ECONOMIC GROWTH, DEMOGRAPHIC TRENDS, AND THE LABOR MARKET:

Realities and Challenges

EFSD
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2026 Flagship Report

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Abbreviations

AI	Artificial intelligence
ALMPs	Active labor market policies
CEE	Central and Eastern Europe
CIS	Commonwealth of Independent States
COVID-19	Coronavirus disease 2019
EAEU	Eurasian Economic Union
EFSD	Eurasian Fund for Stabilization and Development
EPL	Employment protection legislation
EPR	Employment-to-population ratio
FDI	Foreign direct investment
GDP	Gross domestic product
GFCF	Gross fixed capital formation
GNI	Gross national income
GVA	Gross value added
HSE	Higher School of Economics
ICLS	International Conference of Labour Statisticians
ICT	Information and communications technology
ILO	International Labour Organization
IMF	International Monetary Fund
IOM	International Organization for Migration
ISIC	International Standard Industrial Classification of All Economic Activities
IZA	Institute of Labor Economics (IZA)
LFS	Labor force survey
LRT	Light rail transit
MW	Minimum wage

NBER	National Bureau of Economic Research
NEET	Not in employment, education or training
NES	New Economic School
OECD	Organisation for Economic Co-operation and Development
PPP	Purchasing power parity
SEZs	Special economic zones
SME / SMEs	Small and medium-sized enterprise(s)
SNA	System of National Accounts
SSC	Social security contributions
SSIF	State Social Insurance Fund
TRPs	Temporary residence permits
UN	United Nations
USD	United States dollar
VET	Vocational education and training
WB	World Bank
WBES	World Bank Enterprise Surveys
WDI	World Development Indicators

Preface

The economies of all Eurasian states are undergoing a structural transformation marked by shifting drivers of growth, evolving core institutions, a realignment of sectoral contributions, and changing employment dynamics. Policy frameworks aimed at ensuring sustainable economic expansion and macroeconomic stability are adapting accordingly, generating wide-ranging short-, medium-, and long-term implications.

The Eurasian Fund for Stabilization and Development (EFSD) considers tracking this transformation a central component of its mandate. As a regional stabilization mechanism, the EFSD assists its member states in maintaining macroeconomic stability and safeguarding long-term economic growth. Within this scope, the Fund regularly conducts comprehensive diagnostics of macroeconomic risks and maintains a rigorous monitoring of emerging macroeconomic imbalances.

However, risks to long-term growth and stability do not stem exclusively from pure macroeconomic factors. They may equally be triggered by demographic shocks, structural and institutional constraints, or local market and sectoral imbalances.

In this context, the labor market warrants special attention. It serves as the focal point for core aggregate labor supply and demand indicators, including employment and unemployment rates, the labor share of value added, and the dynamics and differentiation of wages. A cursory review of the aggregate statistics presented in standard official reporting might suggest steady progress and an absence of systemic vulnerabilities. Yet beneath this surface lies a far more complex reality that conceals material medium- and long-term risks.

As a responsible institution, the EFSD recognizes the need to deepen its independent assessment of the structural challenges and risks originating in labor markets, accounting for their specific institutional features, demographic context, and interaction with economic growth. This objective defines the rationale for the present report.

This report offers a synthesized analysis of labor market developments across four economies (Armenia, Kazakhstan, the Kyrgyz Republic, and Tajikistan), covering the period from 2010 to 2025. Despite substantial historical, cultural, and policy divergences, these nations share a defining baseline: following the dissolution of the Soviet Union, they emerged as independent states inheriting common structural characteristics, institutional frameworks, and economic linkages. On one hand, they represent post-socialist transition economies; on the other, they display structural and institutional features typical of developing markets. All four face insufficient economic diversification, concentrated revenue sources, and constrained access to global trade corridors, compounded by their landlocked geographical positions. These structural realities directly shape the contemporary functioning of their national labor markets.

A central theme that runs throughout this report, is that the labor market acts as a mediating mechanism between

demographic processes which largely determine labor supply, and the economic growth which drives labor demand. Rather than functioning as a passive transmission mechanism within this triangle, the labor market actively affects labor supply behavior while adjusting to the pace and structure of economic growth.

Labor markets in the region remain significantly under-researched, with a limited body of academic and policy-related studies dedicated to these four economies. Furthermore, their unique institutional and structural profiles preclude the direct application of findings derived from other advanced or emerging markets. Similarly, the experience of Russia, their primary regional trading partner, offers only limited utility for extrapolation.

The authors do not claim to address every labor market challenge across the four countries, as the scope of issues far exceeds the bounds of a single study. Many critical themes are merely outlined to signal the need for a more focused and deeper inquiry, while others remain outside the discussion due to data limitations or space constraints. Conclusions and recommendations formulated herein aim to outline strategic policy priorities and identify emerging labor market risks.

Introduction





A country's economic performance is conventionally evaluated through the level and growth rates of Gross Domestic Product (GDP). Per capita GDP serves as the most comprehensive aggregate measure of national material well-being. However, its underlying determinants depend fundamentally on the proportion of the population actively engaged in the production of goods and services, the quality of their human capital, and the efficiency of their labor productivity. For the vast majority of individuals, household income is directly generated through economic activity. As emphasized in the World Development Report 2013, jobs are the cornerstone of economic and social development (WDR 2013, p. 2). Employment is pivotal not only for macroeconomic output but also for individual well-being. The degree to which people realize their personal capabilities through work, the nature of their employment, and integration into technological processes profoundly shape human lives. Meaningful work and decent compensation remain an indispensable components of social cohesion and individual success — a baseline premise fully endorsed in this study.

Yet, not all individuals who are willing and able to work participate in the labor force. Some actively seek but fail to secure a suitable job, while others, for varied structural or personal reasons, prefer remaining economically inactive. Furthermore, employment itself is highly heterogeneous: alongside high-productivity, well-remunerated positions exist extensive pockets of marginal, low-wage jobs characterized by precarious working conditions. An individual's locus within the labor market is determined by an array of micro- and macroeconomic factors. At the micro level, outcomes depend on individual preferences, demographic characteristics, human capital endowments, and health status. At the macro level, outcomes are driven by aggregate labor demand (specifically, the volume, sectoral and spatial composition of available vacancies) and by institutional frameworks. Institutional frameworks encompass labor market regulations that govern job matching, wage setting, hiring and dismissal costs, social protection systems for employed and unemployed workers, and payroll taxation, among others.

Consequently, labor market outcomes at the macroeconomic level can be conceptualized as the core of a "triangle" whose vertices consist of demographic dynamics, economic growth drivers, and institutional frameworks. The dynamic, non-linear interactions between these vertices and the core are constantly shaped by exogenous shocks and structural shifts.

This report presents a comparative empirical analysis of key contemporary trends and structural conditions across the labor markets of four Eurasian economies: Armenia, Kazakhstan, the Kyrgyz Republic, and Tajikistan. Labor market diagnostics are conducted in direct relation to overarching demographic trajectories and macroeconomic developments, establishing an empirical foundation for evidence-based policymaking and targeted policy recommendations.

Despite significant historical, cultural, and policy divergences, these four nations share some common institutional features as former constituent republics of the Soviet Union. Following its dissolution, they emerged as sovereign states inheriting distinct structural distortions, institutional arrangements, and deeply embedded cross-border economic ties. Today, they represent post-socialist transition economies with incomplete market reforms, while simultaneously exhibiting structural characteristics typical of developing nations. These include substantial shares of agricultural and informal employment, concentrated economic structures and revenue flows, and limited logistical infrastructure for integration in the global trade. All these features affect in a fundamental way how their national labor markets operate.

The current macroeconomic environment across the four economies remains markedly positive. Over the past five years, real GDP grew at an average annual rate of approximately 5% in Kazakhstan and between 8% and 9% in the other three economies. Living standards have improved across all four countries, as reflected in expanding per capita GDP and rising real disposable incomes, while inflation rates have remained largely contained. Typically, such sustained macroeconomic expansion stimulates aggregate labor demand, underpinned by robust private domestic consumption. However, persistent structural concentration, high growth volatility, and heavy reliance on primary commodity exports and private cross-border remittances generate systemic vulnerabilities that constrain the domestic expansion of formal labor demand.

Labor Migration

An important mechanism for labor market adjustment to demographic pressures



The demographic environment across the three Central Asian economies has been broadly favorable. Their working-age populations expanded rapidly, driven by younger, increasingly educated cohorts, establishing the structural preconditions for a demographic dividend. In Armenia, demographic trajectories have been more complex: natural population growth has effectively stalled, and population aging is underway. Across all four states, migration flows constitute a critical socio-economic determinant, differing by volume, direction, and structural composition ranging from rural-to-urban and interregional internal movement to outward labor migration and inbound migration inflows from Russia.

How do regional labor markets adjust to the simultaneous expansion of labor supply and labor demand? Do these favorable macroeconomic and demographic conditions translate into a structural composition of employment capable of sustaining long-term economic growth and population welfare? Is economic growth generating high-productivity, formal employment, or is labor market adjustment primarily mediated by alternative absorption channels such as exits from the labor force, open unemployment, informal employment, or international labor migration? What is the relative contribution of each channel? These central questions form the core analytical agenda of this report.

Formulating these questions is not in itself novel. National development strategies across all four countries explicitly prioritize the creation of high-quality employment aligned with macroeconomic growth targets and societal expectations. However, real-world labor market outcomes frequently diverge from state policy targets, leaving formal job creation goals unfulfilled, a shortfall partially attributable to diagnostic gaps in labor market analysis. This gap underscores the imperative for an in-depth, rigorous, and impartial scientific evaluation of labor market dynamics and the institutional conditions required for their efficient operation.

Section 2 describes the macroeconomic development across the four economies. It presents empirical data on aggregate and per capita GDP dynamics and discusses the structural properties of growth drivers and distributional outcomes over 2010–2024.

Section 3 examines the demographic trends shaping the size, composition, and trajectory of labor supply. It evaluates retrospective working-age population dynamics and examines the historical contribution of the “demographic dividend” to real GDP growth between 2010 and 2024. Demographic projections extending to 2040 highlight both structural opportunities and socio-economic risks, most notably the challenges of rapid population expansion in Central Asia versus population contraction and aging in Armenia. Finally, it sheds some light on internal and international migration flows as key determinants of labor supply dynamics.

International labor migration does not directly alter the size or structure of the resident population, yet it impacts national labor supply, household disposable income, and aggregate consumption, themes likewise addressed in Section 3. The nature, intensity, and direction of migratory flows exhibit marked cross-country divergence. In the Kyrgyz Republic and Tajikistan, for instance, labor market dynamics are defined by structural remittance dependency linked to outward migration to Russia. Emigrant workers from these nations not only alleviate supply-side pressures on domestic labor markets (thereby suppressing national unemployment rates) but also finance a substantial share of domestic household consumption. Conversely, Kazakhstan faces intensifying demographic pressure on major agglomerations and urban infrastructure driven by internal rural-to-urban and interregional migration. Armenia occupies a dual position, acting simultaneously as a source country for outward labor migrants and a destination country for permanent, highly skilled migrant inflows.

Section 4 evaluates labor market performance across the region through the tri-partite distribution of the population across employment, unemployment, and economic inactivity. Key analytical dimensions include employment dynamics, levels, and structural composition, as well as the socio-demographic profiles of employed populations and their sectoral distribution.

Long-term economic growth is fundamentally bounded by aggregate labor productivity and structural economic composition, given that sectors differ substantially in productivity levels, productivity growth rates, and employment shares. The reallocation of labor from lower- to higher-productivity sectors (structural change) can generate a substantial growth premium. This section presents empirical estimates decomposing aggregate productivity growth into within-sector gains and structural reallocation effects across each economy. Labor reallocation across sectors is mediated by labor market dynamics: namely, worker turnover (hires and separations) and job turnover at the firm level. The report evaluates these turnover dynamics for each economy, providing empirical benchmarks for cross-country comparison and contrast against international comparator peers.

All four analyzed economies share a pervasive structural vulnerability in the form of massive labor market informality. The report assesses the structural role and temporal evolution of informal employment, evaluating whether it functions as a substitute for open unemployment or as a shock absorber for a formal sector unable to absorb demographic pressures. We demonstrate that across Central Asian economies, informal employment absorbs a major share of labor supply growth, thereby playing a decisive role in sustaining low unemployment rates.

A critical component of sectoral employment composition comprises state-administered sectors producing public goods (specifically public administration, education, and healthcare) funded primarily through state budgets. Publicly set wage structures within these sectors directly affect selection of workers into these sectors and its implications for the quality of public goods provision. Given its relative scale, the public sector exerts substantial spillover effects on market sectors and broader labor market dynamics.

The analyzed economies exhibit distinct trajectories regarding unemployment and inactivity. Statistically low unemployment in the Kyrgyz Republic and Tajikistan is sustained by the expansion of low-productivity informal work and massive labor force exits (including outward migration). The scarcity of formal jobs, coupled with weak social safety nets for the unemployed, renders informal work a second best choice, particularly across rural labor markets, thereby trapping labor in low-productivity activities. In Armenia, higher unemployment (particularly long-term and youth unemployment) remains a vulnerability when combined with low labor force participation. Across all four states, formal private-sector job creation rates remain insufficient to absorb labor slack and to fully utilize human capital.

The resulting labor market equilibrium under these conditions has profound implications for long-term economic development. Low unemployment does not mean an abundance of high quality jobs, but rather traps labor in low-productivity, marginal employment. Across all analyzed economies, there are severe risks of labor market segmentation into a “good” (formal) and a “bad” (informal) tier, a dual structure fraught with negative consequences for the welfare of individuals locked into states of inactivity and informality.

The section concludes with projections of total employment extending to 2040. These forecasts are built upon demographic projections and alternative scenarios for age-gender specific employment rates. According to these estimates, Central Asian economies face intensifying pressure on job creation driven by rapid labor supply growth. Conversely, in Armenia, anticipated demographic trends will lead to a contraction in labor supply, elevating the imperative to enhance employment quality.

Section 5 examines two core issues related to labor market institutions and state development programs. The labor market regulation addresses a dual mandate: fostering productive employment while providing adequate social protection for workers. While these twin objectives often involve trade-offs, search for an optimal balance is essential. Core labor market institutions consist of the regulations governing market operation, including minimum wage policy, wage-setting mechanisms, unemployment benefit eligibility, and employment protection legislation (EPL). Impacts of these institutions are further compounded by product market regulations (e.g., antitrust enforcement, market entry barriers, and infrastructure access, among others). In the Kyrgyz Republic and Tajikistan, rigid EPL provisions disincentivize formal job creation, thereby sustaining widespread labor informality. In Armenia, moderately liberal rules governing the termination of open-ended contracts co-exist with stringent restrictions on fixed-term employment. In Kazakhstan, liberal contract termination regulations are paired with insurance-based compensation mechanisms.

Section 6 details the primary conclusions and strategic policy recommendations derived from the report's diagnostics. These address labor migration policy, employment legislation, public sector compensation structures, and the enhancement of statistical and information systems supporting labor market policy. The overriding conclusion is that establishing conditions for productive formal employment remains the central challenge for labor market policy across the region.

Macroeconomic Environment, Economic Growth, and Labor Market Implications





The macroeconomic environment and the nature of economic growth fundamentally determine labor market outcomes. Labor markets, in turn, are not neutral with respect to macroeconomic performance: aggregate productivity dynamics (a primary component of economic growth) depend directly on the efficiency, technology, and sector of worker deployment. Consequently, establishing the macroeconomic context serves as the necessary foundation for this labor market diagnostic.

Over the past two decades, the economies of the Eurasian region, including the four countries analyzed in this study, have expanded substantially. This expansion unfolded alongside complex structural and institutional transformations shaped by diverse exogenous shocks, including the COVID-19 pandemic, shifting geopolitical dynamics, and terms-of-trade volatility. Within this setting, the structure, primary drivers, and distributional consequences of economic growth warrant detailed evaluation. Below, we present a comparative macroeconomic diagnostic for Armenia, Kazakhstan, the Kyrgyz Republic, and Tajikistan spanning the period from 2010 to 2024.

2.1. Dynamics and Structure of Economic Growth

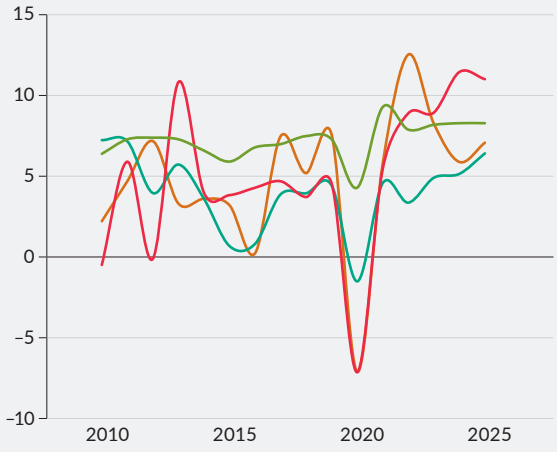
Over 2010–2024, the economies of all four countries expanded substantially. Real GDP increased 3.1-fold in Tajikistan, 2.2-fold in the Kyrgyz Republic, 2.1-fold in Armenia, and 1.8-fold in Kazakhstan (Figure 2.1 a, b).

Tajikistan maintained the most impressive and sustained growth trajectory, with average real GDP growth exceeding 7% annually, albeit from a very low baseline. The growth deceleration induced by the COVID-19 pandemic was less severe than in regional peers and did not push output growth into negative territory. In Armenia, the Kyrgyz Republic, and Kazakhstan, average annual growth rates over the analyzed period exceeded 4%, albeit characterized by higher volatility. In specific years, growth stagnated, and during the peak of the pandemic, output contracted across all three economies.

In the post-pandemic period (2022–2025), all four economies shifted onto higher growth trajectories. The Kyrgyz economy expanded at an average annual rate of 10.2%, while Armenia achieved an average annual growth rate of 8.5%. Kazakhstan registered the lowest growth rate among the four at 5.0% annually, though from a substantially higher per capita GDP baseline. This regional acceleration contrasted sharply with the broader slowdown in global economic activity relative to pre-crisis levels: average annual global growth decelerated to 2.9% in 2023–2025, down from 3.1% during 2016–2019.

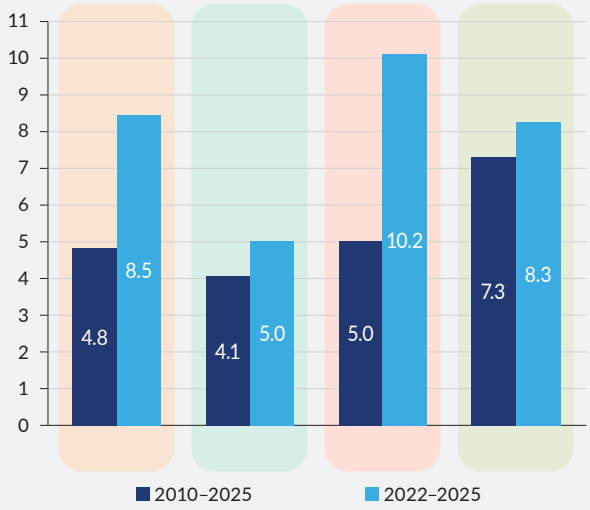
Figure 2.1 (a, b).
Economic Growth Trajectories

a. Real GDP Growth Rates, %



Armenia Kazakhstan Kyrgyz Republic Tajikistan

b. Average Real GDP Growth Rates by Period, %



Source: authors' calculations.

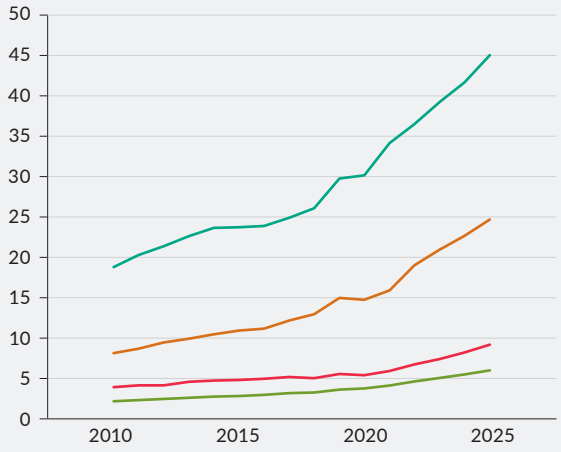
Between 2009 and 2025, per capita GDP at purchasing power parity (PPP) increased substantially across all four analyzed economies. Growth was most pronounced in Armenia and Tajikistan, where per capita GDP expanded 3.1-fold. Consequently, Armenia transitioned into the upper-middle-income group. The Kyrgyz Republic, recording a 2.5-fold increase in per capita GDP (PPP), moved from the low-income to the lower-middle-income group. Kazakhstan achieved a 2.4-fold expansion, albeit from a considerably higher initial baseline, maintaining its status as an upper-middle-income economy (Figures 2.2 and 2.3). Throughout 2009–2025, Kazakhstan maintained a significantly higher relative level of per capita income vis-à-vis Russia compared to its regional peers: its per capita GDP rose from 86% to 90% of the Russian benchmark, reaching 95% in peak years. Armenia demonstrated the most substantial economic convergence toward Russian levels, with its relative per capita income rising from 38% to 49%.

Small Enterprises in Kazakhstan

Approximately three-quarters of workers are employed in enterprises with up to 100 employees



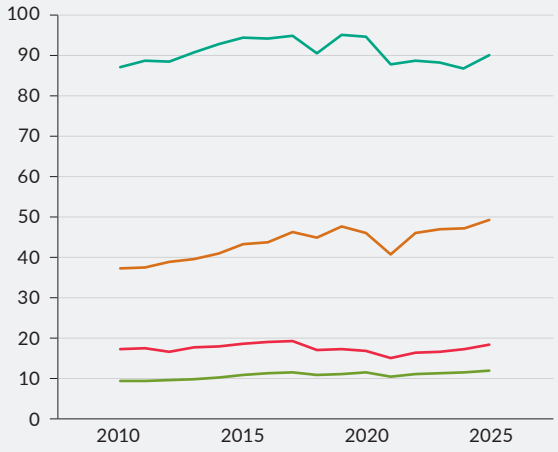
Figure 2.2.
Per Capita GDP at PPP, (USD, thousand)



Armenia Kazakhstan Kyrgyz Republic Tajikistan

Source: IMF

Figure 2.3.
Per Capita GDP at PPP, % of Russian Level



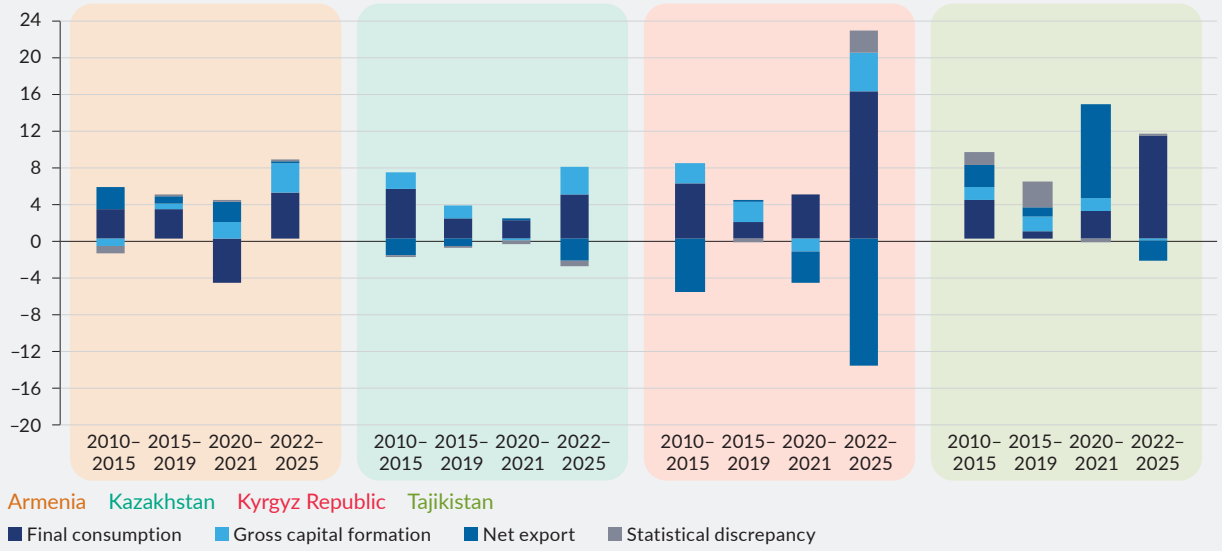
Source: World Bank

In contrast, per capita GDP in the Kyrgyz Republic and Tajikistan in 2025 stood at only 19% and 12% of Russian levels, respectively, underscoring persistent and sizable income gaps across the region (Figure 2.3).

Growth rates and economic volatility across the four countries were heavily dictated by external conditions and the structural composition of growth drivers. The macroeconomic environment in Russia, their primary regional economic partner, exerted a strong influence on all four states. For Kazakhstan, and to a substantial extent the Kyrgyz Republic, fluctuations in primary commodity exports and global commodity price cycles served as critical growth determinants. Economic dynamics in Armenia, the Kyrgyz Republic, and Tajikistan were further driven by cross-border flows of capital, goods, and services. In the latter two economies, labor migration functioned as a vital conduit for worker remittances, which supported household consumption.

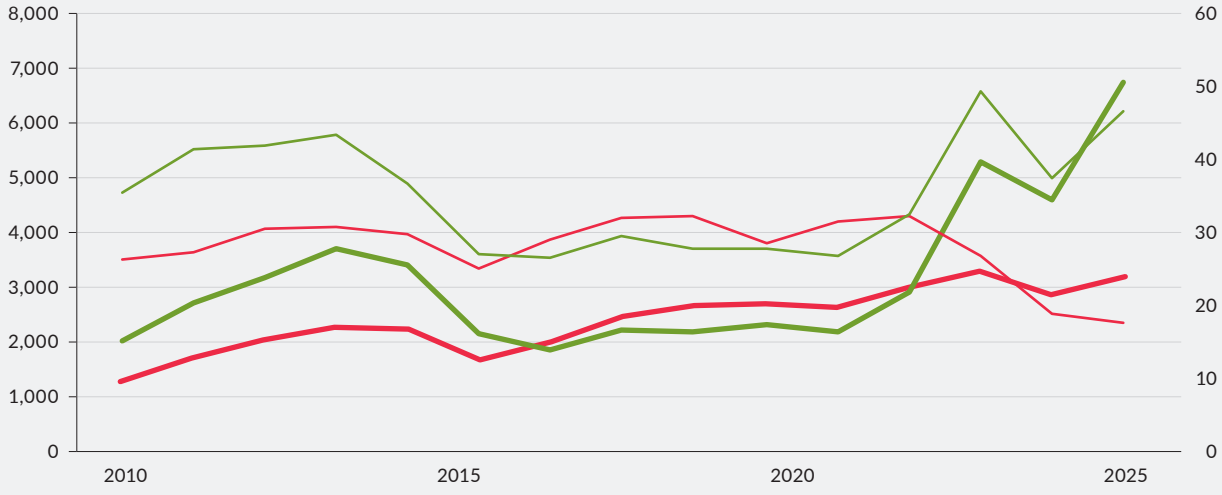
Figure 2.4 presents the expenditure-side decomposition of real GDP growth. Domestic demand, driven predominantly by final consumption expenditures, served as the primary growth engine. Its contribution to real GDP growth expanded significantly in the post-pandemic period. In Armenia, the consumption contribution increased from 3.4 percentage points (pp) pre-COVID to 5.2 pp post-COVID; in Kazakhstan, from 3.9 pp to 4.8 pp; in the Kyrgyz Republic, from 4.0 pp to 16.2 pp; and in Tajikistan, from 2.6 pp to 11.4 pp. In the Kyrgyz Republic and Tajikistan, this sharp increase in the consumption contribution reflected rising remittance inflows linked to outward labor migration, which surged after 2021. In Tajikistan, nominal remittance inflows expanded 3.5-fold over four years, exceeding 40% of GDP in 2025 (note that foreign remittance income is excluded from GDP but constitutes a major component of Gross National Income, GNI). In the Kyrgyz Republic, nominal remittances grew 1.4-fold, though

Figure 2.4.
Expenditure-Side Decomposition of Real GDP Growth
(Average Contribution to Growth by Period, Percentage Points)



Source: Authors' calculations based on data from national statistical agencies
Note: The COVID-19 pandemic period is presented separately to account for extreme indicator volatility.

Figure 2.5.
Remittance Inflows to the Kyrgyz Republic and Tajikistan



Source: Balance of payments statistics of the respective countries

their share relative to GDP declined due to rapid nominal GDP expansion (Figure 2.5). These financial flows account for a critical share of household disposable income and serve as the primary driver of private final consumption.

In Kazakhstan and the Kyrgyz Republic, the contribution of gross fixed capital formation (GFCF) to real GDP growth more than doubled during 2022–2025 compared to pre-pandemic levels. In Armenia, gross capital formation likewise emerged as a stable driver of economic expansion. Investment activity in Tajikistan traditionally relied on a combination of substantial public capital expenditure and external financing; international capital grants reached 3.1% of GDP by the end of the period, up from an average of 1.6% of GDP over 2010–2019.

The contribution of net exports to growth remained volatile, constrained, or persistently negative. This high volatility stems from a narrow, weakly diversified commodity export structure and concentrated destination markets, leaving these economies highly vulnerable to global commodity price cycles. Export dynamics in Kazakhstan and the Kyrgyz Republic were largely dictated by primary commodities (oil and gold, respectively), while export earnings in Tajikistan experienced sharp fluctuations driven by gold and cotton shipments. Concurrently, the expansion of domestic demand, fueled by commodity export revenues and migrant worker remittances, stimulated import growth, thereby dampening the net export contribution to real GDP growth.

Both private consumption and investment activity remain heavily dependent on imports and the production of non-tradable goods and services, exposing the long-term structural fragility of this growth model.

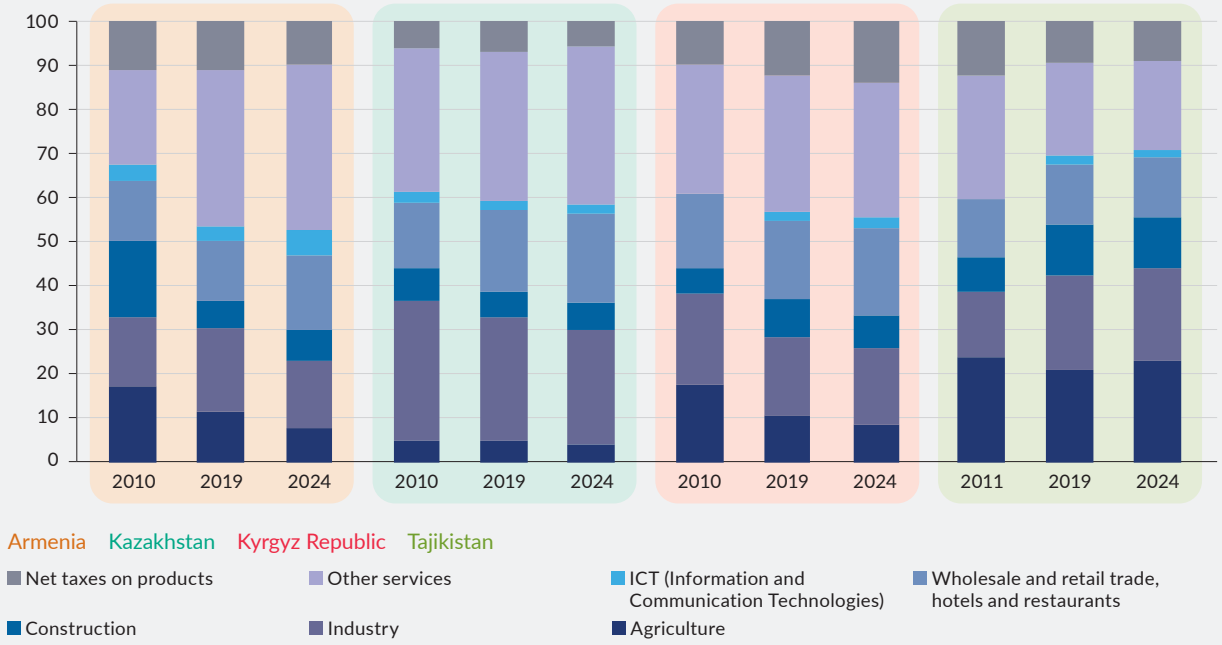
Sectoral structure of economic growth

Structural shifts in GDP reflect an ongoing transformation of growth models, albeit with pronounced cross-country variations (Figure 2.6a and 2.6b). With the exception of Tajikistan, all countries exhibited a marked expansion in the service sector. In Armenia and the Kyrgyz Republic, the most prominent structural change was the declining share of agriculture alongside a rapid expansion of services. In Armenia, agriculture's share of GDP contracted from approximately 17% to 8% over the analyzed period, while services expanded from 39% to 60%. In the Kyrgyz Republic, agriculture's contribution shrank from 17% to 9%, while services increased from 46% to 52% of GDP; the joint share of industry and construction also expanded.

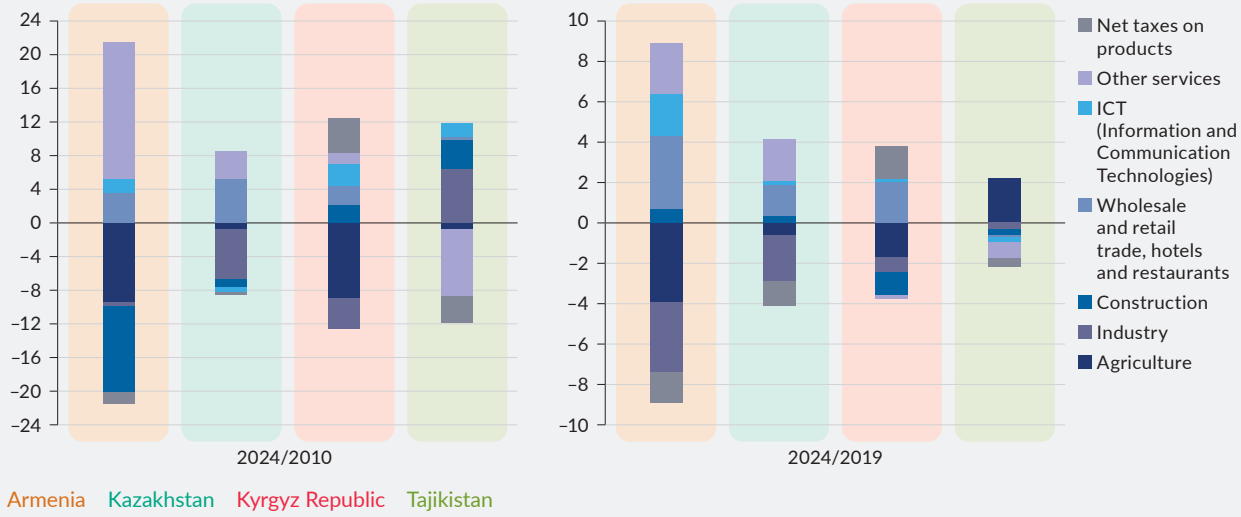
In Kazakhstan, structural realignment was less pronounced: a contraction in industry's share from 32% to 26% was offset by an increase in wholesale and retail trade (from 15% to 20%) and other service activities (from 32% to 36%). Conversely, Tajikistan maintained a high and stable agricultural share (exceeding 20%), with structural shifts driven primarily by the expansion of its industrial and capital investment base. Industry's share of GDP expanded from

Figure 2.6 (a, b).
GDP Structure by Economic Activity

a. GDP Structure by Economic Activity, %



b. Structural Changes in GDP by Economic Activity, Percentage Points



Source: authors' calculations.

15% in 2011 to 21% in 2024, construction increased from 8% to 12%, while the aggregate share of services declined from 41% to 35% (Figure 2.6 a, b).

Although the structural transformation driven by the expanding role of non-agricultural economic activities is fundamentally positive, it has not consistently translated into aggregate productivity growth. Reallocated labor

and capital flowed predominantly into low-productivity, non-tradable domestic services requiring low-skilled labor. High-productivity, export-oriented service sectors, such as information and communications technology (ICT), financial services, and professional services, continue to account for modest shares of both gross value added and total employment.

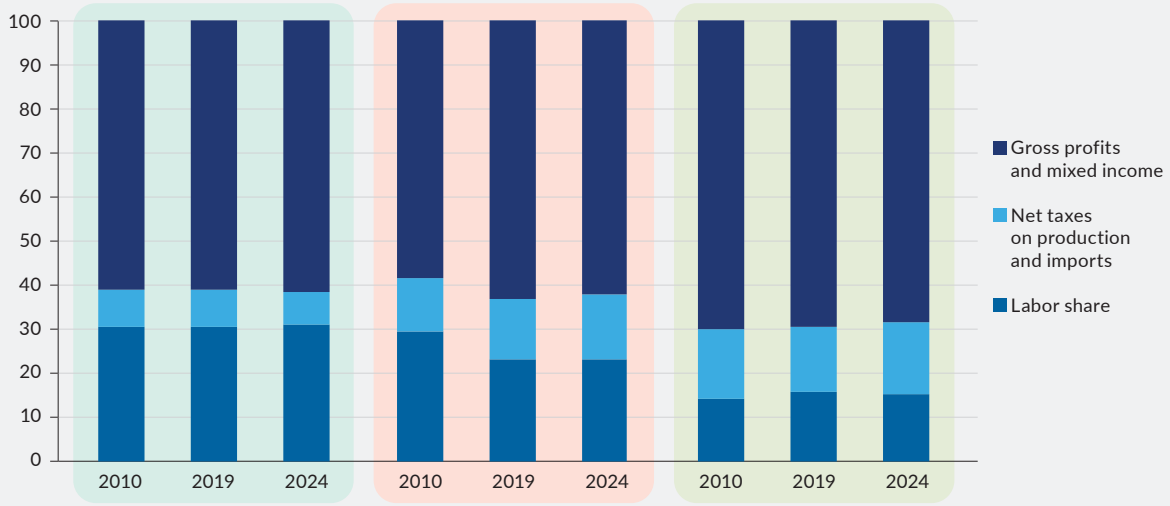
2.2. Distributive outcomes of economic growth

While economic growth across the analyzed countries broadly supported real income growth and poverty reduction, it was not uniformly accompanied by an expansion in the labor share of GDP. In the Kyrgyz Republic, the labor share in GDP declined from 30% to 23%, whereas in Kazakhstan it remained relatively range-bound at 30–32% throughout the period. Tajikistan represented the sole exception, recording a 0.9 percentage point increase to 15.2% of GDP (Figure 2.7). Cross-country comparisons indicate that the labor shares across all four economies remain low by international standards: during the analyzed period, the labor share averaged 45% of GDP in Russia and approximately 49% across OECD member economies. Adding a half of mixed income from self-employment to the labor share raises the latter but does not alter the conclusion. In Tajikistan and the Kyrgyz Republic, cross-border private remittance inflows — while not a part of GDP — constitute a vital source of disposable household income. In Kazakhstan, the low labor share reflects structural features typical of a resource-dependent, hydrocarbon-exporting economy.

Economic growth across all four countries was accompanied by roughly commensurate expansions in real household incomes and real wages. However, inter-sectoral and cross-country wage growth differentials were substantial. In ICT and financial services, real wage dynamics outpaced those in traditional manufacturing, construction, and non-tradable service sectors.

In Armenia, aggregate real wages expanded by 60% over the analyzed period. Wage growth was heavily concentrated in ICT and financial services (expanding 2.7-fold and 2.5-fold, respectively), whereas in manufacturing and construction it lagged considerably (rising by 42% and 15%, respectively). In Kazakhstan, real wages increased by approximately 65%, with outsized gains in ICT, manufacturing, and mining, alongside a weaker growth in construction and professional services. In the Kyrgyz Republic, real wages expanded 2.2-fold over the 15-year period; the mining sector posted the strongest gains (expanding roughly 3.1-fold), whereas the financial sector recorded a more moderate 1.7-fold increase. In Tajikistan, real wages increased 2.9-fold alongside a 3.1-fold

Figure 2.7.
Factor Shares of GDP, %



Sources: Authors' calculations based on data from national statistical agencies

expansion in real GDP, with wage growth in extractive industries vastly outstripping sectoral output growth.

Entrepreneurial income and mixed income from self-employment constitute additional core components of household earnings. In economies with extensive cross-border labor migration, private remittances play a pivotal role in household consumption (see Section 3.3). These incomes, earned on external job markets, exert a complex structural influence on domestic labor markets. While significantly enhancing household welfare, they simultaneously elevate reservation wages, thereby dampening domestic labor force participation rates.

Real income growth supported sustained reductions in national poverty ratios[1]. In the Kyrgyz Republic, the official poverty rate declined from 34% to 24%. Tajikistan recorded an even steeper reduction, with poverty falling from 37% to 17%. In Armenia, the share of the population below the national poverty line contracted from 36% in 2010 to 21.7% in 2024. Nevertheless, absolute poverty rates remain high, reflecting the prevalence of low-productivity, low-wage employment and the earnings volatility associated with informal economic activity. In Kazakhstan, the poverty rate was more than halved between 2010 and 2016, dropping from 6.5% to 2.5%. From 2018 onward, the poverty headcount stabilized within the 4–5% range and failed to decline further even during the accelerated post-pandemic growth phase of 2021–2025; the upward shift in 2018 reflected a revision to the national methodology for calculating the subsistence minimum (Figure 2.8).

[1] The estimates reported below are based on national poverty line definitions and methodologies.

Economic growth influenced heterogeneity in income distribution across socioeconomic groups. In Tajikistan, the Gini index (a measure of income inequality) rose from 31 in 2009 to 36 in 2022. In Armenia, after increasing from 30 in 2010 to 34.4 in 2018, the Gini coefficient steadily declined to 27.4 by 2024. Conversely, in the Kyrgyz Republic, despite substantial poverty reduction, inequality deepened, with the Gini index rising from 38 to 43. In Kazakhstan, inequality remained relatively low and stable throughout the period (Figure 2.9).

Figure 2.8.
Poverty Rate (National Methodology)

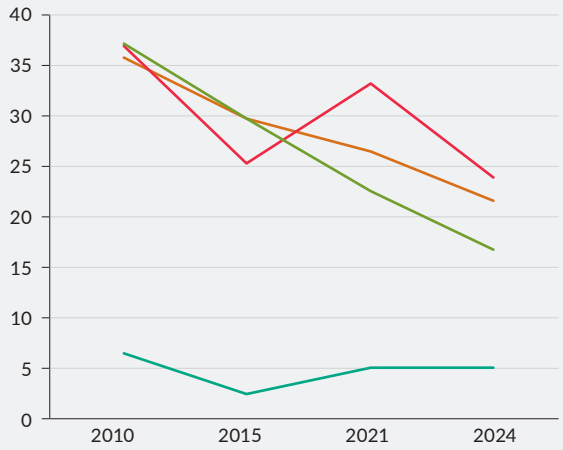
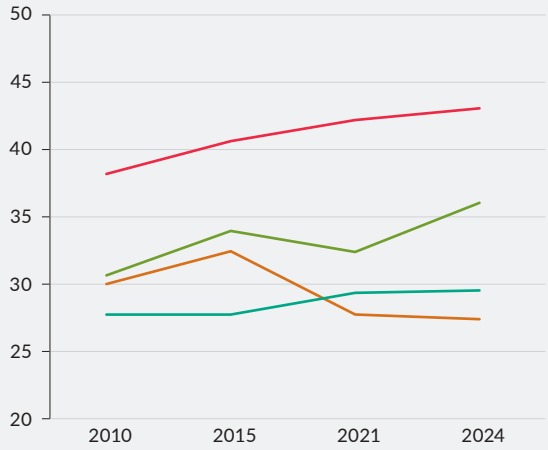


Figure 2.9.
Gini Index



Armenia Kazakhstan Kyrgyz Republic Tajikistan

Note: For Tajikistan, data refer to 2009.

