FOREIGN EXPERIENCE

Potential GDP Modeling and Output Gap Estimation as a Basis for Countercyclical Fiscal Policy in Kazakhstan

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Abstract—This paper identifies key risks of the public sector in Kazakhstan. Methods for modeling potential output and output gap in international research practice and their application in countercyclical fiscal policy are considered. The potential output of Kazakhstan is retrospectively analyzed using the Hodrick–Prescott (HP) filter. Periods of the procyclical budgetary policy are identified. It is proposed to introduce a fiscal model of the structural budget balance, to target a zero output gap in the short term, and to increase the potential output through structural reforms.

Keywords: potential output, output gap, modeling, countercyclical fiscal policy, fiscal impulse, fiscal rules

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Brief analysis of the dynamics of economic growth in the Republic of Kazakhstan for 2000–2019. In the first decade of the 2000s, Kazakhstan experienced steady economic growth (average annual GDP growth rate of 8.5%), but in 2010–2019 the average GDP growth rate slowed down almost twofold (mainly due to a significant drop in global prices for oil and metals in 2015–2016) and amounted to 4.4% (Table 1).

The rise in prices for mineral resources became the main factor in the growth of GDP and the country's foreign trade turnover. In 2014, the share of mineral products in the country's exports reached a maximum, 80.4% (in 2019, 72%), that of metals and metal products, 8.5% (in 2019, 14.1%). The dynamics of real GDP growth in the Republic of Kazakhstan and the average annual global oil price is almost identical under the constantly increasing crude oil production. Periodic shocks associated with changes in oil prices exert pressure and deteriorate the socioeconomic situation in the country. To solve these problems, the government increases budget expenditures at the expense of the National Fund.¹

The goal of the National Fund of the Republic of Kazakhstan (NFRK) is to save financial resources for future generations and reduce the dependence of the republican budget on the situation in the global commodity markets. The National Fund has saving and stabilization functions. The minimum balance is set at 30% of GDP. The stabilization function is ensured by a guaranteed transfer to the

republican budget in the amount of \$8 billion, adjusted downward or upward to 15%. In addition, it is possible to allocate targeted transfers from the National Fund for the implementation of socially significant large-scale projects. The policy of balancing the budget and the National Fund is aimed at reducing the non-oil deficit, which should be no more than 3% of GDP by the end of this decade, as well as at cutting current expenditures from the National Fund, with subsequent transition to funding of only the development budget.

Postpandemic normality and risks of the fiscal sector in Kazakhstan. In Kazakhstan, significant volumes of the NFRK and the inflow of oil export customs duties into the state budget made it possible to increase the fiscal impulse and maintain economic growth during periods of falling global oil prices. Along with the positive effects, the massive anticrisis policy and the widespread use of the NFRK funds resulted in higher risks in the fiscal sector of Kazakhstan.

The risk of growing dependence of the state budget on natural resource rent. As the current revenues of the state budget (SB) were decreasing, the share of transfers from the NFRK in the structure of state budget revenues increased in 2020 (over 11 months) to 36.3% compared to 22% in 2011 (Fig. 1).

The state budget additionally receives export customs duties (ECD). As a result, more than 40% of Kazakhstan's state budget revenues are generated from natural resource rent and depend on oil revenues.

Overstatement of the “cutoff price for oil.” In Kazakhstan, taking into account the factual data on oil revenues coming to the state budget (transfers and ECD on oil) and the NFRK, the average “cutoff price

¹ On the Concept for the Formation and Use of Resources of the National Fund of the Republic of Kazakhstan, Decree of the President of the Republic of Kazakhstan No. 385 from December 8, 2016. <http://adilet.zan.kz/rus/docs/U10000096>.

Table 1. Main socioeconomic indicators of the Republic of Kazakhstan for 2001–2019

