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Determinants of Lending in Kazakhstan

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This paper identifies the macroeconomic determinants of lending in Kazakhstan. The key factors influencing the dynamics of corporate and retail lending are determined by modeling loan portfolio volumes across key lending purposes and economic sectors. The analysis highlights the specific developments of the credit market and problem areas in modeling loan demand from businesses and households.

Key Words: lending, business, population, economy, vector autoregression.

JEL-Classification: C01, E21, E42, E52.

1. Preamble

The purpose of this paper is to analyze various macroeconomic, financial, social, institutional, and other determinants driving the expansion of lending in Kazakhstan.

The dynamics of lending in Kazakhstan are determined by demand from the corporate sector and the general public, which is influenced by macroeconomic indicators (economic cycles, inflation, etc.), the cost of credit, borrower solvency, and the state of industries. Other factors determining demand for credit include economic uncertainty, including those influenced by the geopolitical situation, government policy, and others. Government support for banks and borrowers plays a significant role in the development of lending in Kazakhstan, including through refinancing/loan write-off programs and various government-sponsored concessional lending programs for both specific sectors of the economy and certain categories of the population (e.g., subsidized mortgages and corporate loans).

This paper examines two key segments of the credit market: corporate and retail lending. The broad scope of the study is driven by the goal of a comprehensive assessment of the impact of factors on lending levels in the economy. Differences in demand structure, sensitivity to interest rate changes, and responses to macroeconomic, social, and financial factors determine the importance of separate analysis of the two segments. Furthermore, given the varying dynamics of business lending across industries, it was decided to construct separate models for lending to these industries. Mortgage and consumer lending, in turn, have also shown divergent dynamics over the past 10 years, necessitating the consideration of separate independent factors in the empirical analysis.

To achieve this goal, the following research questions were formulated:

1. What approaches to identifying the main determinants of lending are presented in the economic literature?

2. What macroeconomic conditions have historically accompanied changes in Kazakhstan's lending activity?

3. What are the key macroeconomic variables driving changes in lending volumes in each loan segment?

4. What specifics of the credit market complicate the modeling of demand for loans from businesses and the public?

This paper is presented as follows. The second section reviews the international literature. The third section provides a historical analysis of lending and identifies some of the factors that have had the most significant impact on the dynamics of lending in Kazakhstan since the early 2000s. The methodology is discussed in the fourth section, and the results of the empirical calculations are presented in the fifth section. The results of the study and key conclusions are presented in the final section of the paper.

2. Review of International Literature

The factors influencing bank lending volumes continue to be a focus of analysts. Empirical studies show that the volume of loans provided depends on a multitude of factors, the effects of which vary depending on the economic environment, the level of financial sector development, and other specific conditions. Among macroeconomic factors, indicators such as GDP and the policy interest rate play a key role in shaping loan demand.

Rabab`ah (2015) examines the determinants of commercial bank lending in Jordan using a linear regression model. The results of the study showed that the level of non-performing loans and the overnight deposit rate at the central bank have a negative and significant impact on lending growth. At the same time, factors such as bank size and the rate of economic growth have a positive and significant impact on commercial bank lending activity.

In a study by Manole et al. (2016), using elements of autoregression and moving averages, they analyze the impact of the unemployment rate and consumer price index on household lending in Romania (the ARMAX model). The results show that these two macroeconomic factors have a significant impact on household lending: rising unemployment tends to reduce the availability and demand for credit, while inflationary processes negatively affect the behavior of borrowers and lenders. However, the authors note the limitations of a model based on only two explanatory variables and emphasize the need to consider additional factors for a more comprehensive analysis of household lending dynamics.

Nieto (2007) analyzes household lending dynamics in Spain using a vector error correction model (VECM). The results show that trends in long-term borrowing are positively impacted by factors such as increases in real household spending and gross household wealth (financial assets and real estate), as well as longer loan tenors. However, increases in the cost of credit and unemployment have a negative impact. The author concludes that overall household borrowing in Spain is consistent with theoretical expectations.