Source: Authors' calculations based on data from national statistical agencies



Demographic Dividend

The share of the working-age population is increasing

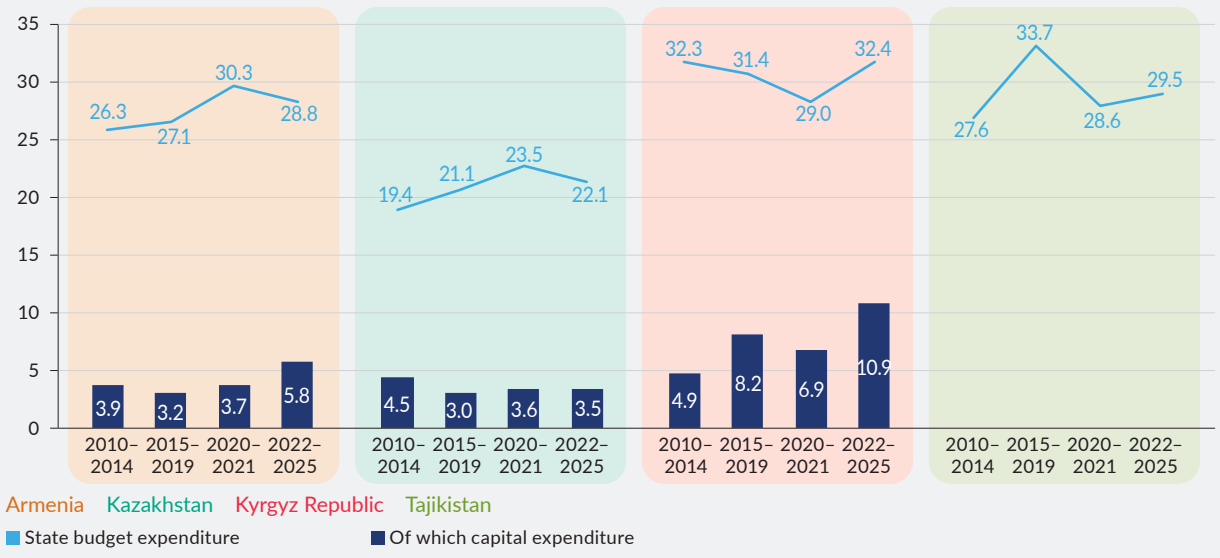
2.3.
Fiscal Policy and Public Expenditure

In recent years, public expenditure has played an increasingly prominent role in stimulating economic growth across the four countries, operating primarily through the investment channel. Public investment programs have expanded significantly, with a heavy focus on large-scale physical infrastructure development. Key regional flagship projects include the Kambarata-1 Hydropower Plant and the China-Kyrgyzstan-Uzbekistan Railway in the Kyrgyz Republic; the Rogun Hydropower Project in Tajikistan; the North-South Transport Corridor in Armenia; and the Astana Light Rail Transit (LRT) system alongside comprehensive road transport infrastructure, healthcare, and educational facility modernization programs in Kazakhstan.

In Armenia, following a decade of declining public capital expenditures during the 2010s, fiscal stance reversed substantially toward the end of the period. Total consolidated government expenditure reached approximately 30% of GDP by 2025, while capital expenditure expanded from around 3% of GDP in the late 2010s to 6.6%. Consequently, public investment emerged as a major financial source for the construction sector.

Kazakhstan maintained a relatively stable public expenditure position, though general government outlays rose from 19.4% of GDP in 2010 to 21.5% in 2025. Budgetary capital expenditures over 2022–2025 exceeded average 2015–2019 levels; however, the effective fiscal footprint in investment activity was substantially larger once off-budget capital expenditure by the quasi-public sector is accounted for.

Figure 2.10.
General Government Expenditure Dynamics (Period Averages, % of GDP)



Source: Authors' calculations based on data from the respective Ministries of Finance

In the Kyrgyz Republic, aggregate public expenditure expanded from 32.4% of GDP in 2010 to 35.4% in 2025. Crucially, budgetary capital outlays more than tripled, rising from 4% to 13% of GDP. This expansionary fiscal impulse was transmitted primarily through construction, alongside the state capital injections into the domestic banking and energy sectors.

In Tajikistan, state budget expenditures rose from 27% of GDP in 2010 to 31% in 2025. Capital outlays tied to large-scale infrastructure and energy projects served as the primary driver of expenditure expansion.

Key Findings

Amid ongoing structural transformation, all four countries achieved substantial gains in economic growth, real household incomes, and employment. Domestic demand, sustained by rising disposable incomes and public investment, emerged as the primary growth engine. The sectoral composition of economic activity continues to change: with the exception of Tajikistan, agriculture's share of gross value added declined, while non-tradable sectors, primarily services and construction, expanded. Concurrently, the relative contribution of sectors producing tradable goods and services contracted across the board.

This structural evolution had a muted impact on the distributive outcome of growth. The outcome is consistent with expansion of the non-tradable sectors. Although national poverty ratios fell noticeably in Armenia, the Kyrgyz Republic, and Tajikistan, absolute poverty remains high, with poverty reduction lagging behind GDP growth. Labor income shares in GDP remain low, while income inequality measures show little downward momentum.

These macroeconomic shifts hold direct implications for countries' labor markets. The structural composition of growth dictates the scale and nature of labor demand, influencing sectoral and spatial job creation as well as wage levels and employment opportunities. Crucially, despite shared transformational trends, each country exhibits a distinct growth model, shaping its long-term economic sustainability and future labor market dynamics.

Armenia. Over the past 15 years, Armenia underwent sustained structural transformation, transitioning in 2017 from the lower-middle-income to the upper-middle-income group. Real GDP grew approximately 2.1-fold over the decade and a half, whereas real wages grew by 60%. Post-pandemic growth was particularly robust, averaging 8.5% annually over 2022–2025. Non-tradable sectors, primarily services and construction, supported this expansion. Initially, growth was catalyzed by transitory external shocks, including inflows of Russian capital, high-skilled labor, financial transfers, expanded tourism, and re-export activities. These inflows simultaneously expanded domestic productive capacity, particularly in ICT, financial services, and construction.

While Armenia established a more diversified economic base, the long-term quality and durability of its growth trajectory depend on substituting temporary external demand shocks with domestic labor productivity gains and tradable sector expansion.

Over the past 15 years, Armenia underwent sustained structural transformation, transitioning in 2017 from the lower-middle-income to the upper-middle-income group.

Kazakhstan. Over the past 15 years, Kazakhstan has maintained its position as the largest and most developed economy in Central Asia, remaining firmly within the upper-middle-income tier. From 2022 onward, domestic demand — fueled by consumption and investment — became the primary engine of economic growth. Structurally, the expanding shares of wholesale and retail trade, hospitality, and other services reflect a clear shift toward domestic demand-oriented sectors. The core structural determinant is not so much the sheer share of mining and manufacturing in gross value added but rather the heavy concentration of export earnings and fiscal revenues in extractive industries, metallurgy, and energy. Current economic policy is guided by the strategic target of doubling nominal GDP to $450 billion by 2029, as mandated in the 2023 Presidential Address and formalized in the National Development Plan until 2029. Achieving this benchmark requires investment-led growth capable of sustaining annual real GDP growth at 5–6%.

Kazakhstan's future growth depends on leveraging its sovereign reserves and institutional capabilities to boost labor productivity, diversify non-resource exports, and create high-quality jobs outside the extractive industries.

Kyrgyz Republic. Average annual GDP growth reached 5.0% between 2010 and 2025, yielding a cumulative 2.2-fold expansion. In 2013, the Kyrgyz Republic transitioned from low-income to lower-middle-income status, maintaining that position throughout the decade. The income gap relative to Russia remains substantial (per capita GDP at PPP stood at approximately one-fifth of the Russian benchmark in 2025), driving continued outward labor migration. Although remittance inflows as a share of GDP have gradually tapered, their absolute nominal volume continues to grow, leaving household welfare highly dependent on external labor earnings.

In recent years, the Kyrgyz Republic established a growth model anchored in buoyant domestic demand, a construction boom, and service-sector expansion.

In recent years, the Kyrgyz Republic established a growth model anchored in buoyant domestic demand, a construction boom, and service-sector expansion. Conversely, agriculture's share of GDP was halved over the 15-year period. Accelerated growth in recent years has significantly broadened fiscal space, enabling state-led economic stimulus.

Tajikistan. Over the past 15 years, Tajikistan's economy expanded more than threefold, facilitating its advance from the low-income to the lower-middle-income tier. Nevertheless, Tajikistan retains the largest living-standard gap relative to regional middle-income leaders. Growth remains heavily reliant on external financial flows: remittances increased from $1.4 billion in 2010 to $7.2 billion in 2025, reaching historically unprecedented ratios relative to GDP. Structural transformation has been limited and diverges from regional patterns. While agriculture retains a high share of output, industry's share expanded via growth in mining and energy.

In both the Kyrgyz Republic and Tajikistan, long-term development sustainability hinges on establishing a more balanced growth engine between non-tradable sectors (trade and construction) and tradable industries (mining and manufacturing). Outward labor migration will remain a central economic feature for the foreseeable future. Key structural bottlenecks include infrastructure constraints, such as winter electricity shortages that limit energy-intensive industrial output, underdeveloped private sector activity, and the need to enhance public service delivery and state-owned enterprise efficiency.

Structural Change

Reallocation of resources from agriculture to non-agricultural activities



Demographic Factors of Economic Growth and Development



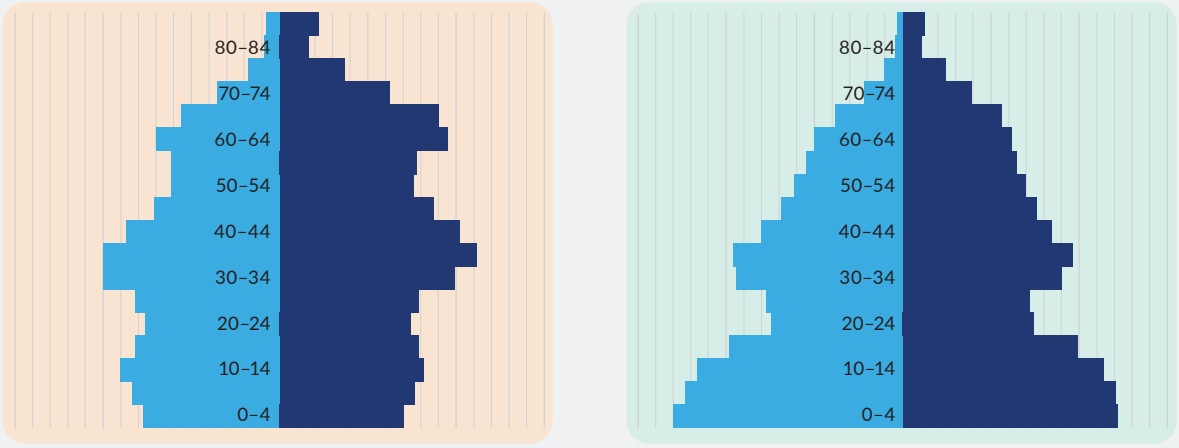


3.1.
Population Trends and Composition

Population dynamics and demographic composition, particularly shifts within the working-age cohort, exert a fundamental influence on labor supply. The operational mechanisms through which demographic changes shape labor supply depend on institutional frameworks and national macroeconomic policies.

All three Central Asian nations have young populations and high total fertility rates driving population growth. Conversely, Armenia exhibits low fertility and an accelerating population aging. These structural differences are reflected in their respective age-sex pyramids (Figure 3.1)[2]. The broad-based, triangular pyramids of the Central Asian states contrast sharply with Armenia's increasingly constricted, diamond-shaped demographic profile.

Figure 3.1.
Age-Sex Pyramids of Armenia, Kazakhstan, the Kyrgyz Republic, and Tajikistan

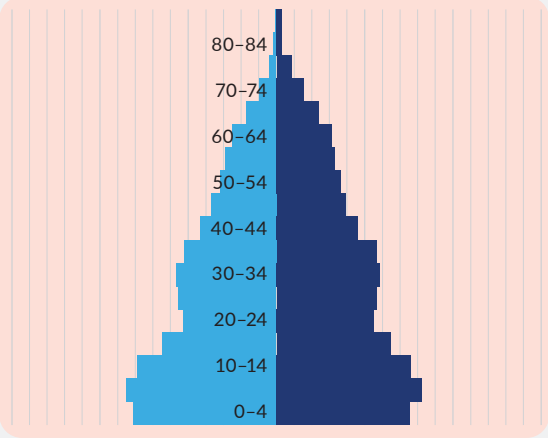


Armenia Kazakhstan Kyrgyz Republic Tajikistan

Source: UN Department of Economic and Social Affairs. Population Division. World Population Prospects 2024

[2] For cross-country comparability, demographic data are sourced from UN DESA World Population Prospects (2024 Revision).

In the Kyrgyz Republic and Tajikistan, high net fertility rates continue to drive rapid population growth. In the Kyrgyz Republic, the resident population expanded from 5.5 million in 2010 (Table 3.1) to 7.3 million by 2025, a 33% increase over 15 years that added approximately 1.8 million citizens. Over the same time period, the working-age population (aged 15–64) expanded by 26% (nearly 1 million individuals). In Tajikistan, total population grew by 38% (from 7.7 million to 10.6 million), while the 15–64 age cohort increased at an identical rate of 38% (rising from 4.6 million to over 6.3 million, an absolute net increase of more than 1.7 million). Kazakhstan recorded a 25% increase in total population (adding roughly 4 million persons), though its working-age cohort expanded at a more modest rate of 12% (approximately 1.4 million individuals). As illustrated in Figure 3.1, Kazakhstan exhibits a distinctly older age profile relative to the rest of Central Asia. Furthermore, the demographic pyramids of both Armenia and Kazakhstan display pronounced historical demographic waves. In Armenia (excluding the inflow of displaced persons from Nagorno-Karabakh toward the end of the period) total population contracted by approximately 3%, while the working-age group shrank by 4%, representing net declines of fewer than 100,000 individuals in each case.



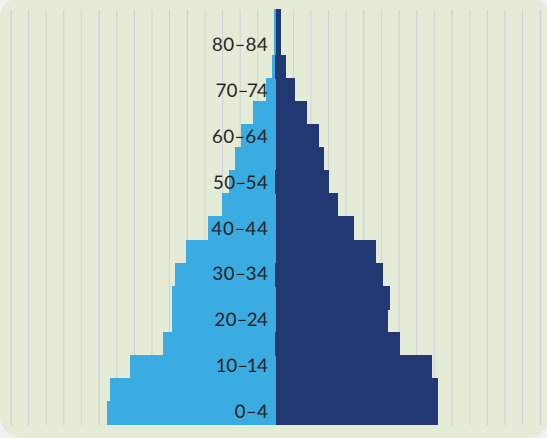


Table 3.1.
Population Trends: Retrospective (2010–2024) and Prospective (2025–2040)



	2010	2025	2040
	3.05	2.95	2.67
	2.05	1.97	1.73

Change: 2025 → 2040

–0.29 mln (– 9%)	–0.23 mln (– 12%)



	2010	2025	2040
	5.5	7.30	8.76
	3.60	4.50	5.72

Change: 2025 → 2040

+1.46 mln (+20.0%)	+1.19 mln (+ 27%)

Armenia:
Decline in both total and working-age populations.

Kazakhstan:
Steady population growth and a substantial increase in working-age population.

Source: National statistical offices; UN Department of Economic and Social Affairs, Population Division, World Population Prospects 2024. Population and labor force projections are based on underlying structural demographic trends, excluding short-term migration shocks.

Total population
15–64

	2010	2025	2040
Total population	16.2	20.28	24.25
15–64	11.17	12.55	15.30

Change: 2025 → 2040

+3.97 mln (+19.6%)

+2.75 mln (+21.9%)



	2010	2025	2040
Total population	7.7	10.6	13.7
15–64	4.59	6.34	8.8

Change: 2025 → 2040

+3.12 mln (+29.4%)

+2.46 mln (+38.8%)



Kyrgyz Republic:
Rapid growth in working-age population.

Tajikistan:
The highest growth rates in both total and working-age populations.

Children under the age of 15 account for more than one-third of the total population in the Kyrgyz Republic and Tajikistan, and approximately 30% in Kazakhstan. The nearly symmetrical, broad-based triangular age pyramids in these countries are characteristic of the early stages of demographic transition. Kazakhstan's pyramid exhibits a structural indentation in the middle age cohorts, reflecting the cohort squeeze resulting from low birth rates in the late 1990s and early 2000s. Across the Central Asian region, robust growth in both total population and the working-age population is projected to persist. Conversely, Armenia's older age structure and lower fertility rates mean that a natural increase cannot compensate for net emigration. Consequently, baseline projections point to a contraction in Armenia's total population.

Children under the age of 15 account for more than one-third of the total population in the Kyrgyz Republic and Tajikistan, and approximately 30% in Kazakhstan. The nearly symmetrical, broad-based triangular age pyramids in these countries are characteristic of the early stages of demographic transition.

Demographic forecasting inherently involves alternative scenarios regarding fertility, mortality, and migration pathways. In this report, baseline projections adopt the UN Medium Variant scenario for 2025–2040[3]. Over this horizon, the large cohorts born during the preceding 15 years and currently forming the broad base of the regional age-sex pyramids will reach the working age, adding substantially to labor supply and putting additional pressure on the labor market.

Under the baseline scenario (Table 3.1), Kazakhstan's population is projected to expand by 20% (roughly 4 million) over the next 15 years, with its working-age cohort growing by 22% (2.75 million). The Kyrgyz Republic's total population is projected to increase by 20% (1.5 million), while its working-age cohort (the core driver of labor supply) will expand by 26%, adding 1.2 million individuals relative to 2024 levels. Demographic expansion in Tajikistan will be even more pronounced: total population is projected to grow by approximately 30% (3.1 million), while the working-age population will expand by 39% (nearly 2.5 million). Armenia exhibits a divergent trajectory: its total population is projected to contract by 10% (approximately 290,000), while its working-age population is expected to shrink by 12% (roughly 230,000)[4].

[3] For comprehensive documentation of the UN forecasting framework, see *Methodology of the United Nations population estimates and projections*. UN DESA/POP/2024/DC/NO. 10, July 2024 https://population.un.org/wpp/methodology

[4] Should displaced persons from Nagorno-Karabakh permanently integrate into Armenia, the projected contraction in total and working-age populations will be proportionally muted.

3.2.
Toward a Demographic Dividend

The existence and direction of the relationship between working-age population growth and macroeconomic expansion remain a subject of active debate among economists and demographers. A growing body of empirical literature suggests that labor force growth alone may have a negligible impact on output expansion if accompanied by proportional increases in the non-working-age population[5]. An increase in the working-age share of the total population can exert a positive effect on GDP growth by reducing the aggregate dependency ratio[6]. This structural shift creates a window of opportunity to capture a "demographic dividend" as a contributor to economic growth[7]. A rising working-age population share is typically accompanied by higher aggregate savings rates, capital accumulation, human capital investments, and heightened innovation activity. Conversely, an increasing overall dependency ratio can act as a "demographic drag", dampening per capita GDP growth rates[8] (Kotschy, Bloom 2023). However, translating an expanding working-age population into an economic dividend requires sufficient domestic job creation; failing this, labor force pressures can escalate into severe macroeconomic imbalances and socio-political risks.

Notably, between 2010 and 2025, age dependency ratios increased across all four analyzed economies. In Armenia, the dependency ratio expanded from approximately 430 to over 490 per 1,000 working-age population, driven by an expanding share of elderly dependents. In Kazakhstan, simultaneous increases in both youth and elderly cohorts raised the dependency ratio from 470 to over 610 per 1,000. In the Kyrgyz Republic, rapid growth in the child population pushed the ratio up from 530 to 610 per 1,000. In Tajikistan, the dependency ratio remained persistently elevated within the 660–670 per 1,000 range. Thus, rapid population growth was not accompanied by a favorable decline in demographic dependency burdens.

The statistical relationship between demographic dynamics and per capita output growth can be formalized using an accounting decomposition. Per capita real GDP (or Gross Value Added) is specified by the following identity:

$$\frac{Y}{N} = \frac{Y}{E} \cdot \frac{E}{L} \cdot \frac{L}{A} \cdot \frac{A}{N},$$

where Y represents real GDP (or GVA), N is total population, E is aggregate employment, L is the labor force, and A denotes the working-age population (aged 15–64). Expressing this identity in compact

[5] For a theoretical and empirical review, see Bloom, D., D. Canning, J. Sevilla (2003). The demographic dividend: a new perspective on the economic consequences of population change. RAND, 2003.

[6] The age dependency ratio is defined as the population aged 0–14 and 65+ divided by the working-age population (aged 15–64), expressed per 1,000 individuals.

[7] Bloom et al, 2003.

[8] Kotschy R., D.Bloom (2023) Population Aging and Economic Growth: From Demographic Dividend to Demographic Drag? IZA DP No. 16377

notation yields $y = w \cdot e \cdot p \cdot a$, where y is per capita real GDP (or GVA), w is labor productivity (real output per employed person), e is the employment rate among the active labor force, p is the labor force participation rate, and a is the working-age population share. Consequently, per capita GDP levels are determined by the interaction of labor productivity, labor market participation, employment absorption, and demographic age structure.

The growth rate of per capita GDP can be decomposed into the sum of the marginal contributions of each constituent component averaged over the specified period:

$$\Delta y = \Delta y^{w} + \Delta y^{e} + \Delta y^{p} + \Delta y^{a}.$$

This accounting framework is operationalized using the Shapley value decomposition methodology[9], applied to standardized cross-country indicators from the World Bank World Development Indicators (WDI) database. The specific marginal contribution of changes in the working-age population share Δy^{a} serves as a statistical proxy for the demographic dividend. The decomposition results for the full 2010–2024 period and the 2020–2024 sub-period are summarized in Table 3.2[10]. Notably, this accounting framework provides a purely statistical attribution of per capita GDP growth and does not imply direct causal mechanisms.

Table 3.2.
Shapley Decomposition of Per Capita Real GDP Growth, 2010–2024 (with 2020–2024 sub-period)

	Labor productivity		Employment rate		Labor force participation		Working-age population	
	2010–2024	2020–2024	2010–2024	2020–2024	2010–2024	2020–2024	2010–2024	2020–2024
Armenia	1.05	0.82	-0.05	0.20	0.07	0.01	-0.07	-0.02
Kazakhstan	1.29	1.17	-0.06	0.01	0.09	0.02	-0.31	-0.19
Kyrgyz Republic	1.34	0.89	0.05	0.02	-0.22	0.09	-0.17	0.00
Tajikistan	1.23	1.09	-0.17	-0.14	-0.06	0.09	0.00	-0.04

Source: WDI database; authors' calculations

Note: Cross-country comparability across the four economies requires reconciling national statistical differences. In Section 3, we utilize WDI data, which incorporate ILO modeled estimates for employment and labor force participation. In Section 4, we draw upon national statistical offices and, where available, labor force survey (LFS) microdata. ILO modeled estimates and national LFS data exhibit discrepancies, which are detailed alongside source documentation.

[9] World Bank Group. Jobs Diagnostics Job Structure Tool. Version 10 June 2023 (https://datatopics.worldbank.org/jobsdiagnostics/); Chen, M., Kwok, C. L., Shan, H. Y., & Yip, P. (2018). Decomposing and predicting China's GDP growth: past, present, and future. Population and Development Review, 44(1), 143–157. https://doi.org/10.1111/padr.12v129; Shorrocks, A.F. 2013. *Decomposition procedures for distributional analysis: A unified framework based on the Shapley value*, Journal of Economic Inequality 11(1): 99–126.

[10] Data for Tajikistan are available through 2023.

The principal finding from Table 3.2 is that per capita real GDP growth across the entire timeline was driven almost exclusively by labor productivity growth. Conversely, contributions from shifts in employment rates, labor force participation, and demographic dependency burdens were either negligible or negative, partially offsetting productivity gains. While this pattern holds across all four countries, cross-country variation remains notable. Findings for the 2020–2024 sub-period are qualitatively consistent with the full timeframe, though the quantitative contribution of labor productivity was somewhat lower.

Armenia. A modest decline in employment rates alongside an increasing dependency burden shaved 12 percentage points off per capita GDP growth over the 15-year period; however, a 7 percentage point increase in labor force participation counterbalanced these losses. The 2020–2024 sub-period exhibited a distinct pattern: labor productivity gains accounted for roughly four-fifths of per capita GDP growth, with the remainder driven by rising employment rates (falling unemployment).

Kazakhstan. Labor productivity expansion was counteracted by an increasing demographic dependency ratio, which effectively neutralized one-quarter of total productivity-driven growth over the full period and one-sixth during the 2020–2024 sub-period.

Kyrgyz Republic. Results indicate a dominant positive contribution from labor productivity expansion over the entire horizon. Conversely, declining labor force participation and an increasing dependency ratio exerted downward pressure on output growth. Absent the fall in participation and rising dependency ratios, cumulative per capita GDP growth could have been up to 40% higher. In recent years, while the marginal contribution of productivity growth moderated, rising participation rates largely offset the slowdown. However, a positive demographic dividend failed to materialize.

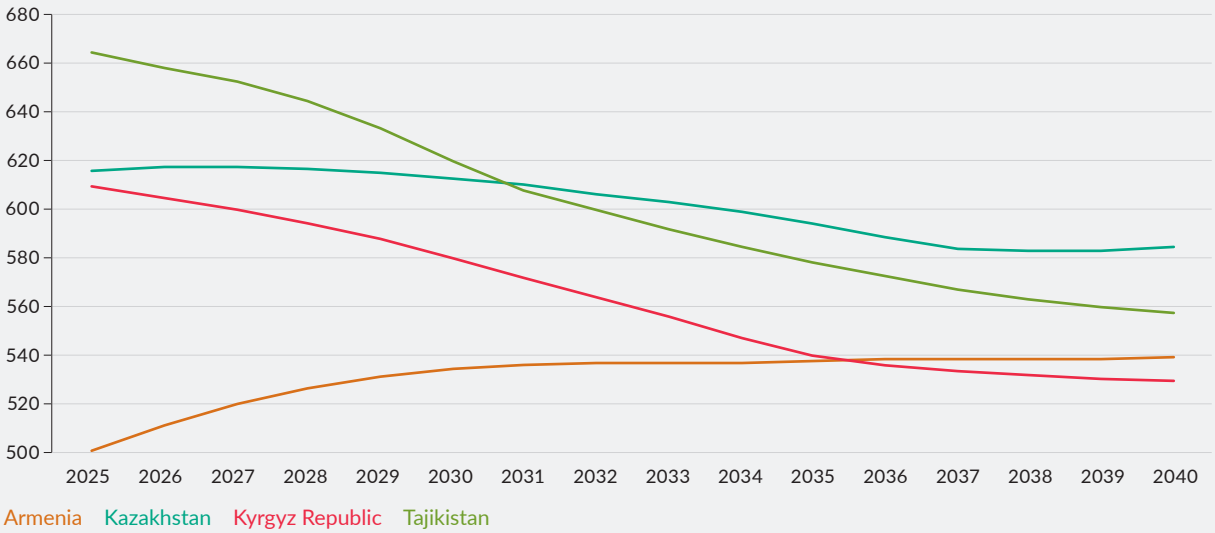
Tajikistan. Declining employment and participation rates dragged down per capita GDP growth, while shifts in the demographic age structure remained largely neutral. During the 2020–2024 sub-period, rising labor force participation yielded a positive contribution to aggregate growth.

First, labor productivity gains served as the primary growth engine for per capita GDP across all four economies. Second, demographic shifts failed to generate a significant demographic dividend: changes in the age structure of the population either exerted a negligible impact on output growth or acted as a structural drag.

In sum, two main conclusions emerge. First, labor productivity gains served as the primary growth engine for per capita GDP across all four economies. Second, demographic shifts failed to generate a significant demographic dividend: changes in the age structure of the population either exerted a negligible impact on output growth or acted as a structural drag.

As noted above, the demographic dividend is governed not by the absolute size of the working-age population, but by its relative share within the total population. High fertility rates increase total population size while expanding the child dependency ratio. However, a youth-heavy dependency burden transitions into a declining dependency ratio as these cohorts reach working age. Over the medium horizon (Figure 3.2), age dependency ratios in the Kyrgyz Republic and Tajikistan are projected to decline, opening a structural window to capture a demographic dividend. In Kazakhstan, an expanding elderly cohort will slow dependency reduction, resulting in the highest dependency burden among the regional peers by the 2030s. In Armenia, the dependency ratio will drift steadily upward, indicating that the demographic dividend window has closed, though its overall ratio will remain the lowest among the four countries through the mid-2030s.

Figure 3.2.
Age Dependency Ratio Projections, per 1,000 people (2025–2040)



Source: UN Department of Economic and Social Affairs. Population Division. World Population Prospects 2024. Authors' calculations

Capturing potential gains from shifts in demographic age structures requires expanding high-productivity job creation and effectively integrating an expanding labor force into the formal economy. Consequently, projected working-age population growth across Kazakhstan, the Kyrgyz Republic, and Tajikistan represents both a strategic growth opportunity and a major macroeconomic policy challenge. Conversely, working-age population contraction in Armenia is not an insurmountable barrier. Transforming a large youth cohort entry into an economic dividend rather than a growth drag depends on human capital development and educational alignment. Under advancing population aging, sustaining the health and functional capacity of older age cohorts becomes equally vital, requiring proactive public health and health system adaptations[11].

[11] Kotschy R., D. Bloom (2023) Population Aging and Economic Growth: From Demographic Dividend to Demographic Drag? IZA DP No. 16377

Demographic projections define only the potential supply of labor; real labor supply depends on labor force participation rates and productivity levels. Projecting economic activity metrics onto underlying population trends offers key insights into medium-term employment dynamics.

3.3. Labor Markets Facing Demographic Challenges

Demographic shifts create structural opportunities and constraints for macroeconomic expansion. Demographic challenges are an objective reality that policymakers must account for. For Armenia, the primary constraint stems from labor supply contraction and population aging; for Central Asia, the core challenge lies in absorbing rapid labor force growth. While policy responses are well-established, their execution requires targeted institutional and economic reforms.

Armenia: population aging and structural migration

Armenia has completed its demographic transition, reaching a low-fertility, low-mortality equilibrium. Sustained sub-replacement fertility has contracted younger cohorts and accelerated structural aging. Dependency ratio growth is driven primarily by an expanding elderly population, while the child dependency share remains flat. Outward migration further shapes labor supply dynamics. Despite temporary net migration inflows in 2022–2024 driven by population movements from Russia and Nagorno-Karabakh, long-term trends point toward structural working-age emigration.

Consequently, Armenia faces labor supply constraints that can be offset only partially by higher participation rates and unemployment reduction.

Under these conditions, relaxing demographic growth constraints requires maximizing existing labor potential: accelerating labor productivity, activating economically inactive and unemployed populations, and extending functional capacity in older cohorts. Strengthening education quality and health system performance is an essential element of this policy response.

Kazakhstan: demographic waves and supply expansion

Kazakhstan is characterized by structural age cohort unevenness caused by historical demographic shocks. Rapid population expansion continues, driven by elevated fertility rates, alongside accelerating structural aging. In the near term, the working-age population will expand simultaneously with the elderly population share. The labor market entry of cohorts born during the fertility surge of the late 2000s will substantially increase potential labor supply.

> **Prime-age labor force participation rates for both men and women in Kazakhstan, unlike its regional peers, are already high, leaving limited room for further activation.**

Prime-age labor force participation rates for both men and women in Kazakhstan, unlike its regional peers, are already high, leaving limited room for further activation. External and internal migration adds further complexity. Kazakhstan remains the sole net immigration economy among the four countries, increasingly acting as a destination for regional labor migrants. This requires robust migration policy frameworks and integration channels. Simultaneously, rapid urbanization toward major metropolitan centers creates structural pressure on urban infrastructure, housing, and local labor markets.

Kyrgyz Republic and Tajikistan: unfinished demographic transitions

Both economies remain in the earlier stages of demographic transition, where high fertility drives rapid population growth. Over the coming years, large youth cohorts will enter the labor force, intensifying job creation pressures while opening a window for a demographic dividend. Employment absorption and dividend realization depend on educational quality and skill formation. While secondary and tertiary educational attainment among younger cohorts in the Kyrgyz Republic is high and rising, educational expansion in Tajikistan remains constrained at lower levels.

Both countries exhibit persistently low female labor force participation. High fertility (particularly in rural areas), unpaid care responsibilities, traditional social norms, and constrained formal wage-employment opportunities keep a significant share of working-age women outside the active labor force.

An additional feature defining the Kyrgyz Republic and Tajikistan is their high structural reliance on external labor migration. Emigration acts as a safety valve that relieves domestic job deficit pressures and slows structural transformation; simultaneously, migrant worker remittances bolster domestic demand and support household consumption for a vast share of the population. However, this heavy reliance leaves both economies acutely vulnerable to policy shifts in destination countries and disincentivizes domestic high-productivity job creation. Maintaining external migration flows near current elevated levels will prove increasingly challenging and unlikely over the medium to long term.

Despite these pronounced demographic divergences, the primary growth reserves across all four countries depend on elevating labor productivity, enhancing human capital formation, creating formal employment opportunities aligned with shifting age profiles, and reducing labor market informality.

3.4. Migration Flows and Migration Challenges

This report analyzes three distinct modalities of migration: **Permanent International Migration:** Relocation involving a change of permanent residence. Net migration balances serve as a major component of total population change. **Temporary Labor Migration:** Short-term external migration to foreign destinations followed by return to the country of origin. While temporary labor migration does not alter permanent population figures, it directly affects the effective labor supply in both origin and destination countries. Furthermore, it generates cross-border remittance flows that significantly influence balance-of-payments dynamics, household incomes, and private consumption. Given their distinct macroeconomic transmission channels, permanent and temporary labor migration are evaluated separately. **Internal Migration:** Population movements across subnational regions and rural-to-urban shifts. While internal migration has negligible effects on aggregate national labor supply[12], it fundamentally alters its geographic distribution.

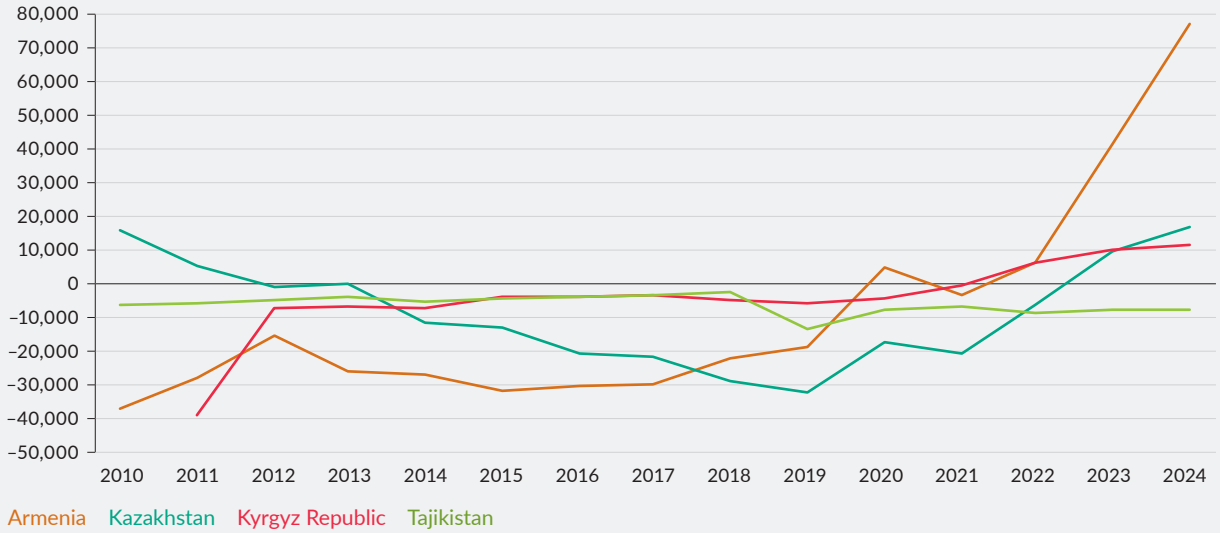
[12] Effective labor supply may shift if internal migration alters individuals' labor force participation status or changes average hours worked among the employed.

3.4.1.
External Migration: Population Trajectories and Labor Supply Dynamics

Permanent Migration

Over the past 15 years, net permanent migration (measured as the difference between permanent arrivals and departures) displayed distinct trajectories across the four economies, despite sharing underlying structural shifts (Figure 3.3)[13]. Net emigration, which prevailed in the 2010s, briefly turned into net inflows in the early 2020s everywhere except Tajikistan, where net migration stayed negative throughout the period. Long-term baseline demographic forecasts (as of 2024) project net permanent migration losses across all four countries through 2040[14].

Figure 3.3.
Net Permanent International Migration Balances, Persons (2010–2024)



Source: National statistical offices

[13] External permanent migration stock is often proxied using foreign-born population datasets (UN Population Division https://www.un.org/development/desa/pd/content/international-migrant-stock). However, these data lack granularity regarding age at migration and timing of movement, resulting in distortions due to historical inter-republic transfers during the Soviet era. Under that proxy methodology, 2024 migrant stock figures would stand at 637,000 for Armenia, 2.8 million for Kazakhstan, 540,000 for the Kyrgyz Republic, and 515,000 for Tajikistan.

[14] https://population.un.org/wpp/

Armenia.

Prior to 2020, Armenia was characterized by intense outward migration, spanning permanent relocation, temporary labor deployment, and educational mobility. Relative to total population size, Armenia's statistically observed net migration losses were the highest among the four analyzed economies. Cumulative net emigration over 2010–2024 was estimated at approximately 145,000 individuals. Up until 2018, net annual losses averaged roughly 30,000 persons per year; thereafter, emigration moderated and subsequently reversed into net immigration, driven primarily by inflows from the Russian Federation. In 2024, net positive migration was further amplified by displaced populations arriving from Nagorno-Karabakh. The long-term retention of a positive migration balance remains unlikely; across baseline projection scenarios, Armenia is expected to experience steady net population losses via emigration. Outflows are predominantly directed toward the Russian Federation, France, and the United States. Beyond the temporary inflow waves from Russia and Nagorno-Karabakh, immigration from Lebanon, Iran, and Syria has also been observed in recent years.

Kazakhstan.

The contribution of permanent migration to total population dynamics was negative but structurally muted. Over the 15-year period, cumulative net emigration stood at slightly over 130,000 persons, a modest figure relative to the country's total demographic base. Kazakhstan maintained a positive net migration balance during the early 2010s, which re-emerged in the post-pandemic period and has persisted through recent years. Historical net emigration was largely driven by the departure of ethnic Russians, concentrated primarily in the northern regions; however, the intensive phase of this outward movement concluded by the early 2000s. Currently, unlike its regional peers, Kazakhstan serves neither as a major source nor as a primary destination for permanent migration.

Future immigration potential depends on available pools of ethnic Kazakhs residing abroad, which are increasingly constrained. Concurrently, as other Central Asian economies seek to diversify labor migration corridors, Kazakhstan's strategic role as a destination country is expanding, predominantly for temporary labor migration rather than permanent settlement.

Quantifying the precise scale of permanent immigration into Kazakhstan by country of origin remains challenging due to data coverage gaps. According to official statistics[15], Kazakhstan's net positive migration balance with Uzbekistan averaged approximately 6,300 persons per year in 2022–2023, moderating to roughly 2,000 persons in 2024[16], while net migration with Tajikistan did not exceed 1,000 persons annually.

[15] Bureau of National Statistics of the Republic of Kazakhstan, Demographic Yearbooks. https://stat.gov.kz/upload/iblock/ba9/sb7y28tuj2cfxl7qhnsb1uc8gzfx1nna/%D0%95–06-%D0%93%20%D1%80%D1%83%D1%81.pdf

[16] Ibid.

Kyrgyz Republic.

Since 2022, the Kyrgyz Republic has recorded a positive net permanent migration balance. This shift is attributable primarily to the return of long-term emigrants previously residing in the Russian Federation who re-entered permanent migration statistics.

Nevertheless, cumulative net migration losses over the preceding 15 years amounted to approximately 65,000 persons. Relative to total population size, this net drain is significantly smaller than Armenia's yet higher than Kazakhstan's.

Tajikistan.

According to national statistical data, net permanent migration losses over the analyzed horizon approached 100,000 persons[17]. Intertemporal variation in net annual migration balances remained minimal throughout the period.

Available official migration datasets for the Kyrgyz Republic and Tajikistan must be interpreted with caution. The structural quality of migration tracking frameworks remains suboptimal, resulting in substantial discrepancies across empirical estimates. A significant share of individuals classified by national statistical agencies as temporary labor migrants have, in reality, resided abroad continuously for extended periods, returning to their countries of origin infrequently or not at all.

Methodologically, such individuals should be classified as permanent emigrants — a reclassification that rarely occurs in local administrative registries (conversely, host-country administrative systems occasionally misclassify temporary labor migrants as permanent residents).

A fundamental statistical blind spot concerns the duration of stay in recipient economies. Available data fail to track duration of stay (the continuous interval between entry and departure) and frequently blur the distinction between *flow* metrics over a given period (such as entry counts or temporary registrations) and *stock* metrics (the actual migrant population present at a specific point in time).



Public-Sector Wages

Wage levels in the public sector are substantially below appropriate levels

[17] Statistical Agency under the President of the Republic of Tajikistan, Analytical Data Tables. https://www.stat.tj/ru/analiticheskie-tabliczy/

3.4.2. Temporary Labor Migration: The Regional Macro Picture

Armenia's integration into international labor migration streams has exhibited a gradual structural decline. As of 2024, the stock of temporary labor migrants from Armenia was estimated at 28,000 individuals, representing 2.4% of total employed persons and less than 1% of the total population[18]. Foreign labor immigration into Armenia remains negligible, accounting for approximately 0.1% of domestic employment, and exerts minimal impact on net international labor balances, which remain negative. Net educational migration balances are similarly negative.

Kazakhstan does not function as a labor exporter; rather, its role as a regional host economy for temporary labor migrants from Central Asia is expanding. Quantitative estimates of foreign labor stock in Kazakhstan vary widely across administrative sources. Data from the Ministry of Labor and Social Protection (2024–2025) report roughly 13,500 to 14,000 legally registered temporary foreign workers continuously residing in the country. Conversely, International Organization for Migration (IOM) survey assessments[19] estimate that approximately 500,000 labor migrants were residing in Kazakhstan in 2024–2025[20], representing roughly 5.5% of the total domestic employed labor force.

Data discrepancies become sharper when comparing host-country figures against donor-country reporting. In 2024, official organized recruitment channels recorded only 10,700 Uzbek citizens working in Kazakhstan. However, the Migration Agency of Uzbekistan[21] reported 322,700 Uzbek labor migrants in Kazakhstan as of early 2025. Data published by Ranking.kz[22] (citing Ministry of Labor data) placed the third-quarter 2025 count of Uzbek labor migrants at approximately 171,000, alongside roughly 10,100 labor migrants from Tajikistan. Meanwhile, labor migrants from the Kyrgyz Republic benefit from near-unrestricted market access under Eurasian Economic Union (EAEU) agreements, and public administrative reporting on Temporary Residence Permits (TRPs) for EAEU citizens remains unreleased[23]. IOM stock assessments indicate that approximately 78% (386,000) of temporary labor migrants in Kazakhstan

[18] Estimates based on Migration Snapshot of the Republic of Armenia for 2024, Yerevan 2026 (https://armstat.am/ru/?nid=82&id=2807) and Demographic Handbook of Armenia 2026 (demog_2025_7.pdf, pp.133–134). A temporary labor migrant is defined as an individual who, over a 3-year observation window, departs the country and returns to permanent residence, or remains abroad for less than 12 months with employment cited as the primary reason for departure. Data derived from the Integrated Living Conditions Survey (ILCS).

