



KYRGYZ REPUBLIC

SELECTED ISSUES

June 2025

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SELECTED ISSUES

May 7, 2025

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POTENTIAL OUTPUT IN THE KYRGYZ REPUBLIC¹

This study reassesses potential output in the Kyrgyz Republic in light of recent structural changes and external shocks, including the pandemic and the regional conflict. Using a combination of production function analysis, state-space models, and univariate filters, the paper provides a comprehensive estimate of the country's evolving productive capacity. The findings indicate a notable rise in potential output growth to 5.3 percent, largely driven by capital accumulation and labor force expansion. However, total factor productivity remains below historical averages. The positive output gap since 2021, which reflects strong post-pandemic growth, including due to the spillovers from the regional conflict, points to possible risks of overheating and rising inflationary pressures. Addressing these challenges will require structural reforms to enhance investment, improve labor market efficiency, and foster productivity gains to support higher and sustainable economic growth.

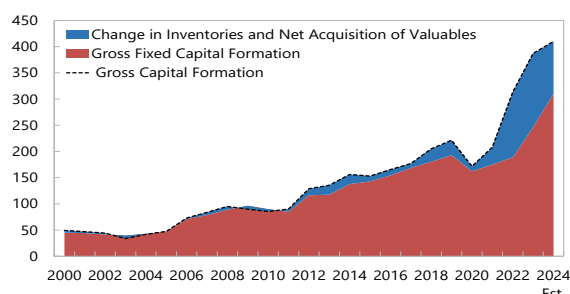
A. Introduction

1. Estimating potential output is essential for effective policymaking. It defines the economy's maximum sustainable level of production without triggering inflation, which serves as a benchmark for assessing whether the economy operates above or below capacity. An output gap, which is a difference between actual and potential GDP, allows policymakers to understand how far an economy is operating from this level and guide policy decisions. A positive output gap (where actual GDP exceeds potential GDP) indicates the overuse of the factors of production, or overheating, often leading to inflationary pressures, necessitating policy tightening to prevent an unsustainable build-up of macro imbalances. Conversely, a negative output gap signals underutilization of capital and labor, offering room for policy easing without causing inflation.

2. Major economic shocks and structural changes can alter productive capacity and hence the potential output. In the Kyrgyz Republic, the pandemic and Russia's war in Ukraine changed labor markets, investment patterns, and trade dynamics, contributing to an unexpectedly high GDP growth of 9 percent annually from 2022-2024, and leading to a surge in gross capital formation (Figure 1). This robust growth outpaced the CCA average of 6.1 percent during the same period (Figure 2). While part of this growth surge is likely to be transitory, driven by external demand shifts and trade rerouting, it could also reflect economy's structural transformation over the years. The shift from agriculture to mining and services, a shrinking (but still significant) informal sector, technological advances, demographic patterns, climate change, and new trade patterns have reshaped labor markets and capital allocation, influencing growth potential in the Kyrgyz Republic.

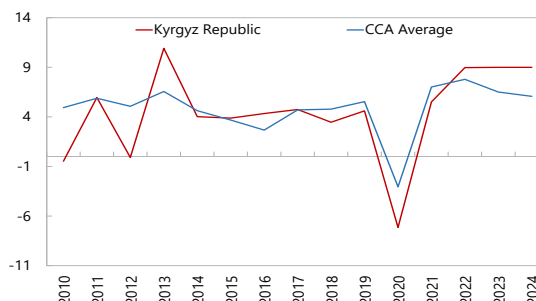
¹ Prepared by Nasir Rao, Anvar Muratkhanov, and Nihal Haider (all MCD).

Figure 1. Gross Capital Formation
(in constant 2018 prices, KGS billion)



Source: NSC and IMF staff calculations.

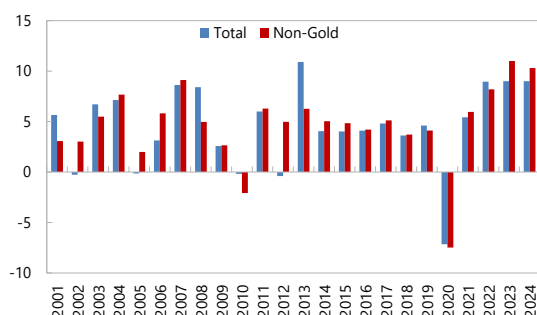
Figure 2. GDP Growth – Regional Comparison
(in percent)



Source: NSC and World Economic Outlook.

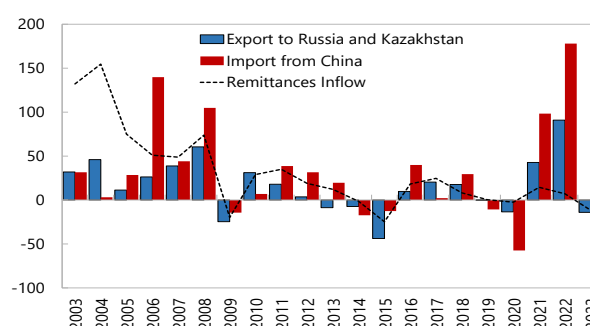
3. Reflecting these changes, the Kyrgyz Republic's growth trajectory has undergone notable shifts in the last two decades. From 2001 to 2013, the economy grew by over 5 percent on average annually, driven by remittance-fueled consumption, gold production, and strong external demand (Figure 3). Post-2014, external headwinds from slower growth in Russia and Kazakhstan reduced remittances and external demand, exposing structural vulnerabilities (Figure 4). The 2015 accession to the EAEU and Kazakhstan's WTO membership further altered regional trade, diminishing Kyrgyz Republic's re-export role.

Figure 3. GDP Growth
(in percent)



Source: NSC and IMF staff calculations.

Figure 4. Regional Trade and Remittances
(percent change)



Source: NBK and IMF staff calculations.

B. Methodology and Results

4. This paper uses three different methods to estimate potential output and capture both structural and cyclical dynamics. These include the production function method for a supply-side perspective, the multivariate Kalman filter for dynamic adjustments, and univariate techniques such

as the Hodrick-Prescott (HP) filter and Beveridge-Nelson decomposition to identify underlying trends. The analysis uses quarterly data from 2000 onward since the earlier post-independence years were fraught with economic volatility and less reliable data. This comprehensive approach ensures a robust assessment of the Kyrgyz Republic's evolving potential output.

Production Function

5. The production function approach follows the methodology proposed by Denis *et al.* (2006) to estimate potential output. It is based on a Cobb-Douglas production function. Capital input is represented by the capital stock, calculated using the perpetual inventory method with the initial stock based on 1999 data from the World Bank's *"The Changing Wealth of Nations 2021"*. Depreciation rates, averaging 3.6 percent, were sourced from the Penn World Table Database. Capital stock series was converted to real values using 2018 as the base year, applying gross capital formation data and adjusting investment series for seasonality. Labor input combines calculated employment levels and average hours worked. Elasticities of capital and labor inputs were estimated using a Vector Error Correction Model (VECM).

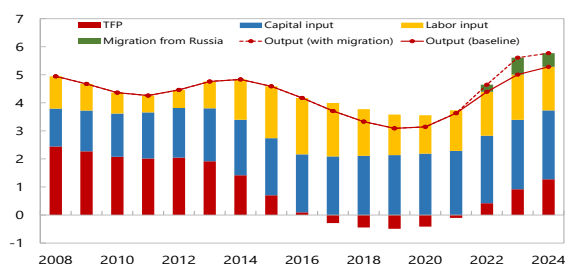
6. Total Factor Productivity (TFP) is calculated as a residual, reflecting both productivity dynamics and shocks to output. Adjustments were made to isolate these shocks before applying the HP filter to smooth the TFP series. While Denis *et al.* (2006) used unsmoothed capital stock for EU countries, this paper applies the HP filter to the Kyrgyz Republic's capital stock to address fluctuations driven by volatile inventories. This approach ensures that long-term trends in TFP and capital stock align with potential output growth, providing a clearer representation of productivity's contribution to economic performance.

7. The results suggest that Kyrgyz Republic's potential output growth has risen to 5.3 percent in recent years, with non-gold potential output reaching 5.6 percent. This growth is primarily driven by capital stock accumulation and labor. TFP has turned positive in 2022, but remains below historical averages observed prior to 2015 (Figure 5). Non-gold potential output growth of 5.6 percent indicates that the contribution of the gold sector is negative, reflecting plateauing gold production in recent years (Figure 6).

8. A notable driver of recent growth dynamics is the influx of Russian migrants since 2022. In the absence of a reliable estimate of the number of migrants, for the purposes of this exercise the paper assumes that 70,000 have settled permanently in the Kyrgyz Republic². This results in an upward revision of potential output growth to 5.8 percent with non-gold potential output growth reaching 6.1 percent. This increase reflects both the direct expansion of the labor force and the boost in capital stock. It may also explain part of the TFP gain as reportedly many migrants are young and skilled IT professionals with above average productivity.

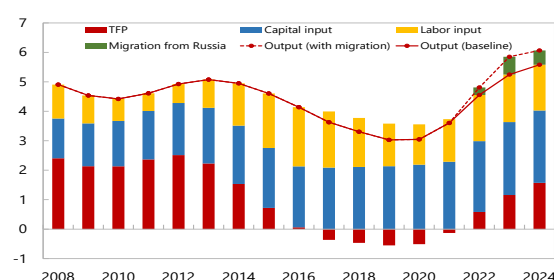
² There is no exact data available on the number of people who remained in the Kyrgyz Republic. Our estimate is based on figures from the Department of Population Registration of the Kyrgyz Republic, which states that between January and October 2022, 170 thousand Russian citizens made official registration in the Kyrgyz Republic. We are assuming that 60 percent of them eventually left, while the remaining 40 percent stayed.

Figure 5. Potential Output (Total)
(percent)



Source: IMF staff calculations.

Figure 6. Potential Output (Non-Gold)
(percent)



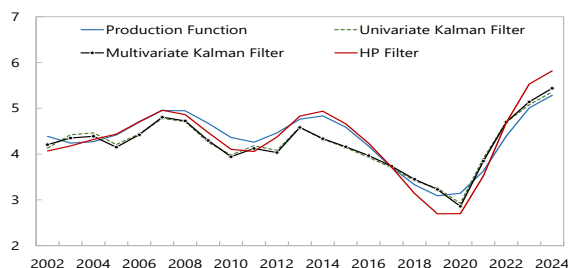
Source: IMF staff calculations.

State Space Models and Univariate Filters

9. State-space models, which rely on multivariate and univariate Kalman filters, and HP filter reinforce the findings of the production function approach. These models yield potential output growth estimates ranging between 5.3 and 5.8 percent, and non-gold potential output growth reaching 6.4 percent (Figure 7A and 7B). The univariate Kalman and HP filters effectively isolate long-term output trends, which provide valuable insights for the Kyrgyz economy given its exposure to external shocks. In contrast, the multivariate Kalman filter adds depth by incorporating macroeconomic relationships like the Phillips curve and Okun's law, capturing the interplay between output, inflation, and unemployment. Together, these models complement the production function, providing dynamic, data-driven insights that reflect both structural shifts and cyclical fluctuations in the economy. The consistency of these results underscores the robustness of potential output estimates, indicating that underlying growth trends are well-captured.

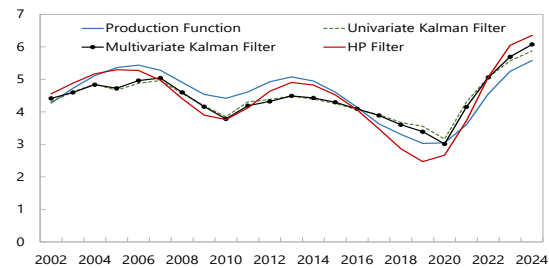
10. The results of the Beveridge-Nelson decomposition also align with other models, adding to robustness. AR and ARMA models show stable potential output growth of 4.4 percent during 2001–2014, a decline to 3.5 percent in 2015–2021 due to subdued growth and the pandemic, and a strong rebound to 5.3 percent in 2022–2024.

Figure 7a. Potential Output (Total)
(in percent)



Source: IMF staff calculations.

