economy and socialist system in general, based on central planning and public ownership. In Soviet time, the income of a family of 3.5 people was as follows.

Comparison of the structure of the Soviet family income and income structure in the Republic of Kazakhstan shows that wages and pensions are the main source respectively 88,2% and 81,5%; income from personal economy and income from other sources in the Soviet era - 11,2% and income from self-employment, entrepreneurship and property in the Republic of Kazakhstan - 11,4% (Table 2).

Although it is believed that it is possible to compare living standards with the USSR only in terms of population expenditures, the structure of income reflects the sources of their formation and allows us to conclude that declaring economic freedoms in relation to private property as the basis of the capitalist economic system and its prosperity is untenable.

Table 2 - Income structure of the Soviet family in 1985

| Income structure of the Soviet family in 1985  | Value, ruble | Share in total income, % |
|--|--------------|--------------------------|
| Salary before income tax   | 374,22       | 79,2                     |
| Payments and benefits -pensions, scholarships, allowances; subsidies for vouchers to sanatoriums, rest homes, pioneer camps, for the maintenance of children in preschool institutions | 45,36        | 9,6                      |
| Income from personal subsidiary plots for families of workers and employees, for collective farmers - 8 times more)  | 15,59        | 3,3                      |
| «Income from other sources.» budget surveys take into account-hidden income, including shadow income.  | 37,33        | 7,9                      |
| Total  | 472,5        | 100,0                    |

Note - Compiled by the authors according to the source [4].

It should be noted that the privatization of public property assumed the effective use of available resources and property created by more than one generation of the country through the formation of the national bourgeoisie and the middle class of entrepreneurs. However, when the public property was divided, the citizens of the country did not receive their share, since the coupon privatization turned out to be fiction. In 1991-1995, the Government of the Republic of Kazakhstan took measures to denationalize and privatize medium and large enterprises in all sectors of the economy of the former Kazakh SSR and state housing stock. The National Program of Denationalization and Privatization, the norms of the Law "On Denationalization and Privatization" and the Regulation on the Coupon Mechanism were developed.

The purpose of privatization was to create equal starting conditions for citizens to participate in the privatization of state property. For these purposes, privatization housing and investment coupons were used, which were legal tender for the acquisition of state property. In the process of mass privatization, the population was given the opportunity to acquire property rights by exchanging privatization investment coupons for shares of Investment Privatization Funds.

These funds were established in the form of open joint stock companies and participated in privatization auctions. They acquired ownership of shares in large and medium-sized enterprises in exchange for coupons invested by citizens. Millions of citizens of the country used their right to participate in the privatization program according to the proposed method. After the implementation of the specified program of denationalization and privatization, residents of the country did not receive dividends and even reports on the activities of the IPF. Thus, the capitalist system basis is a private property, did not receive its development for the households of Kazakhstan. Experts believe that a country should have at least 70% of capitalists to create a capitalistic system. Although Kazakhstan moved from the poorest countries in the world with an annual wealth of less than USD 5,000 per person to the largest group with wealth above USD 5,000 to USD 25,000, each person is wealthy at USD 5,312 according to the Global Wealth Report, 2020 (Table 3).

Developed criteria for attributing people to various categories of the rich represents both scientific and purely curious interest, as it is seen the table below (Table 4).

Table 3 - Characteristics of the financial well-being of the population in the Republic of Kazakhstan and in the world, 2019

| No.               | Indicators  | Unit of measurement             | Value |
|-------------------|---|---------------------------------|-------|
| 1                 | 2   | 3                               | 4     |
| <i>Kazakhstan</i> |   |                                 |       |
| 1                 | National private capital– total   | trillion USD                    | 320,0 |
| 2                 | Private capital per capita of adult population  | thousand USD                    | 26,3  |
| 3                 | Financial assets per capita of adult population   | thousand USD                    | 4, 5  |
| 4                 | Non-financial assets per capita of the adult population                                   | thousand USD                    | 23,3  |
| 5                 | Commitments per capita for adults   | thousand USD                    | 1,5   |
| 6                 | Share of population with financial savings <USD 10,000                                    | %                               | 61,8  |
|                   |   | million people                  | 7,5   |
| 7                 | Percentage of the population with financial savings between USD 10,000 and USD 100,000    | %                               | 34,6  |
|                   |   | million people                  | 4,2   |
| 8                 | Proportion of the population with financial savings between USD 100,000 and USD 1,000,000 | %                               | 3,4   |
|                   |   | million people                  | 413,0 |
| 9                 | Share of the population with financial savings over USD 1,000,000                         | %                               | 0,2   |
|                   |   | million people                  | 24,3  |
| <i>The World</i>  |   |                                 |       |
| 1                 | World private capital [14]  | trillion USD                    | 184,0 |
| 2                 | Total number of dollar multimillionaires in the world [15]                                | thousand people                 | 510,0 |
|                   |   | % in the number of millionaires | 1,08  |
| 3                 | The total number of dollar millionaires in the world                                      | million people                  | 47,0  |
|                   |   | %                               | 0,9   |