[19] IOM employs a survey-based baseline mobility assessment methodology. See: https://dtm.iom.int/reports/kazakhstan-ocenka-bazovoy-mobilnosti-v-kazakhstane-raund-8?close=true

[20] See https://dtm.iom.int/node/64766 and https://dtm.iom.int/reports/kazakhstan-ocenka-bazovoy-mobilnosti-v-kazakhstane-raund-8?close=true

[21] These data were first reported in https://www.gazeta.uz/ru/2025/01/21/migrant/ Representatives of the Agency cited internal tracking sources that estimate migrant volumes as follows: "Three months after an Uzbek citizen departs the country, their record is transferred directly to the Ministry of Internal Affairs..."

[22] https://ranking.kz/reviews/socium/skolko-realno-zarabatyvayut-kazahstantsy-za-pyat-let-razmer-oplaty-truda-v-strane-uvelichilsya-bolee-chem-vdvoe.html

[23] This applies to migration tracking across all EAEU member states.

originate from Uzbekistan, 7% from the Russian Federation, 6% from Tajikistan, and 5% from the Kyrgyz Republic. Conversely, Ministry of Labor registrations are dominated by Chinese nationals (accounting for roughly one-third of formal work permits), with Uzbekistan comprising under 10%. This vast divergence indicates a substantial volume of informal or semi-formal migrant labor from neighboring Central Asian states that remains undetected by standard labor authority registries. Realignments in regional labor migration corridors may have rerouted flows toward Kazakhstan faster than official registration statistics can capture.

Estimates of annual outward labor migration from the *Kyrgyz Republic* range between 300,000 and 1,000,000 individuals. Calculations based on the 2024 Labor Force Survey (LFS) identify 331,000 employed citizens working abroad; synthetic panel adjustments applied to LFS microdata roughly double this baseline figure. Furthermore, the 2022 Population and Housing Census recorded approximately 850,000 citizens absent due to foreign employment[24]. National vital statistics registries indicate a 675,000-person gap between de jure (resident) and de facto populations (representing ~10% of total population), with 638,000 of this unrepresented population originating from rural areas. Ministry of Internal Affairs data from the Russian Federation recorded over 1.0 million Kyrgyz citizens on migration registries in 2024, of whom 834,000 cited work as their primary purpose of entry. Pre-pandemic World Bank estimates conservatively placed the labor migrant stock at 500,000 persons, equivalent to nearly 20% of the domestic employed labor force[25]. Even under the lowest baseline metrics, the Kyrgyz economy exhibits an exceptionally high structural dependency on external labor deployment.

Data on outward labor migration from domestic sources in *Tajikistan* remain subject to substantial reporting discrepancies. Ministry of Internal Affairs datasets for the Russian Federation report that 2.43 million Tajik citizens were registered on foreign migration registries in 2023, of whom 1.74 million declared employment as their primary purpose of entry. In 2024, these figures shifted to 2.03 million and 1.43 million, respectively. Given Tajikistan's larger total demographic base and lower domestic real wage levels relative to the Kyrgyz Republic, the true structural scale of outward labor migration from Tajikistan may be at least double that observed in the Kyrgyz Republic.

The Russian Federation remains the dominant destination for labor migration from both the Kyrgyz Republic and Tajikistan; however, its labor absorption capacity is experiencing a gradual structural contraction. Within the Russian labor force balance calculated by Rosstat (the Russian Federal State Statistical Service), the average annual stock of temporary foreign labor migrants was estimated at 3.5 million persons in 2022, moderating to 3.3 million in 2024. Administrative flow metrics reinforce this downward trajectory. During the first half of 2026, total entry registrations into Russia declared

[24] Population and Housing Census of the Kyrgyz Republic, Vol. 2, Part 3: Population Migration. National Statistical Committee, Bishkek (2024).

[25] Jobs in the Kyrgyz Republic. World Bank, 2018.

under the category of "work" by citizens of Uzbekistan, Tajikistan, and the Kyrgyz Republic contracted by 15% year-on-year. Uzbekistan led total employment-driven entries with over 1.1 million arrivals. Tajikistan ranked second with nearly 500,000 employment-driven entries (a 18% year-on-year decline), while the Kyrgyz Republic ranked third with 290,000 entries (a 16.7% decline)[26]. Kyrgyz media reports (citing the Ministry of Foreign Affairs of the Kyrgyz Republic) similarly highlighted a nearly 50% drop in the registered stock of Kyrgyz labor migrants in Russia in 2024 relative to 2023, falling from 650,000 to 350,000 persons[27].

The contraction of outward labor migration toward the Russian Federation appears to be evolving into a structural, long-term trend. Regulatory tightening of migration frameworks within Russia has elevated migration transaction costs and compressed expected net returns, constraining both host-country demand for Central Asian labor and origin-country labor supply. Consequently, macroeconomic projections assuming that external labor migration can scale synchronously with domestic working-age population growth represent an overly optimistic assumption.

3.4.3. Demographic Profile of Labor Migrants

Labor Force Survey (LFS) microdata for the Kyrgyz Republic allow for a granular reconstruction of the demographic profile of outgoing labor migrants. In 2024, labor migrants accounted for 12% of total employed citizens and approximately 7% of the total population aged 15 and older (authors' calculations). These proportion figures roughly double when migrant flows are re-estimated using synthetic panel methodologies, though the underlying socio-demographic composition remains virtually unchanged. Table 3.3 details key socio-demographic characteristics of Kyrgyz labor migrants relative to the broader domestic population and active labor force.

The empirical microdata indicate that the average labor migrant from Kyrgyzstan is a young male (under 29 years of age) from a rural area, lacking formal tertiary or vocational education[28]. While this demographic subset accounts for approximately 5% of total domestic employment, it constitutes nearly a quarter of the outgoing labor migrant stock.

[26] https://www.vedomosti.ru/society/articles/2026/08/06/1219138-chislo-rabochih-vezdov-v-rf-grazhdan-tsentralnoi-azii-sokratilos?utm_campaign=newspaper_6_8_2026&utm_medium=email&utm_source=vedomosti

[27] https://old.asiaplustj.info/ru/news/centralasia/20250131/v-kirgizstane-zayavili-chto-migrantov-kirgizstantsev-v-rossii-stalo-napolovinu-menshe

[28] A similar pattern is observed in Armenia, where labor migrants are predominantly urban men of young working age. See *Migration Snapshot of the Republic of Armenia for 2024*. Yerevan, 2026. https://armstat.am/ru/?nid=82&id=2807.

Table 3.3
Demographic Composition of the Population and Outward Labor Migrants, Kyrgyz Republic (2024)

	Population Aged 15+	Employed Population (Excl. Labor Migrants)	Labor Migrants
Share of men (%)	48.5	58.4	78.8
Average age (years)	38.9	40.6	32.1
Share aged 15–29 (%)	34.5	21.8	49.0
Share aged 30–49 (%)	38.7	52.5	42.8
Share aged 50+ (%)	26.9	25.7	8.3
Share with tertiary education (%)	32.3	40.5	18.4
Share with general education (secondary or lower) (%)	61.6	50.6	76.0
Share residing in urban areas (%)	38.2	42.3	18.8
Share married (%)	59.8	68.6	50.1
Total (thousand persons)	4,825	2,424	332

Source: Authors' calculations based on 2024 LFS microdata

Unfortunately, the cross-sectional design of the LFS precludes tracking the longitudinal labor market trajectories of migrants across pre- and post-migration phases. Nevertheless, given that outward labor mobility operates as a mass youth phenomenon, the nature of post-migration economic re-entry carries structural macro-level implications. If returning labor migrants originating from economically depressed rural regions utilize external earnings solely to support resident households and subsequently reintegrate into local subsistence sectors, this dynamic may suppress rural-to-urban domestic migration, thereby stalling structural transformation. As demonstrated in Section 4.3, intersectoral labor reallocation serves as a primary engine of aggregate total factor productivity growth and broader structural convergence.

The primary driver of outward labor migration remains the substantial cross-border real wage differential between origin and destination economies. In 2023, nominal average monthly wages (converted to Russian rubles at average annual market exchange rates) in donor economies were markedly lower than those in the Russian Federation — by a factor of five in Tajikistan, a factor of 2.5 in the Kyrgyz Republic, and by roughly 20% in Armenia. However, national corporate-sector average wage metrics reported by national statistical offices understate real geographic earnings disparities. When controlling for origin sectors and regions (agriculture and economically lagging rural sub-regions) versus host-country placement (metropolitan labor markets), the operational wage gaps widen considerably, functioning as a powerful structural

suction mechanism for low-skilled labor across borders. Conversely, in Kazakhstan, the nominal wage differential relative to Russia stood at merely 10%, generating virtually no economic incentive for outward employment-driven migration. Armenia's trajectory is increasingly converging toward this pattern.

In the empirical literature, spatial migration dynamics are frequently modeled via the standard Harris-Todaro spatial equilibrium framework (Harris and Todaro, 1970). Under this model, an individual's decision to migrate is a function of expected real wage differentials, host-country employment probabilities, and direct plus psychological migration transaction costs. Given the vast spatial income gaps (between Russian metropolitan centers and rural Kyrgyz or Tajik areas) combined with high labor demand in a structurally tight Russian labor market, rising regulatory compliance costs and administrative restrictions have not fully neutralized the net expected gains from migration. Policy mechanisms such as organized bilateral recruitment frameworks and pre-departure vocational training in donor states further lower transaction costs for prospective migrants, facilitating host-country labor market insertion, provided host-country labor demand persists and institutional market access remains open.

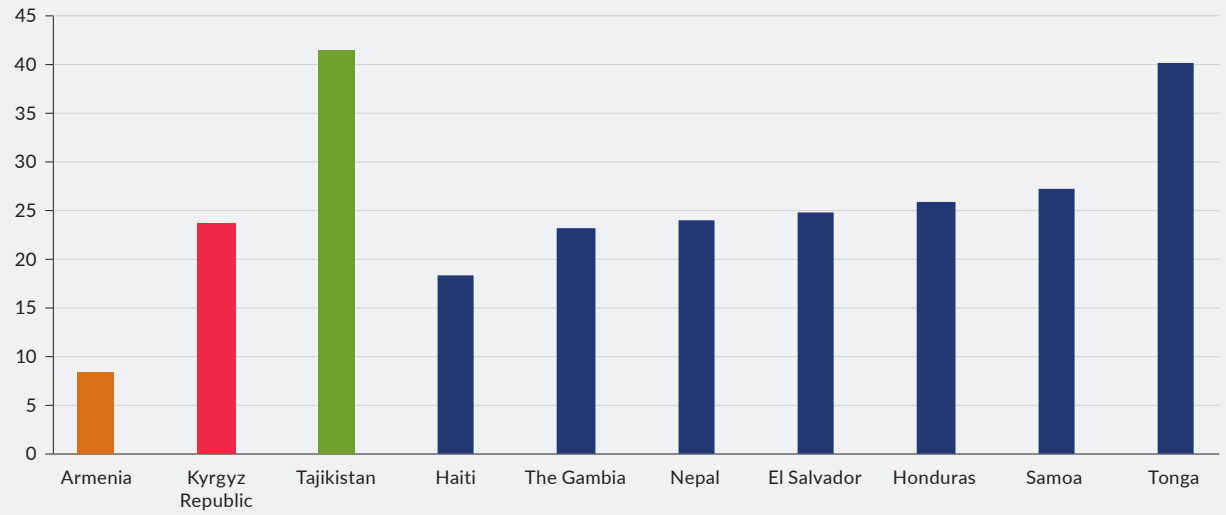
3.4.4. Macroeconomic effects of outward labor migration

The principal macroeconomic metric reflecting the impact of emigration on origin economies is the ratio of net personal cross-border remittances to Gross Domestic Product (GDP)[29]. For Kazakhstan, this ratio is macroeconomically negligible. In Armenia, cross-border remittance inflows as a share of GDP contracted from roughly 20% at the beginning of the observation period to 10% in 2022, declining further to approximately 5% in 2024. Conversely, for the Kyrgyz Republic and Tajikistan, remittance reliance remains at systemic levels (see Figure 2.5 in Section 2.1).

In the Kyrgyz Republic, this ratio fluctuated at around one-third of GDP until the early 2020s before moderating to 18% in 2025. Although dependency on transfers has been diminishing, the Kyrgyz Republic's current metric remains among the highest globally. In Tajikistan, the share of remittances to GDP has been consistently higher throughout the entire period, oscillating between one-third and one-half of total output before exceeding 40% in 2025. This figure is roughly double the total domestic fiscal revenue-to-GDP ratio. In this respect, Tajikistan represents a unique case of systemic macroeconomic dependency on remittance inflows, a vulnerability further amplified by the absence of tangible corridor diversification. Severe reliance on private cross-border transfers exerts a profound impact across all dimensions of economic and social policy in both Tajikistan and the Kyrgyz Republic.

[29] While income earned abroad by national citizens forms part of Gross National Income (GNI) rather than GDP, cross-border remittance flows are benchmarked against GDP here for comparative standardized measurement, given that GDP estimates for Central Asian economies exhibit higher statistical reliability than GNI series.

Figure 3.4.
Volume of Private Cross-Border Remittances (% of GDP, 2021–2024 Average)



Source: World Bank, World Development Indicators

To contextualize this extreme exposure to remittance transfers, these economies can be benchmarked against other countries with substantial remittance inflows. Figure 3.4 presents the 2021–2024 average ratios of personal cross-border remittances to GDP. Tajikistan emerges as the global leader in remittance intensity, while the Kyrgyz Republic belongs to a peer group comprising several small African and Central American nations, Small Island Developing States (SIDS), and Nepal.

Heavy economic reliance on remittance flows entails significant structural tradeoffs. Remittance-generated cash flows exhibit high temporal volatility, remaining acutely sensitive to host-country immigration policy shifts and cross-border exchange rate fluctuations.

Income gains generated by labor migrants far surpass the poverty-reduction impact of domestic social assistance programs (The Journey Ahead. World Bank, 2024). Because migrants originate predominantly from low-income households, absolute poverty rates in donor economies would be substantially higher in the absence of these inflows (Danzer and Ivaschenko, 2010; Gang et al., 2017a, b). These transfers are variously channelled into residential construction, funding children's education, financing life-cycle events, supporting micro-enterprises, or sustaining basic household consumption (Gatskova and Kozlov, 2020; Fanyan et al., 2024).

However, heavy economic reliance on remittance flows entails significant structural tradeoffs. Remittance-generated cash flows exhibit high temporal volatility, remaining acutely sensitive to host-country immigration policy shifts and cross-border exchange rate fluctuations. These external transmission channels lie entirely

beyond the control of national monetary authorities, generating substantial unhedged macroeconomic volatility. Furthermore, remittance inflows tend to nourish informal economic activity, as receiving households are frequently embedded in informal production and consumption networks (Huber and Rahimov, 2017; Ivlevs, 2016; Bettin et al., 2017; Tokhirov, 2018).

Structural remittance dependency functions as a specific strain of "Dutch Disease" characteristic of economies specialized in single-commodity exports — in this instance, the export of low-skilled labor. This condition manifests in real exchange rate overvaluation, which dampens domestic tradable goods production, erodes the institutional environment, and undermines incentives for private investment in human capital (Chami et al., 2008; Abdulloev et al., 2020; Thomas et al., 2019). A further structural consequence is the preservation of surplus agricultural employment: because migrants originate predominantly from rural regions and sustain resident families via remittances, domestic rural-to-urban labor reallocation is effectively stalled, a dynamic clearly observable in Tajikistan.

While outward labor migration siphons off excess rural labor and mitigates domestic unemployment pressure, it simultaneously suppresses intersectoral labor reallocations toward higher-productivity activities such as manufacturing and modern services. This bottleneck constrains aggregate labor productivity growth by suppressing the structural reallocation component (see Section 4.2). A related byproduct is the depression of domestic demand for human capital, as low-skilled migration offers minimal financial returns to education, while domestic returns to education remain concentrated within a narrow band of economic activities. These structural features characterize Tajikistan and, to a lesser extent, the Kyrgyz Republic.

Specialization in labor export also generates distortionary fiscal effects, as cross-border private income transfers fall outside domestic income tax networks. The resulting erosion of the potential tax base leads to systemic underfunding of public goods and human capital infrastructure[30]. This underinvestment degrades the structural foundations for long-term growth, generating further push factors that reinforce migration intentions across generations (Grigoryan and Khachatryan, 2022).

Consequently, the institutional and economic dynamics close into a self-reinforcing equilibrium loop: rapid demographic expansion → rural overpopulation → depressed agricultural labor productivity → sluggish job creation in non-agricultural sectors → stalled structural transformation → intensive rural labor emigration and remittance dependence → elevated economic informality and suppressed open unemployment. Within this equilibrium state, outward labor emigration serves as the primary equilibrating mechanism ensuring the self-reproduction of the low-productivity regime.

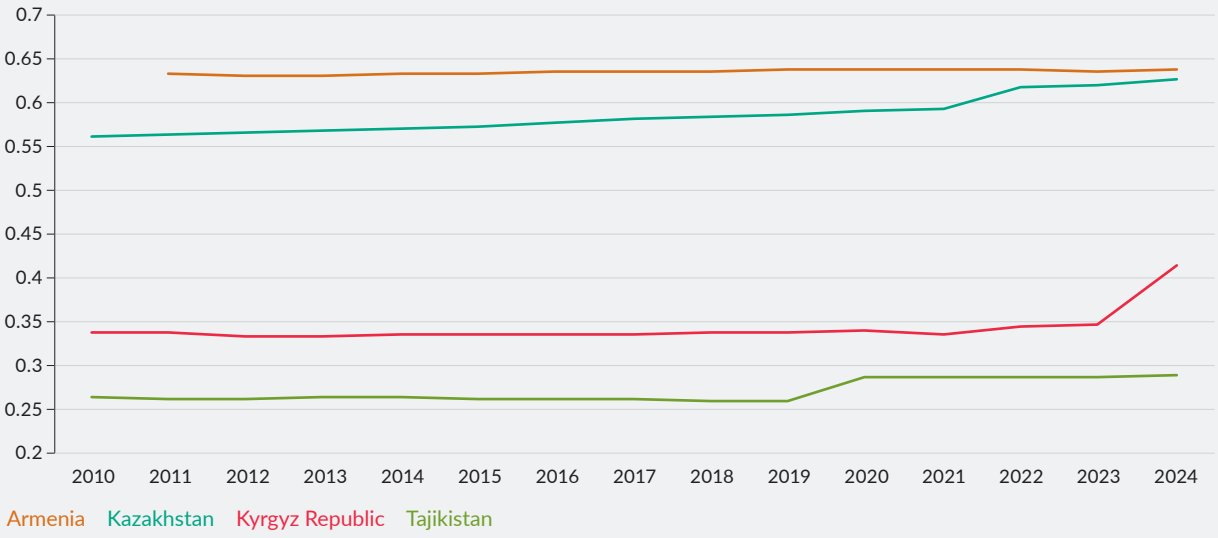
[30] Indirect tax collections (such as VAT and excise duties) may temporarily expand if remittance-funded household consumption shifts toward formally produced, taxable goods and services.

3.4.5.
Internal Migration: Scale and Structural Effects

Urbanization and internal migration

Urban and rural labor markets operate under fundamentally distinct structural conditions. Urbanization, as a spatial reallocation of the population, alters the distribution of the labor force across these markets, directly reshaping employment structures and, consequently, aggregate labor productivity. Figure 3.5 illustrates the evolution of urban population shares over the past 15 years across the four economies. In Armenia and Kazakhstan, two out of three citizens reside in urban areas, whereas the Kyrgyz Republic and Tajikistan remain predominantly rural societies. The structural continuation of urbanization will inevitably trigger broad demographic and socio-economic shifts that directly impact labor market dynamics by transforming both the supply and demand sides of the labor pool.

Figure 3.5.
Share of Urban Population (% of Total Population)



Source: National statistical offices

In *Armenia*, the urban population share has remained largely static, whereas *Kazakhstan* has experienced rapid urbanization, a process that remains far from complete. In the *Kyrgyz Republic*, urban residents accounted for less than one-third of the total population for an extended period. However, the 2022 Population Census revealed substantial historic undercounting of the urban population (and of internal spatial mobility more broadly), leading to an upward revision of the urban share to over 40%.

Although urbanization in the Kyrgyz Republic is proceeding faster than official administrative statistics historically captured, the country remains largely rural.

In *Tajikistan*, rural residents comprise over 70% of the population, though undercounting of recent rural-to-urban migrants remains highly probable. Pronounced urban-rural fertility differentials slow spatial urbanization in both economies, sustaining the primary demographic reservoir for outward international labor migration. In turn, cross-border remittance streams sustain rural household consumption, blunting economic incentives for domestic rural-to-urban relocation. In effect, external labor migration acts as a structural disincentive for internal spatial reallocation.

As established previously, Kazakhstan does not serve as a primary donor for international labor migration. Instead, rural demographic pressures in Kazakhstan are absorbed internally via rural-to-urban migration flows, concentrated heavily in its three major metropolitan centers. These domestic flows are driven by wide real income differentials between rural localities and rapidly expanding urban agglomerations[31].

Over 2010–2024, internal migration recorded net negative balances across every macro-region and administrative region in Kazakhstan, with the sole exception of the three major metropolitan cities[32]. During this timeframe, the combined population of these key metropolitan centers expanded by 2 million residents. Rapid population inflows into capital-city agglomerations have intensified pressure on municipal infrastructure, local labor markets, and housing stock, a trend expected to persist in the medium term.

Kazakhstan does not serve as a primary donor for international labor migration. Instead, rural demographic pressures in Kazakhstan are absorbed internally via rural-to-urban migration flows, concentrated heavily in its three major metropolitan centers.

The structural nature and direction of migration corridors shape not only spatial demographic distribution, but economic structures as well. In Kazakhstan and Armenia, rural-to-urban migration functions as an integral component of ongoing structural transformation. Conversely, in the Kyrgyz Republic and especially Tajikistan, temporary labor emigration from rural areas to foreign markets serves to preserve low-productivity rural employment and reinforce underlying economic hysteresis.

An empirical question arises: do internal rural-to-urban migration and external labor emigration function as structural substitutes? That is, would administrative or economic constraints on outward migration in the Kyrgyz Republic and Tajikistan catalyze internal urban relocation? While rigorous micro-econometric estimation is required to establish causality, spatial choice theory suggests that migration channel selection depends on relative expected net returns. So long as cross-border wage differentials between donor and recipient states far exceed internal urban-rural wage gaps within the Kyrgyz Republic and Tajikistan,

[31] Bureau of National Statistics of the Republic of Kazakhstan.

[32] Prior to the COVID-19 pandemic, the oil-producing Mangystau Region maintained a positive net internal migration balance but has shifted to a net negative balance in recent years.

external labor migration will remain the dominant path. However, accelerated job creation and wage growth in domestic urban centers, coupled with agricultural modernization and tightening access to traditional foreign labor markets, could shift spatial preferences toward domestic urban labor markets.

3.4.6. Challenges for Migration Policy Frameworks

The structural shift in outward labor migration corridors, given its systemic macroeconomic importance for the Kyrgyz Republic and Tajikistan, necessitates recalibrating national migration and labor market policy frameworks. Historically, migration policies in these donor states operated under the assumption of sustained foreign labor demand, focusing primarily on pre-departure orientation, vocational training, and external worker rights protection. However, the structural contraction of employment opportunities in the Russian Federation and the imposition of stricter administrative entry requirements elevate systemic risks for economies heavily dependent on external labor deployment.

One potential strategic response to host-country regulatory restrictions on labor demand in Russia is the geographic diversification of destination countries. While advantageous, corridor diversification alone is unlikely to fully absorb the expanding labor supply driven by rapid demographic growth in the Kyrgyz Republic and Tajikistan. The structural advantages of the Russian labor market, namely scale, visa-free access, linguistic familiarity, and established migratory networks, remain difficult to substitute. Entering non-traditional destination markets requires complex bilateral labor agreements, institutional reforms in pre-departure orientation, vocational curriculum adjustments, formal skill recognition frameworks, and structured recruitment mechanisms aligned with destination-country labor standards. Furthermore, an overreliance



Armenia's Demographic Outlook

Armenia's population will decline by 10% by 2040

on foreign labor markets creates a persistent structural mismatch between worker skill profiles and domestic economic requirements. Given the temporary nature of labor migration, returning migrants simultaneously contribute new human capital and exert structural pressure on domestic labor markets.

An alternative channel of structural adaptation lies in pre-departure and post-return reintegration policy frameworks. Tightening foreign labor market access will not necessarily trigger a one-to-one return flow of migrants. Returning workers are likely to split between domestic rural reintegration and internal rural-to-urban relocation. Provided sufficient formal job creation exists, this return-driven spatial mobility can accelerate productivity-enhancing structural transformation. Conversely, in the presence of urban infrastructure deficits, illiquid housing markets, and informal labor market dominance, unmanaged return flows risk expanding informal employment, elevating open unemployment, and straining municipal infrastructure.

For *Armenia*, migration policy should focus primarily on retaining domestic labor potential, facilitating return migration, and leveraging human capital from the diaspora through targeted employment placement, skill validation, and micro-entrepreneurship support. For *Kazakhstan*, which has largely exhausted the potential of its historic repat-resettlement program, the policy priority centers on managing internal spatial mobility. Continued demographic concentration in major metropolitan areas requires proactive urban infrastructure expansion alongside synchronized housing, regional, and labor market development.

Ultimately, shifting migration patterns require adaptive regulatory policy across all four economies. Policy frameworks must directly manage macroeconomic transmission channels: for *Kyrgyz Republic* and *Tajikistan*, a dual approach combining worker rights protection in foreign corridors and market diversification with structured returnee reintegration programs; for *Armenia*, retaining human capital and incentivizing productive return migration; and for *Kazakhstan*, efficient management of internal population mobility and urban infrastructure adaptation to ongoing metropolitan concentration. The overarching cross-country priority remains the tight alignment of migration frameworks with broader labor market policies aimed at generating productive, private-sector employment. The next section addresses these domestic labor market dynamics.

Employment and Non-Employment: Trends, Composition, and Projections





4.1.
Core Proportions

All citizens aged 15 and older can be classified according to their labor market status. According to the conventional definitions, the labor force comprises both the employed and unemployed. The latter includes individuals without paid work but who are actively seeking employment and available to start working within a specified period. Consequently, those outside the labor force (economically inactive) neither hold employment nor seek it. Although these definitions adhere to standard International Labour Organization (ILO) conventions, administrative and survey boundaries between labor market statuses are frequently blurred. In economies characterized by high rural employment shares, these distinctions become particularly fluid, complicating precise measurement. Each aggregate category comprises distinct sub-components warranting independent examination such as wage employees versus self-employed individuals, or formal versus informal workers.

> **Across all countries, the labor market absorption of population growth is largely driven by individuals shifting into economic inactivity—namely, withdrawing from employment and the job search.**

Labor market status for an individual is not fixed forever; individuals transition across statuses throughout their working lives. Labor market mobility encompasses shifts across occupations, enterprises, sectors, and employment types, as well as transitions between employment, unemployment, and economic inactivity. Table 4.1 presents the population sizes of the core labor market groups in the studied countries across various years.

The principal empirical takeaway is a pronounced structural asynchronous pattern between total working-age population growth (aged 15+) and expansion in labor force and total employment. Across all countries, the labor market absorption of population growth is largely driven by individuals shifting into economic inactivity—namely, withdrawing from employment and the job search.

In Armenia, against a backdrop of negligible working-age population growth over 2010–2024, the labor force contracted substantially by over 100,000 persons, driven by rising economic inactivity alongside a compression in open unemployment. In Central Asia, by contrast, the labor force expanded, but at a pace well below population growth, leading to an outsized expansion of the population outside the labor force. This divergence in growth rates reached a moderate 6 percentage points in Kazakhstan (due to demographic aging and a growing cohort aged 65 and older) compared to 17 percentage points in the Kyrgyz Republic and 39 percentage points in Tajikistan. The stock of unemployed persons (a component of the labor force) declined across all four economies, driven in part by outflow from the labor force.

Table 4.1.
Population by Labor Market Status (2010–2024, Thousand Persons)

	2010	2015	2020	2024	2024/ 2010	Difference 2024–2010
Armenia						
Population Aged 15+	2365.24	2333.61	2307.82	2401.76	1.02	36.5
Labor Force	1463.3	1316.4	1286.7	1357.3	0.93	–106.0
Outside the Labor Force	901.943	1017.21	1021.12	1044.46	1.16	142.5
Total Employed	1185.2	1072.6	1052.4	1176.1	0.99	–9.1
Unemployed	278.2	243.7	234.4	181.2	0.65	–97.0
Kazakhstan						
Population Aged 15+	12133.5	12703	13145.7	13931.4	1.15	1797.9
Labor Force	8610.7	8887.6	9180.8	9664.0	1.12	1053.3
Outside the Labor Force	3522.8	3815.5	3964.9	4267.4	1.21	744.6
Total Employed	8114.2	8433.3	8732	9214.2	1.14	1100
Unemployed	496.5	454.2	448.8	449.8	0.91	–46.7
Kyrgyz Republic						
Population Aged 15+	3828.2	4078.6	4319.8	4825.7	1.26	997.5
Labor Force	2456	2544.3	2595.4	2860.7	1.16	404.7
Outside the Labor Force	1372.2	1534.3	1724.4	1965	1.43	592.8
Total Employed	2243.7	2352.1	2445.2	2756	1.23	512.3
Unemployed	212.3	192.2	150.2	104.7	0.49	–107.6
	2009	**2016**	**2025**	**2025/ 2009**	**Difference 2025–2009**	
Tajikistan						
Population Aged 15–75	4707.4	5314.3	6869.6	1.45	2162.2	
Labor Force	2097.8	2252.2	3018.8	1.44	921.0	
Outside the Labor Force	2089.8	2508.2	3850.8	1.84	1761.0	
Total Employed	1856.5	2096.5	2827.6	1.52	971.0	
Unemployed	241.2	155.8	191.2	0.79	–50.0	

Note: For Tajikistan, LFS rounds were conducted in 2009, 2016, and 2025. In the 2009 and 2016 rounds, the sum of the population within and outside the labor force does not equal the total population aged 15–75. For Armenia, the Kyrgyz Republic, and Kazakhstan, the active population benchmark covers individuals aged 15 and older. (Section 3.2 applied a narrower working-age definition of 15–64 years for these economies)

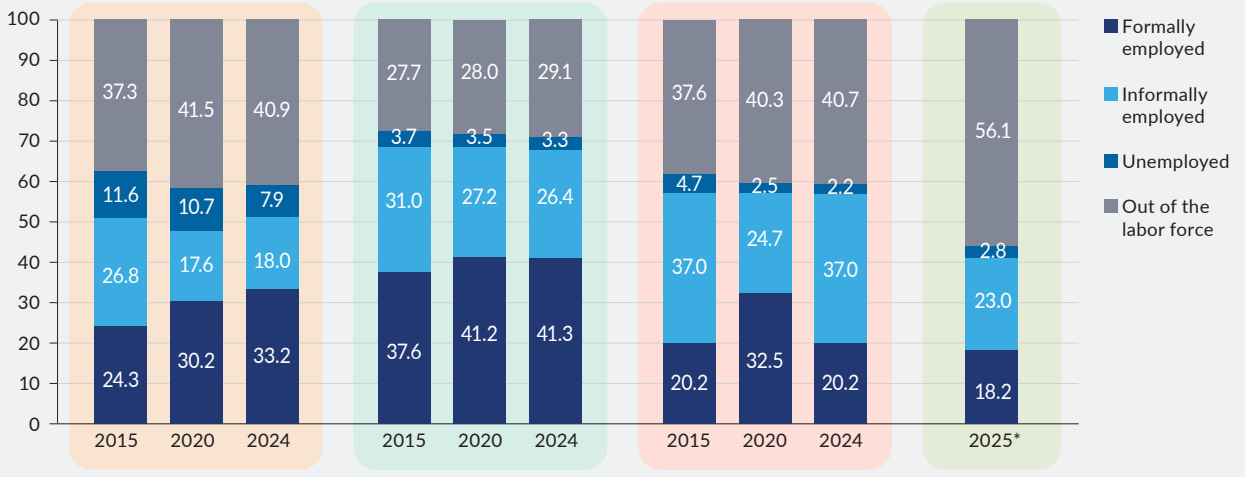
Sources: Calculated based on Labor Force Survey (LFS) microdata; data for Tajikistan: https://www.stat.tj/ru/tabliczy-osnovnyh-pokazatelej-obsledovaniya-rabochej-sily-ors-v-respublike-tadzhikistan/.

Kazakhstan is distinguished by consistently high labor force participation, with less than 30% of the adult population remaining outside the labor force. In contrast, over half of the adult population in Tajikistan is economically inactive, while in Armenia and the Kyrgyz Republic, two out of every five individuals (in age 15+) fall into this status. In the Kyrgyz Republic and Tajikistan, withdrawal from the labor market serves as a primary channel[33] for absorbing rapid demographic growth and artificially maintaining low unemployment rates.

Kazakhstan's high participation rate reflects the relative attractiveness of domestic employment, where prevailing wage offers exceed workers' reservation wages. Its employment-to-population ratio reaches up to 68% in peak years, compared to 41% in Tajikistan, 51% in Armenia, and 57% in the Kyrgyz Republic. Furthermore, formal employment remains dominant in Kazakhstan, encompassing 61% of total employed workers. This structural feature minimizes measurement errors in surveys that typically occur when widespread sporadic informal activity creates classification difficulties. Such measurement errors are substantially higher in the Kyrgyz Republic, where informal employment comprises two-thirds of total jobs. In Armenia, informal employment has contracted significantly in recent years to approximately one-third of total employment; however, high economic inactivity rates may still reflect blurred boundaries between informal employment, inactivity, and open unemployment. In Tajikistan, informal employment accounts for over half of total jobs, which, when paired with high inactivity rates, likewise points to potential survey misclassification of actual labor status.

Below, we present a more granular empirical breakdown of employed and non-employed cohorts.

Figure 4.1.
Population Structure (Aged 15–74) by Labor Market Status: Armenia, Kyrgyz Republic, Kazakhstan (2015, 2020, 2024) and Tajikistan (2025), %



Source: LFS

Note: The share of informal employment in Tajikistan is estimated based on formal and informal non-agricultural employment statistics, under the structural assumption that formal agricultural employment in Tajikistan is effectively zero.

[33] Cross-border labor migration represents the second major structural absorption channel.

4.2.
Employment: Trends and Composition

Before examining the trends and structural properties of employment in detail, it is useful to fix its formal definition. By international statistical convention, the "employed population" comprises individuals engaged in the market production of goods or services within the production boundary of the System of National Accounts (SNA). For instance, the National Statistical Committee of the Kyrgyz Republic defines the employed population as follows: "Employed persons comprise all individuals aged 15 and older who, during the reference week, performed work for pay or profit, or were temporarily absent from such work". This definition aligns with standard International Labor Organization (ILO) guidelines. Crucially, this standard encompasses all income-generating economic activity regardless of tenure, full-time and part-time status, formal and informal arrangements, and working for wage or self-employment. Furthermore, survey methodologies usually apply a minimum threshold of at least one hour of work during the reference week. Consequently, informally employed workers without written contracts, individuals working reduced hours, self-employed workers, and non-standard contract holders are all formally classified as employed. Segmenting this aggregate pool into analytical sub-categories represents is a task for labor market analytics.

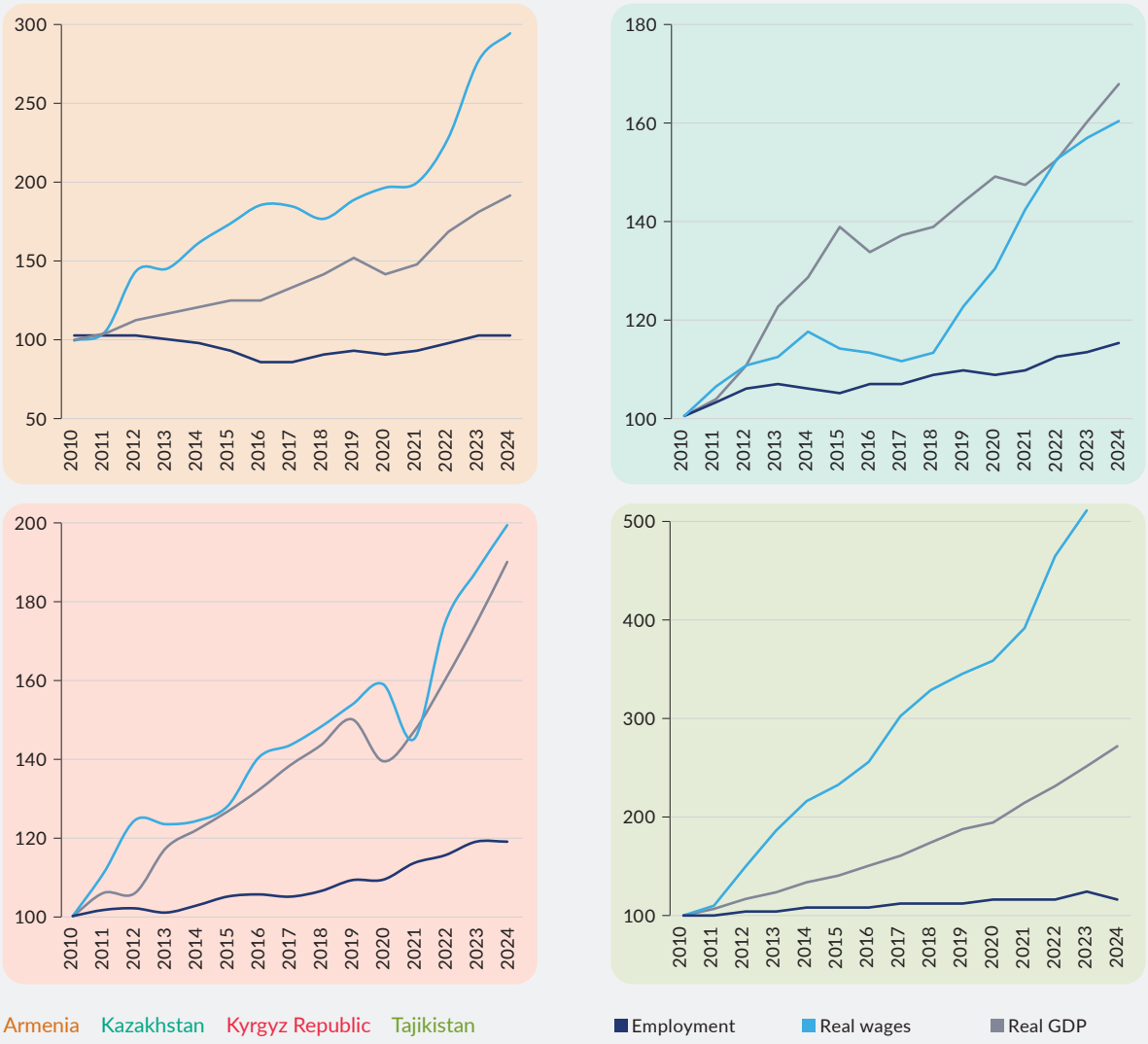
Dynamics of Employment and GDP

Figure 4.2 (a, b, c, d) tracks the evolution of GDP, total employment, and real wage over the 15-year observation period. A defining structural feature across all four economies is that rapid economic growth has a remarkably weak employment-generating effect: output gains are transmitted primarily into real wage growth rather than net employment creation. Across the region, economic expansion remains concentrated within a narrow set of capital-intensive sectors with very limited employment generating effects.

Given the demographic pressures generated by rapidly expanding adult population across Central Asia, the low employment elasticity of growth represents a challenge and deserves special attention. Elasticity estimates, measured as the percentage change in total employment resulting from a 1% increase in real GDP ($\frac{\Delta EMPL/EMPL}{\Delta GDP/GDP}$) vary across country sub-periods (Figure 4.3), but remained consistently below 0.2 over the observation period. The sole exception was Kazakhstan in 2015–2019, when real GDP growth decelerated sharply while employment continued a slow upward trend. In recent years, Kazakhstan's employment elasticity of growth reached 0.32, whereas in all other cases it hovered below 0.2. A low elasticity would be intuitive under conditions of perpetually high employment rates (as observed

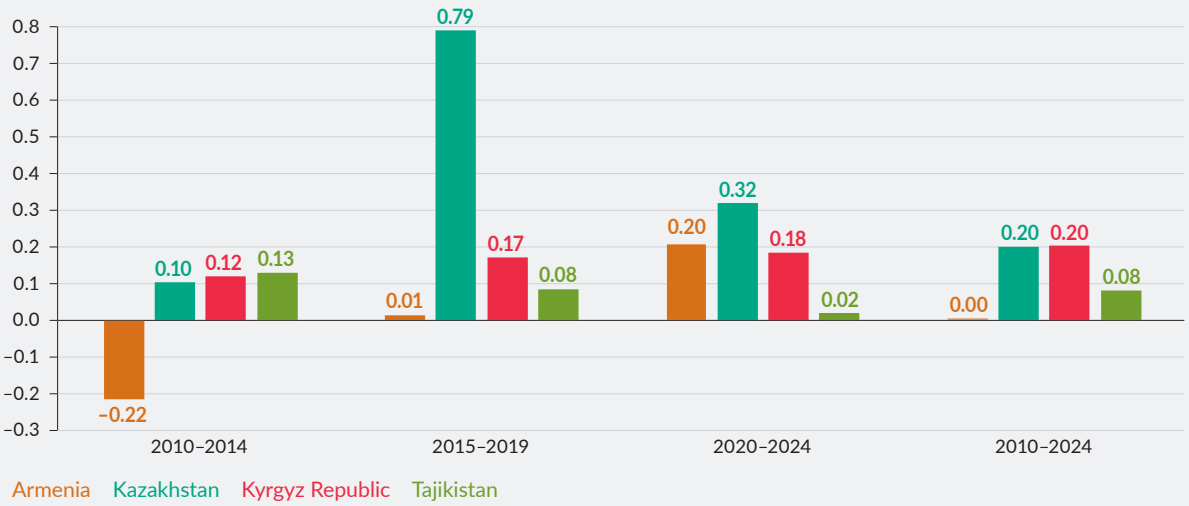
in Kazakhstan) paired with near-zero population growth (as in Armenia). However, this combination is absent across the region, indicating that low employment elasticity is driven primarily by rapid labor productivity gains within a limited subset of sectors.

Figure 4.2 (a, b, c, d).
Indices of Employment, Real GDP, and Real Wages (2010 = 100%)



Source: National statistical agencies and World Bank data; authors' calculations.

Figure 4.3.
Employment Elasticity of Growth (2010–2024)



Source: National statistical agencies and World Bank data; authors' calculations

Employment-to-Population Ratio

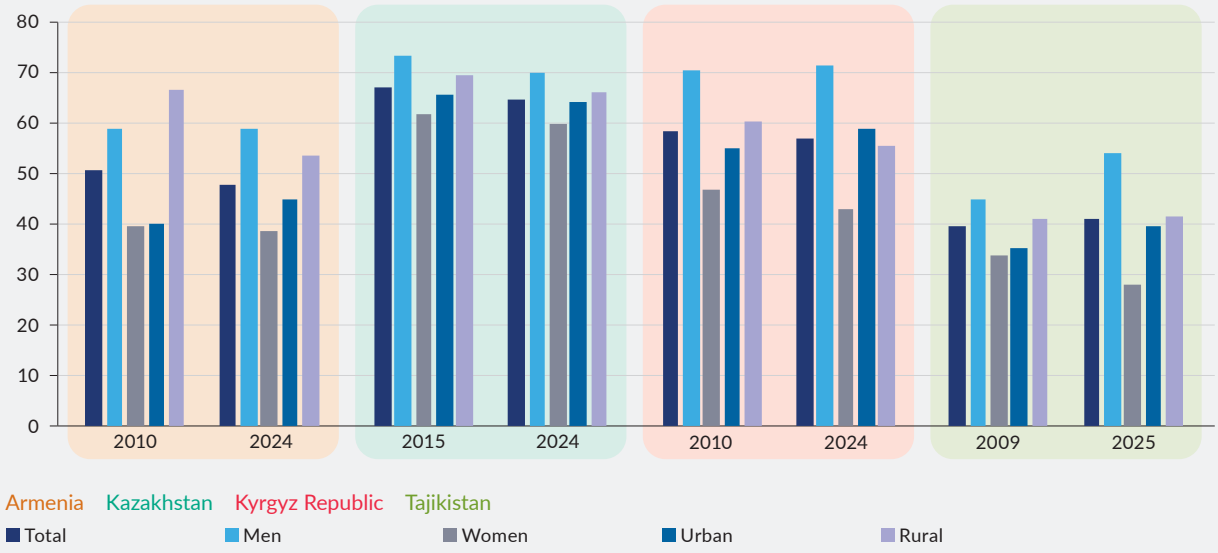
The employment-to-population ratio (EPR), calculated as the total number of employed divided by the population size within the corresponding age group (expressed in %), serves as one of the core indicators of labor market performance.

