









“Institutional, economic, and social determinants of income inequality in Kazakhstan”

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INSTITUTIONAL, ECONOMIC, AND SOCIAL DETERMINANTS OF INCOME INEQUALITY IN KAZAKHSTAN

Abstract

Income inequality remains a key socio-economic challenge in Kazakhstan, where persistent disparities reflect institutional weaknesses, structural imbalances, and limited effectiveness of redistribution mechanisms. This study aims to assess the influence of institutional quality, economic structure, and social policy on income inequality in Kazakhstan. The analysis is based on annual national and international statistical data for 2001–2023, covering indicators of governance quality, investment activity, labor market dynamics, and social protection. Methodologically, the study uses Spearman's rank correlation analysis to identify statistically significant associations between the Gini coefficient and selected explanatory variables, without assuming linear relationships. The robustness of results is verified through significance testing at multiple confidence levels. The findings indicate that stricter rule of law and lower corruption are associated with reduced inequality (Spearman's $\rho \approx -0.44$ to -0.50 , $p < 0.05$), while a higher share of state-owned enterprises correlates with greater disparities ($\rho \approx +0.47$, $p < 0.05$). Investment per capita and household expenditures exert a moderate equalizing effect (each $\rho \approx -0.47$, $p < 0.05$), whereas growth in real incomes and an expanding manufacturing sector are linked to wider gaps. Manufacturing share shows a strong positive association with inequality ($\rho \approx +0.80$, $p < 0.001$), and overall income growth correlates positively as well ($\rho \approx +0.72$, $p < 0.001$). Social transfers and pensions operate primarily as reactive measures, smoothing short-term fluctuations rather than achieving sustained redistribution. The findings provide guidance for public policy aimed at reducing income inequality and indicate that the strongest equalizing effects are associated with improvements in the rule of law, reductions in corruption, and higher investment activity, while growth in real household incomes and existing social transfers are largely reactive and do not ensure sustained redistribution.

Keywords

inequality, redistribution, institutions, corruption, governance, economy, investment, social policy, public spending, Kazakhstan

JEL Classification

D31, D63, H53, O15

INTRODUCTION

Income inequality has become one of the most persistent and structurally embedded socio-economic challenges in Kazakhstan. The issue has gained particular relevance as the country reassesses the outcomes of its 30-year transition toward a market economy. Despite periods of rapid economic growth and reductions in poverty, fundamental contradictions remain in the country's development model, reflected in unequal distributional outcomes and institutional limitations.

The evolution of poverty demonstrates both progress and vulnerability. In 2000, nearly 47% of the population lived below the subsistence minimum; by 2012, this share had fallen to 3.8% and has since stabilized near 2.9%, aside from a temporary increase to 5.5% during the COVID-19 crisis (World Bank, 2025; Chulanova et al., 2024). However, improvements in poverty indicators have not been accompanied by

comparable changes in the distribution of income. The Gini coefficient has remained consistently in the 27–29 range for more than a decade, and income-quintile shares have shown no meaningful shift since the mid-2000s (World Bank, 2025). This pattern is corroborated by long-run statistical data. While per-capita GDP has increased almost threefold since the early 2000s, inequality has declined only marginally and has effectively plateaued since around 2008.

Several structural factors contribute to this persistent disconnect between economic growth and its distributional outcomes. Kazakhstan has not succeeded in building a diversified industrial base, and the emergence of a broad middle class has been slow. Labor compensation remains low by international standards: the wage share in GDP declined from 33% to 30.8% over the past decade, while the broader labor-income share is only 40.4% – approximately half the average in advanced economies and among the lowest in the post-Soviet region. At the same time, the ratio of national income to GDP decreased from 86% in 1985 to 75% in 2021, signaling reduced retention of value added within the domestic economy.

International assessments by the World Bank, OECD, UNECE, and UNDP consistently highlight institutional weaknesses, limited accountability, and the dominance of the extractive sector as key constraints on inclusive development. Research on resource-dependent economies similarly suggests that such structural characteristics tend to reinforce inequality unless counterbalanced by strong institutions and effective social policy.

However, in Kazakhstan, the combined influence of institutional quality, economic structure, and social policy on income distribution remains insufficiently understood. This study, therefore, examines how governance (rule of law, corruption control), economic structure (investment activity, sectoral composition), and social policy jointly shape income inequality in Kazakhstan. By integrating these dimensions into a unified analytical framework, we seek to provide new empirical evidence on the determinants of inequality and on the conditions under which economic growth can support more inclusive and sustainable development.

1. LITERATURE REVIEW

Research on income inequality has undergone a long and complex evolution, reflecting shifts in economic theory and the changing structure of global economies. The early foundation was laid by Kuznets (1955), who hypothesized an inverted U-shaped relationship between economic growth and inequality. As an economy industrializes, inequality first rises but eventually falls once a certain level of development and institutional maturity is reached. However, subsequent empirical studies challenged this optimistic trajectory. For example, Deininger and Squire (1998) and Barro (2000) found that high inequality can persist even after a country attains middle-income status.

