

# Republic of Kazakhstan: Selected Issues



# REPUBLIC OF KAZAKHSTAN

## SELECTED ISSUES

December 2022

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# REPUBLIC OF KAZAKHSTAN

November 18, 2022

## SELECTED ISSUES

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# REVISITING TREND OUTPUT GROWTH<sup>1</sup>

*Trend growth in Kazakhstan has decreased to 2–3 percent due to declining contributions of labor and total factor productivity (TFP). COVID-19 may have reduced the long-term trend GDP level, but it is unlikely to have affected trend GDP growth. Structural reforms to reduce the state footprint in the economy, strengthen public and corporate governance, diversify the economy and exports away from extractive sectors, and promote technological change, are critical to increase future trend GDP growth. The monthly trend-cycle decomposition developed in this Selected Issues Paper (SIP) may help expand the information set available to policymakers when taking base rate policy decisions.*

**1. Complementary methods to decompose GDP into its trend and cycle are explored in this SIP,** including purely statistical, semi-structural, and structural models.<sup>2</sup> First, using quarterly data between 1999Q1 and 2022Q1, trend and cycle are estimated with an HP filter (Hodrey Prescott, 1980) and smoothing parameter lambda values as suggested by Ravn and Uhlig (2002).<sup>3</sup> Second, a structural time series model à la Harvey Jaeger (1993) (HJ in what follows) is used to compare results. The HJ set-up is also adapted to work with mixed frequencies to estimate trend and cycle at a monthly frequency (Appendix I). Finally, using annual data between 1999 and 2021, GDP trend and cycle are estimated with a production function approach (Appendix II).

**2. The SIP is structured as follows:** Section B presents and compares alternative short-term estimates of trend-cycle decompositions and their growth rates, highlighting the benefits of monthly estimations. Section C discusses the usefulness of these short-term estimates in assessing future trend levels and growth rates. In particular, section C addresses the end-point problem affecting two-sided filters, the likely long-term economic impact of COVID-19, and alternative trend-cycle decompositions. In section D, priority areas for structural reforms are considered. In conclusion, a summary and policy recommendations are proposed.

## A. Short-Term Estimates

**3. Trend GDP growth has been decreasing since 2005 and quarterly data suggest it is currently at about 2–2½ percent.** The top panels of Figure 1 report the monthly estimates of trend ( $\mu_{tm}$ ) and cycle ( $\psi_{tm}$ ) using the mixed frequency version of the HJ, the quarterly estimates using the base HJ ( $\mu_{tq}$  and  $\psi_{tq}$ ), and the quarterly estimates using the HP filter ( $\mu_{hpq}$  and  $\psi_{hpq}$ ). Headwind episodes (shaded areas in gray) correctly coincide with business cycle troughs (top right panel).<sup>4</sup> In the bottom panels, the figure reports the growth rates of these time series estimates. In particular, the bottom left panel suggests that annualized trend growth is now about 2–2½ percent (see also Table 1).

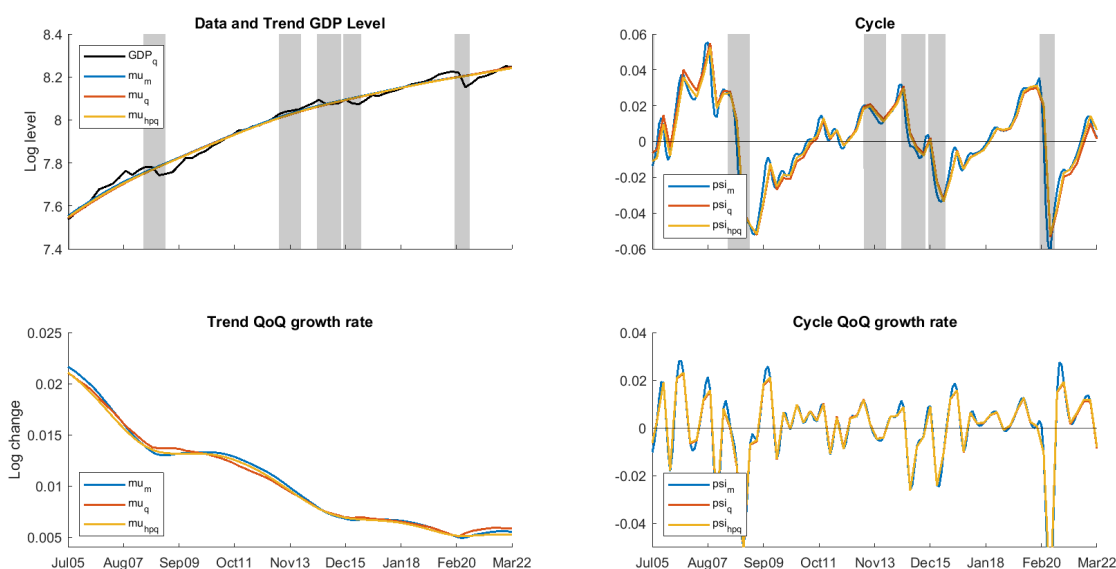
<sup>1</sup> Prepared by Shant Arzoumanian and Gregorio Impavido.

<sup>2</sup> For reviews of different methods, see Cotis et al. (2005), Ladiray et al (2003), or Alvarez and Gomez (2018).

<sup>3</sup> Ravn and Uhlig (2002) state that lambda should vary by the fourth power of the frequency observation ratio; thus, it should equal 1600 for quarterly data, 6.25 for annual data, and 129,600 for monthly data. Values of 100 or 400 for annual data are also used in part of the literature and in this SIP.

<sup>4</sup> Headwind episodes are defined here as two or more consecutive negative QoQ growth of real GDP or sharp decelerations in growth following a time variant methodology inspired by Harding and Pagan (2002).

**Figure 1. GDP Trend and Cycle**  
(Log levels and changes)



Source: Fund Staff calculations.

**4. Annual data suggests instead that current GDP trend growth is between 2-3 percent.**

The last three lines of Table 1 use the HP filter and production function approach with annual data. The results are in line with the previous estimates using quarterly data. For the HP filter, they display a slightly larger dispersion associated with the choice of alternative lambda values. The production function approach shows that trend growth slowed to 2.2 percent in 2021, also in line with the previous methods. All these results are confirmed by other studies. For instance, IMF (2017) finds that Kazakhstan's trend growth peaked at about 10 percent in 2004 before falling to around 2½ percent in 2016.<sup>5</sup>

**5. The declining trend growth is mainly driven by lower contributions of TFP and labor.**

The production function approach sheds light on the determinants of decreasing trend growth (Figure 2). As in many countries, the contribution of labor has been decreasing, likely reflecting lower labor productivity and/or labor market participation.<sup>6</sup> The fact that the contribution of TFP has become negative in recent years suggests that innovation is insufficient.<sup>7</sup>

<sup>5</sup> Alpysbaeva et al. (2021) also arrive at similar conclusions by using an HP filter with a smoothing parameter of 6.25 on annual real GDP for 1991–2019.

<sup>6</sup> Published data on hours worked per week or labor productivity is not available, but ILO data suggests that labor market participation has been decreasing, especially among women.

<sup>7</sup> Data limitations required de-trending TFP. Beside the undesirable practice of extracting a trend from an unobserved residual, this does not account for the correlation between TFP and capacity utilization (i.e., the intensity with which capital is used in the economy). Capacity utilization varies over the business cycle, and not accounting for this may lead to underestimate (overestimate) TFP when capacity utilization is low (high).

**Text Table 1. GDP Trend Growth Estimates**  
(Percent)

Method	Frequency	Projections	2015	2017	2019	2021	2022q1
HJ 1/	Quarterly	No	3.6	2.8	3.5	2.7	2.4
HJ 1/	Monthly	No	3.4	2.6	3.7	2.5	2.2
HP 1/ 2/	Quarterly	No	4.1	2.6	3.4	2.1	2.1
HP 3/	Annual	No	4.0	2.5	3.3	3.0	...
HP 4/	Annual	No	5.1	3.9	3.4	2.0	...
PF	Annual	No	3.5	2.9	2.5	2.2	...

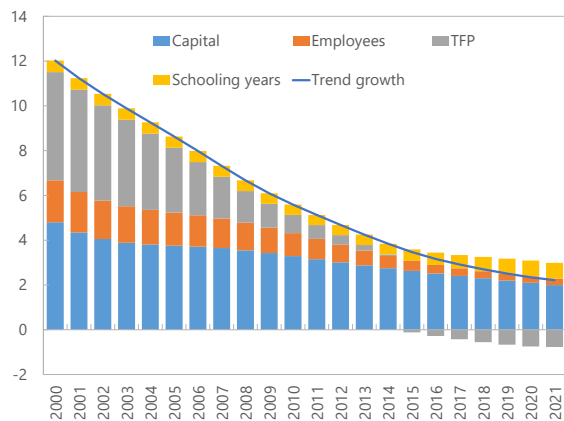
Source: Fund Staff calculations.

"HJ" for Harvey-Jaeger; "HP" for HP filter; "PF" for Production function approach.

1/ Annualized. 2/  $\lambda = 1.600$ . 3/  $\lambda = 6.25$ . 4/  $\lambda = 100$ .

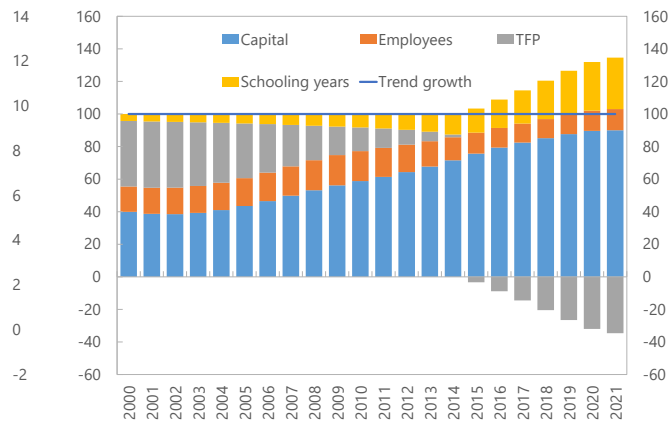
**Figure 2. Contributions to Trend Growth**

Percentage points, YoY



Source: National authorities, Wittgenstein Centre, and Fund Staff calculations

Shares normalized to 100



Source: National authorities, Wittgenstein Centre, and Fund Staff calculations.

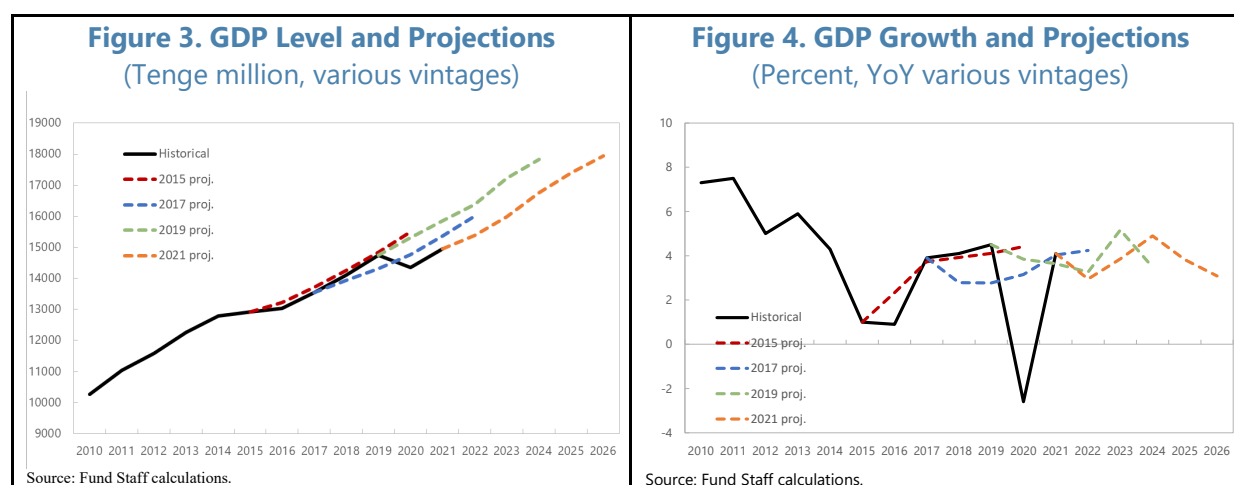
**6. There are similarities across different model estimates presented above, but important differences suggest that the mixed frequency approach could be preferred.** The models largely interpret the trend and cycle similarly, though one interesting departure of the mixed frequency version is the higher variation in the trend of GDP (bottom left panel of Figure 1) relative to the quarterly frequency models. This departure increases the relative amplitude of the cycle, especially during peaks and troughs (right panels of Figure 1). The mixed frequency approach's ability to provide an estimate of the underlying monthly decomposition (something the other methods cannot provide) of the trend and cycle might lead policymakers to favor it when taking policy decisions at this same (monthly) frequency.

**7. The mixed frequency HJ method also provides information that could better inform policymaking than traditional approaches.** There is empirical evidence that a temporal aggregation bias can substantially distort parameter estimates in structural models and, in turn, it can affect policy decisions.<sup>8</sup> The trend-cycle decomposition at monthly frequency attempts to reduce such bias, and it expands the information set available to policymakers, especially when monthly base rate decisions are taken.