| 1   | 2  | 3               | 4     |
|---|--|-----------------|-------|
|   | <i>Of these in:</i>  |                 |       |
| 4   | North America  | million people  | 20,0  |
| 5   | Europe   | million people  | 13,5  |
| 6   | Asia Pacific   | million people  | 7,1   |
| 7   | China  | million people  | 4,3   |
| 8   | Latin America  | thousand people | 880,4 |
| 9   | India  | thousand people | 865,8 |
| 10  | Percentage of the population with financial savings between USD 1,000,000 and USD 5,000,000  | million people  | 41,1  |
| 11  | Percentage of the population with financial savings between USD 5,000,000 and USD 10,000,000 | million people  | 3,7   |
| 12  | Share of the population with financial savings from USD 10,000,000 to USD 50,000,000         | million people  | 1,8   |
| 13  | Proportion of population with financial savings > USD 50,000,000                             | thousand people | 168,0 |
| Note - Compiled by the authors from the source [3]. |  |                 |       |

Table 4 – Types of the rich people according to financial state

| Groups of financial state of people                 | Financial state, USD   |
|---|------------------------|
| Millionaires  | 1,000,000 and more     |
| Multi-millionaires                                  | 10,000,000 and more    |
| Senti millionaires                                  | 100,000,000 and more   |
| Billionaires  | 1,000,000,000 and more |
| Note - Compiled by the authors from the source [3]. |                        |

***Where is the wealth in the 21<sup>st</sup> century?***

As it is known, the stages of human society development from the standpoint criterion of technological development are subdivided into pre-industrial, industrial and post-industrial in accordance with the theory of Daniel Bell (Table 5).

Knowledge transformation into production factor marks the transition of man not only to a new type of economic system, post-capitalism, but also to a new development of social order. A major role in the formation of a new society, built on the interaction of people and for people, is attributed to technology, the rapid expansion of which tags a rapid transition to new opportunities.

Table 5 - Classification of human society and their main traits according to Bell

| Main traits  | Types of human society  |                                     |                       |
|--|-------------------------|-------------------------------------|-----------------------|
|  | Pre-industrial          | Industrial                          | Post-industrial       |
| The main factor of production                        | Labor                   | Capital                             | Knowledge             |
| The main resource                                    | Raw materials           | Energy                              | Information           |
| The main type of activity                            | Extraction              | Production                          | Processing            |
| Basic relationships                                  | Interaction with Nature | Interaction with transformed nature | Interaction of people |
| Note - Compiled by the authors from the source [17]. |                         |                                     |                       |



The digital or third industrial revolution, which commenced in the 60s of the last century, was stand on use of semiconductors, personal computers and the Internet. The Fourth Industrial Revolution that takes place now is based on artificial intelligence, robotics, the Internet of Things, virtual reality, 3D printing, biotechnology and cybersecurity, which became the reality of modern economy. Information and communication technologies as a whole lead to unprecedented growth in labor productivity and large-scale employment through new jobs creation.

Back in the early 2000s, the impact of the use of information and communication technologies for economic growth in the United States was estimated at 107.8%. According to experts, due to the twofold increase in investment in the information technology sector in GDP, in the United States there are going to be innovative entities of small- and medium-sized enterprises, which would provide from 3 to 5 million new jobs until 2030 [18].

Scholars in Russia identified the most substantial factors of labor productivity growth in the national economy as a whole built on correlation analysis of productivity in ICT sector.

Amongst them, there is the widespread use of fixed and mobile broadband communications and the use of digital types of products and services [19]. Because of the advent of the fifth factor of production of «knowledge» in the post-industrial society, an objective prerequisite for production factor transformation of «labor» into production factor «human capital» emerged.