Moreover, some researchers offered opposing interpretations of the inequality–growth nexus. Forbes (2000) and Li and Zou (1998) reported

cases where greater inequality coincided with higher economic growth, suggesting that inequality might, in some contexts, stimulate investment and efficiency. By contrast, Banerjee and Duflo (2003) showed that both sharp increases and sharp decreases in inequality can undermine economic stability, implying a non-linear relationship between inequality and growth. These mixed results indicate that there is no universal law governing the evolution of inequality; instead, its impact and trajectory are highly context-dependent, influenced by country-specific structural factors and policies.

By the late 20th century, research began to emphasize institutional and political economy factors as key determinants of income distribution. Alesina and Rodrik (1994) and Clarke (1995) argued that high inequality generates political pressure for redistributive policies (e.g., higher taxation or social transfers), which may in

turn dampen investment and long-term growth. This viewpoint suggests that inequality can indirectly harm an economy by fueling policies that, while aiming to reduce disparities, might reduce growth incentives. Complementing this, Gupta et al. (2002) provided empirical evidence that weak governance – in particular, corruption – exacerbates inequality by distorting public expenditure in favor of the influential at the expense of the poor. Such findings underscore that when institutions are weak, resources meant for public services or social support may be siphoned off or misallocated, widening the gap between rich and poor.

In turn, Stiglitz (2012, 2015) conceptualized inequality itself as largely a product of rent-seeking and institutional capture by elites. Accordingly, inequality is not an inevitable by-product of growth or globalization, but rather the outcome of policies and institutions that allow certain groups disproportionate access to a nation's wealth. This marks a shift in perspective. Whereas earlier theories like Kuznets' Curve assumed inequality would correct itself as economies mature, the institutionalist perspective holds that deliberate policy choices and power structures determine the income distribution. Together, these articles established a new research direction linking governance and institutional quality to inequality outcomes. This line of reasoning is particularly relevant for transition economies such as Kazakhstan, where evolving institutional frameworks and governance challenges play a pivotal role in shaping economic outcomes.

Another influential strand of the literature examines how technological change and globalization affect inequality. Card and DiNardo (2002), Goldin and Katz (2008), and Autor et al. (2013) show that skill-biased technological progress and trade liberalization tend to favor educated and skilled workers, widening wage gaps. Acemoglu and Restrepo (2019) extend this by showing that automation displaces many middle-skill jobs, polarizing labor markets and elevating inequality. These findings imply that without compensatory policies (like broad-based education and training), advances in technology and trade can increase inequality by raising demand for skilled

labor while reducing opportunities for others. This literature suggests that structural changes in the economy – unless accompanied by human-capital investments – can worsen income distribution.

Institutional approaches to inequality are complemented by policy-focused research. The IMF (2015) and OECD (2015, 2021, 2023) report that very high inequality can undermine growth by eroding human capital and aggregate demand among lower-income groups. Importantly, they find that well-designed redistributive measures – progressive taxation, social spending on health and education, or direct transfers – need not inhibit growth and can in fact support it through social stability and increased consumption. Recent macro-historical analyses by Piketty (2014) and Milanovic (2016, 2019) further challenge the view that inequality will automatically decline. Piketty (2014) shows that when the return on capital persistently exceeds growth, wealth concentrates at the top, reversing Kuznets' trend. Milanovic (2016, 2019) argues that modern capitalism tends to produce rising inequality unless checked by policy interventions. Collectively, these studies view inequality as a systemic issue requiring active policy management rather than a transient phase of development.

In parallel, research on human development has broadened the scope of inequality studies. Sen's (1992) capability approach argues that inequality should be viewed in terms of disparities in people's freedoms and opportunities – such as access to education, health, and other services – rather than just income. Wilkinson and Pickett (2009) show that societies with higher income inequality tend to have worse social outcomes (higher crime, worse health, lower trust). This literature implies that leaving large segments of the population behind can undermine long-run growth and social cohesion. For developing countries like Kazakhstan, this means that policies must address disparities in education, healthcare, and social protection, since inequalities in these domains eventually translate into income inequality.

For transition and resource-dependent economies, the literature suggests that inequality dy-

namics have distinctive structural drivers. One widely discussed concept is the “resource curse”: the tendency for countries highly dependent on natural resource rents (such as oil or minerals) to experience concentrated wealth and weaker institutions, rather than broad-based development. Kalyuzhnova and Nygaard (2011) and Parceró and Papyrakis (2016) argue that without strong governance, resource wealth can foster rent-seeking behavior (i.e., a small elite captures a large share of resource revenues) and reduce the incentive for governments to implement inclusive policies, since tax revenues from a broad base are less important when windfalls from resources are available. This often goes hand in hand with reduced accountability, as governments with resource income may feel less pressure to be responsive to citizens.