Figure 4.4 presents baseline and end-of-period employment-to-population ratios across the observation time window. Except for Kazakhstan, where the overall EPR for the population aged 15 and older consistently exceeds 65%, the analyzed economies display depressed employment rates. In the Kyrgyz Republic, relatively high male employment ratios contrast sharply with low female participation. In Armenia, the EPR oscillates around 50%, while in Tajikistan it hovers around 40%. These values exhibit notable temporal stability in all four countries. While Kazakhstan's employment ratio sits well above the Commonwealth of Independent States (CIS) average (61.6% in 2023), the remaining three economies trail significantly behind this regional benchmark (CIS Monitoring of National Labor Markets, 2024).

By way of comparison, the employment ratio in the Russian Federation hovers around 60%, combining near-peak employment rates among prime-age working cohorts with lower participation rates among young and elderly age groups. Within OECD economies, the average employment ratio stands at 64%, exceeding 80% in the Netherlands and Japan, while dropping to 51% in Turkey (OECD Employment Outlook 2025).

Behind the depressed employment figures in Armenia, the Kyrgyz Republic, and Tajikistan lie substantial gender gaps. Male employment rates exceed female rates by 20 percentage points in Armenia and by more than 25 percentage points in both the Kyrgyz Republic and Tajikistan.

Figure 4.4.
Employment-to-Population Ratio (2010–2024, %)



Sources: Labor Force Survey (LFS) microdata; authors' calculations

Furthermore, seemingly higher EPR recorded across rural areas mask extensive agricultural self-employment.

Cross-country variation in EPR is illustrated by age-specific rates, particularly among women (Figure 4.5). In Armenia, Kazakhstan, and the Kyrgyz Republic, male employment rates across prime working ages (25–59 years) remain consistently above 80%, whereas in Tajikistan they are persistently depressed.

Female employment rates across equivalent age cohorts in Kazakhstan range between 80% and 90%, a level moderately below, but largely comparable to, male participation. In the remaining three economies, female employment rates are substantially lower and exhibit pronounced variation over the life cycle. In Armenia and the Kyrgyz Republic, female employment rates rise gradually from 50–55% among the 25–29 age cohort, peaking near

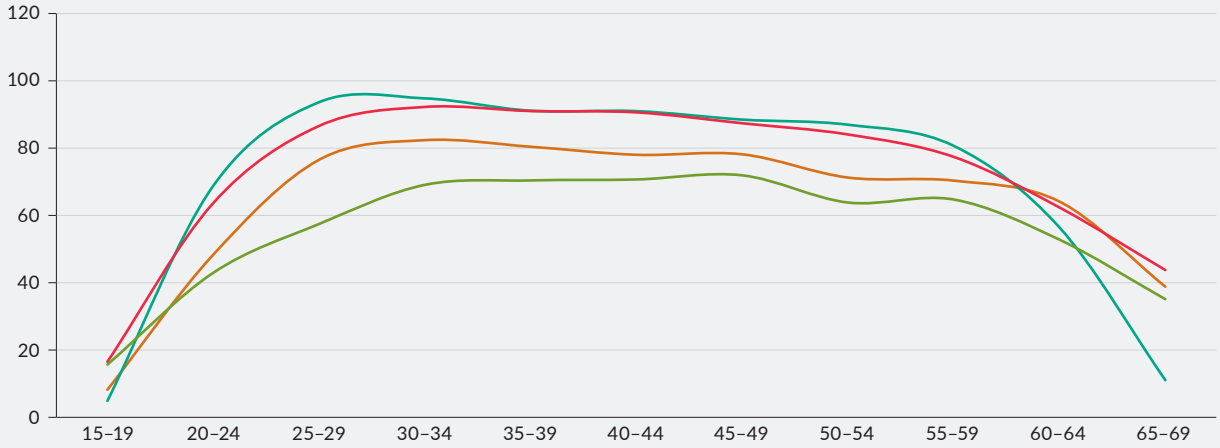


Population Aging in Armenia

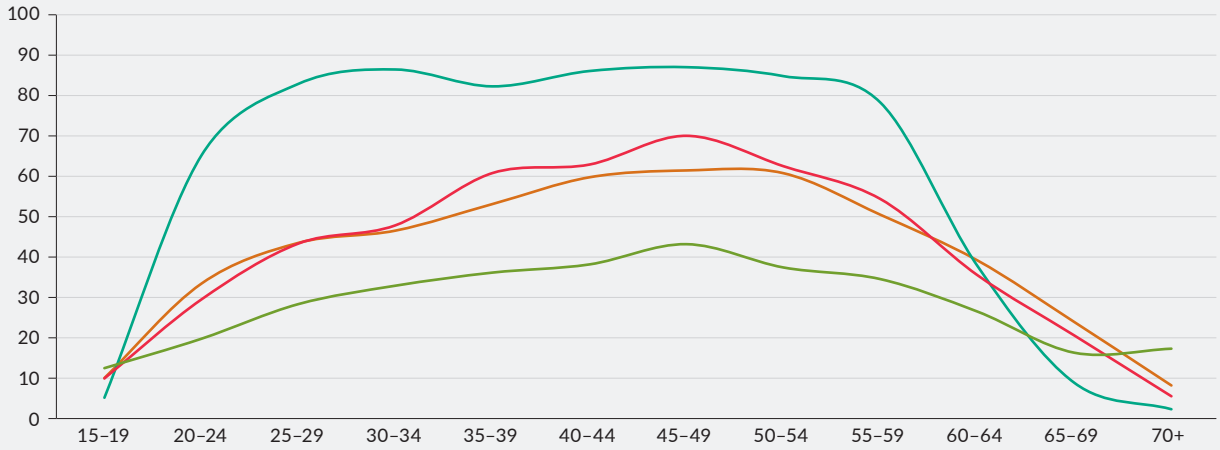
Natural population growth has effectively stalled, and population aging is underway

Figure 4.5.
Employment Rates by 5-Year Age Cohorts and Gender (2024, %)[34]

Men, %



Women, %



Armenia Kazakhstan Kyrgyz Republic Tajikistan

Sources: Authors' calculations based on 2024 LFS microdata; 2025 LFS microdata for Tajikistan

70% in the 40–45 age bracket before trending downward. In Tajikistan, female employment rates remain depressed across all age cohorts, failing to reach 50% at any point. Across all four economies, labor market participation among youth and older workers remains significantly below aggregate national averages.

Summarizing the data from Figure 4.5, it is evident that, with the notable exception of Kazakhstan, available human potential across the analyzed economies remains severely underutilized as measured by standard EPR. A substantial share of the adult population neither holds employment nor actively searches for it,

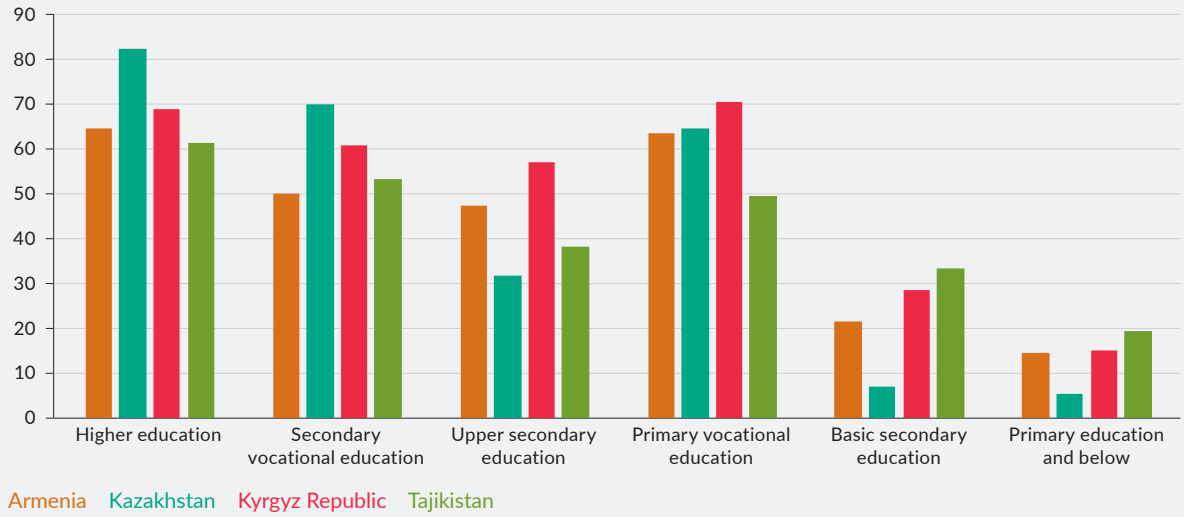
[34] Section 4.9 utilizes these age- and gender-specific baseline rates to project the total volume and structural composition of the employed population through 2040.

with Tajikistan presenting the most extreme regional pattern. One potential explanation for this phenomenon is active participation of men in cross-border labor migration, which remains poorly captured by standard LFS surveys. A fraction of men classified as inactive or non-employed in household surveys can in fact be actively employed on foreign labor markets. Regrettably, national statistical sources do not permit the systematic identification of this group[35]. Furthermore, remittance flows sent by migrant workers elevate the reservation wage by generating an income effect, thus disincentivizing labor market participation among resident family members and subsidizing home consumption. The underlying structural driver forcing this migration choice remains the chronic domestic shortage of jobs offering competitive compensation relative to foreign host economies. An additional determinant of low female employment rates is high fertility, which imposes heavy domestic care burdens and restricts formal labor market engagement. These mechanisms mutually reinforce each other.

In Armenia, Kazakhstan, and the Kyrgyz Republic, the share of tertiary-educated workers within total employment expanded by approximately 5 percentage points over the past 15 years.

Across all four economies, EPR increases monotonically with educational attainment, a relationship that is particularly pronounced among women with the tertiary or other professional education. In Armenia, Kazakhstan, and the Kyrgyz Republic, the share of tertiary-educated workers within total employment expanded by approximately 5 percentage points over the past 15 years. As tertiary enrollment rates

Figure 4.6.
Employment-to-Population Ratios by Educational Attainment (%)



Source: Labor Force Survey (LFS) microdata; authors' calculations; 2025 data for Tajikistan

[35] While partial estimation is feasible using Kyrgyz LFS microdata, a significant portion of outgoing labor migrants remains either unrecorded or misclassified.

continue to expand, baseline employment ratios are expected to shift upward. This trend applies to a lesser degree in Tajikistan, where shifts in the educational composition of the population have remained negligible over recent decades.

Where Are Jobs Being Created?

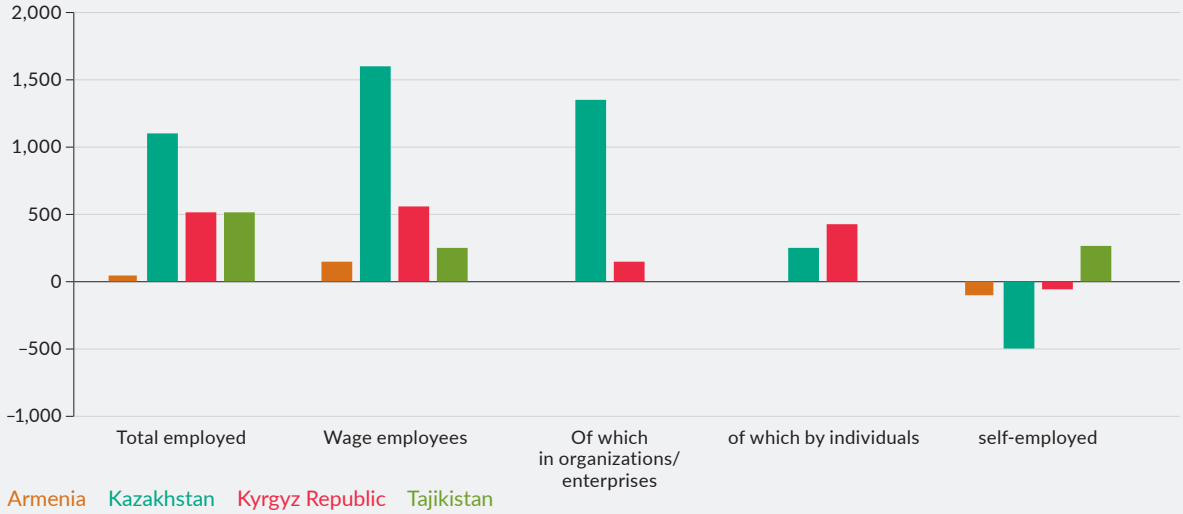
Employment is inherently heterogeneous, comprising distinct segments characterized by varying quality and structural attributes. A primary conceptual distinction lies between wage employment (work performed for a salary or wage) and non-wage employment (self-employment, unpaid family work, and own-account entrepreneurship). Although this boundary can become blurred in practice (particularly when independent contractors or self-employed individuals operate under civil law contracts), it accurately captures broad labor market trends. (We return specifically to non-wage employment in Section 4.4).

Standard labor force surveys and official statistics often divide wage employment into two primary sub-components. Firstly, it is employment in legal entities ("the corporate segment"): work performed within formally registered organizations and enterprises that possess legal entity status. This category encompasses all public sector institutions, state-owned enterprises, and medium-to-large private corporations, regardless of ownership structure. Second, it is wage employment in unincorporated enterprises and household units: work performed for individual entrepreneurs (sole proprietorships) or private persons or households. Unincorporated individual enterprises typically operate as micro-enterprises with few employees.

This typology reflects fundamentally different institutional realities regarding the enforcement of labor regulations and tax codes. While statutory regulations apply fully to the corporate segment, they apply only partially or in simplified form to unincorporated units. This differential application affects recruitment and dismissal rules, tax regimes, and rules for mandatory social security contributions. A substantial portion of the unincorporated segment remains informal (without registration and evading taxation) or semi-formal, remaining largely invisible to official statistical systems. Wage earners in this segment are almost entirely devoid of any statutory social protections.

The corporate segment forms the structural core of the formal economy. It encompasses both market-oriented commercial enterprises and non-market public institutions delivering social services in education and healthcare. Commercial firms within this segment are, on average, more capital-intensive and productive than unincorporated enterprises. Furthermore, public goods are delivered almost exclusively by organizations operating within this formal legal framework. Although exceptions exist, job quality (measured by wages, social protection, and occupational safety standards) is systematically superior in the corporate segment compared to the unincorporated sector.

Figures 4.7.
Absolute Changes in Employed Population by Employment Category (2010–2024)



Wage employment expanded at a faster pace than total employment (which includes self-employment) across all analyzed economies except Tajikistan. However, the institutional mechanisms of this absorption diverged sharply. While Kazakhstan's employment expansion was driven primarily by job creation within the corporate segment, approximately 75% of all net additional wage jobs in the Kyrgyz Republic were created by unincorporated individual entrepreneurs and households. In Tajikistan, wage and non-wage employment grew at roughly equal rates, adding approximately half a million workers in aggregate. Regrettably, available official statistics for Tajikistan do not separate non-corporate wage employment from total wage employment, likely lumping this group together with the self-employed.

Non-corporate wage employment is widespread across the region. This statistical category encompasses both unincorporated individual entrepreneurs and private households employing domestic personnel. Distinguishing between these two sub-categories is not always feasible using standard LFS microdata. In Kazakhstan, this group accounted for approximately 12% of total employment, a share that has remained essentially stable since 2012. In the Kyrgyz Republic, this share is substantially higher, standing at 38% in 2024, despite a gradual downward trend from 44% in 2010. Nonetheless, in absolute terms, the number of workers in this segment expanded by 250,000 in Kazakhstan and 420,000 in the Kyrgyz Republic. Although this employment type exhibits strong informal characteristics, it continues to play a vital structural role in absorbing demographic growth, particularly in the Kyrgyz Republic. A detailed analytical breakdown of this group is provided in Section 4.4.

Firm-size distribution of employment exhibits a strong positive correlation with labor productivity and an inverse relationship with informality. Micro-

Figures 4.8.
Relative Changes in Employed Population by Employment Category (2010–2024)



Armenia (2024/2014) Kazakhstan (2024/2010) Kyrgyz Republic (2024/2010) Tajikistan (2024/2010)

Source: Labor Force Survey (LFS) and national statistics data; authors' calculations.

and small enterprises typically deploy primitive production technologies, utilize lower levels of human capital, and remain unable to exploit economies of scale. Furthermore, small firm size implies short internal job ladders, which restrict firm-specific human capital accumulation and occupational mobility — a key mechanism driving real wage growth over worker lifecycles. A healthy development assumes that productive micro-enterprises survive, mature and transition into larger size tiers to capture benefits of scale.

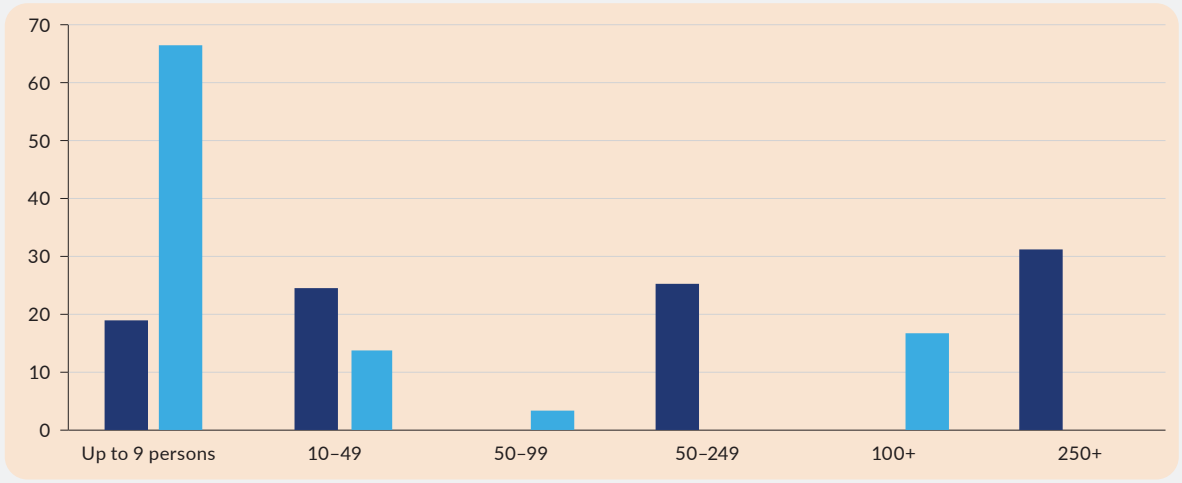
Labor Force Surveys serve as the primary data source for enterprise size distributions, though variations in national size-class definitions complicate direct cross-country comparability.

Armenia: The LFS question about firm size relates exclusively to private-sector wage employees. Approximately 70% of these workers are concentrated in business units with up to 10 employees, whereas large enterprises (100+ workers) account for 12%. Within the formal corporate segment, the distribution shifts toward larger units: one in five workers is employed in organizations with up to 10 employees, while nearly one-third (31%) work in large enterprises employing 250 or more workers.

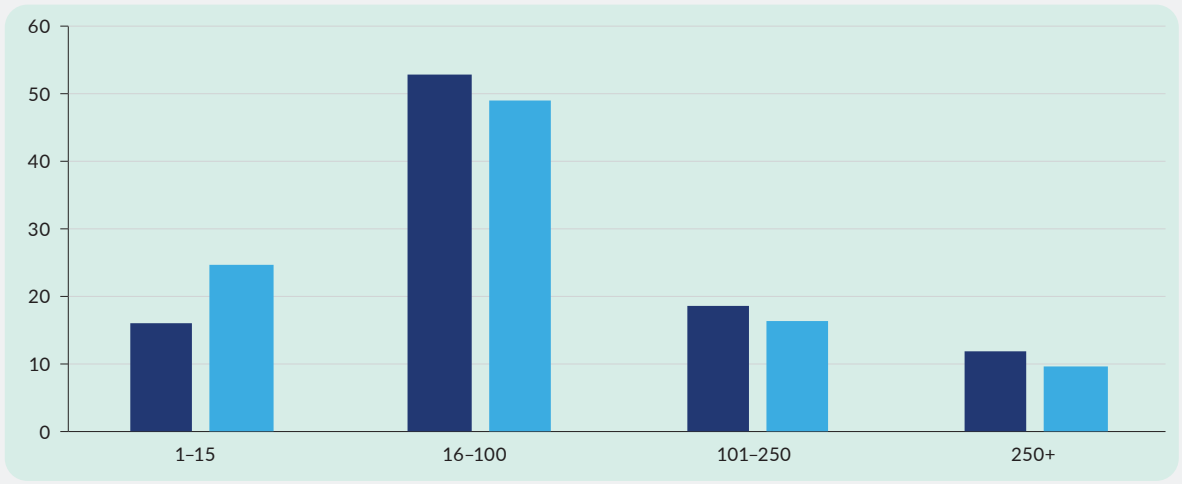
Kazakhstan: Approximately one-quarter of total employment is concentrated in micro-organizations employing up to 15 workers, while nearly half is situated in small-to-medium enterprises employing 16 to 100 workers. Within the corporate sector, the share of employment in large enterprises (250+ employees) remains below 10% and has exhibited a gradual decline over the observation period.

Kyrgyz Republic: Employment is heavily concentrated in micro-, small, and medium-sized enterprises across agriculture and market services. Nearly half of all workers are employed in micro-businesses with up to 5 employees, a pattern consistent with the high prevalence of individual employers. While employment within registered corporate entities leans toward larger size tiers,

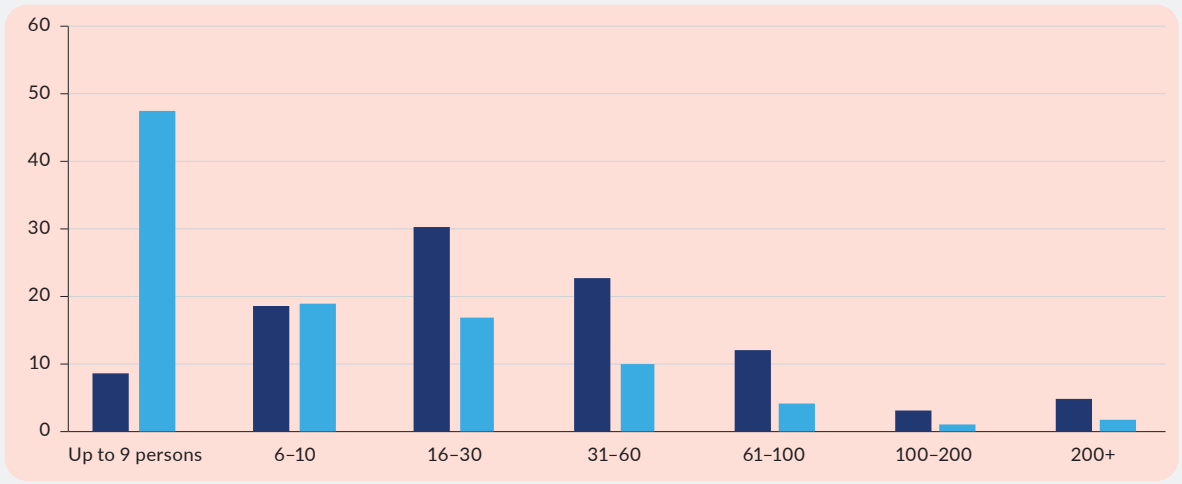
Figures 4.9–4.11.
Distribution of Employed Population by Firm Size (2024, %)



Enterprises/organizations (SRC data) Total (private sector)



Enterprises/organizations Total



Enterprises/organizations Total

Armenia Kazakhstan Kyrgyz Republic

Sources: Labor Force Survey (LFS) and national statistics data; authors' calculations

micro-enterprises maintain a significant presence even within this formal segment. The share of total employment in enterprises with more than 60 workers (including the public sector) stands at approximately 20% and has shown virtually no expansion over the past 15 years.

Micro- and small enterprises dominate the firm-size distribution across all four economies, and official statistics indicate that this concentration has remained essentially unchanged over time. If enterprise scale confers substantial economic benefits, what institutional or market barriers prevent firms from expanding and capturing economies of scale? This structural bottleneck is characteristic of many low- and middle-income economies (La Porta and Shleifer, 2014) and stems from deep-seated institutional and structural frictions that severely constrain economic convergence. Standard LFS microdata, however, do not permit a direct empirical testing of these underlying constraints.

4.3. Structural Change in Employment and Aggregate Labor Productivity

Aggregate labor productivity (Y/L) equals the sum of sectoral labor productivities weighted by their respective employment shares: ($\Sigma\ Yi/Li \cdot Si$). Consequently, a higher concentration of employment (Si) within high-productivity sectors raises overall aggregate labor productivity. When inter-sectoral productivity differentials are large, reallocating labor from low-productivity sectors toward higher-productivity activities operates as an engine of economic growth. For example, shifting labor away from low-productivity traditional agriculture and basic personal services toward modern manufacturing, high-value market services, or technology-intensive industries yields a positive structural change dividend. The pivotal role of structural transformation in economic development has been extensively documented in the literature originating with Lewis (1954) and Kuznets (1967). Conversely, structural transformation can operate in reverse: labor reallocation from higher-productivity sectors to lower-productivity activities generates a negative contribution ("growth-reducing structural change"). The contrasting empirical trajectories of East Asia (growth-enhancing structural change) and Latin America (growth-reducing structural change) are discussed by McMillan and Rodrik (2011), who attribute Latin America's negative structural shifts to labor market rigidities and sustained real exchange rate overvaluation.

In this section, we quantify the contribution of structural labor shifts to aggregate labor productivity growth for the four target economies. Table 4.2 details the sectoral distribution of total employment across major economic activities for 2010, 2020, and 2024 (rows sum to 100%).

Table 4.2.
Employment Structure by Major Sector of Economic Activity (2010–2024, %)

	Agriculture	Industry	Construction	Market Services	Public Services
Armenia					
2010	45.4	10.0	5.1	22.3	17.2
2020	21.8	13.9	7.1	30.2	27.0
2024	17.8	12.8	9.8	34.3	25.3
Kazakhstan					
2010	28.3	11.7	7.0	32.6	20.4
2020	13.5	12.5	7.2	41.1	25.7
2024	11.2	12.6	7.2	42.4	26.6
Kyrgyz Republic					
2010	31.2	10.4	10.7	32.3	15.4
2020	18.3	14.1	11.8	37.9	17.9
2024	15.7	13.6	12.2	39.8	18.7
Tajikistan					
2014	65.6	4.1	2.7	13.3	14.3
2020	60.8	5.1	4.1	13.1	16.9
2024	59.0	5.7	4.5	13.6	17.1

Sources: National statistical offices; authors' calculations.

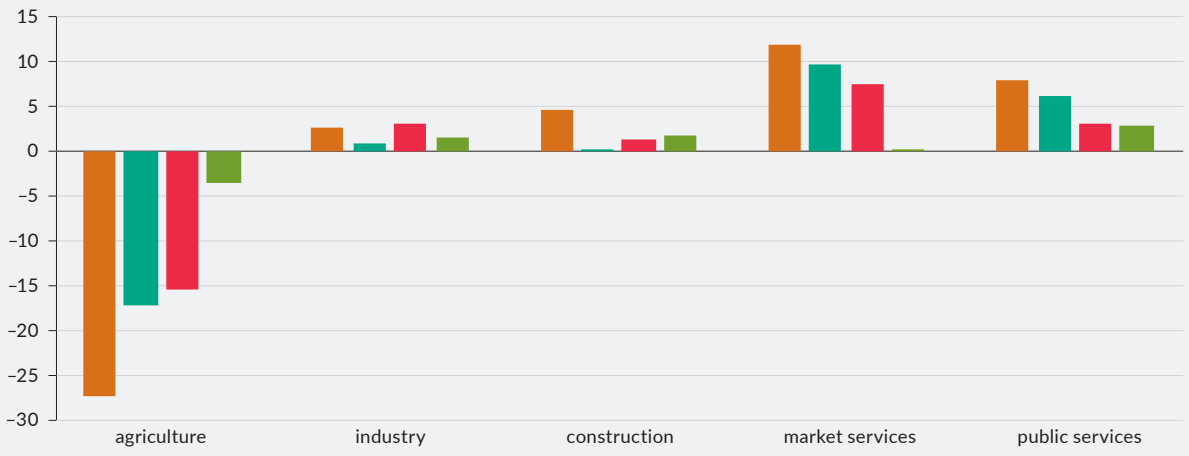
At the outset of the observation period, Armenia, Kazakhstan, and the Kyrgyz Republic had broadly similar employment structures. Agriculture played a dominant role across all three economies, absorbing 30–45% of total employment, while the aggregate services sector (encompassing both market and non-market public services) accounted for 40–50%. The remaining employment (15–20%) was divided between industry and construction, with the former maintaining a larger share in Armenia and Kazakhstan. Over the subsequent 15 years, this structure underwent profound shifts, particularly during the 2010–2020. By 2024, the employment share of agriculture contracted sharply to 18% in Armenia (a decline of 28 percentage points), 11% in Kazakhstan (down 17 percentage points), and 16% in the Kyrgyz Republic (down 15 percentage points). The primary beneficiary of this structural reallocation was the market services sector, which expanded its labor share by 12, 10, and 7 percentage points in Armenia, Kazakhstan, and the Kyrgyz Republic, respectively. Aggregate services came to absorb 60–70% of total national employment, bringing the labor allocation of these three economies closer

to baseline patterns observed across Central and Eastern European (CEE) post-socialist economies. In CEE economies, services dominate total employment, and agricultural shares generally remain below 5%, though their secondary sector (manufacturing and construction) retains a higher employment share than in Armenia, Kazakhstan, or the Kyrgyz Republic (World Development Indicators).

In stark contrast, Tajikistan's sectoral structure was fundamentally different (Figure 4.12). The Tajik economy remains predominantly agrarian in terms of labor allocation: in 2014, nearly 66% of total employment was concentrated in agriculture, compared to approximately 28% in total services, with the small remainder split between industry and construction. By 2024, this distribution had remained essentially stagnant, with agriculture accounting for nearly 60% of employment and services absorbing 31%. Industry and construction combined represented barely 10% of total employment. Although agriculture's share contracted by 5 percentage points between 2014 and 2020, it partially reversed course in the subsequent sub-period. Such heavy agricultural concentration is typical of lower-income economies characterized by large traditional sectors and pervasive, low-productivity rural self-employment. This raises critical structural questions regarding agricultural dynamics in Tajikistan and the economic drivers retaining labor within the sector. A potential explanatory factor is the heavy involvement of rural households in international labor migration, where foreign remittance inflows supplement domestic agricultural livelihoods and subsidize rural consumption.

Across all four economies, the combined share of industry and construction in total employment remained virtually static over 2010–2024. Consequently, the burden of absorbing expanding labor supply fell almost entirely onto the services sector — a structural trajectory consistent with broader empirical trends observed across developing economies (McMillan et al., 2016).

Figure 4.12.
Shifts in Employment Structure by Sector (2010–2024, percentage points)



Sources: National statistical offices; authors' calculations

Structural Change and Labor Productivity

Growth in aggregate labor productivity constitutes an important engine of long-term economic expansion. Economies with low-to-middle per capita income levels are typically characterized by substantial inter-sectoral productivity differentials (McMillan and Rodrik, 2011; De Vries et al., 2015). For example, in Armenia, inter-sectoral productivity gaps reached a factor of four, whereas in the Kyrgyz Republic the gap stood at 20%. In Kazakhstan and Tajikistan, average labor productivity in the services sector in 2024 was approximately twice that of agriculture. Under such conditions, cross-sectoral labor reallocation, specifically the flow of labor from agriculture into services, should theoretically generate a positive productivity dividend. However, alongside high-productivity segments, the services sector also harbors extensive enclaves of low-productivity, informal employment[36].

To evaluate the empirical impact of structural change on aggregate productivity growth, we utilize the canonical shift-share decomposition, breaking down aggregate productivity growth into an intra-sectoral ("within") component and an inter-sectoral reallocation ("between") component.

$$\Delta P_{ik} = \sum_{i=1}^{N} \theta_{i,t-k} \Delta_{t,t-k} p_{i,t} \sum_{i=1}^{N} p_{i,t} \Delta_{t,t-k} \theta_{i,t},$$

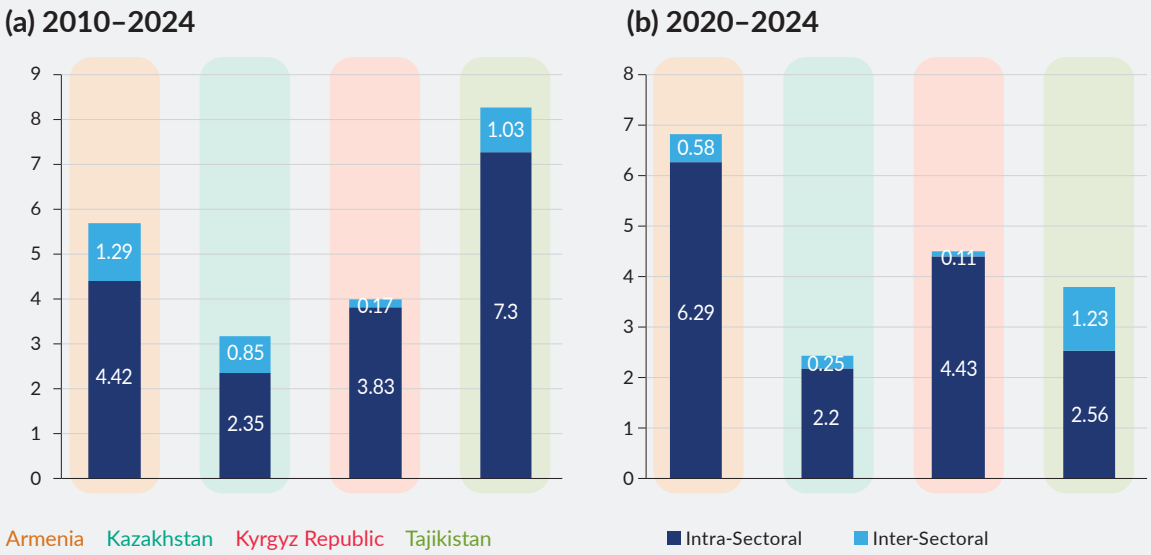
where ΔP_{ik} denotes the change in aggregate labor productivity over a k-year period. The first term captures the contribution of intra-sectoral productivity growth, Δp_i, weighted by sectoral employment shares, θ_i. The second term measures the contribution of structural change, calculated as the sum of changes in sectoral employment shares, $\Delta\theta_i$, weighted by sectoral productivity levels, p_i. Index i denotes the sector, and N represents the total number of sectors. The empirical results of this decomposition are presented in Figure 4.13 (a, b).

Over the 15-year observation period (left panel), structural labor shifts contributed approximately one-quarter of average annual aggregate labor productivity growth in Armenia (23%, or 1.29 percentage points out of 5.71%) and Kazakhstan (27%, or 0.85 percentage points out of 3.2%), and 12% in Tajikistan (1.03 percentage points out of 8.33%). The smallest structural contribution was recorded in the Kyrgyz Republic (4%, or 0.17 percentage points out of 4.0%).

During the recent 2020–2024 sub-period (right panel), these structural changes diverged. In Tajikistan, the contribution of structural shifts accounted for one-third of total productivity growth, whereas in Armenia, Kazakhstan, and the Kyrgyz Republic, the structural reallocation dividend diminished. Nevertheless, given the substantial remaining labor shares in agriculture and persistent inter-sectoral productivity differentials, the growth potential of structural transformation is far from exhausted, particularly in the Kyrgyz Republic and Tajikistan.

[36] The most productive and highest-paying service sub-sectors are Financial and Insurance Activities, and Information and Communication. In Armenia, these sectors account for 5.5% of total employment, compared to 1% in the Kyrgyz Republic (national statistical office data).

Figure 4.13. (a, b).
Decomposition of Aggregate Labor Productivity Growth into Intra-Sectoral Growth and Inter-Sectoral Reallocation Contributions:



Sources: World Bank data; authors' calculations

The trajectory of structural transformation represents a pivotal determinant of sustained long-term economic growth. Historically, economic convergence has been driven by the expansion of manufacturing sectors producing tradable goods (Herrendorf et al., 2013). Manufacturing is not only systematically more productive than agriculture or traditional services, but also achieves faster productivity growth through technological spillovers, broader market integration, and economies of scale. Consequently, reallocating labor from traditional agriculture into expanding industrial enterprises generated substantial productivity dividends. In recent decades, however, the global nature of labor reallocation has undergone a fundamental shift. Modern, labor-saving production technologies imported from advanced economies enable industrial output expansion without a proportional expansion in employment. Simultaneously, demand shifts have accelerated the expansion of the services sector. This shift raises a critical macro-structural question: can the services sector act as the engine of sustained long-term economic growth in place of manufacturing? This question remains a subject of intense debate in modern growth economics, with definitive empirical consensus yet to emerge (Diao et al., 2024; Structural Change..., 2016; Dabuš and Delbianco, 2021; De Vries et al., 2015).

From a productivity perspective, the crucial factor is *which* segment of the services sector absorbs labor departing from agriculture, given the extreme internal heterogeneity and pervasive informality of services. A transition trajectory from informal agriculture into low-productivity informal services is typical of many lower-middle-income economies, severely dampening the net productivity gains of labor reallocation

(McMillan et al., 2016). Tracking individual worker mobility trajectories across sectors requires longitudinal panel data. However, given that every second worker employed in the services sector across the analyzed economies operates within the informal segment, it is highly probable that low-productivity informal services represent the primary absorbing state for labor exiting agriculture.

4.4.
Is It Normal to Be Informal? Job Quality, Informal Employment, and Self-Employment

Jobs differ across a wide array of structural dimensions. The concept of job quality can encompass such dimensions as working conditions, employment stability, compensation levels, contract formality, technological complexity, skill intensity, and statutory social protection, among others. Each component of job quality corresponds to specific statistical metrics. In the context of the analyzed economies, a primary dimension of job quality involves the structural divisions between wage employment and self-employment, as well as formal versus informal status. While self-employment and informal employment are neither synonymous nor quantitatively identical, they overlap substantially.

A well-established empirical relationship exists between per capita GDP and the economy-wide incidence of informality (Perry et al., 2007; La Porta and Shleifer, 2014). Elevated informality is a specific structural feature when large shares of the workforce remain concentrated in subsistence agriculture and basic personal services. It is accompanied by a weak formal private sector and limited state capacity to provide public goods. Informality systematically correlates with lower labor productivity, absent social safety nets, and low technological intensity. Human capital accumulation and earnings in the informal segment remain substantially below formal baselines, notwithstanding isolated exceptions. Furthermore, widespread tax evasion within the informal economy erodes the fiscal base, restricting the state's capacity to finance public goods and infrastructure. This generates a vicious structural cycle: informality undermines public good provision, which in turn incentivizes further informalization.

Although the problematic nature of labor market informality is universally recognized, a consensus regarding its exact conceptual definition remains elusive. Moreover, between complete formality and complete informality lies an extensive "grey zone" exhibiting hybrid characteristics (Perry et al., 2007; World Development Report, 2013, p. 64). Despite systematic efforts by the International Labour Organization (ILO) to standardize labor market metrics, informality continues to be operationalized through diverse statistical frameworks depending on empirical data availability.

In recent years, the legalistic definition of informality, codified in International Labour Organization guidelines (ILO 2013; ILO 2023), has emerged as the dominant statistical standard. Under this approach, any economic activity conducted in violation or outside the coverage of statutory labor regulations is classified as informal. Primary criteria used to delineate formal from informal employment include tax registration, written employment contracts, and mandatory social security contributions. Crucially, this legalistic approach explicitly recognizes that informal employment relationships can exist within both informal and formal sector enterprises (e.g., unregistered workers employed off-the-books by formal firms). Labor Force Surveys serve as the primary empirical data source for this definition, though variations in survey granularity across countries affect cross-country comparability. Because monitoring every regulatory aspect of employment is challenging, empirical estimates of informality remain inherently lower-bound approximations. As additional regulatory criteria are incorporated into survey frameworks, recorded informality rates tend to rise, all else equal[37].

Where micro-level survey data are constrained, two alternative analytical methodologies are deployed. One is using self-employment measures as a proxy for informal employment. Because self-employment is simpler to measure and widely available across national datasets, it frequently serves as a practical proxy for informality. Self-employment is heavily concentrated in rural agriculture and exhibits a strong inverse correlation with per capita GDP (Perry et al., 2007; La Porta and Shleifer, 2014).

In the context of post-Soviet transition economies, employment outside the corporate segment (defined as entities operating without full legal status, comprehensive accounting obligations, or strict statutory compliance) serves as an indirect measure of incomplete formality. Tax registration of physical persons or sole proprietors does not guarantee full adherence to labor codes, statutory social security contributions, or workplace safety standards. Furthermore, regulatory frameworks governing sole proprietorships and unincorporated physical persons apply simplified standards relative to general labor codes, creating sharp disparities in social protection between corporate and non-corporate wage earners. In System of National Accounts methodology, this non-corporate sphere corresponds broadly to the household enterprise sector (System of National Accounts 2008, World Bank, IMF, OECD).

A major technical advantage of this broader structural approach is that several CIS economies maintain mandatory administrative enterprise reporting, whereas comprehensive, public-use LFS microdata are not uniformly conducted or released. The residual between aggregate national employment and formal corporate sector headcounts provides a reliable upper-bound proxy for total informality. This non-corporate segment comprises three main categories: self-employed workers, wage employees hired by unincorporated individual entrepreneurs/physical persons, and off-

[37] For example, incorporating statutory paid sick leave coverage into the formal employment benchmark raises the measured informality rate in Armenia by 5 percentage points (from 30% to 35%) in 2024.

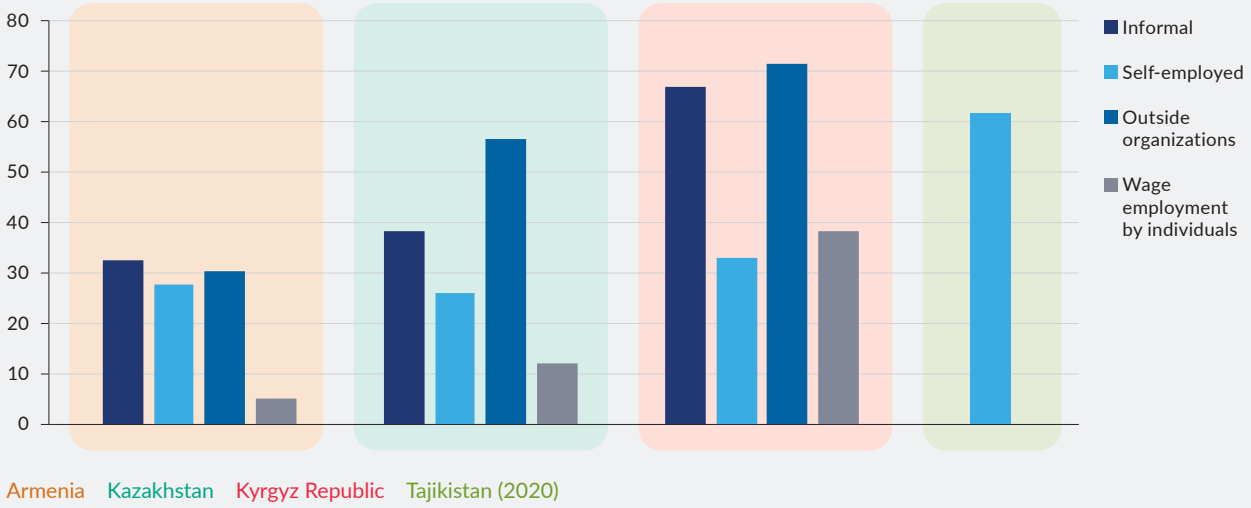
the-books informal wage workers in formal enterprises. Even if a fraction of these workers maintains basic tax registration, full compliance with broader regulatory standards remains highly improbable.