## B. Long-Term Estimates

**8. Long-term extrapolations from the above results are explored, even though the HP filter is potentially subject to end-point biases.** HP filters tend to underestimate cycles with higher frequencies close to the end point (Baxter and King, 1995). Similarly, Cogley (1990) suggests that a mechanical use of HP filters may lead to reporting spurious cycles. This problem is accentuated by end-point large negative shocks (relative to trend), such as the COVID-19 pandemic. To minimize it, practitioners often include forecasts in the sample. With these, the HP filter estimates are then influenced by the assumptions underpinning the forecasts, which can again lead to policy biases (Cotis et al. 2005). Notwithstanding this, this SIP also explores the impact of projections in replicating earlier estimates. Figure 3 presents the various vintages of GDP projections used, superimposed on actual GDP. Figure 4 reports their growth rates, which are all assumed to converge to 4 percent in the long run.

**9. Biases from the use of projections seems to affect mainly estimates from the production function approach.** Table 2 (underlined numbers) reports the annual data estimates when projections are used. Any bias in the HP filter stemming from the use of projections is distorted by the choice of lambda, and therefore not evident. However, the production function approach produces trend estimates that are systematically higher when projections are used.



<sup>8</sup> Christiano and Eichenbaum (1987) define temporal aggregation bias as the error that arises in structural model parameter estimates when agents' decision-making frequency is higher than the frequency of data releases. The literature on the subject is vast – see also Kim (2010) and Forni and Marcellino (2014).



**Text Table 2. GDP Trend Growth Estimates**  
(Percent)

Method	Frequency	Projections	2015	2017	2019	2021	2022q1
HJ 1/	Quarterly	No	3.6	2.8	3.5	2.7	2.4
HJ 1/	Monthly	No	3.4	2.6	3.7	2.5	2.2
HP 1/ 2/	Quarterly	No	4.1	2.6	3.4	2.1	2.1
HP 3/	Annual	No	4.0	2.5	3.3	3.0	...
		Yes	<u>3.3</u>	<u>2.6</u>	<u>3.6</u>	<u>2.0</u>	...
HP 4/	Annual	No	5.1	3.9	3.4	2.0	...
		Yes	<u>3.9</u>	<u>3.1</u>	<u>3.4</u>	<u>2.6</u>	...
PF	Annual	No	3.5	2.9	2.5	2.2	...
		Yes	<u>3.5</u>	<u>3.1</u>	<u>2.8</u>	<u>2.8</u>	...

Source: Fund Staff calculations.

"HJ" for Harvey-Jaeger; "HP" for HP filter; "PF" for Production function approach.

1/ Annualized. 2/  $\lambda = 1.600$ . 3/  $\lambda = 6.25$ . 4/  $\lambda = 100$ .

**10. COVID-19 has had an impact mainly on short-term estimates of trend level and growth.** In the short term, it has depressed both trend level and growth through headwinds to labor, capital, and TFP. Overall, the economic contraction in the first half of 2020 is best understood as a combination of a large initial supply shock and a sharp decline in demand, amplified by reduced contact among/mobility of people (IMF 2021a):

- **Labor.** Short-term disruptions to business operations and increased childcare needs prevented some individuals from working, leading to lower employment and participation during COVID.
- **Capital.** Capital investment has fallen in the construction sector due to trade disruptions with Russia, weakening productive capacity.<sup>9</sup>
- **TFP.** TFP may also have been affected by reduced R&D expenditure as businesses redirected resources to priorities such as health, remote work, and addressing supply chain disruptions.

**11. In the long term, COVID-19 may lead to permanent losses in trend levels, but it is unclear whether trend growth will also be affected.** Experience suggests that recessions are typically followed by persistent losses to TFP, but mainly in levels. The extent of long-term GDP losses may vary across countries, depending on economic structures and policy responses to support human capital accumulation, investment, and factor reallocation (e.g., retraining, reskilling, and insolvency procedures) (IMF 2021b). Trend growth, instead, would be affected mainly by demographics and TFP growth:

<sup>9</sup> The apparent strength of investment in Figure 1 may reflect efforts to duplicate information technology equipment for remote work (and not constitute additional capital investment).

- **Demographics.** Under the assumption that it will become endemic in the short term, COVID-19 is not expected to substantially alter fertility, mortality, or migration trends.
- **TFP.** Without destruction of physical capital, COVID 19 may only impact long-term TFP growth through prolonged school closures and early retirement that reduce the human capital of the future workforce. However, it is too early to assess if this impact is statistically significant.

## C. The Importance of Structural Reforms

**12. Future TFP growth will depend on the marginal productivity of capital.** TFP and capital accumulation are endogenous: investment tends to increase labor productivity and the generation and adoption of technological innovations. In Kazakhstan, a large share of investment is still allocated to extractive sectors, and it is unclear whether this will generate significant innovation benefits for the rest of the economy.

**13. Most economies in the Caucasus and Central Asia (CCA) have stopped converging with emerging Europe.** CCA countries inherited similar institutional and policy frameworks from the Soviet Union. The first generation of reforms laid the foundations for transitions to market economies and for macroeconomic stabilization, while income levels and social indicators improved. However, structural and institutional reforms generally slowed in the early 2000s, hampering growth and income convergence with emerging Europe (IMF 2022).

**14. A second generation of reforms is needed to address structural weaknesses impacting trend growth.** These reforms should aim to boost export competitiveness, promote diversification away from oil and commodities, increase FDI in non-extractive industries, reduce the state footprint in the economy by resuming privatizations and promoting private sector development, increase the education of the workforce and reduce skill mismatches, and strengthen governance and the judicial process to promote fair and swift contract enforcement. An ambitious program of reforms was recently announced by President Tokayev in several of these areas.

**15. The impact of structural reforms in Kazakhstan and other CCA countries could be substantial.** IMF (2022) estimates the medium-term gains that CCA countries could reap in terms of growth from various reforms. For Kazakhstan, the largest gains could be achieved by reducing the state footprint, strengthening public and corporate governance, diversifying trade, and, more broadly, through economic diversification away from extractive industry and technological innovation (Table 3).

**Text Table 3. Payoffs from Closing Reform Gaps in the CCA Region**  
(Percent)

	WB WGI	EBRD Transition Indicators				
	Governance	Privatization	Corp. Governance and Enterprise Restructuring	Price Liberalization	Trade & Forex	Competition
Armenia	0.4	0.5	0.0	0.2	0.0	0.0
Azerbaijan	1.1	3.7	0.9	0.2	0.5	0.4
Georgia	0.0	0.0	0.0	0.0	0.0	0.2
Kazakhstan	0.7	1.6	0.9	0.4	1.0	0.2
Kyrgyz Republic	1.2	0.5	0.9	0.0	0.0	0.2
Tajikistan	1.7	2.6	0.9	0.2	1.0	0.4
Turkmenistan	1.8	7.5	3.4	0.7	3.1	0.8
Uzbekistan	1.7	3.2	1.7	0.9	4.1	0.4

Source: IMF (2022).

## D. Conclusions

**16. Various methodologies suggest that annual trend growth in Kazakhstan has declined and it is now about 2–3 percent.**<sup>10</sup> A mixed frequency methodology is also proposed to generate monthly estimates and better inform monthly base rate policy decisions.

**17. Trend growth has been decreasing because of reduced contributions from labor and total factor productivity.** As in many other countries, the contribution of labor has been decreasing likely reflecting either lower labor productivity or participation, or both. In addition, the negative contribution of TFP in recent years, suggests that the country is not innovating.

**18. Structural reforms remain critical to raise future trend GDP growth.** COVID-19 has depressed both trend level and growth in the short term through headwinds to labor, capital, and TFP. It could also affect long-term trend growth through the destruction of human capital, but it is too early to assess the statistical significance of this effect. In any case, structural reforms will be needed to increase trend growth. Priorities include reducing the state footprint, strengthening public and corporate governance, and economic and trade diversification. Increasing the share of investment, including FDI, in non-extractive industries should promote R&D, innovation, and higher TFP.

<sup>10</sup> According to World Bank (2022), productivity growth has been close to zero for the last decade. Average economic growth in the five years prior to COVID was 2.4 percent, against 8½ percent during 1999–2008.

## Appendix I. Output Decomposition in Mixed Frequencies

### A. The Low Frequency Model

#### 1. The model postulates that:

$$y_t = \psi_t + \mu_t$$

where  $t = 1, \dots, T$ ,  $y_t$  is the observed log of real GDP data,  $\psi_t$  is the unobserved (to be estimated) cycle, and  $\mu_t$  is the unobserved (to be estimated) trend. The data generating process of the trend  $\mu_t$  is postulated to be a local linear process in the form of random walk with drift:

$$\begin{aligned}\mu_t &= \mu_{t-1} + \varphi_{t-1} \\ \varphi_t &= \varphi_{t-1} + \xi_t\end{aligned}$$

where  $\varphi_t$  is the unobserved (to be estimated) random walk slope of the trend and the stochastic component  $\xi_t \sim NIID(0, \sigma_\xi^2)$  is normally and independently distributed with mean zero and variance  $\sigma_\xi^2$ . A trend of this form is relatively smooth.<sup>1</sup>

#### 2. The data generating process of the stochastic cycle $\psi_t$ is:

$$\begin{aligned}\psi_t &= \rho \cos(\lambda \psi_{t-1}) + \rho \sin(\lambda \psi_{t-1}^*) + \kappa_t \\ \psi_t^* &= -\rho \sin(\lambda \psi_{t-1}) + \rho \cos(\lambda \psi_{t-1}^*) + \kappa_t^*\end{aligned}$$

where  $\rho$  is restricted to  $\rho \in (0,1)$  to ensure that the cycles are stationary,  $\lambda$  is restricted to allow for cycles between 1.5 and 9 years,  $\psi_t^*$  is an unobserved (to be estimated) variable that has no economic explanation but it is required by the trigonometric set-up of the data generating process of the cycle, and the stochastic components of the cycle are both normally and independently distributed with zero mean and same variance:  $(\kappa_t, \kappa_t^*) \sim NIID(0, \sigma_\kappa^2)$ .

**3. There are four unobserved variables ( $\mu_t, \psi_t, \psi_t^*, \varphi_t$ ) and four structural parameters ( $\rho, \lambda, \sigma_\eta^2, \sigma_\kappa^2$ ) to estimate.** This is a natural application for the Kalman filter as, at its core, it can estimate in a recursive fashion via maximum likelihood unobserved parameters and variables by recognizing how to properly weight its last estimate and the new measurement information to form an optimal new estimate. In order to apply the Kalman filter the model is cast in its state-space recursive form:

$$y_t = Z\alpha_t$$

<sup>1</sup> Notice that Harvey and Jaeger (1993) assume instead an ARIMA(0,2,1) trend by adding a random component also to the level, in addition to the slope. At the same time, they argue that whether this is required or not at the onset, is an empirical matter. The specification used in this annex is more parsimonious and yields qualitatively similar results with the advantage of a smoother trend estimate.

$$\alpha_t = T\alpha_{t-1} + Re_t$$

where  $t = 1, \dots, T$ ,  $y_t$  is the observation equation of the observed log of real GDP,  $Z = [1 \ 0 \ 1 \ 0]$  is the 1x4 row observation vector,  $\alpha_t^T = [\mu_t \ \varphi_t \ \psi_t \ \psi_t^*]$  is the 1x4 row state vector of the

unobserved variables in the state equation,  $T = \begin{bmatrix} 1 & 1 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & \rho \cos \lambda & \rho \sin \lambda \\ 0 & 0 & -\rho \sin \lambda & \rho \cos \lambda \end{bmatrix}$  is the 4x4 state equation

system matrix,  $R = \begin{bmatrix} 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}$  is the 4x4 matrix ordering residuals, and  $e_t^T = [0 \ \xi_t \ \kappa_t \ \kappa_t^*]$  is

the 1x4 row vector of stochastic components in the state equation.

## B. Extension to Deal with Mixed Frequencies

**4. In order to estimate latent variables at higher frequencies the model is extended by adding** the following recursive constraint between variables at lower frequencies (quarterly in our case) and variables at higher frequencies (monthly in our case).

$$A_t = \frac{1}{m_t} \alpha_{t-1} + \frac{m_t - 1}{m_t} A_{t-1}$$

where  $m_t$  is the number of high frequency periods in the low frequency period that, in our specific case with monthly base frequency and quarterly lower frequency, rotates among (1,2,3).

**5. With this recursive average,<sup>2</sup> the model becomes:**

$$y_t = Z\alpha_t$$

$$\begin{bmatrix} \alpha_t \\ A_t \end{bmatrix} = \begin{bmatrix} T & 0 \\ \frac{T}{m_t} & \frac{m_t - 1}{m_t} \end{bmatrix} \begin{bmatrix} \alpha_{t-1} \\ A_{t-1} \end{bmatrix} + \begin{bmatrix} R \\ \frac{R}{m_t} \end{bmatrix} e_t$$

<sup>2</sup> When using log of GDP, this assumption is necessary to preserve the linear nature of the state space model. The approximation follows Mariano and Murasawa (2010) and it arises from the fact that the standard accounting identity used for quarterly GDP is the arithmetic average and not the geometric average of the time series. Mitchell *et al.* (2005) finds this to be a good first-order approximation in the case of GDP.

## Appendix II. The Production Function Approach

**1. Following IMF (2017), the estimation approach uses a Cobb-Douglas production function denoted by the following equation:**

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

where  $A_t$ ,  $K_t$ , and  $L_t$  stand for TFP, capital and labor, respectively. The parameter  $\alpha$  refers to the share of output attributed to capital, and  $1 - \alpha$  is the share attributed to labor. Since the methodology assumes constant returns to scale, the coefficients of labor and capital (the shares of income distributed to each factor of production) sum to 1. While it is common in the empirical literature to apply income shares of 0.65 for labor and 0.35 for capital in Advanced Economies, country-specific parameters are preferable.