Pomfret (2019) and Sanghera and Satybaldieva (2023) observe that in post-Soviet states (including Kazakhstan), the legacy of state ownership and underdeveloped market institutions can result in new forms of inequality after the transition. For instance, the privatization processes of the 1990s often led to valuable assets being concentrated in the hands of a few, and in the absence of strong legal institutions, wealth accumulated through connections and insider advantages. Thus, instead of the market reforms uniformly lifting incomes, they sometimes created sharp divides between winners and losers of the transition. Thus, when institutions are weak, even state policies ostensibly aimed at equality (like state ownership of enterprises) may end up benefiting a narrow group (through corruption or inefficiency) rather than the population at large.

In a broader comparative analysis, Bourguignon and Morrisson (2002) and Cornia (2004) show that the effects of globalization and liberalization on inequality vary greatly across countries, depending on governance quality and social protection systems. Countries that implemented robust social safety nets and maintained sound governance saw less of an inequality surge from global market forces. In contrast, those with inadequate institutions experienced more extreme rises in inequality. The lesson for resource-dependent and transition economies is that strong

institutions and deliberate social policies are critical for ensuring that growth (whether driven by resource booms or integration into global markets) translates into inclusive development. In the absence of these, such economies are prone to a high concentration of wealth and opportunity.

Turning specifically to Kazakhstan and the Central Asian region, the empirical literature, while not as extensive as in advanced economies, points to several key determinants of inequality that align with global findings. OECD (2018) and World Bank (2025) reports underscore that Kazakhstan has pronounced regional and sectoral disparities despite substantial overall growth in the past decades. In particular, Kazakhstan’s western oil-producing regions and major cities like Almaty and Nur-Sultan (Astana) enjoy much higher average incomes than agrarian or remote regions. This suggests that the benefits of growth have been unevenly distributed geographically. Academic studies reinforce this pattern. Howie and Atakhanova (2014) found that the 2000s oil boom significantly widened the gap between resource-rich regions and the rest of the country. While oil revenues boosted GDP and government income, they disproportionately accrued to areas and sectors directly involved in extractive industries, highlighting a resource-curse manifestation within the country. Moreover, limited economic diversification means that regions lacking oil or mining activities have had fewer growth drivers. Chulanova (2024) and Rodríguez-Pose et al. (2024) show that Kazakhstan’s heavy reliance on extractives, coupled with uneven human capital development, has led to what they term regional “poverty traps.” In such areas, insufficient investment and a lack of skilled jobs perpetuate low incomes, making it difficult for these regions to catch up. This resonates with the earlier point that without broad-based development (in education, skills, and industries), growth in one sector can actually heighten inequality. Consistently, UNDP (2020) data confirm that disparities in access to essential services like education and healthcare correlate strongly with income stratification in Kazakhstan. In other words, regions or communities that lag in school quality or healthcare outcomes are the same ones experiencing high-

er poverty and inequality. Kireyeva et al. (2023) further emphasize that the quality of education varies across Kazakhstan – urban schools generally outperform rural ones, some regions have better teacher training than others – and these differences translate into unequal opportunities for students, ultimately reflecting in divergent earnings and social mobility. All these findings highlight that Kazakhstan's inequality is multi-dimensional: it is not only an issue of income distribution per se, but also of where people live (region), what sector they work in, and what opportunities they have had in terms of schooling and services. Addressing inequality, therefore, requires region-specific and sector-specific strategies, alongside national policies.

Crucially, institutional factors underlie many of these outcomes in Kazakhstan. Both international assessments and local research indicate that the quality of governance has a profound impact on how effectively growth translates to social progress. Transparency International (2022) and the World Bank (2025) note that corruption and a weak rule of law in Kazakhstan reduce the effectiveness of public spending and social programs. Essentially, when funds meant for education, healthcare, or poverty alleviation are siphoned off through corrupt practices or when legal institutions fail to enforce accountability, the redistributive impact of those funds is undermined. This can result in high levels of spending on paper but modest improvements in equality or human development on the ground. Supporting this, Uskelenova and Nikiforova (2024) and Temerbulatova et al. (2024) argue that institutional weaknesses – such as inconsistent policy implementation, lack of transparency, and unequal enforcement of regulations – account for a significant portion of persistent inequality across regions of Kazakhstan. For example, if some regions benefit from better-connected officials or more efficient local governments, they might secure more public investment or business activity. In contrast, regions with poorer governance remain stuck in a cycle of underdevelopment.

It is also important to consider the nature of Kazakhstan's social policies in recent decades. The country has made notable progress in ex-

panding access to education and social protection (for instance, school enrollment rates have risen and various social assistance programs have been introduced). However, redistribution in Kazakhstan has remained largely reactive rather than preventive. This means social programs often act as after-the-fact safety nets – mitigating the worst effects of inequality and poverty – but do not fundamentally alter the initial distribution of income and opportunities. Pensions and targeted transfers (such as poverty benefits) have helped to reduce extreme poverty and cushion short-term income shocks. Yet, they have not significantly narrowed the overall income gap or stopped inequality from widening during boom periods. This is in line with global observations that addressing inequality at its roots (through measures like progressive taxation, equalizing access to quality education, and job creation in lagging areas) is more effective for sustained equality than only relying on transfers after inequality has occurred. In Kazakhstan's case, the heavy reliance on direct transfers and subsidies – without parallel measures to improve, say, tax progressivity or public service quality – means that inequality is moderated to a degree, but not permanently reduced.