> **Across all four target economies, informality remains a pervasive structural phenomenon regardless of the statistical definition applied.**

Across all four target economies, informality remains a pervasive structural phenomenon regardless of the statistical definition applied. Figure 4.14 summarizes available comparative estimates across these alternative metrics.

Before analyzing these figures, several methodological nuances require clarification regarding the four underlying definitions. The first estimate is the share of informal workers, measured on the basis of a legalistic definition (presence of tax registration and payment of social contributions) using labor force surveys (LFS). LFS are regularly conducted in three of the four countries. This group consists of self-employed and informally employed wage workers. The second estimate is the share of self-employed, also determined within the LFS framework. In Tajikistan, the corresponding question was asked during the 2020 population census. The third is the share of wage workers employed by physical persons. Finally, the fourth is the share of those employed outside the corporate segment, which consists of legal entities of all types.

Figure 4.14.
Estimates of Labor Market Informality across Alternative Definitions (% of Total Employment)



Sources: National statistical offices; authors' calculations

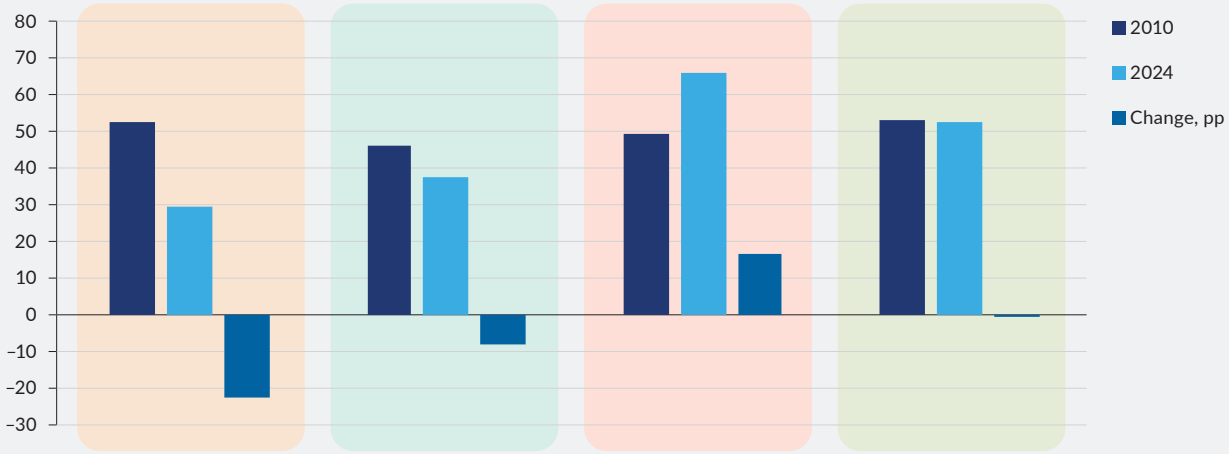
For Armenia, estimates of informality/self-employment in 2024 based on LFS data hovered around 30% of total employment. The estimate of the share of the non-corporate segment is based on the difference between total employment and employment in the register of the State Revenue Committee.

In Kazakhstan, there is a significant dispersion of estimates: from 12% for employment under physical persons (based on LFS) to over half for those employed in the non-corporate sector (according to administrative statistics).

In the Kyrgyz Republic, the share of informally employed virtually coincides with the estimated share of those employed outside the corporate segment: both yield approximately two-thirds of total employment.

For Tajikistan, two estimates are available for the share of self-employed. One can be obtained as the difference between total employment and wage employment, exceeding 50% for 2024 (Agency for Statistics under the President of the Republic of Tajikistan, *Labor Market in the Republic of Tajikistan*, 2024). The second is based on 2020 census data and yields 62% of total employment (Population and Housing Census 2020, Vol. VII, Table 6)[38]. The actual level of informality may be even higher, as these estimates apparently do not include informal wage workers. Refining them requires microdata from household surveys for recent years, which are either non-existent or unavailable.

Figure 4.15.
Changes in the Share of Informally Employed (% and percentage points)



Sources: National statistical offices; authors' calculations

Unemployment Protection

Low benefit levels, restricted access, and short benefit durations



[38] See.: https://www.stat.tj/ru/perepis-naseleniya-i-zhilishhnogo-fonda-2020.

Figure 4.15 shows the dynamics of informal employment (according to the first definition; for Tajikistan, as self-employment) over the period under discussion. In Armenia, its scale contracted by more than 1.5 times — from 52% to 30% of total employment. In Kazakhstan, its share decreased by 8 percentage points, while in the Kyrgyz Republic it rose by 16 percentage points. We do not have similar data for Tajikistan, but the share of self-employed remains stable at around 53%.

Components of Informal Employment

We use the concepts of non-wage employment and self-employment synonymously, although *non-wage employment* encompasses five sub-groups: employers (owner-managers), own-account workers, members of producers' cooperatives, unpaid family workers, and individuals engaged in home production for sale. The shares of employers and cooperative members are very small, while the distinctions among the remaining three groups are blurred. Self-employed individuals account for between one-quarter and one-third of total employment in Kazakhstan, Armenia, and the Kyrgyz Republic (in that order). In Tajikistan, as noted above, they constitute over half of all employed persons.

Another major component of informal employment is wage *employment* for unincorporated entities — individual entrepreneurs or private households. These two groups are difficult to separate statistically, and corresponding data are often absent. Their combined scale ranges from 5% of total employment in Armenia to 12% in Kazakhstan and 38% in the Kyrgyz Republic. Data for Tajikistan are unavailable.

Are self-employment and wage employment of this type fundamentally distinct states of informality, or is this division merely artificial? A simple probit regression on the choice between these two employment regimes (controlling for key demographic characteristics as well as regional and year fixed effects) for the Kyrgyz Republic indicates that these represent distinct states, as the characteristics of the population groups involved differ statistically. Self-employment is more characteristic of rural populations, individuals over 30 years of age, those with lower educational attainment, and married individuals with families. The contraction of agricultural employment leads to a squeeze in self-employment and labor reallocation toward the services sector (where wage employment is more prevalent), though the informal nature of work may persist during this transition. A definitive conclusion regarding the structural contraction of self-employment and its drivers would be premature, as the boundary between these forms of informality can be fluid and dependent on subjective self-reporting by respondents in labor force surveys.

Regarding the structural characteristics of informal employment, it remains heavily concentrated across all four economies in agriculture, as well as in market services such as retail trade, catering services, and transportation (Figure 4.16).

In Tajikistan, nearly three-quarters of all informally employed (self-employed) workers, and in Armenia more than half, are concentrated in agriculture. In Kazakhstan, informal workers are divided roughly equally between agriculture and market services, whereas in the Kyrgyz Republic, market services represent the primary domain of informal labor absorption[39].

In Tajikistan, nearly three-quarters of all informally employed (self-employed) workers, and in Armenia more than half, are concentrated in agriculture.

Figure 4.16.
Sectoral Structure of Informal Employment (%)



Sources: National statistical offices; authors' calculations

The dynamics and structure of informal employment are shaped by both labor supply and labor demand. First, if the pace of formal job creation remains low while social protection against unemployment is weak or non-existent, additional labor supply is absorbed *predominantly* by informal jobs. This structural dynamic is particularly pronounced in the Kyrgyz Republic, where the number of informally employed workers expanded by 60% between 2010 and 2024, even as total employment grew by only 23% (authors' calculations based on LFS microdata).

Second, structural shifts involved in the reallocation of labor from agriculture toward market services (a sector that remains highly informal) alter not only the overall share of informality in total employment, but also its internal composition.

[39] We identify the public sector by economic activity category; however, informal service provision also exists within education and healthcare (e.g., informal private tutors or off-the-books medical services).

Despite variations in statistical definitions and empirical estimates, the central conclusion is that informality remains a severe structural bottleneck across all four economies, constraining labor productivity growth and household welfare gains. Informality poses heightened systemic risks when accompanied by labor market segmentation that restricts workforce mobility and cross-sectoral reallocation. Under such conditions, the informal segment reproduces itself as a chronic, low-productivity trap from which workers face substantial barriers to exit.

As noted at the outset of this section, policymakers and public officials widely recognize the imperative to reduce the size of the informal labor market. One primary policy approach relies on enhancing tax administration and intensifying regulatory enforcement against entities operating within official reach. However, attempting to achieve "formalization" solely through tax accounting measures and regulatory pressure fails to resolve underlying structural weaknesses, as it leaves the core characteristics of these jobs untouched — their low technological intensity, depressed productivity levels, low compensation, and absent statutory social protections. Ultimately, the pervasive prevalence and persistence of informal labor relationships stem primarily from a deficit of formal alternatives, namely, a weak formal private sector incapable of generating quality jobs at scale. The second (and decisive) pathway to addressing this challenge lies in establishing institutional and economic conditions conducive to formal private-sector job creation that offers an attractive alternative. This mandates comprehensive institutional reforms and broader structural transformation.

4.5.
Public Sector Challenges: Public Goods Provision or Social Safety Net?

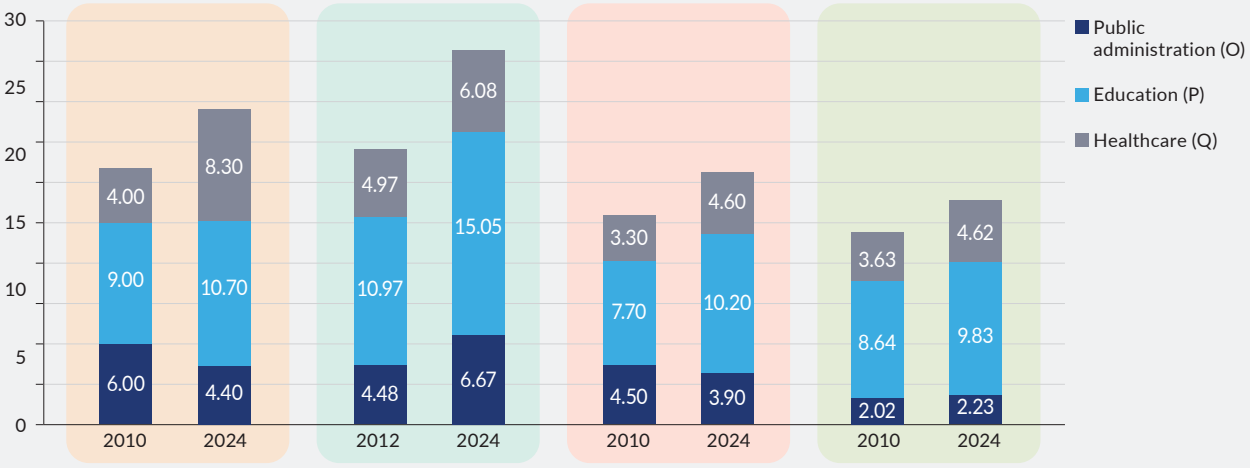
The pivotal role of the public sector encompassing public administration (Section O in ISIC activity classification), education (Section P), and human health and social work (Section Q), financed predominantly from state budget sources can hardly be overstated[40]. The public sector underpins state capacity and ensures the provision of essential public goods, including security, public education, healthcare, and social assistance. As highlighted in World Bank (2026), state capacity depends fundamentally on the skills and motivation of its workforce; this applies both to frontline personnel who interact daily with citizens and to administrators responsible for financing, monitoring, and governance. Skills and motivation are, in turn, shaped by how recruitment, promotion, professional development, and labor compensation are institutionalized and administered.

In this context, our analytical focus is on public sector performance through the labor market lens. First, public sector wage levels determine the selectivity and quality of recruitment, directly influencing worker motivation and the quality of public goods delivered. Second, the public sector draws from the common aggregate labor pool and accounts for a substantial share of total formal employment. Third, given its structural scale and direct fiscal funding, public sector employment generates significant macroeconomic externalities; for instance, it anchors wage benchmarks for the private market sector. Excessively high relative public wages exert upward fiscal pressure on budget expenditures while crowding out private-sector job creation. Conversely, depressed relative public wages trigger adverse selection, erode work incentives, and establish a lower equilibrium wage floor across the broader economy. This elevates the risk of working poverty, transforming public sector employment itself into a de facto social protection mechanism rather than a driver of state capacity. Striking and maintaining an optimal wage balance between the market and non-market sectors constitutes a key institutional and fiscal policy challenge.

We examine the three economic activities outlined above. Regarding education and healthcare, small non-budgetary private components exist, though available statistical sources do not permit their precise disaggregation. Figure 4.17 presents the total headcount, structural composition, and multi-year shifts across all four economies over 2010–2024.

[40] Hereafter, we use the terms “public sector” and “budgetary sector” interchangeably. The budgetary sector represents a sub-component of the broader public sector, which also encompasses state-owned commercial and quasi-commercial enterprises.

Figure 4.17.
Employment Structure in the Public Sector (%)



Armenia Kazakhstan Kyrgyz Republic Tajikistan

Sources: National statistical offices; CIS Statistical Committee; authors' calculations

In 2010, the three analyzed economic activities (Sections O, P, Q) accounted for 15 to 20% of total employment in the economy. Over the past 15 years, the share of the budgetary sector grew universally, reaching 17 to 27% in 2024. This falls within the range observed in OECD countries. The highest values were recorded in Kazakhstan and Armenia, while the lowest were in the Kyrgyz Republic and Tajikistan. This increase over the period was primarily driven by growth in education, the dynamics of which reflect demographic trends on the one hand, and rising demand for tertiary education on the other. High birth rates and the corresponding increase in the child population in Central Asian countries create growing demand for teachers and related professions. The budgetary sector plays an important role in female employment, as its gender balance is tilted in their favor. In the Kyrgyz Republic, one in three working women (33%) works in these activities, while in Kazakhstan the ratio is two in five (38%).

As for those employed in organizations (within the corporate sector, where these three activities account for the bulk of formal workers), the share of budgetary workers is even higher. For example, in the Kyrgyz Republic it exceeds 60%, in Kazakhstan it stands at over 50% (51.4%), in Armenia at 27.5% (of all registered with the State Revenue Committee), and in Tajikistan at 32.8% (among all wage workers, the formal share of whom is unknown). These ratios indicate not so much that the budgetary sector is quantitatively bloated, but rather that the formal private market sector as an alternative (in terms of employment, not function!) remains weak in generating "quality" employment.

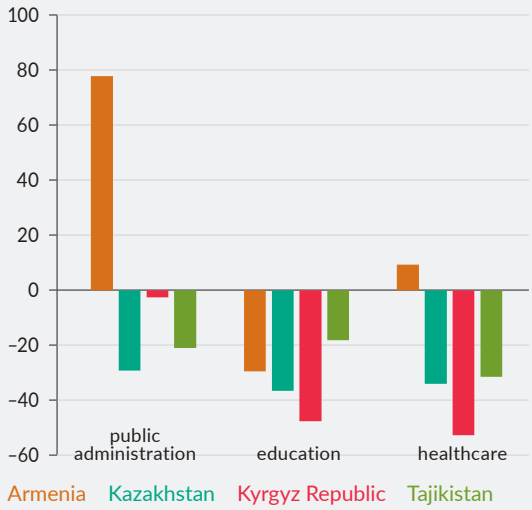
Job Quality: Compensation in the Budgetary Sector

Jobs in the budgetary sector offer relatively higher quality along many dimensions, as they feature active social guarantees (including annual leave, paid sick leave, earnings stability, etc.), predictable career progression, and favorable working conditions. This aligns closely with women's preferences when selecting an employment sector. However, a key dimension of quality is the level of compensation relative to the market sector.

Before presenting estimates regarding compensation in the analyzed countries, it is useful to recall several stylized facts based on extensive research (see review in Gindling et al., 2019). Public (budgetary) sector workers in most countries receive a premium over market sector workers with comparable individual characteristics. This premium tends to decline as per capita GDP rises, reflecting more competitive labor markets and the presence of alternative employment options in the private sector. Exceptions to this trend include certain post-socialist countries, where instead of a monetary premium, a substantial "penalty" is observed (see, for example, Gindling, 2020; Gimpelson et al., 2019; Sharunina, 2013). Among the causes of this peculiarity is the preservation of the residual principle of wage determination without institutional anchoring to alternative options in the market sector. In Central and Eastern European countries that inherited this principle, such a situation was observed in the early 1990s, followed by a gradual transition toward approximate inter-sectoral parity. Another reason relates to strong wage compression among budgetary workers, which reduces pay differentials for low-skilled workers while increasing penalties for the highly skilled. As researchers note, underpaying highly skilled workers may negatively affect the quality of social services provided by this sector (Gindling et al., 2020).

Figure 4.18 presents the ratio of average wages in budgetary activities relative to manufacturing. Compensation in manufacturing is used as the benchmark for comparison because this critical growth sector primarily employs medium- and low-skilled workers, whereas the budgetary sector requires high qualifications (doctors, teachers, and civil servants generally hold higher education degrees). This makes the comparison of average wages particularly illustrative. In the figure, we show a raw comparison (without controlling for individual characteristics) of average wages by economic activity across all countries based on aggregate data published by national statistical offices.

Figure 4.18.
Relative Wages in Budgetary Sectors (Ratio to Manufacturing, % Gap, 2024)



Source: National Statistical Services, CIS Statistical Committee, authors' calculations.

A brief conclusion from this figure is that the average worker in education and healthcare earns significantly less than one employed in manufacturing. In education, this gap (a "penalty") is minimal in Armenia and Tajikistan, but can reach up to 50% in the Kyrgyz Republic. In healthcare, it is absent in Armenia, but exceeds 50% in the Kyrgyz Republic. For public administration workers, the "penalty" is generally smaller, and in Armenia it becomes a significant "premium". In any case, these estimates point to a critical underpayment of skilled labor in the analyzed activities.

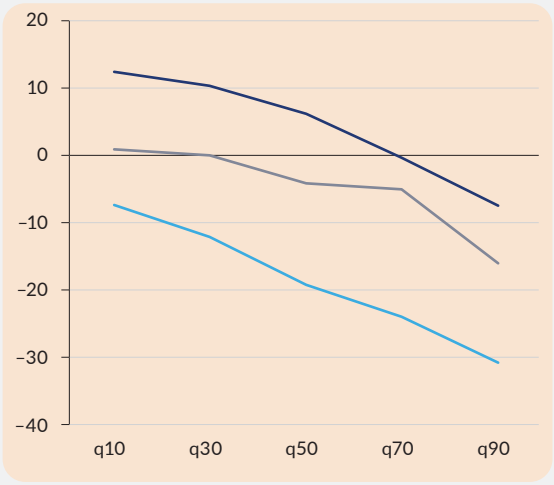
However, a discussion in terms of averages does not account for employment heterogeneity or the non-random distribution of workers across activities. A feature of these estimates is that, due to the nature of the data used, they refer only to the corporate segment of the economy, whereas part of the manufacturing sector lies outside it. In the unobserved segment of employment, wages may be lower, which affects these ratios. Moreover, these ratios may vary along the distribution: they differ for less-skilled workers compared to the highly skilled.

The use of microdata allows us to control for observed individual characteristics and regional fixed effects. In this case, we use wage earners in market-sector enterprises (excluding agriculture and self-employment) as the reference category for comparison. How these wage gaps and ratios change along the distribution can be evaluated using quantile regressions while controlling for individual characteristics. This is illustrated in Figures 4.19 (a, b), which are based on 2024 LFS microdata for Armenia and the Kyrgyz Republic.

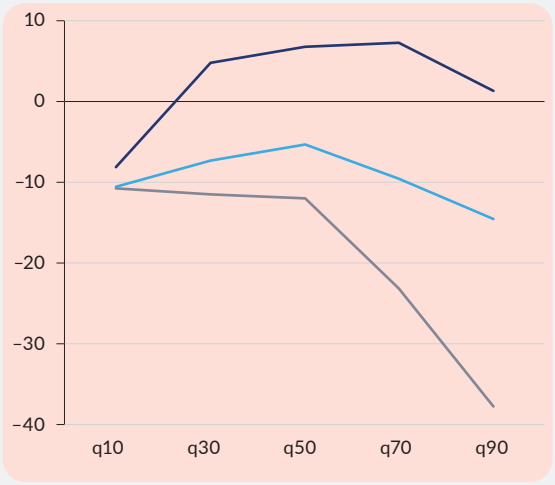
Because we expanded the comparison base to all wage workers in the market sector, the overall wage gaps (relative to the non-agricultural market sector) diminished. In Armenia, moving from the 10th to the 90th percentile, the gap consistently declines from a 12.5% premium to a 7% penalty for public administration workers, from -7% to -30% in education, and from virtual parity to -15.6% for healthcare workers. As for the Kyrgyz Republic, the gap for public administration workers becomes weakly positive (a "premium"), while the "penalty" contracts substantially for education and healthcare workers in the lower half of the distribution. However, the "penalty" for these latter two groups increases sharply in the upper tail of the distribution. At the 90th percentile, it reaches 14% and 37%, respectively. Recall that it is

Figure 4.19 (a, b).
Armenia and the Kyrgyz Republic: Relative Wages Along the Earnings Distribution (%)

a.



b.



Armenia Kyrgyz Republic

Public administration Education Healthcare

Source: Authors' calculations based on 2024 LFS data. Estimates based on quantile regression coefficients controlling for gender, age, education, marital status, full-time wage employment, place of residence, and regional fixed effects. Standard errors estimated using bootstrapping methodology. Reference category: wage earners in the non-agricultural market sector.

precisely in the right tail of the distribution where the most qualified and experienced workers are concentrated[41].

The economic activities of interest are "populated" by workers possessing higher average levels of human capital than both the overall national economy and the benchmark reference groups. Consequently, one would expect a positive wage differential across all quantiles, yet empirical evidence demonstrates the exact opposite. The gap is consistently negative and deteriorates significantly in the upper quantiles, sharply elevating the risk of adverse selection in these professions, which directly undermines the quality of public goods provided. This structural risk is particularly acute for the most qualified specialists in the budgetary sector.

These empirical findings align with the conclusions of Gindling et al. (2019), showing that the conditional public-sector wage premium declines along the earnings distribution — dropping from 32% at the 10th percentile to 6% at the 90th percentile. In our context, however, the trajectory reflects an expanding penalty rather than a diminishing premium, though the overall direction of change coincides, as the least qualified and lowest-paid worker cohorts either gain (as in Gindling et al.) or face negligible losses.

[41] Note that the age distribution of healthcare workers in both Armenia and especially the Kyrgyz Republic is heavily skewed toward older cohorts. Conversely, public administration features a rather high share of young people, indicating both a large inflow into the state apparatus and rapid turnover/exit. The age distribution in education is bimodal; it records an influx of young individuals (rapid growth in the left tail) while maintaining a high plateau in the right tail, confirming employment stability in these sectors. This should lead to human capital accumulation and be reflected in compensation if earnings conventionally grew with age and experience.



Youth Unemployment in Armenia

High unemployment, including youth and long-term unemployment

This raises a fundamental question: Why, in the face of such structural wage penalties, do healthcare and education professionals not transition to the market sector such as retail trade (where many undoubtedly migrate)? While a definitive empirical answer requires further investigation, several key factors are evident. Given the restricted landscape of formal employment opportunities for women holding tertiary or specialized secondary qualifications, the budgetary sector provides a crucial share of such positions. Standard monetary wage gap calculations fail to account for the comprehensive non-monetary amenities associated with public employment, including statutory social guarantees, predictable annual leave, and flexible schedules compatible with childcare. These non-wage benefits substantially increase the overall job utility of even low-paying positions. Moreover, career mobility for teachers and medical personnel is constrained by high, sector-specific investments in human capital. However, under these conditions, there is a strong likelihood that instead of accumulating strategically vital human capital, the public sector operates primarily as a substitute for social protection mechanisms.

What external spillovers stem from this public sector wage-setting mechanism beyond its immediate labor market boundaries? First, depressed public-sector pay contributes directly to lowering the general equilibrium wage floor across the broader economy. In this sense, public sector compensation acts as an institutional mechanism reinforcing broader labor market rigidities (see the following section). Second, it exerts a chilling effect on worker transitions from the informal to the formal sector, as the net financial gain from formalization remains minimal. Third, it dampens the returns to education, eroding incentives for private investments in human capital accumulation. Given the structural size of the budgetary sector, its large share of public fiscal expenditures, and its pervasive influence on aggregate labor market dynamics, this domain warrants dedicated empirical analysis. Ultimately, an institutional reform of public sector pay structures would prove highly beneficial across all target economies to raise relative compensation and introduce greater structural rigidity against downward wage pressures. Adhering to the principle of “equal pay for equal work” mandates that compensation levels in this sector should (holding all else equal) be maintained at levels no lower than those prevailing in the market segment for workers with comparable human capital endowments.

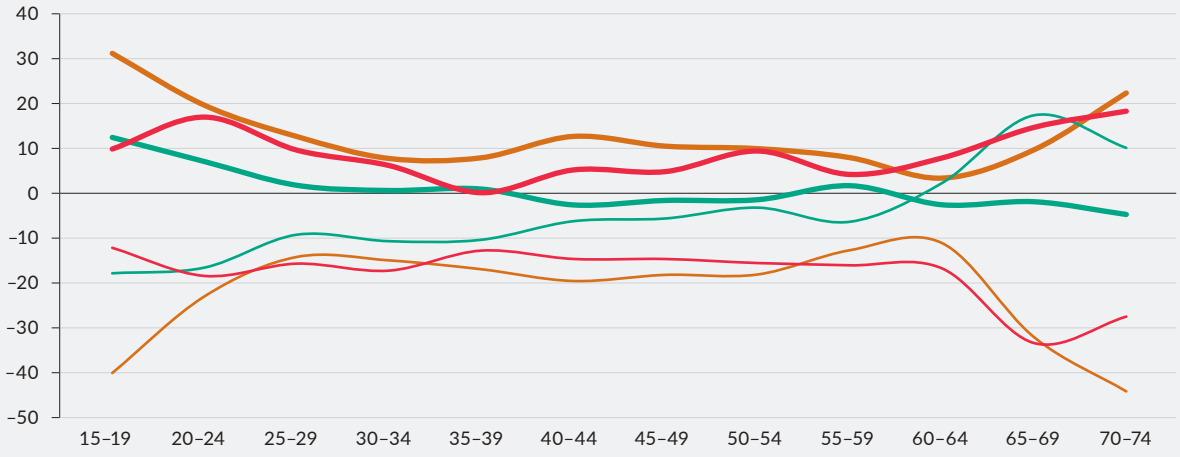
4.6.
Reallocation, Labor Mobility, and Job Turnover

What primary economic mechanisms drive structural labor reallocation? One channel operates through intergenerational replacement, where entry-level worker cohorts decline to enter traditional sectors occupied by older generations. For example, young workers choose not to enter agriculture to succeed their parents, gradually reshaping aggregate employment structures even if older workers remain in agriculture until retirement. A second channel operates through direct job-to-job mobility, where individual workers change employers and sectors mid-career. In both instances, structural reallocation is mediated by micro-level labor flows — comprising hiring/separations and job creation/destruction at the firm level.

Do age-specific employment patterns undergo structural shifts over time? In other words, how does the sectoral distribution of employment evolve across young versus older worker cohorts?

We compare sectoral employment structures across five-year age brackets over a 10- to 15-year observation period (Figure 4.20). As established previously, the most pronounced structural shifts across all four economies occurred in agriculture (where employment contracted) and market services (where employment expanded). Across age brackets, agriculture's share of employment declined nearly synchronously across the 20–60 age group (falling by 3 to 16 percentage points in Kazakhstan and by 12 to 17 percentage

Figure 4.20.
Shifts in the Employment Structure of Agriculture and Market Services by Age Groups (percentage points)



Agriculture Armenia Kazakhstan Kyrgyz Republic Tajikistan
Market services Armenia Kazakhstan Kyrgyz Republic Tajikistan

Note: Difference in sectoral employment shares within each age group between 2024 and the beginning of the period (Kyrgyz Republic and Tajikistan — 2010, Armenia — 2014, and Kazakhstan — 2012).

Source: Labor Force Surveys.

points in the Kyrgyz Republic) while maintaining relative proportions across age cohorts. We observe no accelerated exit from agriculture among younger cohorts relative to older age groups. A mirror-image pattern emerges in market services, which served as the primary beneficiary of structural shifts, though the absolute percentage point variations between baseline and terminal periods were half as large. This empirical pattern suggests that while intergenerational replacement occurred, it was not the dominant mechanism driving structural labor reallocation.

While the ratios of employment shares in agriculture and market services across age groups remained relatively stable over time in Kazakhstan and the Kyrgyz Republic, Armenia exhibits a pronounced trend toward declining agricultural employment and growing market services employment among younger age groups and in the 60+ age group. In 2024, the share of those employed in agriculture among individuals aged 20–24 was nearly 30 percentage points lower than in 2014. The drop among those under 20 years of age is even larger. Similarly, the share of persons over 60 who retained work in agriculture over the 10-year period also contracted sharply. The situation in market services appears almost like a mirror image. Clearly, agriculture is ceasing to be the primary occupation for young people, with market services stepping into this role, absorbing half of all young people under 30 years of age. However, the macro-structural effect of these shifting youth preferences will manifest over time.

Labor Turnover

Labor market mobility for wage earners is realized through hirings and separations. To measure the intensity of wage worker movement, two main statistical measures can be used[42]. First, there are administrative reporting data from organizations on hiring/separations relative to the average annual payroll headcount. They show the intensity of labor turnover in organizations, but do not indicate job tenure among existing workers. These statistics are available only for those employed in corporate sector enterprises, that is, for roughly one-third of all employed persons. Second, there are data on job tenure (i.e., with a given employer, or in a given occupation for self-employed individuals) for all employed persons, extracted from labor force surveys. We utilize both approaches.

Data on turnover, including hirings and separations (for all causes) for 2010–2024, are compiled in Table 4.3. We observe fairly high turnover rates in Kazakhstan throughout the period, alongside a slight upward trend over time: labor turnover hovered around 50% per year, with hiring exceeding separations, thereby driving employment growth in organizations. For comparison, turnover in Russia during the pre-COVID period was even higher. High

[42] We do not examine mobility measures based on panel data here, as such data are unavailable to us. For this reason, we cannot estimate unconditional and conditional probabilities of inter-sectoral transitions for different groups of individuals.

turnover rates highlight a continuous flow of job vacancies, providing access to employment.

In the Kyrgyz Republic and Armenia, turnover intensity is substantially lower. Armenia experienced a small gain in corporate employment, whereas in the Kyrgyz Republic employment in corporate entities contracted on average over the period (the average annual difference between separations and hiring was 2.2%). Note that hiring and separations move procyclically, that is, each "downsizing" was subsequently partially offset by new hiring, but separation indicators are more volatile than those for hiring.

Labor turnover in Tajikistan is 2.5 times lower than in Kazakhstan and twice as low as in Armenia and the Kyrgyz Republic. This can have distinct but non-mutually exclusive explanations. First, the small corporate segment (dominated by the budgetary sector) is characterized by high job stability and discriminatory barriers to entry. A weak formal private sector generates an insufficient number of new jobs to stimulate hiring. Second, labor market institutions may dampen or impede new hiring. The low rates in Tajikistan fit seamlessly into the broader picture of sluggish structural transformation, persistent high agricultural employment, and an underdeveloped formal private services sector.

Labor turnover in Tajikistan is 2.5 times lower than in Kazakhstan and twice as low as in Armenia and the Kyrgyz Republic.

Table 4.3.
Labor Turnover in Organizations (2010–2024, % of Annual Payroll Employment)

	Hired	Separated	Turnover (H+S)	Difference (H-S)
Armenia (av. 2013–17)	20.5	20.0	40.5	0.5
Kazakhstan (av. 2012–23)	27.0	25.7	52.7	1.3
Kyrgyz Republic (av. 2010–24)	20.7	22.9	43.6	-2.2
Tajikistan (av. 2019–23)	11.4	8.9	20.3	2.5
For comparison: Russia (av. 2015–19)	28.5	33.0	61.5	-4.5

Sources: National statistical offices; authors' calculations

Labor turnover by economic activity shows significant variation. In the public sector, turnover is modest, but in market services and in construction, it can exceed 100%, indicating a complete replacement of personnel over the course of a year (or the use of short-term employment contracts, which are subject to legislative restrictions).

Behind relatively high labor turnover figures may lie a widespread reliance on fixed-term contracts, notwithstanding statutory limitations. The re-signing of a fixed-term contract with the same employer does not constitute true job-to-job mobility. When this factor is accounted for, labor mobility cannot be deemed sufficiently high to drive structural transformation. A comparison of hiring and separation rates with corresponding values in Russia supports the hypothesis of insufficient labor market flexibility within the formal sector. The use of fixed-term contracts and their role in ensuring labor market flexibility across the analyzed countries will be specifically addressed in Section 5, which is dedicated to labor market institutions.

Enterprise-level labor turnover data indicate how many individuals (or what share of the average payroll headcount) an employer hired or separated over the calendar year for various reasons. If specific jobs exhibit extremely high personnel churn, each new hire into those positions will inflate the overall indicator even if all other jobs remain stable, preventing an accurate assessment of broader labor mobility.

An alternative perspective on mobility can be derived from data on the share of short-tenure workers, defined as those with a job tenure of one year or less with the same employer. This metric evaluates the probability of new hires and successful matches that were realized and survived during the year preceding measurement. The higher this share, the more mobile the labor market and the greater the scale of potential reallocation. These data are gathered through Labor Force Surveys and cover all employed individuals, including those in marginal jobs.

To estimate the probability that a worker possesses a short job tenure, we estimate a probit regression (taking a value of 1 if tenure <= 1 year, and 0 otherwise), controlling for a full set of individual characteristics, including a variable for informal employment and the economic activity sector. The conditional probabilities for workers across all countries (Armenia, Kazakhstan, and the Kyrgyz Republic) of having short tenure fluctuate around 8–15%. Although typical for many countries, this level of mobility appears insufficient to drive intensive structural shifts.

Job Reallocation

Worker mobility as captured by enterprise statistics is a useful but insufficient condition for structural change. Workers frequently change jobs while retaining their specific economic activity. Moreover, mobility measured by job tenure can largely reflect short-term hiring of the same workers into identical marginal positions. Structural shifts require “creative destruction” that alters the macroeconomic proportions between sectors, wherein firms in certain activities

expand employment while others contract it. Job creation and job destruction — the constituent components of this reallocation process — are asymmetrical, operating at varying speeds and affecting distinct industries and regions.

Figure 4.21 (a, b).
Job Creation and Destruction Rates (%)



Source: Authors' calculations based on World Bank Enterprise Surveys (WBES) data

Empirical analysis of job reallocation builds on the methodology pioneered by Davis and Haltiwanger (1992)[43]. A job is defined as an occupied position created to fulfill an employment contract (System of National Accounts, 2008) rather than a physical workplace (such as a factory machine, an assembly line station, or an office desk and chair). The change in employment (ΔL_i) at an enterprise i over the period $t_1 - t_0$ forms the basis for a series of indicators

[43] A similar methodology is also utilized by Rosstat. See "Mobility and Stability...", Chapter 1.

calculated relative to the average employment level at the firm. These include the job creation rate (jc_i) defined as the ratio $(\Delta L_i/L_i) * 100\%$, when $\Delta L_i > 0$; the job destruction rate (jd_i) – $(\Delta L_i/L_i) * 100\%$, when $\Delta L_i < 0$; and the gross job reallocation rate ($jt = jc + jd$), equal to their sum. Enterprises with $\Delta L_i > 0$ can be termed "creators", those with $\Delta L_i < 0$ "destroyers", and those with $\Delta L_i = 0$ "holders" of jobs. It should be noted immediately that the sum of created jobs (jc, when $\Delta L > 0$) is not equal to the net employment increase ($jc - jd$), although these terms are frequently conflated.

The primary contribution to job creation is driven by young enterprises aged five years or less

Our empirical analysis draws upon data from four waves of the World Bank Enterprise Surveys (WBES) conducted across all four target countries[44]. These surveys record employment levels in the year preceding the survey and three years prior (with values annualized). Using these data for job reallocation analysis entails several analytical limitations. First, a shorter observation window (one year or less) for tracking employment changes would be vastly preferable. Second, the survey sample does not cover all economic activities. Third, a positive selection bias likely affects firm sampling, as less efficient companies are more inclined to abstain from participation. Fourth, the data tend to underestimate job destruction, notably because firms that have suspended operations are excluded from the sample. Finally, there is the specificity of the selected sectors, which are highly sensitive to cyclical fluctuations. Nevertheless, WBES data remain indispensable source of information on firm behavior in the selected countries.

The calculation results for all four countries are presented in Figures 4.21 (a, b). Job creation rates comprise two components: continuous and newly established firms. Job destruction rates in this data pertain solely to continuous firms.

Job creation rates vary significantly over time and across countries. In Armenia, the job creation rate (jc) across the sampled firms ranged from 2.6% to 11.9%; in Kazakhstan, from 4.7% to 16.3%; in the Kyrgyz Republic, from 3.1% to 6.5%; and in Tajikistan, from 7.3% to 17.9%. In 2024, the highest values were recorded in Kazakhstan and Tajikistan. According to the latest wave of data, the contribution of newly established enterprises to total jc was more substantial in Kazakhstan (44%) and Tajikistan (60%), but accounted for less than 15% in the other two countries.

The primary contribution to job creation is driven by young enterprises aged five years or less; to a large extent, they determine overall creation intensity. In part, this outcome reflects a low-base effect: young enterprises start from low employment levels, and any absolute increase yields a high rate. At the same time, the distribution of positive employment changes among young and older enterprises is virtually indistinguishable — the overwhelming majority of firms create only 2 to 4 new jobs on average over a three-year period, regardless of age, while the correlation between firm age and size remains weak (ranging from 0.17 to 0.43

[44] https://www.enterprisesurveys.org/en/enterprisesurveys

depending on the country and period). Consequently, 80% to 90% of all observed enterprises maintain employment of no more than 50 employees.

The sharp decline in (*jc*) as firms "mature" suggests either lack of incentives, or barriers to further expansion. This restricts one of the key mechanisms of creative destruction — the ability of successful enterprises to grow, enhance productivity, and gradually displace less efficient competitors from the market.

Job destruction rates (*jd*) were much lower, fluctuating between 1.5% and 3.0% in 2013, and between 0.8% and 2.4% in 2024. These estimates should be interpreted with caution, as they are sensitive to negative bias arising from positive selection toward more successful companies and the inability to account for the effects of firm closures.

The linkage between job creation dynamics and economic structural shifts varies across countries. In the Kyrgyz Republic, sectoral dynamics generally align with changes in GDP structure: the contraction of agriculture and industry is accompanied by employment growth in services. In Kazakhstan, by contrast, the most intensive job creation was recorded in trade, manufacturing, and finance. However, the share of these sectors in GDP changed only marginally (for instance, the share of trade grew by 2.2 percentage points from 2013 to 2024), indicating a divergence between micro-level employment dynamics and macro-level structural transformation.

In Tajikistan, high job creation intensity in selected sectors in 2024 (accommodation and food services at approximately 30%, and manufacturing up to 26%) may reflect the onset of structural shifts combined with a low-base effect. In Armenia, transportation stands out as a sector exhibiting simultaneously high job creation intensity (with the rate rising from 0.1% to 14.4%) alongside an invariant share in GDP (around 3.5%).

For comparison, in Russia during 2017–2019, annual creation rates averaged approximately 5.3% in manufacturing and 13.5% in trade (two activities whose enterprises are included in the WBES sample), while destruction rates stood at 5.9% and 9.8%, respectively (Labor and Employment in Russia, 2021, Tables 5.3 and 5.4).

What conclusions can we draw regarding the intensity and structure of job reallocation based on the obtained data? To answer this, it is useful to compare these findings with estimates from other structurally and institutionally similar countries. In their detailed study of this issue using Turkish data, Ayhan et al. (2025) note that turnover rates (gross job reallocation) ranged between 34% and 44%. Such levels are close to those observed in other developing economies with dynamic labor markets, yet they significantly exceed the figures we derived from WBES data.

Although a precise comparison is constrained by imperfect data comparability, it must be acknowledged that job creation rates in the analyzed countries are insufficient to drive productivity-enhancing structural shifts. We can also compare our estimates with World Bank figures for various transition and developing economies presented in the World Development Report 2013 (p. 100).

In 2013, job creation rates in the target countries were notably lower than those in comparable economies: 2.6% in Armenia, 4.7% in Kazakhstan, 5.4% in the Kyrgyz Republic, and 7.3% in Tajikistan compared to a range of 9.5%-17.5% in Latvia, Mexico, Argentina, Estonia, Hungary, Slovenia, and Romania during the 2000s. By 2024, the situation evolved unevenly: in Kazakhstan and Tajikistan, creation rates rose to 16.3% and 17.9%, respectively, approaching the upper bound of the comparison range, whereas in Armenia and the Kyrgyz Republic, the increase in intensity was much smaller, with values remaining several times lower than those of the comparison countries.

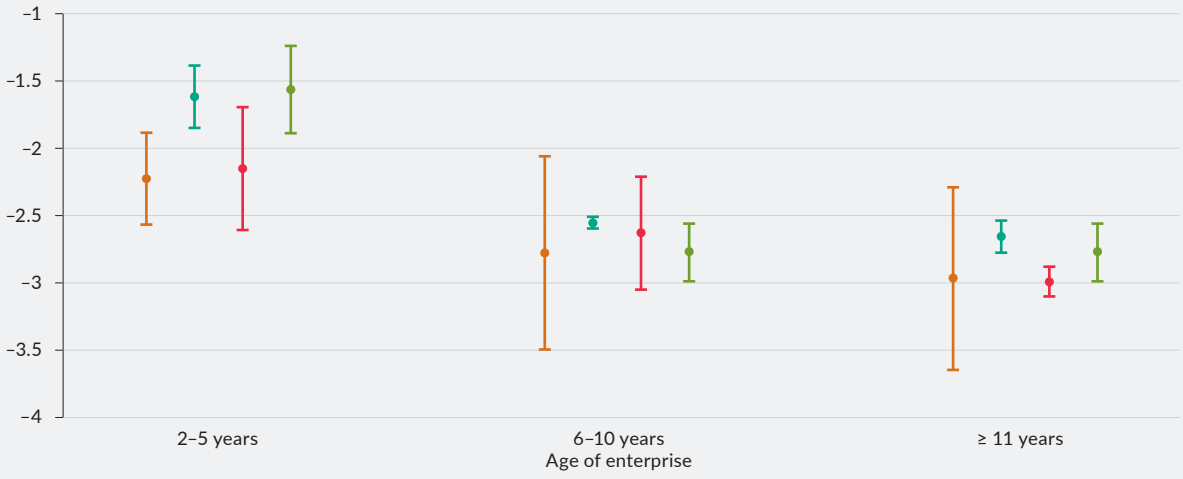
Although positive selection bias in the WBES sample tends to overstate rather than understate job creation, Armenia and the Kyrgyz Republic continue to lag significantly behind comparator nations. The cases of Kazakhstan and Tajikistan warrant more cautious interpretation: high values by 2024 may reflect either a genuine acceleration of structural transformation (more likely for Kazakhstan) or a low-base effect (closer to Tajikistan's experience). Overall, however, the challenge of formal private-sector job creation persists across all countries.

