



MORE, BETTER AND INCLUSIVE JOBS IN KAZAKHSTAN

Social Protection and Jobs
Europe and Central Asia
ANALYTICAL REPORT

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Preface

In 2022, the Ministry of Labor and Social Protection of the Population (MLSP) of Kazakhstan requested analytical support from the World Bank to develop a comprehensive plan to reform its labor market for the 2024-30 period. The plan responds to the key priorities for the labor market identified in President Tokayev's Address to the Nation on September 1, 2023. Based on discussions between the MLSP and World Bank, a roadmap has been prepared, followed by a set of analytical materials by the World Bank's Social Protection and Jobs (SPJ) Unit and the JSC Workforce Development Center (WDC).

The two teams were responsible for the following thematic areas:

(a) Boost enterprise productivity to increase the number and quality of jobs, including

- establishing the role of productivity;
- determining the sectors with above-average growth in employment and value added;
- identifying market entry, growth, and exit constraints that potentially are linked to job creation, including an assessing any regulatory and market factors that may limit the dynamics of enterprise development; and
- establishing the role that training plays in making technological change deliver productivity gains.

(b) Prepare the population for old and new jobs, including

- discussing the challenges faced by the education sector in the provision of training, relevant to the labor market;
- analyzing the barriers against the poor and vulnerable from receiving better education;
- discussing the factors that prevent poor and vulnerable populations to access better education; and
- discussing the importance of lifelong learning, including on-the-job training.

The following publication summarizes the analytical notes and presentations prepared by the World Bank and WDC in the framework of Concept Plan development. World Bank specialists contributed to Chapters 1 through 3 and the WDC specialists prepared Chapter 4. The material was discussed with WDC experts and MLSP staff during a series of technical consultations.

Based on the material delivered by the World Bank, the WDC and other local expert groups, the MLSP was able to draft the Concept Plan of Labor Market Development for 2024-2029, which WDC presented in Astana during a Round Table on April 20, 2023, and at the conference "Labor Market in the Era of Change" on October 26, 2023. The Concept Plan of Labor Market Development for 2024-2029 was approved by the Government of Kazakhstan on November 28, 2023.

Acknowledgements

This publication contains analytical materials, all of which have been prepared by World Bank staff in the framework of the plan's roadmap and Kazakhstan Job Quality analysis prepared by the WDC staff. The report was prepared by a joint team from the Social Protection and Jobs Unit (SPJ), comprising Jamele Rigolini (Senior Advisor), Javier Sanchez-Reaza (Senior Economist), Ivan Shulga (Senior Social Protection Specialist), and Maria Ustinova (Social Protection Consultant), and the Workforce Development Center (WDC), comprising Shalkar Baikulakov (Vice President of WDC), Dmitry Shumekov (Director of Forecasting and Research Department, WDC), and Ulpan Shegenova (Deputy Director of Strategy Department, WDC). Margie Peters-Fawcett copyedited and proofread the manuscript. Cem Mete, former Practice Manager, Europe and Central Asia and Paolo Belli, Practice Manager, Europe and Central Asia of the same unit and Daulet Argandykov, President of the WDC provided guidance to the teams. The report benefited from the review and guidance by Paolo Belli (Practice Manager, ECA SPJ).

The World Bank is grateful for the valuable comments and suggestions provided by Olzhas Ordabaev, Vice Minister of Labor and Social Protection of the Population and his team.

The World Bank and WDC teams thank Mayya Revzina (Senior Publishing Officer), Shynar Jetpissova (External Affairs Officer), Valeriya Marufi (Program Assistant) and Azat Alkeyev (Program Assistant) for their guidance and support in the preparation of official publication.

Abbreviations

ECD	early childhood development
ICT	information and communications technology
JQI	job quality index
LLL	lifelong learning
LMIS	Labor Market Information System
MLSPP	Ministry of Labor and Social Protection of the Population
OECD	Organisation for Economic Co-operation and Development
PISA	Programme for International Student Assessment (OECD)
SPJ	Social Protection and Jobs
STEM	science, technology, engineering, and mathematics
TVET	technical and vocational education and training
UN	United Nations
WDC	Workforce Development Center



Introduction

Growth, Poverty, and Jobs

Despite the dwindling of Kazakhstan's economic growth rate, the poverty rate, nevertheless, has reduced. Economic growth is central to reducing poverty in countries (Dollar, Kleineberg, and Kray 2013). Real gross domestic product per capita growth rate in Kazakhstan in 2005 was at 12 percent but has declined since (Figure 1.1A). Relatively slower growth rates may mask vulnerabilities such as rising inequality, elite capture, and a weaker institutional framework (World Bank 2020a). A weaker governance framework also is reflected in weak private sector governance and institutional and business environment support for SMEs and micro, small, and medium enterprises. Despite slower economic growth and a number of institutional challenges, the country, nevertheless, has been successful at reducing the poverty rate (Figure 1.1A).

The major factor contributing to Kazakhstan's growth has been productivity, regardless of the period. A much lower contribution stems from labor market factors (Figure 1.1B). In terms of the growth decomposition calculation, employment rates are the second most important factor; however, this has not been the case between the period since 2012 and preceding the COVID-19 pandemic. Other labor market factors, such as participation rates, have experienced even smaller inputs.

Employment Rates: Double Decoupling

Employment rates have been decoupled from economic growth and poverty reduction. Minor contributions to growth from employment is not uncommon around the world, as has been the case in Kazakhstan. Higher-income economies have experienced sluggish growth in employment ratios.¹ As a result of the 2008 global financial crisis and the COVID-19 pandemic, the U.S. economy has experienced a significant change in employment ratios (Figure 1.2A). The three periods since 2003,² however, show very minor variations across time: less than 2 percent change. Moreover, employment ratios appear to have decoupled from poverty reduction across countries. Kazakhstan's marked decline in poverty headcount, however, may be unrelated to the slight improvement in its employment ratios (Figure 1.1B).

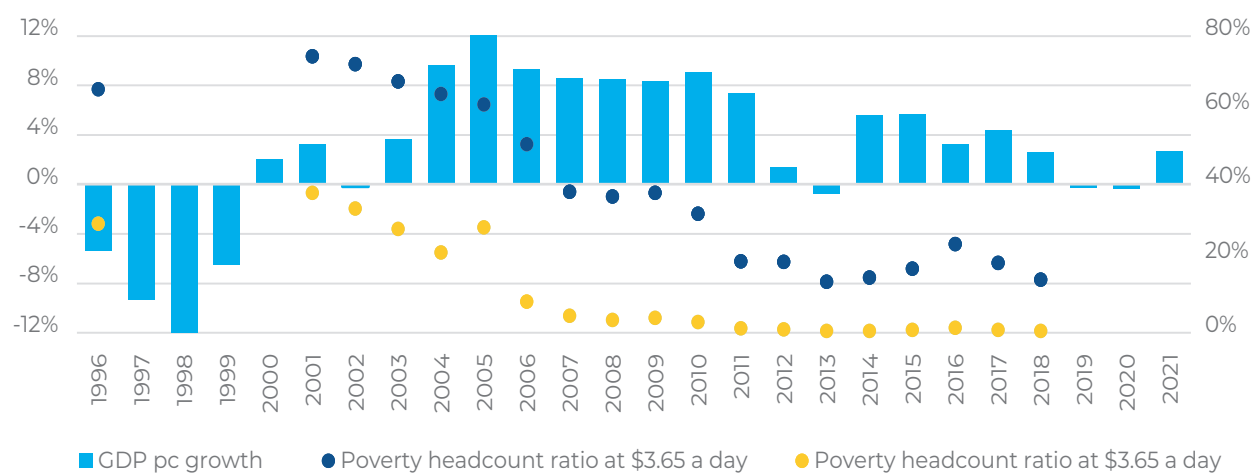
While technological change has raised the productivity and wages of workers, it appears to have led to a double decoupling in terms of labor. The reasons for the double decoupling (from growth and poverty reduction) are beyond the scope of this report; however, evidence points to a process of capital deepening and technological change. On the one hand, advanced economies - among which the United

¹ Employment ratios are employed persons over 15 years of age as a proportion of total employment.

² Post-IT bubble from 2003 to 2008, the post-financial crisis 2009–19, and the COVID-19 period since 2020.

Figure 1.1. Kazakhstan: Growth Decomposition

A. Growth and Poverty, 1996–21



B. Growth Decomposition, Various Periods



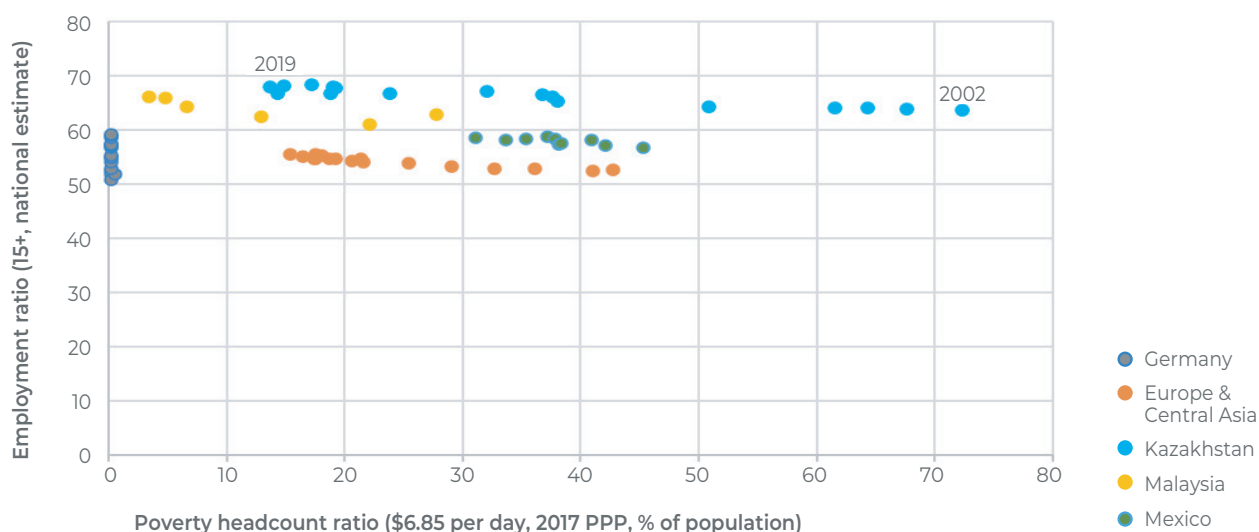
Sources: Panel A: Staff calculations based on "World Development Indicators" (World Bank 2023a); and Panel B: "Job Diagnostics" (World Bank 2023b).

Figure 1.2. Employment and Poverty

A. United States: Employment Ratios, 2003-23



B. Various Countries: Employment and Poverty

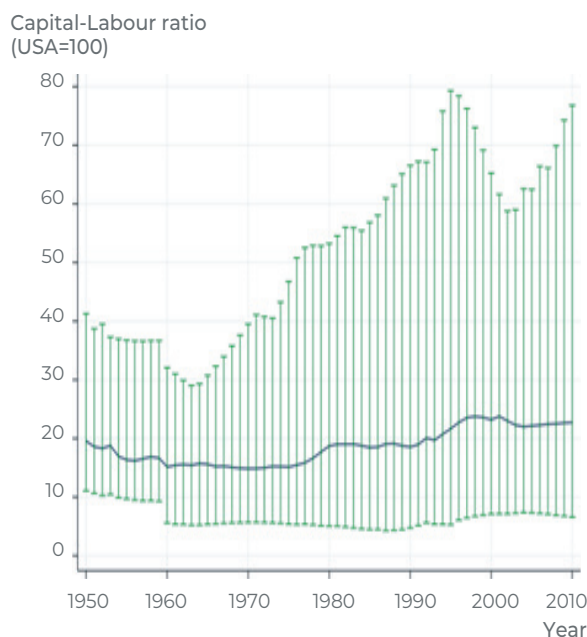


Sources: Panel A: US Gov-BLS (2023); and Panel B: Staff calculations based on "World Development Indicators" (World Bank 2023a).

States - have introduced capital faster than they have employed workers since the 1950s (Figure 1.3A). The process of capital deepening has fueled productivity growth not only in the United States but also in most Member Countries of the Organisation for Economic Co-operation and Development (OECD). This action has not been applied in economies of lower income and, as a result, it has created a world which despite its technological heterogeneity, also differs in terms of skills demand. A simple regression analysis points to an association between capital-labor ratios and labor productivity (Figure 1.3B). Not only is labor productivity responding to technological change, but the association has been stronger over time. On the other hand, the decoupling from poverty reduction also may have been the result of the positive impact of social protection systems in tackling extreme poverty.

Figure 1.3. Capital-Labour Ratios

A. Capital-Labour Ratios across Countries, 1950–2010



B. Capital-Labour Ratios and Productivity Growth



Sources: Panel A: US Gov-BLS (2023); and Panel B: Staff calculations based on “World Development Indicators” (World Bank 2023a).

The Challenge of Creating Better and Inclusive Jobs

In this context, creating good quality and inclusive jobs becomes even harder than previously. Jobs are important because they are one of the most powerful tools to improve the lives of people. Technology has enhanced the way in which jobs are being created. The benefits, however, are not necessarily available to everyone. In the case of Kazakhstan, this report argues that employment creation remains a challenge, and to address it requires productivity growth and a removal of market distortions. For example, firms should be able to easily enter the market, grow and, if need be, exit the market if necessary, thus fostering a culture of entrepreneurship. The challenge is not only to improve employment ratios, but to do so with jobs that not only will pay more based on worker productivity, but which will be tied to benefits, job protection, and stability. Finally, there is a need for inclusiveness which, in this report, relates to upskilling, reskilling, and lifelong learning for all, thus enabling workers to find jobs commensurate with their skills. In order for jobs to be inclusive in that way, barriers to markets need to be removed. That may translate into reforming the role that the State plays in the economy, or into removing policies that go against market forces such as some migration policies in place.



II.

Boosting Firm Productivity for Additional and Better Jobs for All

Productivity is central to the mechanisms that deliver more and better jobs for all. First, to create more jobs, new firms - which, in many cases, contribute with the bulk of new jobs - should be able to access a market that is sufficiently competitive as to ensure that productivity will drive firm growth and increase employment. Second, the benefits from productivity depend on the quality of the jobs being created. To achieve higher productivity, capital in the form of technology is essential, so that every worker is able to become more productive, thereby reallocating factors of production across sectors (i.e., structural change). As firms grow and create further jobs, their productivity levels will determine wages; consequently, the more productive a firm, the higher the wage and the better the quality of the workplace will be. Third, if workers are allowed to move, they will seek better jobs elsewhere, thus contributing to productivity growth. The processes of productivity growth and employment creation and improvement, however, will require reskilling and training in order to shift regional specializations, which is key to a just transition.

Setting the Conditions for Job Creation

Kazakhstan needs to provide financing for job creation by newly established firms. Since 2011, registration of new businesses has accelerated. Despite Kazakhstan's 2014–15 economic crisis,³ the trend in new firm registrations⁴ has rapidly resumed - so much so as to have doubled since 2011 (Figure 2.1A). Part of this success has been the result of an elimination of restrictions, as well as reductions in the cost, time required, and number of procedures necessary to establish a firm within the same period (Figure 2.1A). Nevertheless, progress has not been as sufficient for Kazakhstan to have reached the degrees of business creation in European and Central Asian countries or its trading partners (Figure 2.1B and Figure 2.1C). While regulation has led to a creation of jobs in new firms, dwindling private-sector funding - particularly since the 2014–15 crisis - may have impinged on the decision of some potential entrepreneurs to establish businesses (Figure 2.1D).

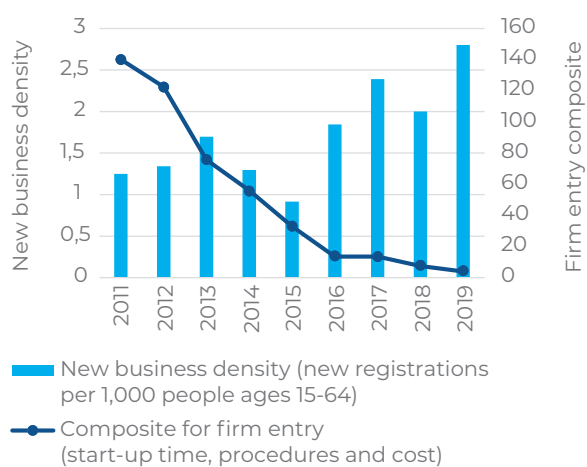
More work is needed to further remove the barriers and regulations that can act against firms, and a policy focus is required to accelerate the growth of startups. Young firms in OECD countries contribute to approximately 20 percent of employment, while creating almost half the number of new jobs (Calvino, Criscuolo, and Menon 2016). Despite the progress made in reducing cost, time and the number of procedures, Kazakhstan can still make progress in improving conditions on trade, taxes and electricity provision (Figure 2.2A). While enterprise entry regulations require attention, there remain other

³ The 2014–15 economic crisis in Kazakhstan was triggered by sanctions imposed on Russia, its most important trading partner, and the lower international price of crude oil.

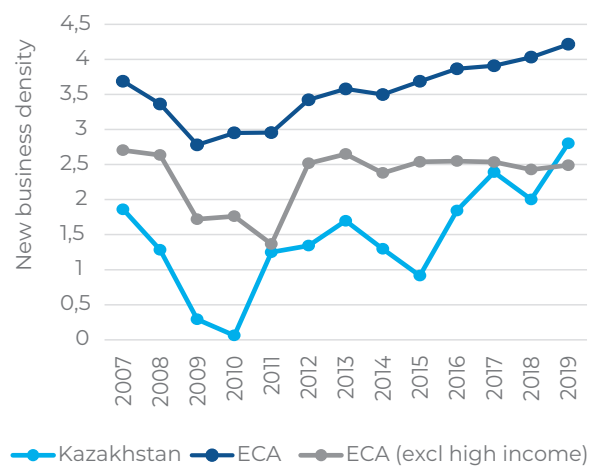
⁴ New firm registration density refers to registration of new businesses per 1,000 people between the ages of 15 and 64.