Figure 7b. Potential Output (Non-Gold)
(percent)

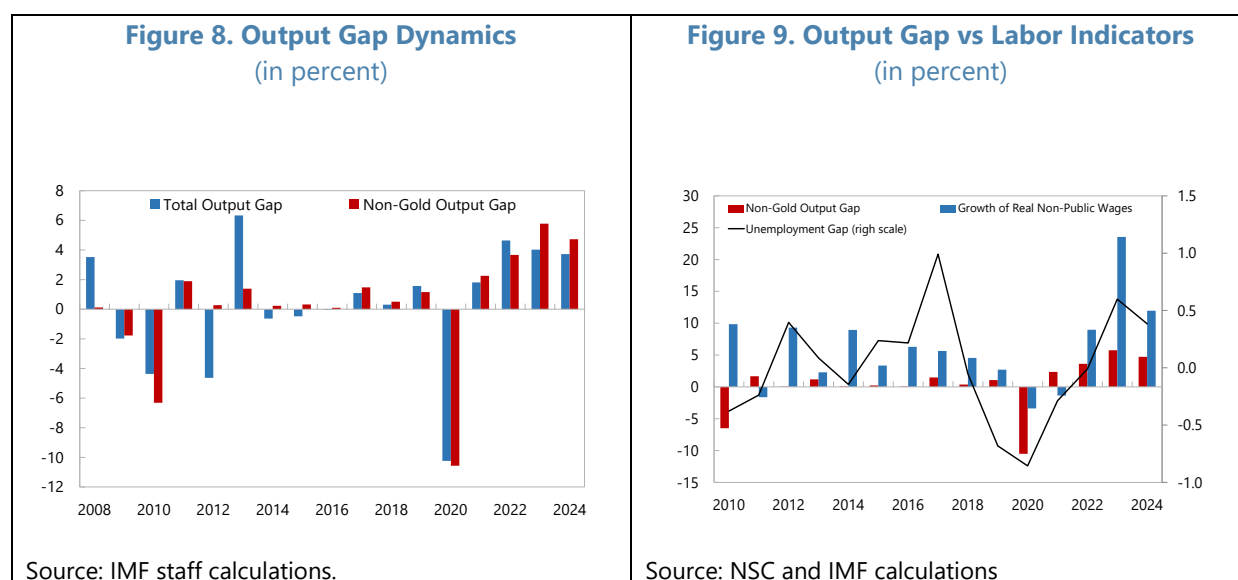


Source: IMF staff calculations.

Output Gap Dynamics

11. The output gap in the Kyrgyz Republic has turned persistently positive in the recent years, especially for non-gold GDP. This trend reflects strong post-pandemic recovery, supported by capital inflows and labor migration from Russia. Figure 8 shows that after some fluctuations, the output gap increased significantly after 2020, indicating that growth has outpaced its potential. This growth boost is more pronounced for non-gold output, highlighting the declining share of gold production and the growing importance of domestic demand and other sectors, such as construction and trade. While TFP remains below early 2010s levels, its upward trend signals gradual efficiency gains alongside growth driven by capital and labor. However, a consistently high positive output gap may suggest overheating of the economy, which could pose risks of inflation, asset price distortions, and macroeconomic imbalances if not carefully managed.

12. The tightening of the labor market might also be a reflection of rising output gaps. Declining unemployment rates and rising real wages indicate strong labor demand relative to supply (Figure 9). This mismatch can fuel wage-driven inflation, as firms compete for a limited pool of workers, pushing up labor costs that are often passed on to consumers through higher prices. The inflow of skilled Russian migrants, while expanding the labor force, has had mixed effects. Those working remotely for foreign companies have limited impact on local labor markets, while others have added to labor supply but not fully eased pressures due to skill mismatches and increased demand for services driven by higher migrant consumption. The correlation between the output gap and labor market indicators, such as real wage growth and the unemployment gap, highlights the cyclical nature of these dynamics.³



³ Unemployment gap is calculated as difference between non-accelerating inflation rate of unemployment (NAIRU) and actual unemployment.

C. Conclusion and Policy Recommendations

13. The Kyrgyz Republic's recent economic performance was marked by a strong post-pandemic recovery and external spillovers from the regional conflict. The surge in real GDP growth in 2022-2024 was driven by capital stock accumulation and labor input, but TFP remains below historical averages. The potential output growth rate is estimated to have increased to 5.3 percent since the pandemic from about 4.4 percent before, but it is well below the current pace of growth. Temporary external tailwinds may mask underlying economic fragilities, necessitating prudent macroeconomic policies and deeper and broader structural reforms to improve long-term growth potential and strengthen resilience.

14. This persistently positive output gap highlights the risk of economic overheating. If continued, this could lead to build-up of inflationary pressures, labor shortages and macroeconomic imbalances. To mitigate these risks, policymakers should adopt counter-cyclical fiscal and monetary policies and advance reforms that attract investment, improve labor markets and strengthen productivity. Some of the key reform areas include fostering a business-friendly environment, improving access to finance, strengthening of property rights and the rule of law, and enhancing education and skills development.

Annex I. Model Specifications

Production Function

1. The production function used in the paper is expressed as:

$$Y_t = TFP_t * K_t^\alpha * L_t^{1-\alpha}$$

where Y_t denotes real GDP; TFP_t denotes Total Factor Productivity; K_t and L_t denote capital and labor inputs respectively; α and $1 - \alpha$ represents output elasticities of capital and labor respectively.

The paper follows a structured approach to estimate potential output growth, comprising three key steps: (1) calculating the equilibrium levels of capital and labor inputs, (2) estimating the output elasticities of capital and labor, and (3) deriving the dynamics of TFP linked to potential output growth.

Estimation of Capital and Labor Inputs:

2. The paper employs capital stock as the measure of capital input, calculated using the perpetual inventory method.

$$K_t = K_{t-1} * (1 - \delta_{t-1}) + I_t$$

where K_t denotes capital stock at constant prices at period t ; I_t denotes flow of investments at constant prices at period t ; δ denotes capital depreciation rate; K_{t-1} denotes capital stock at constant prices at period $t-1$.

The paper employs composite labor input indicator with the following structure¹:

$$L_t = LF_t * (1 - U_t) * AHW_t$$

Which is transformed to the following form:

$$\bar{L}_t = \bar{LF}_t * (1 - U_t^{NAIRU}) * \bar{AHW}_t$$

where \bar{L}_t is the potential labor input; \bar{LF}_t is the trend of labor force (in millions of persons); U_t^{NAIRU} represents the non-accelerating rate of inflation; \bar{AHW}_t is the trend of average hours worked series.

3. Non-accelerating rate of inflation of the level of 4.4 percent², trends of labor force and average hours worked were estimated applying the HP filter to the actual series. To mitigate the

¹ The quarterly data for the period Q1 2010 to Q4 2023 on all the components was obtained from the ILOSTAT database. To extend the historical series back to the year 2000, the constructed labor input indicator was extrapolated for the period Q1 2000 to Q4 2009 using the dynamics of the official employment series provided by the National Statistical Committee. To remove the seasonal factors, the composite indicator was seasonally adjusted.

² The Kalman filter analysis for the unemployment rate yields comparable results.

endpoint bias, before implying the filter the original series were first extended with four-year forecasts generated by ARIMA models, covering the period up to 2027.

Estimation of the Output Elasticities of Labor and Capital:

4. Due to the presence of cointegration between real GDP, labor and capital, the paper utilized the Vector Error-Correction Model (VECM) to estimate the output elasticities of capital and labor inputs.³ The use of VECM also helps to mitigate some aspects of endogeneity and serial-correlation inherent to the time-series data. At the same time the VECM will allow to obtain the values of long-run relationships between the interest variables.

The specification of the model is following:

Long-Term equation:

$$\ln(Y_{t-1}) = \beta_1 \ln(K_{t-1}) + \beta_2 \ln(L_{t-1}) + \beta_0$$

Matrix of short-term equations:

$$\begin{aligned} \Delta \ln(Y_t) &= \alpha_0 + \lambda_1 \epsilon_{t-1} + \sum_{n=1}^N \alpha_{1,n} \Delta \ln(K_{t-n}) + \sum_{n=1}^N \alpha_{2,n} \Delta \ln(L_{t-n}) + \sum_{n=1}^N \alpha_{3,n} \Delta \ln(Y_{t-n}) + \sum_{i=1}^I \alpha_{4,i} \text{shock}_i + u_{1,t} \\ \Delta \ln(K_t) &= \gamma_0 + \lambda_2 \epsilon_{t-1} + \sum_{n=1}^N \gamma_{1,n} \Delta \ln(K_{t-n}) + \sum_{n=1}^N \gamma_{2,n} \Delta \ln(L_{t-n}) + \sum_{n=1}^N \gamma_{3,n} \Delta \ln(Y_{t-n}) + \sum_{i=1}^I \gamma_{4,i} \text{shock}_i + u_{2,t} \\ \Delta \ln(L_t) &= \phi_0 + \lambda_3 \epsilon_{t-1} + \sum_{n=1}^N \phi_{1,n} \Delta \ln(K_{t-n}) + \sum_{n=1}^N \phi_{2,n} \Delta \ln(L_{t-n}) + \sum_{n=1}^N \phi_{3,n} \Delta \ln(Y_{t-n}) + \sum_{i=1}^I \phi_{4,i} \text{shock}_i + u_{3,t} \end{aligned}$$

Where β_1 and β_2 denotes long-term coefficients reflecting the elasticity of output with respect to capital and labor; β_0 denotes constant term, Y_t denotes real GDP in constant 2018 prices (in million KGS); K_t denotes calculated unsmoothed capital stock/investments in constant 2018 prices; L_t denotes composite indicator of labor input; ϵ_{t-1} denotes the error correction term, which reflects deviations from the long-run equilibrium; λ_i denotes adjustment coefficients indicating the speed of return to equilibrium; shock_i denotes the series of dummy variables to capture the effect of significant internal and external shocks like political instability in 2010 and onset of the Covid-19 in 2020; u_t – denotes short-term disturbances. The sample size of estimation is quarterly data from Q1 2001 to Q4 2023.

5. Given that capital stock represents the long-term productive capacity of an economy, while investment reflects short-term fluctuations in productive capacity, two models are estimated to evaluate the output elasticity of capital input: one using capital stock and the other using investment flows. This dual-model approach ensures a comprehensive analysis of capital's contribution to

³ The presence of cointegration among the variables of interest was evaluated using the Johansen Cointegration test. Prior to conducting the test, the variables were examined for the presence of a unit root to confirm their non-stationary nature, ensuring the appropriateness of the cointegration analysis.

output by capturing both long-term and short-term dynamics. Additionally, it serves as a robustness check to validate the consistency of results across two specifications.

| Table 1. Kyrgyz Republic: Results for Long-Term Equation | | | | |
|----------------------------------------------------------------------------------------------------------------------------|------------------------------|-------------------|--------------------------------|-------------------|
| | Original coefficients | | Normalized coefficients | |
| | (1) | (2) | (1) | (2) |
| Capital stock | 0.281** (0.110) | | 0.311** (0.123) | |
| Investments | | 0.293* (0.046) | | 0.294* (0.046) |
| Labor input | 0.624** (0.274) | 0.703* (0.226) | 0.689** (0.303) | 0.706* (0.227) |
| Standard errors are shown in parentheses. Significance levels: *p<0.01; **p<0.05; *** p<0.1; ^ insignificant with p>0.1 | | | | |

6. The original coefficients were normalized to ensure their sum equaled one, aligning with the theoretical assumption of constant returns to scale in the Cobb-Douglas production function. Notably, the specification using investments inherently satisfied this assumption, as the original coefficients naturally summed to one. The resulting estimates closely align with those of Kudabaeva (2010), who reported an output elasticity of capital at 0.26 and labor at 0.74, further validating the robustness of the analysis.

Total Factor Productivity:

7. After calculating all the observable components of the production function, the dynamics of total factor productivity can be derived as the residual using the following equation:

$$\Delta TFP_t = (\Delta Y_t - (0.3 * \Delta K_t + 0.7 * \Delta L_t))$$

After adjusting TFP for the shocks that may distort true productivity trends, the refined TFP series was smoothed using the HP filter and, along with other computed components, was integrated into the following equation to derive the annual potential output growth series:

$$\Delta \bar{Y}_t = (\Delta \bar{TFP}_t + 0.3 * \Delta \bar{K}_t + 0.7 * \Delta \bar{L}_t)$$

Multivariate Kalman Filter

8. The paper employs the Multivariate Filter methodology developed by Blagrove *et al.* (2015), which incorporates equations utilizing three key observable indicators: real GDP growth, inflation, and the unemployment rate. This approach models potential output as a latent variable, estimating it alongside the output gap by leveraging the relationships between the variables. The Kalman filter

is employed to estimate unobservable variables, while parameter values and the variances of shock terms in the equations are determined using Bayesian estimation techniques.