To gain a deeper understanding of the variation in job creation, we estimate a regression model specified as follows:

$$jc_{cit} = \beta_0 + \beta_1 ln(\overline{workers}_{cit}) + \beta_2 age_firm_{cit} + \beta_3 X_{cit} + \varepsilon_{cit},$$

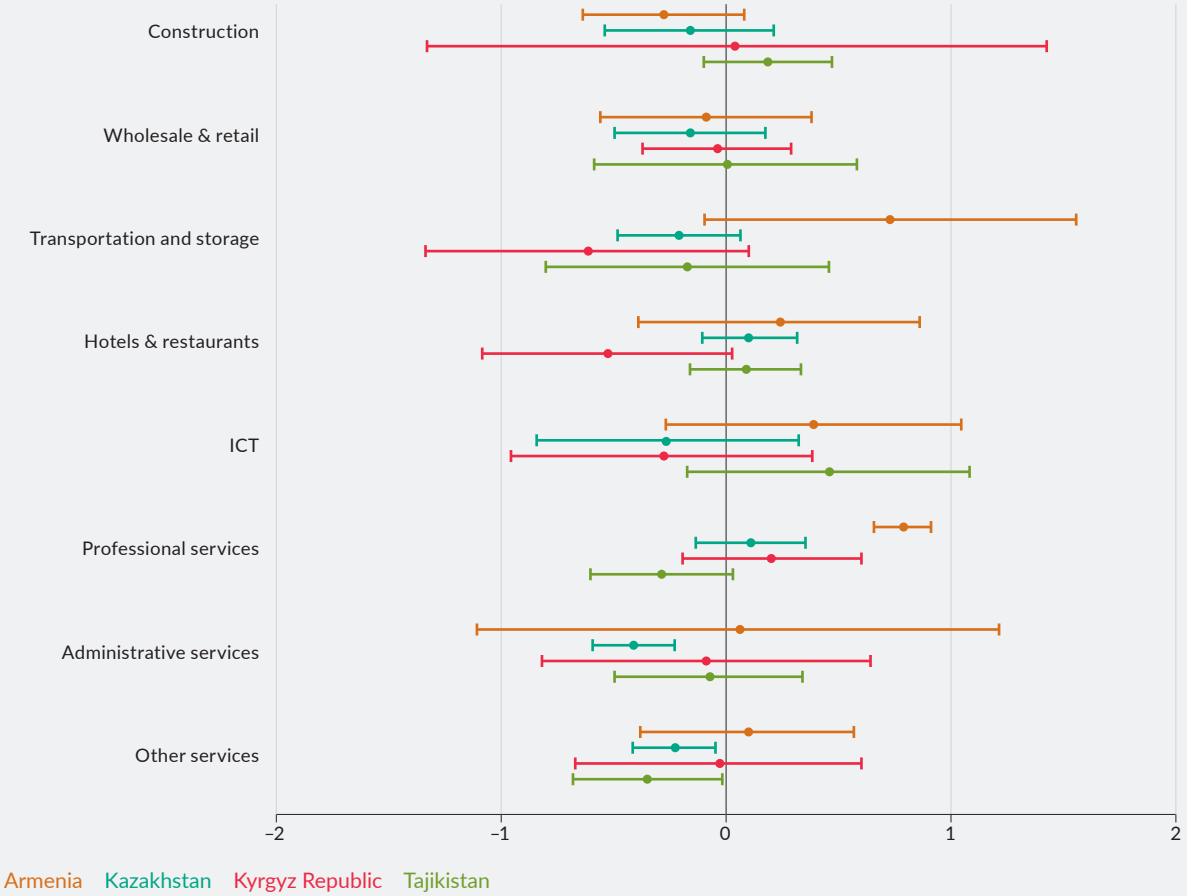
where jc_{cit} is the job creation rate in country c at enterprise i at time t; $ln(\overline{workers}_{cit})$ is the logarithm of the average number of workers at the enterprise between two time points; age_firm_{cit} is the categorical variable for enterprise age; X_{cit} is a vector of control variables; ε_{cit} is the model error term.

Figure 4.22.
Regression Estimates of the Relationship between Enterprise Age and Job Creation Rates, Reference Category: 0–1 Years



Source: WBES data; authors' calculations

Figure 4.23.
Regression Estimates of the Relationship between Enterprise Activity Sector and Job Creation Rates, Reference Category: Manufacturing



Source: WBES data; authors' calculations

Across all four countries, enterprise size (average employment) is positively associated with job creation rates, whereas enterprise age is negatively associated, with this effect compounding across each successive age group. Figure 4.22 shows that, compared to enterprises aged 0–1 years, the decline in the job creation rate is 1.64 percentage points for the 2–5 age group, 2.56 percentage points for the 6–10 group, and 2.67 percentage points for enterprises older than 11 years. These results further corroborate the previously identified fading dynamics: the older the enterprise, the lower its contribution to job creation, which aligns with the hypothesis of limited incentives or barriers to firm growth as they mature.

To analyze structural shifts, we evaluate the sector effect on job creation. As our baseline category, we use manufacturing, which typically exhibits lower job dynamics than construction or services. Intersectoral differences (shown in Figure 4.23) in job creation are, in most cases and across all countries, statistically insignificant. This indicates that among the economic activities covered by the WBES, there are no obvious leaders in this metric.

Our analysis reveals the uneven nature of creative destruction. The mechanism of growth for successful enterprises and their transition from the small to the medium and large categories is virtually non-functional across all four countries. Sectoral job reallocation aligns with changes in GDP structure only in the Kyrgyz Republic, whereas in Kazakhstan, Armenia, and Tajikistan, micro- and macro-level dynamics diverge. Enterprise export orientation does not serve as a consistent factor for more intensive job creation due to existing export constraints or the primary-commodity specialization of exports. Relative to other developing and transition economies, Armenia and the Kyrgyz Republic demonstrate a significant and persistent lag in the intensity of job turnover, while the findings for Kazakhstan and Tajikistan cannot currently be interpreted as unambiguous confirmation of accelerating structural transformation.

The mechanism of growth for successful enterprises and their transition from the small to the medium and large categories is virtually non-functional across all four countries.

4.7. What Lies Behind Low Unemployment in Central Asia and High Unemployment in Armenia?

In this subsection, we focus on the non-employed adult population. These individuals are either unemployed or outside the labor force (economically inactive). In Section 4.1, we discussed employment-to-population ratios (*ep*), including their variation across demographic characteristics. By definition, non-employment rates as a share of the population equal (100 − *ep*) %. Non-employment states are frequently temporary for many individuals, as they often accompany transitions between labor market statuses.

Economic inactivity (remaining outside the labor force) is a prevalent status among youth and older age cohorts. The former are engaged in education prior to labor market entry, while the latter are exiting or have already exited the labor force. Higher youth unemployment is characteristic of all target countries. In part, this has a technical and statistical explanation: in calculating the unemployment rate, an inflated numerator (frequent job changes typical for young people) is divided by a small denominator comprising young people in labor force. However, substantive reasons cannot be ruled out, particularly those related to actual frictions during the school-to-work transition. These include an absence of information regarding the productivity of new labor market entrants, a lack of job-search experience, elevated wage expectations, and related factors.

Economic inactivity during prime working ages represents a less natural state and is typically minimally represented among men. A rising share of prime-age inactivity serves as a signal of persistent job-search friction and is accompanied by an increasing share of “discouraged workers” — those who desire work but have ceased searching following prolonged, unsuccessful

attempts. An exception is female economic inactivity throughout prime working ages or during periods associated with childbearing and child-rearing. This is characteristic of societies where prevailing behavioral norms entail low female labor force participation, reflecting both the preferences of women and their household members and underdeveloped institutions for reconciling work and family responsibilities. As urban lifestyles spread, female educational attainment rises, and fertility rates decline, female labor force participation increases.

Age profiles of inactivity across the analyzed countries demonstrate substantial heterogeneity (age profiles of unemployed are discussed below). In Kazakhstan, male economic inactivity between ages 25 and 54 is near to its minimum (below 5%), rising to 25% in the 55–64 age bracket, reflecting contractions in both labor supply and labor demand for this cohort. Female economic inactivity in Kazakhstan is also very low by international standards — only 11–13% of women aged 25–54 do not participate in the labor force (despite high fertility rates), though this share reaches 38% in the 55–64 age group. The extent to which these indicators mask blurred boundaries between labor statuses and the impact of child benefit eligibility rules remains an open question.

The situation in Armenia is strikingly different. Male economic inactivity stands at 10% for ages 25–44, but rises to 14% in the 45–54 group and further to 24% among those aged 55–64. Female economic inactivity in Armenia is far more widespread than in Kazakhstan, reaching 46% in the 25–34 age group, before declining to 33–35% among those aged 35–54 and reaching 50% for ages 55–64. Concurrently, nearly 40% of men and 20% of women aged 65–74 remain in the labor force, which is exceptionally high for a country at an intermediate level of economic development. Established labor force participation rates largely reflect the prevailing intra-household division of responsibilities in Armenia, adjusting to labor demand for mothers with children. Over the past decade, prime-age women in rural areas actively exited the labor force. This may represent a response to the contraction of the agricultural sector under conditions of high unemployment and low re-employment prospects. Inactivity rates are significantly lower among holders of any vocational or tertiary education degree, a pattern holding true for both men and women, as well as urban and rural residents.

In the Kyrgyz Republic, non-involvement of men aged 30–39 in the labor force stands at approximately 5%, corresponding to the level observed in Kazakhstan. However, in the 25–29 and 40–49 age brackets, male economic inactivity reaches 10%, close to the figures for Armenia. At older ages, starting from 50–54, the share outside the labor force gradually rises from 15% to 55% across subsequent five-year cohorts. This is noticeably higher than in Kazakhstan and similar to the situation in Armenia. Of particular concern, however, is the fact that one in four men aged 20–24 remains outside the labor force. In the overwhelming majority of cases, they are neither employed nor enrolled in education.

The low rate of female labor force participation reflects the established household lifestyle in the Kyrgyz Republic. Two out of three women (65%) aged

20–24 remain outside the labor force; with age, this level gradually declines to 28% in the 40–44 group, before rising again to 43% in the 55–59 group, 63% in the 60–64 group, and 80% in the 65–69 group. Under age 40, economic inactivity is even more prevalent in urban areas than in rural areas, but rural inactivity subsequently exceeds urban inactivity by 3, 6, and ultimately 10 percentage points by age 50–54. In the oldest age cohorts, the gap closes once again. Holding any vocational or higher education degree (compared to basic general education) enhances the likelihood of remaining in the labor market.

Tajikistan exhibits the lowest overall labor force participation rate, a characteristic spanning all age cohorts. In the 20–24 age bracket, every second man is economically inactive, with only a small fraction of this cohort continuing their studies.

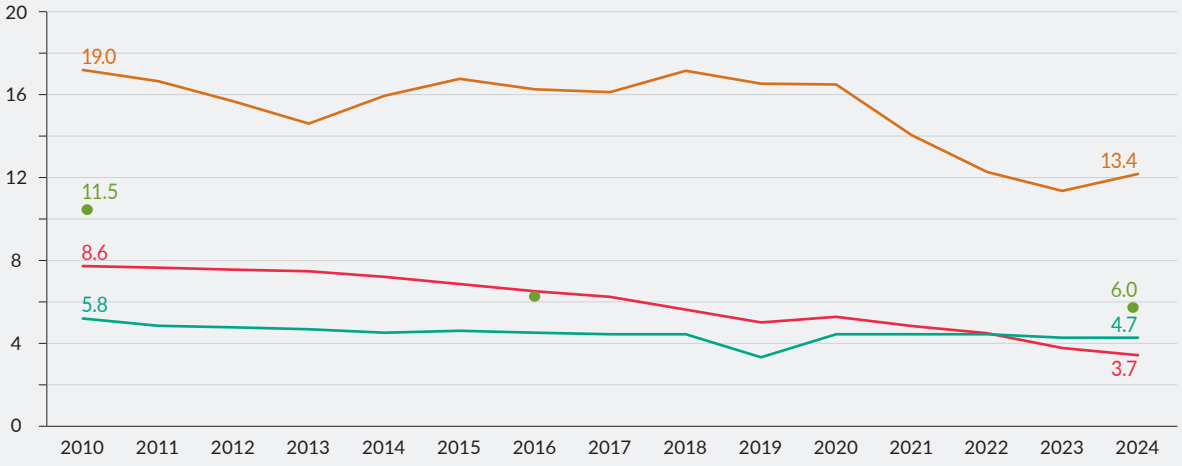
Tajikistan exhibits the lowest overall labor force participation rate, a characteristic spanning all age cohorts. In the 20–24 age bracket, every second man is economically inactive, with only a small fraction of this cohort continuing their studies. Even in the 30–49 age range, nearly one-quarter of all men remain outside the labor force. Non-participation rates among women are double those of men: 60% to 70% of women aged 25–44 are absent from the labor market. In the 50–59 age group, approximately 35% of men and over 60% of women are inactive. Within gender subgroups, there are no structural differences in economic inactivity between urban and rural residents. One in three higher education graduates is outside the labor force, and as educational attainment declines, the share of inactivity expands, standing at 43–45% among holders of secondary and initial vocational diplomas and reaching 60% among those who completed only general secondary school.

While the age profile of male economic inactivity follows general underlying patterns, it varies significantly across the target economies, with female age profiles demonstrating even greater heterogeneity. As noted in the discussion of the regional demographic situation (Section 3), expanding labor force participation represents an unexploited supply reserve in Armenia. At the same time, labor force exit, alongside informal employment and external migration, functions as a safety valve to dampen open unemployment and absorb population growth in high-fertility countries. In any case, low participation rates underscore a constrained landscape for job availability, particularly for high-productivity positions offering competitive compensation.

Unemployment: Levels and Duration

Non-employed individuals who are actively seeking work and available to start constitute the pool of unemployed. The standard unemployment rate is the share of the unemployed within the total labor force (in %). It reflects costs of job search borne by the non-employed and depends on both the inflow rate into unemployment and the duration of unemployment spells. In 2024, 7.9% of working-age citizens in Armenia, 3.2% in Kazakhstan, 2.2% in the Kyrgyz Republic, and 2.8%

Figure 4.24.
Unemployment Trajectories: Armenia, Kazakhstan, Kyrgyz Republic (2010–2024); Tajikistan (2009, 2016, and 2025) (%)



Source: Labor Force Surveys

Note: For Tajikistan, data are presented for the years in which Labor Force Surveys were conducted (2009, 2016, and 2025).

in Tajikistan were unemployed. Re-calculated in standard unemployment indicators (as % of the labor force), this corresponds to 13.4%, 4.7%, 3.7%, and 6.0%, respectively (Figure 4.24).

Across all analyzed countries, a downward trend in unemployment rates is observed, albeit at varying paces and not without occasional fluctuations. In Kazakhstan, the unemployment rate in 2024 was 1.1 percentage points lower than in 2010. In the Kyrgyz Republic, it declined over this period by nearly half, or by 3.9 percentage points. In Tajikistan, the unemployment rate dropped from 11.5% in 2009 to 6% in 2025.

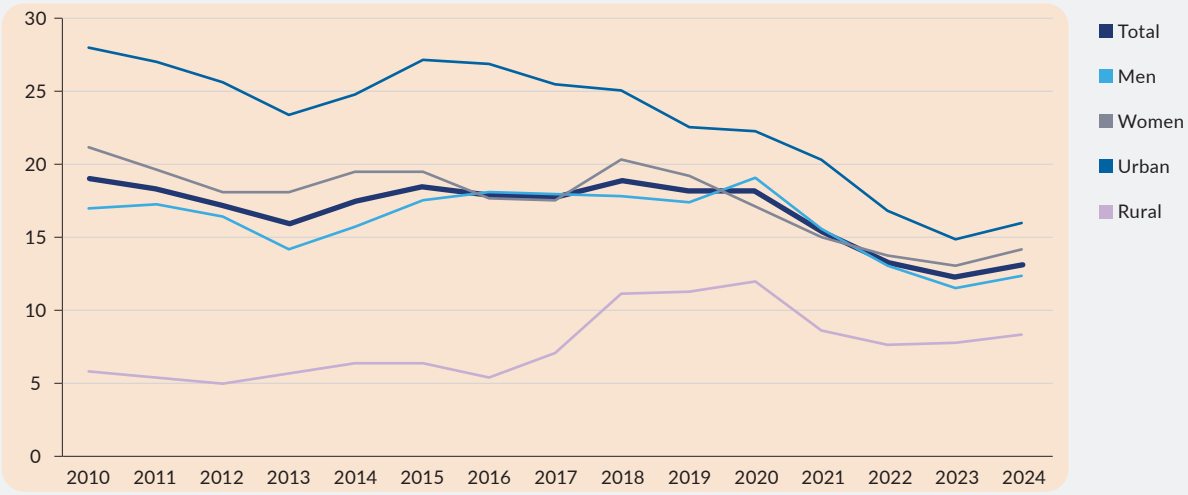
Unemployment in Armenia warrants particular attention. Its rate hovered at 18–19% until 2020, when a significant reduction began. By 2023, it had fallen by 7 percentage points to 12.4%, before rising by 1 percentage point in 2024. While unemployment in the Central Asian countries remained at best a second-order policy problem throughout the period under discussion (despite rapid labor supply growth), Armenia stood out for its persistently high unemployment amidst a stagnant labor supply. An analysis of unemployment dynamics between 2010 and 2024 broken down by gender and place of residence (urban vs. rural) reveals important structural patterns (Figure 4.25 a-d). While gender disparities are relatively modest, unemployment emerges primarily as an urban rather than a rural phenomenon. This is hardly surprising, as rural self-employment (and inactivity) can effectively absorb potential jobseekers. The higher degree of formalization in the urban economy constrains its labor absorption capacity, while higher reservation wages prolong search durations. The narrowing of the gap between rural and urban unemployment over time occurred mainly due to a decline in urban unemployment rates[45].

[45] A temporary spike in rural unemployment in 2018 may be associated with methodological refinements to the Labor Force Survey sampling design at that time.

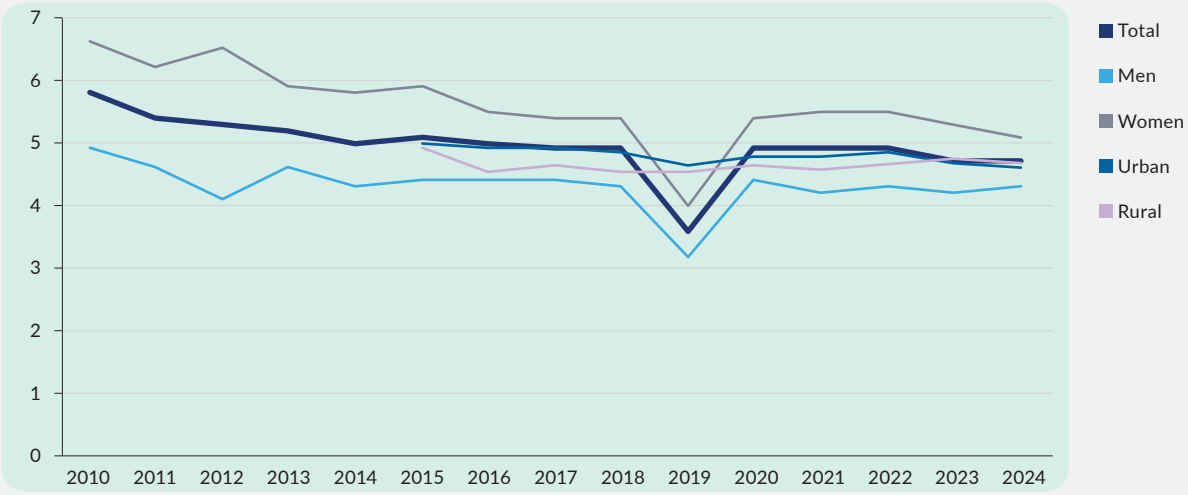
In the Kyrgyz Republic, such a sharp contrast between urban and rural unemployment is absent, but differences exist between male and female unemployment — female unemployment is higher. Similar moderate gender gaps are observed in Kazakhstan. The nearly twofold drop in unemployment in Tajikistan occurred predominantly through a reduction in urban unemployment, which fell from 16.8% in 2009 to 7.3% in 2025. Rural unemployment in Tajikistan declined earlier, reaching 5.5% as early as 2016.

Figure 4.25 (a, b, c, d).
Unemployment Rates, 2010–2024, Total and by Subgroups

a) Armenia



b) Kazakhstan

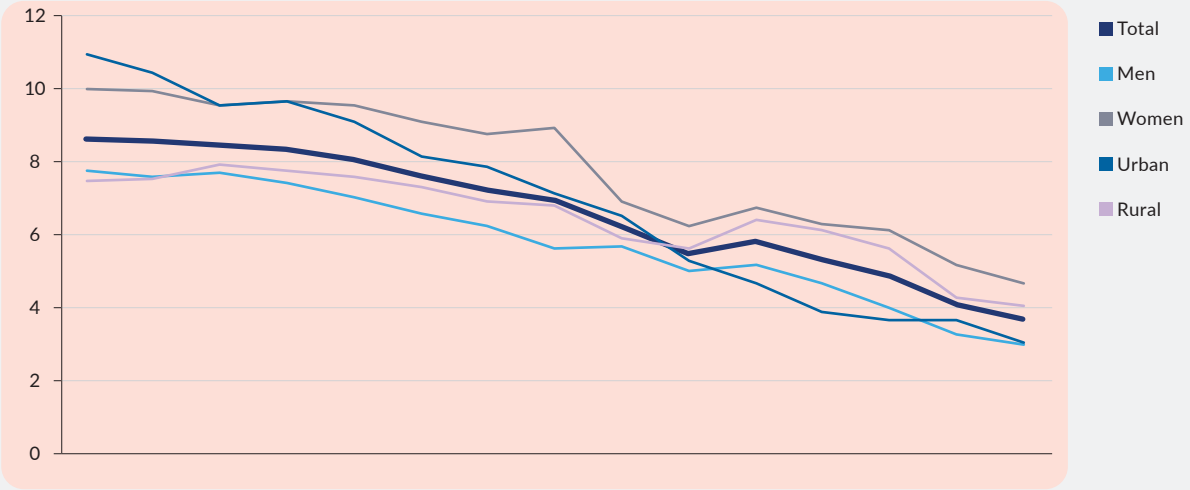


Armenia Kazakhstan Kyrgyz Republic Tajikistan

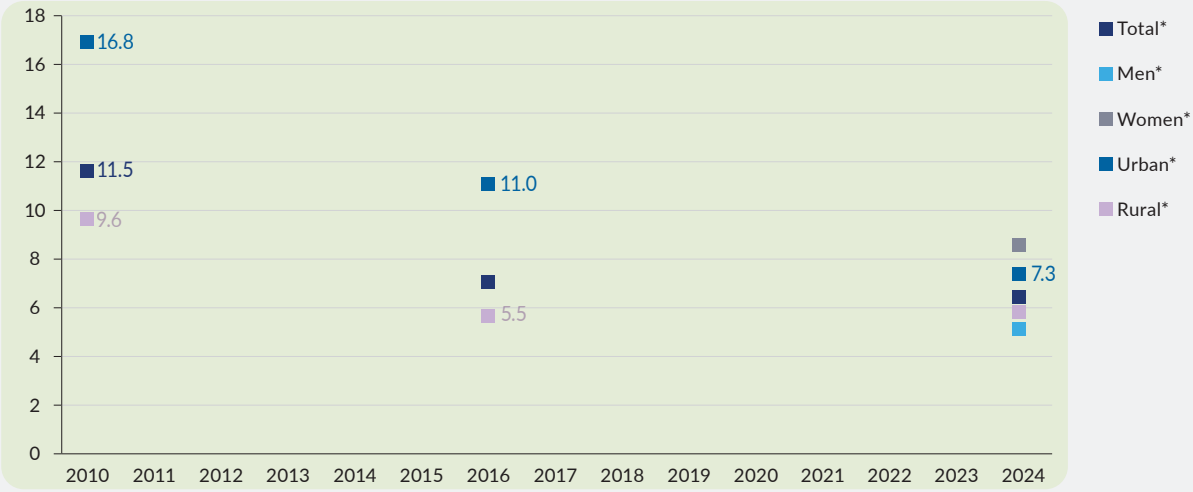
Source: Labor Force Surveys.

Figure 4.25 (a, b, c, d).
Unemployment Rates, 2010–2024, Total and by Subgroups

c) Kyrgyz Republic



d) Tajikistan



Armenia Kazakhstan Kyrgyz Republic Tajikistan

Source: Labor Force Surveys.

Note: For Tajikistan, data are presented for the years in which Labor Force Surveys were conducted (2009, 2016, and 2025).

In Armenia, the overall average unemployment rate (13.4% in 2024) conceals significant variation across age groups. For example, among youth aged 15–24, the unemployment rate reached 27%, double the national average, and stood at 32% among young women. While we previously noted the semi-technical nature of youth unemployment measures, it would be incorrect to attribute everything solely to calculation methodology. The unemployment rate declined rapidly along the age scale, reaching the national average in the 25–34 age group and continuing to drop by 1–2 percentage points in older cohorts. Female unemployment exceeded male

unemployment by 4.5 percentage points in the 25–34 age group and by 2.5 percentage points in the 35–44 group, but was 3 percentage points lower in the 45–54 cohort. Urban unemployment was twice as high as rural unemployment overall, with this ratio widening to threefold in older age brackets. As with economic inactivity, holding formal vocational or higher education credentials mitigates unemployment risks. Unlike inactivity, however, the educational composition of the unemployed also reflects, among other things, the relative attractiveness of unemployment benefits for groups with differing productivity levels.

Unemployment age profiles in Kazakhstan, apart from the higher youth unemployment typical of all countries, are characterized by a slight increase in unemployment rates with age among both men and women. By age 50–59, the unemployment rate reaches 6% across all groups (men and women, urban and rural areas). As educational attainment increases, the unemployment rate declines. Its minimum value is observed among tertiary education graduates (around 3%), whereas its maximum of 12% is found among those with basic secondary education. Representatives of this educational group in urban areas face unemployment 2.5 times more frequently than their rural counterparts.

In the Kyrgyz Republic, unemployment among individuals aged 30–49 is half that of those under 25, and falls even lower (under 2%) in the 50–59 age bracket. The protective effects of vocational credentials appear here as well. Adjustment to shifting labor supply and demand conditions occurs primarily through alternative channels, namely, flows into inactivity and informal employment.

Information regarding unemployment in Tajikistan is considerably more scarce due to irregular LFS rounds and the absence of microdata. We cannot speak of definitive trends, as we observe only isolated data points widely separated in time. In 2025, male unemployment dropped below 6% by age 25–29 and further declined to 2% in the 50–54 cohort. Male youth unemployment was elevated only in the youngest 15–19 age group (21%), dropping to 8% in the 20–24 bracket. Female unemployment rates exceeded those of males, declining from 19% in the 20–24 cohort first to 11.5% at ages 25–29, then to 8–9% at ages 30–44, and finally dropping below 4% in older age groups. Among individuals with higher education, the unemployment rate stood at just 3.6%, compared to 8.3% for those with primary vocational education. Thus, as in the Kyrgyz Republic and Kazakhstan, unemployment in Tajikistan, with the exception of youth cohorts, remains low across all age-gender groups.

The longer an unemployment spell lasts, the higher the overall unemployment level. We can estimate the duration of unemployment spells using LFS microdata (Figure 4.26). Note that duration distributions of unemployment spells derived from cross-sectional data are potentially subject to right-censoring bias, as they record the elapsed duration of unfinished spells at the time of the survey.

Data on unemployment duration highlight a defining feature of unemployment in Armenia: nearly half of all unemployed individuals report spell durations exceeding

one year. By comparison, fewer than one-quarter (23%) report long-term unemployment in the Kyrgyz Republic, and only 10% in Kazakhstan. This demonstrates that behind Armenia's relatively high unemployment rate lies not so much a massive inflow of workers into unemployment, but rather weak outflow rates and prolonged "entrapment" in that status. In Kazakhstan, 55% of unemployed individuals remain in this status for no longer than three months, compared to 42% in the Kyrgyz Republic, and only 21% in Armenia. Labor markets in the Kyrgyz Republic, and particularly Kazakhstan, are more mobile in this sense, though the question remains as to how such mobility is structured and where it leads.

While in the Kyrgyz Republic one would expect a high probability of transition from unemployment into informal employment or inactivity, in Kazakhstan outflow into formal and informal employment is more probable, with a smaller share exiting to inactivity. Unfortunately, without panel microdata, these insights represent expert assessments rather than conclusive empirical evidence.

A high share of short-term unemployment spells corroborates the point regarding the intensity of inter-status flows in Kazakhstan and the Kyrgyz Republic. At the same time, a short spell in itself offers no guarantee of the quality or durability of the match between worker and employer. Evaluating match quality requires detailed microdata on labor market trajectories and mobility pathways.

Additional insights into unemployment dynamics emerge from disaggregating spell durations by urban and rural location (Figure 4.27). In Armenia, urban and rural unemployment do not differ significantly

In Armenia: nearly half of all unemployed individuals report spell durations exceeding one year. By comparison, fewer than one-quarter (23%) report long-term unemployment in the Kyrgyz Republic, and only 10% in Kazakhstan.

in terms of spell duration; however, the lower unemployment rate in rural areas points to a more pronounced selectivity effect: smaller inflow rates paired with longer spell durations. The duration structure of unemployment in urban Kyrgyz Republic (characterized by a high share of spells exceeding one year) closely resembles the Armenian pattern. Despite its modest overall level, urban unemployment in the Kyrgyz Republic appears highly selective, characterized by low inflow, sluggish outflow, and prolonged spell durations. Conversely, rural unemployment in the Kyrgyz Republic is highly fluid, closely mimicking the duration structure observed in Kazakhstan (where urban-rural differentials are minimal). This pattern is likely driven by the dominance of labor market exits into informal employment and economic inactivity across rural areas of the Kyrgyz Republic.

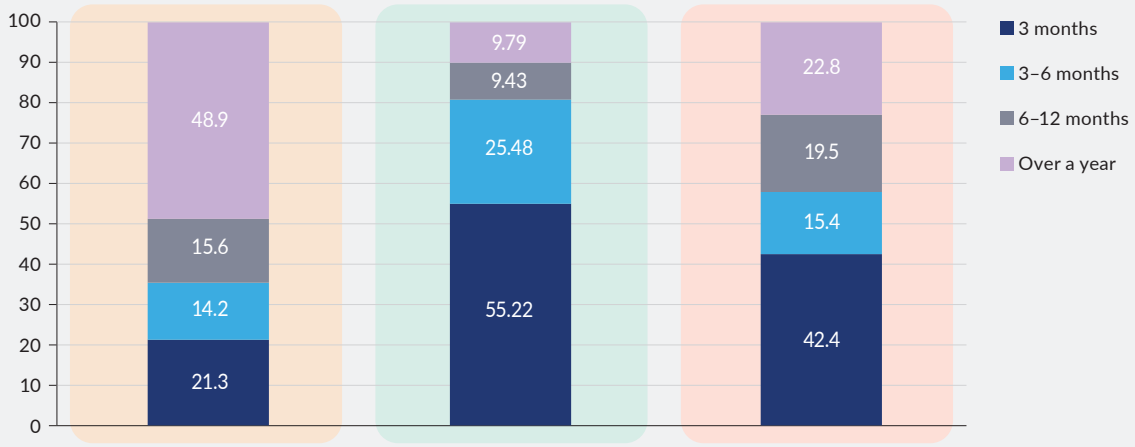
What factors account for the high proportion of stagnant, long-term unemployment? In Armenia, prior to 2026, eligibility for social assistance among low-income households was tied directly to official registration as unemployed. Rights to safety net benefits accrued only if non-working, able-bodied household members were registered with state employment services. This institutional setup likely inflated unemployment

statistics by introducing pseudo-unemployed individuals who were not actively searching for work or who engaged in sporadic, difficult-to-record informal employment. Legislative amendments enacted in 2026 altering access rules for low-income family benefits, specifically, the shift toward imputing income to non-working citizens at the cost level of the minimum food basket, are expected to eliminate this statistical overhang in unemployment records. The true magnitude of this administrative overhang will become visible through future shifts in long-term unemployment rates.

An analysis of unemployment levels must be complemented by an examination of labor flows connecting unemployment with alternative states. Formulating evidence-based labor market policies requires understanding the origin state prior to unemployment, the duration of completed unemployment spells, and their eventual transition destinations. While a reduction in aggregate unemployment is generally a positive development, the specific exit trajectory is of equal importance. Exiting unemployment into a formal-sector job carries vastly different economic implications than transitioning into self-employment or labor force inactivity. Furthermore, critical questions arise regarding the efficacy of active and passive labor market policies (such as job placement assistance, training, and unemployment benefits) and the role of individual human capital attributes (e.g., educational attainment and work experience). Addressing these questions requires panel data capable of tracking individual transitions across labor market statuses over time. Administrative unemployment registries compiled in most countries, being longitudinal by design, can serve this analytical purpose, provided registered unemployment accurately reflects total open unemployment.

How should structural differences in unemployment between Armenia and the Central Asian economies

Figure 4.26.
Distribution of Unemployment by Search Duration: Armenia, Kyrgyz Republic, Kazakhstan (%, 2024)



Sources: LFS microdata; authors' calculations

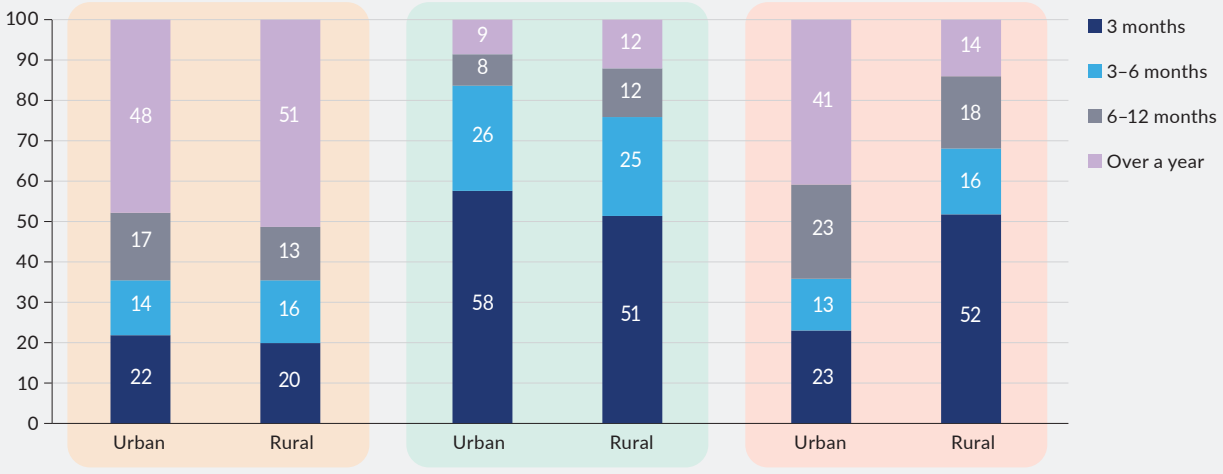
be interpreted? Is Armenia's higher unemployment rate a greater policy concern, or, conversely, does the low unemployment rate in the Kyrgyz Republic mask underlying vulnerabilities related to low economic activity and pervasive informality? The answer is nuanced and depends on the specific signals embedded within these indicators, as well as how labor market institutions are configured to absorb labor supply.

Empirical studies (e.g., Feng et al., 2024) document that aggregate unemployment rates tend to rise alongside economic development. In lower-income economies, labor markets are often segmented, featuring a large traditional or informal segment that absorbs surplus labor. Donovan et al. (2023) demonstrate across a broad panel of low- and middle-income countries that self-employment frequently operates as a disguised form of unemployment in the absence of institutional social protection safety nets. They draw this conclusion from the fact that flows connecting unemployment and self-employment with other labor market states are quantitatively identical.

Unemployment, informal employment, and economic inactivity function largely as substitutes determined by country-specific economic structures and institutional settings. As economic development proceeds, worker expectations shift toward securing jobs in the modern formal sector offering statutory social protection. This job-search process is naturally associated with an increase in open unemployment.

The methodology for measuring unemployment is standardized across countries by the International Labour Organization (ILO). However, the ILO explicitly acknowledges that: low unemployment rates in developing countries cannot serve as an indicator of economic well-being or as evidence that worker expectations regarding employment are largely satisfied. Rather,

Figure 4.27.
Distribution of Unemployment Search Duration by Residence (Urban vs. Rural): Armenia, Kyrgyz Republic, Kazakhstan (%, 2024)



Armenia Kazakhstan Kyrgyz Republic

Sources: LFS microdata; authors' calculations

it is far more likely that the concept of unemployment as defined by the 13th International Conference of Labour Statisticians (ICLS) has limited applicability for describing labor market realities in developing nations. In these economies, the vast majority of individuals cannot afford to remain unemployed for any extended period, given the absence of unemployment benefits or alternative social safety nets, or because their families are too impoverished to support them. In such settings, most individuals are compelled to accept any available job or create their own self-employment (predominantly in the informal sector). Thus, in terms of labor market dynamics, excess labor supply is absorbed through depressed wages or lower productivity rather than an increase in open unemployment. Meanwhile, the majority of those unable to secure employment or establish self-employment join the ranks of the economically inactive rather than the unemployed (ICLS/18/2008/1).

Unemployment is frequently viewed as an unproductive state that must be reduced at all costs. However, economic search theory explicitly emphasizes the productive nature of unemployment as the "work of searching for work" (Mortensen, 1986). The productivity of a resulting match depends directly on the outcomes of this search process. The inability to productively search for a match due to liquidity constraints (or barriers to geographical or occupational mobility) leads to an involuntary truncation of search duration below its optimal length. Excessively brief search spells result in lower productivity or instability in newly formed worker-firm matches. Conversely, excessively long search durations in the form of stagnant, long-term unemployment signal severe structural bottlenecks in the labor market.

Thus, establishing an effective unemployment protection system that replaces a substantial portion of earnings lost upon job loss while incentivizing active job search can actually lead to higher open unemployment rates by curbing exits into inactivity and marginal employment. All else being equal, the absence of unemployment insurance slows the phasing out of low-productivity jobs, hampers structural transformation, and negatively impacts long-term economic growth.



Widespread Informality

Widespread labor market informality remains a serious structural challenge

4.8
Modelling Labor Market Choice

In previous sections, we examined the structural breakdown of the population across labor market statuses. Because individuals vary across multiple dimensions, personal probabilities of being employed, unemployed, or outside the labor force differ substantially. The distribution across statuses conditional on individual characteristics can be analyzed using multinomial logit regression models. Cross-sectional LFS microdata, unfortunately, do not permit observing the dynamic aspects of this distribution or tracking inter-status transition flows over time.

For each country (excluding Tajikistan), using 2024 microdata, we estimate an equation of the form:

$$p(status_{irt} = j \mid X_{irt}) = \frac{\exp(X'_{irt}\beta_j + region_r\gamma_j)}{\Sigma_{k=0}^{3}\exp(X'_{irt}\beta_k + region_r\gamma_k)}, \quad j = 0,1,2,3$$

The dependent variable $status_{irt}$ takes 4 values (formally employed, informally employed, unemployed, and outside the labor force); the vector of observed characteristics X_{irt} includes baseline demographic variables for each individual i residing in region r at time t (gender, age, education, place of residence, marital status, household composition including the presence of children). We also control for regional fixed effects ($region_r$) and estimate robust standard errors accounting for spatial clustering of observations.

This specification implies a single-stage choice framework, where the economic agent simultaneously selects one of the 4 options. An alternative approach assumes a sequential decision-making process: first, the individual decides whether or not to participate in the labor market, and subsequently chooses among three alternatives — formal employment, informal employment, or job search while remaining non-employed. "Choice" in this context is not synonymous with underlying preferences.

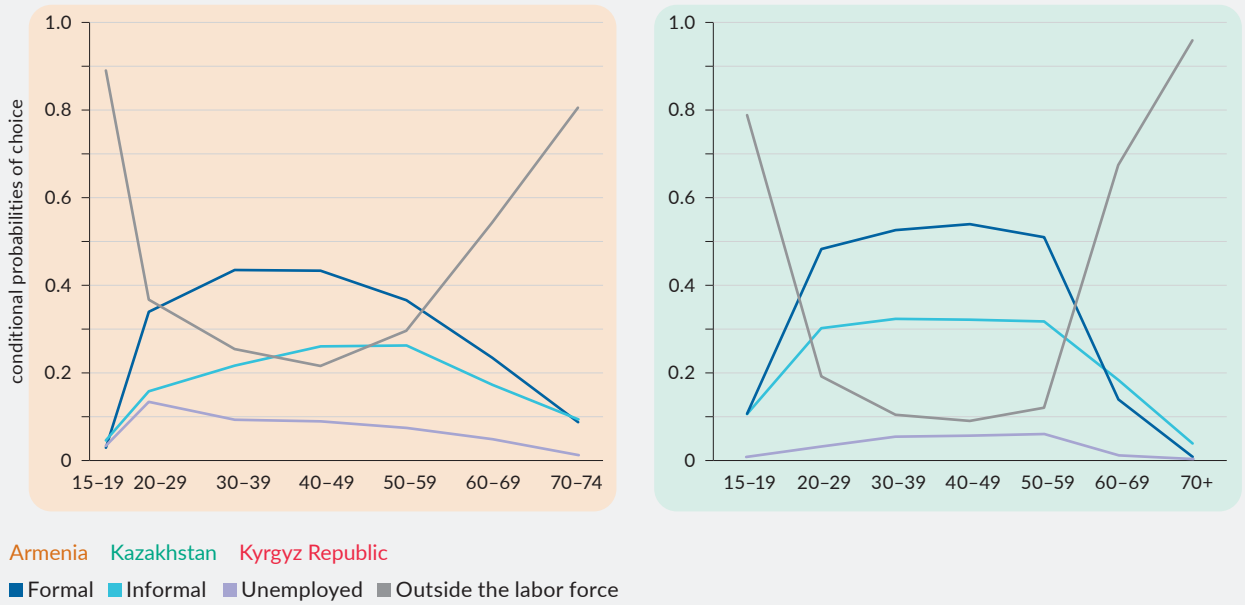
For clearer interpretation of the empirical results, we transform the multinomial logit coefficients into predicted conditional probabilities for an individual with a given set of characteristics to occupy each status. The distribution of predicted conditional probabilities across labor market states, with independent variables fixed at sample means, is presented in Figures 4.28 (a, b, c). The probability of being employed in any capacity (regardless of employment type) is equal to the sum of the probabilities of formal and informal employment.

Moving rightward along the age scale, the population structure shifts to reflect life-cycle preferences. Younger and older individuals exhibit a higher probability of remaining outside the labor force, whereas prime-age individuals are distributed between formal and informal economic activities. A characteristic feature is the steepness of the inactivity and employment profiles for the boundary age groups.

Although the status profiles share a common functional form across countries, their quantitative parameters vary significantly. In the 20–60 age brackets, the predicted probability of formal employment exceeds 50% in Kazakhstan and stands at approximately 40% in Armenia. In the Kyrgyz Republic, the most probable outcome (40–50%) is informal employment. The second most likely state in Kazakhstan and Armenia is informal employment, at 30% and around 20%, respectively. In the Kyrgyz Republic, formal employment ranks second, with probabilities of 20–25%. Excluding the youngest and oldest (60+) cohorts, the probability of economic inactivity is low in Kazakhstan (around 10%), but persistently higher in the Kyrgyz Republic and Armenia (exceeding 20%). The probability of unemployment hovers around 10% in Armenia and remains below 5% in the Kyrgyz Republic and Kazakhstan.

A more granular analysis reveals that in the 30–39 age group, the probability distribution across the four states (formal employment: informal employment: inactivity: unemployment) is 42:22:24:12 in Armenia, 53:32:10:5 in Kazakhstan, and 23:50:23:4 in the Kyrgyz Republic. Virtually identical proportions characterize the 40–49 age cohort. In other words, in the Kyrgyz Republic, every second citizen in these prime-age groups is informally employed, compared to every fifth in Armenia and every third in Kazakhstan.