Figure 2.1. Kazakhstan: New Firm Creation

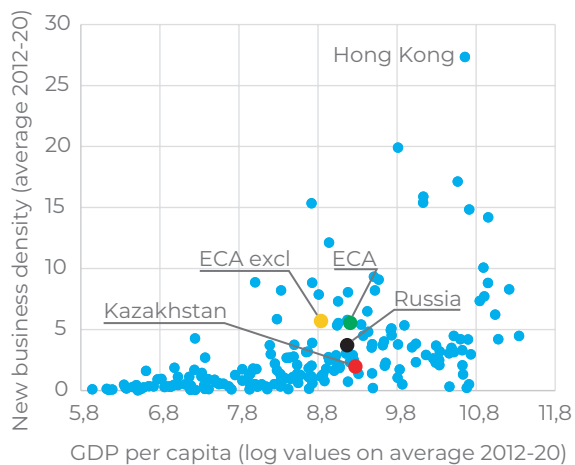
A. Entry Barriers to New Firms, 2011–19



B. New Business Density, 2007–19



C. New Business Density to Gross Domestic Product (in percent), 2012–20



D. Entry Barriers to New Firms, 2011–19

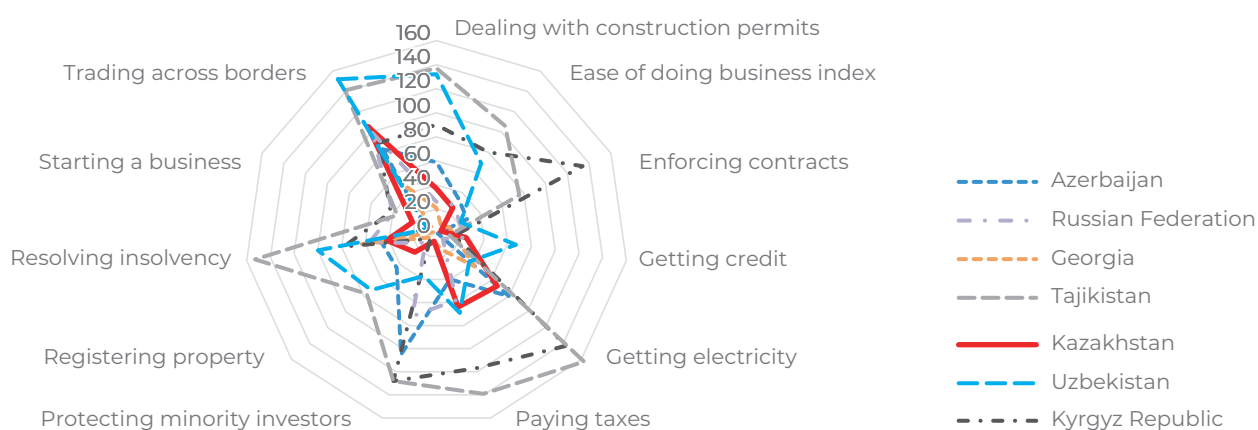


Sources: Staff calculations based on "World Development Indicators" (World Bank 2023a).

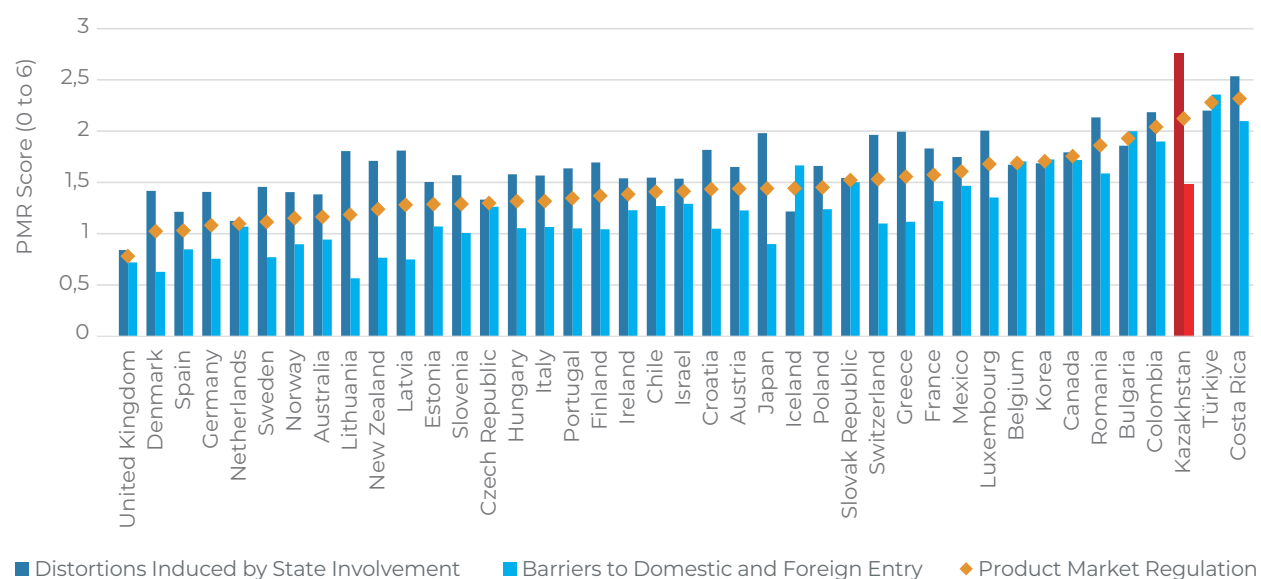
more restrictive regulations. The distortions brought about by State involvement in Kazakhstan are much higher than in any OECD countries. As a whole, product-market regulation⁵ is the lowest, along with Costa Rica and Türkiye (Figure 2.2B). The most restrictive among the distortions is the number of state-owned enterprises. In terms of public ownership, Kazakhstan shows the highest distortion rate when compared with OECD and other countries (Figure 2.2C). Also highly restrictive is the simplification of regulations, comparable to Greece and Costa Rica and only lower than in Colombia. This limited level of

Figure 2.2. Regulation Challenges

A. Doing Business in Kazakhstan, 2020

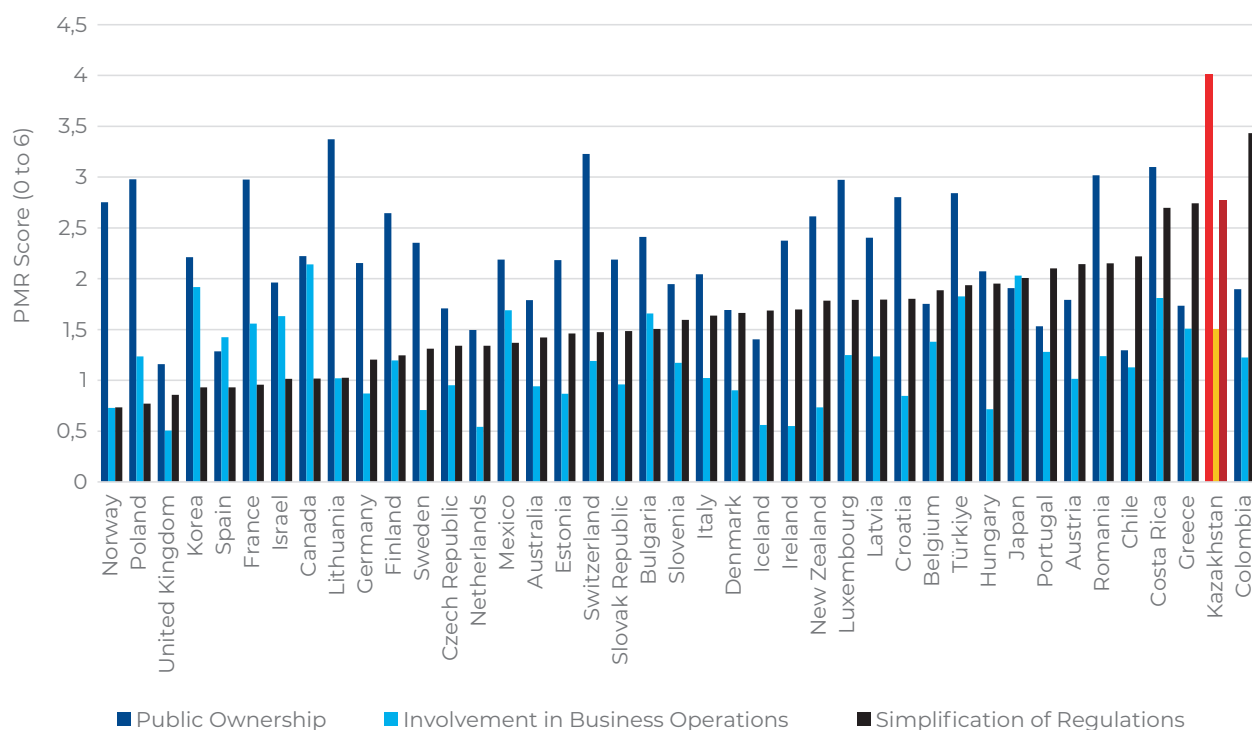


B. Regulatory Framework Restrictiveness, 2018

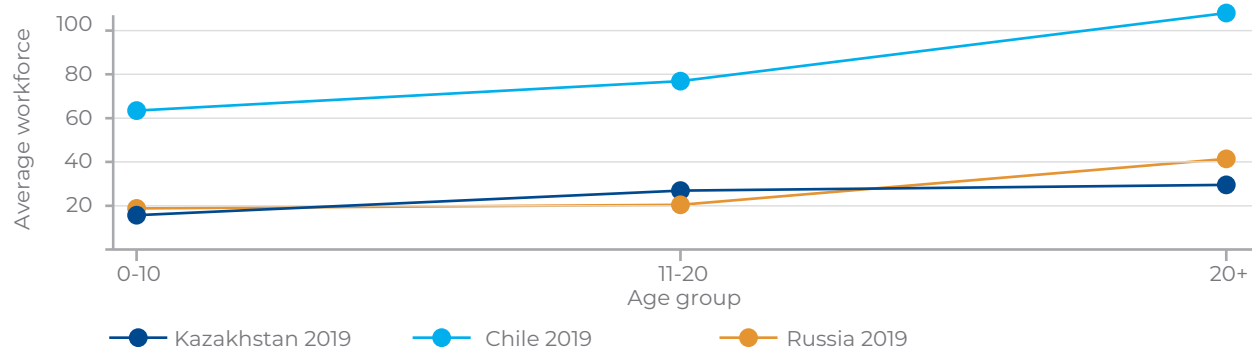


⁵ A key indicator to reveal the level of competition in an economy that provides a level playing field for new firms.

C. Distortions induced by State involvement, 2018



D. Employment by firm age



Sources: Panel A: "Doing Business" (World Bank 2020b); Panel B and Panel C: OECD "Product Market Regulation Indicators" (OECD 2023); and Panel D: World Bank (World Bank, forthcoming).

competition, partly created by State involvement, could be one of the reasons why young firms seldomly grow through the years, and thereby limit their contribution to employment growth (Figure 2.2D). It is important that industrial policy not only focuses on medium-sized enterprises (as per current policy), but that also on young firms - particularly startups - with plans for an accelerated growth. Industrial policy could incorporate global experiences in providing accelerator programs for young startups.

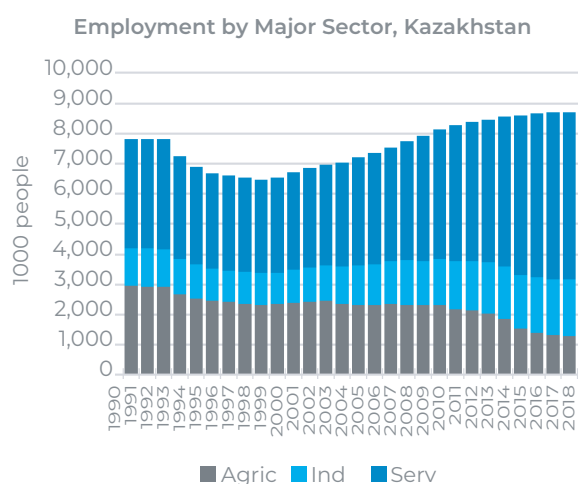
Ensuring Better Jobs

For the quality of jobs to improve, structural change must accelerate. Productivity and the need for quality jobs are capped by the limited structural change. The latter implies productivity gains in primary sectors as a result of technology (i.e., capital), which actually sheds labor. While loss of employment might be deemed a negative outcome, in reality it frees up labor to be allocated to more productive, and therefore better paid, jobs elsewhere. These include off-farm employment in the transportation, logistics, and processing sectors, among others (e.g., as dairy production in Petropavlovsk, North Kazakhstan). These also include people migrating to areas of industry and services. Such sectoral structural change is evident in the movement of employment and value added. In Kazakhstan, employment in agriculture has shrunk since the country's independence and particularly since the 2008 global financial crisis (Figure 2.3A). While job gains also flow into industrial activities, it is services activities that benefits most. However, in terms of value added, the fastest growth is in industry (Figure 2.3B). This limited industrialization of employment essentially implies reallocating labor released by agriculture, in many cases directly into low value-added services. If Kazakhstan aims at improving the quality of the workplace, industrial (particularly manufacturing) activities must play a greater role in absorbing released labor. Training will be crucial to ensure a skills match in the labor market.

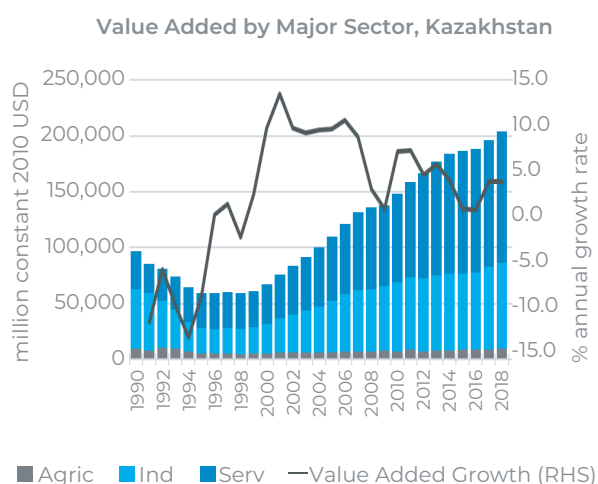
Fostering structural change leads to productivity gains and better paid jobs. By improving productivity and shedding labor in agriculture, workers will move to other jobs offering better wages, since these are more productive. Provided workers have the right skills for the new jobs, this reallocation of labor should result in better paid jobs. In Kazakhstan, the limited structural change is associated to dwindling productivity in some sectors and an increase in the productivity growth of others (Figures 2.4A and Figure 2.4B). However, even if productivity grows at a different pace across sectors, wages will remain in line. Regardless of the age of workers, capital-intensive activities will pay better (Figure 2.4C), and the more productivity an activity yields, the better the wage (Figure 2.4D).

Figure 2.3. Kazakhstan: Structural Change

A. Sectoral Employment, 1991–2018



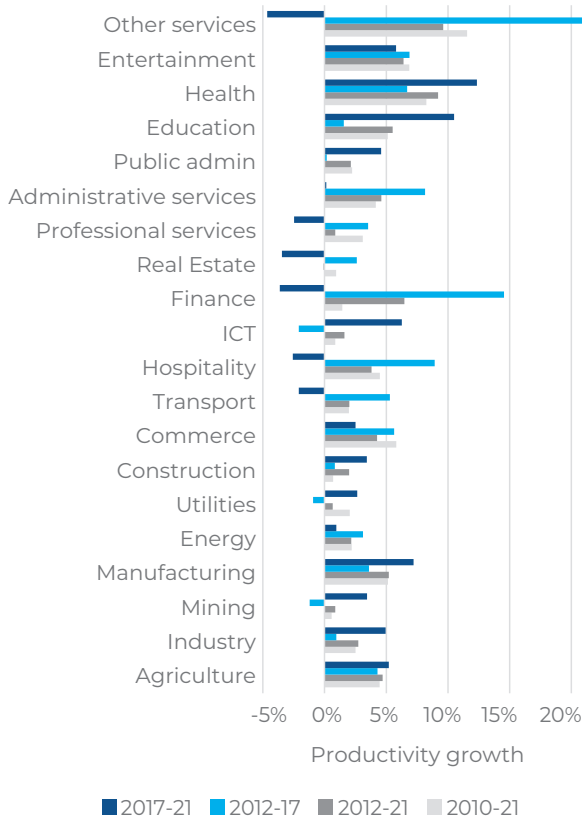
B. Sectoral Value Added, 1991–2018



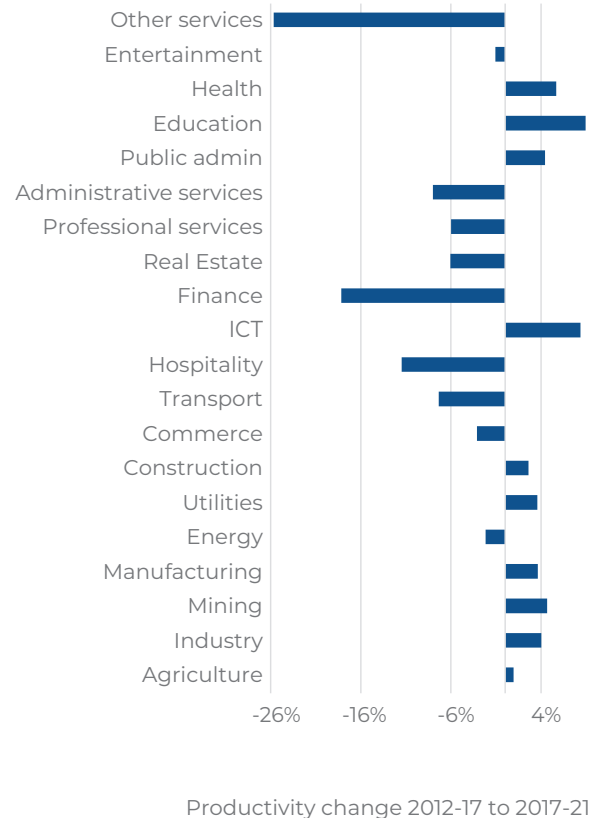
Source: "Job Diagnostics" (World Bank 2023b).