**2. Firm-level data from Orbis are used to estimate parameters  $\alpha$  and  $1 - \alpha$  for Kazakhstan.**

Using a cross-section of Kazakh firms, the parameters are obtained through OLS regression along the following specification:

$$\ln(y_i) = \alpha_0 + \alpha \ln(k_i) + \beta \ln(l_i) + \varepsilon_i$$

where  $y_i$ ,  $k_i$  and  $l_i$  stand for output (approximated by value added), capital (approximated by fixed assets) and number of employees of firm  $i$ .<sup>1</sup> Using data in 2019, a cross-sectional OLS regression is estimated with the imposed constraint  $\beta = 1 - \alpha$ . The result yields a coefficient of 0.4 for capital and 0.6 for labor. These coefficients are then used in equation 1 to calculate the trend level. The basic Cobb-Douglas function from equation 1 can be extended in a way that decomposes the labor variable into changes in the number of employees and the level of human capital. This takes into account both the stock of labor and its productivity. The function can be re-written as:

$$Y_t = A_t K_t^\alpha (e^{S_t r} l_t)^{1-\alpha}$$

where  $S_t$  is the average number of schooling years in time  $t$  and  $r$  is a parameter that captures the marginal returns to a year of schooling. Data on average schooling years are obtained from the Wittgenstein Centre at five-year intervals. The parameter for marginal returns to schooling is set at 0.107 based on findings of Psacharopoulos and Patrinos (2004). Capital stock in the initial year is calculated as  $K_0 = I_0 / (g + \delta)$ , where  $I_0$  is the initial investment expenditure,  $g$  is the average growth rate of capital over the sample period and  $\delta$  is the rate of depreciation (assumed to be 0.07 in line with findings for other emerging market economies). Data on output, investment and employment come from the IMF's WEO database. Following the standard growth accounting procedure in equation 1, TFP is calculated as a residual. Next, the HP filter is applied to each factor of production—TFP, capital, number of employees, and years of schooling, using a smoothing parameter of 100. The component-specific trend values are plugged into equation 3 to yield the trend output level. Finally, year-on-year growth rates of the trend output level are computed.

<sup>1</sup> A sample of 430 firms is used in the cross-sectional regression.

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# SPILLOVERS FROM RUSSIA: BUILDING RESILIENCE TO FUTURE SHOCKS<sup>1</sup>

*Kazakhstan and Russia share the second longest land border in the world and maintain strong economic linkages. This paper investigates the impact of Russian cyclical output fluctuations on growth in Kazakhstan and peer economies. Russian growth shocks play a larger role than global factors in explaining domestic growth fluctuations but have a weaker impact on Kazakhstan than on peers. Trade is the primary channel through which the Russian business cycle passes through to domestic activity, while risk premia can be an amplification factor. Higher partner diversification dampens this pass-through by mitigating the impact of contractions in bilateral trade flows.*

## 1. Recent crises have renewed interest in understanding international business cycle transmission.

Since the Global Financial Crisis (GFC), a growing body of literature has highlighted the channels of international business cycle transmission, the most important of which is trade. For instance, Wincoop (2001), Baxter and Koupiratsas (2004), and Imbs (2004, 2006) find that countries with higher levels of bilateral trade have stronger business cycle synchronization. Financial channels also play a role, with more financially integrated economies having higher business cycle co-movements. Hsu et. al (2011) identify FDI as an important transmission channel. Other factors that impact cross-border business cycle correlation include industrial similarity, level of development, and currency union membership.

## 2. This paper assesses the impact of Russian cyclical output fluctuations on Kazakhstan.

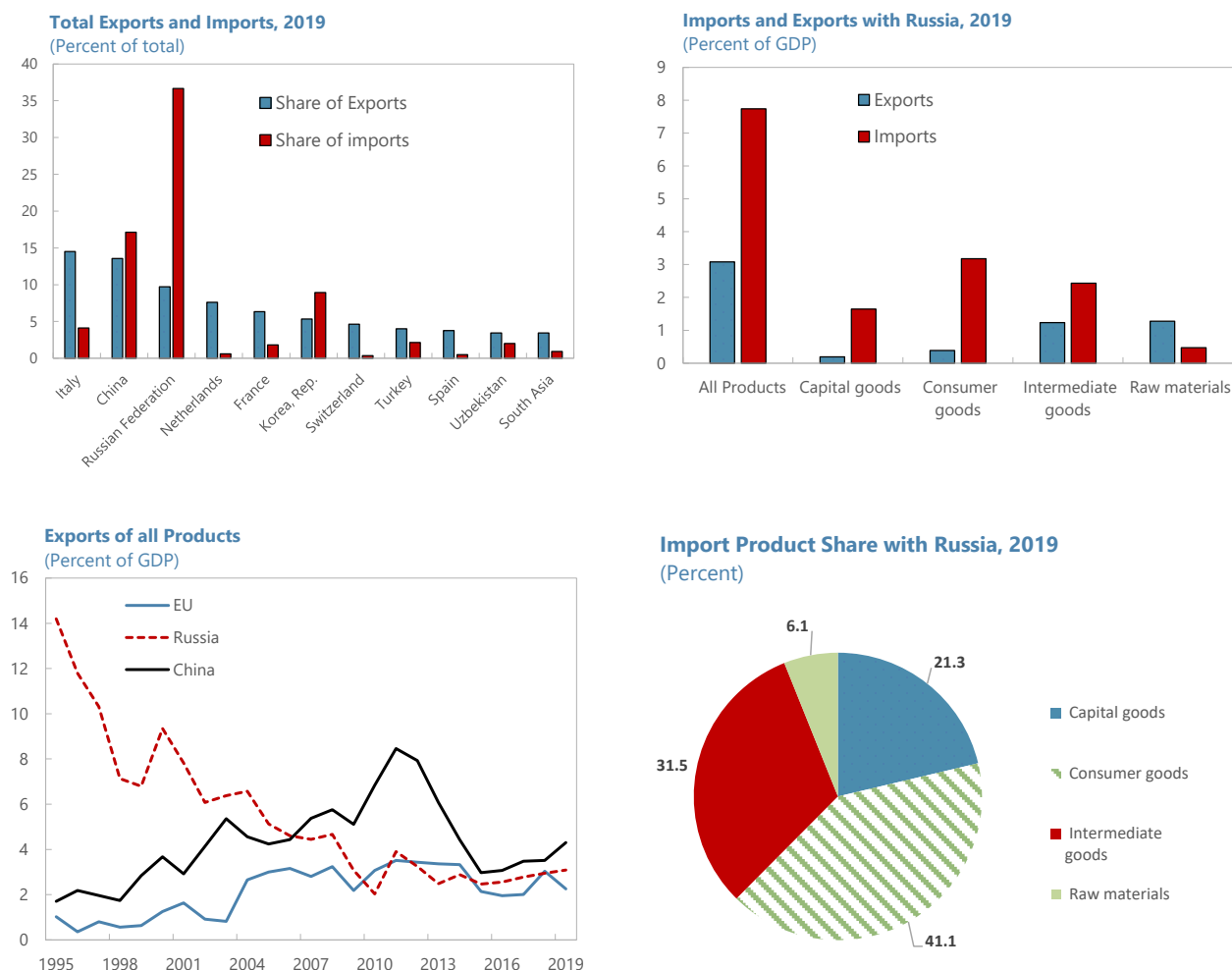
Previous research found that Russia affects neighboring economies primarily through trade, financial, and remittance channels (IMF 2009). Since Kazakhstan does not maintain substantial remittance linkages with Russia, this paper focuses on the trade and financial channels. It documents them (section B), quantifies their impact both overall (section C) and across channels (section D), and reviews how country-specific factors, such as macroeconomic fundamentals, partner diversification, and institutions, influence such impact (section E). Section F concludes.

## A. Stylized Facts

3. **Kazakhstan maintains large trade linkages with Russia** (Figure 1). In 2019, over a third of Kazakhstan's total imports were from Russia (representing about 8 percent of GDP). Imports from Russia consist mainly of consumer and intermediate goods—41 and 32 percent of bilateral imports, respectively. Kazakhstan's exports are more diversified, as its exports to Russia declined substantially over the past three decades, to about 10 percent of total exports in 2019. Since the GFC, China has been Kazakhstan's main export partner.

<sup>1</sup> Prepared by Shant Arzoumanian.

**Figure 1. Kazakhstan Has Strong Trade Linkages with Russia, Particularly Through Imports**



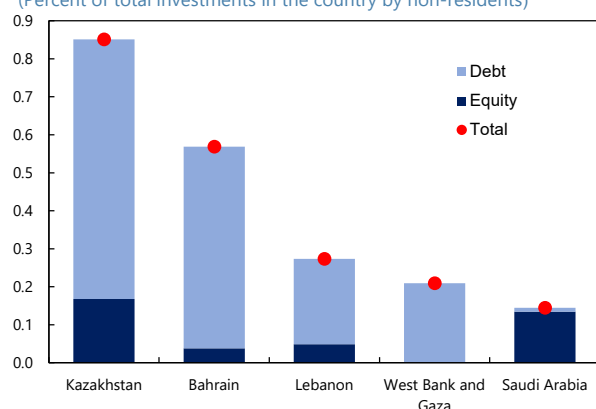
Sources: World Bank, IMF World Economic Outlook, and IMF staff estimates.

**4. Bilateral portfolio and FDI linkages are small.** Portfolio investments in Russia by Kazakhstani residents are less than 1 percent of their total portfolio holdings (Figure 2), and mostly in debt securities. Kazakhstan receives limited FDI inflows from Russia compared to peer economies—representing about 3 percent of GDP.

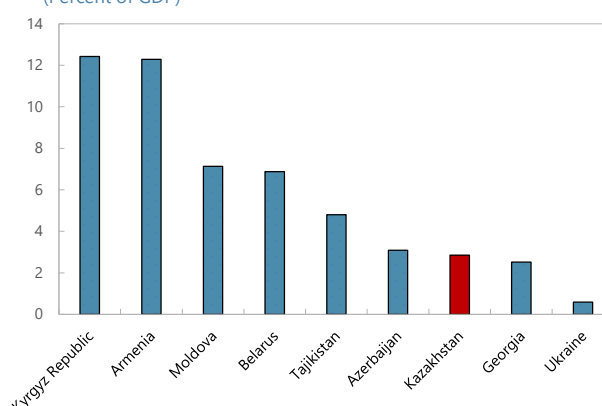
**5. Russia and Kazakhstan's sovereign bond spreads are closely correlated** (Figure 3). Strong sovereign spread co-movements occurred during past shocks (e.g., the GFC, 2015 oil price shock, and COVID-19 pandemic). This likely reflects the importance of common exposures between the two countries. Investors may also anticipate spillovers to Kazakhstan from adverse shocks affecting Russia.

**Figure 2. Cross-Border Financial Linkages with Russia are Small****Portfolio Investment in Russia Held by Residents, 2020**

(Percent of total investments in the country by non-residents)

**Inward Direct Investment Position from Russia, 2020**

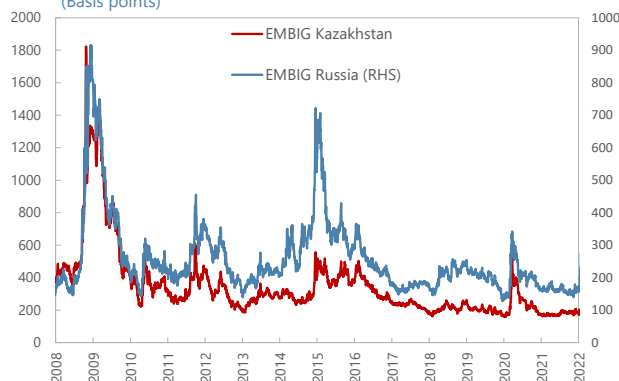
(Percent of GDP)



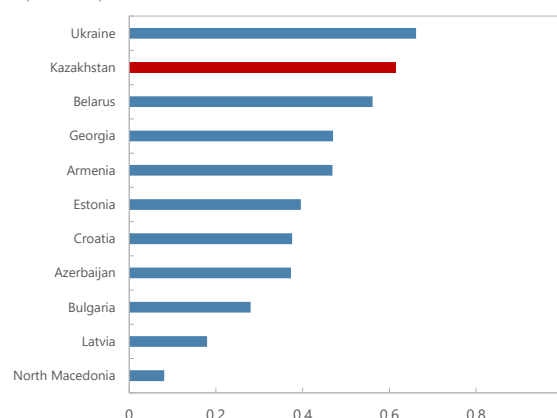
Sources: IMF CPIS database, CDIS database, World Economic Outlook, and IMF staff estimates.

**Figure 3. Sovereign Spreads are Strongly Correlated****Sovereign Bond Spreads**

(Basis points)

**Correlation Between Russian and Domestic Sovereign Bond Spreads**

(2012-2021)



Source: Bloomberg, IMF Sovereign Debt Monitor, and staff estimates.

