Comparative Economic Research. Central and Eastern Europe
Volume 25, Number 4, 2022
https://doi.org/10.18778/1508-2008.25.35

Global Income Inequality – A Case Study of OECD Countries and Kazakhstan

Seisembay Jumambayev https://orcid.org/0000-0003-0527-3748
Ph.D. of Economic Sciences, Associate Professor, Al-Farabi Kazakh National University
Department of Management, Almaty, Republic of Kazakhstan, e-mail: jumambayevseis@rambler.ru

Almazhan Dzhulaeva https://orcid.org/0000-0003-1533-7979
Candidate of Economic Sciences, Acting Associate Professor, Al-Farabi Kazakh National University
Department of Management, Almaty, Republic of Kazakhstan, e-mail: soulapple777@gmail.com

Sariya Baimukhanova https://orcid.org/0000-0002-9128-4891
Ph.D. of Economic Sciences, Associate Professor, Al-Farabi Kazakh National University
Department of Finance and Accounting, Almaty, Republic of Kazakhstan, e-mail: bsariya@rambler.ru

Guliya Ilyashova https://orcid.org/0000-0003-2661-0328
Senior Lecturer, Al-Farabi Kazakh National University, Department of Economics
Almaty, Republic of Kazakhstan, e-mail: Ilyashova.guliya@kaznu.kz

Aidana Dosmbek https://orcid.org/0000-0001-8394-7176
Al-Farabi Kazakh National University, Department of Management, Almaty, Republic of Kazakhstan
e-mail: aidana.dosmbek@gmail.com

Abstract

This article presents the results of a study into the features of the formation of economic inequality in Kazakhstan in the context of global trends in the country's development. The methodological basis of the study was a comparative analysis of the former Soviet Union (FSU) and OECD countries in terms of economic development and inequality in the context of global changes and trends, implemented with the help of econometric and economic-statistical methods. The study revealed a direct statistically significant ($p < 0.05$) correlation between the level of income concentration of the 10% group and the economic growth of Iceland ($r = 0.67$) and the Republic of Belarus ($r = 0.65$). In the case of the Republic of Kazakhstan, no such correlation was

Received: 21.04.2022. Verified: 5.08.2022. Accepted: 11.10.2022

found. However, in Kazakhstan, the link between the 10% group's income concentration and gross domestic product per capita has been established. The dynamics of GDP growth and the values of Kazakhstan's population's real money incomes have a stable inverse relationship. The correlation coefficient between them is r = –0.46, and the determination coefficient is R = 0.215, based on data from 2008 to 2020. This suggests that economic growth is still the most important factor that influences the population's real income. The results of the study will be put into practice by familiarizing government officials with the developed proposals for enhancing the state's policy of overcoming economic inequality and setting the stage for sustainable economic growth. In addition, the results of this study will be of interest to academic science, actualizing new directions for further research.

Keywords: development, distribution, institutions, transition economy, wealth

JEL: O10, O57, P16

Introduction

Global income inequality has remained stubbornly high for decades, a reflection of the world's existing highly hierarchical economic system. At the same time, the share of income received by 10% of the world's population fluctuates between 50–60% of total income, while the share of the remaining 50% in the lower part is typically 5–10%. The global share of the world's richest 1% is nearly three to four times that of the remaining 50%, which is roughly on the same order of magnitude as the 0.1% share (Chancel and Piketty 2021).

In today's world, the COVID–19 pandemic and its accompanying economic crisis are the two most powerful contributors to global poverty and persistent inequality. As a result of the pandemic, between 88 and 115 million people were trapped in extreme poverty in 2020, bringing global poverty rates back to levels seen in 2017. The figure is expected to rise to 150 million by 2021 (World Bank 2020).

Global inequality remains widespread in 2021, despite three decades of trade and financial globalization. Inequality is now nearly as bad as when Western countries were at their pinnacle of power. Additionally, the COVID–19 pandemic has contributed to the escalation of global inequality. Since the mid–1990s, roughly 1% of the wealthiest people have amassed 38% of all additional wealth. Notably, since 2020, these processes have moved at a much faster pace (World Inequality Lab 2021a).

Because of this, income distribution is of significant scientific and practical importance. Recent years have seen many new economic theories arise that try to ascertain why there is so much inequality in income distribution and how that can upset economic growth. This research will investigate the theories that explain inequality. Again, the study of income inequality in the FSU countries is particularly important because this issue has received insufficient attention.

New perspectives on income inequality

While it is widely acknowledged that income inequality is inherently undesirable, there is considerable debate about its impact on economic growth. The level of equality of opportunity is responsible for the relationship between income inequality and economic growth. Income inequality has a greater impact on future growth in societies where opportunities are unequally distributed, i.e., where parents' material circumstances constrain their children's opportunities (Mijs 2021). By contrast, in societies where there are more opportunities for everyone, income inequality can be more easily ignored and should not limit investment opportunities or slow down growth. In this case, opportunity equality can be equated with intergenerational mobility, or the degree of correlation between parents' achievements (income and education) and children's achievements (Aiyar and Ebeke 2020).

The dynamics of income inequality in the post-communist countries of Central and Eastern Europe have long been thought to be linked to the impact of institutional change. The group analysis results indicate two types of institutional changes: endogenous in the first transition period, associated with a deterioration in income distribution, and exogenous in the second transition period, associated with income distribution stabilization. The persistence of high income inequality during the second transition period can be explained by post-transitional tolerance for inequality, which reflects economic evolution but also suggests a possible shift in values in Central and Eastern European countries (Josifidis, Supic, and Glavaski 2018).

Main hypothesis

Inequality has a detrimental effect on economic growth for a number of reasons. To begin with, inequality can result in underinvestment in education, health care, and physical capital, all of which contribute to slower economic growth. On the other hand, underinvestment can be associated with a lack of resources, i.e., poverty, rather than inequality as an economic phenomenon. This favors considering poverty as another factor that can stifle economic growth (Breunig and Majeed 2020).

Inequality in FSU countries may be linked to the fact that, as a result of rapid development and urbanization, there is a high concentration of population in these countries' capitals, owing to higher personal incomes. This always favors increased mobility and long-term migration from small and medium-sized cities to large cities, as well as rural depopulation (with the exception of Kazakhstan, which has the highest degree of spatial polarization). The high degree of personal income inequality in capitals compared to provinces primarily determines labor migrants' choices: the capital or outside the country (Zubarevich 2018).

Another aspect of the problem is that the relationship between remittances and inequality is reversed in most countries. Remittances, on the other hand, deepen economic inequality when they account for more than 20% of GDP. This situation calls into question the assertion that remittances should only be viewed as a redistribution mechanism that benefits the poor because additional migrant remittances can actually increase income inequality in some cases (Tokhirov 2021).

The issues captured here are viewed through the lens of the following hypothesis, which will either be confirmed or refuted: A high level of income inequality in FSU countries and Kazakhstan can, among other things, affect the dynamics of economic growth and its sustainability. Furthermore, there is a link between the indicator of gross internal income per capita and the percentage of people living on less than the poverty line.

Literature review

Today's world is marked by widespread economic inequality. Rapid economic growth in some developing countries has helped to reduce inter-country inequality to some extent, but intra-country inequality remains high and, in some cases, is increasing (Haller and Eder 2016).

According to the UN Sustainable Development Outlook Report, high levels of inequality limit human development's economic and social mobility and, as a result, impede economic growth (United Nations 2019). Inequality is also a major impediment to achieving the Sustainable Development Goals. Societies with high levels of income inequality develop more slowly than societies with low levels, and they are less successful at sustaining long-term economic growth. They are also ineffective at alleviating poverty (Department of Economic and Social Affairs of the United Nations Secretariat 2020).