Indicator	2001	2005	2010	2015	2017	2019
GDP, trillion tenge	3.3	7.6	21.8	40.9	54.4	69.5
GDP, billion USD	22.2	57.1	148.1	184.4	166.8	181.7
Volume indices of GDP, %	113.5	109.7	107.3	101.2	104.1	104.5
GDP per capita, million tenge	0.2	0.2	0.5	2.3	2.6	3.4
GDP per capita, thousand USD	1.5	3.8	9.1	10.5	9.2	9.8
Population at the end of the year, million people	14.9	15.2	16.4	17.7	18.2	18.6
Labor force (aged 15 and over), million people	7.5	7.9	8.6	8.9	9.0	9.2
Employed population, mln.	6.7	7.3	8.1	8.4	8.6	8.8
Unemployment rate, %	10.4	8.1	5.8	5.1	4.9	4.8
Average monthly nominal salary, thousand tenge	17.3	34.1	77.6	126.0	150.8	186.8
Real wage index, %	111.1	111.7	107.6	97.7	98.3	109.1
Average per capita nominal cash income of the population, thousand tenge	7.7	15.8	39.0	67.3	83.7	104.3
Real money income index, %	111.3	114.5	106.3	101.4	101.8	106.4
CPI, % to December of the previous year	106.4	107.5	107.8	113.6	107.1	105.4
Fixed capital investments:						
trillion tenge	0.9	2.4	4.7	7.0	8.8	12.6
% of GDP	29.0	31.9	21.3	17.2	16.1	18.1
Volume indices of investments in fixed assets, %	144.7	134.1	97.0	103.7	105.8	108.8
Deficit (surplus) of the state budget, % of GDP	–0.2	0.6	–2.4	–2.2	–2.7	–1.8
Resources of the National Fund at the end of the period, trillion tenge	0.2	1.1	5.8	25.8	23.1	27.5
% of GDP	5.8	14.2	26.4	63.0	42.5	39.5
billion USD	1.3	8.1	39.1	116.2	70.9	71.8
Export of goods, billion USD	8.6	27.8	60.3	46.0	48.5	58.1
Import of goods, billion USD	6.4	17.4	31.1	30.6	29.6	39.7
Gross FDI, billion USD	4.6	7.9	22.2	15.4	21.0	24.3
Average annual USD exchange rate	146.7	132.9	147.4	221.7	326.0	382.8

Source. Ministry of Finance of the RK, Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the RK.

for oil” in 2007–2019 was \$60/bbl at the actual average oil price of \$79/bbl and the state budget deficit of 2.2% of GDP. But in the period 2015–2017, the cutoff price significantly exceeded the actual world oil prices at that time, and oil revenues to the budget far exceeded oil revenues to the NFRK (Fig. 2).

Risks of reduced revenues of the National Fund of the Republic of Kazakhstan. Tax revenues to the National Fund of the Republic of Kazakhstan after 2014 also began to decline (Fig. 3).

As can be seen from Fig. 3, the dynamics of tax revenues to the NFRK depends on the economic cycle. It was found that an increase in the oil price by \$1 leads to an increase in the revenues of the NFRK by \$282 million [1].

In the first half of 2020, due to a drop in oil prices and an increase in transfers to the republican budget, the National Fund decreased by \$4 billion.

Due to the need to cover for a significant increase in the budget deficit, the amount of the guaranteed transfer from the NFRK will be (in trillion tenge): 2.7 in 2021, 2.4 in 2022, and 2.2 in 2023. Additionally, in 2021, it is planned to allocate a targeted transfer from the NFRK in the amount of 1 trillion tenge.²

Risks of reduced revenues from energy exports. According to our calculations, the correlation coefficient between Kazakhstan’s GDP growth and exports in dollar terms is about 0.96.

Meanwhile, over the past five years, the share of exports of goods and services in the structure of GDP

² Report of the Chairman of the National Bank of the Republic of Kazakhstan, E.A. Dosaev, at the meeting of the Government of the Republic of Kazakhstan “On the Forecast of Social and Economic Development and the Republican Budget for 2021–2023.” Nur-Sultan, August 25, 2020. <https://national-bank.kz/ru/news/doklady-i-vystupleniya?page=3>.

Fig. 1. Changes in the structure of the state budget revenues of the Republic of Kazakhstan: ▨ tax revenues; ▩ receipts from transfers; ■ other receipts; —○— income of the state budget, % of GDP.

Source: data from the Ministry of Finance of the Republic of Kazakhstan.

Fig. 2. “Cutoff price of oil” in 2007–2019 for Kazakhstan: ▨ total oil revenues; ▩ oil revenues in the state budget; ▩ state budget deficit, % of GDP; —○— oil price; —●— cutoff price.

Source: Ministry of Finance of the Republic of Kazakhstan, Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the RK, World Bank, authors' calculations.