**B. Quantifying the Effect of Shocks from Russia**

**6. Both VAR and dynamic panel models are used to quantify the impact of Russian cyclical output fluctuations on Kazakhstan and CIS economies.** VAR models allow for analysis of the dynamic relationship between macroeconomic variables. This is crucial when there is strong co-movement between the variables under study. In the context of Kazakhstan, external factors that drive domestic growth fluctuations may be correlated with each other (EU growth, oil prices, Russian growth). The VAR takes into account these complex interactions, and thus permits tracing the effect of shocks back to the appropriate source. The VAR has the following specification:

$$x_t = d_t + A_1(x_{t-1}) + A_1(x_{t-2}) + \dots + A_h(x_{t-h}) + \epsilon_t \quad (1)$$

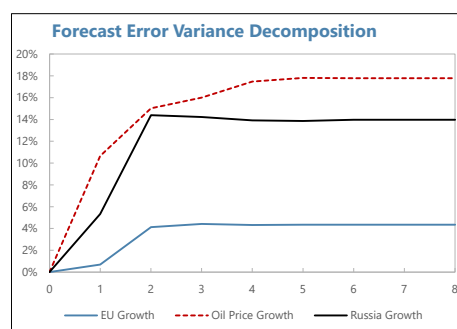
Where:  $x_{t-i}$  is the vector of endogenous variables under consideration, which includes quarterly real GDP growth for the EU, oil price, real GDP growth for Russia, and real GDP growth for Kazakhstan (in this order, i.e., assuming that EU growth is the most exogenous variable, followed by oil prices, and then Russian growth – in line with IMF 2012).  $A_i$  ( $i = 1, \dots, h$ ) is the matrix of parameters, where  $h$  is the number of lags in the model,  $d_t$  is a vector of deterministic components, and  $\epsilon_t$  is the vector of error terms.<sup>2</sup> Country-specific impulse response functions show the time-varying effects of one standard-deviation (SD) orthogonalized shocks to Russia and EU growth on domestic growth fluctuations.

## 7. The VAR approach provides the following key results (Figures 4 and 5):

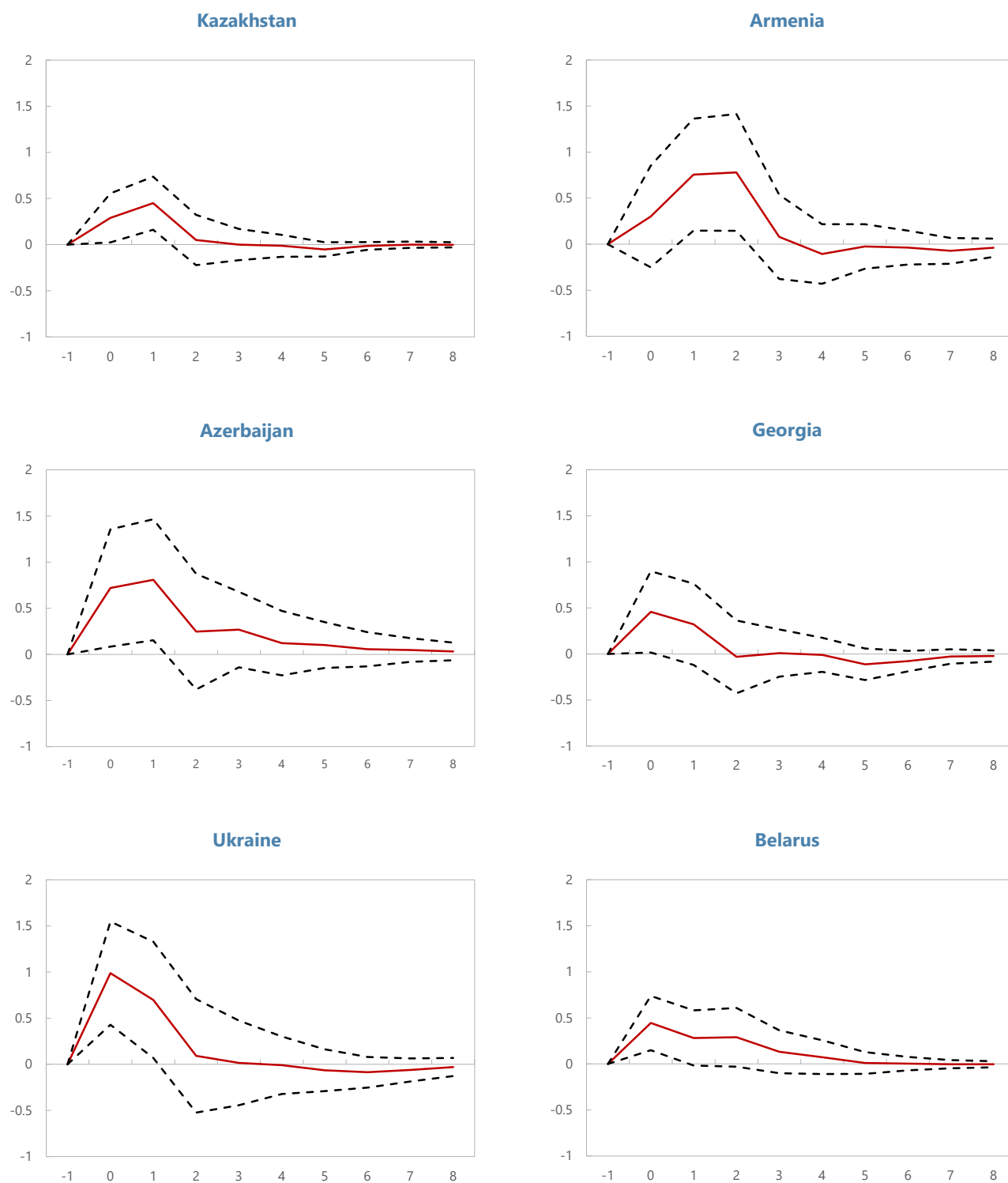
- *Growth shocks in Russia have a significant impact on Kazakhstan.* A one-SD positive growth shock in Russia (1.8 pp increase) raises quarter-on-quarter growth in Kazakhstan by 0.3 pp in the first quarter and 0.5 pp in the next quarter.
- *The impact on Kazakhstan is smaller than in peer countries:* in Armenia and Belarus, the spillover effects peak three quarters after the initial shock, with an impact of 0.8 and 0.6 pp, respectively. They are even larger for Ukraine, reaching one pp in the first quarter and 0.7 pp in the second quarter.
- *Growth shocks in the EU have a smaller impact on Kazakhstan.* A one-SD positive growth shock in the EU (1.9 pp increase) is associated with a 0.25 pp growth increase in Kazakhstan after two quarters.

## 8. Additional analyses confirm that Russia plays a dominant role in explaining Kazakhstan's growth fluctuations:

- *Forecast error variance decompositions confirm that shocks from Russia play a more important role in explaining domestic growth fluctuations (14 percent) than shocks from the EU (4 percent). In addition, oil price shocks are a major factor, explaining 18 percent of domestic growth fluctuations.*

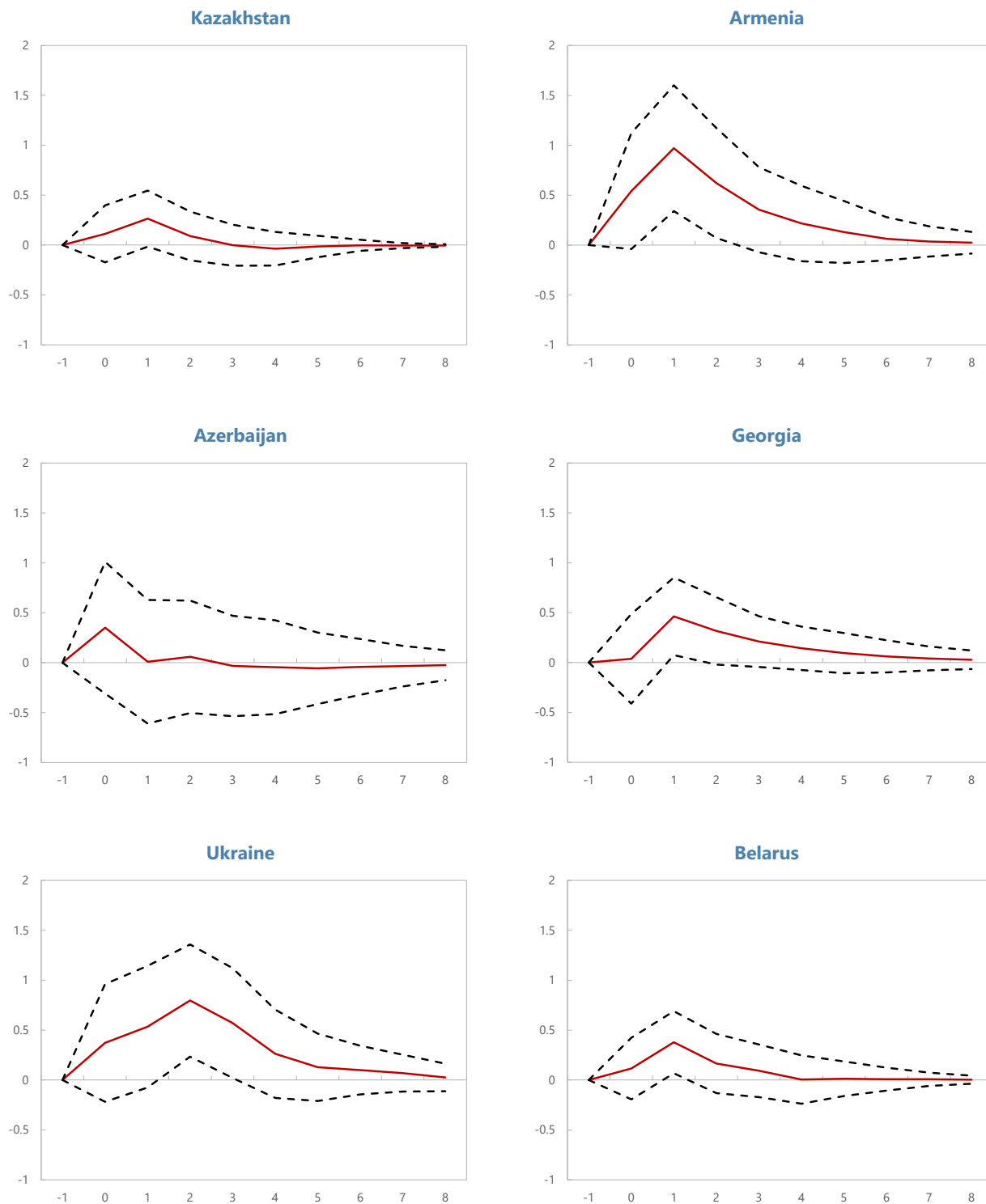


<sup>2</sup> An alternative specification with oil price placed before EU growth produced similar results. The same model is estimated for each country (Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, and Ukraine). The identification of shocks is based on a Cholesky decomposition. To test the null hypothesis of a unit root on each of the four variables, an augmented Dickey-Fuller (ADF) test is employed. The results suggest that all variables in log form are stationary in first differences (delta-log). The VAR uses two lags based on the Akaike and Schwarz lag-selection test.

**Figure 4. Impact of Shocks to Russian Growth on CIS Economies**

Source: IMF staff estimates.

**Figure 5. Impact of Shocks to EU Growth on CIS Economies**



Source: IMF staff estimates.

- *Dynamic OLS regressions* are also used to assess the impact of Russian cyclical output fluctuations on Kazakhstan. The baseline specification is as follows:

$$Y_t = \beta_1(Y_{t-1}) + \beta_2(GRussia_t) + \beta_3(X_t) + \epsilon_t \quad (2)$$

Where the dependent variable,  $Y_t$ , is quarter-on-quarter real GDP growth in the country. To control for potential autocorrelation in real GDP data,  $Y_{t-1}$  is added on the right side. These country-specific and panel regressions also complement the VAR approach by expanding the range of non-Russia variables ( $X_t$ ) to include global factors such as EU real GDP growth, China real GDP growth, and oil prices, as well as domestic factors such as headline CPI and the real effective exchange rate (REER).

Table 1 shows the impact of a one-pp increase in real GDP growth in Russia on real GDP growth. After controlling for non-Russia factors, the impact is of about 1/3 pp increase in real GDP growth in Kazakhstan (first column) and 2/3 pp increase in CIS oil importers (last four columns).<sup>3,4</sup> Also consistent with the VAR approach, growth in the EU has less of an impact on domestic fluctuations in Kazakhstan compared to growth in Russia. In addition, an increase in oil prices has a positive and significant impact on growth in Kazakhstan.<sup>5</sup>

**Text Table 1. Drivers of Cyclical Output—Overall: 2005–2021**

VARIABLES	(1) KAZ	(2) KAZ	(3) KAZ	(4) KAZ	(5) CIS OI	(6) CIS OI	(7) CIS OI	(8) CIS OI
Own Growth (t-1)	0.0724	0.263**	0.250**	0.139	-0.0387	0.0662	0.0519	-0.0159
Russia Real GDP Growth	<b>0.487***</b>			<b>0.323**</b>	<b>1.015***</b>			<b>0.883***</b>
EU Real GDP Growth		<b>0.328***</b>		-0.0750		<b>0.623***</b>		0.0981
China Real GDP Growth (t-1)			<b>0.409***</b>	0.281*			<b>0.658***</b>	0.0716
Headline CPI Inflation	-0.304**	-0.263**	-0.262**	-0.290**	-0.0801*	-0.0335	-0.0464	-0.0724
REER Growth	-0.0494	-0.0475	-0.0533	-0.0544	0.0273	0.0534	0.0773**	0.0301
Oil Price Growth	0.0166	0.0294***	0.0240**	0.0148	0.00628	0.0384***	0.0361***	0.00516
Constant	1.321***	1.205***	0.496	0.769**	0.415**	0.615***	-0.481*	0.282
Observations	68	68	68	68	339	339	339	339
R-squared	0.505	0.449	0.502	0.537	0.377	0.284	0.285	0.381

Standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

<sup>3</sup> CIS oil importers (CIS OI) consist of: Armenia, Belarus, Georgia, Kyrgyz Republic, Moldova, Tajikistan, and Ukraine.