Figure 2.4. Kazakhstan: Productivity and Wages

A. Sectoral Productivity by Period



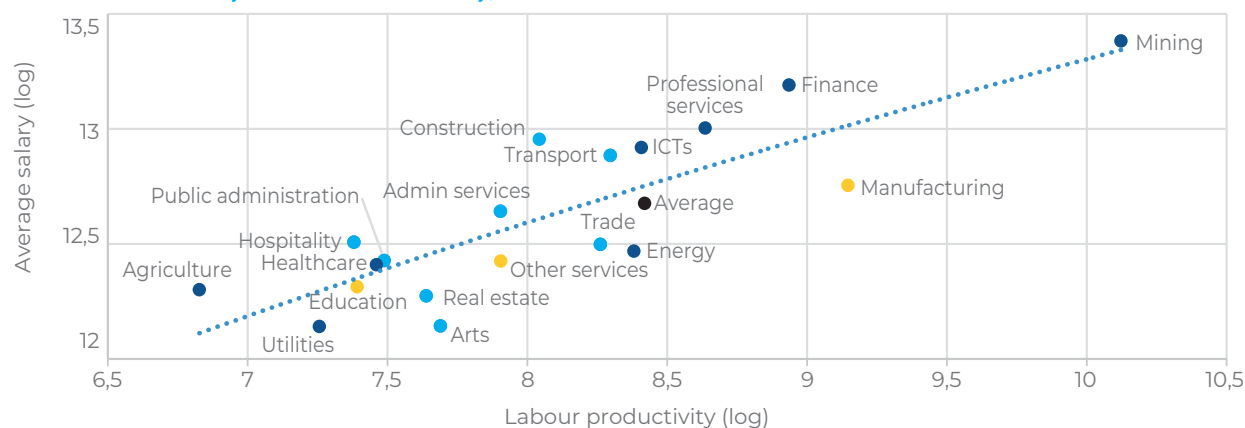
B. Change in Productivity Growth Rates



C. Wages by Sector and Age, 2021

	16-24	25-28	29-34	35-44	45-54	55-64	65-74
Administrative services	-1,34	-1,39	-1,11	-0,86	-0,77	-0,80	-1,37
Agriculture	-1,28	-1,15	-1,11	-1,18	-1,28	-1,26	-1,12
Arts	-1,25	-1,63	-1,46	-1,37	-1,28	-1,09	-1,02
Commerce	-0,76	-1,39	-1,39	-1,22	-1,19	-1,10	-0,93
Construction	-0,56	0,93	0,42	1,33	-0,36	-0,93	-0,36
Education	-0,53	-0,82	-0,94	-0,93	-0,64	-0,42	-0,55
Finance	-0,37	-0,20	-0,32	-0,36	-0,12	-0,38	-0,26
Health	-0,35	0,02	0,91	1,19	1,91	1,61	0,03
Hospitality	-0,17	-0,53	-0,62	-0,83	-0,63	-0,30	-0,29
ICTs	0,13	0,41	0,62	0,40	0,54	0,60	1,35
Industry	0,32	0,30	-0,27	-0,23	-0,31	0,03	2,18
Other professional services	0,36	-0,10	-0,15	-0,30	-0,10	0,07	0,77
Other services	0,50	0,78	1,60	2,00	2,37	2,76	1,64
Professional service	0,73	0,57	-0,06	-0,16	0,30	0,42	-1,01
Public administration	0,78	1,13	1,41	1,24	0,86	0,35	0,57
Real estate	0,94	1,33	1,07	0,69	0,23	-0,01	-0,07
Transportation	2,83	1,75	1,39	0,54	0,47	0,45	0,44

D. Sectoral Labor Payments and Productivity, 2022



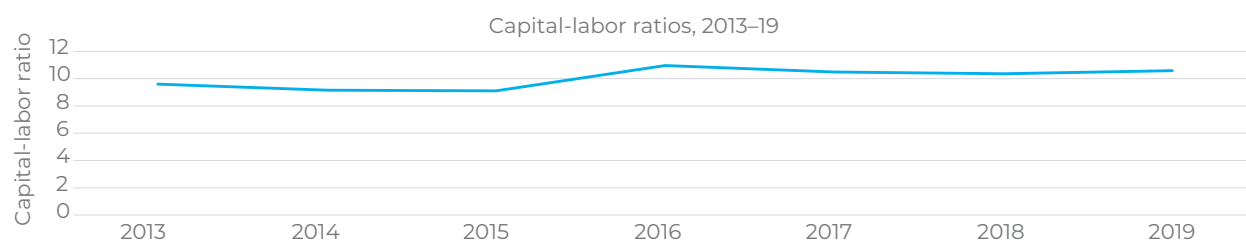
Sources: Panel A and Panel B: Staff calculations based on (i) GVA data: Kazakhstan Statistics Bureau (GovK 2023a); and (ii) deflators: "World Development Indicators" (World Bank 2023a); Panel C: Staff calculations based on Bureau of National Statistics (GovK 2021); Panel D: Staff calculations based on Workforce Development Centre (ISC 2022)

Fostering structural change for better jobs requires capital deepening as a necessary condition. The structural change process will require further capital deepening (i.e., technological change) in agriculture. To introduce capital into the agriculture sector in a way that makes economic sense, land plots will need to be sufficiently large to support the cost of new technology. In some countries this implies allowing commercial agriculture to create clusters of farm plots. In Kazakhstan, this may be a significant challenge, requiring a revision of laws relating to agricultural land tenure and the role of the State.⁶ Assuming that necessary legislative amendments are possible, an important domestic credit effort should be made to regain funding growth for private firms. Credit and lease of technology, along with other financial instruments, will be necessary to increase a stagnant capital-labor ratio (Figure 2.5A). More importantly, success of the capital-deepening process will depend on the individual firm's capacity to effectively absorb new technologies. For that to take place, it is critical that the right skills are in place—either because local skills will meet demand or because skills are initially foreign but are intended to eventually build local capacity.

The sufficient condition for structural change to create better jobs, however, lies in implementing appropriate training. As former farmers reallocate to other sectors of the labor market, it is essential that they have the right job skills. This is true in the manufacturing sector, whether that is in off-farming processing plants, transportation or storage, or it is in manufacturing or services in larger urban centers, skills will be needed. Having in place appropriate technical/vocational education and training (TVET) programs to make reskilling/upskilling possible is part of the solution. Another avenue is a more committed involvement from the private sector in providing training. Kazakhstan lags behind its regional comparators such as Tajikistan, in terms of the proportion of workers who are offered training – even more so in the proportion of firms (Figure 2.6A). Longer term measures will require changes in the education system in order to correct the shortcomings in the foundational skills and quality of education, as well as to prepare workers for a more intensive use of skills at the workplace. The OECD's Programme for International Student Assessments (PISA) for student performance in schools, and its Programme for the International Assessment of Adult Competencies (PIAAC) for tertiary education indicate that foundational skills in the former, and tertiary education in the latter are much lower than in comparator countries (Figure 2.6B).

⁶ Article 6 of the Kazakhstan's Constitution states that land is the property of the people. As a result, the State owns the land which can be leased. Current legislation permits Kazakh farmers to lease land for up to 49 years.

Figure 2.5. Kazakhstan: Capital Deepening

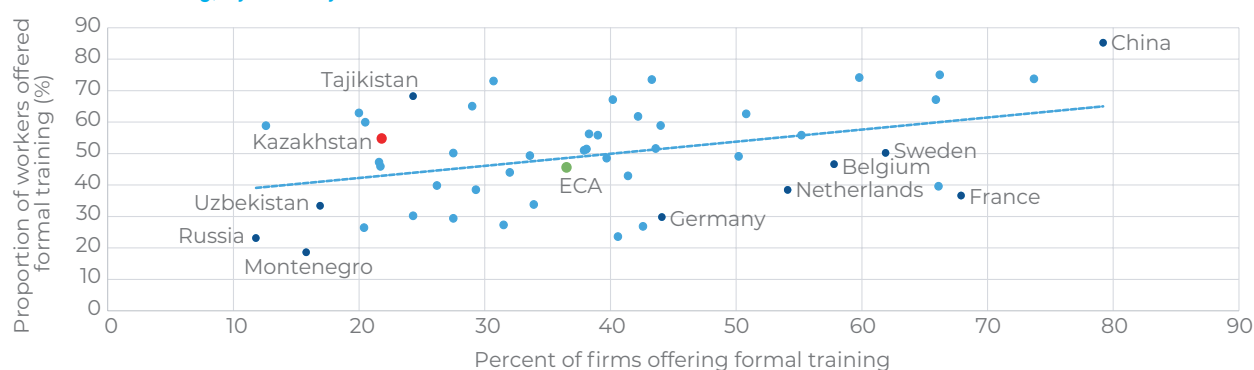


Sources: Staff calculations based on (i) GVA data: payments to labor and core capital consumption from Kazakhstan Statistics Bureau (GovK 2023a); (ii) for employment, capital stocks and flows data. "IMF Datamapper" (IMF 2023); and (iii) deflators: "World Development Indicators" (World Bank 2023a)

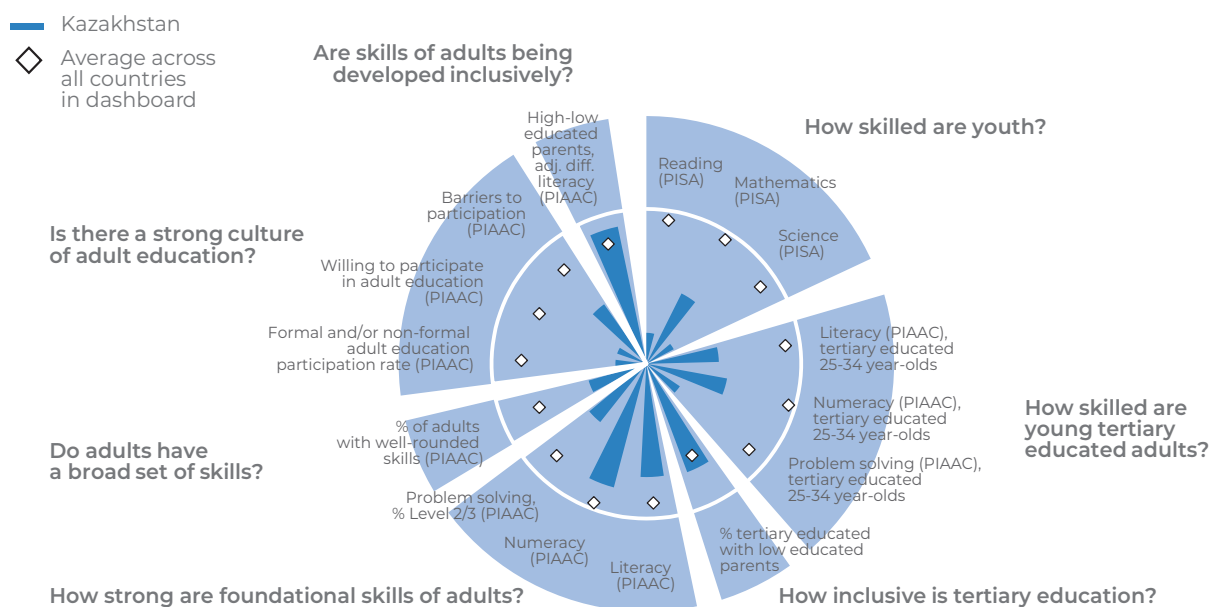
Note: Capital was the result of aggregating International Monetary Fund data on public, private, and public-private capital stocks, flows (gross formation), and subtracting Kazakhstan's core capital consumption figures (GovK 2023c) to obtain a total net capital stock.

Figure 2.6. Skills and Training

A. Formal Training, by Country



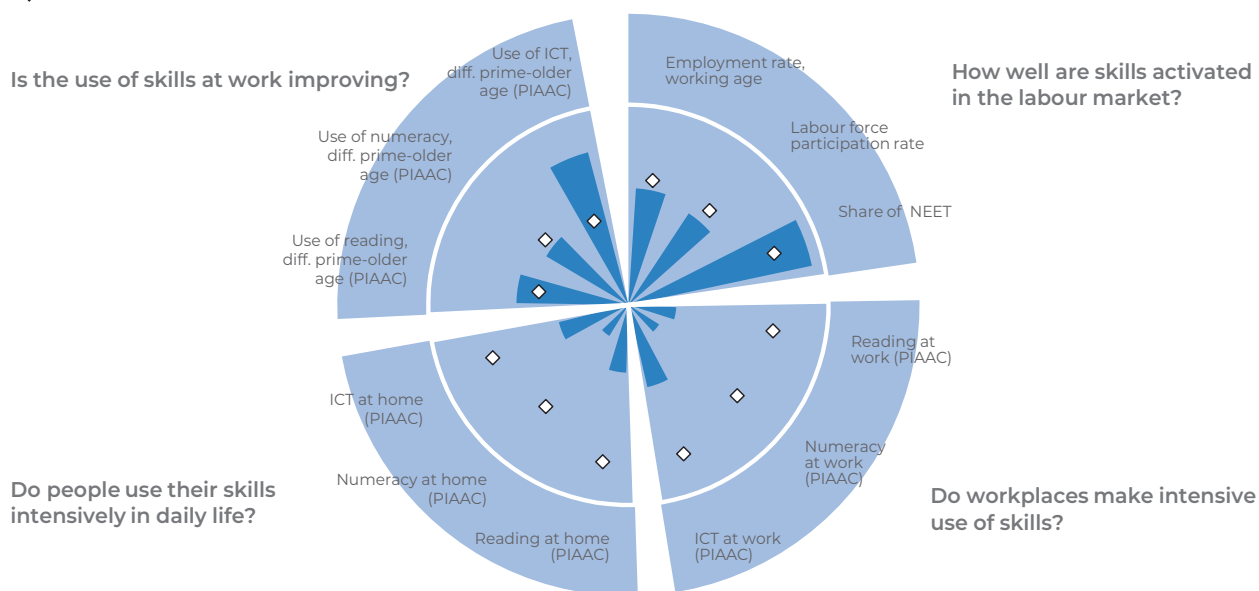
B. Kazakhstan: Relevant Skills



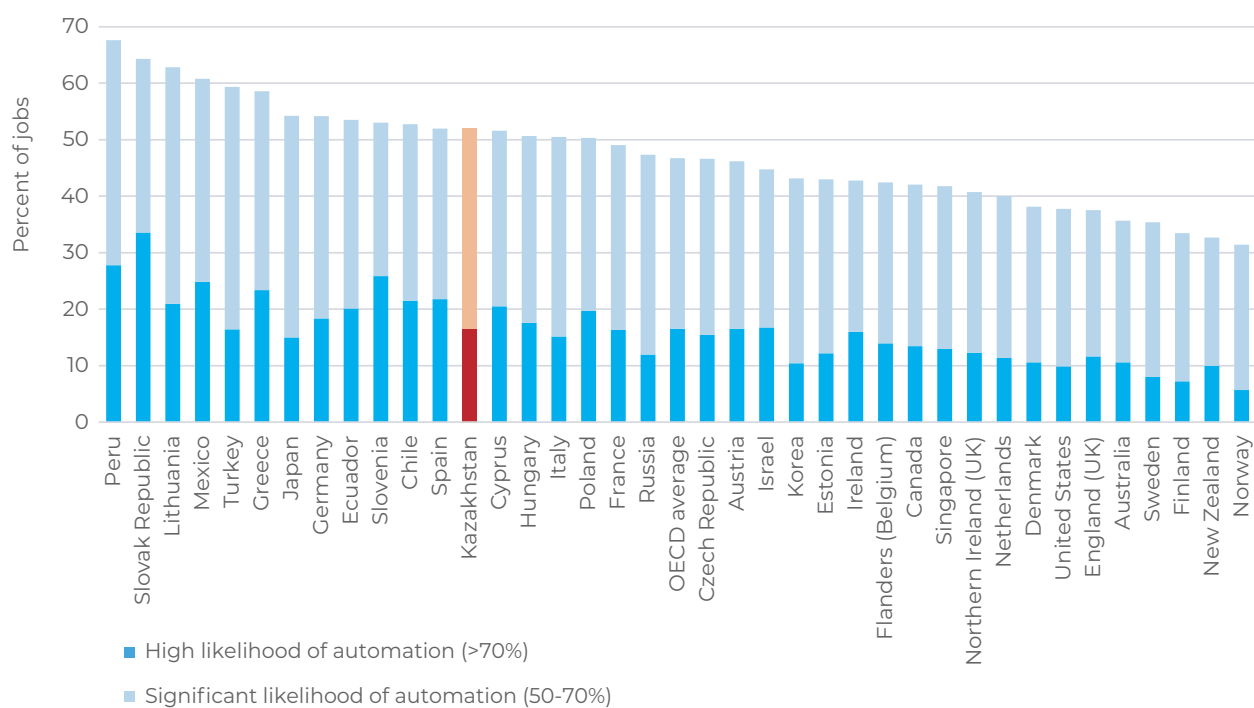
C. Kazakhstan: Effective Use of Skills

■ Kazakhstan

◇ Average across all countries in dashboard



D. Likelihood of Job Automation, by Country



Sources: Panel A: "Enterprise Surveys" (World Bank 2023c); and Panel B, Panel C, and Panel D: "Skills Strategy Kazakhstan" (OECD 2021).

Moreover, the current level of technology use in the country limits an intense use of skills at the workplace (Figure 2.6C). The challenge is exacerbated by the imminent changes posed by automation, whereby: over half of jobs in Kazakhstan are at a significant risk and potential loss of jobs (Figure 2.6D).

Providing Access to Jobs

To maximize the quantity of better jobs, a spatial transformation needs to be enabled. As structural change releases labor, workers will move to other areas where jobs are available. The global experience in development shows that this constitutes a process of urbanization. Kazakhstan is no exception. Since the turn of the century, population growth has been linked to urban population growth (Figure 2.7A). At the same time, urbanization has meant concentration of economic activity. As a consequence, regional inequality continues to increase (Figure 2.7B). The key mechanism for this spatial transformation is migration. However, only three regions in Kazakhstan, all of whose cities have some level of positive net migration: Astana, Almaty, and Shymkent (Figure 2.7C). While wage gaps provide - as expected - the market signal for workers to migrate to better paid jobs, a few regions showing positive wage premia for workers are actually losing population (Figure 2.7D). This hints at the fact that migrants might not only look for production externalities (i.e., wages from more productive activities), but also consumption externalities from agglomeration (e.g., amenities, entertainment, social and cultural life, among others).

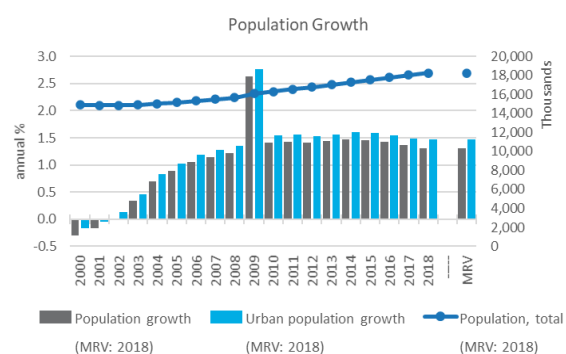
It is important that programs aiming at facilitating migration are aligned with market forces and in “bringing people to jobs”. Wages are the prime signal for worker migration, but not the only one. Better jobs also mean addressing vulnerable employment.⁷ Other forces, such as consumption externalities, also attract migrant workers typically to denser areas. Internal migration policy should be aligned with market forces and facilitate “bringing people to jobs” by reducing the cost and eliminate, as much as possible, any barriers for people to migrate. However, current policy aims at relocating workers from population centers to rural/remote areas that are losing population; this is being managed by: (i) providing grants (reimbursement of relocation costs); (ii) covering the cost of housing (rent) for one year; (iii) offering a mobility certificate, conditional to a minimum five-year stay (amounting to 50 percent of the cost of a home purchase); and (iv) offering a wage subsidy for employment. Instead of enabling effective spatial transformation and structural change, these actions impede better job creation and they do not contribute to productivity.

Regional development should focus on “bringing jobs to people” in a bottom-up approach. Similarly, regional development policy should focus on leveling the playing field for lagging regions by - as it is the intention - aim at converging them in terms of service provision. Having said that, there are two caveats to this approach. First, technology is again a force to tap into and utilize to provide costly services (e.g., health and education to remote and sparsely populated villages (e.g., e-health in Sweden). Second, and very importantly, regional development policy also should be applicable to the regions. Critical ownership by region, and the bottom-up involvement in a competitive strategy, should be at the core of planning efforts in corresponding agencies. The aim should be to avoid compensatory policies to lagging regions and, instead, focus on “bringing jobs to people” by tapping into their possible specializations. For instance, the regions of Akmola and Karaganda can continue to foster manufacturing (Figure 2.8A and Figure 2.8B); that of North Kazakhstan can take similar steps to support agriculture (Figure 2.8C); and the City of Almaty should take advantage of emerging specializations in finance and professional services (Figure 2.8D). What is paramount is that the regions, themselves, are able to decide the specializations they wish to develop.

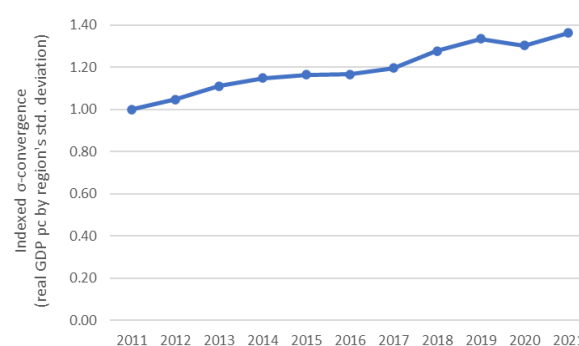
⁷ According to the World Bank (World Bank 2023a), more than one in five workers in Kazakhstan are in vulnerable employment. While the vulnerable share of total employment has been steadily decreasing, it still represents a considerable share of total employment.