The model estimation is based on annual data for GDP growth, inflation⁴, and the unemployment rate from 2000 to 2023. To address the endpoint problem, the sample size was extended to 2026 by including estimates for 2024 and projections for 2025–2026.

The model has the following structure:

Output Equations:

$$\begin{aligned} y &= Y - \bar{Y} \\ \bar{Y}_t &= \bar{Y}_{t-1} + G_t + \varepsilon_t^{\bar{Y}} \\ G_t &= \theta G^{SS} + (1 - \theta)G_{t-1} + \varepsilon_t^G \\ y_t &= \phi y_{t-1} + \varepsilon_t^y \end{aligned}$$

where y denotes output gap, Y is real GDP in log terms, \bar{Y} is potential real GDP, G_t is potential output growth, $\varepsilon_t^{\bar{Y}}$ – potential output shock term, G^{SS} – potential output steady-state path, ε_t^G – potential output growth shock term, and ε_t^y – output gap shock.

Philips Curve Equation:

$$\pi_t = \lambda \pi_{t+1} + (1 - \lambda)\pi_{t-1} + \beta y_t + \varepsilon_t^\pi$$

Where π_t denotes inflation, and ε_t^π inflation shock.

Unemployment Equations:

$$\begin{aligned} u_t &= \bar{U}_t - U_t \\ \bar{U}_t &= (\tau_4 \bar{U}^{SS} + (1 - \tau_4)\bar{U}_{t-1}) + g\bar{U}_t + \varepsilon_t^{\bar{U}} \\ g\bar{U}_t &= (1 - \tau_3)g\bar{U}_{t-1} + \varepsilon_t^{g\bar{U}} \end{aligned}$$

Where u_t – gap between actual unemployment and its equilibrium process, \bar{U}_t denotes Non-Accelerating Level of Inflation, U_t – actual unemployment, \bar{U}^{SS} is steady state inflation rate, $g\bar{U}_t$ is variation in the NAIRU (to allow persistent deviations of the NAIRU from its steady-state value), $\varepsilon_t^{\bar{U}}$ – NAIRU shock term, $\varepsilon_t^{g\bar{U}}$ is shock term of the variation in the NAIRU.

Okun's Law Equation:

$$u_t = \tau_2 u_{t-1} + \tau_1 y_t + \varepsilon_t^u$$

Where ε_t^u denotes unemployment gap shock term.

Beveridge-Nelson Decomposition

⁴ To account for the impact of global food and energy prices, the model incorporates core inflation instead of headline inflation.

9. The Beveridge-Nelson (BN) decomposition separates permanent and transitory components in economic time series. Developed in the 1980s, it is widely used to analyze economic growth dynamics and estimate output gaps, including those caused by the COVID-19 pandemic in the Euro Area. In potential output analysis, BN decomposition identifies long-term trends versus short-term fluctuations, helping policymakers distinguish structural shifts from temporary shocks. Applied within an ARIMA model, it effectively isolates economic disturbances. The approach involves the following equations:

ARIMA Model Specification:

$$Y_t = \phi(B) \theta(B)^{-1} \epsilon_t$$

where Y_t is the time series, $\phi(B)$ is the autoregressive (AR) polynomial, $\theta(B)$ is the moving average (MA) polynomial and the ϵ_t is a white noise error term.

Permanent and Transitory Components:

$$Y_t = Y_t^P + Y_t^T$$

where Y_t^P is the permanent component, representing the long-term trend, and Y_t^T is the transitory component, representing short-term fluctuations.

Estimation of Permanent Component:

The permanent component is often estimated through the long-run forecast derived from the ARIMA model:

$$Y_t^P = \lim_{h \rightarrow \infty} E[Y_{t+h} | Y_t]$$

This equation indicates that the permanent component is the expected value of the future values of the series, given the current value, as the forecast horizon approaches infinity.

Estimation of Transitory Component:

The transitory component can then be calculated as:

$$Y_t^T = Y_t - Y_t^P$$

Hodrick–Prescott Filter

10. The Hodrick–Prescott filter is applied to quarterly data spanning from 2000Q1 to 2024Q3, incorporating estimates and projections for 2024Q4 to 2027Q4 to address the end-point problem. The smoothing parameter (λ) is set to 1600

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LABOR MARKET CHALLENGES AND POLICY REFORMS IN THE KYRGYZ REPUBLIC¹

A. Importance of Labor Market Analysis

1. **Well-functioning labor markets play a crucial role in promoting inclusive economic growth (IMF, 2017).** This is especially pertinent in emerging and developing economies, where there is substantial potential to improve labor market policies to reduce inequality, increase productivity, and decrease informality.
2. **The main goal of labor market policies is to ensure high and stable employment and productivity while providing adequate protection to workers (IMF, 2019).** Maintaining stable and high employment requires flexible labor legislation that provides employees with basic job protection while also easing hiring and firing procedures. This flexibility allows attracting talent and improves the efficiency of resource allocation in the economy. At the same time, Active Labor Market Policies (ALMPs) and a well-functioning unemployment benefits system are needed to protect workers in case of job losses and provide a basic level of social security, thus furthering the objective of equity. Striking the right balance between efficiency and equity is essential to achieving broader objectives of labor market policies.
3. **In the Caucasus and Central Asia (CCA) region, labor market policies are generally less advanced than in Emerging Europe (EMEU).** The CCA region is comparable to EMEU in terms of labor market flexibility and efficiency. In terms of effectiveness, labor regulations in the CCA region focus on worker protection but unemployment benefits are often limited, underfunded, and cover only a small segment of the population. In contrast, EMEU typically offers more comprehensive social safety nets, including unemployment insurance, pensions, and healthcare benefits.
4. **Active Labor Market Policies (ALMPs), such as vocational training and job search assistance, are also underdeveloped in the CCA region.** EMEU, by comparison, has more prevalent programs, such as job retraining, apprenticeships, and job placement services. Furthermore, many CCA countries maintain rigid labor codes that restrict workforce mobility and contribute to high informality (Gigineishvili et al., IMF, 2023).

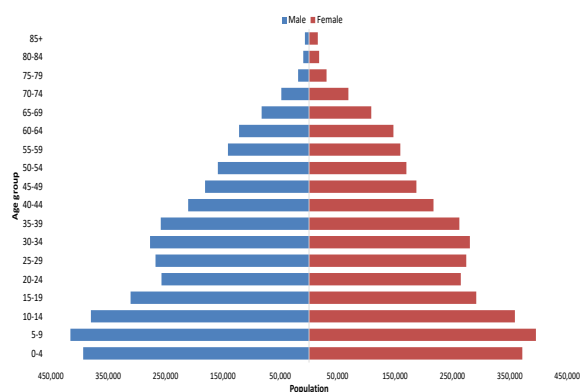
B. Overview of the Labor Market in the Kyrgyz Republic

5. **The Kyrgyz Republic has a young and growing population.** About 32 percent of the population is under 15 years and 5.7 percent is over 65 years (Figure 1). The share of youth in the total working population is one the highest in the region and is projected to increase further (Figure 2). The population has grown by almost 2 percent per year since 2000, and is estimated to grow by

¹ Prepared by Jean van Houtte and Farid Talishli (all MCD).

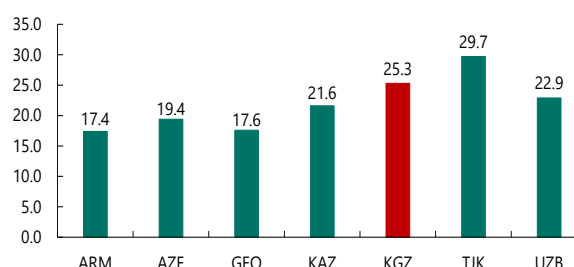
1.4 percent per year² in the medium term. According to the World Bank, the labor force is projected to grow by about 50,000 every year.

Figure 1. Population Tree of the Kyrgyz Republic in 2023



Source: National Statistical Committee.

Figure 2. Share of Youth in Working Age Population, 2023



Source: National Statistical Committee and IMF staff calculations.

Note: Youth age is 15-24 years, working age is 15-64.

6. The Kyrgyz Republic needs higher and more inclusive growth to absorb the rapidly growing labor force. Staff estimates suggest that the economy needs to grow by over 6.5 percent a year over the medium to long term to generate sufficient jobs and contain unemployment. Otherwise, social inequality and outmigration would increase and the output gap with emerging markets would widen further. This will require structural reforms to raise potential output. The government should seek to provide a market-friendly business climate, improve governance and a competitive environment, strengthen labor markets, and enhance the opportunities for human capital development.

7. The Kyrgyz Republic employs approximately 2.3 million people, the majority in the informal sector. The labor force participation (LFP) rate is 65.6 percent, which is similar to most Central Asian countries but is higher than that of the Caucasus region.^{3, 4} However, the formal sector employs only about 600,000 people (Table 1), including those working in state-owned enterprises (SOEs). The public sector accounts for around 60 percent of the employment in the formal economy, indicating a significant reliance on state-driven formal employment (Figure 3). A dominant role of the public sector in the economy and the labor market poses potential challenges to economic growth. High expenditures on public sector wages may crowd out critical investments, such as infrastructure projects, that are essential for long-term development. Furthermore, an oversized

² UN World Population prospects.

³ Except for Azerbaijan with LFP around 70 percent.

⁴ ILO database. [ILOSTAT Data Explorer](https://dataexplorer ilo.org/).

public sector risks stifling private sector growth by diverting productive human capital and reducing space for entrepreneurship and innovation.

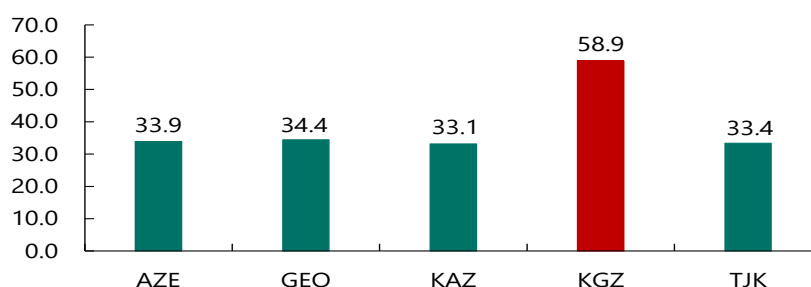
Table 1. Kyrgyz Republic: Employment Structure
(million persons)

| | |
|--------------------------|-------------|
| Total | 2.33 |
| Formally employed | 0.58 |
| Public sector | 0.34 |
| SOE | 0.04 |
| Agriculture and Industry | 0.09 |
| Services | 0.11 |
| Informally employed | 1.75 |
| Agriculture | 0.34 |
| Industry | 0.55 |
| Services | 0.86 |

Source: National Statistical Committee.

Note: Excluding 0.35 million workers abroad.

Figure 3. Size of Public Sector
(as percent of total formally employed)



Source: National Statistical Committee.

8. Informality remains a significant challenge in the Kyrgyz Republic. The informal economy employs 1.75 million people and is estimated to account for 19 percent of GDP in 2023⁵. Informal employment is typically characterized by the absence of social protection, low wages, and minimal job security. It is prevalent in sectors such as small-scale retail, domestic work, and subsistence agriculture, where workers often lack formal contracts and protection.

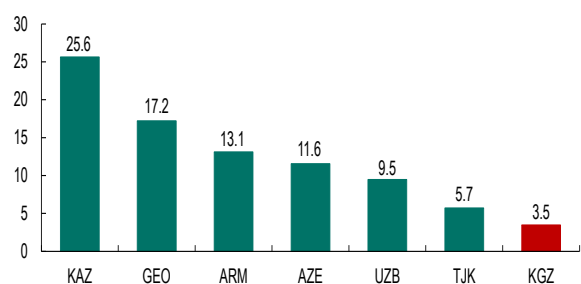
9. Economic growth during the last two decades contributed to reducing unemployment, but productivity remains weak. Average economic growth for the last 18 years was 4.9 percent while unemployment during the same period declined from about 8 percent to 4 percent⁶. However, productivity remains low in the Kyrgyz economy. The low productivity can be attributed to several

⁵ <https://stat.gov.kg/ru/statistics/nacionalnye-scheta/>

⁶ Unemployment in the Kyrgyz Republic is one of the lowest in CCA and Emerging Europe.
<https://databank.worldbank.org/source/world-development-indicators>

factors, including the concentration of the workforce in traditionally less productive sectors (e.g., agriculture, transportation, and construction) and the large informal sector, where access to training and organizational efficiency are limited. The output per worker is lowest in the CCA region (Figure 4). Moreover, capital-intensive sectors like gold mining, which accounts for 6.5 percent of GDP, employs only 0.2 percent of the workforce. The average output per worker in sectors that typically generate more jobs is therefore even lower. Agriculture, which employs 24 percent of the workforce, contributes under 9 percent of GDP, pointing to economy's overall low labor productivity. An analysis of unit labor costs (ULC) also indicates lower productivity in agriculture, non-gold industry, and transport and communication sectors (Figure 5).