<sup>4</sup> An alternative specification controls for changes in the US Federal Funds rate to capture global financial tightening. The results are the same.

<sup>5</sup> Oil prices have a substantial effect on Kazakhstan's real and financial sector variables. Positive oil price shocks are positively linked to real GDP and non-oil real GDP growth, public consumption, and real exchange rate appreciation. The oil price is also a driver of investment and capital flows.

## C. Transmission Channels

**9. Exports to Russia are a significant driver of Kazakhstan's economic growth.** Real GDP growth in Russia is replaced with bilateral exports to Russia (in q-o-q growth rates) in the regressions presented in Table 2. The results show that exports to Russia have a significant impact on growth in Kazakhstan, and an even stronger impact for CIS oil importers. A 10-pp increase in bilateral export growth is associated with a 0.27 pp increase in Kazakhstan's real GDP growth, and a 0.4 pp increase in CIS OI growth (columns 1 and 5).<sup>6</sup>

**Text Table 2. Drivers of Cyclical Output—Trade Channel: 2005–2021**

VARIABLES	(1) KAZ	(2) KAZ	(3) KAZ	(4) KAZ	(5) CIS OI	(6) CIS OI	(7) CIS OI	(8) CIS OI
Own Growth (t-1)	0.131	0.0899	0.0816	0.0819	-0.0268	-0.0439	-0.0405	-0.0448
Export to Russia growth	<b>0.0267*</b>			<b>0.00635</b>	<b>0.0423***</b>			<b>0.0276**</b>
Export to EU growth		<b>0.0472***</b>				<b>0.0593***</b>		
Export to AE growth			<b>0.0461***</b>	<b>0.0413*</b>			<b>0.0684***</b>	<b>0.0561***</b>
Headline CPI	-0.281**	-0.318**	-0.326**	-0.324**	-0.0727	-0.113**	-0.119**	-0.118**
REER Growth	-0.0263	-0.0239	-0.0245	-0.0237	0.101**	0.129***	0.134***	0.140***
Oil Price Growth	0.0431***	0.0363***	0.0362***	0.0361***	0.0715***	0.0676***	0.0685***	0.0669***
Constant	1.416***	1.458***	1.511***	1.501***	0.837***	0.858***	0.865***	0.827***
Observations	68	68	68	68	339	339	339	339
R-squared	0.363	0.398	0.396	0.398	0.194	0.202	0.210	0.220
Standard errors in parentheses								
*** p<0.01, ** p<0.05, * p<0.1								

**10. The role of the financial channel appears minimal.** Table 3 shows the estimated impact of movements in Russian financial markets on cyclical output fluctuations in Kazakhstan and peer economies. Changes in Russian interbank lending rates and equity prices are used as proxies for financial transmission variables. An increase in Russian interbank lending rates is negatively associated with growth in Kazakhstan. However, changes in in Russia's equity prices, policy rate and government bond yields do not have a significant effect.<sup>7</sup>

<sup>6</sup> The impact of bilateral exports with Russia is slightly stronger for CIS oil importers: a 1 pp increase in bilateral exports is associated with a 0.4 pp increase in CIS OI real GDP growth (column 5).

<sup>7</sup> In an alternative specification controlling for changes in the Federal Funds Rate and in 10-year US Treasury bond yields, the effect of Russian bank lending rates remains significant for Kazakhstan.



**Text Table 3. Drivers of Cyclical Output—Financial Channel: 2005-2021**

VARIABLES	(1) KAZ	(2) KAZ	(3) KAZ	(4) CIS OI	(5) CIS OI	(6) CIS OI
Own Growth (t-1)	0.0566	0.0174	-0.00675	0.0677	-0.0418	0.0601
Russia Equity Price Growth (t-1)	<b>0.0279</b>		<b>0.0232</b>	<b>0.0350**</b>		<b>0.0327**</b>
Russia Change in Lending Rate (t-1)		<b>-0.291*</b>	<b>-0.348*</b>		<b>-0.336**</b>	<b>-0.149</b>
EU Real GDP Growth (t-1)	0.321	0.166*	0.177	0.773***	0.0526	0.719**
Headline CPI	-0.337**	-0.287**	-0.360***	-0.0952**	-0.0473	-0.0886**
REER Growth	-0.0687*	-0.0239	-0.0535	0.0238	0.0521	0.0196
Oil Price Growth	0.0292**	0.0500***	0.0306**	0.0312***	0.0686***	0.0312***
Constant	1.716***	1.565***	1.907***	0.843***	1.033***	0.858***
Observations	50	68	50	300	403	300
R-squared	0.365	0.392	0.420	0.205	0.173	0.209
Standard errors in parentheses						
*** p<0.01, ** p<0.05, * p<0.1						

## D. The Role of Economic Fundamentals, Diversification, and Institutions

**11. This section assesses how country-specific factors influence the cross-border transmission of Russian cyclical output fluctuations.** The economic literature highlights that partner diversification and economic fundamentals can be important determinants of such transmission, and that public governance can influence a country's ability to weather economic crises (IMF 2018). To understand the role of these factors in the case of Kazakhstan and peers, coefficient  $\beta_2$  from equation 2 is first estimated for a sample of CIS and EU economies for which quarterly data are available;<sup>8</sup> then, using cross-sectional data, country-specific beta coefficients are regressed on a 14-year average of country-specific variables.

**12. Strong macroeconomic buffers contribute to Kazakhstan's resilience to the Russian business cycle.** Vast oil reserves allow Kazakhstan to smooth the impact of external shocks on domestic growth. Indeed, Figure 6.3 shows that while more complex economies tend to be less sensitive to Russia's cyclical output fluctuations, Kazakhstan deviates from this pattern. Similarly, Figures 6.4 and 6.5 show that Kazakhstan's relatively strong current account position and low foreign-currency debt share explain why the economy is less sensitive to Russia.

**13. Countries with higher partner diversification are less sensitive to Russian cyclical output.** There is a strong negative correlation between countries' partner diversification (proxied by the global connectedness index) and their sensitivity to Russian output fluctuations (Figure 6.1).<sup>9</sup>

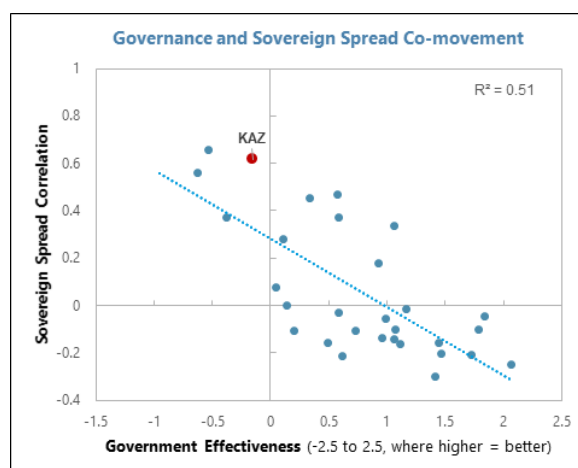
<sup>8</sup> This parameter captures the effect of a 1 pp increase in real GDP growth in Russia on domestic real GDP growth for each country, controlling for non-Russian factors.

<sup>9</sup> The Global Connectedness—Breadth index measures the dispersion of trade, financial, and population flows between a country and the rest of the world. A higher score implies more dispersion or diversification. The data are from NYU Stern School of Business; Center for the Future of Management; DHL Initiative on Globalization.

More diversified economies experience less severe spillover effects. This is consistent with the literature on business cycle synchronization, which suggests that countries with deeper trade and financial linkages have more highly correlated business cycles. Analysis also shows that countries with large export linkages with Russia are more sensitive to Russian output fluctuations than countries with high import dependence from Russia. In the case of Kazakhstan, import dependence does not seem to play a role in cycle transmission (Figure 6.9), even though it exceeds that of other economies. On the other hand, strong import linkages (particularly for intermediate goods) can make countries more vulnerable to supply-side shocks.

#### 14. Countries with higher government effectiveness are less sensitive to the Russian business cycle.

Government effectiveness captures the perceived quality of public services and the extent to which policymakers are independent from political pressures, and is negatively associated with business-cycle passthrough (Figure 6.7). One reason is that more effective governments may be better positioned to address the economic impact of external shocks and reduce vulnerability to spillovers via risk premia. Indeed, there is a strong relationship between governance indicators and sovereign risk premia, and this relationship strengthens when economic conditions worsen, as markets become less tolerant of institutional risk (Alexandre, 2018). Correlations also show that the sovereign spreads of countries with weaker public governance are more sensitive to Russian spreads, suggesting that contagion effects from Russian financial markets are then amplified.