Figure 2.7. Kazakhstan: Spatial Transformation

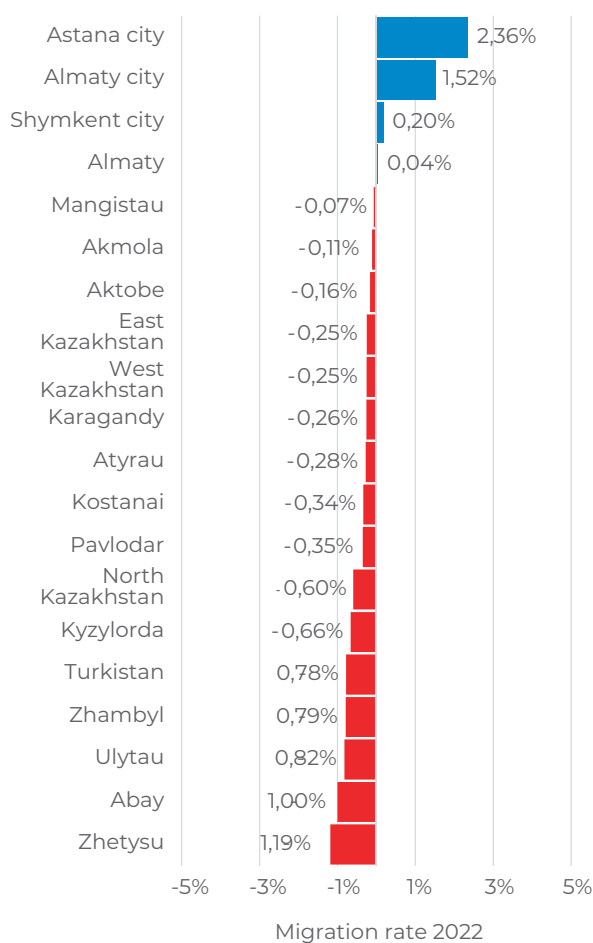
A. Urbanization



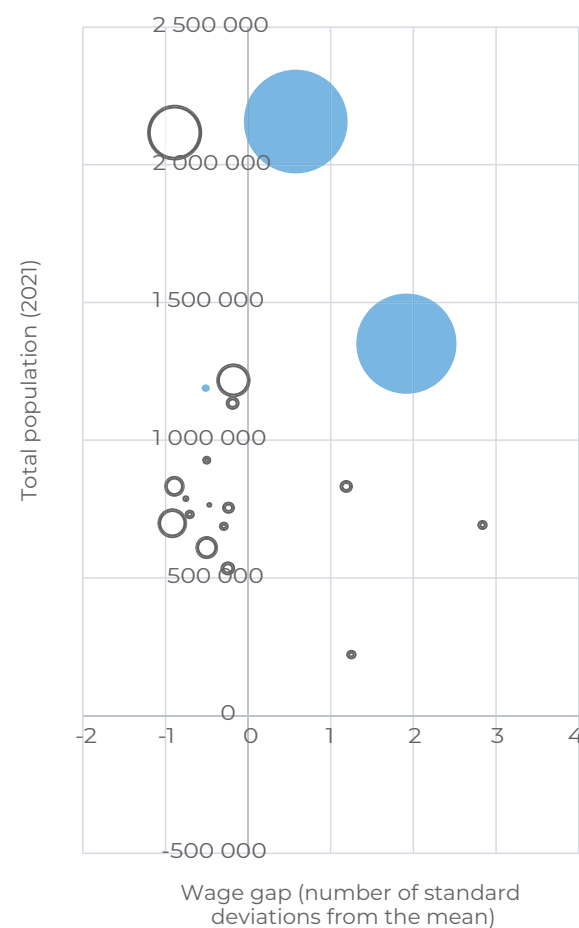
B. Regional Inequality



C. Net Migration



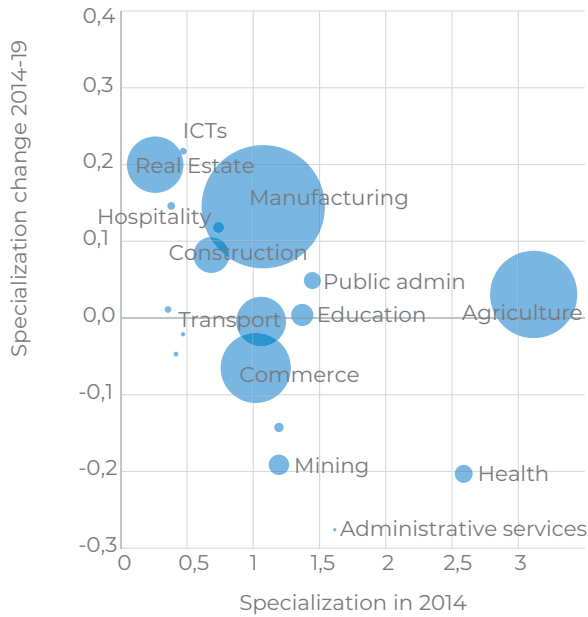
D. Migration and Wage Gaps



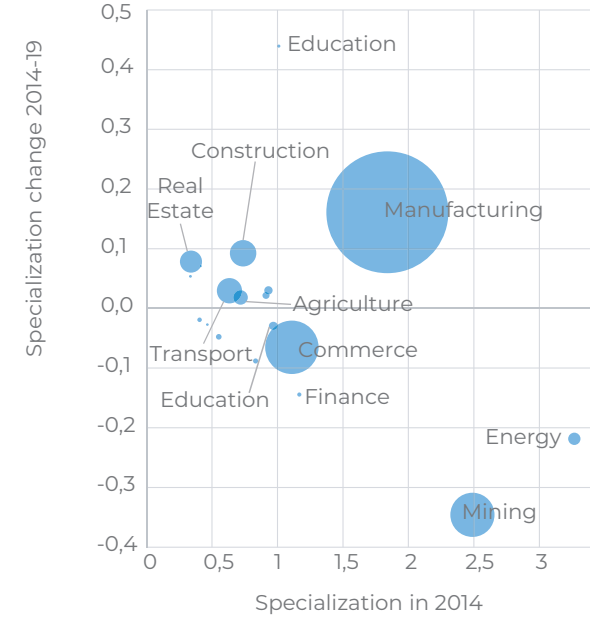
Sources: Panel A - "Jobs Diagnostics" (WorldBank 2023b); Panel B: Staff calculations based on Kazakhstan's Bureau of Statistics (GovK 2022) by region; and Panel C and Panel D: Staff calculations based on Kazakhstan's Bureau of National Statistics (GovK 2023b).

Figure 2.8. Kazakhstan: Regional Specialization Examples

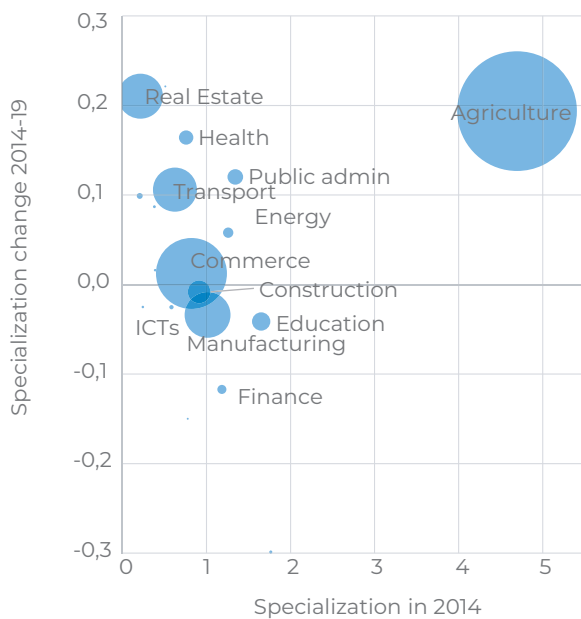
A. Akmola Region: Specialization



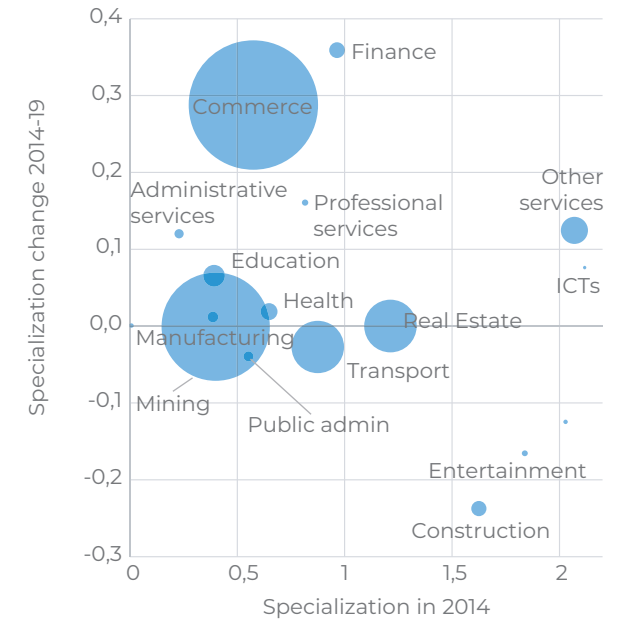
B. Karaganda Region: Specialization



C. North Kazakhstan Region: Specialization



D. City of Almaty: Specialization



Source: Staff calculations based on Kazakhstan's Bureau of National Statistics (GovK 2022).

Note: The bubbles represent the size of gross domestic product in 2021.



Preparing People for Jobs Now and in the Future

Skills are central for the future of Kazakhstan's labor market. Kazakh workers need for jobs is mounting, not only in number but also in terms of quality and access. Demographic changes are on the brink of leading to a pressing need for more jobs. At the same time, other megatrends (e.g., digital transformation, automation, and climate change) are compelling the need to prepare workers not only for current jobs, but also for the emerging future job market. Shortcomings on foundational skills, knowledge application, and skills mismatches with respect to labor demand have never been more in need of addressing than now. Skills upgrading and reskilling are challenges that will require not only changes within educational and TVET systems, but also in the private sector to ensure that skills development responds to its needs. Challenges stemming from these megatrends underline a need to address skills-development shortcomings by also aligning them to potential future needs and fostering a lifelong learning culture.

Preparing Workers for (More) Jobs

Higher fertility rates fueling dependency ratios have shaped changes in the population structure.

Since the turn of the century, fertility rates in Kazakhstan were on the rise. Between 1988 and 1999, however, fertility rates plummeted to an annual average rate of -5 percent, (Figure 3.1A). Since then, annual fertility rate increase provided a much-needed recovery in population. Despite the tapering off to 1.9 percent, the 2020 rate of 3.13 children per woman remained significantly higher than the 2.1 replacement fertility rate.⁸ This progress, however, calls for a growing need for early childhood development (ECD) and schooling. Young dependency ratios in 2021 stood at 47 percent of working age population (Figure 3.1B), which is roughly the same observed prior to the country's independence. The current population structure presents a youth bulge from age 0 to 10 (Figure 3.1C). With forecasts to 2030 showing the age cohort slightly contracting, it nevertheless will still reflect the largest cohort in Kazakhstan (Figure 3.1D).

The education system therefore needs to prepare to upgrade coverage and access to schooling.

Population changes can be translated into a growing need for schooling. In pre-primary school, gross enrolment had increased during the past decade (Figure 3.2A). While the trend in growth continues, there is now a shortage of accommodation to satisfy the increasing numbers.⁹ As a result, despite pre-primary schooling is compulsory in Kazakhstan, one in every four children in that age group fails to receive the corresponding instruction (Figure 3.2B). What is more, in 2018 nearly half of all children had not attended

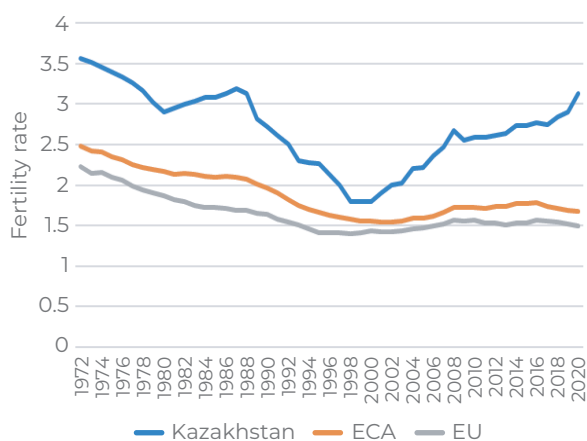
⁸ Replacement fertility represents the rate at which each generation replaces the previous, thus leading to zero population growth for a given rate of mortality and an absence of migration, or to the net reproduction rate equal to one. Replacement fertility varies with the mortality rate; the higher the mortality rate in a given population, the higher the replacement in terms of fertility. For low-mortality populations, replacement fertility is above two births per woman, often approximated by a rate of 2.1 births per woman (UN 2015).

⁹ Gross enrollment ratio is the ratio of total enrollment, regardless of age, to the population of the age group.

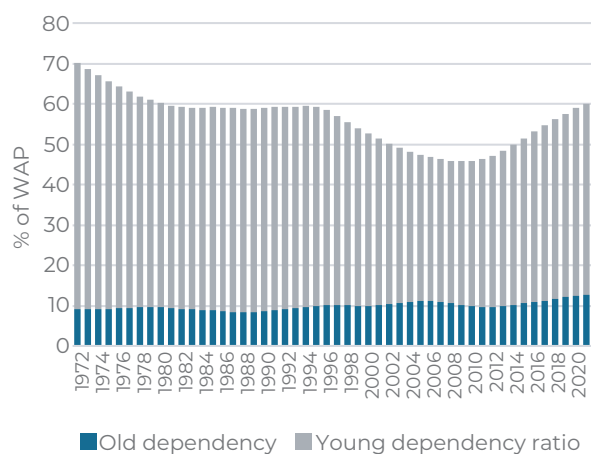


Figure 3.1. Kazakhstan: Mounting Need for Jobs

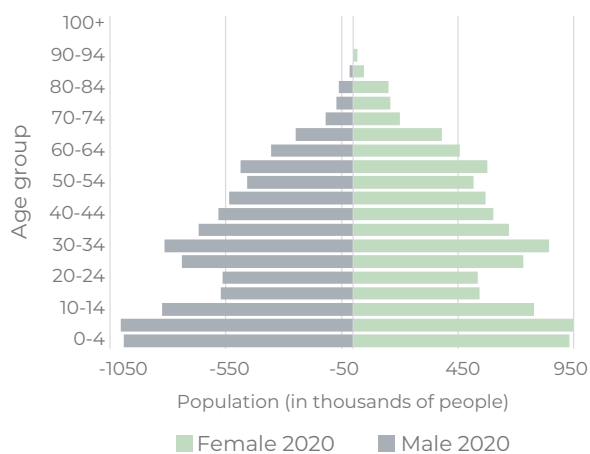
A. Fertility Rates, 1972–2020



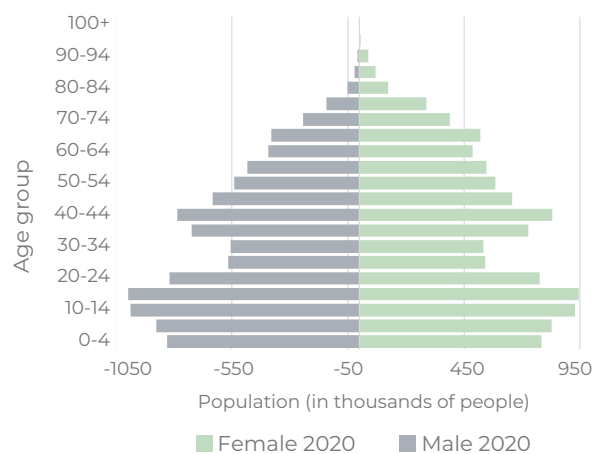
B. Dependency Ratios, 1972–2020



C. Population Structure by Age, 2020



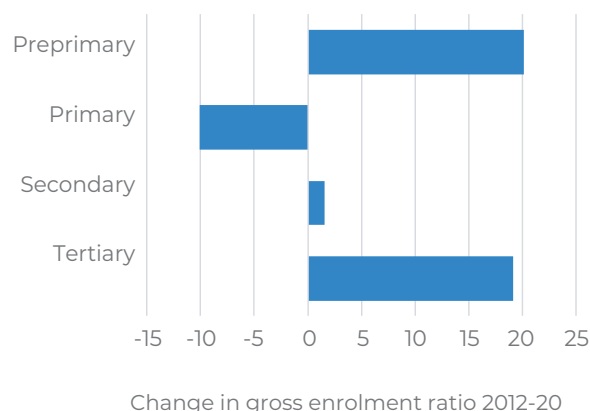
D. Population Structure by Age, 2030



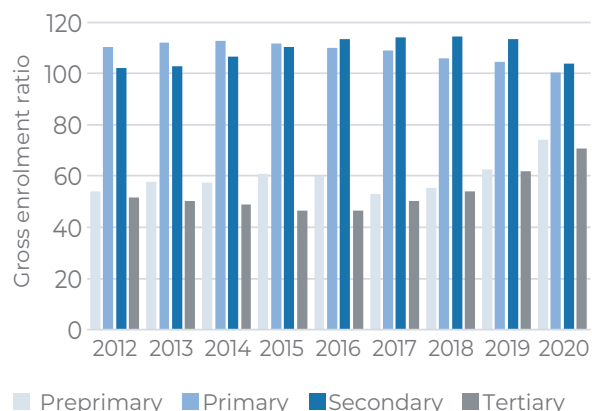
Source: Staff calculations based on "World Development Indicators" (World Bank 2023).

Figure 3.2. Kazakhstan: Enrolment by Level

A. Change in Enrolment, 2012–20



B. Enrolment by Schooling Level, 2012–20

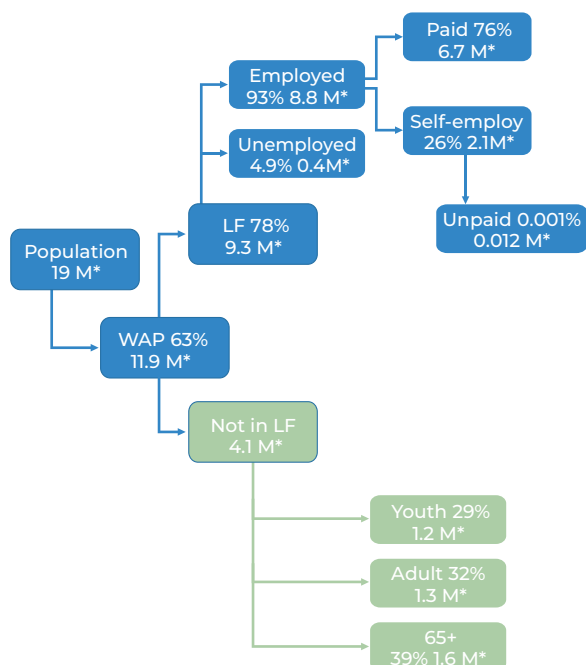


Source: Based on UNESCO (2017).

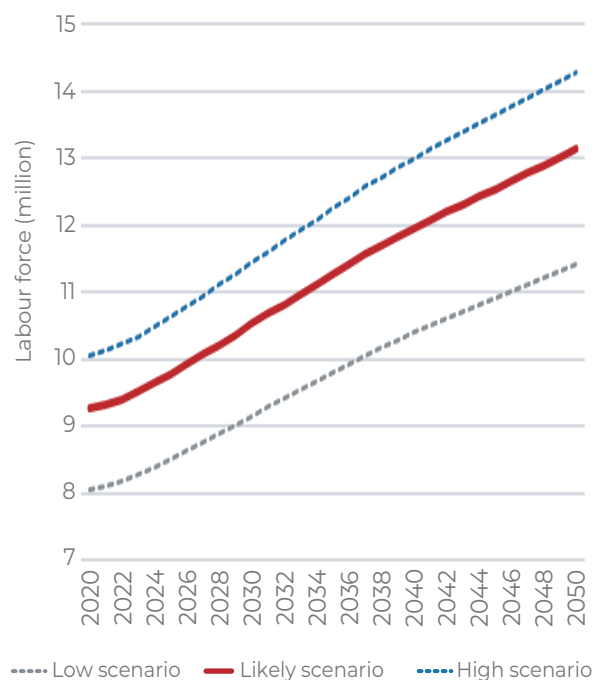
Note: Gross enrolment ratio is the ratio of total enrollment, regardless of age, to the population of the age group that officially corresponds to the level of education shown. Pre-primary education refers to programs at the initial stage of organized instruction, designed primarily to introduce very young children to a school-type environment and to provide a bridge between home and school.