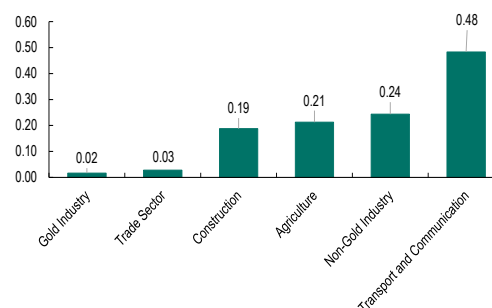
Figure 4. Output per Worker in 2023
(in constant 2015 prices, thousand USD)



Source: National Statistical Committees.

Source: National Statistical Committees.

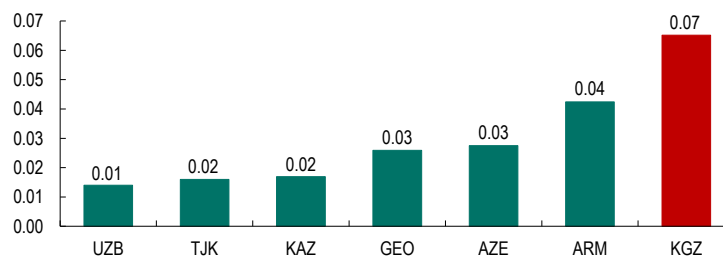
Figure 5. Unit Labor Costs per Industry in the Kyrgyz Republic
(in KGS per unit of real output, lower value – higher competitiveness of the sector)



Source: National Statistical Committee.

Note: Unit labor costs are calculated as the ratio of the wage costs per worker to the real output per worker in a specific sector.

Figure 6. Unit Labor Costs in 2023: Cross-country Analysis
(in USD per unit of real output, lower value – higher competitiveness)

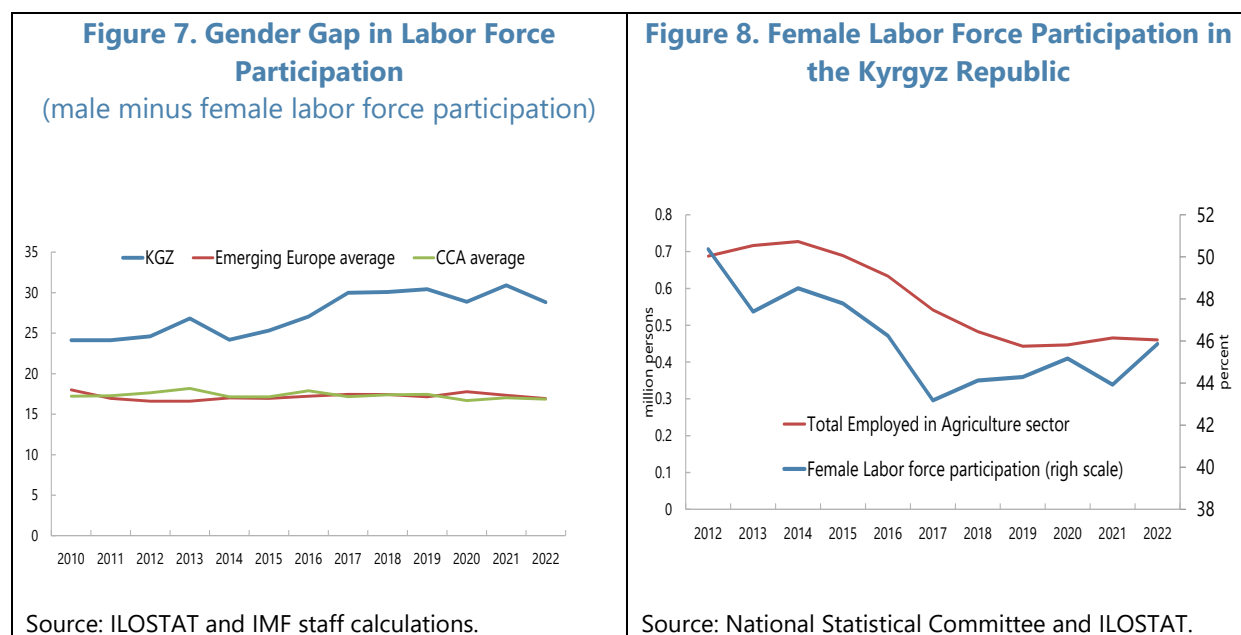


Source: National Statistical Committees.

Note: Unit labor costs are calculated as the ratio of the real wage costs per worker to the real GDP per worker in constant 2015 prices.

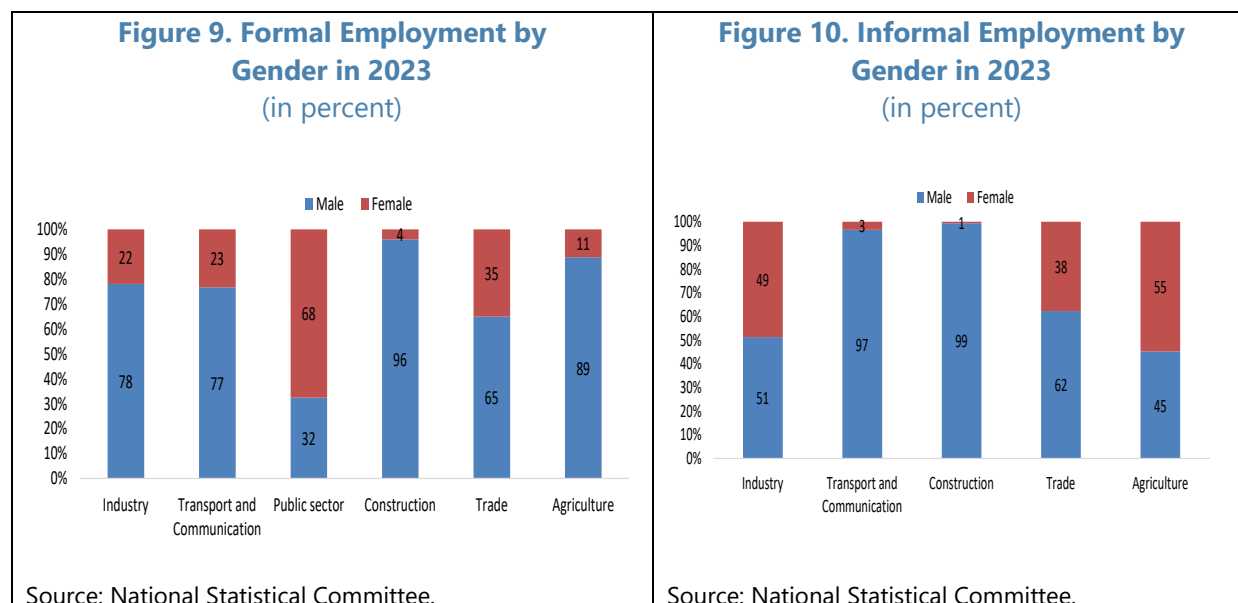
10. The unit labor costs in the Kyrgyz Republic are higher than elsewhere in the CCA region (Figure 6). Moreover, a 5 percent average annual increase in real wages in the Kyrgyz Republic since 2018 has been outpaced only by that of Kazakhstan and Uzbekistan. Since productivity remains low and with gains well below real wage increases, unit labor costs are therefore becoming less competitive compared to regional peers.

11. The gender gap in labor force participation in the Kyrgyz Republic is sizable and the fastest-growing in the region. Approximately 70 percent of working-age men are employed compared to only 45 percent of women (Figure 7). This disparity is partly driven by parenthood, as women often leave the labor force for caregiving responsibilities, whereas men's participation remains largely unaffected. The limited availability of affordable childcare further restricts women's employment opportunities and contributes to their higher unemployment rates relative to men. Additionally, remote work, which began emerging rapidly after the COVID-19 shock, remains underdeveloped in the Kyrgyz Republic, making it difficult for women to work from home. In this regard, the recent revisions to the Labor code, which envisage remote and hybrid work arrangements by agreement between the parties, is a welcome development. While the gender gap has historically been relatively high compared to peer countries, it widened further starting in 2014 as the agricultural sector—traditionally a major employer of women—began to shrink. For example, employment in the agricultural sector declined from 727,000 in 2014 to 460,000 in 2022 (Figure 8). While men were able to transition to other sectors, many women were unable to find alternative employment.

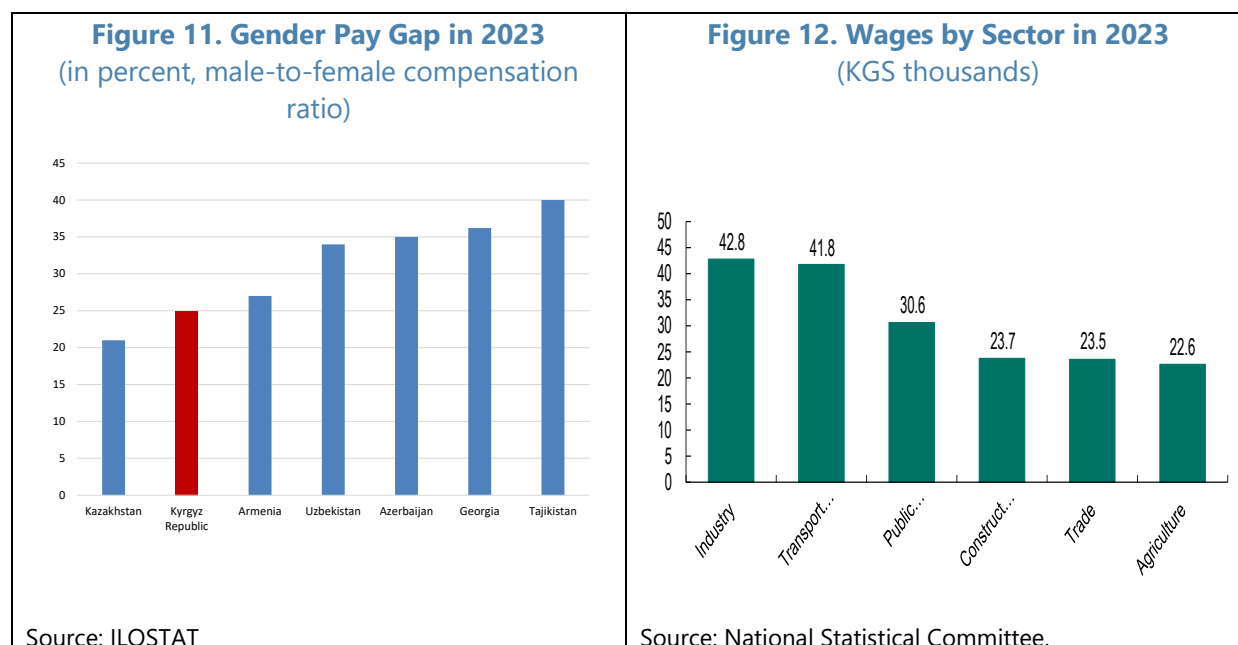


12. While gender disparities persist across the labor market, the nature and extent of these gaps differ significantly between the formal and informal sectors. The gender gap in the formal sector is relatively small (Figure 9) but remains significant in the informal sector (Figure 10). In both sectors, men are predominantly employed in industries such as services, manufacturing, and construction, with some jobs legally inaccessible to women. The public sector has a higher

proportion of female employees, largely due to the strong presence of women in education and healthcare, where they play a critical role in the country's workforce. Formal sector jobs, especially in public service, provide greater stability and career progression opportunities. In the informal sector, however, women are concentrated in low-wage, insecure jobs with limited opportunities for advancement.