Moreover, recent comparative research reminds that the impact of resource-led growth on inequality hinges on institutional quality. Sawadogo and Ouoba (2024), examining several resource-rich countries, confirm that it is not resource wealth alone but the governance context that determines whether economic growth leads to greater equality or further polarization. In countries with strong institutions, transparent management of resource revenues, and effective public investments, natural resource income can be used to fund education, health, and infrastructure that benefit broad segments of society. In countries with weak institutions, however, resource booms often enrich only a minority and can even entrench corrupt networks, thereby widening inequality. Kazakhstan's experience reflects this pattern: periods of high oil prices have brought surges in national income, but without robust checks and balances and inclusive institutions, the benefits have not been evenly shared. Going forward, strengthening institutions – improving governance, accountability, and rule of

law – emerges as a key priority for Kazakhstan to ensure that growth (whether from natural resources or other sectors) is broadly distributed rather than captured by special interests.

Despite the rich body of literature on inequality, several gaps remain, especially in relation to developing and transition economies like Kazakhstan. First, while many studies highlight the importance of institutions in shaping inequality, there is no consensus on how exactly institutional improvements translate into more equitable outcomes in resource-dependent settings. Some evidence suggests that better governance directly leads to lower inequality (for instance, by reducing corruption and improving public service delivery), but other work implies that institutional reforms must be accompanied by complementary economic changes (such as diversification away from oil) to significantly narrow disparities. In other words, the precise channels through which institutional quality impacts inequality – and the conditions under which those impacts are largest – remain not fully resolved, calling for more nuanced analysis. Second, the combined influence of institutional, economic, and social factors is rarely analyzed within a unified framework. Much of the existing research tends to isolate one set of factors; for example, a study might examine how education affects inequality independently, or how corruption affects inequality independently. While such studies are insightful, they may overlook interaction effects – such as the possibility that the benefit of education on equality is greater when corruption is low, or that the harm of resource dependence is mitigated when social policies are strong. The literature still lacks integrated studies that consider all three dimensions together to capture their joint and relative contributions to inequality. Finally, research specific to Kazakhstan has been somewhat fragmented. Different scholars have examined pieces of the puzzle (for instance, the effect of foreign direct investment on inequality, or the regional distribution of infrastructure spending, or the impact of a particular social program), but these studies often operate in isolation. There has been little attempt to weave these threads into a comprehensive picture of why, overall, Kazakhstan exhibits the level and trends of inequality that

it does. Consequently, important interconnections – such as how governance might influence the success of social policy, or how economic structure might mediate the impact of institutions on inequality – remain unexplored in the Kazakhstani context. These gaps in the literature point to the need for a more holistic, critical analysis of inequality in Kazakhstan. Our study fills this gap by jointly analyzing the institutional, economic, and social determinants of income inequality, rather than treating each in isolation.

The aim of this study is to assess the relationship between institutional quality, economic structure, and social policy and income inequality in Kazakhstan over the period 2001-2023.

2. METHODOLOGY

This study employs a structured analytical design to examine the institutional, economic, and social determinants of income inequality in Kazakhstan over the period 2001-2023. Kazakhstan represents a resource-dependent transition economy characterized by persistent regional disparities and a dominant public sector in redistribution mechanisms. The selected timeframe covers major economic cycles – including periods of growth and crisis – and coincides with structural reforms that have shaped income distribution. It also ensures the availability of consistent, comparable time-series data.

The empirical base integrates national data from the Bureau of National Statistics of Kazakhstan with harmonized international datasets provided by the World Bank (World Development Indicators and Worldwide Governance Indicators), the IMF, the OECD, and Transparency International. Indicators were selected based on (1) theoretical relevance to income inequality, (2) time-series continuity across 2001-2023, and (3) methodological consistency. The variables are grouped into three analytical domains: institutional (e.g., corruption control, rule of law, state ownership), economic (e.g., investment, household expenditure, manufacturing share), and social (e.g., education enrollment, pensions, targeted transfers). The full list of indicators and data sources is presented in Table 1.

Table 1. Analytical indicators and primary data sources

Factor group	Indicator	Source
Institutional	Control of corruption (estimate)	(World Bank, 2024a)
	Rule of law (estimate)	(World Bank, 2024a)
	Share of state-owned enterprises in total enterprises (%)	(Bureau of National Statistics of the Republic of Kazakhstan, 2024a)
Economic	FDI, net inflows (% of GDP)	(World Bank, 2025b)
	Investment per capita (thousand KZT)	(Bureau of National Statistics of the Republic of Kazakhstan, 2024b)
	Long-term unemployment rate (%)	(Bureau of National Statistics of the Republic of Kazakhstan, 2024c)
	Share of manufacturing in GDP (%)	(Bureau of National Statistics of the Republic of Kazakhstan, 2024a)
	Real household income index (2001 = 100 %)	(Bureau of National Statistics of the Republic of Kazakhstan, 2024d)
	Average per-capita monetary expenditure (thousand KZT/month)	(Bureau of National Statistics of the Republic of Kazakhstan, 2024d)
	Gross enrolment ratio in higher education (%)	(Bureau of National Statistics of the Republic of Kazakhstan, 2024e)
Social	Recipients of targeted social assistance (per 1,000 people)	(Bureau of National Statistics of the Republic of Kazakhstan, 2024f)
	Recipients of state social benefits (per 1,000 people)	(Bureau of National Statistics of the Republic of Kazakhstan, 2024f)
	Pensioners (per 1,000 people)	(Bureau of National Statistics of the Republic of Kazakhstan, 2024f)