Figure 3.3. Kazakhstan: Labor Force

A. Labor Force



B. Labor Force Estimates, 2020–50



Sources: Panel A: Staff calculations based on WDC (2021); and Panel B: Staff calculations based on UN (2023).

Notes: Panel B: Scenarios were built using different labor force participation rates and United Nations population projections to 2050 according to: 60 percent (low), 69 percent (likely and last available data point for Kazakhstan), and 75 percent (high).

pre-primary school; those who had done so, received less than a year's worth (OECD 2020). These figures are even more concerning since primary school in Kazakhstan starts only until the age of seven. There is also a potential dispersion in the quality of education at that level since it can be provided not only by schools, but also by other organizations, as well as at home (Mullis et al. 2019). Given that the physical characteristics of learning spaces have a significant impact on educational progress (Barrett et. al., 2019), home schooling represents not only a challenge but also an opportunity in a time of digital transformation.

Kazakhstan could establish mechanisms to support firms (Chapter II) to address the mounting need for (more) jobs. These demographic changes will exacerbate the need for more jobs. Recent unemployment rates (lower than 5 percent) in Kazakhstan may also reflect the narrowing of the population pyramid base (Figure 3.1C). Youth (age cohorts of 15–19 years of age and 20–24 years of age) and, to a lesser extent, the 25–29-year-old group, show a significant reduction in size.¹⁰ That narrowing of the pyramid base could lead to a reduction in the number of jobs needed in the economy. United Nations (UN) population projections show a change in the current decade. By 2030, Kazakhstan will face a near-doubling of its youth (Figure 3.1D). That increase translates into a significant increase in the need for education (tertiary and TVET) and, more importantly, in the need for jobs. While current unemployment stands at 4.9 percent (Figure 3.3A), UN population estimates show an increase in the labor force. A likely scenario, using the current labor force participation rate (69 percent), shows that by 2029 Kazakhstan will have 1 million more workers seeking employment compared to 2022 (Figure 3.3B). By 2036, the need for additional new jobs could be up to 2 million compared to 2022.

Upgrading Skills for Better Jobs

The jobs challenge lies not only in terms of quantity, but also quality. Job quality can be defined in multiple ways. The OECD focuses on earnings, job security, and working environment. A World Bank review of other definitions found that an additional dimension is job benefit (Hovhannisyan et. al. 2022). Evidence indicates that job quality is associated to sectoral productivity, formality, education, and urbanization. Upgrading job quality in Kazakhstan would require (i) fostering productivity through capital investment (Chapter II), (ii) addressing informality focusing on skills development, and allowing for urbanization (Chapter II).

Addressing informality is likely to be one of the most important aspects in employment strategy. Earnings in Kazakhstan have been, on average, growing since the end of 2015, and have recently recovered from a deep reduction during the COVID-19 pandemic (Figure 3.4A). Although self-employment has been contracting as a share of labor force, it still constitutes one-fourth of all workers (Figure 3.4B). Not all workers in self-employment are in low-quality jobs, but the lion's share is. Nearly all self-employment - albeit as it declines - is considered vulnerable employment (Figure 3.4C).¹¹

Informality and vulnerable employment should be addressed through leveling of the playing field, ensuring regulations are effectively applied, and providing incentives to formalize. In the long-run, productivity growth will drive wages and will lead to lower informality. But that requires introducing capital (Chapter II), as well as removing pay differences across nationalities, gender, and other distinctions. Among the regulations that need to be monitored for effective application are: (i) improving inspections, (ii) promoting knowledge and compliance with the law, (iii) improving administrative processes for effective coverage (e.g., simplifying social security enrolment, enhancing electronic platforms, digital payments), and (iv) ensuring flexible labor markets so that workers under flexible working arrangements

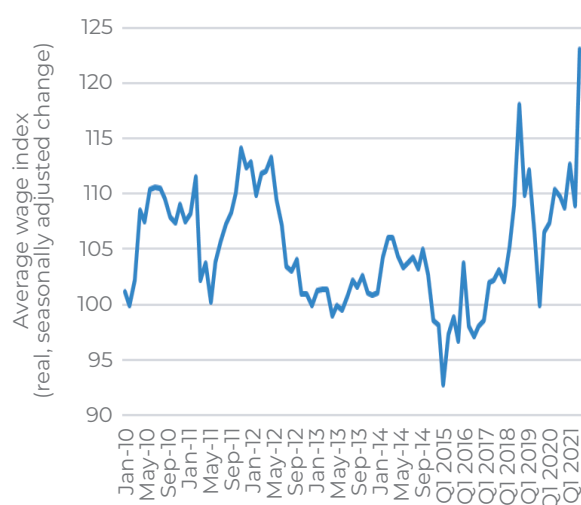
¹⁰ The United Nations, for statistical purposes, defines those persons between the ages of 15 and 24 as youth.

¹¹ Vulnerable employment refers to contributing family workers and own-account workers as a percentage of total employment.

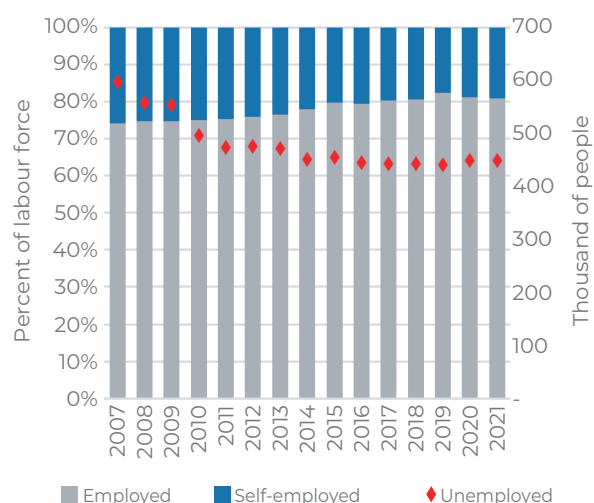
can contribute towards the pension system. On the incentives side, tools such as decreasing contribution rates, introducing a “Gold List of Firms” with perks for businesses that tackle informality, providing incentives to workers by offering additional services within the spectrum of social security (e.g., insurances), and expanding the definition of social security to include voluntary savings schemes and tailoring the system to their needs (Rother et. al. 2022).

Figure 3.4. Kazakhstan: Quality of Jobs

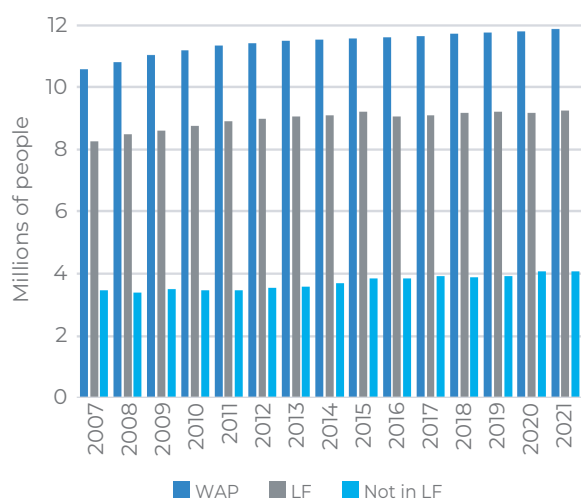
A. Wage Growth, 2010–21



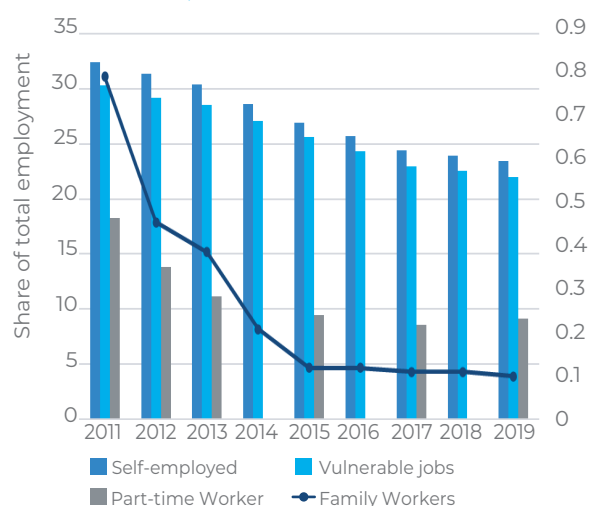
B. Self-Employment, 2007–21



C. Vulnerable Jobs, 2007–21



D. Labour Force, 2007–21

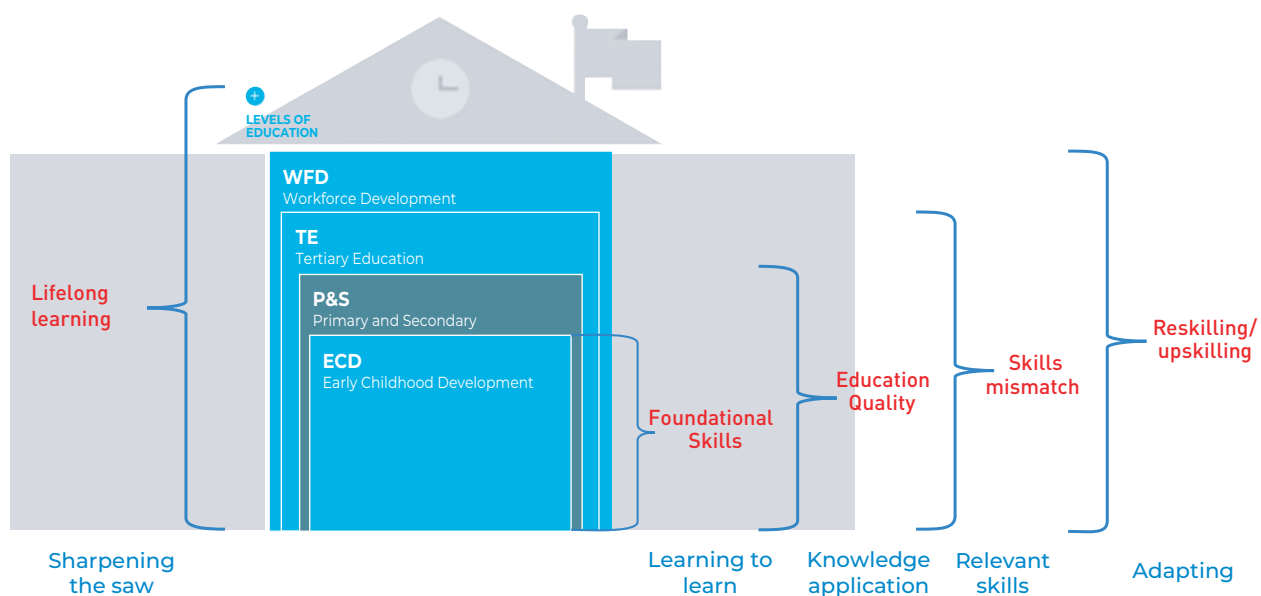


Sources: Panel A: Kazakhstan National Bureau of Statistics (GovK 2023); and Panel B, Panel C, and Panel D: Staff calculations based on “World Development Indicators” (World Bank 2023).

Notes: Panel A: The index for average wages was created using average wage data at constant prices and adjusting seasonal effects by expressing growth on year-on-year terms (with respect to the same month/quarter of the previous year); the series was provided by month, from January 2010 to December 2014, and in quarters from AI 2015 to Q3 2021; and Panel B: Secondary vertical axis on thousands of people corresponds to unemployment only.

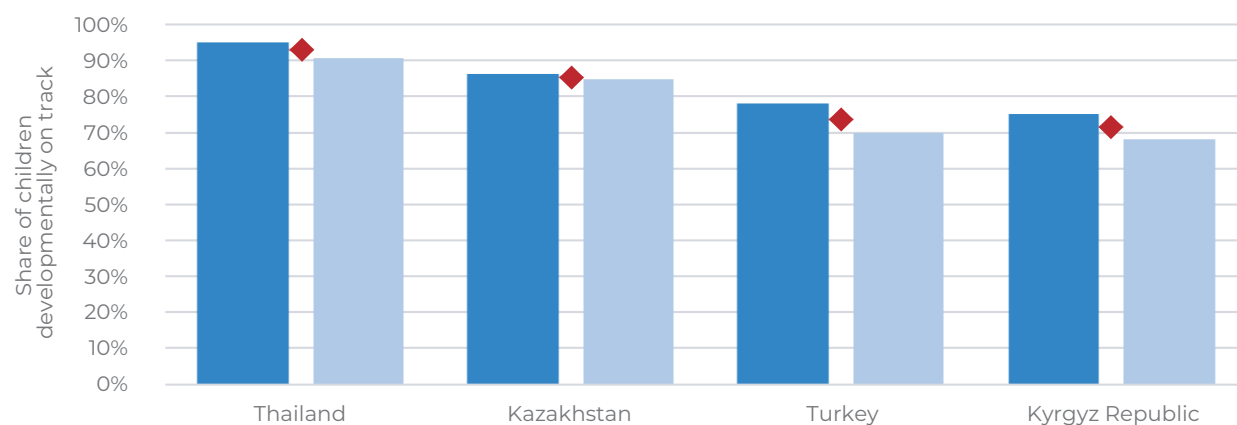
Figure 3.5. Early Childhood Development and Skills Development

A. Education and Skills



Source: Based on World Bank (2021) SABER Annual Report 2020

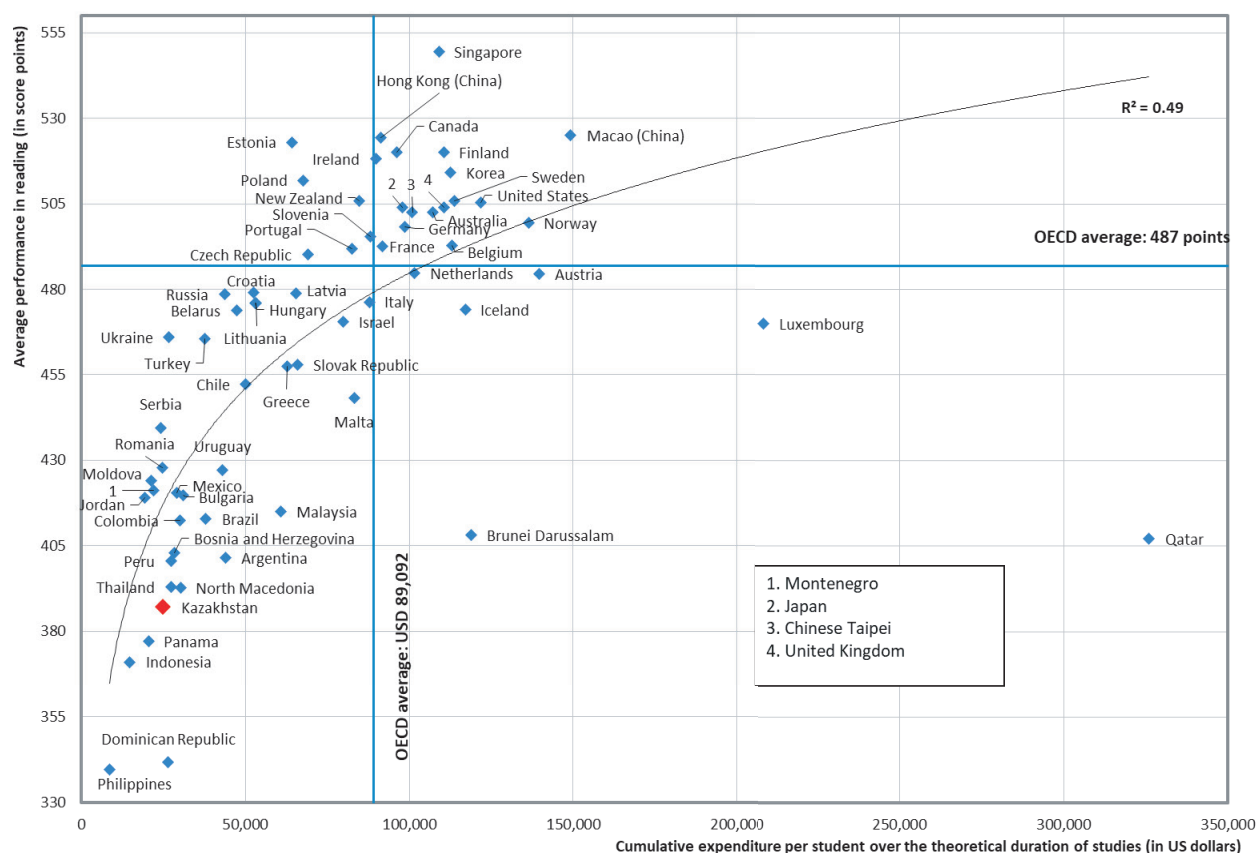
B. Children Developmentally on Track



Sources: Panel A: Based on World Bank (2021a); Panel B: UNICEF (2023); and Panel C: OECD (2019).

Notes: Panel B: Shares represent the percentage of children (aged 36–59 months) developmentally on track in at least three of the four following domains: literacy-numeracy, physical, social-emotional, and learning. Data refers to most recent available value: Kazakhstan (GovK 2015), Kyrgyz Republic (GovKR 2018), Thailand (GovTH 2019), and Türkiye (GovT 2018).

C. Expenditure on Education, by Country



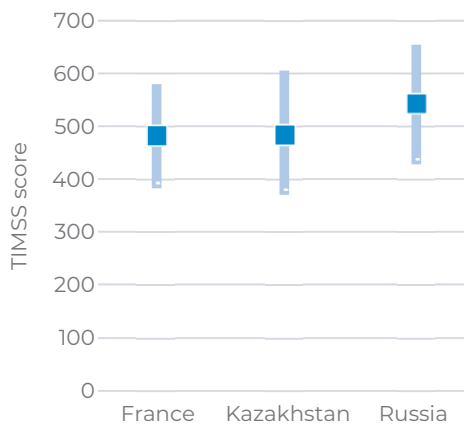
The key to job quality is skills. Education is a central part of skills development, but knowledge is not equivalent to skills. Formal instruction is an effective tool to provide students with knowledge, but skills development requires them to be able to apply that knowledge. A country's educational system provides both, knowledge and skills (Figure 3.5A). Foundational skills¹² as the cornerstone of learning, are provided during a child's ECD years.¹³ Building upon these, further knowledge is provided in primary and secondary schooling, and when combined with its application, can deliver quality education and skills. Globally, by the end of secondary levels, 60 percent of students will not continue with higher education and will become part of the labour force –that number for Kazakhstan is much lower at around 30 percent. Some of those students, will be facing a skills mismatch between what they were able to acquire in the educational system and what the labor market demands. Remedial actions are often the role of TVET systems, leading to reskilling, so as to have the capacity to adapt to private sector needs. Those students who graduate from tertiary education possess higher skills for first-rate jobs, but the type of degree may constitute another type of mismatch. Throughout their life, students and workers alike, especially today, will be confronted with the need to acquire new knowledge to transform it into skills leading to a lifelong learning (LLL) effort.

¹² Literacy, numeracy, and transferable skills.