The world of global flows of goods, services, and capital has changed dramatically over the last twenty-five years. This has influenced global economic and financial power relations (Čaušević 2017).

The financial capitalism era, characterized by increased globalization and banking, has altered the relationship between labor and capital, with labor frequently being the weaker party. On the one hand, trade unions lost power as a result of the labor-capital conflict, and labor market institutions such as worker protection from layoffs, unemployment benefits, unemployment subsidy replacement rates, and so on were weakened. Moreover, workforce flexibility, atypical labor contracts, and temporary jobs led to precarious employment and, thus, precarious consumption. In this context, income inequality has grown because labor, the most important source of income, is viewed from a supply-side perspective as a cost to be reduced rather than a fundamental component of aggregate demand to expand production (Fadda and Tridico 2016).

Thus, in recent decades, the shift away from classical industrial capitalism toward financial capitalism has accelerated the growth of inequality. In this regard, economic inequality is common in many countries around the world. This socio-economic phenomenon is still one of the most perplexing scientific mysteries of the past and present. The FSU countries only recently faced the problem of inequality, about 30 years ago, after abandoning the planned economy and transitioning to a market economy. Therefore, this phenomenon has received insufficient attention.

There has recently been much interest in studying certain aspects of the development of inequality in the FSU countries. The reason for this is that there is a significant difference between countries in terms of inequality, with Kazakhstan standing out. The purpose of this study is to examine the characteristics of economic inequality in Kazakhstan in light of global trends affecting its growth. This assumes that the research objectives will be met. To begin, it is necessary to examine the issue of economic inequality at the global level, specifically between individual countries in terms of GDP per capita, as well as between different segments of the population in terms of income, using an established assessment criterion based on the Gini coefficient and other relevant indicators. The next step is to delve deeper into the study of the inequality problem by comparing Kazakhstan to other countries. Finally, the study intends to characterize similar approaches and differences in viewpoints on the major global trends and factors in the formation of inequality in various countries worldwide.

Methods and materials

Research methodology

For this comparative analysis, 12 FSU countries and 38 OECD member countries as of 2021 were chosen for their distinctive patterns of socio-economic development. Appropriate indicators were chosen based on a study of the main theoretical and methodological concepts and approaches to the study of the problem of inequality. The use of these indicators in the comparative analysis would reveal differences and trends in the dynamics of income inequality in Kazakhstan and developed countries, as well as their impact on economic growth. The results allow us to assess the impact of changing income inequality trends on Kazakhstan's economic growth rate and, ultimately, the country's real chances of joining the world's thirty most developed countries.

The indicators representing the distribution of households according to the amount of average per capita cash income and total cash income of the population by 10% groups were used during the study of income inequality in Kazakhstan and some

developed countries. They enable the calculation of decile differentiation indicators and the assessment of income concentration, cash income and expenditure structure of the population, the Gini coefficient, the poverty rate, etc. Inequality was measured using data from the National Bureau of Statistics of the Republic of Kazakhstan, OECD. Stat, the World Bank Open Data, World Inequality Database (WID.world), the Eurasian Union's statistical database, and other sources.

The P90/P10 ratio, i.e., the ratio of the upper bound value of the ninth decile or the 10% of people with the highest income to that of the first, was also used here.

The Gini coefficient has significant advantages over other indicators, but it also has a number of limitations. It has a clear graphical representation, and as with any generalizing measure, it allows general conclusions about inequality trends to be drawn. It does not, however, determine whether the increase or decrease in inequality is the result of changes at the bottom, middle, or top of the distribution. The Gini coefficient is more sensitive to changes in the middle of the distribution than other indices and less sensitive to changes at the very bottom and very top of the distribution (Department of Economic and Social Affairs of the United Nations Secretariat 2020).

Correlation analysis was carried out using Microsoft Excel. All calculations were performed according to Meissner (2013).

Results

In the modern world, economic inequality exists at the global level between individual countries. It is typically measured in terms of GDP per capita, as well as income inequality between different strata of the population. Let us take a closer look at these two situations.

When the dynamics of the FSU countries and the OECD countries in terms of GDP per capita (current US$) are compared, there is a significant difference between them (Table 1).

Table 1. The FSU countries' achieved Level of GDP per capita (current US$) in relation to the OECD countries' average indicator (as a percentage)

Country	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Australia	137.5	127.5	148.8	167.1	183.0	182.2	164.7	159.5	138.6	144.5	145.8	139.4	136.0
Austria	143.3	143.0	134.0	137.3	130.7	135.6	136.3	124.1	125.6	126.6	130.8	126.9	126.9
Belgium	133.3	132.9	126.3	126.5	120.2	124.9	125.7	115.2	116.5	118.0	120.9	117.5	117.1

Country	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Canada	129.5	121.9	136.0	139.6	141.7	140.7	134.3	122.5	117.4	120.7	118.1	117.3	113.6
Switzerland	206.7	214.9	220.6	243.9	232.9	235.5	236.4	238.2	230.4	223.0	219.6	216.0	228.6
Chile	29.8	30.4	36.6	39.1	41.3	42.3	38.7	38.1	38.2	40.1	40.4	37.3	34.7
Colombia	15.2	15.5	18.1	19.6	21.7	22.0	21.4	17.4	16.3	17.1	17.1	16.3	14.0
Costa Rica	19.1	20.3	23.5	24.7	27.1	28.7	28.6	32.7	33.3	32.7	31.7	32.1	31.7
Czech Republic	63.2	59.2	57.1	58.5	53.5	53.8	52.4	50.1	51.5	55.2	59.5	59.9	60.2
Germany	125.9	123.7	118.8	124.7	118.0	123.7	126.4	115.4	116.8	119.2	121.9	118.4	121.3
Denmark	178.3	173.4	166.0	165.0	157.4	163.6	164.8	149.6	151.6	154.1	156.6	151.3	160.3
Spain	98.0	95.5	87.2	84.6	76.2	77.7	77.6	72.3	73.5	75.2	77.1	74.8	71.0
Estonia	50.5	43.9	41.9	46.7	46.8	50.9	53.3	48.9	50.7	54.5	58.6	59.2	60.4
Finland	148.4	141.0	132.9	136.5	128.4	133.3	132.5	120.2	121.5	123.9	127.0	123.2	128.0
France	125.6	124.0	116.2	117.0	110.0	113.8	113.4	102.9	102.7	103.5	105.7	102.7	102.5
United Kingdom	131.0	115.5	113.1	112.4	114.2	116.0	125.1	126.5	113.9	107.8	109.3	107.2	105.8
Greece	88.7	88.6	76.3	68.0	59.0	58.1	56.9	50.7	49.6	49.7	50.2	48.5	46.4
Hungary	43.7	38.9	37.7	38.0	34.9	36.6	37.6	35.7	36.3	39.1	41.7	42.4	41.7
Ireland	169.3	154.8	139.0	139.3	131.9	137.7	146.3	174.2	174.3	186.2	201.0	204.7	223.8
Iceland	157.8	123.1	123.7	127.5	123.8	133.1	143.8	148.8	172.0	192.6	189.3	174.5	155.6
Israel	82.0	82.6	87.8	89.8	87.5	97.1	99.5	100.6	103.4	108.3	106.0	110.3	114.5
Italy	113.0	110.6	103.0	103.2	94.3	95.0	93.6	84.9	85.8	86.5	88.0	85.0	83.2
Japan	110.5	123.2	128.6	130.3	132.3	109.3	101.4	98.2	109.3	104.0	101.2	103.2	103.8
Korea Republic	59.2	57.1	66.0	67.1	68.5	72.7	77.1	80.7	81.2	84.6	85.0	80.6	82.7
Lithuania	41.4	35.2	34.3	38.4	38.7	42.0	43.6	40.1	41.6	45.1	48.7	49.5	52.5
Luxembourg	316.7	307.7	300.2	309.4	287.3	303.7	313.2	284.8	289.3	287.2	296.4	290.3	304.2
Latvia	45.5	36.6	32.5	36.8	37.5	40.4	41.4	38.7	39.7	41.9	45.4	45.0	46.3
Mexico	27.8	23.9	26.5	27.3	27.6	28.7	28.8	27.0	24.3	24.8	24.6	25.2	21.9
Netherlands	159.8	156.6	145.7	144.8	134.8	139.5	139.2	126.9	127.6	129.9	134.8	132.8	137.5
Norway	268.7	238.4	250.8	268.9	273.2	275.1	255.7	208.9	195.5	202.0	209.1	191.9	176.9
New Zealand	86.6	84.1	96.3	102.6	107.6	114.9	117.5	108.5	111.2	115.0	110.1	108.2	108.9
Poland	38.8	34.4	36.1	37.1	35.2	36.6	37.6	35.3	34.5	37.1	39.3	39.7	41.1