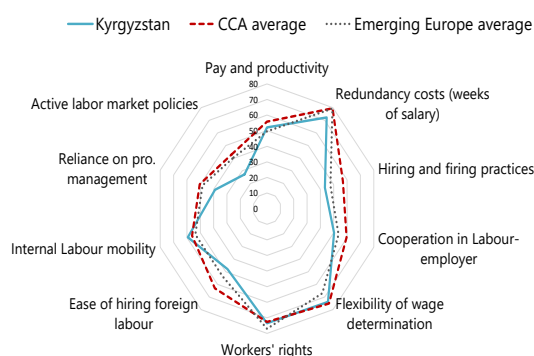
13. The gender pay gap in the Kyrgyz Republic is relatively small compared to peer countries. On average, women in the Kyrgyz Republic earn 25 percent less than men (Figure 11). This disparity is partly due to the fact that women are predominantly employed in lower-paying sectors such as agriculture and trade, while higher-paying industries like industry, transport, and communication are primarily male-dominated (Figure 12).



C. Policies Affecting the Labor Market

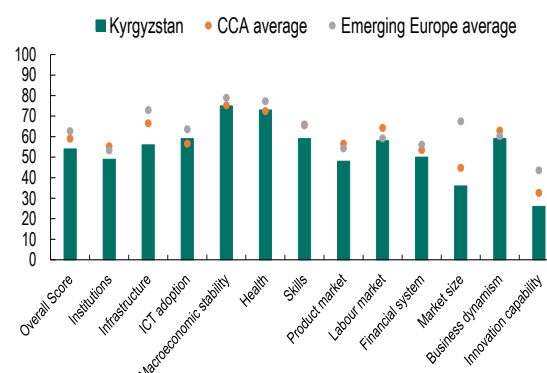
14. Labor market regulations in the Kyrgyz Republic are more restrictive compared to the average of CCA countries. Based on World Economic Forum's Global Competitiveness Index it ranks below its regional comparators on most labor market components, including active labor market policies, reliance on professional management, the ease of hiring foreign labor and procedures for hiring and firing employees (Figure 13 and 14). For example, compared to Kazakhstan's streamlined procedures for hiring skilled foreign workers, Kyrgyz Republic's quota system and burdensome procedures for obtaining work permits complicate hiring of foreign talent. Firing and hiring procedures are also cumbersome and time-consuming. Employers must adhere to strict documentation requirements and justifications to terminate employees, which increases compliance costs. This contrasts with Kazakhstan and Uzbekistan, which provide more flexibility to employers. These rigidities increase compliance costs, which can be particularly burdensome for small and medium-sized enterprises, contributing to informality in the economy. Informal labor arrangements often bypass minimum wage requirements and social protections, weakening labor market efficiency and equity. Recently, however, the new Labor Code envisages simplified mechanisms for concluding employment contracts, which provides additional flexibility.

Figure 13. Labor Market Regulation Indicator
(higher the score the better market regulation)



Source: 2019 Global Competitiveness Report of World Economic Forum.

Figure 14. Global Competitiveness Index



Source: 2019 Global Competitiveness Report of World Economic Forum.

15. Labor market “safety net” programs play a limited role in the CCA region and in the Kyrgyz Republic. Determining and verifying eligibility for unemployment benefits is a challenge due to significant informal employment. Tracking informal workers and their pay is difficult, which increases the risk of ineligible claims for unemployment benefits (Brollo, Ibarra, and Campante Vale, 2024). Further complications arise from limited technical and administrative capacity to provide job search assistance and training, which are essential elements of an efficient unemployment benefit scheme. The average unemployment benefit coverage in the Kyrgyz Republic is 0.3 percent, compared to 5.4 percent in other CCA countries and 20 percent in EMEU (Table 2). Unlike advanced economies, where these benefits automatically expand during economic shocks to stabilize household income and consumption, they are static in the Kyrgyz Republic.

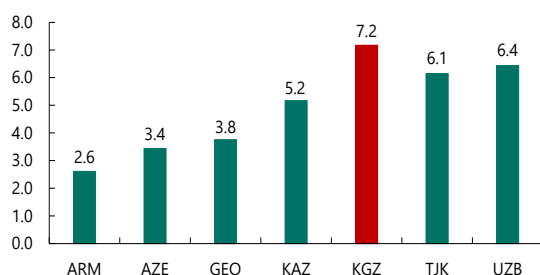
Table 2. Kyrgyz Republic: Unemployed Benefit Coverage
(percentage of unemployed receiving unemployment benefits)

| | |
|--------------------------------|-------------|
| ARM | 0.0 |
| AZE | 1.6 |
| GEO | 0.0 |
| KAZ | 23.2 |
| KGZ | 0.3 |
| TJK | 6.5 |
| UZB | 6.0 |
| CCA average | 5.4 |
| Emerging Europe average | 20.0 |

Source: ILOSTAT.

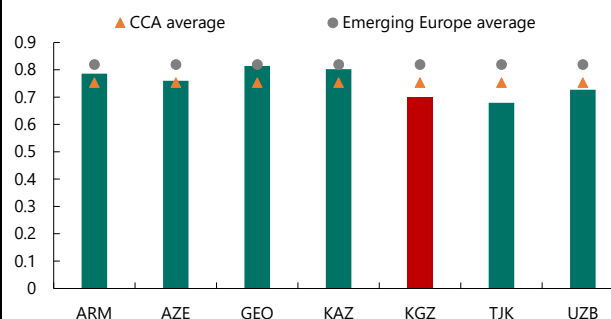
16. The Kyrgyz Republic's spending on education is the highest in the region, but education outcomes are weaker. The government spending on public education covers 11 years of schooling and exceeds 7 percent of GDP (Figure 15). However, learning-adjusted years of schooling is only 8.4 years, while 64 percent of primary school graduates are not proficient in reading and comprehension⁷ and the primary school completion rate is 93 percent⁸. These are lower than the respective regional averages⁹. Preschool coverage in the Kyrgyz Republic is the lowest in the region. Only 28.3 percent of kids are covered by preschool education, while in Kazakhstan and Uzbekistan, this indicator is 92.5 percent and 74 percent, respectively¹⁰. Expected years of schooling for men and women are similar but below their international comparators.

Figure 15. Public Education Expenditures in 2023
(Percent of GDP)



Source: IMF GFS

Figure 16. Human Development Index, 2022



Source: Human Development Report 2023-2024.

⁷ The World Bank's Learning Poverty brief for the Kyrgyz Republic, 2019.

⁸ The World Bank's Human Capital brief, 2023.

⁹ According to the World Bank's Human Capital Index, learning adjusted years of schooling is 10.5 for Kazakhstan, 9.2 for Uzbekistan, and 8 for Tajikistan.

¹⁰ National Statistical Committees of Kyrgyzstan, Kazakhstan, and Uzbekistan.

17. There is significant room to improve the quality of education in the Kyrgyz Republic.

The weaknesses, especially in tertiary education, are reflected in skill mismatches in the labor market. Sixty percent of adults in the Kyrgyz Republic have less than a basic understanding of literacy and numeracy in a problem-solving context, including computer literacy. In comparison, the average rates in Europe and Central Asia countries are 22 percent for literacy and 25 percent for numeracy (World Bank 2022). According to the 2023 World Bank Enterprise Survey, the lack of skilled and adequately educated workers is one of the main obstacles for businesses. The Kyrgyz Republic also falls below the averages for the CCA and EMEU on the Human Development Index (Figure 16).

D. Conclusion and Policy Options**18. Improving labor market efficiency is a critical policy objective to address the challenges posed by the expected increase in the labor force.**

Staff analysis suggests that the Kyrgyz economy needs to grow by over 6.5 percent per year in the medium to long term to create sufficient jobs for about 50,000 new entrants in the labor market each year. Without higher growth and more flexible labor market regulations the country will face a formidable challenge of containing unemployment, poverty, social inequality, and outmigration of talents. Structural reforms that improve the business climate, including measures that strengthen governance, transparency and competition, and support private sector development can raise potential output and help generate more jobs and income.

19. There is significant room for improvement in the design of labor market policies to reduce inequality, increase productivity, and decrease informality. The labor market requires more flexible hiring and retention rules that prioritize protecting workers rather than protecting jobs, as seen in more advanced economies. This approach can enhance labor market flexibility, reduce informality, and promote economic growth by enabling firms to adjust their workforce more efficiently and encouraging formal employment. Additionally, simplifying procedures for hiring foreign professionals would facilitate knowledge transfer and enhance the private sector's efficiency.

20. Strengthening the social safety net and developing active labor market policies is essential. Establishing an unemployment insurance system and expanding vocational training programs and job search assistance can better align training with labor market demands and improve employment outcomes. The unemployment insurance system should scale up during economic downturns and scale back when the economy stabilizes. Additionally, job placement services, career counseling, and upskilling opportunities would provide essential support to job seekers.

21. Reforming the education system is another important policy objective. Inadequate education results in a skills and gender gaps, low wages, higher unemployment and informality, and limits the economy's capacity to diversify and transition into higher-value industries. Reforms should focus on delivering more years of quality learning and skill development to align with labor market

demands, improving tertiary education and expanding access to vocational training programs.¹¹ Enhancing education would also help mitigate emigration.

22. Implementation of reforms aimed at strengthening gender equality could increase female labor force participation and contribute to economic growth. Ending gender restrictions on access to certain positions is important. Expanding affordable childcare services, promoting flexible work arrangements, and developing skills training programs tailored to women would empower them to participate more actively in the workforce, unlock their potential and contribute to overall economic prosperity.

¹¹ The Government of the Kyrgyz Republic has adopted Education Development Strategy 2040 aiming to improve the quality of education.

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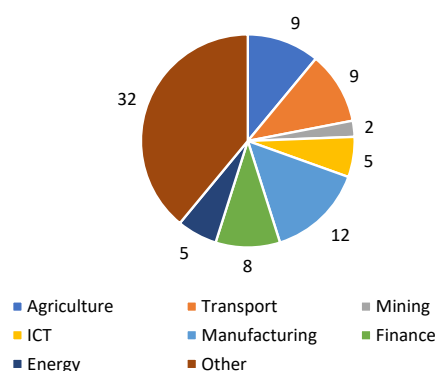
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KYRGYZ REPUBLIC: FISCAL RISKS FROM STATE-OWNED ENTERPRISES¹

A. Introduction

1. State-owned enterprises (SOEs) play an important role in the economy of the Kyrgyz Republic. There are eighty-two SOEs (Figure 1), broadly classified in two groups according to their legal status: Joint Stock Companies (JSCs), which are fully or majority state-owned, and State Enterprises (SEs), with both groups making roughly equal proportions. This number exceeds the OECD average of 51 SOEs. The largest SOEs operate in strategically and economically important sectors, including energy, mining and quarrying, finance, and communications sectors. In 2023, the total assets of major SOEs accounted for 50 percent of GDP, while their revenues represented 15 percent of GDP, underscoring their significant economic footprint (State Agency for the Management of State Property – SAMSP, 2024).

Figure 1. Sectoral Distribution
(Number of SOEs)



Source: SAMSP (2024) and IMF staffs calculations.

2. The financial soundness of SOEs may impact fiscal outcomes through different channels. Taxes, royalties, and dividends received from SOEs contribute to overall government revenue. Governments may face potentially substantial costs when SOEs struggle to service their debt, in case of explicit loan guarantees. In many cases, SOE-related fiscal risks are implicit and can weigh on public finances even in the absence of contractual obligations. For instance, the government may need to provide support in the form of subsidies, transfers, or recapitalization to ensure continuity of operations of SOEs and prevent arrears that may negatively impact the whole economy (Baum and others, 2020).

3. The purpose of this paper is to shed light on fiscal risks from Kyrgyz Republic's SOEs. First, it considers SOE-related fiscal risks from an aggregate perspective based on the state-guaranteed debt, contingent liabilities, and the budgetary impact of SOEs. Second, it uses firm-level data to assess the risks emanating from important SOEs by assessing their financial performance (profitability, liquidity, and solvency) using the IMF's SOE Health Check Tool (IMF, 2021a).² The last section of the paper concludes and recommends policies.

¹ Prepared by Natalie Manuilova (FAD), Anh Dinh Minh Nguyen (FAD) and Erkeaim Shambetova (MCD).