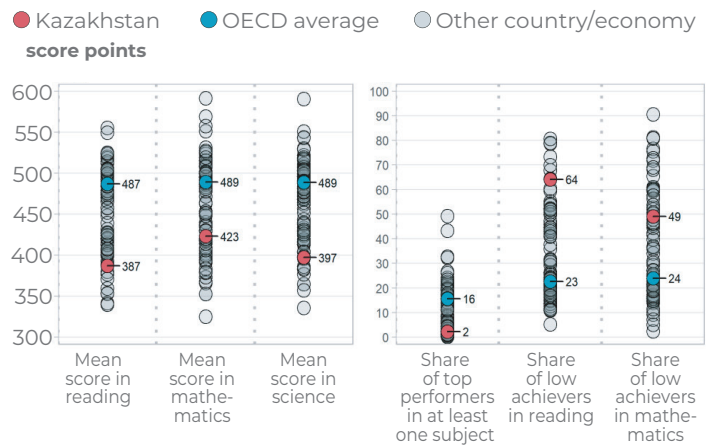
¹³ From conception to eight years old (when more than 1 million neural connections are formed each second (Harvard University 2017))

Figure 3.6. Education, Knowledge, and Skills

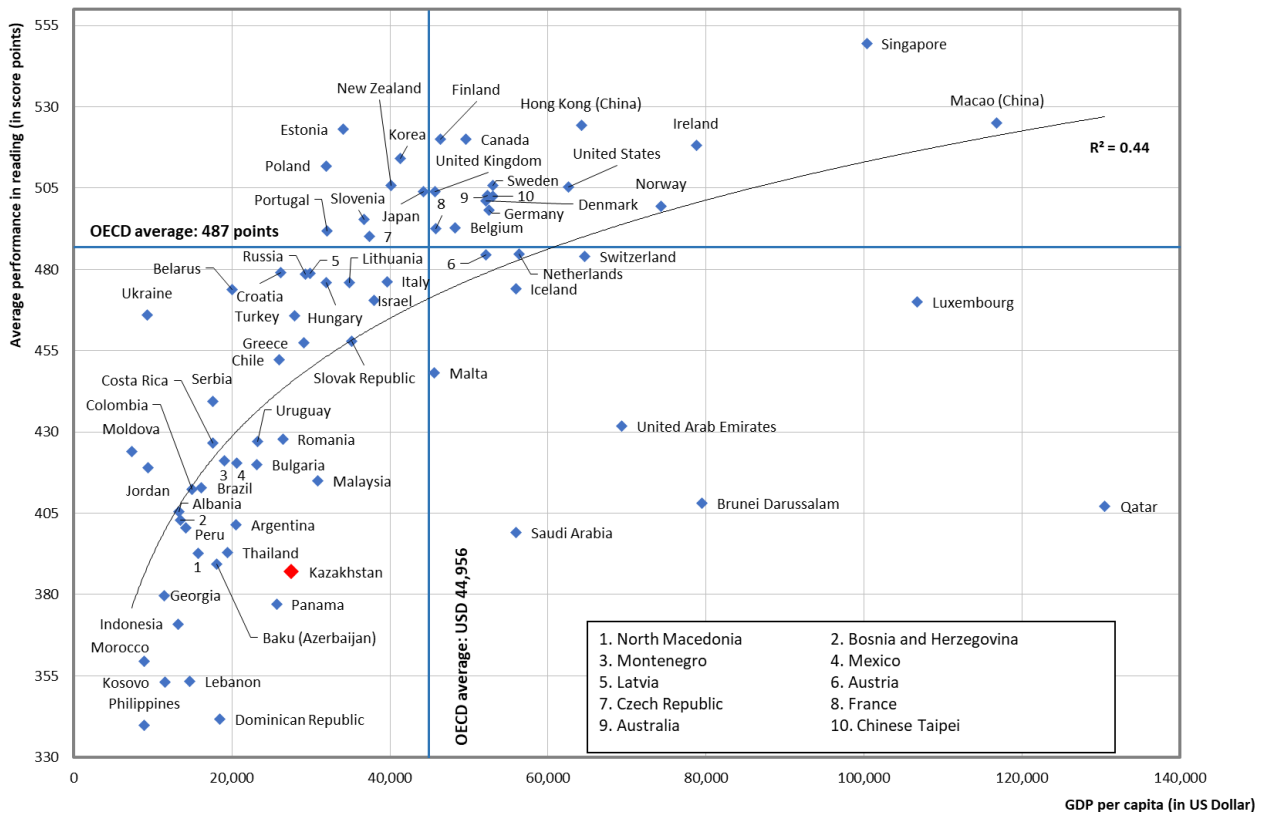
A. Education and Knowledge, by Country



B. Education and Skills, by Regions and Country



C. Expenditure on Education, by Country



Sources: Panel A: NCES (2023); Panel B: OECD (2018); and Panel C: OECD (2019).

Notes: Panel A: Trends in International Mathematics and Science Study (TIMSS) scores depicted narrower lines that represent dispersion between the subject with the lowest and the highest scores for each country.

The skills-development system must ensure that every child has an opportunity to learn and develop foundational skills. ECD provides the basis to be able to learn and relearn. The latest available data show that 85 percent of Kazakh children under the age of five are developmentally on track (Figure 3.5B), including in terms of foundational skills development. However, much more can be done to expand pre-primary children in ECD. First, securing sufficient resources for education seems to be a feasible objective, given that Kazakhstan ranks low in expenditure per student (Figure 3.5C). It is possible that further resources can contribute towards better educational outcomes. According to Lynch and Vaghul (2015), for every US\$1 spent, there potentially is an eightfold return on investment. Second, an integrated approach to ECD can be useful to address quality and disparities in coverage. It is not only about more resources, but about the effectiveness with which these are invested. An integrated approach to ECD that includes perceptual, physical, mental, linguistic, emotional, and social aspects of development can offer benefits in terms of quality. By expanding infrastructure to welcome more children into pre-primary education, such an approach can: (i) provide comprehensive services (e.g., infant stimulation, parental education, prevention of abuse); (ii) ensure there is care continuity from the prenatal period to eight years of age; (iii) prevent unintended discrimination through lack of coverage; (iv) offer parental education and community involvement; and (iv) serve special needs children (Vargas-Baron 2005).

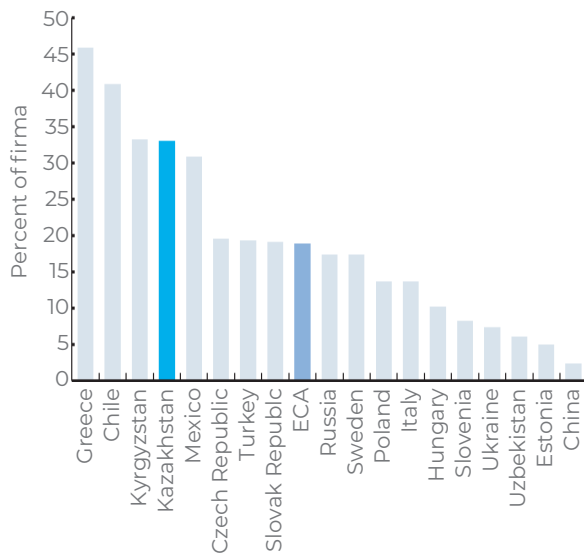
Kazakhstan should build on the success of knowledge provision in order to transform it into skills. Kazakhstan has an effective educational system to provide knowledge to students. Measured by the Trends in International Mathematics and Science Study (TIMSS) test, Kazakhstan's results are similar to such OECD countries as France, albeit with slightly greater dispersion (Figure 3.6A). When the test focuses on applying knowledge (i.e., skills) using the Programme for International Student Assessment (PISA), however, the results are less favorable. According to the latest available data (2018), Kazakhstan lagged behind the OECD's average results in all three sections (i.e., reading, mathematics, and science). But at the same time, Kazakhstan's results display less dispersion: with fewer children outperforming or underperforming (Figure 3.6B). However, for its level of income (i.e. GDP per capita), Kazakhstan's results fall short. Other countries at Kazakhstan's income level, such as Chile or Romania, show better PISA results (Figure 3.6C). Results underscore the need for change in the educational system to assist students in not only acquiring knowledge, but also the know-how to use it. In the process, the system should also seek ways in which to foster students' emotional intelligence, critical thinking, creativity, self-discipline, curiosity, and a sense of belonging and purpose. Curricula reform is therefore needed, but just as importantly is its delivery: the quality of teaching must continue to rise. Kazakhstan's Orleu (TVET) system recently included some new areas to enhance quality, such as critical thinking, but others continue to require attention. It is important that these changes are extended throughout the entire system, from pre-primary to secondary education.

Making Jobs More Accessible

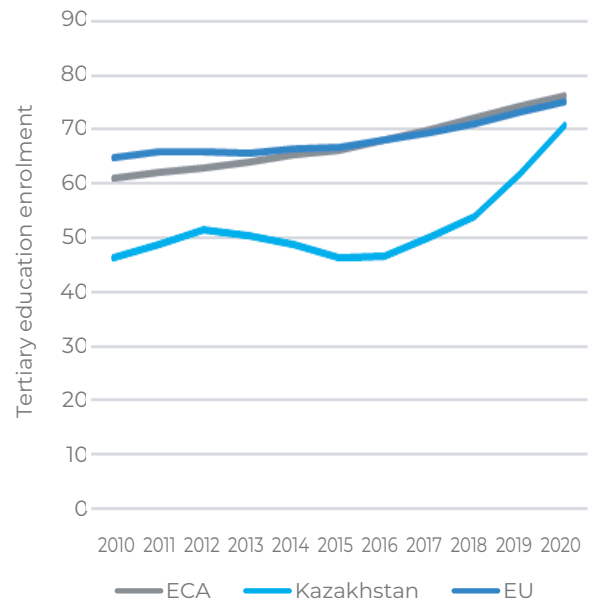
Vertical and horizontal skills mismatches may limit quality job creation and make access to jobs more challenging. Once formal education (at the secondary and tertiary levels) is completed, the question is whether knowledge acquired by students, results in market-relevant skills. In Kazakhstan, The World Bank's Enterprise Surveys (World Bank 2023c) indicate that at least one-third of Kazakh firms operate at a low-skill level - a major constraint (Figure 3.7A). This signals that, from the firm's standpoint, there is a horizontal skill mismatch. If such is the case, it can be assumed that at least the content/knowledge acquired is not up to par with demand. The vertical level, pertaining to studies, also can be a mismatch, although it is much less prevalent in Kazakhstan, affecting less than 0.8 percent of workers. Thus both types of mismatch, vertical and horizontal, exist in Kazakhstan despite the variations in negative effect on earnings by industry. In effect, at 7.1 percent, the horizontal mismatch is nine times more prevalent

Figure 3.7. Mismatch of Skills

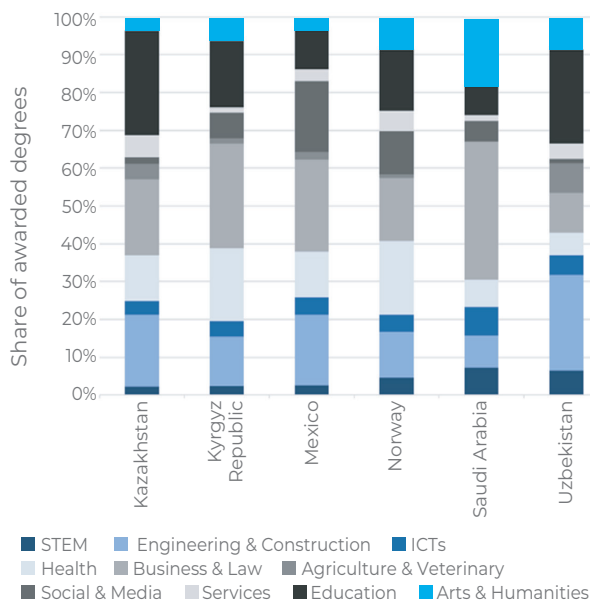
A. Low Skills, by Country



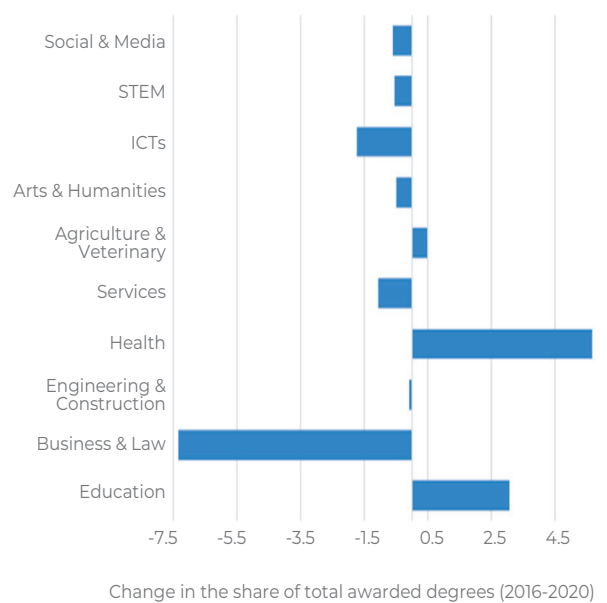
B. Tertiary Education Enrolment



C. Degrees Awarded by Discipline, by Country



D. Change in Degrees Awarded



Sources: Panel A: Based on "Enterprise Surveys" (World Bank 2023c); Panel B: "World Development Indicators" (World Bank 2023); and Panel C and Panel D: UNESCO (2020).

Notes: Panel A: Percent of firms that indicated low skills as a major constraint for business; Panel B: Tertiary education enrolment relates to the number of secondary school graduates, regardless of age, who were successfully enrolled in tertiary education, including universities and educational institutions; and Panel D: Percentage change between 2016 and 2020.

than that of the vertical, at 0.8 percent. It is those workers with both aspects of mismatch who are faced with the steepest market disadvantage (Serikbayeva and Abdulla 2022).¹⁴ Mismatches tend to be higher among the self-employed and those workers in part-time paid employment, with around only one-third in either group correctly matched. While full-time workers will experience much higher success in job matching, nearly one in four will face the disadvantages of a mismatch (Serikbayeva and Abdulla 2022). Earnings for vertically mismatched workers, on average, are 10 percent lower, while on a horizontal basis, earnings are 12 percent less. With a double mismatch, earnings can be up to 25 percent less.¹⁵

College degrees are less aligned to productive activities and may reflect a horizontal mismatch based on the field of study. In the absence of data relating to the skill mismatch of workers without a tertiary education in Kazakhstan, data relating to college degrees shows that gross tertiary education enrolment has increased dramatically, from 47 percent in 2016 to 71 percent in 2020 (Figure 3.7B). This partially corresponds with enrolment rates in the Europe and Central Asia regions. Almost two-thirds of degrees are awarded in fields that are relatively general (e.g., social, media, education), with only over one-third in degrees for occupations of higher productivity (e.g., information and communications technology (ICT); disciplines of science, technology, engineering, and mathematics (STEM)) (Figure 3.7C; Chapter II). STEM and ICT degrees are on the decline (Figure 3.7D), with health education steadily rising - a welcome transformation. Mismatch in the fields of study is exemplified in that of ICT, whereby less than one-third of college graduates are actually employed in that field (WDC 2022) (Table 3.1).

To bridge this gap for more job accessibility, it will require a Labor Market Information System (LMIS). For an LMIS to be effective, it should be able to: (i) match workers' skills to demand, (ii) signal to future workers what skills are in demand, and (iii) provide information to anticipate future trends in competencies. Nevertheless, job matching in the labor market will never be ideal since agents' make decisions under imperfect information (ETF/CEDEFOP/ILO 2016). Skills mismatches can result in limited or imperfect access to jobs: initial unemployment, increased cost in job search, underemployment, underutilization of skills investment, and decreased job satisfaction. For firms, the consequences include higher recruitment costs, lower productivity, and/or insufficient quality of work as a result of lower/inadequate employee skills. For the economy, these suboptimal outcomes result in a decrease in wages, sluggish growth, and a reduction in public revenue. According to OECD (2021), an LMIS in Kazakhstan should focus on: (i) strengthening skills assessments and anticipating the necessary tools; (ii) creating an enabling environment for an effective skills information system; and (iii) enhancing information relating to the use of skills in order to not only inform policymakers but also stakeholders' choices. In addition, an effective LMIS should be expected to provide career and skills guidance, as well as to deliver labor market intelligence with information on its outcomes and policy/program impacts for all agents in the economy (World Bank 2021b). A good example of an advanced and effective LMIS is the Work-Net employment information platform (GovSK 2023) of the Republic of Korea - a one-stop e-government solution for jobs that span across ministerial programs (Meacham et. al. 2019).¹⁶

Clear disparities in skills development across regions and income groups may lead to frictions in terms of accessing jobs. Improved Kazakhstan's fertility rates' boost to population growth have been favouring urban areas -even more so since 2012 (Figure 3.8A). Migration trends may exacerbate concentration, particularly in the largest two cities: Astana and Almaty. The trend may be a blessing for some. Urban dwellers -and those migrants heading there - typically enjoy better access to quality education/skills

¹⁴ Vertical mismatch occurs when the worker's level of skills/education is higher/lower than the level of skills/education required by the employer; in other words, overeducation or undereducation. Horizontal mismatch relates to a workers' skills not matching the requirements of the job. This can occur when a job does not match the field of study, or there is a gap between the knowledge gained from the educational system and the required job competencies.

¹⁵ Controlling for human capital characteristics: education, work experience, and tenure.

¹⁶ Choi (2021) discusses the potential of applying Big Data approaches to improve support to individual workers in the Republic of Korea.

Table 3.1. Kazakhstan: College Graduates Employed in Information and Communications Technology

	2019	2020	2021	2019-2021	Average salary, thousand tenge	Share
□ Total graduates	9,759	11,390	12,902	34,051	-	-
■ Data available	3,690	3,837	4,118	11,645	257.3	100%
■ Work as per initial specialty	1,096	1,168	1,372	3,636	366.1	31%
■ Work out of initial specialty	2,459	2 562	2 588	7,609	202.4	65%
■ IT teachers in universities and colleges	67	51	58	176	256.6	2%
■ Computer science teachers	68	56	100	224	200.7	2%
■ No data	6,069	7,553	8,784	22,406	-	-

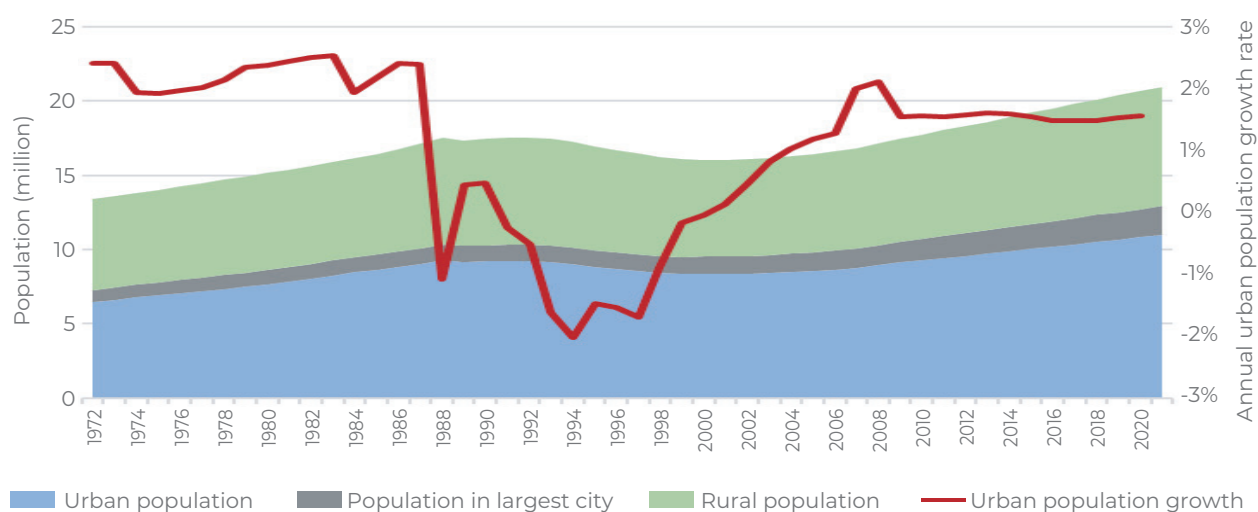
Source: WDC (2022).

development. Urban students outperform their rural peers in both, reading and mathematics (Figure 3.8B). While all regions (with the exception of Astana and Almaty) lagging behind the OECD's PISA average (Figure 3.8C). Natural population growth and migration patterns (Chapter II) may therefore contribute to a growing number of children able to access better schools and acquire more adequate skills for the labor market, in turn be employed with better conditions and earnings. This so-called "urban advantage" applies to most countries, whereby urban schools tend to have better performance ratings, are larger and have more resources and autonomy in deciding how to employ them (OECD 2013). Similarly, more affluent students tend to outperform those who are disadvantaged, the latter of whom may later face a similar skills mismatch and reduced earnings (Figure 3.8B).