Country	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Portugal	68.9	68.8	64.4	62.0	55.3	57.9	58.2	54.1	55.4	57.4	59.9	58.9	58.9
Slovak Republic	51.8	49.3	47.9	49.1	47.0	48.8	49.2	45.8	45.8	46.8	49.2	48.8	50.3
Slovenia	76.2	73.6	67.2	67.1	60.9	62.8	63.8	58.7	60.1	62.8	66.4	65.7	67.0
Sweden	155.6	140.0	151.2	162.4	156.2	163.4	158.2	144.8	144.1	143.9	138.8	131.5	137.2
Turkey	30.3	27.1	30.7	30.5	31.7	33.7	32.0	30.9	30.2	28.3	24.0	23.1	22.4
USA	134.1	140.4	138.6	133.3	138.9	141.9	145.1	159.8	160.9	160.8	160.3	165.2	166.8
OECD members	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Armenia	11.1	8.9	9.2	9.4	9.9	10.3	10.5	10.1	10.0	10.5	10.7	11.7	11.2
Azerbaijan	15.4	14.8	16.7	19.2	20.2	21.1	20.8	15.5	10.8	11.1	12.0	12.2	11.1
Belarus	17.7	16.0	17.2	17.4	18.7	21.3	21.9	16.7	13.9	15.4	16.1	17.3	16.8
Georgia	9.2	8.4	9.2	10.7	11.9	12.4	12.5	11.3	11.3	11.7	12.0	11.9	11.2
Kazakhstan	23.4	21.4	25.9	31.1	33.3	37.1	33.8	29.5	21.4	24.7	24.9	24.8	23.8
Kyrgyz Republic	2.7	2.6	2.5	3.0	3.2	3.4	3.4	3.1	3.1	3.3	3.3	3.5	3.1
Moldova	5.9	5.7	7.0	7.9	8.2	8.9	8.8	7.7	8.0	9.4	10.8	11.4	11.9
Russian Federation	32.2	25.5	30.5	38.2	41.5	42.7	37.1	26.2	24.1	28.7	28.7	29.1	26.6
Tajikistan	2.0	2.0	2.1	2.3	2.6	2.8	2.9	2.7	2.2	2.3	2.2	2.3	2.3
Turkmenistan	10.8	12.0	12.7	15.1	18.0	19.5	21.0	18.1	17.7	17.6	17.7	19.3	–
Ukraine	10.8	7.6	8.5	9.5	10.4	10.8	8.2	6.0	6.1	7.1	7.9	9.3	9.8
Uzbekistan	3.0	3.6	4.7	5.1	5.8	6.1	6.6	7.3	7.1	4.9	3.9	4.4	4.4

Source: compiled by the author using data from the World Bank Group (2021).

Only the Russian Federation, Kazakhstan, and Belarus had the highest GDP per capita (in current US$) among the CIS countries from 2008 to 2020. Nonetheless, it was nearly 4–5 times lower than the OECD average. This disparity is 40 or more times greater in other FSU countries. Kazakhstan's GDP per capita (current US$) in 2020 was only 23.8% of the OECD average, a value that had not seen marked changes since 2008. Furthermore, the smallest lag of this indicator from OECD countries in Kazakhstan was only 37.1% in 2013. The economic inequality that exists in the FSU countries can be explained from both the standpoint of institutional theory and the raw material model of economic development. When the causes of differentiation and inequality in the FSU

countries in terms of GDP per capita (current US$) are considered, the underdevelopment of market economic institutions, as well as the high proportion of resource industries in the structure of these countries' national economies, stand out. In many ways, this is linked to another aspect of economic inequality, which is the difference in income between different groups of people.

Comparative analysis of income inequality

The ratio of incomes of the richest and poorest strata of the population allows for the most realistic assessment of the scale of social inequality in various countries worldwide. This indicator not only reveals the main trends in income distribution over specific periods, but it also reveals the extent to which inequality varies between different countries in the world.

Table 2 compares countries with varying market economies. They are roughly divided into two groups: those with neoliberal market economies (the United States, the United Kingdom, and Canada) and those with socially oriented market economies (Denmark, Finland, France, Germany, the Netherlands, Norway, and Sweden), as well as Kazakhstan.

Table 2. Interdecile P90/P10 ratio in several OECD countries and Kazakhstan

Country	2012	2013	2014	2015	2016	2017	2018	2019
Canada	4.3	4.4	4.2	4.4	4.1	4.1	4.0	4.0
United Kingdom	4.2	4.2	4.2	4.2	4.2	4.3	4.5	4.5
USA	...	6.4	6.4	6.1	6.3	6.2	...	...
Denmark	2.8	2.9	2.9	2.9	2.9	3.0	...	...
Finland	3.1	3.2	3.1	3.1	3.0	3.1	3.1	...
France	3.6	3.5	3.4	3.5	3.4	3.4	3.5	...
Germany	3.5	3.6	3.7	3.7	3.8	3.7	...	...
Netherlands	3.2	3.3	3.3	3.3	3.4	...	...	...
Norway	3.0	3.0	3.1	3.1	3.1	3.1	3.1	...
Sweden	...	3.2	3.3	3.3	3.3	3.3	3.3	3.4
Kazakhstan	5.8	5.6	5.7	5.6	5.6	5.9	6.0	...

Source: OECD (2021).

A comparison of the Interdecile P90/P10 ratio of income inequality between the two groups of countries and Kazakhstan allows for a fairly clear distinction between them based on the level of income inequality that has been achieved in each of these countries.

This indicator in a multiple ratio between the incomes of the richest and poorest strata of the population was 4 or more times in the United States, Great Britain, and Canada, while it ranged from 2.9 (Denmark) to 3.7 times in the other group of countries during the period under review (Germany). In this regard, Kazakhstan is comparable to and even outperforms the United States, the United Kingdom, and Canada.

The Gini coefficient, which compares the total share of the population with the total share of income that they receive, is another globally recognized indicator of income distribution among certain groups of the population. This indicator ranges from 0 for perfect equality to 1 for perfect inequality (Table 3).