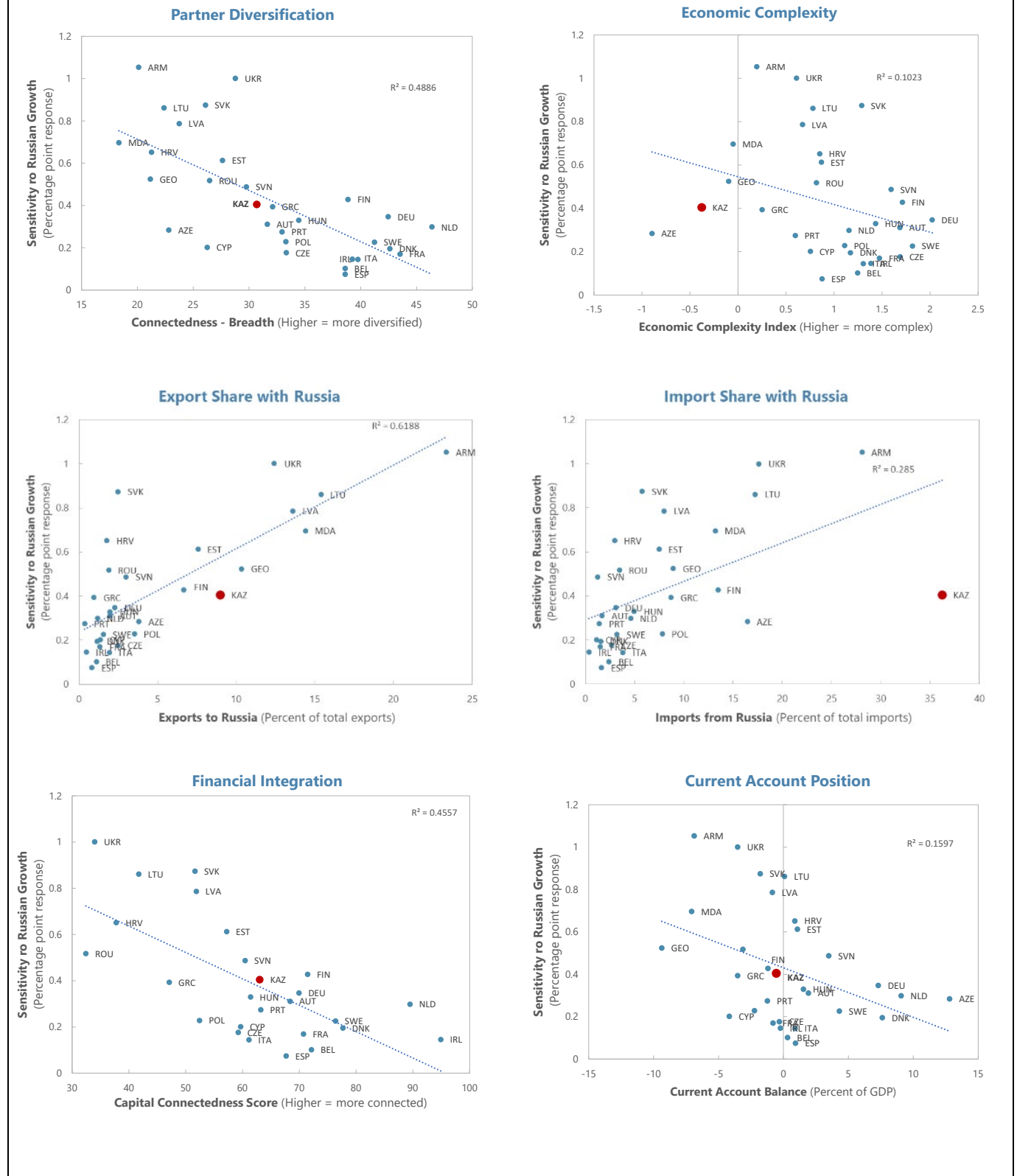


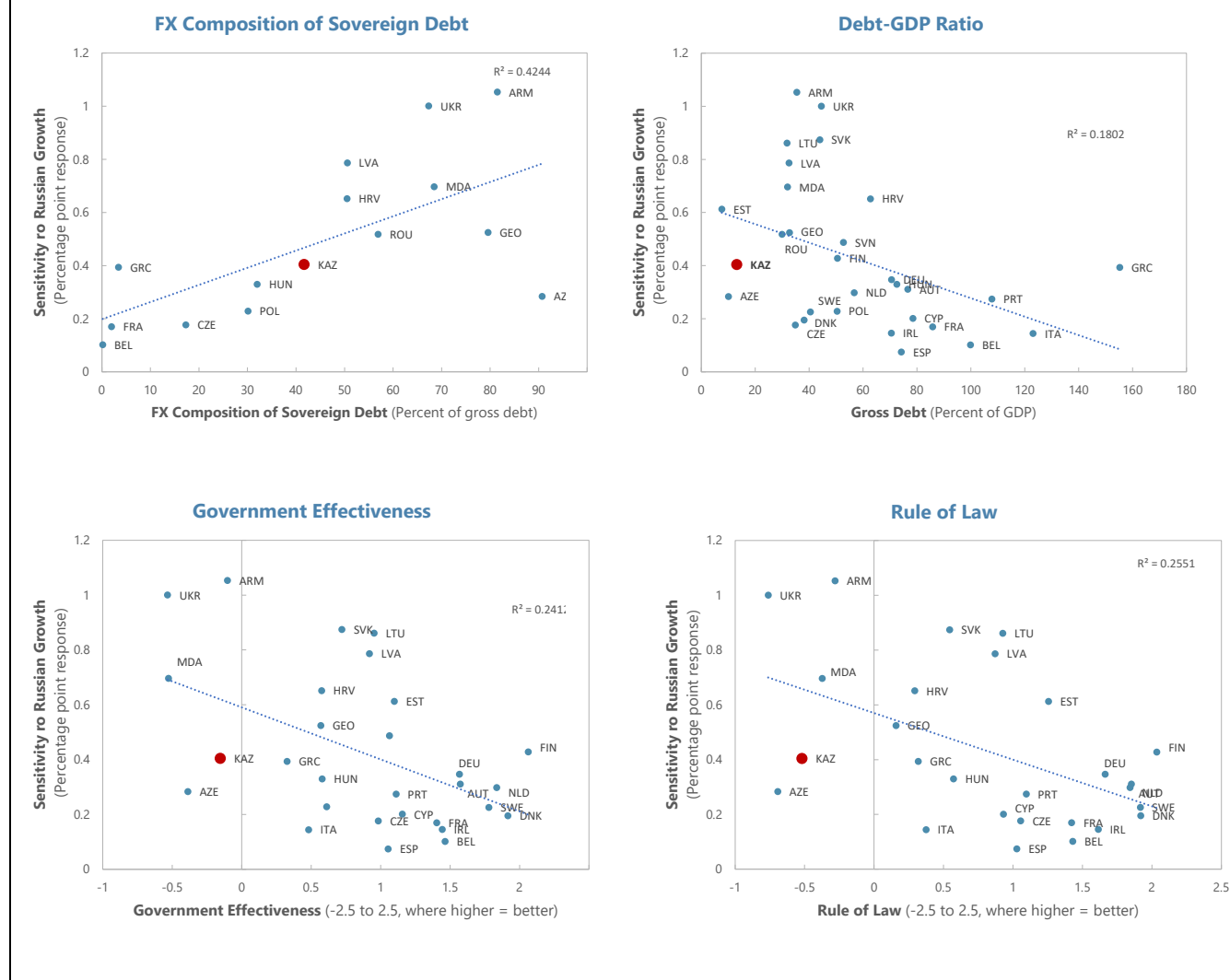
**15. When all country factors are combined, partner diversification and trade intensity with Russia appear as the strongest determinants of business cycle passthrough.** The above variables are combined in a cross-sectional regression along the following specification:

$$\beta_2^i = \theta_1(\alpha^i) + \epsilon^i \quad (3)$$

Where  $\beta_2^i$  is the country-specific coefficient from equation 2 that captures the impact of a one-pp increase in Russia's real GDP growth on domestic growth, controlling for non-Russia factors. It is regressed on  $\alpha^i$ , which is a matrix of country-specific factors. Now  $\theta_1$  captures the effect of an increase in each country variable on the cyclical output elasticity.  $\epsilon^i$  is the error term. Regressions in which all country variables are introduced one by one reveals that each factor is strongly correlated with the sensitivity to Russia's economy. When combined, diversification factors such as global connectedness and trade intensity with Russia appear as the most important determinants of such sensitivity. Greater partner diversification (proxied by the global connectedness index) is associated with weaker spillover effects, while a higher trade share with Russia is associated with larger effects.

**Figure 6. Role of Economic Fundamentals, Diversification, and Institutions**



**Figure 6. Role of Economic Fundamentals, Diversification, and Institutions (concluded)**


**16. Partner diversification dampens the impact of the Russian business cycle on domestic growth by mitigating contractions in bilateral trade flows.** An event analysis is used to examine how partner diversification influences the way that economies respond to large Russian business cycle fluctuations. The results suggest that more diversified economies experience weaker cyclical output and bilateral trade fluctuations during large Russian business cycle swings. Kazakhstan is in the medium connectedness group, yet its dynamics over the Russian business cycle are similar to those of the low connectedness group. One potential explanation is that these large events also capture the lagged effect of oil price shocks.

**Text Table 4. Determinants of Business Cycle Passthrough**

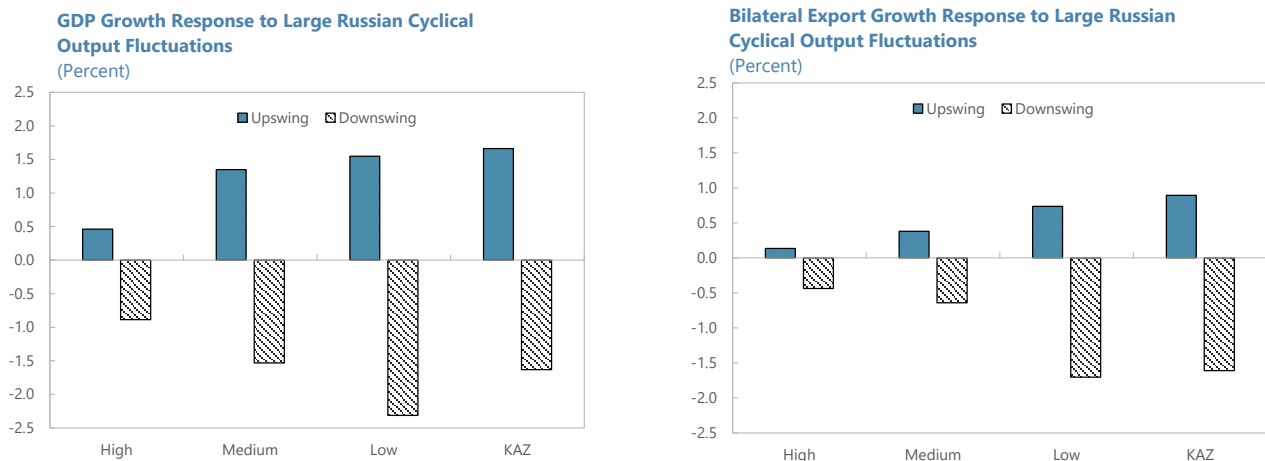
Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependent Variable: Sensitivity to Russian Cyclical Output Fluctuations								
<b>Diversification</b>								
Global Connectedness - Breadth	-0.0215*** (0.00433)						<b>-0.0149*</b> (0.00762)	
Trade with Russia (% of total trade)		0.0147*** (0.00430)						<b>0.00951*</b> (0.00511)
Economic Complexity			-0.128* (0.0707)				0.114 (0.0838)	0.0903 (0.0849)
<b>Institutions</b>								
Government Effectiveness				-0.179*** (0.0594)			0.0818 (0.102)	0.146 (0.112)
EU (1 if EU, 0 if otherwise)					-0.282** (0.107)			
<b>Fundamentals</b>								
Current Account Balance (% of GDP)						-0.0237** (0.00975)	0.00111 (0.00970)	0.000444 (0.00971)
GDP Per Capita							-1.36e-05* (6.88e-06)	-1.94e-05*** (6.29e-06)
Constant	1.102*** (0.140)	0.320*** (0.0534)	0.551*** (0.0811)	0.578*** (0.0667)	0.432*** (0.0455)	0.650*** (0.0943)	1.160*** (0.189)	0.774*** (0.148)
Observations	31	31	31	30	31	31	30	30
R-squared	0.459	0.286	0.101	0.245	0.169	0.193	0.547	0.541

Standard errors in parentheses

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

Source: IMF staff estimates.

Note: A negative sign indicates that an increase in the variable is associated with a smaller elasticity with Russia.

**Figure 7. Partner Diversification Dampens the Passthrough of the Russian Business Cycle**

Sources: IMF DOT database, WEO, and staff estimates.

Note: Upswings and Downswings correspond to large Russian cyclical output fluctuations. Large fluctuations are identified as periods where Russian real q-o-q GDP growth is one-SD above or the below its 2001–19 average. Countries are then grouped by partner diversification scores into top (High), medium (Medium), and bottom (Low) third percentiles. Average responses are then calculated for Upswings and Downswings across the three groups, and for Kazakhstan. Kazakhstan is in the medium diversification group.

Note: Bilateral exports are the q-o-q growth of exports to Russia in local currency. The growth rates are weighted by the share of Russia in total exports and are demeaned.

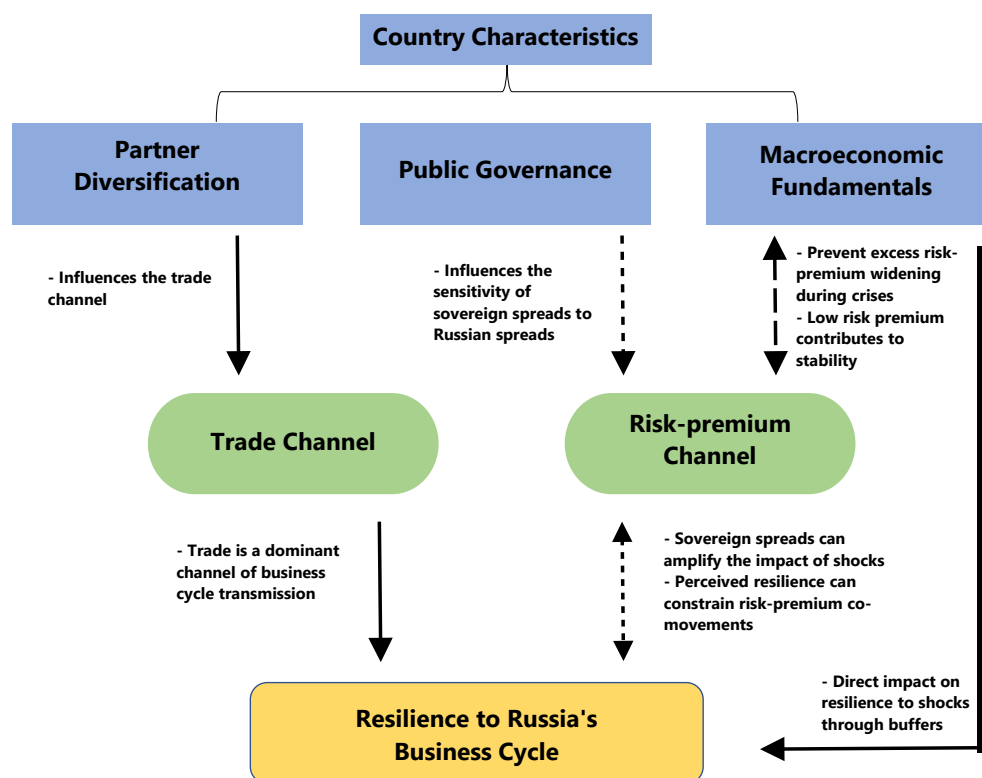
## E. Conclusion

**17. This paper provides evidence of strong economic linkages and business cycle synchronicity between Russia and Kazakhstan.** Shocks to growth in Russia have a sizable impact on Kazakhstan and play a dominant role in driving its cyclical output fluctuations, including relative to global factors.

**18. Spillovers from Russia's business cycle to Kazakhstan are transmitted primarily through trade, especially exports,** and may be amplified by changes in sovereign risk premia. Despite this, growth spillovers to Kazakhstan are relatively mild compared to peers, due to its strong macroeconomic fundamentals.

**19. Kazakhstan's vulnerability to shocks from the Russian economy can be mitigated through a combination of policies.** These include greater partner diversification, improved public governance, and continued credible macroeconomic policies, which have benefited from large buffers and served Kazakhstan well in the past. Partner diversification plays a key role in explaining cross-border business cycle transmission, as it reduces the impact of Russian business cycle fluctuations on domestic growth through constraining movements in bilateral trade. Improved public governance can limit the co-movement between Russian and domestic sovereign spreads during crises. Finally, maintaining credible macroeconomic policies and strong fundamentals can help contain cross-border spillover effects, both directly and indirectly (Figure 8).

**Figure 8. Improving Resilience to External Shocks**



Note: Arrow dashes illustrate the relative importance of each channel, with fewer dashes indicating a stronger channel.

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# REDUCING VULNERABILITIES TO CORRUPTION THROUGH IMPROVEMENTS IN FISCAL GOVERNANCE<sup>1</sup>

*Public financial management and fiscal policy in Kazakhstan are affected by several governance vulnerabilities. The forthcoming revisions of the budget and tax codes are opportunities to address these vulnerabilities, facilitate fiscal policy implementation, and enhance its credibility. Reforms should aim to streamline governance structures and strengthen fiscal processes to make them more rules-based and subject to tighter oversight. Fostering transparency is another priority: efforts are needed to broaden the coverage of fiscal accounts, disclose tax expenditures (especially energy subsidies), and strengthen public investment and procurement processes. The authorities have initiated reforms to bring Kazakhstan in line with best international practices in several of these areas and to develop a fiscal risk management culture. The 2023 budget marks the disclosure of the first fiscal risks statement, with subsequent statements expected to cover additional sources of risk, such as from State-Owned Enterprises (SOE). Stronger SOE oversight and improved revenue collection and taxpayer compliance should also benefit from a more risk-based approach.*

**1. Kazakhstan has renewed its commitment to improve governance and reduce vulnerabilities to corruption.** Following social unrest in early 2022, President Tokayev, stressed the need for public governance improvements, including in the fiscal area: public procurement, revenue administration, fiscal transparency, reform of state-owned enterprises (oversight, privatization). Such commitments are also supported by current fiscal reforms: revision of the tax code, new budget code, new public procurement law, revised framework for public-private partnerships, fiscal decentralization, and formal fiscal risks assessments accompanying annual budget laws.