Fig. 3. Dynamics of tax revenues in the NFRK for 2001–2019. —●— oil price; ▨ tax revenues to the NF (right scale).

Source: Ministry of Finance of the Republic of Kazakhstan, World Bank.

significantly decreased and amounts to an average of 34%, which is 9 percent points below the average annual figures at the end of 2010–2014 (43%) and 16 percent points less than the peak indicators of the first decade of the 2000s.

By the end of 2020, a current account deficit of –4.2 billion USD (–2.5% of GDP) is expected.³

According to the National Bank of the Republic of Kazakhstan, by the end of 2023, the resources of the National Fund will amount to 30.8% of GDP, approaching the maximum level of the established minimum balance (30% of GDP). In this regard, measures will be needed to maintain the savings function of the National Fund and reduce the non-oil deficit.⁴

The new normality requires a shift to countercyclical fiscal policy. In this situation, the World Bank calls on energy exporting countries to move to a new macroeconomic policy: “In cases where the fall in commodity prices is short-term, its consequences can be mitigated by means of incentives. However, if low prices persist for a long time, governments must seek solutions so that the economy could calmly adjust to the new normalcy. Due to the COVID-19 pandemic, this new normality established itself earlier in oil-exporting countries with emerging markets and developing economies. In the postcoronavirus world, these countries will have to more decisively pursue policies aimed at reducing dependence on oil revenues” [2].

In the context of the new normalcy, the introduction of a countercyclical budgetary rule, which would stabilize government spending in accordance with the phase of the economic cycle, becomes a matter of paramount importance for Kazakhstan. This will shield domestic economic situation from oil price volatility, reduce the nonoil budget deficit, and support the accumulation of NFRK resources for future generations.

Developing an effective countercyclical fiscal policy requires introducing such parameters as “potential output” and “output gaps,” which are used by international institutions and advanced economies. No such parameters have been used so far in the practice of fiscal policy in Kazakhstan.

An important problem in estimating the potential output and output gap is the fact that they are statistically unobservable variables. In this regard, interna-

tional research practice employs various approaches to economic and mathematical modeling and estimation of these macroeconomic parameters.

Methods for modeling potential output and output gap in international research practice. Approaches to estimating potential output can be divided into four groups: univariate nonstructural methods, multivariate nonstructural approaches, direct methods, and structural approaches.

Univariate methods estimate the trend of potential output based on actual results without being tied to economic theory. These methods are simple, do not require assumptions about the structure of the economy, and are important for countries that do not have data sufficient for application of complex approaches.

Multivariate approaches include information about several other variables, use relationships established by economics such as production functions or Phillips curves; they can be considered as an extension of univariate approaches [3–8].

Direct methods are based on data from enterprise surveys and can be used over a short time horizon, in which existing production technologies can be considered fixed and resources are considered as complementary [9].

Structural approaches are based on specific economic theories and models. These include methods based on aggregate production functions and methods with theoretical assumptions in structural vector autoregressions (SVARs). Methods based on SVARs have weak assumptions about the relationship between factors of production and about the trend and deviations of the components of potential output [9].

Below, is a list of methods within the above-described groups of methods for estimating potential output and output gap:

Univariate nonstructural methods:

- (1) Hodrick–Prescott filter.
- (2) Kalman filter.
- (3) Method of unobservable components.
- (4) Henderson filter.
- (5) Phase-average trend method.
- (6) Band-pass filter of Baxter and King.
- (7) Christiano–Fitzgerald filter.
- (8) Butterworth filter.
- (9) Wavelet methods.
- (10) Linear detrending.
- (11) Beveridge–Nelson decomposition.
- (12) Structural time series.
- (13) Markov models.

Multivariate nonstructural methods:

- (1) Okun’s Law.
- (2) Blanchard and Quah aggregate supply and demand shocks.

³ Report of the Chairman of the National Bank of the Republic of Kazakhstan, E.A. Dosaev, at the meeting of the Government of the Republic of Kazakhstan “On Adjusting the Forecast of Social and Economic Development of the Republic of Kazakhstan for 2020–2024 and the Republican Budget for 2020–2022.” Nur-Sultan, October 13, 2020. <https://nationalbank.kz/ru/news/doklady-i-vystupleniya?page=3>.