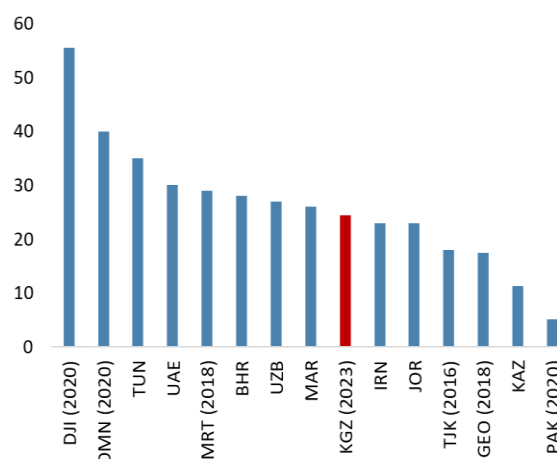
² <https://www.imf.org/en/Topics/fiscal-policies/Fiscal-Risks/Fiscal-Risks-Toolkit/Fiscal-Risks-Toolkit-SOE-HCT>

B. Fiscal Risks: Aggregate Perspective

4. Contingent liabilities from SOEs are significant, therefore posing potential fiscal risks.

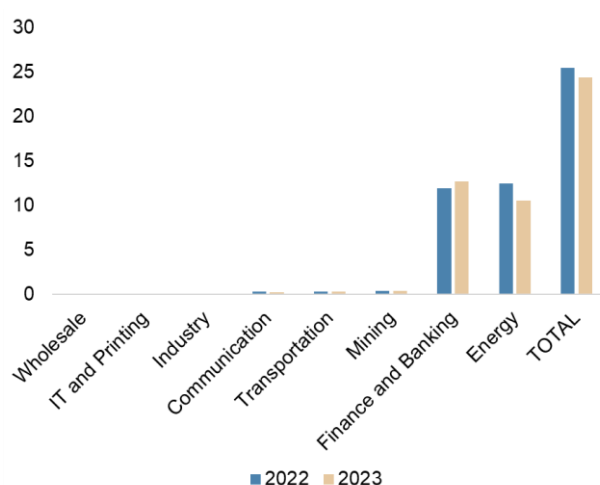
The total amount of liabilities of the largest twenty-eight SOEs amounted to 25 percent of GDP in 2022 and 2023 (SAMSP, 2024), which is in the middle range of countries in the Middle East, North Africa, and Central Asia (henceforth, ME&CA) (Figure 2). This sizeable level of liabilities can be a source of concern, particularly if SOEs have low profitability or/and their assets are insufficient to cover their debts. A sectoral breakout indicates that non-financial SOEs held liabilities equivalent to 12 percent of GDP as of end 2023, with about 90 percent of the debt concentrated in the energy sector (Figure 3). While total liabilities in the energy sector fell by 2 percent of GDP over 2022-23, thanks to GDP growth, they increased in nominal terms by above 10 percent from KGS 127 billion to KGS 140 billion, primarily because of large operating losses. However, a mitigating factor is that approximately 85 percent of these liabilities are long term debt, reducing short-term fiscal pressures. Meanwhile, the liabilities of SOEs in the finance and banking sector amounted to 13 percent of GDP in 2023, but their large asset base significantly reduces their fiscal concern (Figure 4).

Figure 2. Contingent Liabilities of SOEs
(Percent of GDP)



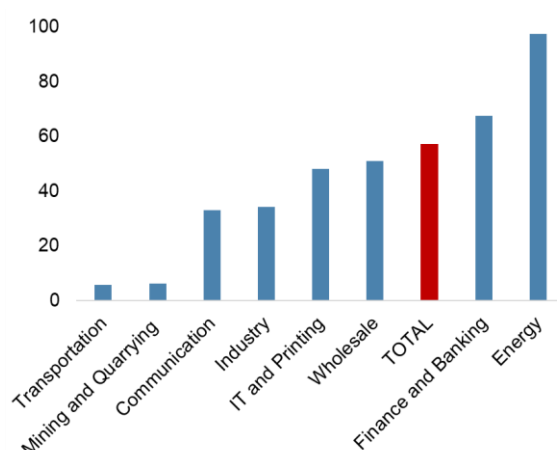
Source: IMF (2021b), SAMSP (2024), and IMF staffs calculations. The data is 2019 or the latest.

Figure 3. Liabilities of Large SOEs by sector
(Percent of GDP)

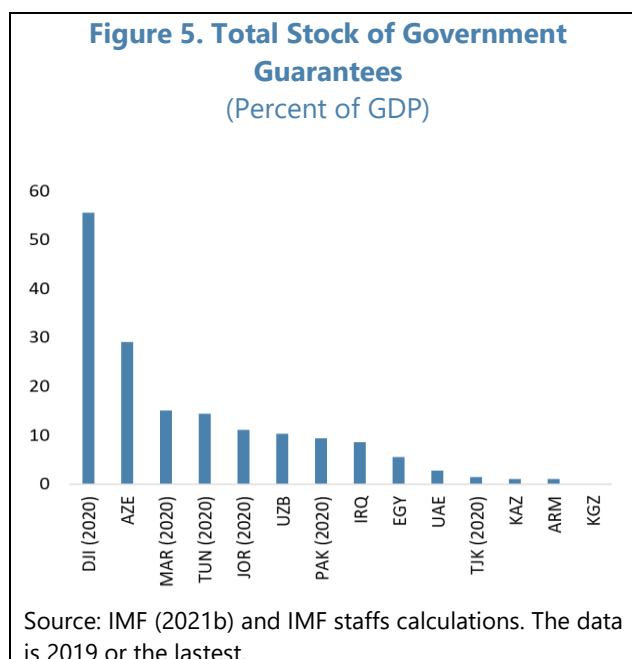


Source: SAMSP (2024) and IMF staffs calculations

Figure 4. Debt-to-Asset Ratio in 2023
(Percent)



5. There is currently no outstanding state-guaranteed debt for SOEs. The Kyrgyz Republic introduced a moratorium on state guarantees in 2007 in its medium-term public debt strategy, later reinforcing it with a special clause in the Budget Code.³ For comparison, the state-guaranteed debt is about 10 percent in the ME&CA as well as in European Union countries on average (Figure 5 and Nguyen, 2024). On-lending of external loans to SOEs by the Ministry of Finance, however, implies de-facto guarantees. Additionally, a couple of agencies issue guarantees and sureties on behalf of the central government like Guarantee Fund and Finance and Credit Fund of the Ministry of Finance. Although the amounts are small, they have a potential to grow if not managed under prudent fiscal oversight.



6. Solvency risks vary across sectors, with the energy sector posing a significant concern. The debt-to-asset (D/A) ratio, which measures the debt burden relative to assets and serves as an indicator of solvency, remains below 50 percent for most sectors. The lowest D/A ratios are observed in the transportation and mining and quarrying sectors (less than 10 percent). On the other hand, the D/A ratio for the energy sector was about 97 percent in 2023, increasing by almost 10 percentage points from 89 percent in 2018 mainly due to operating losses, therefore indicating an elevated risk of solvency, particularly if losses continue.

7. Fiscal support to SOEs has been balanced out with their contribution to the budget in 2022-2023. The average contribution of SOEs to the budget was 1.4 percent of GDP, with (direct) tax contribution of 0.5 percent of GDP and dividends of 0.9 percent of GDP. This is broadly equal to the direct fiscal support to SOEs, including subsidies (about 0.6 percent of GDP) and lending (about 0.9 percent of GDP).

8. The establishment of National Investment Fund should be accompanied with fiscal discipline to limit potential risks. The National Investment Fund (NIF) was established by the Cabinet of Ministers in November 2024 with an objective to improve the efficiency of SOEs corporate management and ensure their long-term growth. Lessons from international experience highlight the need for careful implementation, as many of these funds have struggled to achieve their objectives (Bauer, 2014). The challenges mainly stem from inadequate financial management and weak governance frameworks, as well as a poor integration of such funds into the budget process, which in turn is hampering fiscal discipline and leading to fiscal risks. Therefore, it is vital to

³ Recent changes in the Budget Code could allow the Government to issue guarantees under certain conditions.

ensure transparency and accountability of the NIF, prevent overlapping responsibilities with the SPMSP while continue strengthening SOEs oversight. Given that the NIF is tasked with assisting SOEs in attracting funding and investments, the SPMSP should oversee SOE fiscal risks to prevent a conflict of interest for the NIF. Consistent policy frameworks and full disclosure of financial performance are key principles for managing holding companies to mitigate risks related to borrowing, quasi-fiscal activities, and contingent liabilities, and reinforcing long-term fiscal stability. Moreover, it is crucial to avoid preferential treatment of SOEs and maintain a level playing field for all businesses.

C. Fiscal Risks: Firm-Level Analysis

9. This section complements the aggregate perspective with a firm-level analysis of fiscal risks by assessing the financial health of major SOEs in the Kyrgyz Republic. Table 1 describes the main sources of risks and the associated key financial indicators to assess the potential for those risks to arise. These indicators encompass three aspects—profitability, solvency, and liquidity—to identify risks across the entire portfolio of key SOEs in recent years. Specifically, *profitability metrics* assess an SOE's efficiency in using its assets to generate returns for its shareholders. *Solvency metrics* evaluate an SOE's ability to withstand unexpected losses, repay its debt in the long term, and continue operating as a going concern. Finally, *liquidity metrics* reflect an SOE's ability to service its current liabilities and how readily it can convert assets into cash.

Table 1. Kyrgyz Republic: Fiscal Risks and Financial Indicators

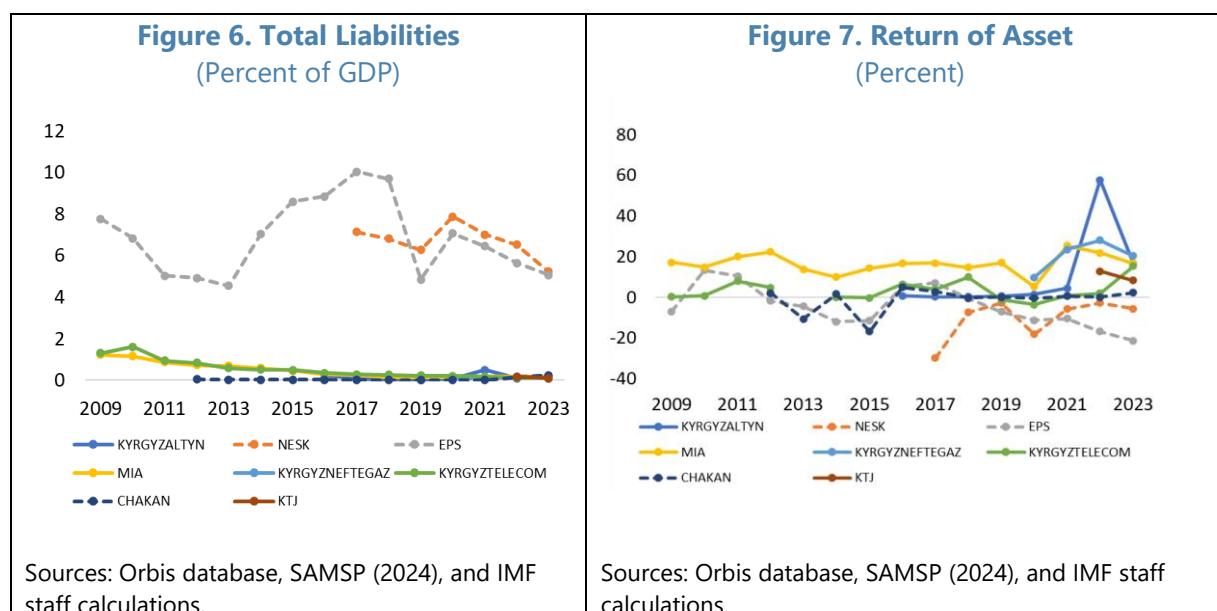
| Fiscal Risk | Main Source of Risk at SOE level | Key Financial Indicators |
|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|
| Lower dividends and taxes | <ul style="list-style-type: none"> • Lower revenues • Higher costs | Deteriorating profitability indicators |
| Higher subsidies | <ul style="list-style-type: none"> • Higher cost of subsidized activities | Deteriorating profitability indicators |
| Equity injections | <ul style="list-style-type: none"> • Losses eroding equity • Unsustainably high debt levels • Write-off or impairment of assets | Deteriorating solvency indicators (debt to assets) |
| Increased borrowing needs | <ul style="list-style-type: none"> • Weak internal generation of cash (often due to poor profitability) • Poor working capital management (collection from debtors and payment of creditors) • Inadequate access to market financing to meet obligations as they fall due | Deteriorating liquidity or solvency (interest coverage) indicators |
| Materialization of contingent liabilities | <ul style="list-style-type: none"> • Weak internal generation of cash (often due to poor profitability) • Inadequate access to market financing to meet obligations as they fall due | Deteriorating liquidity or solvency (interest coverage) indicators |

Source: IMF (2021a).