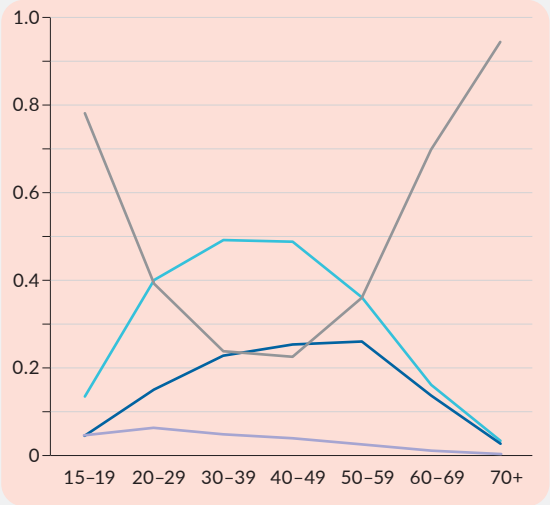
Figures 4.28 (a, b, c).
Predicted Conditional Probabilities of Labor Market Status Choice (Based on Multinomial Logit Regressions), 2024



Source: LFS microdata; authors' calculations.

The 20–29 age group is quite heterogeneous, combining individuals who have not yet completed formal education (economically inactive), those already working (formally and informally employed), and a subset of women who have exited the labor force following childbirth. At this age in the Kyrgyz Republic, the probability of inactivity is 40%, matching the probability of informal employment. In Armenia, similar parity is observed between the probabilities of inactivity and formal employment. In Kazakhstan, every second young person is formally employed, every third informally employed, and every fifth is outside the labor force.

As for labor force withdrawal, in the Kyrgyz Republic the probability begins to rise sharply starting among 50-year-olds, whereas in Armenia and Kazakhstan this acceleration occurs primarily after age 60.



Probabilities are estimated based on multinomial logit regression coefficients. Controls include gender, educational attainment, place of residence (urban vs. rural), marital status, presence of disabled individuals, children, and migrants in the household, as well as regional fixed effects. All values are statistically significant at the 1% level.

The analysis highlights the persistent challenges of securing formal-sector employment in the Kyrgyz Republic across all age cohorts, pushing workers into informal employment and economic inactivity, though rarely into open unemployment. Active movement into and out of the labor force occurs primarily in the 20–29 and 50–59 age brackets, respectively. This substantially curtails the total lifespan duration of labor force participation for the representative worker whose choices are modeled.

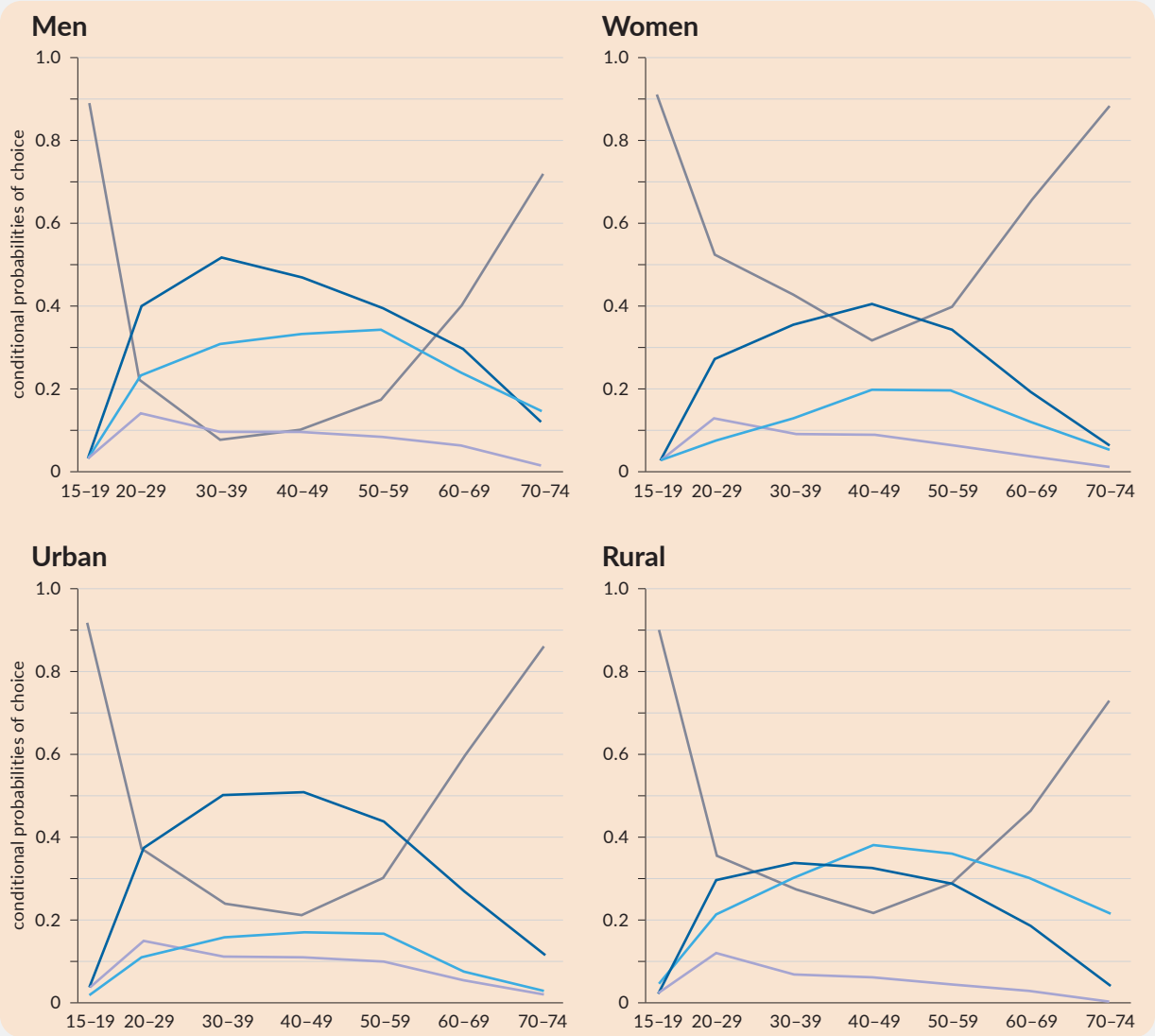
The conditional status distribution in Kazakhstan displays a more conventional pattern for individuals aged 20–60. The probability of informal employment remains stable over this lifecycle interval, while the probability of youth unemployment exhibits no sharp spike.

The status distribution in Armenia combines features observed in the other two economies. In terms of the ratio between formal and informal employment probabilities, Armenia closely resembles Kazakhstan. Conversely, its similarity to the Kyrgyz Republic lies in a high probability of inactivity across the entire 20–60 age scale, particularly within the youngest and older cohorts (ages 20–29 and 50–59).

The distributions in Figures 4.28 (a-c) describe the choices of a baseline individual with core characteristics evaluated at sample means. However, individual attributes vary and exert a distinct influence on labor market positioning. Figures 4.29 (a- d) present predicted probabilities for labor market statuses in Armenia separately for men, women, urban residents, and rural residents.

The key distinction between men and women lies in the steepness of the U-shaped inactivity profile. For men, labor force entry occurs at a much faster pace: in the 20–29 age group, the probability of remaining outside the labor force is approximately 20%, compared to 50% for women. For women, this inactivity probability declines up to ages 40–49, before

Figures 4.29 (a, b, c, d).
Simulated Conditional Probabilities of Labor Market Status Choice (Based on Multinomial Logit Regressions), Armenia: Men, Women, Urban, Rural



Source: LFS microdata; authors' calculations.

accelerating rapidly once again. Concurrently, the probability of informal employment rises consistently, underscoring the structural vulnerability of women in the labor market.

A comparison of distributions for urban and rural populations reveals a sharp contrast in employment structure. Formal employment dominates in urban areas, whereas in rural settings, the probabilities of formal and informal employment are virtually identical. While formal employment probabilities are slightly higher in younger working ages, informal employment probabilities become significantly higher in older cohorts (starting from ages 40–49). Another salient distinction pertains to the probability of unemployment, which operates predominantly (though not exclusively) as an urban and youth phenomenon.

Estimates of conditional probabilities of labor market status choice allow for a refined understanding of the distributions described in previous sections by purging them of the "composition effect" — the underlying heterogeneity of the analyzed groups. They demonstrate that the choice among alternatives shifts along the lifecycle age scale of a representative working-age individual, with these shifts exhibiting pronounced country-specific characteristics. The proportions between employment and inactivity, unemployment and inactivity, and unemployment and informal employment differ markedly across labor market entrants, prime-age workers, and prospective retirees, with these ratios varying substantially across countries. Behind the low unemployment in the Kyrgyz Republic lie heightened risks of inactivity or informal employment, while in Kazakhstan elevated risks of informal employment predominate. The higher unemployment rate in Armenia, reflecting the *relatively* greater institutional attractiveness of this status, may serve to mitigate risks of inactivity and informality: informal employment functions in most cases as an involuntary substitute under conditions of formal job scarcity and the absence of a comprehensive unemployment insurance system.

In the absence of panel microdata, we can neither confirm nor rule out risks of structural labor market segmentation into distinct formal and informal tiers in the analyzed economies. Does a high risk of informal employment signal that substantial population segments are trapped in an undesirable sector, or does it represent a standard stage within a continuous career trajectory free of structural segmentation? Answering these questions requires longitudinal panel data. Expanding Labor Force Surveys and exploiting rotating panel designs within quarterly LFS frameworks would represent a critical step toward uncovering underlying labor market mechanisms.

4.9
Looking to the Future: Employment Projections to 2040

In light of established demographic trends, how might the volume and structural composition of the employed population evolve over the long term under varying labor market participation scenarios? Because employment levels are endogenous and depend on a complex array of economic, institutional, and social factors that defy exact prediction, these results should be interpreted not as definitive forecasts, but rather as indicative estimates of the potential scale of population demand for jobs. This is particularly crucial for countries experiencing rapid population growth (a category encompassing three of the four analyzed nations), where expanding job creation is a paramount precondition for unlocking demographic dividends and ensuring long-term social stability.

The output of these calculations is a projection of potential employment volumes over the horizon to 2040, conditional on specified employment rates across five-year age-gender groups. Aggregate labor supply (the size of the labor force) exceeds labor demand (measured by the number of employed individuals) by the volume of open unemployment. For the Central Asian economies, the wedge between employment and labor force participation is minor due to persistently low open unemployment rates and a large informal sector (especially in the Kyrgyz Republic and Tajikistan) that absorbs excess supply. In Armenia, evaluating unemployment dynamics constitutes an integral element of the projection framework.

The employment projection is constructed by overlaying two primary components: a demographic population forecast and projected employment rates for corresponding age-gender cohorts. Aggregate employment at any given point in time is determined by these two parameters (though each is ultimately endogenous with its own determinants). Employment in year t is calculated as:

$$E_t = \Sigma_a^k (e_0^a \cdot pop_t^a), \quad \text{where} \quad e_0^a = \frac{E_0^a}{pop_0^a}.$$

The subscript a denotes the age group, while subscripts 0 and t designate the baseline and projection years, respectively. E represents the absolute number of employed individuals, and pop — represents population size. We utilize five-year age groups (k groups). In other words, the employment projection for year t is computed separately for each five-year age group for men and women. The absolute population size in year t for age group a is weighted by its corresponding employment rate e. All group-specific headcounts are then aggregated.

The UN World Population Prospects 2024 medium-variant scenario serves as the demographic baseline. Calculations are performed separately for men and women across five-year age brackets, followed by structural aggregation.

Because the projection horizon is bounded by 2040, all potential adult individuals have already been born; consequently, the projected population aged 15–64 depends exclusively on net migration scenarios and, to a lesser degree, working-age mortality rates. The underlying population dynamics and age-gender employment rates were detailed in Section 3.

To construct scenarios for employment rate trajectories, we draw upon LFS data from the past 10–15 years for each country (see Figures 4.4 and 4.5)[46]. Across all countries, male employment rates in prime working ages are high (to a lesser extent in Tajikistan) and relatively stable over time. We assume that these rates will persist over the forecast period, with potential marginal increases in youth and older age brackets. Variation in female employment rates (across age cohorts, over time, and among countries) is substantially more pronounced, justifying the consideration of alternative country-specific policy scenarios.

The calculation results corresponding to the scenarios described below are presented in summary Table 4.4 and discussed below.

Armenia. Aggregate labor force participation for men ranged between 71% and 76%, and for women between 53% and 61%, though higher unemployment translates into lower employment rates. However, compared to Kazakhstan or Russia, labor force participation and employment in Armenia are several times higher in older age groups[47], nearly double in the 15–19 age group, and comparable in the 20–24 bracket. At the same time, participation rates for both genders are significantly lower in prime working ages (25–54), indicating substantial potential reserves for expanding employment.

For Armenia, we evaluate three employment scenarios. The first (a baseline status quo scenario) assumes employment rates remain fixed at mid-2020s levels.

The second scenario assumes a moderate increase in labor force participation: rates for the 15–19 and 20–24 age brackets remain at 2024 levels; the male employment rate for ages 25–59 gradually converges (over a 10-year horizon) to levels observed in Russia and Kazakhstan; and female rates for ages 25–59 move in the same direction, but close only 40% of the gap, given that cultural norms influencing female labor force entry evolve slowly. Indicators for older age groups are held at 2024 levels. Age-specific unemployment rates remain unchanged; thus, employment growth can occur solely through additional labor force participation.

The third scenario incorporates unemployment projections. Unemployment rates in Armenia are considerably higher than in Russia and Kazakhstan; consequently, unemployment reduction represents a major employment reserve. We evaluate an additional optimistic scenario of cutting unemployment rates by half (to 50% of baseline levels), overlaid on moderate participation growth.

[46] For Tajikistan, data are drawn from the 2020 Population and Housing Census.

[47] The retirement age in Armenia is 63 years (65 for the social pension), which is generally higher than current figures in Russia and Kazakhstan.

Table 4.4.
Employment Projections Under Alternative Scenarios, Thousand Persons (Age Groups 15–74)

scenario	2025			2040			total change	
	men	women	total	men	women	total	2040/ 2025	2040– 2025
Armenia								
1	654	517	1,171	592	449	1,041	0.89	-130
2	654	517	1,171	664	518	1,182	1.01	11
3	688	543	1,231	751	546	1,297	1.05	66
Kazakhstan								
1	4,826	4,483	9,309	5,768	5,297	11,065	1.19	1,756
Kyrgyz Republic								
1	1,677	1,078	2,755	2,086	1,306	3,392	1.23	682
2	1,677	1,078	2,755	2,086	1,614	3,700	1.34	974
Tajikistan								
1	1,850	978	2,828	2,465	1,346	3,811	1.35	983
2	1,850	978	2,828	3,217	2,036	5,253	1.86	2,425

Source: Authors' calculations.

Combining options for age-gender participation rates and age-gender unemployment rates yields three scenarios: 1) *status quo* (both indicators fixed at 2024 levels); 2) *moderate participation growth* with unchanged unemployment rates; and 3) *moderate participation growth with a 50% reduction* in unemployment rates[48].

Scenario 1 projects a contraction in Armenia's employment of approximately 10% (or 130,000 persons). Scenario 2 yields the same employed headcount in 2040 as at the baseline, whereas under Scenario 3, total employment is 25% higher compared to the fully inert Scenario 1. With a gradual rise in participation (Scenario 2) without unemployment reduction, total employment remains 10% lower than under Scenario 3. Across all scenarios, the labor force will undergo aging (see Figure 4.30), even though the population shares of cohorts under 30 and over 60 will remain virtually unchanged.

Kazakhstan. Kazakhstan is characterized by a high labor force participation rate, which, given low unemployment, translates into a high employment rate. Unusually for a country with high fertility, female employment matches levels found in Central and Eastern Europe. This leaves little room for further employment rate expansion. We expect only minor shifts in the 55–64 age

[48] In Scenario 3, unemployment reduction is assumed to take effect from the start of the projection period rather than gradually.

bracket for women and in the 65+ cohort for both genders as a result of the gradual statutory retirement age increase for women under ongoing pension reform. Overall, total employment over the 15-year horizon (2026–2040) is projected to increase by approximately 19%. This will require creating roughly 1.8 million new jobs. Total population, working-age population, and total employment will expand at roughly equal rates, a pattern not observed in the preceding decade.

Kyrgyz Republic. The Kyrgyz Republic exhibits high male employment rates, making significant further increases unlikely. However, female employment has established itself at a substantially lower level, particularly in younger working ages. We assume that scenarios for female employment rate trajectories are bounded below by current Kyrgyz levels and above by current Kazakh levels. Fully closing the gap with Kazakhstan over the next 15 years appears unlikely, but narrowing it by half is achievable. This defines two boundary scenarios for employment rate trajectories through 2040:

1. Status Quo: Current male and female employment rates define the lower bound for future projections;

2. Female Convergence: Status quo male rates combined with a progressive reduction of the female employment gap define the upper bound. In this scenario, the gap relative to Kazakhstan's current levels narrows by 50% by 2040.

Adjusting demographic forecasts for evolving employment rates yields two employment scenarios (Table 4.4). Under Scenario 1 (full status quo), aggregate employment increases by a factor of 1.27, implying a need to absorb over 700,000 additional workers by 2040. Scenario 2 (male status quo with female participation growth) yields a 1.38-fold increase in employment, expanding the total headcount by approximately 1 million persons. The gap between scenarios in 2040 exceeds 300,000 persons, driven exclusively by female participation. Yet even the baseline scenario requires the Kyrgyz Republic to substantially scale up job creation to productively absorb population growth. Whether these will be formal or informal jobs is of paramount importance for economic growth and public welfare. Historically, as noted earlier, employment expansion occurred almost entirely through informal job creation.

Tajikistan. Labor market information for Tajikistan is exceptionally limited. Labor Force Surveys are conducted irregularly, and their results are published in severely abridged formats. The latest available LFS at the time of constructing these projections (for which aggregated data are accessible) was conducted in 2025 (with data published in July 2026), following a nine-year hiatus. Age-specific employment rates (according to both the 2025 LFS and the 2020 Census) for both men and women in Tajikistan are significantly lower than in the other analyzed countries (Figure 4.5).

To establish potential bounds for future employment headcount shifts, we evaluate two scenarios:

1. Lower Bound (Status Quo): Future employment headcount is defined by holding employment rates constant at levels observed in the latest available reporting year;

2. Upper Bound (Convergence): Assumes progressive convergence toward current Kyrgyz employment rates by 2040.

Scenario 1 (Table 4.4) projects employment expansion from approximately 2.8 million to 3.8 million in 2040, an increment of roughly 1 million persons over 15 years. This expansion would be driven by absorbing an additional 600,000 men and 370,000 women into employment. Alternative Scenario 2 yields a "bonus" of 2.4 million employed individuals (comprising 1.4 million men and 1 million women); yet even the minimal baseline scenario demands substantial new job creation.

The projections also illustrate potential shifts in the age composition of employment. Younger workers typically possess higher human capital due to broader educational coverage, more modern curricula, and superior health status. Labor productivity growth generally continues through mid-career, after which it at best stabilizes[49] (Lagakos et al., 2018; Gimpelson and Chernina, 2023). What structural shifts might occur within the age profile of the employed across the analyzed economies? The results are presented in Figure 4.30 (a-d).

In *Armenia*, employment aging will occur across all scenarios, driven by a contraction in the share of workers aged 30–39 and an expansion in the cohort aged 50–59.

In *Kazakhstan*, employment dynamics will proceed unevenly across age groups. Number of employed in the peak productive years (ages 35–44) may contract, whereas worker shares in younger (ages 20–29) and older working cohorts (50+) will expand rapidly.

In the *Kyrgyz Republic*, employment will become increasingly youthful due to a rising share of workers under age 30. Unlike Kazakhstan, no expansion is expected in the share of older workers (ages 60+), though the proportion of workers aged 40+ will increase modestly (particularly in the pre-retirement 50–59 bracket).

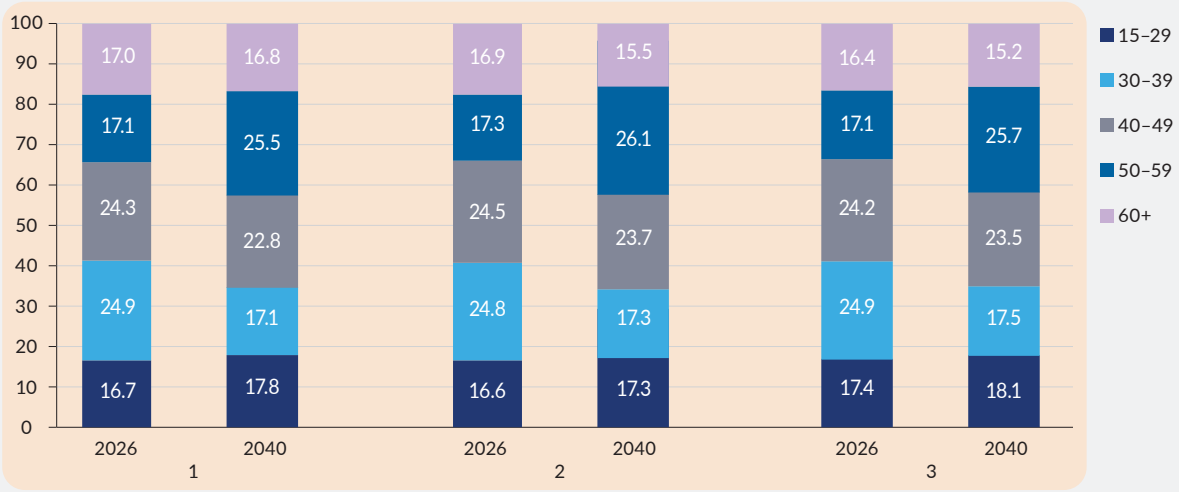
In *Tajikistan*, the share of workers aged 15–39 will remain dominant but will decline relative to the baseline year, falling from 65% to 60% under Scenario 1 and to 53% under Scenario 2. Correspondingly, the share of workers aged 40+ will rise from nearly 35% to almost 45%, reflecting a clear trajectory toward workforce maturation.

Thus, according to our projection estimates, population labor market participation across the countries of the region will evolve along distinct trajectories. In the Central Asian economies (Kazakhstan, the Kyrgyz Republic, and Tajikistan), employment growth will persist, though its magnitude and age composition will vary across countries. In Armenia, by contrast, a contraction in the labor force is anticipated, which can be only partially offset by rising participation rates and falling open unemployment. In all cases, demographic processes define the constraints and opportunities affecting functioning of the labor market. Creating high-productivity, well-compensated jobs remains a paramount policy imperative for years to come.

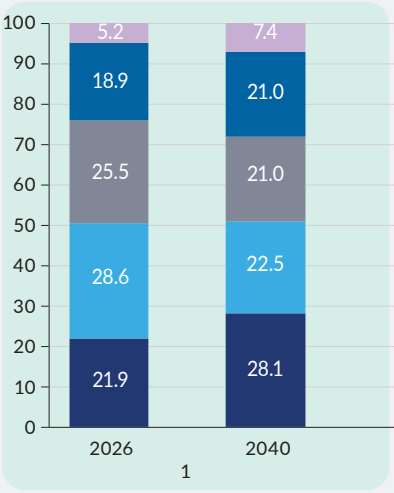
[49] Lagakos, D., Moll, B., Porzio, T., Qian, N., & Schoellman, T. (2018). Life cycle wage growth across countries. Journal of Political Economy, 126(2), p. 797–849. Chernina, E., Gimpelson, V. (2023). Do wages grow with experience? Deciphering the Russian puzzle. Journal of Comparative Economics, 51(2), p. 545–563.

Figures 4.30 (a, b, c, d).
Age Structure of Employed Population in 2026 and 2040 (Men and Women, %)

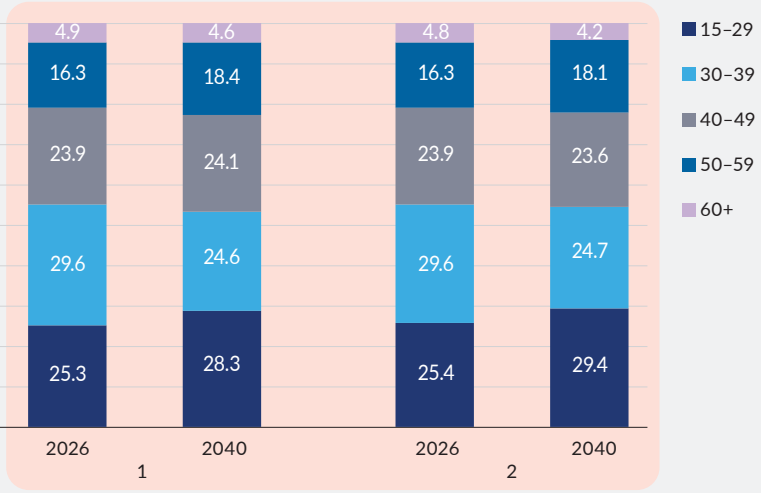
a) Armenia



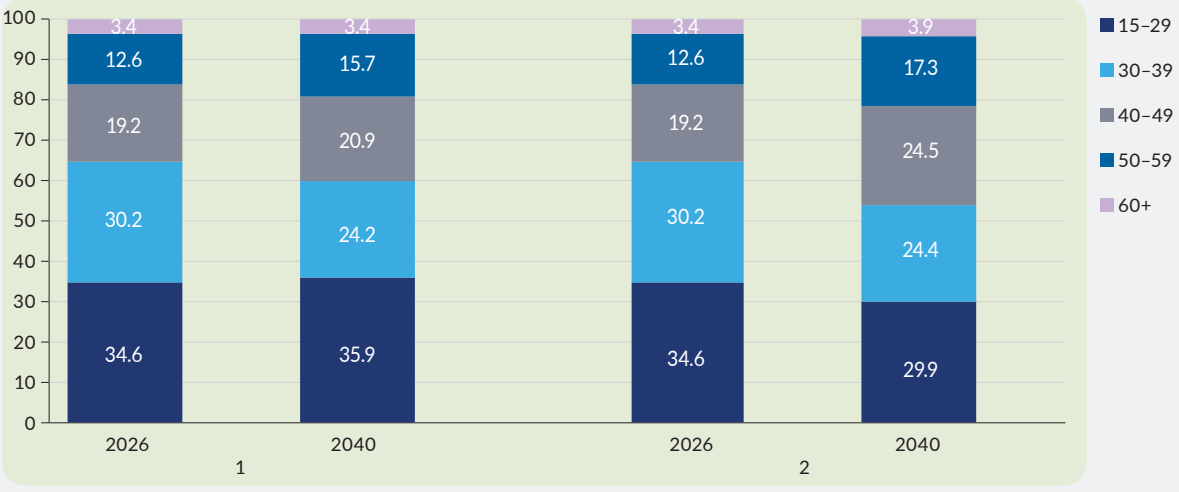
b) Kazakhstan



c) Kyrgyz Republic



d) Tajikistan



Armenia Kazakhstan Kyrgyz Republic Tajikistan

Source: Authors' calculations

Labor Market Institutions, Legislation and Programs





5.1.
The Role of Labor Market Institutions

A key conclusion emerging from the preceding sections of this report is that all analyzed countries face the urgent challenge of expanding the scale and enhancing the quality of productive employment in the formal sector. This is essential both for sustaining long-term economic growth and for enhancing population welfare and poverty reduction. Labor market institutions ought to facilitate these objectives; however, if improperly configured, they risk becoming another formidable institutional bottleneck.

The framework of labor market institutions addresses a dual objective: it must ensure high levels of productive employment (balancing both aggregate employment levels and labor productivity) while simultaneously safeguarding workers against labor market risks unrelated to their individual labor inputs. In practice, aligning these two goals is difficult, as they frequently diverge and draw upon distinct ideological premises. Nevertheless, policy design requires pursuing a delicate balance that avoids both over-regulation and under-regulation. Establishing and maintaining this equilibrium depends on evidence-based empirical research capable of providing policymakers with rigorous arguments regarding the boundaries and causal impacts of regulatory interventions (Alzate et al., 2024; Betcherman, 2019).

Labor market institutions dictate the degree of flexibility employers possess when adapting employment levels to fluctuations in labor demand. On the one hand, this encompasses quantitative flexibility or rigidity, manifested through adjustments to headcounts (the extensive margin) and hours worked (the intensive margin). On the other hand, it encompasses flexibility in adjusting labor costs. Their net impacts on the labor market are further compounded by product market regulations (e.g., antitrust enforcement, market entry conditions, infrastructure access) and the tax regime. Because regulatory interventions inherently introduce deadweight costs that diminish allocative market efficiency, their design and enforcement demand meticulous calibration.

Core labor market institutions comprise the set of codified norms and regulations governing functioning of the labor market. These include statutory minimum wages, wage-setting mechanisms, eligibility rules for unemployment benefits, and employment protection legislation (EPL), among others. These regulations are binding exclusively for formal-sector firms and organizations, where the state maintains the capacity to monitor compliance and enforce standards. However, spillover effects and regulatory transmission into the informal segment cannot be ruled out.

What are the primary institutional effects resulting from this duality? They operate in both directions. On the one hand, the more stringent the labor market institutions in the formal sector (i.e., the higher the implicit costs imposed on firms), the stronger the incentives

for businesses to operate outside the reach of these regulations. These further fuels informality. For instance, an excessively high statutory minimum wage in the formal sector may crowd low-skilled workers out into the informal economy. Similar distortionary effects occur when formal job protection is excessively rigid while worker protection remains weak. On the other hand, widespread informal employment erodes the state's tax base, undermining its capacity to enforce its own institutional rules. When regulations prove unenforceable and public goods are undersupplied in quantity and quality, neither employers nor workers face sufficient incentives to formalize — a transition that raises tax costs without delivering tangible public benefits. Conversely, attempting to enforce overly rigid rules leads to rising informality and the exclusion of vulnerable groups from the workforce (Gimpelson et al., 2015). Consequently, ill-advised attempts to protect one segment of the labor force (formal insiders) end up stripping protection from other, often far larger and more vulnerable groups (the non-employed, informal workers, new entrants, youth, women, older cohorts, and persons with disabilities).

Quantitative Flexibility: Employment Protection Legislation (EPL)

These primarily govern the rules for concluding and terminating employment contracts. The termination of fixed-term employment contracts is not accompanied by severance or redundancy payments to workers. The use of such contracts provides maximum flexibility to the employer when adjusting employment, but can be disadvantageous for workers, placing them in a vulnerable position.

In most countries, labor legislation restricts the use of fixed-term contracts to an exhaustive, closed list of legally permissible grounds. Where there are indications that a given position is permanent, a fixed-term contract may be concluded only in cases of the temporary absence of a permanent employee. This does not eliminate the problem of enforcing this statutory rule within the formal sector, where non-compliance is likely widespread. As for individual employers and sole proprietors, this restriction generally does not apply to them. This creates a strong incentive for employers to retain unincorporated status and refrain from expanding their headcount of formal wage employees.

Employer-initiated dismissal on economic grounds in the case of open-ended (indefinite) employment contracts entails mandatory compensation to laid-off workers. Such compensation typically consists of two primary components: advance notice of dismissal and severance pay. The economic rationale of advance notice is to allow the departing worker to initiate a job search prior to separation, during which their productivity on the job declines while they continue to receive full wages. Severance pay is designed to provide income replacement during the subsequent job search period. Both components can be quantified in terms of the number of weeks (or months) of wages payable by the employer. Alongside direct financial liabilities



Creation of Productive Jobs

Economic activity in all four countries remains poorly diversified

paid as compensation, employers may face various additional administrative and compliance costs. First, this includes mandatory notification of third parties (government authorities, local administration, public employment services, trade unions) regarding planned redundancies, and in some cases, obtaining their prior consent. Second, it involves direct intervention in firm operations not explicitly grounded in statutory law, which restricts employer discretion over hiring and firing policies. For instance, public officials may exert administrative pressure on enterprises, particularly large ones, in an attempt to halt or curb staff reductions.

The higher the aggregate costs associated with quantitative adjustment, the greater the formal rigidity of employment protection. Consequently, while higher EPL rigidity enhances the preservation of incumbent jobs, it depresses the rate of new job creation and slows structural reallocation within the formal sector. In other words, the stronger the social protection afforded to formal job insiders, the worse the labor market opportunities for outsiders who lack formal employment but wish to secure it. (If an employer faces high costs when dismissing workers during economic downturns, incentives to hire during upturns are severely muted).

Below, we briefly review the relevant legal frameworks in force across the analyzed countries. The key legislative instruments regulating the labor market are national Labor Codes (LC) and Employment Acts.

Armenia. Pursuant to Article 95 of the Labor Code of the Republic of Armenia, the use of fixed-term contracts is restricted to an exhaustive list of statutory exceptions. If a fixed-term contract is renewed or re-executed within one month of expiration, it is automatically reclassified as an open-ended (indefinite-term) contract, subject to specific regulatory exceptions. Furthermore, if a court determines that employment relations are de facto governed by a civil-law contract concluded between an employer and a worker, the provisions of labor legislation and other regulatory legal acts containing labor law standards apply retroactively to such relations (Article 102).

Termination of an open-ended employment contract at the employer's initiative is permitted in cases of organization liquidation and mandatory staff redundancy. Workers subject to dismissal on these grounds must be notified by the employer in advance (Article 115). The notification period varies depending on tenure with the given employer, ranging from 14 days for employees with under one year of service up to 60 days for workers with over fifteen years of tenure. The most prevalent advance notice requirement is 30 days. Mandatory notification of third parties or trade unions applies exclusively to vulnerable population categories. The baseline severance pay amount is set at one month's average salary (two months' average salary if termination

is due to permanent disability), though collective bargaining agreements or tripartite agreements may stipulate higher compensation thresholds.

Kazakhstan. Article 30 of the Labor Code of the Republic of Kazakhstan says that legal entities may utilize fixed-term contracts under an exhaustive statutory list of grounds (e.g., seasonal work, specific project contracts, replacing temporarily absent staff) or without restrictions for a fixed duration of no less than one year (subject to a capped number of renewals). Individual employers (small business entities) are permitted to conclude fixed-term employment contracts with workers without statutory restrictions.

In case of employer-initiated contract termination on economic grounds, the employer must provide advance notice of no less than one month (Article 46, Paragraphs 1 and 2) and pay severance equal to one month's average salary (Article 131). Individual employment contracts or collective agreements may stipulate longer notice periods. Consequently, total employer dismissal costs per redundant worker equal two average monthly salaries. Overall, labor legislation in Kazakhstan remains the most liberal among all analyzed economies in the region.

Kyrgyz Republic. According to Article 44 of the Labor Code of the Kyrgyz Republic, legal entities may execute fixed-term employment contracts with wage earners under an exhaustive, finite list of reasons (e.g., seasonal labor, emergency circumstances, replacing temporarily absent staff). Individual employers are not subject to these restrictions.

Article 46 governs employer-initiated contract termination on economic grounds (i.e., enterprise liquidation or staff redundancy). In such cases, the employer must notify the employee of dismissal against written receipt no less than one month in advance (Article 46, Paragraph 3) and disburse severance pay of no less than two monthly base salaries. Thus, this cost component per redundant worker amounts to three monthly salaries. In cases of mass lay-offs, this sum is multiplied by the total number of redundant workers.

Article 48 provides that for a worker released upon termination of an employment contract due to liquidation or reorganization of the organization, or staff reduction, average monthly wages are retained for the job search period up to 3 months, taking into account severance pay, provided that within 10 working days after dismissal they register with the state employment service as a job seeker. For the first month from the date of dismissal, severance pay is paid in an amount not lower than two average monthly salaries; for the second and third months of job search, average monthly earnings are retained. Under this provision, statutory separation costs prove significantly higher.

Tajikistan. The Labor Code of Tajikistan establishes the highest degree of formal job protection among the analyzed countries. It restricts fixed-term employment contracts to a closed list of statutory grounds, with mandatory minimum contract duration of one year (Article 25). Upon re-execution, a fixed-term contract automatically converts into an open-ended contract. Neither fixed-term nor civil-law contracts may be

used if the underlying job tasks display permanent operational characteristics. Open-ended contracts may be terminated at the employer's initiative in cases of organization liquidation (Article 42), though staff redundancies driven by economic conditions are not explicitly cited. In cases of liquidation-related dismissals, prior coordination with authorized state employment agencies is required alongside advance notification to workers of no less than two months (Article 45). Dismissal compensation in such instances equals no less than three monthly salaries (Article 51).

Table 5.1 provides comparative indicators across the analyzed countries alongside benchmark economies. These parameters are codified in the respective Labor Code provisions governing fixed-term contract usage and open-ended contract termination.

Table 5.1.
Statutory Terms for Executing and Terminating Employment Contracts in Labor Legislation

	Fixed-term contracts prohibited for permanent tasks	Maximum duration of fixed-term contracts	Third-party notification/ approval required for dismissal	Advance notice period (in weeks of wage)	Severance pay (in weeks of wage)
Armenia	yes	no restrictions	no	2.0–8.7	4.3
Kazakhstan	no	no restrictions	yes	4.3	4.3
Kyrgyz Republic	yes	60	no	4.3	13
Tajikistan	yes	no restrictions	yes	8.7	13
Serbia	yes	24	no	no	7.7
Türkiye	yes	no restrictions	no	6.7	23.1
Mexico	yes	no restrictions	yes	no	22
Georgia	no	30	no	4.3	4.3

Sources: World Bank Doing Business 2019; national Labor Codes

A distinctive feature of notice period and severance pay regulations in many countries outside the CIS is the explicit indexing of compensation amounts to an employee's tenure with a given employer. Over the tenure, workers accumulate firm-specific human capital, which is legally protected via higher severance tiers tied to tenure duration. This structure incentivizes both firms and workers to invest in training and skill upgrading. Exceptionally high severance thresholds are typically reserved for the dismissal of long-tenured employees. While this makes terminating senior workers prohibitively expensive, severance costs for newly hired personnel remain modest. In the analyzed countries (with the exception of Armenia),

this statutory principle is absent, resulting in a flat compensation scale regardless of tenure. Under a flat structure, the primary financial burden of dismissal (and, by extension, hiring) falls disproportionately on short-tenure workers and new recruits. This effectively intensifies nominal market rigidity and acts as a barrier against job seekers attempting to secure permanent formal employment.

Based on this regulatory analysis, employment protection legislation is most liberal in Kazakhstan and Armenia, and most stringent in Tajikistan. Notably, Kazakhstan also exhibits the highest employment rate in the region, whereas Tajikistan registers the lowest. While this does not imply direct causation, this association is highly illustrative. To be sure, countries such as Turkey and Mexico have much more stringent EPL; however, severance liabilities in those systems scale progressively with tenure, remaining moderate for short-tenured staff. Even so, employment rates in both economies are similarly depressed.

It warrants emphasizing that legislative rules govern exclusively formal-sector entities, as compliance cannot be enforced beyond this perimeter. Unincorporated individual employers (even when operating with formal tax registration) retain substantial discretion over hiring and firing decisions. Entirely informal enterprises and off-the-books workers operate completely outside the regulations. Such asymmetric regulation incentivizes potential employers to keep their workforce size below regulatory thresholds where compliance costs escalate sharply.

The Price of Labor: Regulatory Features

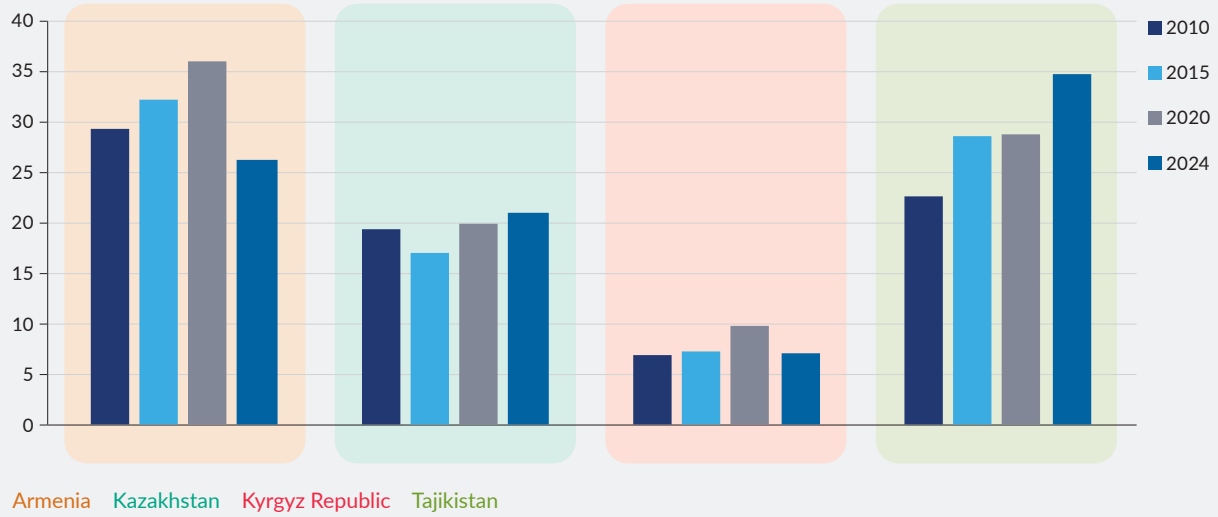
Downward wage flexibility is bounded by statutory minimum wage levels (MW) and unemployment benefit levels (UB), as well as non-employment social transfers more broadly[50]. The structural impact of UB on labor market performance depends not only on its replacement rate, but also on eligibility criteria, including benefit duration and formal tenure requirements. Together, statutory minimum wages and unemployment benefits establish a wage floor. The minimum wage relies on direct state enforcement: non-compliant employers face administrative and financial penalties. Unemployment benefits, conversely, serve as an alternative income stream that directly elevates an individual's reservation wage[51] (Boeri and Terrell, 2002). The lower this wage floor, the lower earnings can clear in the market, stretching the earnings distribution leftward and absorbing potential open unemployment into low-paid work.

Figure 5.1 provides an overview of Kaitz index values (the ratio of the minimum wage to the average or median wage), which remain low by international standards. (For comparison, the Kaitz index in Russia has fluctuated over time but remains within comparable bounds.)

[50] On the role of non-work-contingent benefits, see Boeri and Terrell (2002).

[51] The reservation wage defines the minimum wage threshold at which an individual prefers work over leisure. It represents an unobservable individual characteristic and may not be tied to the statutory minimum wage.

Figure 5.1.
Kaitz Index: Ratio of Minimum Wage to Average Wage (%)



Sources: Commonwealth of Independent States in 2024: Statistical Yearbook / Interstate Statistical Committee of the CIS. Moscow, 2026. 621 pp.; 30 Years of the Commonwealth of Independent States 1991–2021: Statistical Compendium / Interstate Statistical Committee of the CIS. Moscow, 2021. 474 pp.

The International Labour Organization (ILO) recommends maintaining a Kaitz index of at least 50%.

Armenia. Currently, the statutory minimum wage (MW) is set at 75,000 drams per month, representing approximately 25% of the average wage. Projected onto the earnings distribution, it lies far in the left tail, exerting no discernable compression effect. The unemployment benefit (UB) amount equals 60% of the minimum wage (45,000 drams in 2026), or roughly 15% of the average wage.

Eligibility for unemployment benefits requires a minimum insurance contribution tenure of at least 1 year. In the absence of the minimum insurance record, a social assistance allowance may be granted. The duration of UB payments ranges from 6 to 12 months, with every three years of qualifying insurance tenure adding one month of benefits. Status determination as unemployed, registration with the public employment service, benefit duration, and payout amounts are governed by the Employment Act. Beyond the standard criteria of non-employment, active job search, and immediate availability for work, qualifying for unemployed status requires being over 16 years of age and not receiving an old-age pension. Furthermore, during the first 10 days following application to the employment service, candidates may be offered vacancies falling under the definition of suitable work. Refusing two offers of suitable work results in denial or cancellation of unemployed status. The legal definition of suitable work is exceptionally broad: any job that, taking into account earnings level and commute accessibility, matches the job seeker's professional education and qualification is deemed suitable. Specific parameters regarding earnings

thresholds and transport accessibility are established by the Government of the Republic of Armenia.