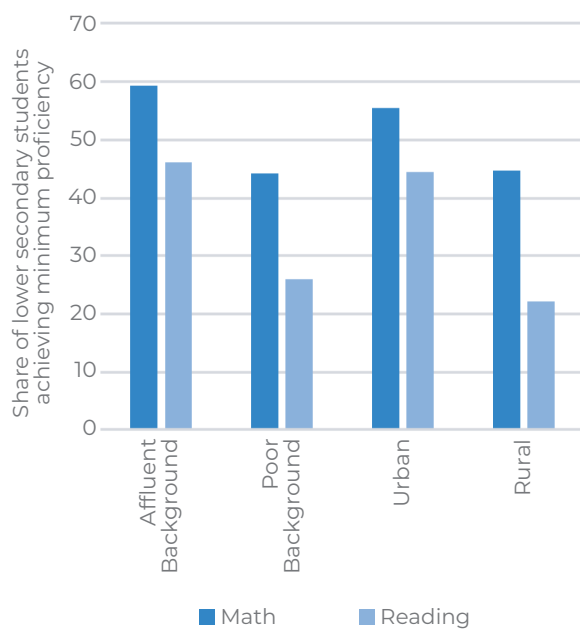
Policies should also address the clear disparities in job access, not only across regions but also across income groups. Skills development should ensure an improved access to better education for rural students. In Australia, a dedicated Rural and Distance Education Unit sets the strategy and actions to address students, teachers, and education leaders' needs in rural/remote areas by focusing on expanding access to ECD, providing incentives to attract and retain qualified teachers, and virtual schooling. In the United States the "grow your own" model for teacher identification among locals and has strengthened the supply of qualified teachers in rural settings. France's *Plan mercredi* (Wednesday Plan) is an effort to carve in professional development time for teachers during the week. Mexico's *Redes de Tutoría*

Figure 3.8. Kazakhstan: Barriers to Job Access

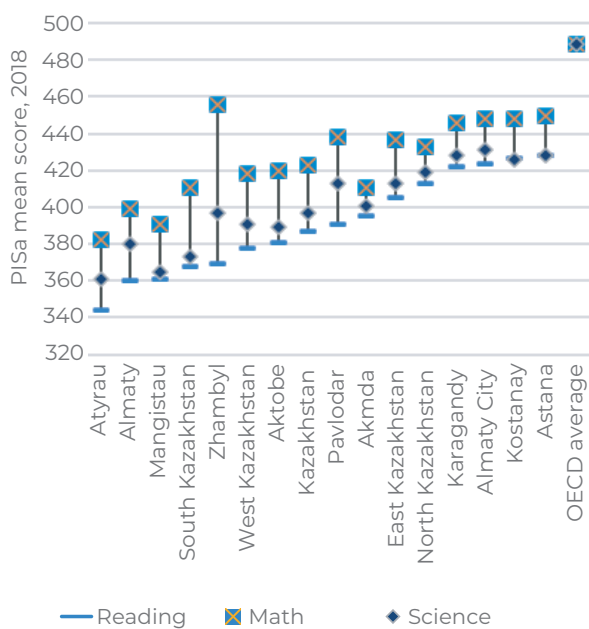
A. Urban and Rural Population



B. Access to Skills Development



C. Spatial Skills Disparities, by City



Sources: Panel A: "World Development Indicators" (World Bank 2023); Panel B and Panel C: OECD (2018); and Panel C and Panel D: UNESCO (2020).

Notes: Panel A: Urban population growth measured on the right-hand side vertical axis; Panel B: Regional vertical lines indicate inter-subject score dispersion; and Panel C: Minimum proficiency corresponds to PISA Level 2 results.

(Tutoring Networks) promote learning model focuses on tutoring networks—including senior students - to establish and run learning communities. Similar rural school clusters have emerged in Spain, which have enabled them to share administrative and management resources, teachers, and education materials (Echazarra and Radinger 2019). This pooling of resources - at a greater level than what can be achieved by a single village or small town - , allows for efficiency and effectiveness gains. Just as importantly, is the use of ICT (i.e., computers, tablets, smart phones, interactive whiteboards, digital platforms enabled all by the Internet), which strengthens the quality of teaching quality, as well as boosts student motivation and performance. For it to be effective, infrastructure and teachers' professional development are both needed to effectively use technology.

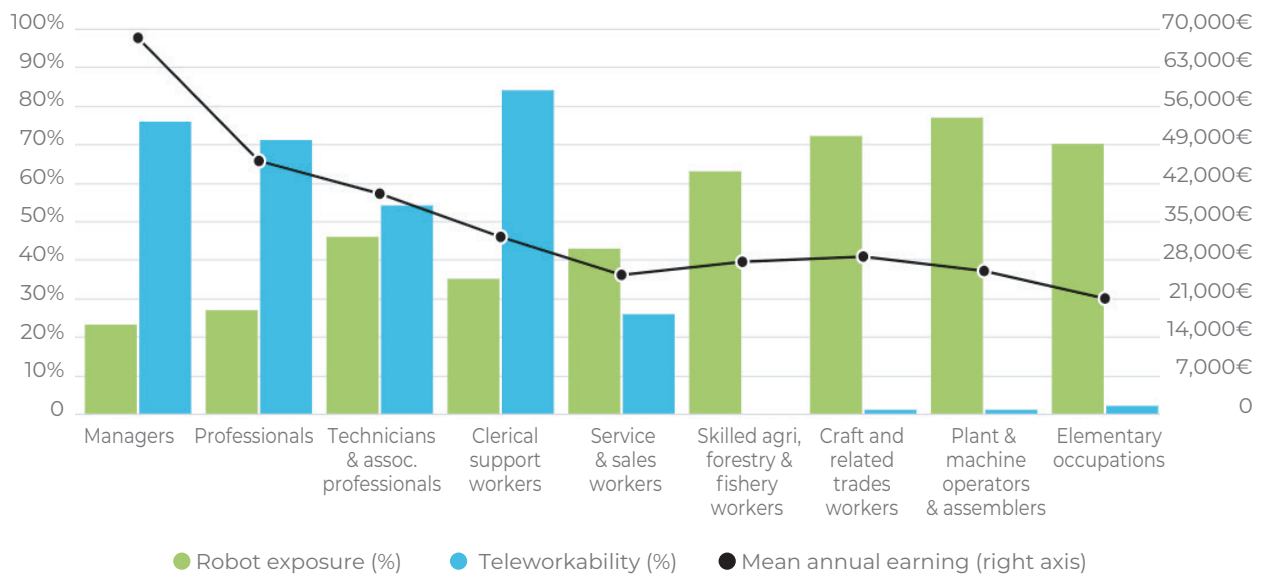
Sharpening the Saw

Foundational skills and soft skills, alike, will determine the ability of workers to transition to a future labor market. Automation already in place worldwide, will make almost all professions exposed to some degree. Furthermore, the more an occupation is carried out with routine tasks, the more it eventually will be affected by automation (Figure 3.9A). Digital transformation will also affect the nature of work - already accelerated as a result of the COVID-19 pandemic. For instance, teleworking has increased and will continue to transform those occupations demanding higher skills (Figure 3.9A). These two simultaneous phenomena affect those with a lower set of skills in their search for employment. On the one hand, automation eliminates a number of routine and low-skill jobs and offers the opportunity for better jobs while, on the other, digitalization not only represents a barrier in the search for future employment but also a demand for new skills. Moreover, the impacts of climate change already have called for technological advancements in OECD countries in terms of policymaking and mitigation efforts, thus evolving the job market into a demand for more skills-intensive jobs. Greener jobs require greater skills—including foundational - and employ them more intensively than traditional ("brown") jobs (Figure 3.9B). In general, the skills for future jobs include foundational skills as a necessary condition to learn and relearn, but many other non-cognitive (i.e. interpersonal, leadership, digital) that will also be necessary for workers' transition into the future labor market (Figure 3.9C).

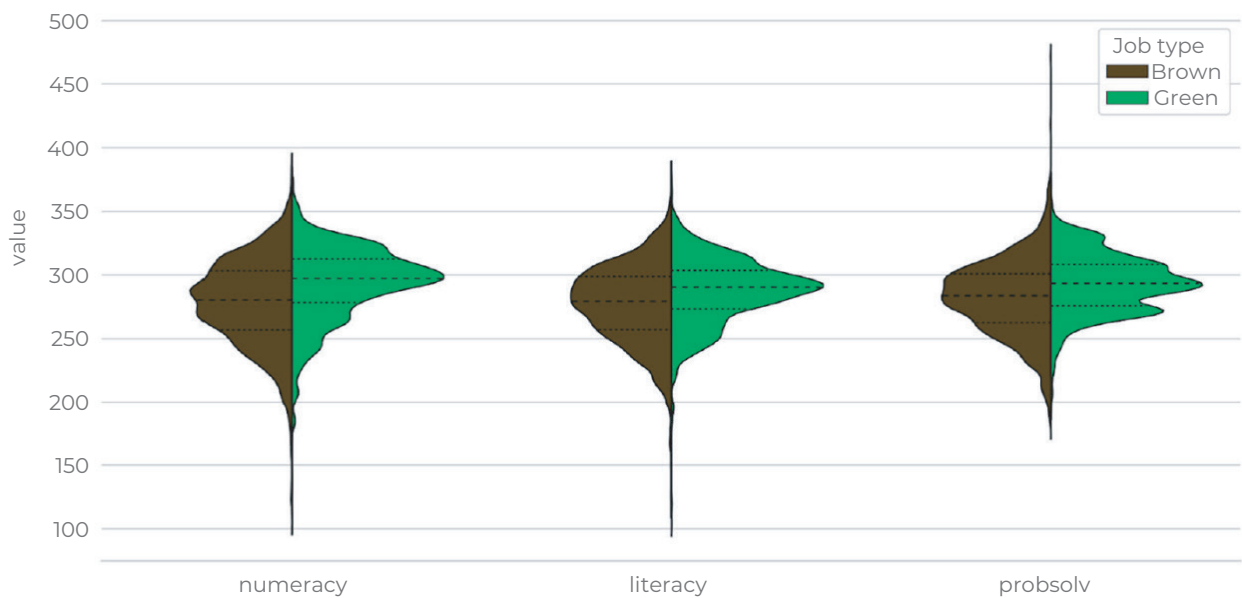
An LLL approach will encourage early and continuous skills development within and beyond formal schooling. The science of brain development attests to the fact that to mature properly, a child's growing brain requires nurturing, long before the start of formal education which, in Kazakhstan, begins at age seven. Investment in prenatal health and early childhood development programs therefore are essential to reach a child's full potential. Quality teaching is critical during a child's primary years in order to provide it a solid foundation in literacy and numeracy. Furthermore, a child's years of adolescence is an essential period for learning, particularly at a time when many students tend to not complete their high school education, but rather seek full-time employment or marry. Opportunities for nonformal education will offer these students a second chance - essential to ensure that all are able to acquire the necessary qualifications for the labor market (World Bank 2011). While TVET and other forms of reskilling are useful, these are no substitutes for foundational skills or quality education in terms of competency. This scenario is a call for relevant government authorities to embrace the fact that the LLL approach for all will complement the advancement of digital technology and the workplace.

Figure 3.9. Preparing for the Future

A. Automation and Digital Transformation



B. Skills for Green Jobs



C. Skills for Future Jobs

Cognitive		Interpersonal	
Critical thinking <ul style="list-style-type: none"> Structured problem solving Logical reasoning Understanding biases Seeking relevant information 	Planning and ways of working <ul style="list-style-type: none"> Work-plan development Time management and prioritization Agile thinking 	Mobilizing systems <ul style="list-style-type: none"> Role modeling Win-win negotiations Crafting an inspiring vision Organizational awareness 	Developing relationships <ul style="list-style-type: none"> Empathy Inspiring trust Humility Sociability
Communication <ul style="list-style-type: none"> Storytelling and public speaking Asking the right questions Synthesizing messages Active listening 	Mental flexibility <ul style="list-style-type: none"> Creativity and imagination Translating knowledge to different contexts Adopting a different perspective Adaptability Ability to learn 	Teamwork effectiveness <ul style="list-style-type: none"> Fostering inclusiveness Motivating different personalities Resolving conflicts Collaboration Coaching Empowering 	
Self-leadership		Digital	
Self-awareness and self-management <ul style="list-style-type: none"> Understanding own emotions and triggers Self-control and regulation Understanding own strengths Integrity Self-motivation and wellness Self-confidence 		Digital fluency and citizenship <ul style="list-style-type: none"> Digital literacy Digital learning Digital collaboration Digital ethics 	
Entrepreneurship <ul style="list-style-type: none"> Courage and risk-taking Driving change and innovation Energy, passion, and optimism Breaking orthodoxies 		Software use and development <ul style="list-style-type: none"> Programming literacy Data analysis and statistics Computational and algorithmic thinking 	
Goals achievement <ul style="list-style-type: none"> Ownership and decisiveness Achievement orientation Grit and persistence Coping with uncertainty Self-development 		Understanding digital systems <ul style="list-style-type: none"> Data literacy Smart systems Cybersecurity literacy Tech translation and enablement 	

Sources: Panel A: Bruegel (2022); Panel B: Sanchez-Reaza et al. (2023); and Panel C: Dondi et al. (2021).

Notes: Panel B: Values on the vertical axis measure the degree to which each skill is used in either a “brown” or a “green” job, so that a higher value on that axis reflects adult competencies as per the Programme for the International Assessment of Adult Competencies (PIAAC) data. Conversely, a higher peak of distribution indicates a more intensive use of skill.

IV.

Quality Jobs for Kazakhstan



What Determines a Good Job and How Is It Measured?

First-rate jobs are associated with higher wages and increased productivity. History has shown that economic growth, productivity, and wages are linked to levels of marginal revenue; that is, workers are paid according to the value (i.e., marginal product) of what they produce (Strain 2022). While the correlation is not perfect, given that wages - or, more broadly, compensation - are influenced by multiple factors, there is evidence of a link between productivity growth and increases in compensation and wages. Stansbury and Summers (2017) discovered that in the United States, a one-percent increase in productivity leads to a 0.73 percentage point increase in compensation.¹⁷ This paper also has found a link between sector-level productivity in Kazakhstan and wages. While the strength of the link is dependent on the relevance of other factors (e.g., collective bargaining, as in the case of European countries), when the precise productivity and compensation measures are taken into account, the link cannot be ignored.¹⁸

Wages are only one aspect of employment, albeit an important one. The discussion on what constitutes a “good” job has now been well established. Agencies under the umbrella of the UN define a job that is satisfactory as one that is productive and will offer a fair income, with job security, social protection, career prospects, and equal opportunities, among other benefits. These benefits fall within the Sustainable Development Goals (i.e., “Goal 8: Decent Work for All”). Its measurement includes gender, age, and disability status within formal and informal employment and income group, as well as unemployment rates and those “Not in Education, Employment or Training” (NEET). Similarly, the OECD applies three objective and measurable dimensions of job quality: earnings quality, labor market security, and quality of the working environment (Cazes, Hijzen, and Saint-Martin 2016). The World Bank proposes a measurement of four dimensions: sufficient earnings to shift a family out of poverty; access to employment benefits; job stability; and acceptable working conditions (Hovhannisyan et. al. 2022).

Kazakhstan’s Job Quality Index

This paper proposes a four-dimensional approach to measure job quality in Kazakhstan. As part of Concept Plan for Labor Market Development in 2024-2029, Kazakhstan intends to apply an alternative approach to assess the quality of jobs. Based on macroeconomic evidence, the following indicators will be considered for employees: (i) decent incomes, characterized by those above the median in the

¹⁷ The coefficient is smaller (0.53 percentage points) when compensation relates to workers involved in the production process, and excludes high earners (e.g., managers); however, the link remains and continues to be statistically significant.

¹⁸ For a full discussion on the literature, see Van Biesebroeck (2015).



corresponding region; (ii) whether or not the employee has had permanent employment within the last six months; (iii) availability of social benefits; and (iv) a safe working environment characterized by the absence or low rate of industrial accidents.

The proposed indicator presents a number of advantages. First, unlike other rankings such as the Social Progress Index and the world Happiness Report, the job quality index (JQI) for Kazakhstan will be tied to economic indicators. Emphasis, therefore, will be placed on developing small- and medium-size businesses, expanding production, stimulating growth in labor productivity, and increasing private entrepreneurship (excluding exporters of mineral raw materials). Second, the JQI will be based on the production of goods and services within Kazakhstan; therefore, it will not bear any direct influence from world markets. Third, the JQI has the potential of being a powerful reference tool for policymakers in terms of economic and social stability, as well as an indicator of medium-term planning for banks and businesses alike. Finally, Kazakhstan will apply Big Data analytics as well as government data to assess job quality in comparison with international standards, the latter of which depend on international surveys.

The JQI will present some caveats, nevertheless. First, sectoral and regional differences (criteria) in the quality of jobs are limited. Second, collection of additional statistics will be required and could represent an administrative burden. Third, private and quasi-public firms in less competitive markets may distort the data in favor of those that have market power.

Quality Jobs in Kazakhstan

Inflationary pressures have impinged on relatively low worker compensation. Over the past 10 years, average monthly salaries in Kazakhstan have remained relatively low. At US\$535, they are lower than in Russia (US\$788) and much lower than in OECD countries (US\$4,500). During periods of inflation, purchasing power and the level of earnings become an ever more important policy concern. Key takeaways are to preserve basic social guarantees and stability in the workplace.

Kazakhstan's recent digital transformation offers a unique opportunity to apply in-depth data to better understand job quality. Making the most of citizen's records, including those relating to taxation, pensions, and employment contracts, provides a more precise and detailed analysis of the country's job structure.¹⁹ In fact, this methodology has been able to identify jobs of quality, their characteristics, and the pace at which they were created.