Table 3. Gini coefficient in several OECD countries and Kazakhstan

Country	2012	2013	2014	2015	2016	2017	2018	2019
Canada	0.317	0.32	0.313	0.318	0.307	0.31	0.303	0.301
United Kingdom	0.351	0.358	0.356	0.36	0.351	0.357	0.366	0.366
USA	...	0.396	0.394	0.39	0.391	0.39	...	...
Denmark	0.249	0.254	0.256	0.263	0.261	0.264	...	...
Finland	0.26	0.262	0.257	0.26	0.259	0.266	0.269	...
France	0.305	0.291	0.293	0.295	0.291	0.292	0.301	...
Germany	0.289	0.292	0.289	0.293	0.294	0.289	...	...
Netherlands	0.288	0.287	0.303	0.288	0.285	...	...	...
Norway	0.253	0.252	0.257	0.272	0.262	0.262	0.262	...
Sweden	...	0.268	0.274	0.278	0.282	0.282	0.275	0.280
Kazakhstan	0.284	0.276	0.278	0.278	0.278	0.287	0.289	...

Source: OECD (2021).

Throughout the studied period, the value of the Gini coefficient in the United States remained virtually constant, while in the United Kingdom it fluctuated between 0.351 and 0.366. Meanwhile, in Canada, it was noticeably lower and showed a downward trend compared to previous countries.

Following a comparative analysis of Gini coefficients, it can be concluded that, in contrast to countries with a neoliberal economic model of market relations, countries with a socially oriented market economy experience greater equality in the distribution of income. Kazakhstan belongs to the second group, according to this indicator. Norway, like Kazakhstan, is an oil-producing country, and the Gini coefficient shows that it has a higher level of equality. In general, it can be argued that Kazakhstan's Gini coefficient has reached average values for OECD countries that follow the model of a socially oriented market economy.

In terms of relative poverty, Kazakhstan falls somewhere between the indicators of a neoliberal market economy and a socially oriented economy (Table 4). A closer examination reveals, however, that, with the exception of Canada, Finland, and France, the majority of the countries studied show an increasing trend toward relative poverty.

Table 4. Total poverty in several OECD countries and Kazakhstan, 2012–2018

Country	2012	2013	2014	2015	2016	2017	2018	2019
Canada	0.133	0.133	0.126	0.142	0.124	0.120	0.118	0.116
United Kingdom	0.105	0.104	0.105	0.109	0.111	0.119	0.117	0.124
USA	...	0.172	0.175	0.168	0.178	0.178	...	...
Denmark	0.054	0.054	0.055	0.055	0.058	0.061	...	...
Finland	0.065	0.071	0.068	0.063	0.058	0.063	0.065	...
France	0.085	0.079	0.081	0.081	0.083	0.081	0.085	...
Germany	0.084	0.091	0.095	0.101	0.104	0.104	...	...
Netherlands	0.069	0.079	0.078	0.078	0.083	...	...	...
Norway	0.081	0.078	0.081	0.081	0.082	0.084	0.084	...
Sweden	...	0.086	0.090	0.092	0.091	0.093	0.089	0.093
Kazakhstan*	0.103	0.099	0.097	0.100	0.095	0.101	0.100	...

* Share of population with incomes below 60% of the median income level.
Source: OECD (2021).

Several notable factors can be identified as contributing to rising inequality and poverty in these countries. This is mostly because of the current demographic crisis in urban civilization and socio-economic reasons associated with the shrinking middle class.

The OECD countries' annual population growth rate is decreasing year by year. Accordingly, the share of working-age people in the total population is also steadily decreasing. These demographic trends are driving an increase in social insurance spending and healthcare costs, resulting in budget deficits, economic stagnation, and rising income inequality.

The analysis of the growth of the Gini coefficient in OECD countries and Kazakhstan in recent years reveals the influence of demographic and social factors. It should be noted, however, that explaining this solely by one demographic factor of population aging would be insufficient. There are additional reasons. In recent years, the share of underemployed workers in the total number of workers has increased in OECD countries, owing to high adoption rates of new technologies and growth in labor productivity. Part-time employment in the OECD countries averaged 16.7% of the total number of employed people in 2019, with the Netherlands accounting for 36.96%, the United King-

dom accounting for 23.06%, Germany accounting for 22.04%, and Norway accounting for 20.14%.

The share of workers who are employed temporarily, which averaged 11.77% across OECD countries in 2019, is also noteworthy. Furthermore, the population's self-employment rate in 2019 was 6.1% in the United States, 15.57% in the United Kingdom, 16.62% in the Netherlands, 9.6% in Germany, and 12.1% in France. These three groups of employed people are paid less, which results in a decrease in the average income of the population as a whole and an increase in social inequality.

According to official statistics, the share of fixed-term contracts in Kazakhstan in 2019 was only 3.5% (calculated as the share of those employed under a definite term contract at the age of 25 and older in the total number of employed at the corresponding age). The share of self-employed workers is 24.0%, with the average income per self-employed person accounting for 37% of the average monthly salary of employees. Part-time workers (30 hours or less per week) accounted for 6.63% of all employed, according to the calculations here. Clearly, out of the three types of employment, self-employment has the greatest impact on income inequality indicators in Kazakhstan.

A high level of inequality, particularly its continued growth as a result of these and other factors, strains tax and social security systems, reduces investment in human capital development, and makes it more difficult for the middle class to get by. According to the OECD report, the middle class is shrinking in most developed countries (OECD 2019). According to OECD methodology, the size of Kazakhstan's middle class is approximately 56.2%, based on the calculations here. According to a survey conducted by the country's National Bureau of Statistics in 2018 to obtain data on respondents' subjective assessments, 57.2% of respondents rate their level of material security as average and place themselves in the middle class. Both numbers confirm Kazakhstan's significant lag behind the OECD countries, where nearly two-thirds of the population is classified as middle class, which includes households earning 75–200% of the country's median income.

As a result, it can be argued that rising income inequality reduces the share of the middle class, resulting in a drop in consumer demand. This has a detrimental effect on the country's economic growth. However, how true is this for countries with varying levels of economic development and inequality? To figure out how close this relationship is, one can use the following indicators:

- share of pre-tax national income going to top 10% (Top 10% Pre-Tax National Income Share) (Appendix 1–2),
- GDP growth (annual %),
- GDP per capita (current US$).

According to the correlation analysis, this relationship is not statistically significant for most FSU countries and OECD countries between 2008 and 2020 (Table 5).

Table 5. Correlation analysis of the effects of income inequality on economic growth and gross domestic product per capita in FSU and OECD countries, 2008–2020

	Correlation coefficients between top 10% pre-tax national income share and the following indicators:	
	GDP growth (annual %)	GDP per capita (current US$)
Australia	–0.41	0.17
Austria	0.01	0.07
Belgium	–0.22	0.08
Canada	0.27	0.27
Chile	0.28	0.43
Colombia	0.09	–0.69*
Costa Rica	–0.17	–0.5
Czech Republic	0.47	–0.56
Denmark	0.31	0.08
Estonia	0.36	0.28
European Union	0.04	–0.05
Finland	0.04	0.09
France	–0.03	–0.38
Germany	0.08	–0.43
Greece	0.2	–0.39
Hungary	–0.3	–0.04
Iceland	0.67*	–0.49
Ireland	0.33	0.41
Israel	–0.63	–0.75*
Italy	0.31	0.89*
Japan	0.29	0.41
Korea	0.5	–0.41
Latvia	0.01	0.59
Lithuania	–0.21	0.24
Luxembourg	0.13	–0.32
Mexico	0.02	–0.1
Netherlands	–0.18	0.61
New Zealand	0.55	0.46