To prepare the dataset, nominal monetary values were deflated to constant prices, and annual frequency was used for all series. Missing data points were interpolated when necessary, and outliers were cross-checked against original statistical bulletins. The dependent variable is the Gini coefficient, a standard measure of income inequality (0 = perfect equality; 100 = perfect inequality). All independent variables were aligned temporally and, where appropriate, standardized to ensure comparability in the time-series context.

To examine associations between inequality and each factor, the analysis uses Spearman's rank correlation coefficient (ρ), a nonparametric statistic suitable for nonnormally distributed data. Spearman's ρ captures monotonic relationships and is robust to outliers, making it well-suited for single-country longitudinal datasets. The coefficient is calculated as:

$$\rho = 1 - \frac{6\sum d_i^2}{n(n^2 - 1)}, \quad (1)$$

where d_i denotes the differences between the ranked values of the variables, n is the number of observations.

Significance levels were tested at 0.05, 0.01, and 0.001. To ensure robustness, indicators with potential multicollinearity (e.g., income and expenditure) were interpreted with caution. Descriptive statistics and time-series visualizations support the correlation results, contextualizing observed trends. While correlation does not imply causation, the results offer empirical insight into structural patterns of inequality in Kazakhstan and serve as a basis for further econometric investigation.

3. RESULTS

3.1. Institutional factors

The dynamics of governance and state-sector variables (Figure 1) show gradual institutional improvements: the World Bank's corruption-control and rule-of-law indices rose (from below zero toward zero) after 2015, and the share of state-owned enterprises (SOEs) in GDP fell from over 20% to about 15–16% by the 2020s. However, inequality remained elevated during this period, implying that these changes had only a modest equalizing effect.

The correlation analysis (Table 2) confirms this pattern: stronger institutions are linked to lower inequality. Specifically, higher scores on corrup-

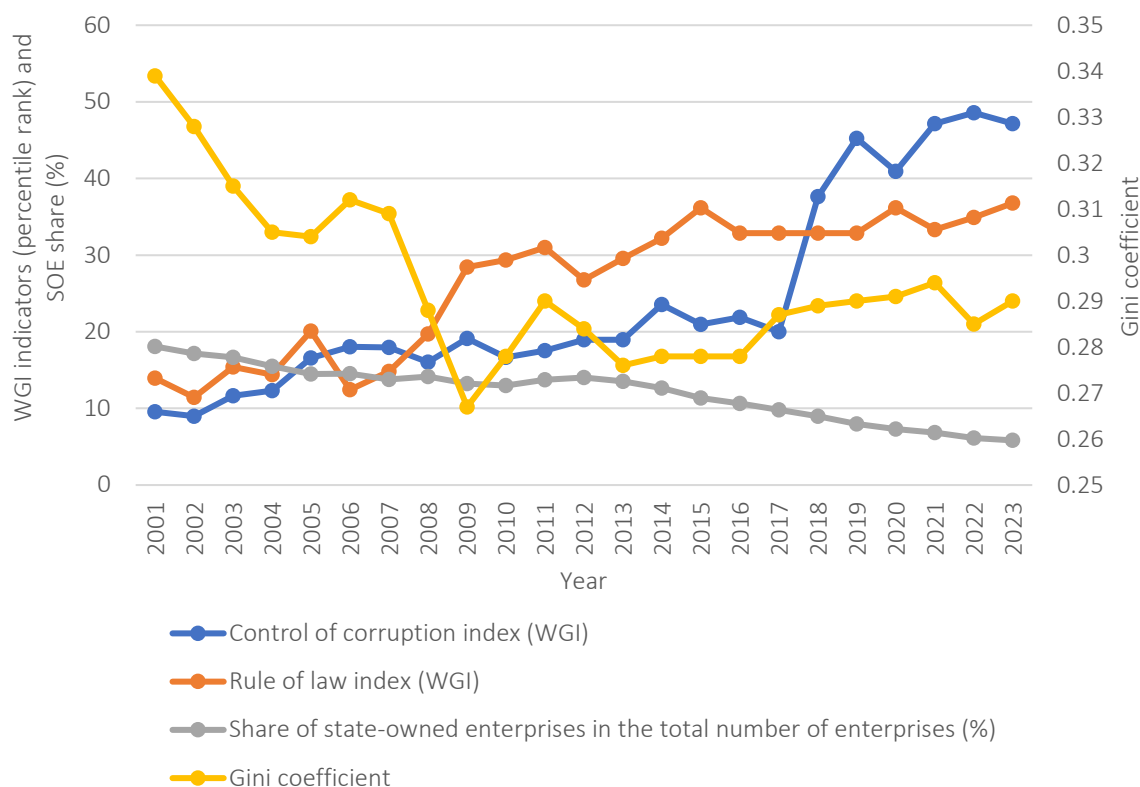


Figure 1. Institutional indicators and Gini coefficient trends in Kazakhstan, 2001–2023