Ultimately, this type of capital together with knowledge embodied in innovations leads not only to economic growth of national economy, but also increases enterprise value. Thus, in the structure of US corporations in the early 80s of the twentieth century, tangible assets represented more than 60% of property, and intangible assets share was more than 40%. By the end of the twentieth century, due to increase intangible assets share, the ratio was 30:70% [20]. Capitalization of intellectual property objects is a set of methods and methods of involving formalized results of intellectual activity into economic circulation. Thus, capitalization is the process of turning results of intellectual activity into intangible assets. Human capital, technology and management are considered as sources of intangible assets creation and knowledge, labor and organizational resources as their forms (Table 6).

Table 6 - Forms and sources of intangible assets

| Forms of intangible assets | Sources of intangible assets                                 |  |   |
|----------------------------|--|--|---|
|                            | Human capital  | Technologies   | Management  |
| Knowledge                  | Intellectual activity, personal creative qualities           | Methodology of creation and introduction               | Corporate culture, management                     |
| Labor resources            | Personnel professionalism, joint use of knowledge and skills | Technologies that expand the capabilities of employees | Personnel management, investment in human capital |
| Organizational resources   | Groups for the creation and use of intangible assets         | ICT networks that increase efficiency                  | Strategies and structures                         |

Note - Compiled by the authors according to the source [21].

In the era of post-industrial economics, science has a leading role the theoretical knowledge as an organizing beginning according to Daniel Bell. Kazakhstan is ranked 55th in the Global Competitiveness Index for 2019 by comparison with the 59th place in 2018 (Figure 5).

In terms of innovation potential, Kazakhstan stands on the 95th place in the world with an average score of 32 out of 100. Such a position is associated with the following factors:

1. Level of recognition of scientific institutions is 0.01 points out of 100.
2. Level of citations of publications is 83.7 points out of 100.

3. Level of application for registration of a trademark 195 applications for 1 million people.

4. The volume of expenditures on R&D 0.1% of GDP.

5. Cluster development 122-position [14].

Thus, in the 21st century under conditions of post-industrial society a new source of wealth is seen in knowledge, which presented as non-material asset of economic entity. The capitalization of these types of property would lead to increase of wealth of an individual as well as an enterprise and the nation as a whole.

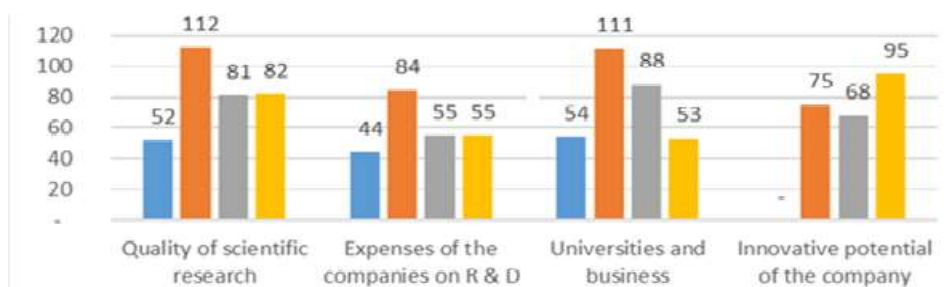


Figure 5 - Change in the competitiveness rating of scientific and scientific-technical activity of Kazakhstan in 2005, 2010, 2015 and 2019

Note - Compiled by the authors from the source [22, 23]

\* Data for 2016.

\*\* Data on trademark registration.

The property problem solving is seen in categorizing the following directions:

1. Physical capital in the form of fixed, working capital and movable and immovable property.
2. Financial in the form of instruments such as securities and deposits.
3. The natural form of natural assets that provide ecosystem services.
4. Human in the form of intangible assets and intellectual property.
5. Social in the form of social connections and social networks, norms of trust and behavior to create a mechanism for social interaction.

According to authors, the last two types of capital are relevant and accessible, requiring understanding by the majority of people in our country and are a subject object in the creation of property. Human capital is formed based on the capitalization of intellectual property. In Kazakhstan, the Civil Code defines intellectual property because of intellectual creative activity and means of individualization of participants in civil circulation, goods, works or services. Intellectual property is divided into two types:

1. The first is works of art, creative and scientific developments, know-how.
2. The second type includes trademarks, a logo, or what a company or individual may differ from others (Table 7).

The potential for capitalization of intellectual property is large towards the formation of household wealth in Kazakhstan. If we turn to the experience of developed countries, the statistics below testifies to the current trends in accounting.