Table 2. Kyrgyz Republic: Selected SOEs for Analysis

| A. Enterprise | B. Sector |
|--------------------------------------------------|-------------------------|
| • National Electric Network of Kyrgyzstan (NESK) | • Energy |
| • Electric Power Stations (EPS) | • Energy |
| • Chakan GES | • Energy Transportation |
| • Kyrgyz Temir Zholu (KTZ) | • Mining and Quarrying |
| • Kyrgyzaltyn | • Mining and Quarrying |
| • Kyrgyzneftegaz | • Telecommunications |
| • Kyrgyztelecom | • Transportation |
| • Manas International Airport (MIA) | |

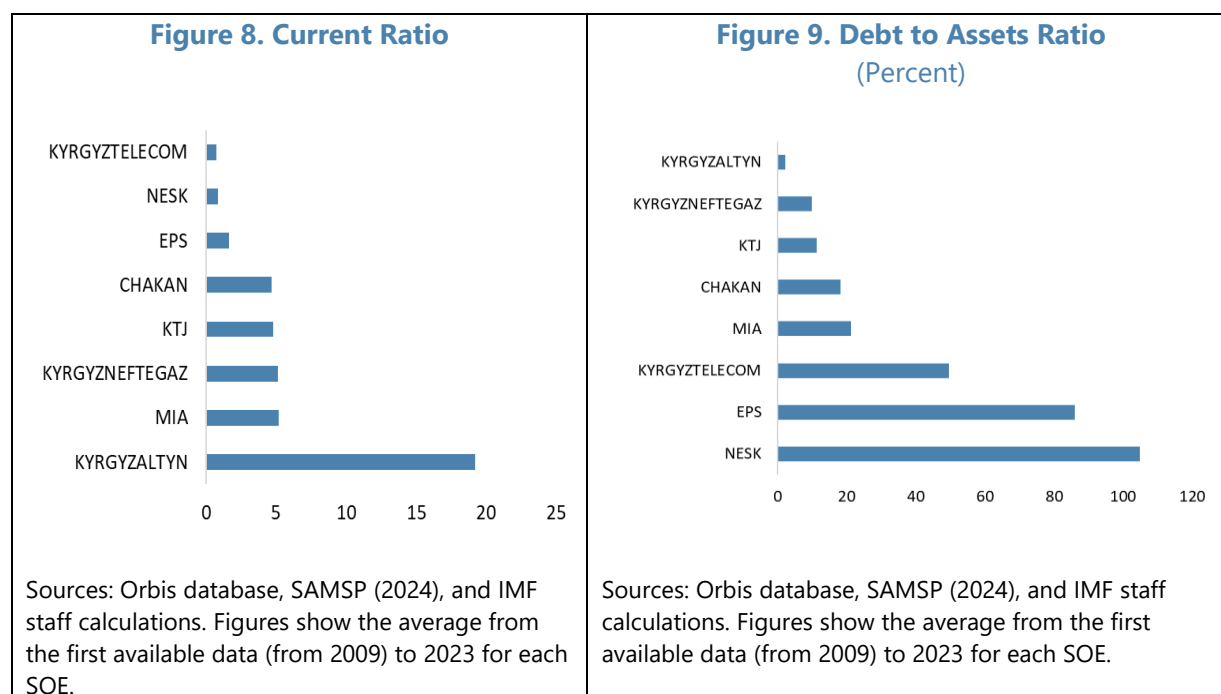
10. The analysis focuses on selected eight large non-financial SOEs in different sectors of the economy. These SOEs operate in four strategically important sectors of the economy, including energy (3 SOEs), transportation (2 SOEs), telecommunications (1 SOE), and mining and quarrying (2 SOE) (Table 2).⁴ These SOEs account for approximately 95 percent of the total assets and liabilities of the non-financial SOEs analyzed in the SAMSP 2024 report. Therefore, evaluating their financial performance can further help identify sources of fiscal risks arising from SOEs. In addition, high concentration of liabilities in two energy SOEs –NESK and EPS – highlights the need for a further in-depth analysis of their financial position and sustainability, and closer monitoring of their financial health by the MoF (Figure 6).



⁴ Among eight selected SOEs, Kyrgyz Temir Zholu is a state enterprise and other SOEs are joint stock companies.

11. While the majority of large SOEs are profitable, the energy sector SOEs are loss-making. The SAMSP (2024) reports that, among twenty-eight largest SOEs, twenty-two made total of profit of KGS 35.5 billion in 2023. Meanwhile, six SOEs incurred aggregate losses of KGS 18.9 billion, resulting in an aggregate net profit of KGS 16.6 billion. These losses are generated primarily by the energy sector SOEs. Among the eight largest SOEs analyzed in this paper, all three energy companies, EPS, NESK, and Chakan had lower return of asset (ROA) compared to SOEs in other sectors (Figure 7). EPS and NESK have continuously reported losses in most years since 2009, while Chakan's profitability remains close to zero. These persistent financial challenges largely stem from below-the-cost residential tariffs for electricity, cost inefficiencies of operations, as well as poor governance (World Bank, 2020; Shambetova and van Houtte, 2024).

12. Low profitability has led to liquidity challenges. Kyrgyztelecom and NESK have an average current ratio below 1, indicating insufficient liquid assets to pay the amounts due to creditors in the short run (i.e., 12 months) (Figure 8). While EPS's current ratio is above 1 on average, it has declined steadily from 2 in 2021 to 1.1 in 2023, signaling rising liquidity concerns. In addition, NESK and, to some extent, EPS face heightened solvency concerns due to high debt-to-asset ratios of close to 100 percent. A firm with the ratio greater than 100 percent and negative equity is technically insolvent. These indicators imply the need for adjustments to enhance solvency and financial viability of energy SOEs. In 2024 the debt to asset ratio of NESK declined sharply to 64 percent from 99 percent in 2023, mainly due to capital injections, which lowers its solvency risks.



13. The IMF's State-Owned Enterprise Health Check Tool (IMF, 2021) is applied to provide a comprehensive assessment of the fiscal risks at the firm level. The tool presents the risks associated with metrics of profitability, liquidity, and solvency. Twelve indicators are associated with the metrics (Table 3).

Table 3. Kyrgyz Republic: Financial Indicators in Three Metrics: Liquidity, Solvency, and Profitability

| Ratios | Description |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Liquidity | |
| Current Ratio | Measures an SOE's ability to meet short-term liabilities (those falling due within 12 months) from liquidating short-term assets. A high ratio indicates that the company is better able to withstand shocks and still meet its current liabilities |
| Quick Ratio | A stricter form of current ratio, this measures an SOE's ability to meet short-term liabilities with only the most liquid short-term assets. A high ratio indicates that the company is better able to withstand shocks and still meet its current liabilities |
| Debtor Turnover Days | Measures the speed with which a company is paid by its customers. A high ratio could indicate that the SOE is taking a long time to collect amounts owed by its customers and may face increasing liquidity challenges. |
| Creditor Turnover Days | Measures the speed with which an SOE pays its suppliers. A high ratio indicates that the SOE pays its suppliers more slowly and may indicate the build up of arrears or worsening financial condition. |
| Solvency | |
| Debt to Assets | Measures the proportion of a company's financing that comes from liabilities. This ratio helps to assess whether the company is solvent and the size of the debt burden on the entity. Debt financing is more cost-effective and therefore most companies maintain some level of leverage, but a high ratio indicates greater reliance on debt financing and has less financial flexibility. |
| Debt to Equity | Measures the proportion of a company's financing that comes from liabilities relative to equity. This ratio helps to assess whether the company is solvent and the size of the debt burden on the entity. Debt financing is more cost-effective and therefore most companies maintain some level of leverage, but a high ratio indicates greater reliance on debt financing and has less financial flexibility. |
| Debt to EBITDA | Indicates the ability of a firm to service any debt it holds. The indicator indicates, at the current rate of cash generation, the number of years it would take for the company to generate sufficient cash to pay off all its debt. A higher indicator indicates a more indebted company, where there is a higher risk that it may not be able to service its debt. |
| Interest Coverage | Indicates whether an SOE is generating sufficient operating profits to cover financing costs and still remain profitable. A high ratio indicates that the entity has more capacity to absorb shocks and still cover its financing costs. |
| Cash Interest Coverage | Indicates whether an SOE is generating sufficient cash to cover its financing costs. A high ratio indicates that the entity has more capacity to absorb shocks and still cover its financing costs. |
| Profitability | |
| Return on Assets | Measures the allocative efficiency of the company in managing its assets to produce profits. A high ratio indicates that larger profits are being generated per unit of asset |
| Return on Equity | Measures the ability of a firm to generate profits using the capital its shareholders have invested in the company. A higher ratio indicates that the company is generating higher returns for each unit of equity |
| Cost Recovery | Measures ability to generate adequate revenue to cover operating expenses. A ratio < 1 indicates entity is unable to cover its operating expenses and is not sustainable without supplementary funding. A higher ratio indicates a company better able to withstand shocks and remain profitable and sustainable |

Source: IMF (2021).

14. The tool categorizes risk levels for each indicator into five tiers. The risk level increases from low risk (Category 1) to high risk (Category 5) (Table 4). These thresholds are applied to all SOEs to ensure a consistent comparison, despite industry-specific risk variations. Most thresholds align with common benchmarks (Halstead and others, 2021), with two exceptions. First, for ROE, SOEs are classified in the lowest risk category if their ROE exceeds 16 percent, which is the 90th-percentile of ROEs of firms in the Kyrgyz Republic.⁵ The low-to-moderate risk rating (Category 2) is for SOEs that generate at least a return of 8 percent – which is the median ROE across both private and public firms. Loss-making SOEs are included in the two highest-risk categories. Second, for ROA, the thresholds for Categories 1 and 2 are derived from the ROE-related thresholds, adjusted by an

⁵ This includes both private enterprises and SOEs, where data is available in the Orbis database. The last available year in most cases is 2023 or 2024. The selected value is close to the default parameter of 20 percent in the toolkit.

asset-to-equity leverage ratio of 2 for SOEs over the 2022-23 period (i.e., ROE thresholds divided by 2).

Table 4. Kyrgyz Republic: Risk Thresholds

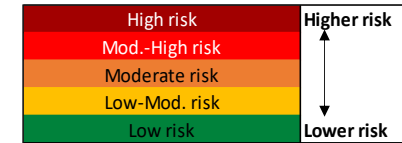
| Profitability | Low risk | Low- | Moderate | Moderate | Moderate | High risk |
|------------------------|--------------|----------|----------|----------|-------------|-----------|
| | | Moderate | risk | risk | - High risk | |
| Return on assets | greater than | 8% | 4% | 0% | -5% | |
| Return on equity | greater than | 16% | 8% | 0% | -10% | |
| Cost recovery | greater than | 1.5 | 1.3 | 1.0 | 0.8 | |
| Liquidity | | | | | | |
| Current ratio | greater than | 2.0 | 1.5 | 1.3 | 1.0 | |
| Quick ratio | greater than | 1.2 | 1.0 | 0.8 | 0.7 | |
| Debtor turnover days | less than | 30.0 | 40.0 | 50.0 | 75.0 | |
| Creditor turnover days | less than | 30.0 | 60.0 | 90.0 | 120.0 | |
| Solvency | | | | | | |
| Debt to assets | less than | 30% | 50% | 80% | 100% | |
| Debt to equity | less than | 50% | 100% | 150% | 200% | |
| Debt to EBITDA | less than | 1.5 | 2.0 | 3.0 | 5.0 | |
| Interest coverage | greater than | 2.0 | 1.5 | 1.2 | 1.0 | |
| Cash interest coverage | greater than | 3.0 | 2.0 | 1.5 | 1.0 | |
| Debt coverage | greater than | 0.8 | 0.6 | 0.4 | 0.3 | |

Sources: IMF (2021a) and IMF staff calculations.

Note: The threshold set for Category 2 (low-to-moderate risk) means that any indicator with a lower/higher value (depending on the indicator) will be classified as Category 1 (low risk). Indicators lying between Category 2 and Category 3 thresholds, Category 3 and Category 4 thresholds, and Category 4 and Category 5 thresholds will be classified as Category 2 (low-to-moderate risk), Category 3 (moderate risk), and Category 4 (moderate to high risk), respectively. Indicators beyond the Category 5 threshold will be classified as Category 5 (high risk).