Table 2. Spearman’s correlation between income inequality and institutional, economic, and social indicators (Kazakhstan, 2001–2023)

No.	Factor indicator	Spearman’s ρ	p-value
1	Control of corruption (World Bank index)	-0.439*	0.036
2	Rule of law (World Bank index)	-0.500**	0.015
3	Share of state-owned enterprises, % of GDP	+0.473*	0.023
4	Foreign direct investment inflows, % of GDP	+0.254	0.242
5	Investment per capita, thousand KZT	-0.471*	0.023
6	Long-term unemployment, % of labor force	+0.451*	0.031
7	Household monetary expenditures per capita, thousand KZT/month	-0.470*	0.024
8	Share of manufacturing in GDP, %	+0.803***	0.000
9	Higher education enrollment, %	+0.192	0.379
10	Recipients of targeted social assistance, per 1,000 people	-0.078	0.723
11	Recipients of state social benefits, per 1,000 people	+0.448*	0.032
12	Pensioners, per 1,000 people	+0.186	0.394
13	Index of real household income (2001=100%)	+0.715***	0.000

Note: $p < 0.05$ (*), $p < 0.01$ (**), $p < 0.001$ (***)

tion control and rule of law both significantly correlate with a lower Gini (Spearman’s $\rho \approx -0.44$ and -0.50 , $p < 0.05$). In contrast, a larger SOE sector correlates with higher inequality ($\rho \approx +0.47$, $p < 0.05$). In sum, Kazakhstan’s institutional improvements – reducing corruption

and reinforcing the rule of law – coincide with narrower income gaps, while a dominant state sector (in the absence of strong governance) was associated with more concentrated income. Analytically, this suggests that institutional quality has been the most decisive equalizing

force, but historical state-sector structures have mitigated its impact.

3.2. Economic factors

Figure 2 shows that foreign direct investment (FDI/GDP) surged in the 2000s and fell after 2015, while domestic investment per capita and real household incomes generally grew from 2001 to 2023. Long-term unemployment also fluctuated over time. The statistical analysis (Table 3) indicates that greater domestic investment and consumption are tied to reduced inequality: investment per capita and household expenditure per capita both correlate significantly negatively with the Gini ($\rho \approx -0.47, p < 0.05$ for each), implying that periods of robust investment and rising consumption saw narrowing income gaps. By contrast, FDI inflows show no significant association ($\rho \approx +0.254, p > 0.05$), suggesting limited distributive impact under prevailing institutional conditions. The share of manufacturing is a striking outlier: it has a robust

positive correlation with inequality ($\rho \approx +0.803, p < 0.001$). In practical terms, this means that as the industrial sector's relative weight grew, so did inequality. This reflects a Kazakhstani specificity: during the resource-boom era, shrinking manufacturing coincided with falling inequality (as resource revenues financed broader social transfers), whereas periods when industry share was higher saw larger income gaps. Finally, the real income index (overall wage/consumption growth) also correlates strongly positively with the Gini ($\rho \approx +0.715, p < 0.001$). This indicates that aggregate income growth, driven largely by resource windfalls, was accompanied by greater disparities.

3.3. Social factors

Table 3 indicates broad trends in social policy coverage: higher-education enrolment rose substantially (from ~43% to over 62% by 2021), social assistance reciprocity jumped sharply in crises, and pension coverage remained consistently high