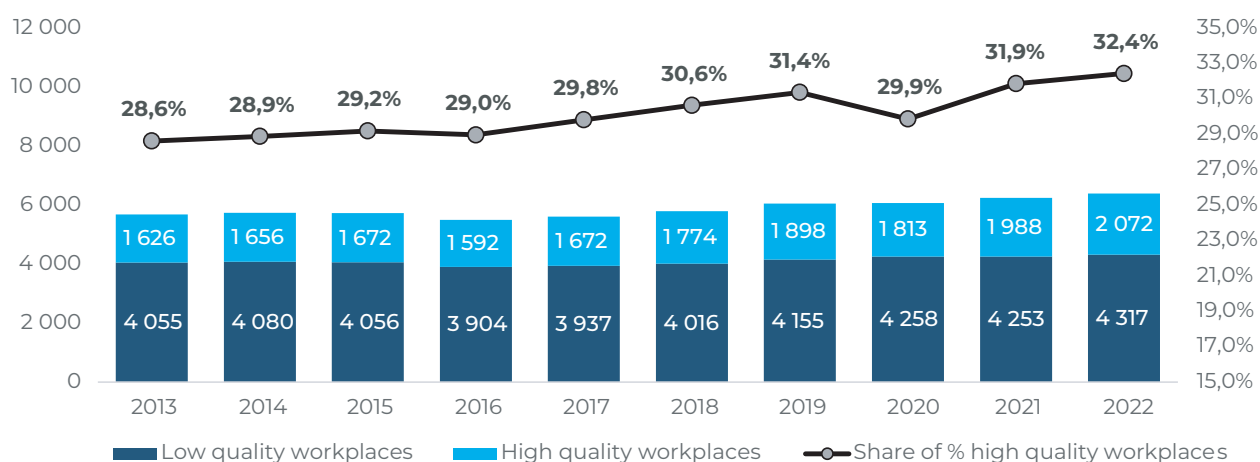
¹⁹ Kazakhstan's digital transformation has contributed to its information and communication infrastructure and, ultimately, to its transformation into e-government. As a result, numerous electronic databases have been developed, able to register citizen's individual transactions and other relevant data, enabling implementation of effective social policies at the state level.

The JQI will assess job quality based on four dimensions. The following four criteria are being applied to assess the quality of jobs: (i) formal or informal employment, (ii) job stability, (iii) income above the regional median, and (iv) job security. Table 4 provides a matrix relating to the quality of the workplace in various sectors.²⁰ Taken into account are the following criteria:

- a formal job contributes to its quality.** In the example (Table 4.1), all workers shown have formal jobs. But for some workers without a contract, the job comes with no social guarantees provided by the State.
- a stable job offers tenure.** To determine employment stability, the methodology considers stable jobs leading to pension contributions (OPC) for six consecutive months. Thus, some of the workers in the illustrative example (Table 4.1), are considered unstable due to insufficient accumulation of months in the calculation of the OPV.
- a quality job provides salaries at least at the median of the regional distribution.** A good salary is important, but how good it is, is subject to earnings of others in the same region since geography and density can influence factor prices.
- and provide a safe workplace with low level of accidents and injury.** Safe workplaces are characterized by a low level of industrial accidents and injuries.

Less than one-third of jobs in Kazakhstan can be considered quality jobs, although certain sectors may have a larger share. The share of quality jobs over the past 10 years have been on the rise, increasing from 29 percent to 32 percent (Figure 4.1). By the end of 2022, the number of high-quality jobs created amounted to 2.1 million. Sectors with the largest share of quality jobs are found in industry (especially mining, at 59 percent), transport (48 percent), healthcare (46 percent), and finance and insurance (45 percent), ICT and education (41 percent). The lowest shares are within the accommodation and water supply sectors (Figure 4.2).

Figure 4.1. Kazakhstan: Share of Quality Jobs, 2013–22



Source: WDC, 2022

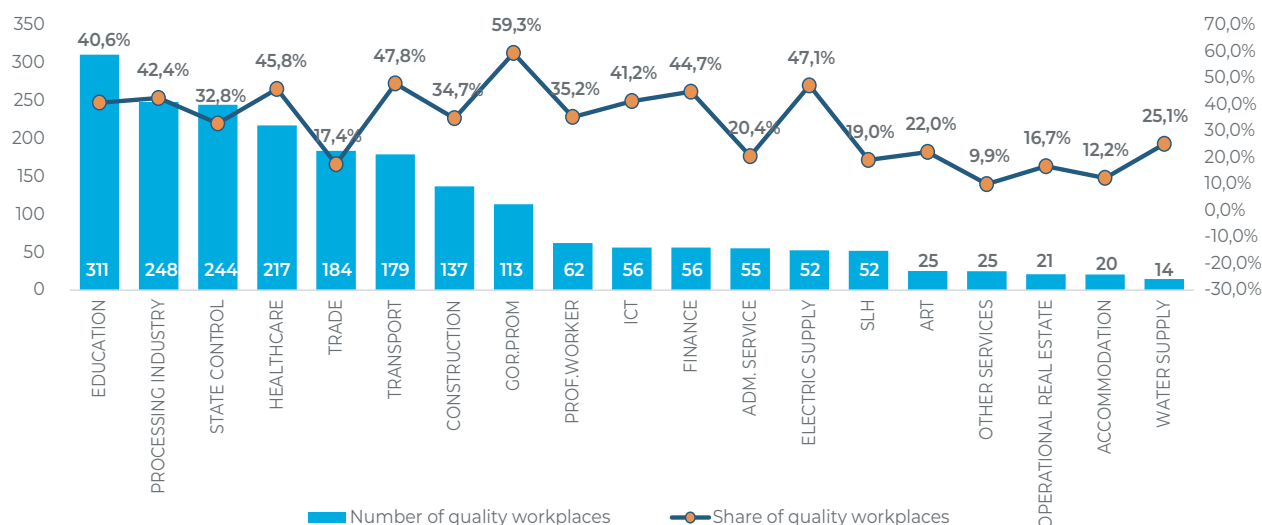
Table 4.1. Kazakhstan: Quality Workplaces: Examples

FULL NAME	Region	Industry	Period (2022)	Amount of pension contributions, thousand tenge	Median salary (by region) in 2022, thousand tenge / month.	Occupational injury rate (at the enterprise) for 2022	Occupational injury rate (in the industry) for 2022	Occupational mortality rate (at the enterprise) for 2022	Occupational mortality rate (in the industry) for 2022	Criteria for quality jobs			
										Formalities of employment (according to column 5)	Stability of employment (according to column 5)	Salary level (according to columns 5-6)	Workplace safety (according to columns 7-10)
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Person A	Shymkent city	Construction	March	17,6	175,6	0,00	0,39	0,00	0,12	Yes	Yes	Yes	Yes
			April	17,6									
			May	17,6									
			June	17,6									
			July	17,6									
			August	17,6									
			Septem-ber	17,6									
Person B		Construction	March	19,0		0,00	0,39	0,00	0,12	Yes	No	Yes	Yes
			April	19,0									
			May	19,0									
Person C		Construction	March	18,0		0,00	0,39	0,00	0,12	Yes	No	Yes	Yes
			April	18,0									
			May	18,0									
			June	18,0									
			July	18,0									
		Trade	August	20,0		0,00	0,01	0,00	0	Yes	No	Yes	Yes
			Septem-ber	20,0									
October			20,0										
Person D		Construction	March	15,0		2,00	0,39	1,00	0,12	Yes	Yes	No	No
			April	15,0									
			May	15,0									
			June	15,0									
			July	15,0									
			August	15,0									
Person E (Informal)		Construction	—	—	Unknown	Unknown	Unknown	Unknown	Unknown	No	Un-known	Un-known	Un-known

Source: WDC, 2022

Note: Based on WDC data collection and analysis of Shymkent region, 2022

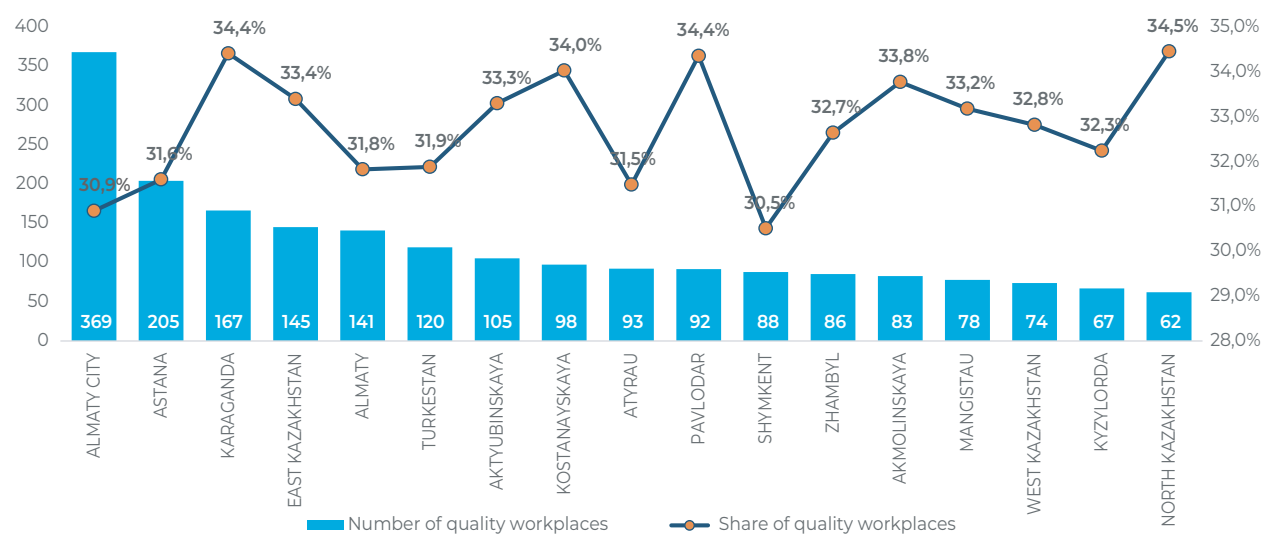
Figure 4.2. Kazakhstan: Sectoral Shares of Quality Jobs, 2013–22



Source: WDC, 2022

Spatially, quality workplaces tend to be concentrated in only two large cities, despite some other regions having higher shares of quality jobs. The largest number of quality jobs are found in Almaty (369,000) and Astana (205,000), although these two cities fare worse when compared with other cities/regions. In terms of quality, the highest share is in Karaganda, Pavlodar, Akmola, Kostanay and North Kazakhstan, with an average of 34 percent. Despite the overall relatively small number of high-quality jobs, however, a fairly high share is observed in the regions, with high income levels, and in West Kazakhstan (Figure 4.3).

Figure 4.3. Kazakhstan: Quality Jobs, 2022 (thousands of jobs and shares)

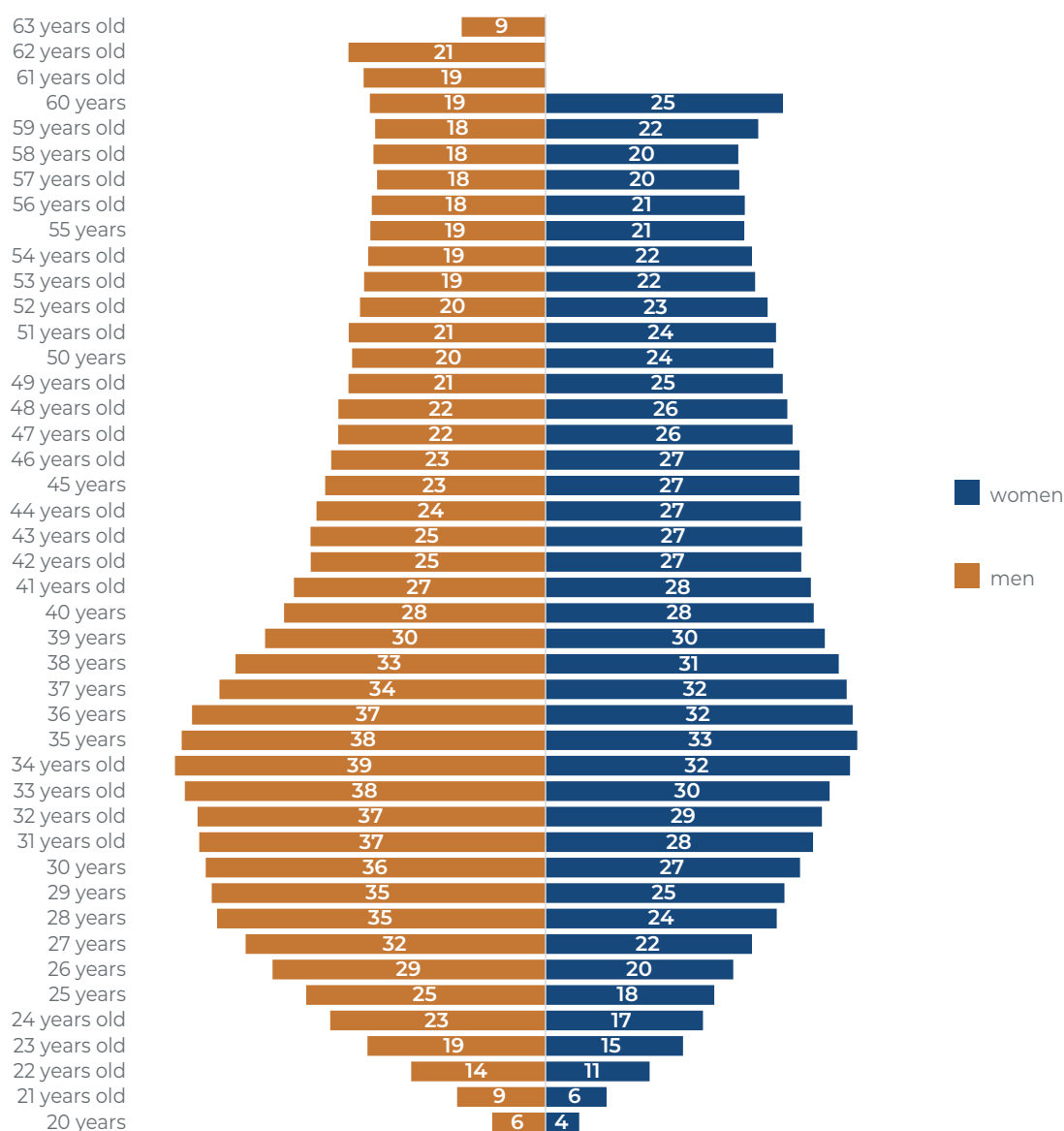


Source: WDC, 2022

There is a minor gender gap in the distribution of quality jobs, but they do favor some age groups.

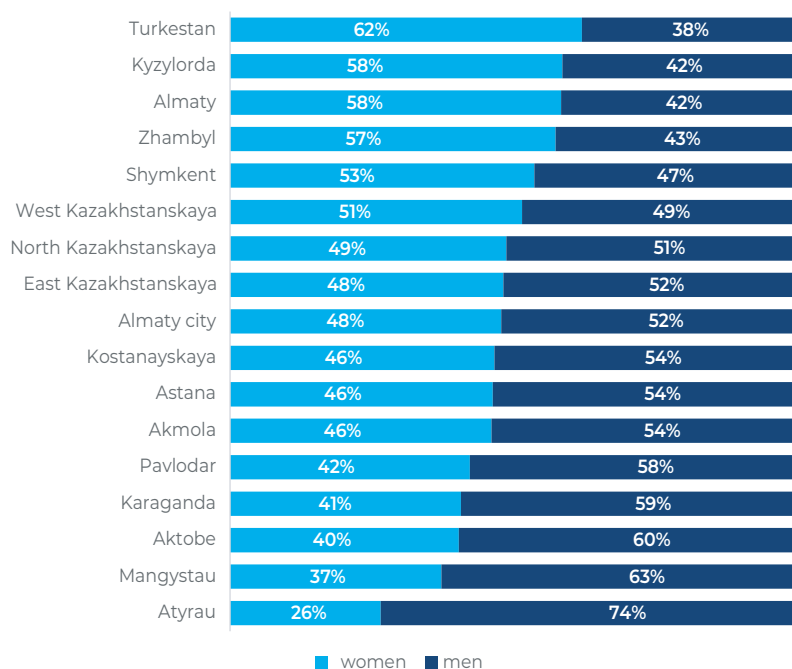
A minor gender gap in the distribution of quality jobs was present in 2022. Women hold 48 percent of those, higher quality jobs (Figure 4.4). However, some of the regions show higher women's quality jobs shares than men (see for instance Turkestan at 62 percent or Kyzylorda at 58 percent in Figure 4.5). Women's share of quality jobs was also concentrated in some sectors (see for instance healthcare at 82 percent or education at 80 percent in Figure 4.6).²¹ In terms of age groups, the 27- to 38-year-old group seem particularly favored; quality jobs in that age group showed a share of at least 32 percent –the national average in 2022.

Figure 4.4. Kazakhstan: Share of Quality Jobs by Age and Gender, 2022



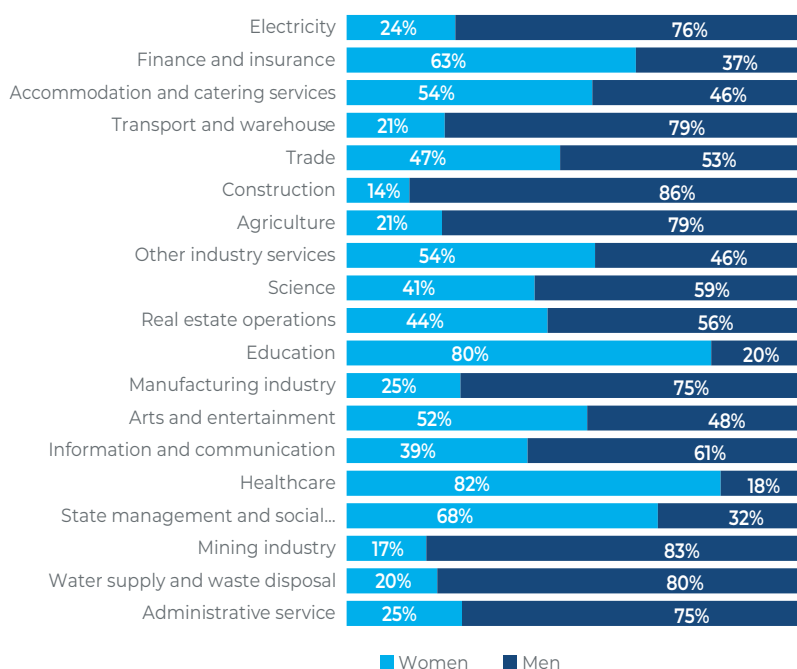
Source: WDC, 2022

Figure 4.5. Kazakhstan: Share of Quality Jobs by Region and Gender, 2022



Source: WDC, 2022

Figure 4.6. Kazakhstan: Share of Quality Jobs by Sector and Gender, 2022



Source: WDC, 2022

Kazakhstan's Proposed Job Quality Index

The JQI shows the following virtues:

- Comprehensive indicator: It links employment indicators to population income and labor safety.
- Inclusion of a qualitative indicator: It assesses the stability of newly created jobs and monitors employee income levels.
- High efficiency: It is able to track indicators across regions and industries on a monthly basis.
- Fully automated: It includes an information system that will automatically calculate indicators.

In accordance with the new approach to assessing the well-being of citizens and the development of the labor market, the JSC Workforce Development Centre proposes the following for Kazakhstan to develop quality employment:

- a) As a pilot, a series of regions should be selected where the effectiveness indicator can be applied.
- b) The system should be implemented throughout the country.
- c) A Job Quality Availability indicator should be introduced to assess the effectiveness of state and other budget programs that relate to regional development and economic growth.
- d) Policies of human capital development should be harmonized so that they focus on career strategies that will offer quality employment and thus create productivity.

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