In the early 80s of the twentieth century, tangible assets represented 60% of the structure of US corporations, while the share of intangible assets was 40%. However, by the end of the twentieth century, the share of intangible assets increased

to 70%, thus reducing the share of tangible assets to 30% [4]. For individual enterprises, the data characterize the ratio of tangible and intangible property with a predominance of the latter type of assets. Therefore, the ratio of tangible and intangible assets in Coca Cola is 96: 4; IBM 83:17; British Petroleum - 70:30 [4].

In addition to intellectual capital, another promising type of it in the digital economy is social capital. The emergence of this term is associated with the name of L. J. Hanifan, who developed the concept of social capital in the first half of the last century. Social capital was seen as asset that included benevolence, camaraderie, empathy, and social communication between individuals and between families. Hanifan attached special importance to them in everyday life of people [4].

Currently, in connection with digitalization of all spheres of human activity, social capital is also determined by activity in social networks and own virtual network of friends. Even students of Kazakhstani universities gain some money due to a large amount of subscribers in Instagram. A net with 17 000 followers have been attracted by the local companies as a platform for advertising their products instead of possessing these products by owner of an account. In this regard, social networks are becoming income opportunities along with other benefits.

The study and adherence to principles of economics and welfare theory, taking into account the possibilities of post-industrial society, seems to be very relevant.

Table 7 - Types of intellectual property in Kazakhstan

|   |   |
|---|---|
| The results of intellectual creative activity   | Means of individualization of participants in civil turnover, goods, works or services  |
| Works of science, literature and art  | Brand names   |
| Performances, productions, phonograms and transmissions of on-air and cable broadcasting organizations                            | Trademarks (service marks)  |
| Inventions, utility models, industrial designs  | Appellations of origin (indications of origin) of goods   |
| Breeding achievements   | Other means of individualization of participants in civil turnover, goods and services in cases provided for by this Code and legislative acts (logo, slogan) |
| Integrated Circuit Topologies   |   |
| Undisclosed information, including production secrets (know-how)  |   |
| Other results of intellectual creative activity in cases stipulated by the Civil Code or other legal acts (regulatory legal acts) |   |
| Note - Compiled by the author based on the source [4].  |   |

## Conclusion

In this research paper, the economic category “wealth” was studied. Investigations of contemporary scholars’ manuscripts, analysis of the existing methodology of calculation, classifications of countries of the world were used. Wealth level per capita, analysis of the place of Kazakhstan in the rankings of world wealth, characteristics of basic conditions of theory of post-industrial society, analysis of structure of balance sheets of major hi-tech companies of the world were done. New sources of accumulation of wealth as intangible assets and intellectual property, capitalization of which would enable to increase the value of the enterprise, value of the individual and wealth of nation as a whole are offered.

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#### Information about the authors

**Berdykulova G.M.** - **corresponding author**, Candidate of Economic Sciences, Professor, Economics and Business Department, International Information Technology University, e-mail: [g\\_berdykulova@msil.ru](mailto:g_berdykulova@msil.ru), ORCID iD: <https://orcid.org/0000-0002-3000-1675>

**Abdinova M.** - MSc in Finance, Senior Lecturer, Economics and Business Department, International Information Technology University, e-mail: [m.abdinova@yahoo.com](mailto:m.abdinova@yahoo.com)

**Ananiev T.V.** - Senior lecturer, Economics and Business Department, International Information Technology University, e-mail: [atimson33@gmail.com](mailto:atimson33@gmail.com)

#### Авторлар туралы мәліметтер

**Бердыкулова ГМ.** - **хат-хабаршы авторы**, экономика ғылымдарының кандидаты, профессор, Халықаралық ақпараттық технологиялар университетінің экономика және бизнес факультеті, e-mail: [g\\_berdykulova@msil.ru](mailto:g_berdykulova@msil.ru), ORCID iD: <https://orcid.org/0000-0002-3000-1675>

**Абдинова М.** - қаржы магистрі, аға оқытушысы, Халықаралық ақпараттық технологиялар университетінің экономика және бизнес факультеті, e-mail: [m.abdinova@yahoo.com](mailto:m.abdinova@yahoo.com)

**Ананьев Т.** - аға оқытушысы, Халықаралық ақпараттық технологиялар университетінің экономика және бизнес факультеті, e-mail: [atimson33@gmail.com](mailto:atimson33@gmail.com)

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