	Correlation coefficients between top 10% pre-tax national income share and the following indicators:	
	GDP growth (annual %)	GDP per capita (current US$)
Norway	0.54	0.6
Poland	0.34	–0.01
Portugal	0.17	0.48
Slovakia	0.06	–0.32
Slovenia	0.05	0.08
Spain	0.06	–0.15
Sweden	0.23	–0.1
Switzerland	–0.01	–0.48
Turkey	0.01	–0.4
United Kingdom	–0.36	0.22
USA	0.49	0.74*
Armenia	0.31	0.42
Azerbaijan	0.54	0.67*
Belarus	0.65*	0.01
Georgia	0.12	0.67*
Kazakhstan	–0.06	–0.60*
Moldova	0.15	–0.79*
Russian Federation	–0.004	–0.03
Tajikistan	0.08	–0.12
Turkmenistan	–0.31	–0.15
Ukraine	0.07	–0.29
Uzbekistan	–0.18	–0.45

* $p < 0.05$.
Source: calculated by the authors using data from the World Bank Group (2021) and the World Inequality Lab (2021b).

Concurrently, there is a direct statistically significant ($p < 0.05$) relationship between the level of income concentration in the 10% group and economic growth in Iceland ($r = 0.67$) and Belarus ($r = 0.65$). Kazakhstan did not show this correlation, although there is a correlation between the income concentration of the top 10% of earners and gross domestic product per capita.

According to the data presented above, there is a stable inverse relationship between the dynamics of GDP growth and the values of Kazakhstan's population's real money incomes. The correlation coefficient between them is $r = –0.46$, and the coefficient

of determination is R = 0.215, based on data from 2008 to 2020 (Figure 1). This suggests that economic growth is still the most important factor influencing the population's real income.

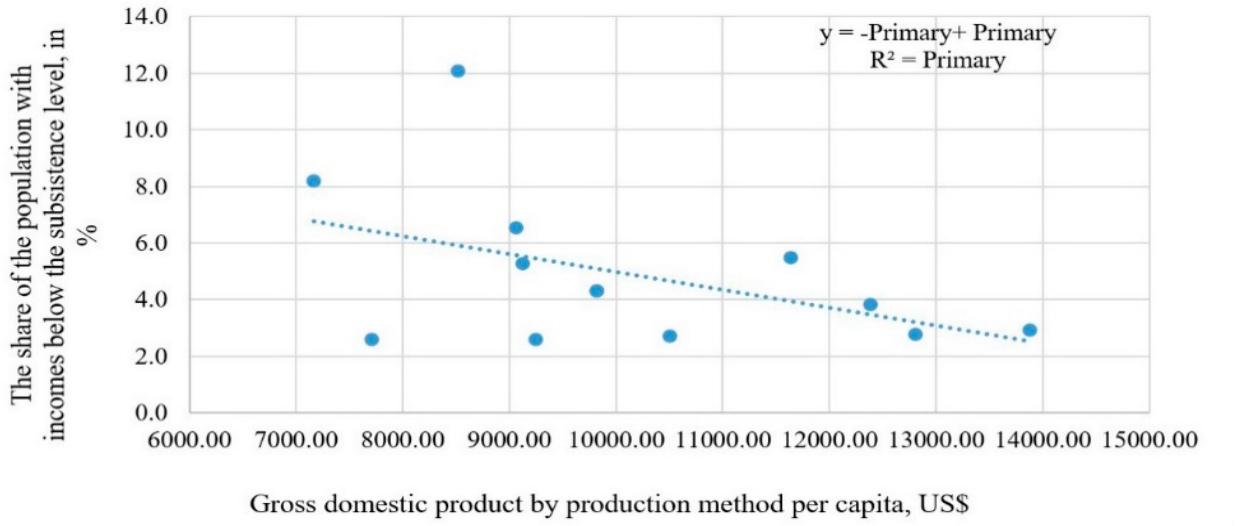

Figure 1. Relationship between Gross Domestic Product per capita and share of population living below the poverty line, 2008–2020

Source. calculated by the authors based on data from the Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan (2021)

The dynamics of income inequality and living standards are also affected by how diverse the population's sources of monetary income and expenditures are. It is thought that the higher the level and more complex the structure of income and expenditure, the more the household sector can influence the process of making market-relevant decisions. According to the data in Table 6, the share of receipts from social payments has been increasing recently: it was 16.6% of the population's cash income in 2015 and 28.6% in 2020 (Table 6).

The growing contribution of social payments to family income is primarily due to two factors: the desire to provide the population with a certain level of inclusive economic growth (the average annual growth of GDP and real money income of the population during this period was 3% and 2.7%, respectively) and an increase in the number of people in the older age group. Most of Kazakhstan's elderly stop working, relying on state retirement benefits and assistance from close relatives. During the period in question, the number of pension recipients increased by 246,860, a 12.46% increase. During the same period, the population grew at a rate of 5.53%, while the employed population grew at a rate of 4.12%, implying that the rate of growth in the number of pensioners was 2.25 and 3.02 times faster, respectively. The average income of people of retirement age is significantly lower than that of working-age people: the average pension to average wage rate for this period

ranged between 29.7 and 33.7%. In these circumstances, the state attempted to slow the rise of inequality by increasing the share of social transfers.

Table 6. The structure of monetary incomes of the surveyed households in Kazakhstan, in %

	2015	2016	2017	2018	2019	2020
Cash income – total	100	100	100	100	100	100
Including						
Remuneration of employees (wages)	69.3	68.0	65.7	63.3	61.9	57.9
Income from entrepreneurial activity and self-employment (except agricultural)	8.7	8.1	8.7	8.9	8.6	7.6
Income from agricultural activities (income from the sale of agricultural products, feed, livestock, etc.)	2.1	2.1	2.0	2.0	1.8	1.6
Social benefits	16.6	18.2	19.7	21.6	23.8	28.6
Retirement benefits	13.7	14.9	16.4	18.3	20.3	23.5
Other income sources	3.3	3.6	3.9	4.2	3.9	4.3

Source: Eurasian Economic Commission (2021).

Meanwhile, the focus on the close relationship between social policy and the choice of a model for the country's economic growth is more important. In particular, it is important to pay attention to how the state regulates the country's labor market. In comparison to developed countries, a distinguishing feature of Kazakhstan's current labor market model is its certain adaptation to sharp fluctuations in demand, primarily due to wage changes rather than changes in employment. The government's policy goal is to maintain high employment and low unemployment in the country at the expense of low labor productivity and low wages. Therefore, social policy should emphasize improving the quality rather than the quantity of available labor. A decisive shift toward stimulating the creation of high-quality new jobs is required, as it is a necessary condition for the development of a stable middle class.

In the long run, reducing income inequality in Kazakhstan can serve as an additional driver to sustain economic growth and increase the country's global competitiveness, gradually bringing it closer to the characteristics of developed countries.

Discussion

Globally, wealth inequality is still severe. The Middle East and North Africa have the highest levels of inequality, with the richest 10% of the population receiving nearly 60% of the region's total income. Sub-Saharan Africa ranks second with 57%, Latin

America ranks third with 55%, and South and Southeast Asia ranks third with 53%. In the Russian Federation and Central Asia, about 10% of the richest citizens receive 48% of the total income, while in North America, it is 45%. In Europe, where the richest 10% of the population account for only 36% of total income, inequality is the least pronounced (World Inequality Lab 2021a).