**2. This paper provides an overview of fiscal governance vulnerabilities and prioritized recommendations to support the authorities' reform plans.** Three areas are covered, which fall within the scope of the authorities' "Concept for Public Financial Management", and cover fiscal rules, transparency, and risk management.

## A. Budget Structures and Rules, and Fiscal Policy Effectiveness

### Streamlining and Clarifying Fiscal Responsibilities

**3. Budget processes and fiscal policy effectiveness are hampered by scattered fiscal responsibilities and ad-hoc decisions.** The operations of numerous extra-budgetary funds and quasi-public entities do not fall under the direct remit of the budget. Together with widespread subsidized lending, this undermines fiscal policymaking, by making it difficult to assess the fiscal impulse, and broader macroeconomic policy coordination (e.g., monetary policy transmission).

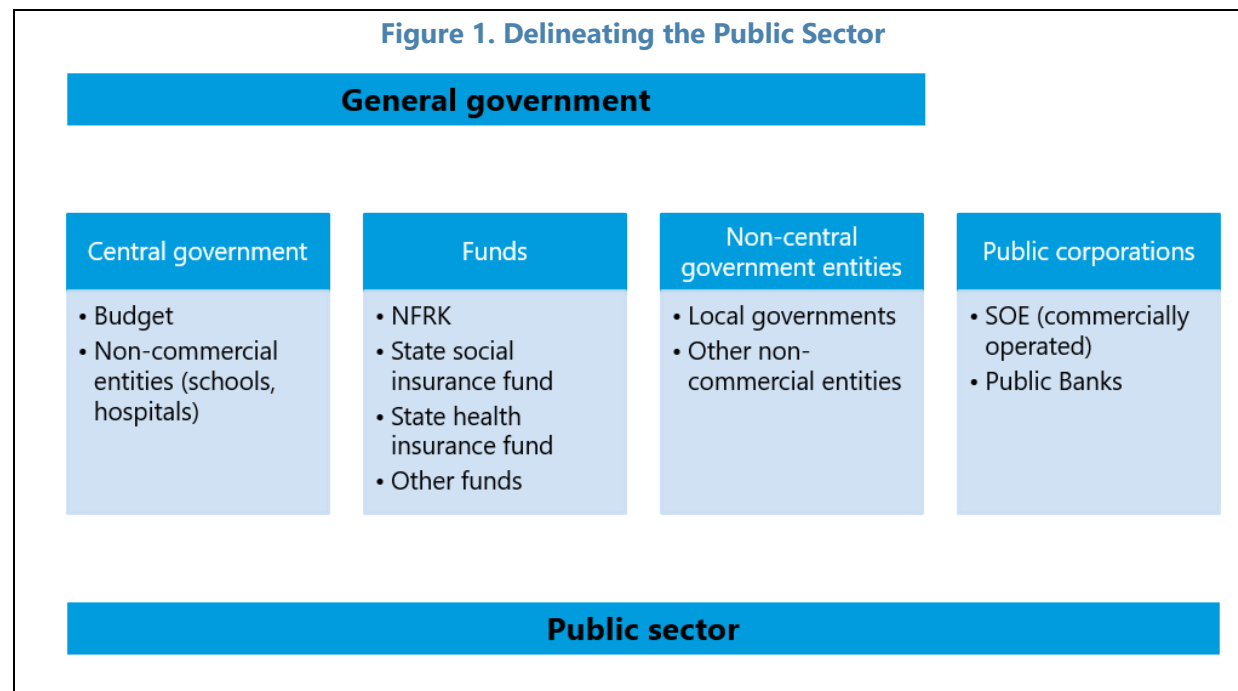
**4. The clarification of fiscal responsibilities should be guided by international standards,** starting with the boundaries of the general government and public sector (Figure 1). In particular, reforms of the quasi-public sector should bring entities that do not operate on a commercial basis

<sup>1</sup> Prepared by Olivier Basdevant.



under the direct supervision of line ministries,<sup>2</sup> while privatization plans for those operating on a commercial basis should proceed (Box 1).

**Figure 1. Delineating the Public Sector**



**Box 1. Quasi-Government Entities in Kazakhstan**

There are about 7,000 quasi-government entities (QGE) in Kazakhstan, which include, for the most part, SOE, and other public entities providing government services on a non-commercial basis. Most of them are fully owned by the government, and less than a thousand are companies where the government is a shareholder (e.g., Limited Liability Partnerships and Joint Stock Companies). Most QGE are owned by two national holding companies <sup>1/</sup>:

- *Samruk-Kazyna*, which covers non-financial public corporations and is largely involved in the natural resource sector (hydrocarbons account for half of its revenue and three quarters of assets). Samruk-Kazyna's revenues amounted to 14.0 percent of GDP in 2021, comparable to central government revenues (17.1 percent), and had accumulated a debt of 11.8 percent of GDP (Text table).

Budgetary Weight of State-owned Enterprises, 2021		
	(Billions of Tenge)	(percent of GDP)
General government revenue	14,359	17.1
<i>of which</i> : revenue from SOEs	2,490	3.0
Revenue of holding companies	11,980	14.3
Baiterek	216	0.3
Samruk Kazyna	11,764	14.0
Budget support to SOEs	55	0.1
Holding companies debt	18,146	21.6
Baiterek	8,200	9.8
Samruk Kazyna	9,946	11.8
Memorandum item		
Nominal GDP	83,952	...

Sources: Kazakhstan authorities and IMF staff estimates.

<sup>2</sup> Some entities, currently classified as state-owned enterprises, are actually performing quasi-fiscal activities, that are not always adequately funded by the budget. Clarifying their roles, together with a disclosure of their budgetary cost, would help inform reform of the quasi-public sector.

**Box 1. Quasi-Government Entities in Kazakhstan (concluded)**

- *Baiterek*, which is a shareholder of financial institutions. In 2021, Baiterek's revenues amounted to 0.3 percent of GDP, and its total debt to 9.8 percent of GDP.

QGE oversight is distributed across the Ministry of Economy, line ministries, the NBK, and other entities (including holding companies). There is scope to streamline this complex governance structure to enhance the consistency of spending and borrowing decisions by QGE with the broader fiscal policy objectives.

1/ A few QGEs are outside the perimeter of the two holding companies: the water company (Kazvodkhoz), the United Accumulative Pension Fund, the State Social Insurance Fund, and the State Health Insurance Fund.

**Strengthening Budget Rules and Processes**

**5. The upcoming revision of the budget code is an opportunity to make fiscal policy more rules-based.** As noted, some public funds were created in an ad-hoc manner, as part of new policy initiatives, and without channeling these public resource allocations through the formal budget process.<sup>3</sup> Stricter implementation of procedural rules to amend the budget is needed.<sup>4</sup>

**6. Stronger and clearer institutional responsibilities would facilitate the implementation of numerical fiscal rules and reinforce fiscal policy credibility.** When elaborating annual budgets, the *non-oil* deficit to *non-oil* GDP should be a key focus, as it is a more relevant measure of fiscal impulse than the overall deficit, and thus a better guide to assess the pro- or counter-cyclicality of the macroeconomic policy mix. More broadly, the medium-term fiscal framework should be used to anchor annual budgets on medium-term policy objectives. In particular, deviations from approved budgets should either be corrected in subsequent years, or lead to a revision of medium-term plans if warranted (e.g., if due to extraordinary shocks such as the COVID-19 pandemic). Stronger budget rules articulated around numerical objectives would enhance budget predictability and credibility (Kopits and Symansky 1998). It is also common to have provisions on the reporting of fiscal outcomes to promote transparency, such as a requirement for the government to publish accurate and timely mid-year and end-of-year fiscal reports, and to explain reasons for potential deviations from the numerical rules (see below). Further, supporting policies and other rules would be essential to strengthen budget credibility, notably in the area of wage bill policy and management (Box 2).

**Box 2. Improving the Policy on Public Wage Bill**

**Strengthening the public wage policy (remuneration and hiring) would support budget credibility and help promote good governance in the public sector.** Efforts have already been made to improve governance in the management of human resources in the public sector. Features of the civil service administration include codes of conducts, ethical standards, and disciplinary sanctions civil servants (GRECO, 2021). While there are specific areas for further improvement (see also Annex V of the Staff Report), a broader macro-economic approach to wage bill management would also complement these efforts.

<sup>3</sup> For example, the recently created Children's National Fund will transfer funds to young adults when they reach age 18 to support their higher education and housing.

<sup>4</sup> The current budget code enables one revision to each annual budget, based on revisions to economic conditions (e.g., large revisions to revenue collection), while giving administrative flexibility to implement minor adjustments (reallocations, revisions based on minor changes to the cost of some programs).

### Box 2. Improving the Policy on Public Wage Bill (concluded)

**The public wage bill is underestimated** (see Public Expenditure and Financial Assessment, PEFA, of 2019<sup>1/</sup>). While there is a focus on disclosing the fiscal operations of the central government, there is limited information on the overall public wage bill for the general government, as the wage bill of non-central government entities is not reported. This lack of transparency hampers a correct assessment of the fiscal impact of wage bill policies.

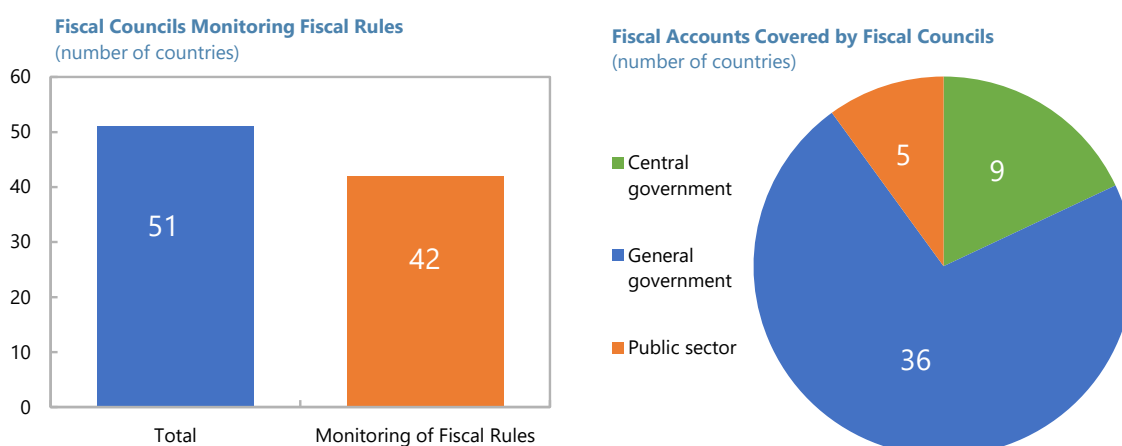
**Rules regarding the remuneration of civil servants could be improved to foster good public sector governance.** Such rules should support fiscal policymaking and disinflation objectives. Wage increases are currently set largely based on seniority and ad-hoc decisions, reflecting current inflation. Current reform plans should introduce a direct link between salary increases and performance, to provide all civil servants with adequate incentives to perform and to act with integrity.

1/ <https://www.pefa.org>

## Strengthening Budget Oversight

**7. An independent fiscal council would help cement the authorities' commitment to fiscal discipline** (IMF, 2013). While the functions of fiscal councils vary across countries, they typically help raise public awareness of and confidence in the state of public finances by assessing proposed budgets and budget execution. Their prevalence is growing across the world, with currently 51 emerging and advanced economies having established fiscal councils (Figure 2). Kazakhstan could consider a fiscal council tasked with monitoring fiscal outcomes and publishing its assessments of budget implementation against approved budgets and fiscal and numerical rules.

**Figure 2. Fiscal Councils in Emerging Markets and Advanced Economies, 2021**



Source: IMF.

## B. Strengthening Fiscal Transparency

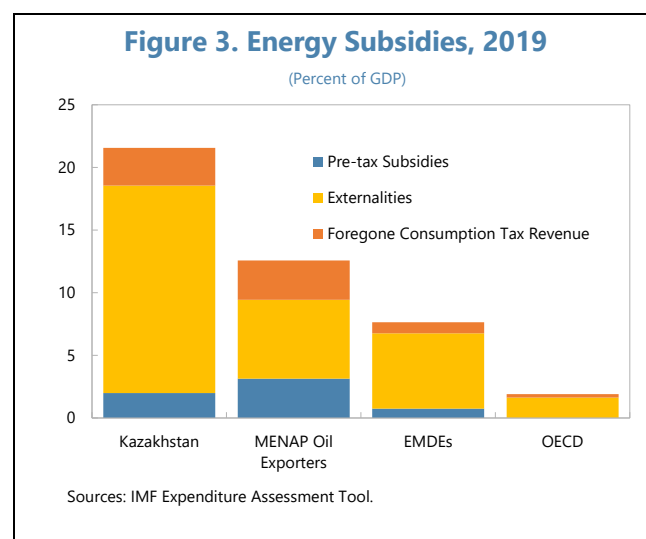
### Public Accounts

**8. Kazakhstan has made substantial efforts to improve budget transparency, including by leveraging digitalization and introducing a new fiscal risks statement (FRS).** The authorities have also made progress in better aligning government finance statistics with the 2014 Government Finance Statistics Manual (GFSM), and data is now available online through the government platform.<sup>5</sup> Kazakhstan's progress toward greater transparency and greater fiscal oversight by Parliament was recognized in the 2021 Open Budget Survey.<sup>6</sup>

**9. Looking ahead, restructuring the quasi-public sector will have implications for fiscal disclosures.** Some SOEs are currently classified as extrabudgetary general government units, and their reclassification will have multiple impacts, including on fiscal statistics, budget presentations, governance arrangements, accounting, and reporting.<sup>7</sup> Similarly, a distinction should be made between extrabudgetary activities that are compensated through budget transfers, and activities that are not or not fully compensated by the budget in a direct manner (i.e., quasi-fiscal activities). The latter should not only be fully compensated for, but also adequately reported in the budget.