15. SOEs in energy and telecommunications sectors had risk ratings above moderate levels in the pre-COVID period. These include: NESK, EPS, and Kyrgyztelecom (Table 5.A), which had low profitability and liquidity ratios (see also Figure 8), and also a high solvency risk, particularly in terms of their ability to service outstanding debt, as measured by the ratio of debt to earnings before interest, tax, depreciation, and amortization (EBITDA). A higher indicator denotes a more indebted company, and a higher risk of default. These SOEs also face challenges in covering financing costs (as captured by low interest coverage). Furthermore, a high debt-to-equity ratio signaled greater reliance on debt financing compared to equity, increasing financial vulnerability. By contrast, the other three SOEs with available data (Chakan, MIA, and Kyrgyzaltyn) had risk ratings below the moderate level, though both Chakan and Kyrgyzaltyn showed some profitability concerns.

Table 5. Kyrgyz Republic: Kyrgyzstan SOEs Health Check



A. 2019

| | Profitability | | | Liquidity | | | | Solvency | | | | | Overall Risk |
|----------------|------------------|------------------|---------------|---------------|-------------|----------------------|------------------------|----------------|----------------|----------------|-------------------|------------------------|--------------|
| | Return on Assets | Return on Equity | Cost Recovery | Current Ratio | Quick Ratio | Debtor Turnover Days | Creditor Turnover Days | Debt to Assets | Debt to Equity | Debt to EBITDA | Interest Coverage | Cash Interest Coverage | |
| NESK | | | | | | | | | | | | | |
| EPS | | | | | | | | | | | | | |
| CHAKAN | | | | | | | | | | | | | |
| MIA | | | | | | | | | | | | | |
| KYRGYZALTYN | | | | | | | | | | | | | |
| KYRGYZTELECOM | | | | | | | | | | | | | |
| KTJ | | | | | | | | | | | | | |
| KYRGYZNEFTEGAZ | | | | | | | | | | | | | |

B. 2023

| | Profitability | | | Liquidity | | | | Solvency | | | | | Overall Risk |
|----------------|------------------|------------------|---------------|---------------|-------------|----------------------|------------------------|----------------|----------------|----------------|-------------------|------------------------|--------------|
| | Return on Assets | Return on Equity | Cost Recovery | Current Ratio | Quick Ratio | Debtor Turnover Days | Creditor Turnover Days | Debt to Assets | Debt to Equity | Debt to EBITDA | Interest Coverage | Cash Interest Coverage | |
| NESK | | | | | | | | | | | | | |
| EPS | | | | | | | | | | | | | |
| CHAKAN | | | | | | | | | | | | | |
| MIA | | | | | | | | | | | | | |
| KYRGYZALTYN | | | | | | | | | | | | | |
| KYRGYZTELECOM | | | | | | | | | | | | | |
| KTJ | | | | | | | | | | | | | |
| KYRGYZNEFTEGAZ | | | | | | | | | | | | | |

Sources: Orbis database, SAMSP (2024), and IMF staff calculations.

Note: SOEs are ordered by size of liabilities in 2023 from largest to smallest. Blank space is where the data is not available for calculation. SOEs in the energy sector are coloured in blue in the first column.

16. SOEs' financial performance outside the energy sector improved noticeably in 2023 compared to the pre-COVID period. MIA has consistently maintained a low-risk rating, while both Kyrgyzaltyn and Kyrgytelecom have shown a gradual risk reduction, particularly due to profitability and solvency improvements over the 2019–2023 period (Table 5.B and Annex Table A2). Nevertheless, liquidity risk remains a concern, as evidenced by low current and quick ratios. Two SOEs – KTJ and Kyrgyzneftegaz - where data is only available for the post-COVID period, are classified as low-risk rating.

17. In contrast, concerns persist with SOEs in the energy sector. The risk ratings of NESK and EPS remained above moderate in 2023, reflecting ongoing challenges in profitability, liquidity, and solvency. However, NESK has improved in cost recovery, generating adequate revenue to cover operating expenses. Meanwhile, Chakan's rating deteriorated compared to 2019, primarily due to a significant increase in debt between 2019 and 2023.

18. NESK and EPS exhibit weaker financial performance compared to their international SOE peers.⁶ Two groups of international electricity-generating SOEs are considered: (i) SOEs with a similar operating revenue range (about 200 SOEs) and (ii) top 1,000 SOEs by operating revenue (Table 6). The median operating revenue of SOEs in these two groups are about \$200 million, though the latter has a larger interquartile range due to a larger sample⁷.

- **Profitability:** Unlike NESK and EPS, peer SOEs have positive ROA and ROE, greater than 2 percent and 5 percent on average, respectively. Additionally, NESK's and EPS's returns fall significantly below the first quartile of peers, highlighting their lower allocative efficiency in using assets to produce profits. EPS's cost recovery of 0.7 is also notably weaker than most of its peer. Lower profitability is due to the below-the-cost tariffs, which highlights the importance of continuing the ongoing tariff reform to reach full cost-recovery by 2030.
- **Employment:** Lower productivity contributes to the weak profitability of EPS and NESK. Both SOEs employ 20 times more staff than their peers, resulting in significantly lower operating revenue or profit per employee.
- **Liquidity:** while EPS's current ratio of 1 aligns with peer benchmarks, NESK faces higher liquidity risk, as reflected in the current ratio being three times lower than the industry average.
- **Solvency:** Both EPS and NESK rely more heavily on debt financing than their peers, reducing financial flexibility and increasing solvency risks.

⁶ For international comparison the analysis focuses on these two SOEs because they have significantly larger stock of debt (as percent of GDP) than other SOEs.

⁷ The findings remain when comparing NESK with international SOE peers in the group of NACE Rev. 2 industry classification: 3512 - Transmission of electricity, as shown in Annex Table 1.

Table 6. Kyrgyz Republic: International Comparison with SOEs in Electricity Sector
(2023 or last available data)

| | NESK | EPS | Similar International SOEs in Revenue <i>(Median, 25th and 75th range)</i> | Top 1000 International SOEs <i>(Median, 25th and 75th range)</i> |
|-----------------------------------------|-------------|------------|--------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| Operating Revenue (ml USD) | 264 | 184 | 220 [182 ; 267] | 220 [71 ; 657] |
| Profitability | | | | |
| ROA (%) | -5.6 | -21 | 2 [-2.1 ; 5.5] | 3.3 [0.2 ; 6.3] |
| ROE (%) | -399 | -999 | 5.5 [-1.5; 14.5] | 9.4 [1.3; 17] |
| Cost recovery | 1.1 | 0.7 | 1.1 [1.0 ;1.3] | 1.1 [1.0; 1.3] |
| Liquidity | | | | |
| Current ratio (%) | 0.4 | 1.1 | 1.4 [1.0; 1.8] | 1.2 [0.8; 2.0] |
| Solvency | | | | |
| Debt to Assets (%) | 99 | 98 | 68 [46; 80] | 68.6 [50; 87] |
| Employment | | | | |
| Number of employees | 10400 | 5246 | 247 [132; 468] | 218 [65 ; 768] |
| Operating revenue per employee (th USD) | 25 | 35 | 786 [445; 1510] | 848 [465 ; 1706] |
| Profit per employee (th USD) | -5 | -31 | 29 [0; 160] | 88 [14 ; 279] |

Source: Orbis database and IMF staff calculations

Note: Similar international SOEs, column 4th, are SOEs amongst the standard peer group with revenues close to those of EPS and NESK, including SOEs with revenue between EPS's and NESK's revenues (about 90 SOEs), 50 SOEs with revenue higher than NESK, and 50 SOEs with revenue smaller than EPS. Top 1000 international SOEs according to the Operating revenue (Turnover) amongst the standard peer group. The standard peer group is based on NACE Rev. 2 industry classification: 3511 - Production of electricity.

19. The debt-to-equity swap potentially helps improve financial health of energy SOEs. In 2022 the Cabinet of Minister issued a decree to convert an outstanding debt to capital in the two largest energy companies, EPS and NESK, totaling KGS 10.7 billion in 2023, KGS 55.8 billion in 2024, and KGS 57 billion in 2025. These amounts are roughly equal to the loan repayments toward the

state budget in 2026-2030.⁸ This conversion of part of their outstanding debt into equity, released debt pressure of SOEs' balance sheet and improved their financial health. However, this measure should be accompanied by full financial disclosure.

D. Conclusion and Recommendations

20. The findings from both aggregate and firm-level based analyses indicate potential SOE-related factors that can contribute to fiscal risks. Contingent liabilities of 12 percent of GDP, mainly from the energy sector, could lead to long-term fiscal challenges. A detailed firm-level analysis confirms that major energy SOEs consistently underperform their international peers, partially due to below-the-cost tariffs and cost inefficiencies of operations. In addition, these SOEs are consistently incurring heavy losses and have difficulties in managing short-term debts. They also have high liabilities relative to their assets, therefore raising concerns about long-term solvency.

21. These issues call for the following policy recommendations:

- **It is important to closely monitor financial performance of SOEs and identify mitigation measures timely.** This includes establishing a (digital) unified database between the MoF and SAMSP that facilitates the information exchange and analysis of SOEs' financial performance and fiscal risks assessment. The aggregate report on SOEs' financial performance in the 2023 SAMSP report is a welcome step towards this objective.⁹ The MoF's Statement of Information on Fiscal Risks and its chapter on fiscal risks stemming from SOEs is gradually evolving. It could be further supplemented with tables and charts from the IMF SOE Health Check Tool, and its coverage should increase over time to cover the energy sector SOEs.
- **It is crucial to implement reforms aimed to improve SOEs' financial performance.** First, it is important to continue the tariff reform to improve cost-recovery for the energy SOEs and reduce the costs of their quasi-fiscal activities. Second, while the ongoing debt to equity conversions improve financial viability, they should be accompanied by full financial disclosure. Third, reforms should continue to strengthen the SOE governance—management, oversight, and transparency. Over time, these will have a positive effect on SOEs' financial performance, increasing productivity and lowering costs. In addition, such reforms can help boost the overall economic competitiveness and productivity, given the crucial role of SOEs in the production network of the economy.

⁸ Debt-to-equity conversion is made by the Ministry of Finance that becomes a co-shareholder of the energy companies, with its stake to reach 1/3 of the total share capital. The Ministry of Energy would remain the majority shareholder with the rest of the stake.

⁹ In 2024 the SAMSP issued a comprehensive report covering 28 largest SOEs. The report was completed with support of the world Bank and ADB. It covers many important aspects of SOEs' activities including their financial performance and measures undertaken by the government to improve the SOE policy and management.

Annex I. The Global Comparison

Annex Table 1. Kyrgyz Republic: NESK and International Comparison
(2023 or last available data)

| | NESK | Similar International SOEs in Revenue <i>(Median, 25th and 75th range)</i> | International SOEs <i>(Median, 25th and 75th range)</i> |
|-----------------------------------------|-------------|--------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|
| Operating Revenue (ml USD) | 264 | 264 [166; 479] | 65 [12; 858] |
| Profitability | | | |
| ROA (%) | -5.6 | 2.9 [0.9; 6.3] | 2.7 [0.4 ; 6.4] |
| ROE (%) | -399 | 6.8 [2.0; 12.5] | 6.5 [1.2; 12.1] |
| Cost recovery | 1.1 | 1.1 [1.0; 1.3] | 1.1 [1.0; 1.3] |
| Liquidity | | | |
| Current ratio (%) | 0.4 | 1.2 [0.7; 1.8] | 1.2 [0.7; 2.0] |
| Solvency | | | |
| Debt to Assets (%) | 99 | 54 [43 ; 70] | 49 [25 ; 67] |
| Employment | | | |
| Number of employees | 10400 | 571 [248 ; 1452] | 284 [45 ; 1925] |
| Operating revenue per employee (th USD) | 25 | 470 [230; 1150] | 406 [62 ; 1053] |
| Profit per employee (th USD) | -5 | 46 [7.0 ; 199] | 34 [3.1 ; 169] |

Source: Orbis database and IMF staff calculations

Note: Similar international SOEs, column 4th, are SOEs amongst the standard peer group with revenues close to those of NESK, including 50 SOEs with revenue higher than that of NESK, and 50 SOEs with revenue smaller than that of NESK. International SOEs are those in the standard peer group, which is based on NACE Rev. 2 industry classification: 3512 - Transmission of electricity, whose revenue is greater than USD 1 million. This group has about 460 companies in Orbis database.

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