Global trends undoubtedly have an effect on how opportunities and resources are distributed. Certain megatrends have the potential to help equalize opportunities, while others have the potential to exacerbate income inequality, primarily through their impact on labor markets. However, their impact is not set in stone. Inequality levels and trends vary even among countries at the same level of economic development and are affected equally by trade, technological innovation, and even the effects of climate change (Department of Economic and Social Affairs of the United Nations Secretariat 2020). Successful examples of inequality reduction highlight the importance of national policies and local institutions.

Identifying the root causes of inequality is critical to developing effective policy solutions. However, the answer to the question of whether or not it is appropriate to take action against income inequality is somewhat influenced by what is considered the source of inequality (Fadda and Tridico 2016).

Financial inclusion is a major driver of economic growth. Therefore, when developing public policy, it is critical to pay special attention to financial sector reforms to ensure long-term economic growth. To stimulate economic growth, governments and policymakers must address the barriers to financial services access (Sethi and Acharya 2018). Furthermore, understanding the links between financial inclusion, poverty, and economic growth will assist policymakers in designing and implementing programs that increase access to financial services, thereby reducing poverty and income inequality.

Inequality stems from unequal power. Those who have more assets have more power than those who do not (Yates 2016).

The difference in the average Gini coefficient between the five richest and five poorest countries increased by 37.8% in the final year of the twentieth century compared to 1990. Consequently, despite high rates of real economic growth in the fastest growing group of countries that includes a number of developing countries (notably China and Vietnam), most other developing countries lagged increasingly behind during the last decade of the last century. This, coupled with the continued impoverishment of poor and highly indebted countries and sharp economic declines in the transition economies that were once part of the former Soviet Union, resulted in marked increases in inequality worldwide (Čaušević 2017).

In the aftermath of the Soviet Union's disintegration, income inequality increased at an unprecedented level. This is, in fact, one of the reasons for many Russians' dissat-

isfaction with the country's modern economic system (Libman and Obydenkova 2019). Inequality, on the other hand, is a valid outcome. It results from processes in which the underlying causes and consequences of deficiencies in the political system lead to increased economic instability (Stiglitz 2015).

There has been no long-term and widespread economic growth in the Russian Federation since its partial market economy transition. The gains of economic growth are concentrated at the top of the income distribution, trapping large segments of the population in low-income situations. While extreme poverty has been largely eradicated, approximately 40% of the population struggles to purchase anything beyond the bare necessities. In the lowest-income decile, food accounts for nearly half of household budgets. Public social spending, which is becoming a larger proportion of total income, is characterized by a lack of progressiveness (Remington 2019). Most of it is non-cash but retains the Soviet-era categorical structure.

Income inequality and institutional reforms have a statistically significant and non-linear relationship. Reforms harmed the income distribution at the start of the transition, but after reaching a crucial point in reform progress, institutional improvements helped stabilize the income distribution. The persistence of high income inequality during the second transition period can be explained by the emergence of tolerance for inequality, which coincides with the shift from shock therapy to institutional reforms based on implementing European Union legislation. Increasing income mobility and encouraging meritocratic values are critical factors in post-transitional tolerance for inequality (Josifidis, Supic, and Glavaski 2018). Consequently, the dynamics of inequality and redistribution in Central and Eastern European countries should be considered in the context of not only economic evolution, but also the emergence of social conventions in which a high concentration of income is not justified but appears to be accepted as an unavoidable part of the national economy's integration into the European and global economies.

The concept of providing a minimum inclusive income at the European level, whether unique or not, is a formula for the true identity of the European model, an adaptive model in its evolution to global changes in economic and social needs (Jianu et al. 2021). Indeed, concern for an inclusive minimum income is both an expression of the relatively recent concern for creating a harmonious economic space developed across the European Union and another formula aimed at addressing the consequences of social injustice.

Conclusion

The purpose of this study was to examine the characteristics of economic inequality in Kazakhstan in the light of global trends affecting its growth. To achieve the goal, a multi-country quantitative study was designed and implemented. The methodological basis of the study was a comparative analysis, which was implemented with the help of econometric and economic-statistical methods. Twelve countries of the former Soviet Union and 38 OECD member countries were chosen for testing.

The results support the hypothesis that there is a link between the indicator of gross domestic income per capita and the percentage of people living on less than the subsistence level in Kazakhstan. Simultaneously, there was no statistically significant relationship between high levels of income inequality and the dynamics of economic growth. In this way, specific suggestions about how to improve public administration's attitude toward addressing income inequality problems can be issued.

Cross-country analysis also revealed a statistically significant ($p < 0.05$) relationship between the level of income concentration in the 10% group and economic growth in Iceland ($r = 0.67$) and Belarus ($r = 0.65$). Kazakhstan did not show this correlation, although the relationship between the level of income concentration in the 10% group and the gross product per capita was confirmed.

According to the data presented above, there is a stable inverse relationship between the dynamics of GDP growth and the values of Kazakhstan's population's real money incomes. The correlation coefficient between them is $r = -0.46$, and the determination coefficient is $R = 0.215$, based on data from 2008 to 2020. This suggests that economic growth is still the most important factor that influences the population's real income.

Only the Russian Federation, Kazakhstan, and Belarus had the highest GDP per capita (current US$) among the CIS countries from 2008 to 2020, according to the study. However, it remained nearly 4–5 times lower than the average for the OECD countries. This difference is 40 or more times greater in other FSU countries. Kazakhstan's GDP per capita (current US$) in 2020 was only 23.8% of the OECD average, and the indicator had not seen marked changes since 2008. Furthermore, the smallest lag of this indicator from OECD countries in Kazakhstan was only 37.1% in 2013.

Broadly, the reasons for the FSU countries' differentiation and inequality in terms of GDP per capita (current US$) primarily relate to the underdevelopment of market economic institutions, as well as the high share of resource industries in the structure of these countries' national economies. Another aspect of economic inequality is the income disparity between different strata of the population, which is linked to this in a variety of ways.

A successful resolution of the population's income inequality is a precondition for Kazakhstan's admission to the OECD's group of economically developed countries. In the future, overcoming inequality could become a key driver of the country's economic growth. The primary directions for reducing income inequality are determined by the state's social policy, which is inextricably linked to labor market regulation and adjustment to the creation of new, highly productive jobs. A critical aspect of the problem of income inequality is finding the right balance between measures to achieve the desired level of inequality and the increasing role of social transfers.

In the future, the results of the study will be put into practice by familiarizing Kazakhstan's government experts with the developed proposals for enhancing the state's policy of overcoming economic inequality and establishing the conditions for sustainable economic growth. In addition, the results of this study are of scientific interest, primarily in terms of the formation of directions for further research, including the study of the main economic factors that influence the level of inequality and research on the effectiveness of public policies to overcome inequality.

References

Aiyar, S., Ebeke, C. (2020), *Inequality of opportunity, inequality of income and economic growth*, "World Development", 136, https://doi.org/10.1016/j.worlddev.2020.105115

Breunig, R., Majeed, O. (2020), *Inequality, poverty and economic growth*, "International Economics", 161, pp. 83–89, https://doi.org/10.1016/j.inteco.2019.11.005

Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan (2021), *Basic socio-economic indicators of the Republic of Kazakhstan*, https://stat.gov.kz/for_users/dynamic (accessed: 10.06.2021) [in Russian].