### Tax Expenditures and Energy Subsidies

**10. Disclosing tax expenditures and energy subsidies is important for fiscal transparency, including to facilitate structural fiscal reforms.** Like many other countries, Kazakhstan provides tax expenditures to support businesses and households. These consist in large exemptions on VAT and corporate income tax.<sup>8</sup> They also include both pre-tax energy subsidies and low tax rates in the energy sector (Figure 3),<sup>9</sup> which reflect the authorities' objective of sharing broadly the dividends from the country's hydrocarbon resources.



<sup>5</sup> The authorities launched the Open Government portal in 2016 (<https://egov.kz/cms>), with the view of promoting transparency in government operations

<sup>6</sup> <https://www.ipp-jcs.org/en/open-budget-survey-2/>.

<sup>7</sup> For instance, the financial statements of non-commercial entities should be subject to public sector rather than private sector standards.

<sup>8</sup> As of 2020, the authorities assessed tax expenditure for VAT and CIT to represent, respectively, about 4.5 percent of GDP and 1.7 percent, against a total collection of 3.6 percent and 3.5 percent. The total removal of these tax expenditure would potentially double their joint level of revenue collection. While some tax expenditures may be desirable to maintain, there is significant a significant potential for additional revenue through their rationalization.

<sup>9</sup> Pre-tax subsidies are implicit subsidies, i.e., rent that is not captured by providing energy products, notably fuels, below their international prices.

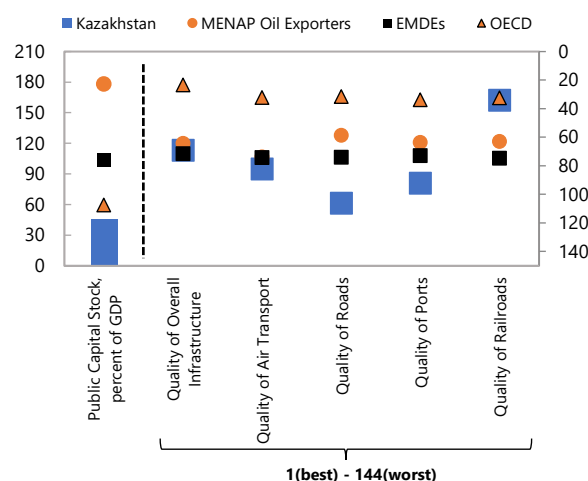
**11. Tackling energy subsidies will be important for medium- to long-term fiscal policy.**<sup>10</sup> It will be a complex reform to implement for at least three reasons: (i) the size of the subsidies (about 20 percent of GDP) calls for careful planning of tax and price adjustments, (ii) removing energy subsidies will be costly for both businesses (which need time and resources to invest in alternative energy sources) and households (requiring adequate social safety nets to protect the poorest), and (iii) removing energy subsidies is a highly sensitive policy measure that requires early and sustained engagement with the civil society. As a first step, disclosing the level of energy subsidies and their opportunity cost would help start a public debate on how public resources could be better used (e.g., for education, health, or infrastructure spending).

## Public Investment and Procurement

**12. The authorities have taken steps to improve the effectiveness of the public investment framework.** Progress in this area will be critical given the need to upgrade the quality of infrastructure (especially roads), which will in turn be important to diversify the economy, address climate-related challenges, and enhance Kazakhstan's growth potential (Figure 4).

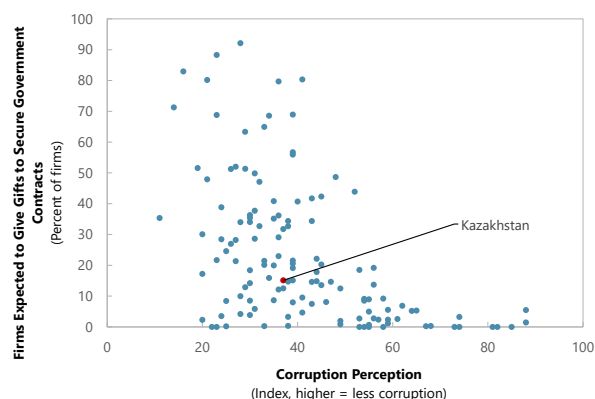
**13. Efforts are underway to bring public procurement in line with best practices, including through digitalization.** Public procurement currently represents 7 percent of GDP and 35 percent of government spending. Perceptions of corruption in public procurement remain significant (Figure 5). The authorities have recently taken initiatives to foster transparency and fairness in bidding and winner selection, including through (i) the preparation of a new public procurement law, (ii) the development of fiscal risks assessments, which will cover public-private partnerships, (iii) a new web-based procurement platform to foster open and

**Figure 4. Infrastructure Quality, 2020**



Sources: IMF FAD Expenditure Assessment Tool (EAT), World Economic Outlook, World Development Indicators, IMF Investment and Capital Stock Dataset, and World Economic Forum.

**Figure 5. Perception of Corruption in Public Procurement**



Sources: World Bank Enterprise Survey, and Transparency International.

<sup>10</sup> 2021 Article IV SIP on Kazakhstan's climate-related challenges.

transparent bidding.<sup>11</sup> Specifically, the new procurement law introduces provisions to: allow greater access to public tenders, including by foreign enterprises; promote greater use of online procurement, helping to reduce vulnerabilities to corruption and foster transparency;<sup>12</sup> focus on quality of delivered goods and services over price; and, streamline and accelerate procurement processes.

**14. Further improvements to public procurement processes could bring about substantial benefits.** They would support higher quality of procured goods and services, as well as private sector development. They include the following priorities:

- *Generalize competitive public tenders.* The share of uncompetitive procurement contracts (because of either single bidders or direct negotiations) has been reduced through digitalization but is still elevated (about a half of total contracts). Further, QGE have their own procurement process, different from that of the central government. Unifying these processes under a single digital platform would help strengthen competition.
- *Address perceived unfairness from the fact that SOEs compete with private firms for public procurement contracts.* As part of SOE reforms, consideration should be given to privatize SOE operating on a commercial basis and in public procurement markets.
- *Give more budget flexibility to procurement contracts to avoid unnecessary delays or disruptions.* Rigidity in procurement contract price-setting prevented some suppliers from procuring the needed goods or services when economic conditions changed, as they had to reopen bidding processes.
- *Disclose beneficial owners of public contracts.* This would align Kazakhstan with best practices and support broader efforts in anti-money laundering (AML).

## C. Fostering a Risk Management Culture

### Improving Fiscal Risks Statements

**15. The introduction of an FRS and long-term fiscal sustainability report (LTFS) in the 2023 budget is an important step towards risk-based fiscal policymaking.** The first FRS focuses on macro-fiscal risks, and the authorities intend to broaden its scope to cover SOEs, public-private partnerships and other risks in the coming years. The initial LTFS focuses on projections until 2050 and issues pertaining to demographic and climate changes. These steps will considerably improve the authorities' capacity to manage fiscal risks and preserve fiscal space for future priority spending.

**16. The FRS and LTFS can also help strengthen fiscal governance and fiscal policy credibility.** The FRS can inform PFM reforms, for example to better incorporate macroeconomic projections in the budget process, or to prioritize SOE and PPP reforms. It can also help develop

<sup>11</sup> <https://goszakup.gov.kz/>

<sup>12</sup> For instance, transparency on criteria for selecting bids and, ex-post, on the reasons for selecting winning bidders greatly help strengthen confidence in the quality and fairness of the process.

contingency fiscal plans in case risks materialize, helping to reconcile the stabilization role of fiscal policy (including through greater coordination with the central bank) and the need to preserve fiscal space for future priority spending. In the longer term, the LTFS will help analyze the management of natural resource revenues as part of the transition away from fossil fuels.

**17. Managing fiscal risks from the SOE sector will be challenging going forward** due to SOEs' complex governance structure, financial connectedness (among themselves and with the central government), and risk exposures:

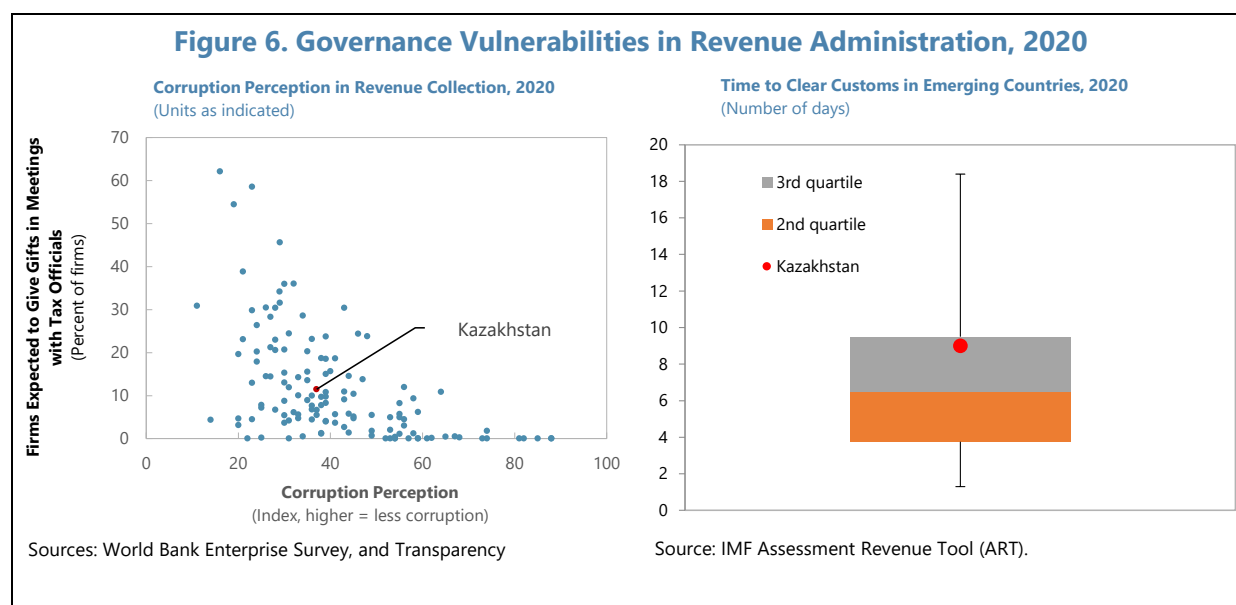
- *SOE debt*: Limited information is available on debt held by subsidiaries of both holding companies and cross-debts among their subsidiaries, which could potentially raise risks for SOEs and to the budget.
- *Cross-SOE financial exposures*: The practice of centralized cash management within holding groups can be a channel of intra-group contagion through the transmission of liquidity or solvency pressures across entities.
- *Common risk exposures*: Shocks affecting the hydrocarbon sector may simultaneously impact several large SOE entities and thus weaken the whole holding group, potentially creating significant fiscal liabilities.

**18. While privatizations would help reduce these risks, structural SOE reforms are also desirable.** In particular, a simpler governance structure could place some SOEs directly under the supervision of one line ministry, while the Ministry of Economy would focus on the supervision of cross-cutting fiscal risks.

## Taxpayer Compliance

**19. Revenue collection has been affected by corruption vulnerabilities** (Figure 6).

Entrepreneur perceptions of bribe requests from tax officials are not high, but they are still above the median level among emerging countries, and could be concentrated in specific sectors, creating bottlenecks for private sector development. Some indicators suggest that there is room to improve revenue administration processes. For example, according to World Bank data, the number of days to clear customs is about 9, which puts Kazakhstan at the top of the third quartile among emerging countries.



**20. Increased digitalization has helped improve taxpayer compliance and reduce vulnerabilities to corruption.** The State Revenue Committee (SRC)'s reliance on upgraded IT infrastructure has brought about several benefits:

- E-invoicing has strengthened VAT collection and reduced opportunities for VAT fraud.
- Taxpayer services have been improved, with one-stop shops for e-filing and e-payments.
- Taxpayer databases allow to cross-check declarations between customs and tax, thereby reducing tax fraud.
- Corruption vulnerabilities have been reduced due to less face-to-face interactions between taxpayers and tax officials.

**21. More broadly, revenue collection has gradually moved to a more risk-based approach.** The SRC has modernized tax administration, including by focusing on compliance risks that have the highest impact on revenue mobilization. New IT systems have allowed the authorities to better assess compliance risks by incorporating economic factors (e.g., the economic cycle). The Large Taxpayer Office (LTO) can now leverage comprehensive databases to improve voluntary compliance. Finally, the SRC is developing risk-based tax audits.<sup>13</sup>

**22. The new tax code expected in 2023 should support efforts to reduce taxpayer compliance risks.** The authorities intend to streamline tax incentives, which could help reduce the scope for abuses and tax evasion. The broader objective of increasing fairness in the new tax code, notably through greater PIT progressivity, is important and would help secure popular support for fiscal reforms, increase voluntary taxpayer compliance, and facilitate revenue administration.

<sup>13</sup> Audits were previously mandated by law and included excessively detailed procedures leading to inefficiencies and high resource costs.



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