⁴ Report of the Chairman of the National Bank of the Republic of Kazakhstan, E.A. Dosaev, at the meeting of the Government of the Republic of Kazakhstan “On the Forecast of Social and Economic Development and the Republican Budget for 2021–2023.” Nur-Sultan, August 25, 2020. <https://nationalbank.kz/ru/news/doklady-i-vystupleniya?page=3>.

Fig. 4. Methods used by fiscal organizations within EU IFIs to estimate potential output. Source: EU IFIs [10].

(3) Phillips curves (traditional and neo-Keynesian).

(4) Natural interest rate method.

Direct methods based on survey data.

Structural methods:

(1) Using the production function.

(2) Dynamic stochastic general equilibrium models.

(3) Models of real business cycles.

Potential output estimation approaches used by international organizations. *EU Independent Fiscal Institutions Network (EU IFIs).* In EU IFIs (2018), the majority of members (15 out of 20 respondents) produce their own independent estimates of potential output and output gaps, usually twice a year [10]. Most members of this network use two traditional methods for estimating potential output: the Hodrick–Prescott (HP) filter and the production function method. Several extended applications also employ univariate or multivariate unobservable components models and principal component analysis. Only three surveyed institutions mentioned employing combinations of output gap estimates using different approaches or sources (Fig. 4).

Potential output is determined using the common Cobb–Douglas production function with constant returns to scale, with Harrod’s neutral technical progress contributing to an increase in the labor force. The share of wages is assumed to be 0.67.

European Commission (EC). To calculate potential output, the European Commission employs a commonly accepted methodology of the production function [11] (CAM), which is similar to the OECD approach. This methodology is based on the Cobb–Douglas function.

According to [12], potential output using CAM is calculated in stages:

—Calculation of the trend volume of labor using statistics and forecasts of the working age population and the trend level of the labor force participation rate,

the level of structural unemployment (NAWRU), and the trend level of the number of working hours.

—Calculation of the trend level of capital, for which it is necessary to estimate the trend level of the ratio of investments to GDP.

—Estimation of the smoothed Solow residual (total factor productivity, TFP) using filtration procedures.

Thus, CAM is a rather complex methodology that requires long-term statistical series. This fact can prevent countries with developing economies from using this methodology.

World Bank (WB). The World Bank does not have a clearly defined methodology for estimating GDP trending and output gaps. So, in [13], the GDP trend is estimated using the Hodrick–Prescott filter.

To decompose GDP, the WB study [14] employs a production function method similar to the OECD methodology. There, the total factor productivity (TFP) is estimated using panel regression, the trend level of employment is calculated using the coefficients of labor force participation, and the trend level of capital is taken equal to the current level. That work also notes univariate and multivariate methods for estimating the output gap, although without clear reasoning for choosing a given approach.

International Monetary Fund (IMF). The IMF does not employ a unified methodology for calculating potential output and output gap. For example, in [15] it is noted that developing countries have only short-term and low-quality statistical data, so the use of the production function method is inappropriate. Moreover, according to the study [12], the methods for developed countries also differ: in individual cases, the standard Hodrick–Prescott filter with a smoothing parameter of 100 for annual data can also be used. For this reason, it is impossible to render any specific approach to estimating potential output common for all countries.

Among the various IMF approaches to estimating potential output, the approaches described in [16] are particularly interesting, in which the authors estimate

the output gap using several equations: the dynamics of the trend GDP growth rate and the output gap, which are modeled as an AR process, the equation of the dynamics of inflation, and the trending unemployment rate equation (NAIRU). Statistical data on GDP at constant prices, inflation, unemployment, as well as forecasts of GDP and inflation are used to estimate the parameters of the model. The parameters are estimated using the Kalman filter with superimposed prior distributions.

Eurasian Economic Commission and Eurasian Development Bank. The joint report of the Eurasian Economic Commission and the Eurasian Development Bank “The System of Analysis and Macroeconomic Forecasting of the Eurasian Economic Union” [17] describes a multicountry structural dynamic macroeconomic model for the EAEU member states (Kazakhstan, Russia, Belarus, Armenia, and Kyrgyzstan), which is a hybrid model that includes elements of empirical models and structural DSGE models. The model complex has a quarterly basis. The Kalman filter is used to estimate potential output and output gap.

The EEC also employs a multicountry macroeconomic model to form a long-term forecast, the methodology of which corresponds to the balance-econometric class [18]. The model is based on annual data for the period 1995–2013. In it, the potential output for all EAEU member countries is estimated using the Kalman filter and is a structural exogenous parameter.