Prior to 2026, the receipt of means-tested social assistance benefits by non-working, working-age low-income citizens was legally conditional upon registration as unemployed. This mechanism risked inflating registered unemployment statistics with individuals who were de facto economically inactive or engaged in hard-to-detect informal work. Consequently, the high share of long-term unemployed individuals (70% of total unemployed) may represent a statistical artifact distorting the true labor market picture. Beginning in 2026, non-working, low-income working-age individuals applying for social benefits will be imputed an income equal to the cost of the minimum food basket, while the requirement for mandatory registration as unemployed is abolished. Decoupling social assistance administration from job search assistance is expected to eliminate this statistical overhang.

Kazakhstan. Over the past decade, the minimum wage has fluctuated between 16% and 20% of the average wage. It stands at 85,000 tenge (since 2024), representing approximately 19% in 2025. While relatively higher than in other Central Asian states, this replacement level remains considerably below benchmarks observed in post-transition economies of Central and Eastern Europe, which serve as relevant comparative peers.

Unemployment benefits are disbursed as social insurance payments for job loss to individuals for whom employers remitted social contributions into the State Social Insurance Fund (SSIF). As of 2026, the target income replacement rate stands at 45% of the average monthly income upon which contributions were paid over the preceding 24 months, subject to a statutory contribution cap[52]. Benefit payout duration spans 1 to 6 months depending on insurance tenure (1 month of benefits for 6 to 12 months of tenure, scaling to 6 months of benefits for 60 or more months of tenure).

Kyrgyz Republic. Both the minimum wage and unemployment benefits remain exceptionally low relative to average earnings. Throughout most of 2010–2024, the minimum wage hovered between 5% and 10% of the average wage (though its ratio relative to median wages is somewhat higher). As for unemployment benefits, payouts range from 300 to 600 som in specific cases, which constitutes a negligible sum against an average monthly wage of 36,000 som. The public sector, accounting for 60% of formal employment, is likewise characterized by depressed pay scales, anchoring the entire earnings distribution downward. Consequently, the institutional wage floor remains set at a level that fails to purge low-productivity jobs (and is substantially lower than in the other analyzed economies). This contributes to the accumulation and persistence of a large pool of low-productivity positions absorbing marginal employment.

[52] The maximum income base for calculating social insurance contributions is capped at 7 minimum wages. With the minimum wage set at 85,000 tenge in 2026, the maximum countable monthly income base equals 595,000 tenge (85,000 × 7). Additional tenure adjustment coefficients apply, and mandatory pension contributions (10%) are withheld from payouts.

Tajikistan. Tajikistan has seen a gradual rise in its Kaitz index, with the minimum wage reaching 35% of the average wage. Although modest by advanced-economy standards, this is comparatively high for the region. Given the pervasive informality of the Tajik economy, it is essential to examine to what extent this minimum wage floor functions as a binding institutional constraint on employers and, if binding, its precise contribution to driving employment into the informal sector.

Social support for the unemployed is governed by the Law on Promoting Employment, which stipulates payout rules. These regulations are quite stringent, effectively disqualifying broad segments of non-employed individuals from accessing benefits. For instance, first-time job seekers, individuals returning to the labor market after a hiatus exceeding one year, and persons completing vocational training are ineligible for unemployment benefits (Article 27). Article 28 introduces an extensive list of statutory grounds under which benefit disbursements may be terminated, suspended, or reduced. The maximum benefit duration is capped at no more than three months within a single calendar year, disbursed as a one-time cycle subject to mandatory re-registration with the Public Employment Service in accordance with state-established procedures (Article 25).

The unemployment benefit amount in Tajikistan is indexed to average earnings at the last place of employment, providing a replacement rate of 50% in the first month, 40% in the second month, and 30% in the third month. In relative terms, this represents a higher wage replacement rate than in other economies of the region; however, strict qualification criteria neutralize incentives to register for benefits. Moreover, given the multiplicity of conditions under which payouts may be suspended, job seekers face substantial uncertainty regarding actual receipt.

Consequently, taking into account all institutional constraints and implementation practices, minimum wage and unemployment benefit regimes drive down the effective wage floor. While this suppresses measured open unemployment, it may push individuals into informal employment or out of the Tajik labor market entirely (into economic inactivity or labor migration).

Two-Tier Wage Structures as a Price Adjustment Mechanism

A second key mechanism enabling wage flexibility is the widespread use of variable compensation components within overall remuneration structures. The fixed portion of wages consists of base salary or tariff rates strictly codified in employment contracts. The variable component encompasses various bonuses, allowances, and discretionary premiums that are not fixed in contracts and can be granted or revoked by the employer depending on operational circumstances. This variable portion adjusts flexibly to employer cash flows and prevailing macroeconomic conditions. Such a setup functions as an automatic shock absorber: the variable component expands during economic expansions (profit sharing) and contracts

during downturns, thereby shifting the burden of macroeconomic adjustment onto workers (cost sharing). Ultimately, wage flexibility (downward via low institutional wage floors and upward/downward via variable pay adjustments) supports employment stability (though not necessarily employment growth). Naturally, within the informal economy, all remuneration and labor income function as variable, non-guaranteed sums.

Two-tier compensation structures are pervasive across the formal corporate sectors of several CIS economies. In Russia, this regime has operated since the early 1990s, often conceptualized as the "Russian model" of reverse wage flexibility[53] (see *Wages in Russia...* 2007; Gimpelson and Kapeliushnikov, 2015; Kapeliushnikov, 2023).

In Kazakhstan, bonuses and premia account for an average of approximately 15% of the total payroll fund, though this share varies substantially across economic activities. For example, in the mining and quarrying sector, the variable share exceeds 20%[54]. While comparable high-frequency payroll data are unavailable for the other analyzed countries, low output elasticity of employment combined with high wage elasticity of employment strongly supports the hypothesis that variable pay plays a central role in labor market performance.

Shifting labor market adjustment from quantity margins to price margins (wages) enables economies to preserve aggregate employment levels and maintain low open unemployment rates. However, this adjustment model fails to incentivize the creation of high-productivity, formal jobs: it shields neither employers from administrative and regulatory compliance risks associated with quantitative adjustment, nor workers, who ultimately absorb all labor market risks.

Tax Wedge

An important institutional parameter shaping incentives for job creation is the tax system. One of its key metrics is the size of the tax wedge — the difference between total employer labor costs and the net take-home wage received by an employee after all mandatory taxes and social security contributions. The tax wedge comprises two primary components: personal income tax (PIT) and social security contributions (SSC), paid by either the employee or the employer. The larger the tax wedge, the stronger its dampening effect on formal employment creation. Lehmann and Muraviev (2011) estimated the elasticity of informal employment to changes in the tax wedge across transition economies to be moderate; however, precisely estimating this elasticity for the Eurasian region remains infeasible due to data constraints.

[53] "Wages in Russia: Evolution and Differentiation" (2007), Gimpelson V. and Kapeliushnikov R. Chapters 1 and 2

[54] Table 'Average Monthly Nominal Wages of Employees by Payroll Structure across Economic Activities' https://stat.gov.kz/ru/industries/labor-and-income/stat-wags/ (excluding small entrepreneurial enterprises).

In the analyzed countries, labor income is subject to flat (or nearly flat) statutory income tax rates of 10–12%, meaning cross-country variation in the aggregate tax wedge is almost entirely driven by differences in social security contribution rates. Consequently, the tax wedge varies from 16% in Kazakhstan to 34% in Tajikistan, while in Armenia and the Kyrgyz Republic it ranges between 22% and 25%. While these rates are lower than in most Central and Eastern European (CEE) economies, the flat PIT structure means that marginal tax wedges (outside Kazakhstan) can prove more restrictive for low-wage workers.

Institutional Complementarity

To evaluate how institutions shape labor market performance, one must consider their institutional complementarity (Lehmann and Muraviev, 2011). In isolation, individual regulatory norms rarely pose an absolute barrier to formal job creation (even if they fail to actively incentivize it). However, institutional rules do not operate in a vacuum; they interact dynamically, either reinforcing one another's distortionary effects or partially offsetting them. Weak and selective enforcement alters regulatory impacts while exacerbating the very market uncertainty that regulation aims to bound. Conversely, overly zealous enforcement of restrictive rules yields adverse consequences for vulnerable worker segments (Gimpelson et al., 2010). For example, high dismissal costs that suppress formal separations can be partially mitigated by robust active labor market policies (ALMPs) and job placement assistance; however, combining rigid job security (protecting formal insiders) with weak safety nets for the unemployed generates severe market segmentation and fuels informalization.

Naturally, compliance with legal norms hinges on enforcement efficacy, which is rarely complete. Incomplete enforcement introduces de facto quantitative flexibility, but at the extreme, it leads to further informalization. Risks also arise from the opposite direction: extra-legal administrative intervention in employment relations. Such intervention may aim to stall staff reductions at large state-owned or prominent enterprises to prevent localized surges in open unemployment, or it may serve covert competitive interests. Whatever the underlying motive, selective enforcement creates substantial regulatory risks for employers and undermines formal job creation[55].

Where high severance costs and tax wedges disincentivize the creation of formal jobs for low-skilled workers, the combination of a low wage floor, weak social safety nets, and selective legal enforcement accelerates informalization and drives exit from the labor force. Formal and informal migration policy frameworks fit directly into this institutional equilibrium.

[55] On the distortionary impacts of selective and incomplete enforcement of labor legislation, see Gimpelson et al. (2010).

Labor market institutions clearly require structural modernization to better align with economic needs and state enforcement capabilities. Achieving this requires explicitly defining core policy objectives given the state's fiscal and institutional constraints — an imperative that is particularly relevant for the Kyrgyz Republic and Tajikistan. Nominal legislative rigidity must be brought into alignment with real enforcement capacity. Modernizing these institutions brings to the fore a fundamental policy trilemma: whether to maximize protection for incumbent formal-sector workers or to expand the formal perimeter by incentivizing new job creation. This represents a strategic choice between protecting existing formal jobs versus protecting individual workers — both current formal insiders and job seekers seeking formal entry. Experts at the IMF reached a similar conclusion in their evaluation of the Kyrgyz labor market, noting that shifting policy focus from protecting jobs to protecting workers *"can enhance labor market flexibility, reduce informality, and foster economic growth by enabling firms to adjust their workforce more efficiently while encouraging formal employment"* (IMF Country Report, 2025).

5.2. Labor Market Issues in National Strategies and Government Programs

The objectives and targets of labor market development, together with the policy interventions designed to achieve them, are articulated in specialized programs that form an integral part of national development strategies. In Armenia and Kazakhstan, these take the form of comprehensive, long-term labor market strategies, whereas in the Kyrgyz Republic and Tajikistan, they manifest as narrower employment promotion programs that focus almost exclusively on supply-side interventions while largely omitting labor demand dynamics. Analyzing these strategic documents clarifies government policy priorities, revealing how public authorities conceptualize structural labor market challenges and their proposed remedies.

Armenia. The *Strategic Plan for Employment of the Republic of Armenia (2024–2030)*[56] aligns directly with national economic development priorities and the overarching *Transformative Strategy 2050*. Core priorities include reducing open unemployment and poverty, fostering human capital accumulation, accelerating labor productivity growth, and promoting export expansion to ensure inclusive economic growth. The Strategic Plan sets an explicit goal: stimulating employment growth within high-productivity sectors of the economy through continuous human capital development and entrepreneurship promotion. Among its key operational tasks are: securing simultaneous gains in total employment and labor productivity alongside unemployment reduction; enhancing the

[56] https://cdn.prod.website-files.com/6695218b7018c74c4c41f7ab/69036adb6e167905d120674c_ARM_Employment%20Strategy.pdf

cost-effectiveness and impact of public employment programs and government expenditures; deploying targeted social policy by profiling vulnerable population groups; and alleviating poverty while raising living standards.

The *Strategic Plan* provides a thorough baseline analysis of labor market conditions using LFS microdata. The analytical focus centers on workforce profiling, primarily of the unemployed and economically inactive, to isolate specific subgroups whose labor potential remains underutilized, positioning them as primary targets for Active Labor Market Policies (ALMPs). Key target cohorts include NEET youth, women in the 30–39 age bracket, working-age members of social assistance beneficiary households, and residents of small settlements and regional towns. This analytical baseline is complemented by an inventory of existing active employment initiatives and an identification of operational bottlenecks using administrative data on registered unemployment and public employment center performance. The document underscores the imperative of inter-agency coordination and synchronization across line ministries and state agencies to advance human capital, stimulate high-productivity job creation, and resolve skill mismatches.

Drawing upon international best practices, the plan formulates a target of accelerated economic growth (aiming for 8% annual GDP growth) and introduces policy instruments for economic development and employment promotion that have proved effective in peer economies. Most proposed measures address the supply side of the labor market, seeking to enhance the employability and competitiveness of vulnerable groups through vocational training, reskilling, and competency development.

On the demand side, the strategy mandates policy interventions across three primary vectors: structural economic transformation driven by labor reallocation from agriculture to non-agricultural sectors; export promotion; and the attraction of Foreign Direct Investment (FDI). Collectively, these initiatives are designed to foster high-productivity non-agricultural job creation in small settlements and regional towns. FDI attraction is tasked with generating productive employment through the expansion of Special Economic Zones (SEZs) offering preferential tax regimes and subsidized credit, with dedicated support for export-oriented firms. To mitigate regional spatial disparities, the strategy proposes applying elevated property tax rates to industrial facilities in Yerevan, thereby creating economic incentives for firms to relocate operations to secondary cities and regional centers.

On the labor supply side, a range of instruments is proposed to enhance the employment rate of vulnerable groups. These include educational vouchers for skill upgrading targeted at low-engagement demographics, alongside wage subsidies for vocational training programs directed at youth and women re-entering the labor force. Another set of policy tools encompasses tax incentives and employment subsidies for labor market entrants and prime-age female cohorts (ages 30–39) via direct wage subsidization or income tax rebates. Furthermore, the plan provides for the promotion of flexible work arrangements

through employer tax incentives, tax relief for enterprises in industrial zones that hire unemployed women aged 30–39, and support for female entrepreneurship through dedicated business accelerators, preferential corporate income tax rates, and subsidized credit lines.

The *Strategic Plan* places particular emphasis on the data infrastructure supporting evidence-based policy making. It formulates the goal of building a comprehensive digital analytical and information system that bridges labor demand and supply. To this end, plans are laid to modernize existing monitoring systems, upgrade data collection and analysis infrastructure, and expand information processing capacity. The framework envisions expanding the integration of survey microdata and administrative records to track labor market mobility trajectories, as well as leveraging big data analytics.

Kazakhstan. The *Concept of Labor Market Development of the Republic of Kazakhstan for 2024–2029*[57] proceeds from the characterization of the national economy as one of low economic complexity, relying predominantly on medium-skilled labor and lacking sustained market incentives for human capital accumulation. This structure reflects limited economic diversification and a heavy dependence on natural resource extraction and primary exports.

The primary structural bottlenecks of the labor market are identified as follows: persistent skill mismatches between workforce qualifications and labor market demand resulting from an underdeveloped vocational education and training (VET) system; high rates of informal employment combined with weak enforcement of labor rights, particularly in rural areas; and persistent inequality in access to high-paying jobs across demographic groups.

The policy objective for labor market development is framed as a dual task: securing high living standards through equitable income distribution and poverty reduction, while facilitating a structural transition from an "economy of simple goods" to a high-complexity economy centered on technology-intensive goods, services, and production processes. High-quality education is underscored as the foundational prerequisite for sustainable productivity growth.

To advance these goals, the Concept outlines an extensive suite of policy measures aimed at stimulating labor demand, upgrading workforce skills (supply side), and matching labor supply with market demand. To this end, it proposes developing medium- and long-term labor demand forecasting frameworks with the active involvement of the business community.

[57] https://adilet.zan.kz/rus/docs/P2300001050

Key vectors for stimulating labor demand are articulated based on an analysis of international best practices, encompassing three interconnected pillars: 1) industrial development, incorporating automation and digitalization; 2) expansion of an export-oriented private sector; 3) support for small and medium-sized enterprises (SMEs). To channel state support to the private sector, the strategy proposes utilizing grants and targeted subsidies to enterprises, primarily to upgrade employee competencies.



Shift Toward Informal Services

Structural change made only a limited contribution to aggregate productivity growth

To foster high-productivity job creation, the Concept proposes: enhancing transparency and public access to geological data to minimize transaction costs and streamline licensing in the mining sector; strengthening trade policy to eliminate non-tariff trade barriers; building industrial cooperation networks and regional clusters to integrate domestic firms into cross-border value chains; accelerating spatial and industrial development through the proactive provision of energy, water, transport, logistics, engineering, and digital infrastructure; reforming agricultural subsidies; and streamlining product certification and customs clearance timelines.

Regarding labor supply interventions, extensive use of targeted subsidies is proposed. These include grants and subsidies to educational institutions, wage subsidies for vulnerable population groups, and employment quotas alongside job adaptation and workplace training reimbursements for persons with disabilities. To integrate older workers into a lifelong learning culture, free online training modules will be provided via a unified state digital platform. Targeted entrepreneurship support programs are planned to foster self-employment and business creation among individuals with disabilities. Finally, the design and deployment of a national skill certification system aim to reduce information asymmetry across the labor market.

Significant attention in the Concept is devoted to modernizing public employment services. Plans include restructuring labor mobility centers to provide personalized support to job seekers using a dedicated case-management approach. The framework mandates the complete digitalization of public support tools, the deployment of digital employment services, and the enhancement of the national electronic labor exchange with automated, AI-driven job matching services. These upgrades are intended to shift public employment services from passive job placement toward proactive employment assistance, laying the groundwork for income growth through skill development, labor mobility, and streamlined employment contracting.

The *Migration Policy Concept through 2030*[58] complements the Concept of Labor Market Development regarding labor supply interventions. It aims to encourage educational and business immigration and attract skilled labor migrants (with a focus on shortage occupations) to facilitate technology transfer and national workforce training.

Kyrgyz Republic. The *Program for Promoting Population Employment of the Kyrgyz Republic for 2022–2026*[59] was developed in line with the priorities of the National Development Strategy for 2018–2040. It states that state employment policy will focus on enhancing workforce quality and eliminating labor market demand-supply mismatches, with its implementation contributing to the UN Sustainable Development Goals.

The *Program* identifies the primary labor market challenges as low rates of productive, relatively high-paying job creation; unbalanced regional economic development driving internal migration; weak local government engagement in employment promotion; misalignment of vocational education with labor market needs; and low levels of social guarantees for workers.

In the employment sphere, key challenges include: a growing number of active working-age unemployed; high levels of external labor migration; demand-supply imbalances for professional personnel; extensive informal and precarious employment; low placement rates for vulnerable categories; limited employer participation in skill upgrading and vocational training; a severe gap between unemployment benefits and the subsistence minimum; a lack of data on the true scale of unemployment and labor migration; and underfunding of active and passive labor market programs.

The *Program* outlines 5 strategic priorities: 1) improving accessibility of employment services: enhancing service quality and upgrading the labor market forecasting system; 2) active labor market policies: offering training in high-demand occupations, paid public works, youth and maternal employment support, workplace integration for persons with disabilities, and conditions for extending older workers' working lives; 3) flexible and modern education and vocational training: modernizing initial vocational training and lifelong skill development, improving career guidance, expanding internships and workplace apprenticeships, and forecasting workforce needs to balance supply and demand; 4) digitalization of employment services: expanding the *Labor Market* information system, establishing a nationwide vacancy and resume database, integrating with the EAEU *Work Without Borders* job search platform, and strengthening inter-agency data exchange; 5) infrastructure development: opening regional career guidance centers, training public employment service personnel, offering free information and advisory services domestically and abroad, conducting resume and interview workshops, and engaging media on employment topics.

[58] https://adilet.zan.kz/rus/docs/P2500001081#z10

[59] https://www.gov.kg/files/news/froala/1cfa486d9991d1da9c4ac9a9db742ab84ce59c5f.docx

Tajikistan. The *Program for Promoting Population Employment of the Republic of Tajikistan for 2023–2027*[60] forms part of Tajikistan's strategic planning and state forecasting framework, aligning with the priorities of the National Development Strategy through 2030 and the Concept for Productive Employment Development through 2040. Its explicit objective is to promote employment by engaging unemployed citizens in vocational training.



Urbanization in Kazakhstan

Pressure on the labor markets and infrastructure of major cities is increasing

The *Program* formulates an extensive list of targets and a detailed matrix of policy measures grouped into 12 core directions, 9 of which (excluding the first three) target supply-side interventions: 1) job creation: postulated in accordance with existing macroeconomic forecasts; 2) labor market intermediation: fostering cooperation between public employment service agencies and employers, vacancy dissemination, and job fair organization; 3) targeted employment promotion for vulnerable groups: job quotas for youth, persons with disabilities, military veterans, and former inmates; expanding vocational training access for vulnerable populations; establishing and preserving specialized jobs with flexible/regulated work schedules; facilitating remote work conditions; and partial wage subsidization for employers hiring vulnerable job seekers; 4) youth employment & unemployment prevention: facilitating placement into open vacancies; access to short-term vocational upskilling and reskilling courses aligned with domestic and external labor demand; engagement in paid public works; entrepreneurship support via preferential microcredit; and social safety net support for unemployed youth via unemployment benefit disbursements; 5) female employment promotion: implementing measures parallel to youth support initiatives, complemented by targeted vocational training for unemployed and job-seeking young women (particularly in remote and mountainous rural areas) through Adult Education Centers; 6) social support & reintegration for returning migrants: job creation, temporary placement in paid public works, vocational training, preferential microcredit for private entrepreneurship, formal validation of prior learning and acquired skills, and legal/advisory assistance; 7) workforce adaptation to accelerated industrialization: identifying occupational skill requirements via employer surveys; deploying dual vocational training systems; modernizing the capital and instructional infrastructure of TVET institutions via public and foreign investment; and recruiting youth and women into training programs for high-demand occupations; 8) entrepreneurship advisory & financial support: advisory services and seed funding for unemployed individuals launching micro-enterprises; SME development through startup microcredit lines; leveraging donor funding for youth

[60] https://faolex.fao.org/docs/pdf/taj221456.pdf

and female entrepreneurship; integrating business training into public employment service centers; and developing innovative loan monitoring and recovery mechanisms; 9) paid public works programs: structuring and scaling temporary public work schemes; 10) traditional crafts development: establishing craft centers and implementing vocational curricula focused on traditional handicrafts; 11) social protection during unemployment: direct income support for registered unemployed citizens; 12) institutional modernization of labor & employment agencies: transitioning to digital service delivery; attracting supplementary investment for active labor market policies (ALMPs); ensuring transparent, targeted fund allocation; continuous professional development for employment agency personnel; and modernizing data collection systems for sectoral labor market statistics.

The adoption of comprehensive, detailed labor market strategies underscores the attention paid by public authorities to structural employment challenges and the ongoing search for policy solutions.

Across all analyzed economies, national labor market strategies are oriented (exclusively in some cases, and to a significant degree in others) toward securing sustainable employment and decent wages for vulnerable demographics (youth, women, residents of remote settlements, older cohorts, and persons with disabilities). While crucial, measures promoting social inclusion and protecting worker rights constitute only one component of broader labor market development and employment promotion frameworks (unless interpreted narrowly as the administrative mandate of public employment services).

Without claiming exhaustive coverage, several critical avenues for refining national labor market development strategies can be identified.

1. The analysis presented in this report demonstrates that the core labor market challenges across all four countries stem primarily from the labor demand side. Labor demand is a derived demand (contingent upon product demand for goods and services) and is driven by firms optimizing their operations within a competitive environment. Which jobs are preserved, which new positions enter the market, the velocity of this job turnover, and its sectoral and spatial distribution all depend on business dynamics. In this context, policy measures that foster private entrepreneurship and business development directly shape the macroeconomic backdrop governing the volume, structure, and quality of jobs and vacancies. If private-sector expansion stalls due to macroeconomic, regulatory, or infrastructural bottlenecks, labor demand and formal job creation will remain suppressed. While employment policy falls under the operational domain of Ministries of Labor, establishing conducive conditions for private sector growth is a cross-cutting mandate shared across all line ministries and state agencies, alongside the Central Bank responsible for macroeconomic stability. Without a comprehensive evaluation

of the broader macroeconomic and institutional landscape, it is difficult to assess the efficacy or viability of policy measures proposed by labor ministries. The labor market strategies of Kazakhstan and Armenia incorporate key elements of such an integrated approach, whereas the strategies of the Kyrgyz Republic and Tajikistan address labor demand in a largely declarative manner.

2. All national programs prioritize refining the matching mechanism between workers and existing or prospective job vacancies (unemployed job seekers and firm vacancies). Addressing this frictional mismatch falls within the mandate of labor ministries and centers on lowering information search costs. Interventions include forecasting future labor demand with stakeholder involvement, compiling and disseminating vacancy data, and assisting the unemployed through job placement and skill development/reskilling initiatives. However, while valuable, these supply-side and matching interventions do not resolve the structural deficit of formal labor demand in the private sector. Furthermore, the operational feasibility and priority ranking of certain recommendations remain debatable. For instance, formulating reliable labor demand forecasts is a complex methodological and technical undertaking for which institutional capacity may be lacking. It requires an extensive data infrastructure that, in most cases, does not yet exist. Under conditions of rapid structural and technological change, historical statistical data quickly lose predictive value for anticipating future skill requirements. Similarly, heavy reliance on active labor market policies (ALMPs) yields limited returns when formal job creation is sluggish and real-time labor market intelligence is scarce. Policy design and target-setting must therefore be grounded in rigorous priority assessments, specialized empirical evaluations, and robust data foundations.

3. The public sector (encompassing budget-funded social sector institutions as well as state-owned and state-controlled enterprises) constitutes a vital and substantial segment of the labor market. The state functions as the primary employer, setting benchmark wage scales, working conditions, and social protection standards across the economy. Consequently, labor market strategies in economies with a prominent state footprint cannot afford to overlook public-sector employment dynamics. Existing strategic programs currently leave these issues unaddressed.

4. A widely advocated toolkit of policy interventions comprises various forms of subsidization, ranging from targeted employment subsidies for specific demographic groups to job creation and retraining incentives. Wage subsidies and preferential tax treatments for vulnerable cohorts are feature prominently across virtually all national strategic programs.

However, these proposals generally rely on partial equilibrium analysis, neglecting the broader general equilibrium effects induced by shifts in relative labor prices. As is well established in labor economics, targeted support for one demographic group can generate displacement effects that crowd out other worker categories from the labor market. For example, subsidizing the hiring costs of prime-age women may displace youth or other groups with comparable productive characteristics who serve as labor substitutes for employers, but whose non-subsidized employment is costlier. Furthermore, such active interventions are frequently temporary; terminating subsidies often triggers a reversal of gains, resulting in staff reductions among the very beneficiaries the policy aimed to support.

5. In designing targeted support mechanisms, policymakers frequently operate within a partial equilibrium framework, overlooking or underestimating broader systemic adjustments. This limitation often reflects institutional silos within line ministries, a lack of general equilibrium modeling capacity, or severe data constraints. National Labor Force Surveys remain the primary data source on labor market dynamics; however, because LFS data capture exclusively the supply side of the market, they cannot convey a complete picture of labor dynamics. Integrating comprehensive enterprise-level and employer data (detailing the structure of labor demand across worker cohorts, the price elasticity of labor demand with respect to taxes, subsidies, and employment protection legislation, as well as firm-level wage-setting practices) would substantially enhance understanding of structural labor market mechanisms. Developing this firm-side analytical capability is particularly imperative during the structural transformations currently unfolding across the analyzed economies.

Main Findings and Policy Recommendations





The majority of Eurasian economies, including the four countries examined in this study, have demonstrated impressive growth rates over the past five years, with their real GDP more than doubled since 2010. These economies have successfully maintained macroeconomic and financial stability, absorbed systemic pressures from global and regional shocks, and sustained growth rates exceeding the expectations of most analysts and policymakers. This unexpected economic resilience creates the impression of an improvement in the quality of economic growth and, by extension, in the demand for labor.

The observed economic expansion has unfolded against the backdrop of demographic processes that have significantly impacted labor supply. In three of the countries, where the demographic transition remains incomplete — Kazakhstan, the Kyrgyz Republic, and Tajikistan — the working-age share of the population continues to rise. This opens potential avenues for achieving a demographic dividend to foster economic growth. Conversely, in Armenia, labor force contraction and population aging may catalyze accelerated structural transformation within the labor market, aiding in the reduction of unemployment and inactivity rates.

Under such predominantly favorable conditions, labor market imbalances and structural bottlenecks would ideally diminish, fostering long-term economic sustainability and advancing population welfare through the expansion of formal, high-productivity jobs. Nevertheless, our analysis of national labor markets reveals contrasting trends, summarized in the following core findings relevant across all analyzed economies:

- **The elasticity of formal, high-productivity job creation relative to economic growth is marginal.** This is primarily attributable to the fact that economic activity across the examined countries remains poorly diversified, gradually shifting toward non-tradable, lower-productivity sectors characterized by a high prevalence of informal employment. The narrow structural foundation of economic growth impedes the generation of a sufficient volume of high-productivity employment. In our view, this constitutes the primary long-term impediment to sustainable economic growth and successful labor market transformation across the region.

- **The narrow structural base of economic growth has prevented full achievement of the demographic dividend.** Output growth was predominantly driven by gains in labor productivity, whereas the contribution of demographic change (growth in the working-age population) was minimal. Shifts in the age structure of the working-age population exerted either a negligible positive impact on economic growth or actively dampened it.

- **Labor market absorption of population growth occurred largely through the expansion of informal employment or labor force withdrawal.** Widespread labor market informality persists as a major structural challenge across all discussed economies, constraining growth in labor productivity and household living standards. The challenges of informality are further compounded by labor market segmentation, which restricts workforce dynamism and cross-sectoral reallocation.

The prevalence of inactivity and the entrenchment of informal employment arrangements stem largely from a deficit of formal alternatives, namely, the weakness of the private sector and its inability to generate decent jobs under rising demographic pressure.

» **Structural shifts involving resource reallocation from agriculture to non-agricultural economic activities represent a vital reserve for economic growth.** This growth mechanism is utilized to varying degrees but remains far from exhausted. However, its ultimate potential relies heavily on formal job creation within the private sector.

» **Labor migration (both external and internal) remains an essential adjustment mechanism for labor markets facing demographic pressure and structural constraints.** Nevertheless, the acute migration dependence of the Kyrgyz Republic and Tajikistan as labor-exporting economies raises significant concerns. Such reliance creates disincentives for domestic high-productivity job creation and renders these economies highly vulnerable to shifts in the migration policies of host countries. Sustaining outbound migration flows at or near current levels will prove increasingly problematic and, indeed, unlikely over the medium to long term.

» **The public sector's role as the primary pool of formal employment is growing across all analyzed countries; however, public sector wage levels remain substantially depressed relative to market sectors.** This wage penalty negatively affects human capital quality and worker motivation within the public sector, while dampening the cross-sectoral flow of labor from informal to formal employment by minimizing incentives for transition. Consequently, this depresses both social and private returns to education, eroding household incentives to invest in human capital.

» **Employment promotion and unemployment reduction policies in the analyzed countries appear predominantly focused on lowering the unemployment rate as a political and economic indicator of performance.** In the context of weak unemployment protection (characterized by low benefit levels, stringent eligibility criteria, and short duration of payments), surplus labor relative to market demand is systematically displaced into informal self-employment or out of the labor force entirely.

Demographic projections through 2040 indicate the continued rapid expansion of the working-age population in Central Asian economies but a slight contraction in Armenia. Given the long-term structural characteristics of economic growth and labor demand, alongside anticipated demographic trends governing labor supply, the creation of a sufficient volume of formal, high-productivity jobs across the analyzed countries appears unlikely within the forecast horizon to 2040. Informality and inactivity will most likely persist at elevated levels, while labor migration, both internal and external, will remain a vital mechanism for balancing labor supply and demand. For the EFSD as a stabilization institution, this implies that ongoing labor market imbalances may generate substantial risks to the long-term economic sustainability of these countries during their structural transformation. Mitigating these risks requires a systemic and coordinated policy framework at both the macroeconomic and microeconomic levels.

The core mechanism for addressing these challenges lies in establishing conditions conducive to formal job creation within the private sector, offering a superior alternative to informality, inactivity, and labor migration. This requires fundamental structural shifts within the economies of the analyzed states, which in turn demand a favorable institutional environment for private sector development, accelerated investment, the modernization and diversification of infrastructure (energy, logistics, digital, etc.), equitable access to infrastructure, export promotion, integration into global value chains, and technological upgrading and sophistication.

The strategic benchmark for labor market policy must pivot toward maximizing productive and well-remunerated employment. It is advisable to abandon unemployment minimization as a political and economic measure of efficiency, shifting the focus toward curbing informal and marginal employment and retaining individuals within the active labor force. Excessive legislative and administrative measures that artificially suppress unemployment should be curtailed in favor of policies that foster the expansion of productive employment. Key measures in this domain include facilitating the entry and scale-up of new enterprises (supporting startups and removing growth barriers), refining tax policy, reducing hiring costs, streamlining access to infrastructure for new firms, ensuring a favorable investment climate, comprehensively developing human capital, and entering new export markets.

On the labor demand side, the principal challenge remains the net creation of formal jobs. The rate of net formal job growth (job creation minus job destruction) must outpace working-age population growth. This is essential not only to absorb new labor market entrants but also to generate the demand-side conditions required to reduce informal employment, enhance youth and female labor force integration, and reintegrate returning migrant workers.

On the labor supply side, a key priority remains the accumulation of human capital to enhance workforce mobility, facilitate skill acquisition, and adapt existing skill sets amid ongoing and anticipated structural shifts across the region's economies. Recommended measures include improving educational quality, establishing robust frameworks and infrastructure for vocational training and lifelong reskilling, eliminating gender- and age-based discrimination,



Evidence-Based Labor Market Policy

Impossible without reliable statistical data

and enforcing meritocratic (as opposed to kinship- or clan-based) principles in hiring and promotion.

Across all analyzed economies, an institutional reform of public sector pay structures aiming to implement the principle of "equal pay for equal work" would yield significant benefits. Under this principle, compensation levels within the public sector should, ceteris paribus, be aligned with those prevailing in the market sector for workers with *comparable* human capital. Such alignment would enhance worker motivation and substantially improve the quality of public goods provided.

Across all analyzed economies, it is advisable to enhance the accessibility of passive labor market policy instruments (in terms of income replacement rates, eligibility criteria, and benefit duration) for broader categories of job seekers. Examples include establishing a basic minimum unemployment allowance for individuals lacking prior social security contributions and introducing benefit levels stratified by contribution history or tenure (where currently absent). There are no uniform or off-the-shelf formulas in this domain; *country-specific empirical studies* on the impact of standard policy instruments on unemployment spell durations, transitions from unemployment into employment or inactivity, and choices between inactivity and active job search will allow for the precise calibration of reform parameters.

Active labor market programs (ALMPs), given their high unit cost per net outcome, face inherent constraints when formal private-sector job creation remains slow. It would be prudent to undertake a comprehensive performance audit of existing programs to identify specific tracks and targeted demographic groups for which current interventions achieve their objectives at economically viable costs. Priority should shift toward mitigating information asymmetries in the labor market, supporting vulnerable population groups, and facilitating access to private digital job portals.

Below, we highlight key distinguishing structural characteristics of the labor markets and ongoing transformation processes across the analyzed states that must be factored into policy design.

Armenia

- Against the backdrop of negligible population growth between 2010 and 2024, Armenia experienced a significant contraction in its labor force, accompanied by rising labor force inactivity and a moderate reduction in unemployment.
- Rural-to-urban migration serves as a vital component of structural transformation. By 2024, the share of agricultural employment declined by 28 percentage points to 18%.
- Despite rapid economic growth rates, high unemployment, including long-term and youth unemployment, remains an acute challenge, coupled with relatively low labor force participation rates and massive informality. Based on Labor Force Survey data, estimates of informal employment and self-employment hovered around 30% of total employment in 2024.
- The relatively high unemployment rate is driven less by a high inflow of workers into unemployment than by low outflow rates and prolonged unemployment durations ("stagnant unemployment").
- Armenia has completed its demographic transition, characterized by low fertility and mortality rates. Natural population growth has virtually halted, and population aging is underway.
- By 2040, Armenia's total population is projected to contract by 10% and its working-age population by 12% (a decrease of approximately 290,000 and 230,000 individuals, respectively). The country faces risks associated with an escalating dependency ratio and a contracting labor supply, which can only be partially offset through higher participation rates and further unemployment reduction.
- A potential rise in the relative price of labor as a factor of production, stemming from labor supply contraction, could serve as an additional catalyst for technological upgrading and structural transformation, provided a favorable institutional environment is maintained.

Kazakhstan

- In the context of an ongoing demographic transition and a growing working-age population, Kazakhstan exhibits a high labor force participation rate which, given the low unemployment rate, translates into a high overall employment rate. Unusually for an economy with such a high fertility rate, female employment matches levels observed in Central and Eastern European countries.

- The migration potential of rural Kazakhstan is being realized domestically through rural-to-urban population flows, directed predominantly toward the three major urban areas (Almaty, Astana, and Shymkent). This inflow is driven by substantial income differentials between rural areas and rapidly expanding urban agglomerations. Over the period under review, the combined population of these three cities expanded by 2.0 million individuals, placing increasing pressure on urban labor markets and infrastructure.

- Approximately three-quarters of workers in Kazakhstan are employed in enterprises with up to 100 employees, whereas the share of employment of large enterprises (250 or more employees) continues to contract.

- Low unemployment in Kazakhstan masks elevated risks of informal employment, whereas labor force inactivity remains exceptionally rare.

- According to our projections, total employment over the 15-year forecast horizon (2026–2040) is expected to expand from 9.3 million to 11.1 million individuals (an increase of approximately 19%). This will require the net creation of roughly 1.8 million jobs by 2040. Total population size, the working-age population, and total employment are projected to grow at virtually identical rates, a synchronization absent in the preceding decade.

Kyrgyz Republic

- Amid an incomplete demographic transition and rapid expansion of the working-age population, male employment rates remain relatively high, whereas female employment rates remain persistently low.
- Growth in the working-age population is absorbed through three primary channels: informal employment, external labor migration, and labor force non-participation (inactivity).
- The net volume of formal sector jobs failed to expand, while the share of informal employment rose from half to roughly two-thirds of total employment. Informality is particularly prevalent in agriculture and market services.
- The low unemployment rate is sustained by alternative channels of economic activity (informal jobs and emigration) and reinforced by the design of passive labor market institutions (benefit levels and eligibility conditions).
- Structural shifts exerted a weak impact on aggregate productivity growth due to marginal cross-sectoral productivity differentials and the concentration of labor reallocation from agriculture into low-productivity informal services.
- The public sector accounts for over 60% of total formal employment, yet public sector compensation remains lower than that of non-agricultural market sector workers with comparable characteristics. This wage penalty increases at higher skill levels, negatively affecting self-selection into the teaching and medical professions and eroding worker motivation.
- Labor market institutions, specifically employment protection legislation regarding dismissals and unemployment benefits, are poorly suited to actual labor market conditions, fail to protect workers, and foster market segmentation.
- By 2040, under the UN medium-variant population projections and depending on cohort-specific employment rate trajectories, total employment is projected to grow from 2.7 million to 3.4–3.7 million individuals (an expansion of 27–38%). Absorbing this growth will require intensive creation of formal jobs.

Tajikistan

- Amid an incomplete demographic transition and rapid expansion of the working-age population, employment rates for both men and women remain low.
- Growth in the working-age population is absorbed through three primary channels: informal employment, external labor migration, and labor force non-participation (inactivity).
- While the exact volume of formal sector jobs is difficult to quantify, it is unlikely to have increased. Self-employment accounts for approximately 60% of total employment, with informality particularly pervasive in agriculture and market services.
- The unemployment rate remains moderately low. This outcome is driven by alternative avenues of economic activity (informal work and migration) and reinforced by the design of passive labor market policy institutions (benefit levels and eligibility conditions).
- Structural shifts have been constrained and have exerted a weak impact on aggregate productivity growth.
- The public sector accounts for more than one-third of all wage earners (employees), yet their average compensation is significantly lower than that of workers in industry. This wage gap adversely affects recruitment into the teaching and medical professions as well as employee motivation.
- Labor market institutions, specifically employment protection legislation regarding dismissals and unemployment benefits, are poorly suited to actual labor market conditions, fail to protect workers, and foster market segmentation.
- By 2040, under the UN medium-variant population projections and depending on cohort-specific employment rate trajectories, total employment is projected to grow from 3.0 million to 4.0–5.1 million individuals (an expansion of 33–69%). Accommodating this growth will necessitate rapid, large-scale formal job creation.

Statistics and Monitoring





Informed and evidence-based labor market policy is impossible without a reliable statistical foundation. The depth and validity of economic analysis are consistently constrained by data availability and quality. Establishing causal relationships requires long time series and panel data structures.

However, the mere existence of large volumes of information regarding the labor market and participant behavior is insufficient for policy formulation and justification. These data, serving merely as raw inputs for downstream, in-depth analysis, must reach analysts capable of rigorously processing them to derive evidence-based conclusions. Transparent data access must be guaranteed for researchers across the public and private sectors, international organizations, universities, and academic institutions who possess the capacity to conduct independent analysis of anonymized microdata using modern statistical, econometric, and modeling techniques. It would be advisable to establish a systemic framework to support independent economic research — one that actively engages universities, other academic institutes, and think tanks through open data access, competitive research grants on priority topics, and the organization of academic seminars and policy conferences.

The experience of the statistical authorities in Armenia regarding (i) labor market data collection through diverse statistical instruments, (ii) data presentation in official publications and on the Statistical Committee of the Republic of Armenia website, and (iii) the provision of public access to it, could offer valuable insights for all countries in the EAEU. Statistical agencies in Kazakhstan and the Kyrgyz Republic perform extensive work in collecting labor market data; however, public access to microdata remains restricted, and subsequent research is hampered, particularly by a lack of methodological documentation. Labor market statistics in Tajikistan remain in an embryonic state, severely limiting the scope for substantive analysis.

The key area for improving statistics is to enhance the LFS as the main source of data on labor supply and household behavior.

For **Armenia**, it is advisable to introduce a rotating sample design that will make it possible to obtain panel data on household behavior in the labor market.



Employment Assistance

Support for vulnerable population groups

For **Kazakhstan**, the priorities are:

- to include questions about wages and labor income;
- to develop and use a rotating sample design to obtain panel data;
- to ensure public access to anonymized LFS microdata.

Kyrgyzstan requires:

- to develop and use a rotating sample design to obtain panel data;
- to ensure public access to anonymized LFS microdata.

For **Tajikistan**, the transition to the regular implementation of the LFS is a priority. Additionally, it is necessary to publish detailed methodology and tools, as well as provide public access to microdata.

Household surveys (such as the LFS) focus predominantly on labor supply analysis. Evaluating labor demand requires granular data on firm behavior, which mandates expanded utilization of existing statistical reporting and the implementation of specialized enterprise surveys tracking job creation and destruction trends. Panel survey data detailing growth barriers for SMEs are of paramount importance (where Russia's experience in conducting such monitoring could prove instructive).

Administrative records (including tax register data for both individuals and legal entities, business registers, and registered unemployment databases) possess an inherent panel structure capable of significantly refining our understanding of labor market processes. Internationally, extensive experience has been accumulated in constructing such administrative data systems and enabling secure researcher access to inform policymaking. Mechanisms should be developed to grant anonymized access to these administrative data sources for carrying out analysis.

Finally, policy analysis should leverage the expanding capabilities of novel data sources, such as digital job-matching platforms, to analyze the volume, occupations, and structural characteristics of vacancies and job seekers. It is essential to enhance the interoperability and integration of disparate data sources, establishing, where feasible, unique statistical identifiers across datasets to construct a unified labor market information system.

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Economic Growth, Demographic Trends, and the Labor Market: Realities and Challenges

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