Chancel, L., Piketty, T. (2021), *Global Income Inequality, 1820–2020: The persistence and mutation of extreme inequality*, "Journal of the European Economic Association", 19 (6), pp. 3025–3062, https://doi.org/10.1093/jeea/jvab047

Čaušević, F. (2017), *A Study into Financial Globalization, Economic Growth and (In) Equality*, Palgrave Macmillan, Cham, https://doi.org/10.1007/978-3-319-51403-1

Department of Economic and Social Affairs of the United Nations Secretariat (2020), *World Social Report 2020. Inequality in a Rapidly Changing World*, https://www.un.org/development/desa/dspd/wp-content/uploads/sites/22/2020/01/World-Social-Report-2020-FullReport.pdf (accessed: 10.06.2021).

Eurasian Economic Commission (2021), *Statistical Yearbook of the Eurasian Economic Union*, Eurasian Economic Commission, Moscow.

Fadda, S., Tridico, P. (2016), *Varieties of Economic Inequality*, Routledge, London–New York, https://doi.org/10.4324/9781315682099

Haller, M., Eder, A. (2016), *Ethnic Stratification and Economic Inequality around the World: The End of Exploitation and Exclusion*?, Ashgate Publishing, Ltd, Abingdon.

Jianu, I., Dinu, M., Huru, D., Bodislav, A. (2021), *Examining the relationship between income inequality and growth from the perspective of EU member states' stage of development*, "Sustainability", 13 (9), https://doi.org/10.3390/su13095204

Josifidis, K., Supic, N., Glavaski, O. (2018), *Institutional changes and income inequality: Some aspects of economic change and evolution of values in CEE countries*, "Eastern European Economics", 56 (4), pp. 1–19, https://doi.org/10.1080/00128775.2018.1487265

Libman, A., Obydenkova, A. (2019), *Inequality and historical legacies: Evidence from post-communist regions*, "Post-Communist Economies", 31 (6), pp. 699–724, https://doi.org/10.1080/14631377.2019.1607440

Meissner, G. (2013), *Correlation Risk Modeling and Management: An Applied Guide including the Basel III Correlation Framework-With Interactive Models in Excel/VBA*, John Wiley & Sons, Singapore.

Mijs, J.J. (2021), *The paradox of inequality: Income inequality and belief in meritocracy go hand in hand*, "Socio-Economic Review", 19 (1), pp. 7–35, https://doi.org/10.1093/ser/mwy051

OECD (2019), *OECD Under Pressure: The Squeezed Middle Class*, OECD Publishing, Paris.

OECD (2021), *Income Distribution Database*, OECD.Stat, https://stats.oecd.org/index.aspx?queryid=66670 (accessed: 10.06.2021).

Remington, T.F. (2019), *Income inequality and food insecurity in Russia*, "Russian Politics", 4 (3), https://doi.org/10.1163/2451-8921-00403002

Sethi, D., Acharya, D. (2018), *Financial inclusion and economic growth linkage: Some cross country evidence*, "Journal of Financial Economic Policy", 10 (3), pp. 369–385, https://doi.org/10.1108/JFEP-11-2016-0073

Stiglitz, D. (2015), *The price of inequality. How the stratification of society threatens our future*, Eksmo, Moscow.

Tokhirov, A. (2021), *Remittances and inequality: the post-communist region*, "Prague Economic Papers", 30 (4), pp. 426–448, https://doi.org/10.18267/j.pep.776

United Nations (2019), *Sustainable Development Outlook 2019: Gathering storms and silver linings*, https://www.un.org/development/desa/dpad/publication/sustainable-development-outlook-2019-gathering-storms-and-silver-linings/ (accessed: 10.06.2021).

World Bank (2020), *Poverty and Shared Prosperity 2020: Reversals of Fortune*, World Bank, Washington.

World Bank Group (2021), *World Development Indicators*, https://databank.worldbank.org/source/world-development-indicators (accessed: 10.06.2021).

World Inequality Lab (2021a), *The World Inequality Report 2022*, https://wid.world/news-article/world-inequality-report-2022/ (accessed: 10.06.2021).

World Inequality Lab (2021b), *World Inequality Database (WID.world)*, https://wid.world/data/ (accessed: 10.06.2021).

Yates, M.D. (2016), *The Great Inequality*, Routledge, London–New York, https://doi.org/10.4324/9781315645841

Zubarevich, N.V. (2018), *Concentration of the Population and the Economy in the Capitals of Post-Soviet Countries*, "Regional Research of Russia", 8 (2), https://doi.org/10.1134/S2079970518020107

Globalne nierówności dochodów – studium przypadku krajów OECD i Kazachstanu

W artykule przedstawiono wyniki badania sposobu powstawania nierówności ekonomicznych w Kazachstanie w kontekście globalnych trendów w rozwoju kraju. Podstawą metodologiczną pracy była analiza porównawcza krajów byłego Związku Radzieckiego (FSU) i OECD pod kątem rozwoju gospodarczego i nierówności w kontekście globalnych zmian i trendów, realizowana za pomocą metod ekonometrycznych i ekonomiczno-statystycznych. Badanie wykazało bezpośrednią istotną statystycznie ($p < 0,05$) korelację pomiędzy poziomem koncentracji dochodów grupy 10% populacji a wzrostem gospodarczym Islandii ($r = 0,67$) i Białorusi ($r = 0,65$). W przypadku Kazachstanu nie stwierdzono takiej korelacji. Jednak w Kazachstanie ustalono związek między koncentracją dochodów grupy 10% populacji a produktem krajowym brutto na mieszkańca. Dynamika wzrostu PKB i wartości realnych dochodów pieniężnych ludności Kazachstanu wykazują stabilną odwrotną zależność. Współczynnik korelacji między nimi, obliczony na podstawie danych z lat 2008-2020, wynosi $r = -0,46$, a współczynnik determinacji wynosi $R = 0,215$. Sugeruje to, że wzrost gospodarczy jest nadal najważniejszym czynnikiem wpływającym na realne dochody ludności. Wyniki badania znajdą zastosowanie w praktyce dzięki zapoznaniu urzędników rządowych z opracowanymi propozycjami wzmocnienia polityki państwa w zakresie przezwyciężania nierówności gospodarczych i stworzenia warunków dla zrównoważonego wzrostu gospodarczego. Ponadto wyniki tych badań będą interesujące dla nauki gdyż wskazują nowe kierunki dalszych badań.

Słowa kluczowe: rozwój, dystrybucja, instytucje, gospodarka przechodząca transformację, bogactwo