The solution of the model, filtering of historical data, simulations, and forecasting are implemented in the MATLAB software environment (IRIS toolbox).

The Republic of Kazakhstan. To develop an adequate monetary policy, the National Bank of Kazakhstan (NBK) estimates the potential output of Kazakhstan using the Hodrick–Prescott and Kalman filters. The data are collected by the NBK from a survey of business trends, to which the principal component analysis is later applied. The output gap is estimated by including the output gap lag and two principal components in the regression [19].

In [20], the authors estimate the potential output and output gap for Kazakhstan, Russia, and Azerbaijan using the Hodrick–Prescott and Kalman filters. The results for the two approaches were almost identical for all the three countries. In what follows, the authors use the results of using the HP filter, since the corresponding calculations are simpler.

Regarding the implementation of the countercyclical fiscal policy, it should be noted that the Ministry of Finance and the Ministry of National Economy of Kazakhstan do not estimate the potential output and the output gap.

Based on this, it is important for the economic bloc of the Government of Kazakhstan to independently estimate the potential output and the output gap in order to develop a countercyclical fiscal policy and

make independent decisions on the size of the fiscal impulse.

Estimation of potential output and structural budget balance of Kazakhstan. Our research suggests that the methods and approaches for estimating potential output and output gap, employed by various international organizations and developed countries, are similar.

Potential output and output gap are primarily estimated using the production function method (Cobb–Douglas specifications), the HP filter, and the Kalman filter. That being said, the resulting production gap usually correlates well with the gap obtained by using the HP filter.

Based on historical annual data, we retrospectively estimated the trend potential output and output gap for Kazakhstan (Fig. 5).

Potential output was estimated using time series of GDP in real terms for 1991–2019 in prices of 2005 using the Hodrick–Prescott filter (smoothing parameter 6.25) within the EViews 10 econometric package.

Output gaps are defined as the difference between the level of actual and potential output.

The resulting gaps serve as an indicator of the degree of inflationary pressures in the economy. If the actual GDP exceeds the potential one, the gap is expressed as a positive value and inflation tends to grow. If the actual GDP is lower than the potential one, the output gap becomes negative and there is a downward pressure on inflation. Thus, the output gap links the real side of the economy, the production of goods and services, with inflation.

Structural balance. The structural budget balance is the cyclically adjusted nominal budget balance that corresponds to the budget balance at the zero output gap:

$$SB_t = \left[(R_t^p - E_t) / Y_t^p \right] \times 100, \quad (1)$$

$$R_t^p = R_t (Y_t^p / Y_t)^{\varepsilon_{R,Y}}, \quad (2)$$

where SB is the structural balance of the budget, R is the budget revenues, R^p is the cyclically adjusted budget revenues, E is the budget expenditures, Y is the actual GDP, Y^p is the potential output, $\varepsilon_{R,Y}$ is the historical elasticity of the state budget revenues in relation to GDP, reflecting the automatic response of the budget balance to changes in the output gap.

Calculation technique. The elasticity of budget revenues in relation to GDP was calculated using annual data for 2000–2019. Further, state budget revenues were adjusted taking into account the output gap and elasticity according to formula (2). State budget expenditures were not adjusted for the economic cycle, since the expenditures related to unemployment are financed not from the state budget but from the state social insurance fund. The structural balance of the state budget was calculated as the difference between the adjusted revenues and expenditures of the state budget (% of potential output) according to formula (1).

Fig. 5. Dynamics of real and potential output and inflation of Kazakhstan for 1991–2019: — real GDP growth, % Y/Y; --- potential output growth; —●— inflation.

Source: Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the RK, authors' calculations.

The *fiscal position* is defined based on the sign of the structural budget balance. If the balance is negative, the fiscal position has a stimulating character, if positive, the fiscal position is restraining.

The *fiscal impulse* is defined as the difference between fiscal positions of two adjacent years and shows the impact of the budget on the economy or the change in the direction of fiscal policy from year to year. If the fiscal impulse is positive, the impact of the budget on the economy is restraining, if negative, it is stimulating.