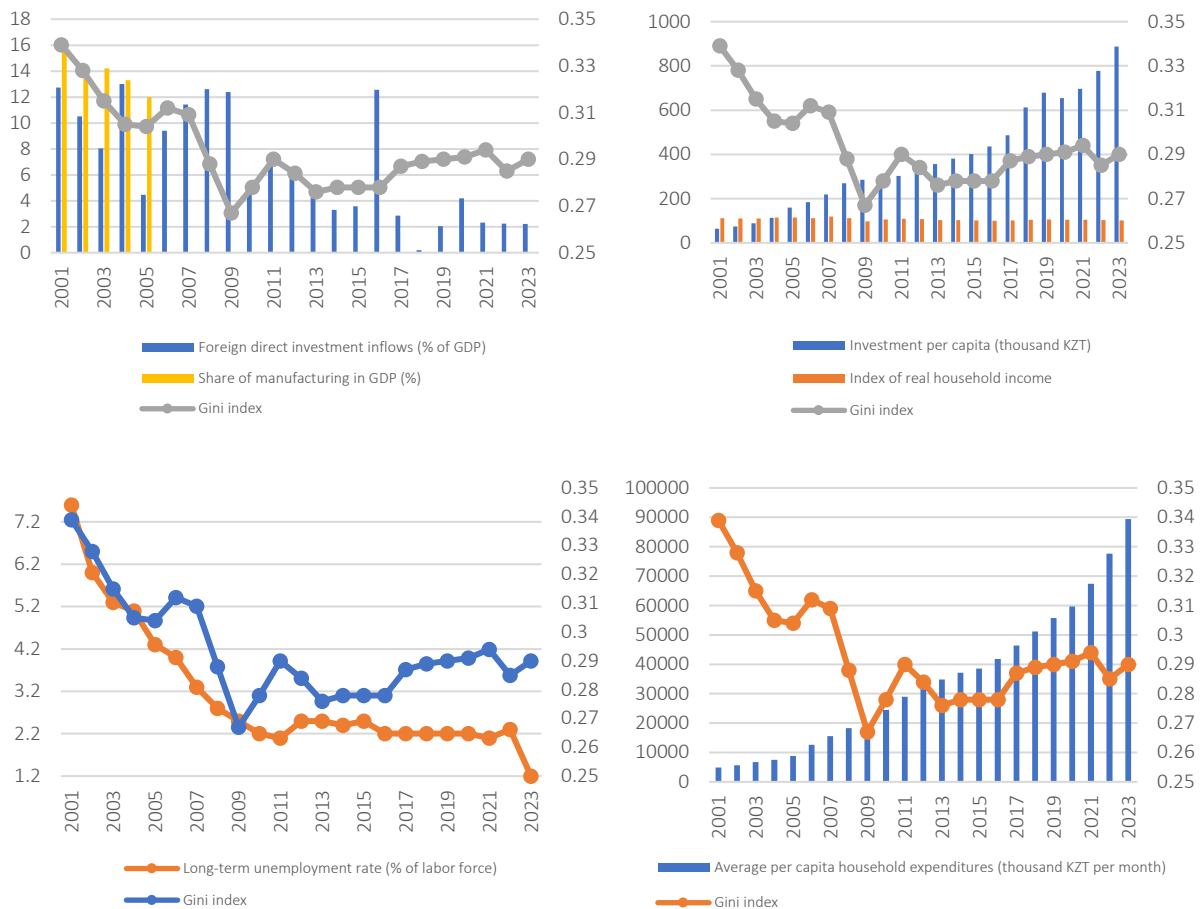


Figure 2. Trends in economic indicators and income inequality in Kazakhstan, 2001–2023

Table 3. Descriptive trends in social policy indicators in Kazakhstan, 2001–2023

Indicator	2001	2006	2011	2016	2021	2022	2023	Trend
Higher education enrolment (%)	43.1	55.8	53.1	51.1	62.6	59.1	54.4	Growth with fluctuations
Recipients of targeted social assistance per 1,000 people	0.00	22.96	8.61	1.63	52.47	39.76	30.28	Fluctuations
Pensioners per 1,000 people	117.66	107.56	105.37	116.68	119.32	117.79	118.72	Consistently high
Recipients of state social benefits per 1,000 people	53.3	50.24	47.35	44.45	42.59	43.29	43.37	Overall decline with fluctuations

(~105–119 per 1000). Unemployment benefits and social transfers fluctuated over time. The net effect is mixed: expanding education and pensions likely helped equalize incomes (by boosting human capital and securing basic income), whereas targeted social programs responded reactively to inequality spikes. In fact, the correlation results show that long-term unemployment correlates positively with inequality ($\rho \approx +0.45$, $p < 0.05$), as expected (more joblessness leads to bigger gaps). Education enrolment shows no significant relationship ($\rho \approx +0.19$, $p > 0.3$), suggesting that increased schooling alone did not immediately reduce measured inequality. Social transfers similarly have limited effects: recipients of targeted assistance have a very weak negative (but insignificant) correlation with Gini, while recipients of general social benefits correlate positively ($\rho \approx +0.45$, $p < 0.05$), reflecting that transfers were often expanded after inequality rose. In summary, the pension system provides a broad income floor, but overall social spending acted more as a buffer during shocks than as a sustained equalizer.

In sum, our results indicate that higher institutional quality (lower corruption, stricter rule of law) is associated with lower inequality, whereas economic growth and social policy exhibit conditional effects. Domestic investment and consumption expansions were linked with narrowing gaps, but growth driven by resource revenues did not automatically equalize income. Social policies maintained stability for the vulnerable but did not substantially alter the overall Gini.

4. DISCUSSION

The findings confirm that institutional quality is central to income distribution in Kazakhstan. Stronger control of corruption and rule of law was associated with lower inequality, supporting the view that governance failures widen in-

come gaps (Gupta et al., 2002). Nevertheless, the equalizing effect of institutional improvements appears weaker than in some Eastern European transition economies, where governance reforms combined with privatization yielded notable Gini reductions. In Kazakhstan, however, structural rigidities and oil-price volatility limited the extent to which better institutions translated into broader welfare gains. Resource rents also reduced inequality only when governance quality was sufficiently high (Parcerro & Papyrakis, 2016), which helps explain why improved legal frameworks in the 2000s did not ensure the wide sharing of oil revenues.