Appendix 1. Top 10% pre-tax national income share in OECD countries

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Australia	0.2977	0.3119	0.3137	0.3059	0.3182	0.3293	0.327	0.3286	0.3251	0.3356	0.3366	0.336	0.336
Austria	0.3553	0.3424	0.3472	0.3386	0.3189	0.3212	0.3408	0.3331	0.3417	0.3338	0.3352	0.3388	0.3385
Belgium	0.3172	0.3093	0.3135	0.3114	0.3137	0.3163	0.3187	0.3183	0.3211	0.3183	0.3286	0.3289	0.3289
Canada	0.4072	0.3935	0.4022	0.4036	0.399	0.409	0.4128	0.4132	0.3941	0.4095	0.4086	0.407	0.407
Chile	0.5909	0.5889	0.6081	0.6274	0.6174	0.6075	0.6016	0.5957	0.5924	0.5891	0.5891	0.5891	0.5891
Colombia	0.5395	0.5368	0.5342	0.5263	0.5062	0.5123	0.5142	0.5015	0.502	0.5067	0.5146	0.5146	0.5146
Costa Rica	0.529	0.5237	0.4801	0.4977	0.4976	0.4992	0.4997	0.5064	0.5167	0.4983	0.5125	0.501	0.501
Czech Republic	0.3215	0.2984	0.2978	0.29	0.3033	0.2966	0.3029	0.3072	0.2979	0.2953	0.2877	0.2854	0.2857
Denmark	0.3007	0.29	0.3156	0.3165	0.3175	0.3276	0.3349	0.3301	0.333	0.3333	0.3328	0.3364	0.3386
Estonia	0.3753	0.3439	0.359	0.3718	0.3912	0.388	0.3841	0.3579	0.3621	0.3534	0.3595	0.3462	0.3474
European Union	0.3587	0.3588	0.3536	0.3555	0.3561	0.3603	0.3611	0.3593	0.3591	0.3588	0.3572	0.3553	0.3551
Finland	0.3406	0.3228	0.3264	0.3235	0.3177	0.3153	0.3205	0.3293	0.329	0.3386	0.3361	0.334	0.3399
France	0.3369	0.3219	0.3272	0.3336	0.3251	0.3237	0.3243	0.3247	0.3229	0.32	0.3201	0.3225	0.3223
Germany	0.3675	0.3724	0.3668	0.3678	0.3632	0.3776	0.3826	0.3818	0.381	0.3778	0.3729	0.3722	0.3707
Greece	0.3315	0.3251	0.3374	0.3142	0.3177	0.3329	0.3574	0.3538	0.3467	0.3383	0.3276	0.3253	0.3261
Hungary	0.3415	0.332	0.3367	0.328	0.3181	0.3327	0.3288	0.3295	0.3306	0.3357	0.3359	0.3395	0.3384
Iceland	0.2925	0.2768	0.2677	0.2733	0.2772	0.2968	0.2955	0.2949	0.2916	0.2908	0.2908	0.2908	0.2908
Ireland	0.322	0.3247	0.3234	0.3245	0.31	0.3227	0.3264	0.3498	0.3559	0.3488	0.354	0.3516	0.3518
Israel	0.5226	0.5254	0.5282	0.5223	0.5166	0.5066	0.4974	0.4944	0.4915	0.4915	0.4915	0.4915	0.4915
Italy	0.3072	0.3041	0.3089	0.3129	0.3116	0.3084	0.3087	0.3075	0.3215	0.3289	0.3285	0.3255	0.3221

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Japan	0.4507	0.4401	0.4495	0.4473	0.4478	0.4493	0.449	0.45	0.4493	0.4489	0.4489	0.4489	0.4489
Korea	0.4614	0.457	0.4659	0.4662	0.4622	0.46	0.4605	0.464	0.4664	0.4671	0.4666	0.4645	0.4645
Latvia	0.3762	0.3802	0.3622	0.3892	0.3841	0.3824	0.3663	0.3558	0.3381	0.3595	0.3533	0.3444	0.3452
Lithuania	0.3725	0.3732	0.3473	0.348	0.3731	0.3797	0.4113	0.3719	0.3702	0.3831	0.3713	0.3652	0.3657
Luxembourg	0.3847	0.3332	0.3668	0.3541	0.3409	0.333	0.328	0.3252	0.3283	0.338	0.333	0.3353	0.3353
Mexico	0.5848	0.5819	0.5789	0.5863	0.5936	0.5907	0.5878	0.5843	0.5807	0.5771	0.5735	0.5735	0.5735
New Zealand	0.2963	0.3151	0.3117	0.326	0.343	0.3324	0.3338	0.3383	0.337	0.3445	0.3465	0.3457	0.3457
Norway	0.3412	0.3092	0.3252	0.3276	0.3297	0.324	0.322	0.3064	0.3052	0.3083	0.3189	0.3011	0.2959
Poland	0.3783	0.3644	0.3662	0.3698	0.3674	0.3658	0.3726	0.3778	0.3743	0.371	0.3746	0.3764	0.3775
Portugal	0.3806	0.3747	0.3794	0.3827	0.3667	0.3725	0.3731	0.3716	0.373	0.3764	0.3674	0.3651	0.3521
Slovakia	0.298	0.2956	0.3177	0.3024	0.2956	0.3252	0.2994	0.3152	0.2929	0.2726	0.274	0.269	0.265
Slovenia	0.3041	0.2978	0.2986	0.2926	0.2947	0.293	0.2996	0.2902	0.2939	0.2946	0.2958	0.2952	0.2958
Spain	0.3476	0.3588	0.3434	0.3406	0.3464	0.3469	0.3488	0.3507	0.3489	0.3496	0.346	0.348	0.3448
Sweden	0.3179	0.3028	0.3144	0.3092	0.298	0.2989	0.3014	0.3096	0.2924	0.3014	0.2945	0.2961	0.3078
Switzerland	0.3118	0.3168	0.3364	0.3389	0.3288	0.33	0.3282	0.3297	0.328	0.3195	0.3189	0.3256	0.3249
Turkey	0.5017	0.5187	0.5124	0.5147	0.5151	0.5086	0.5173	0.524	0.5397	0.5518	0.5593	0.5447	0.5447
United Kingdom	0.3689	0.385	0.3464	0.3554	0.3647	0.3866	0.3669	0.356	0.3562	0.3592	0.3593	0.3564	0.3567
USA	0.438	0.4259	0.4388	0.4447	0.4555	0.4506	0.4567	0.4568	0.4543	0.4535	0.4563	0.4546	0.4546

Source: data from World Inequality Lab (2021b).

Appendix 2. Top 10% pre-tax national income share in the CIS countries

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Armenia	0.3781	0.3729	0.4003	0.3811	0.3844	0.3877	0.3998	0.4144	0.4076	0.4451	0.4476	0.4062	0.4062
Azerbaijan	0.3988	0.3951	0.3879	0.3942	0.4013	0.3961	0.3961	0.3897	0.3801	0.3907	0.3907	0.3907	0.3907
Belarus	0.3631	0.3581	0.3514	0.377	0.3599	0.3326	0.344	0.3267	0.3316	0.3365	0.3355	0.3339	0.3339
Georgia	0.4653	0.4475	0.4551	0.494	0.4611	0.4945	0.4669	0.4684	0.4823	0.4886	0.484	0.4903	0.4903
Kazakhstan	0.4233	0.4327	0.4274	0.4056	0.4086	0.4095	0.3971	0.3784	0.418	0.421	0.4253	0.4253	0.4253
Moldova	0.3646	0.3675	0.3576	0.3551	0.3518	0.3485	0.3467	0.3471	0.3405	0.3419	0.3431	0.3445	0.3439
Netherlands	0.2855	0.2866	0.2917	0.2894	0.2926	0.2843	0.2928	0.2926	0.2923	0.299	0.296	0.2941	0.2943
Russian Federation	0.5219	0.4961	0.4556	0.4815	0.4554	0.4731	0.4537	0.4535	0.4579	0.4558	0.4646	0.4643	0.4643
Tajikistan	0.4185	0.4168	0.4178	0.4155	0.4193	0.4203	0.4163	0.4124	0.4272	0.4314	0.4321	0.4321	0.4321
Turkmenistan	0.4937	0.4981	0.497	0.4941	0.4949	0.4941	0.4905	0.4871	0.4958	0.4983	0.4988	0.4988	0.4988
Ukraine	0.3408	0.3203	0.3061	0.3034	0.3008	0.3003	0.3044	0.3247	0.3406	0.3357	0.3327	0.3349	0.3349
Uzbekistan	0.4618	0.4618	0.4618	0.4618	0.4618	0.4618	0.4618	0.4618	0.4578	0.4626	0.4626	0.4626	0.4626

Source: data from World Inequality Lab (2021b).