Interpretation of the results and retrospective assessment of the adequacy of the fiscal policy to the situation in the economy in terms of the “budget rule.” For convenience, the calculation results are represented graphically. According to the calculations, the fiscal position indicates that the Government of the Republic of Kazakhstan in 2003–2019 pursued a stimulating fiscal policy, that is, it was expansionary. At the same time, the values of the fiscal impulse show that the fiscal policy was becoming less expansionary in 2008–2010, 2013, 2015–2016, and 2018, compared with the corresponding preceding years (Fig. 6).

Periods of effective countercyclical policies. Analyzing the correspondence of the fiscal policy to the economic cycle, we see that in 2008–2009 and 2015–2016 the fiscal policy was countercyclical and effective in overcoming short-term problems—the effects of external shocks and return to natural growth.

Periods of procyclical policies. However, in 2003–2007, 2011–2014 (precrisis period), and 2018–2019 the direction of the policy was not consistent with the economic cycle: while having high economic growth, the government kept the budget deficit.

As a result, despite the positive output gaps, the procyclical budgetary policy continued during these periods and was accompanied by the allocation of significant funds from the NFRK. It was during these periods that excessive stimulating measures on the part

of the government and the National Bank increased consumer activity. Given the underdevelopment of domestic production, it put pressure on the continued growth of inflation.

Such inconsistencies between the growth of government spending and the economic cycle indicate the need to develop fiscal rules that would contain benchmarks for efficiency.

The need for institutional changes in fiscal policy. Currently, there are 12 budget rules in Kazakhstan, which are regulated by the following documents:

- Budget Code of the Republic of Kazakhstan.
- The Concept of the Formation and Use of Funds of the NFRK from December 8, 2016.
- The Concept of the New Budgetary Policy of the Republic of Kazakhstan no. 590 from June 26, 2013.
- Treaty on the EAEU from May 29, 2014.

These fiscal rules impose constraints on the budget balance (budget deficit and nonoil budget), expenditures (guaranteed transfer), and the level of debt. At the same time, these rules do not have countercyclical properties, are periodically violated, and create imbalances in the fiscal sphere.

At the end of 2020, out of the existing 12 budget rules, five rules were not observed (nonoil budget deficit, budget deficit, transfers from the NF, public debt, and expenses for servicing and repaying government debt), and two rules (external debt of the country, public and quasi-public sector debts) were close to being violated. It can be stated that the current fiscal rules do not provide for the fiscal sustainability of the economy. In this regard, it is necessary to revise the existing fiscal model of the country through the construction of a system of new budget rules.

To improve the efficiency of the budget system, enhance macroeconomic stability, and introduce an element of countercyclical, the following rules are proposed:

Fig. 6. The structural balance of the state budget of the Republic of Kazakhstan and the fiscal impulse in 2000–2019:

▒ structural balance of the state budget, % of GDP; ▨ structural balance of the state budget, % of GDP; ◆ fiscal position; → fiscal impulse. Source: Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the RK, Ministry of Finance of RK, calculations of Economic Research Institute (Nur-Sultan).

—To introduce a fiscal model based on the structural budget balance cleared of the influence of economic cycles.

—To develop a unified approach to estimating the output gap and the structural budget balance in Kazakhstan at the government level with the involvement of scientific institutions, analytical centers, and independent experts.

—To target a zero output gap by pursuing a coordinated countercyclical fiscal and monetary policy in the short term and increasing the potential output through structural reforms.

—To limit the volume of transfers from the NFRK to the fund's investment income for the previous year.

—To establish an additional rule under which budget expenditures could be increased only at the expense of nonoil revenues.

—To move from the “addressless” direction of transfers from the NF to the budget to their use exclusively for investment development goals and not for current consumption.

To prevent a sharp decline in NF reserves if oil prices remain low in the long term, the government needs to balance public spending to support short-term demand in order to restore growth with economic sustainability in the medium term. To do this, it is necessary to avoid procyclicality and acceleration of the growth rate of public expenditures that are not supported by the corresponding growth in productivity, to optimize state budget expenditures, to reduce ineffective tax incentives, to expand the tax base by reducing the nonobserved economy, to pursue a rational debt policy and attract loans (mainly in tenge) to replace lost income, and to improve the efficiency of public investment needed for sustainable recovery.

In addition to overcoming the crisis and recovering the economy, it is also very important for support measures to be aimed at developing the economy in the long term with regard to the construction of transport, energy, and social infrastructure and improving the quality of human capital.

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CONFLICT OF INTEREST

The authors declare that they have no conflicts of interest.

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