The relationship between state ownership and inequality also challenges conventional expectations. A larger state sector was correlated with higher inequality, reflecting that SOEs often served the interests of well-connected groups rather than the wider population. Similar outcomes were observed in several post-Soviet economies, where weak institutions turned state ownership into a mechanism of elite capture (Milanovic, 2016). Kazakhstan's gradual SOE downsizing likewise did not yield more equitable redistribution. Thus, reducing the state's economic role is insufficient without transparency and rule-based management of remaining public enterprises.

The results provide partial support for a Kuznets-type dynamic: periods of strong domestic investment and rising household consumption coincided with narrower income gaps. This pattern aligns with cross-country evidence that investment can mitigate inequality under inclusive institutions (Sawadogo & Ouoba, 2024). At the same time, foreign direct investment – concentrated in oil and mining – showed no significant association with the Gini coefficient. As in other resource-rich regions, resource-seeking FDI under weak governance generated little spillover to lower-income groups (Kanbur & Lustig, 1999).

An unexpected pattern emerged in the link between manufacturing and inequality. A higher manufacturing share of GDP correlated with greater inequality, contrary to standard expectations (Autor et al., 2013). This reflects Kazakhstan's resource-driven growth model: during oil booms, shrinking industrial activity was offset by expansive social spending financed by resource revenues, temporarily narrowing inequality. Similar dynamics are noted in other oil-exporting economies, where redistribution tied to commodity cycles can overshadow the equalizing role of industrialization.

Aggregate income growth did not reduce inequality. During boom years, rising average incomes disproportionately benefited top earners – a classic “resource-curse” pattern where windfalls exacerbate rather than diminish income gaps (Sawadogo & Ouoba, 2024). Weak progressivity in redistribution limited the potential equalizing effects of high growth.

Social and human-capital factors displayed limited influence. The rapid expansion of higher education did not reduce inequality, mirroring cases where tertiary enrolment growth outpaced the creation of high-skill jobs (Atkinson, 2015). Kazakhstan faces similar structural mismatches, resulting in underemployment and weak returns to education for many graduates. Social transfers functioned mainly as a buffer: spending tended to rise after

inequality increased, rather than preventing disparities. This reactive stance limits the redistributive impact of social programs, consistent with findings across Central Asia (Temerbulatova et al., 2024). Pensions remain a partial exception by providing a basic income floor for the elderly, though they do not significantly affect overall inequality.

Overall, Kazakhstan's experience aligns with global evidence showing that strong institutions, inclusive growth, and well-targeted social support contribute to lower inequality. However, several patterns are distinctive. Inequality fell during phases of declining industrial output due to oil-financed redistribution, and the expansion of higher education failed to generate the expected equalizing effects due to limited labor-market absorption.

A comprehensive strategy to reduce inequality should therefore combine institutional strengthening – particularly anti-corruption efforts and enforcement of the rule of law – with policies that promote diversified, job-rich growth beyond the oil sector. Social policy must shift toward proactive, well-targeted programs, stronger alignment between education and labor-market needs, and greater transparency in benefit allocation. These priorities are consistent with international evidence on effective redistribution (Ostry et al., 2014). Without structural reforms, neither economic growth nor expanded but weakly targeted transfers can ensure sustained reductions in inequality.

CONCLUSION

The aim of this study was to examine how institutional, economic, and social conditions influenced income inequality in Kazakhstan between 2001 and 2023. The analysis showed that institutional quality – particularly control of corruption and the rule of law – has a stable and statistically significant association with lower inequality. By contrast, a higher share of state-owned enterprises was linked to greater disparities, reflecting the structural legacy of a dominant public sector operating under imperfect governance.

Economic indicators displayed a dual pattern. Domestic investment and household consumption were associated with narrowing income gaps, whereas rapid growth of aggregate incomes and a higher manufacturing share coincided with rising inequality. These results confirm that growth in a resource-rich economy does not automatically translate into equitable distribution, especially when sectoral dynamics disproportionately benefit privileged groups. Social factors had more limited and reactive effects. Pensions provided a basic income floor, but the expansion of education and targeted transfers did not generate a durable equalizing impact, often responding to inequality *ex post* rather than *pre-emptively* addressing structural disparities.

These findings highlight the need to strengthen institutional integrity, promote inclusive investment beyond the resource sector, and make social policy more proactive and better targeted. Reforms should link economic modernization with equity objectives by increasing transparency in redistribution, aligning education with labor-market needs, and reducing regional disparities.

Future research could extend this analysis by applying multivariate regression techniques, incorporating regional and gender-disaggregated data, and exploring the role of digital inequality. Comparative studies across resource-rich economies in Central Asia and Eastern Europe may also yield deeper insights into the institutional mechanisms through which inequality is reproduced and can be reversed.

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