Guo & Stepanyan (2011) study the dynamics of bank lending in developing countries over the past decade using panel regression. Using extensive data and country-specific time series, they found that domestic and external sources of financing positively impact lending growth. Economic growth facilitates increased lending, while high inflation negatively impacts real loan growth. Furthermore, the authors emphasize the importance of banking sector stability as a prerequisite for lending expansion.

Increasing attention in modern literature is being paid to the sector-specific determinants of lending. International studies show that levels of lending in different sectors depend not only on the overall macroeconomic environment but also on sector-specific characteristics, including industry specifics (e.g., seasonality in agriculture), asset structure, institutional constraints, government involvement, and others.

According to Demirgüç-Kunt and Maksimovic (1998), in the industry, construction, and telecommunications, the development of financial infrastructure and the protection of creditor rights are key factors. In countries with an effective institutional environment, companies are more active in raising debt capital, especially long-term capital. At the same time, Love and Zicchino (2006) emphasize that in economies with limited financial capacity, interest rate fluctuations have a greater impact on lending volumes in capital-intensive industries. According to a report by the US Federal Deposit Insurance Corporation (FDIC, 2021), in construction, such fluctuations sharply increase the risk of default due to high debt burdens and weak liquidity.

In agriculture, lending can be complicated by the specific characteristics of the sector. Lending to agricultural producers is often limited by low collateral liquidity, income seasonality, and weak infrastructure, often requiring government intervention to expand financial support for the agro-industrial complex. For example, Carter and Olinto (2003) note that the main barrier to agricultural lending is not the cost of borrowing, but rather the lack of collateral and income seasonality. In countries with an active government role, government guarantees and subsidized programs become key factors (Barry et al., 2000), highlighting the influence of fiscal determinants.

The trade sector has traditionally been one of the main recipients of bank loans; in this sector, determinants of lending may not be macroeconomic conditions, but rather liquidity, profitability, and turnover ratios (Garcia-Teruel and Martinez-Solano) (2010).

According to the above studies, bank lending volume is influenced by a variety of factors, including macroeconomic and financial variables. Key factors include economic growth, inflation, employment, and interest rates, which simultaneously shape demand for loans and affect their availability. According to the authors of some studies, institutional factors (the stage of economic development, financial sector, etc.), as well as industry specifics, can influence lending volume. A stable macroeconomic environment, the stability of the banking system, and favorable monetary conditions play a decisive role in supporting lending activity.

These findings emphasize the need for a comprehensive approach to analyzing credit dynamics, taking into account both macroeconomic parameters and the characteristics of the banking system and social environment. These factors should be considered in the context of the specific economic environment of a particular country, which is especially important for Kazakhstan when studying the impact of macroeconomic policy on lending.

3. Historical Analysis of Lending to the Kazakh Economy

The dynamic development of the banking system since the early 2000s has been accompanied by an expansion of lending to the economy. The loan portfolio of second-tier banks (STBs) grew rapidly, driven by access to cheap external financing. Loans to GDP rose from 10.6% in 2000 to a peak of 56.5% in 2007 (in nominal terms, a 26-fold increase from 276.2 billion tenge to 7.3 trillion tenge), which is an evidence of potential overheating in the economy at that time. The growth of loans during this period was promoted by a significant increase in mortgage loans to households, which, in turn, stimulated the development of lending to related sectors (consumer loans, construction, etc.).

The global financial crisis of 2008–2009, whose signs began to emerge in Kazakhstan as early as 2007, led to a sharp decline in foreign investment and reduced access to affordable external funding. The consequences of the financial crisis, including falling real estate prices, resulted in an increase in the share of non-performing loans (NPLs), which peaked at 33.7% in 2014 and led to a decline in lending activity.

In 2009–2010, low bank lending activity was associated with increased corporate credit risks amid deteriorating loan portfolio quality. This deterioration in loan portfolio quality is explained, on the one hand, by the decline in borrowers' creditworthiness and, on the other hand, by the lack of a process for replacing non-performing loans with newly issued loans (Financial Stability Report, 2012).

A number of measures taken by the Government and the National Bank in the post-crisis period, including the restructuring of external liabilities of some banks and the creation of a specialized company for the purchase of problem assets – “Problem Loans Fund5 JSC – contributed to the revival of lending activity in 2011–2014, during this period the average annual growth of the total loan portfolio amounted to 12.7%.

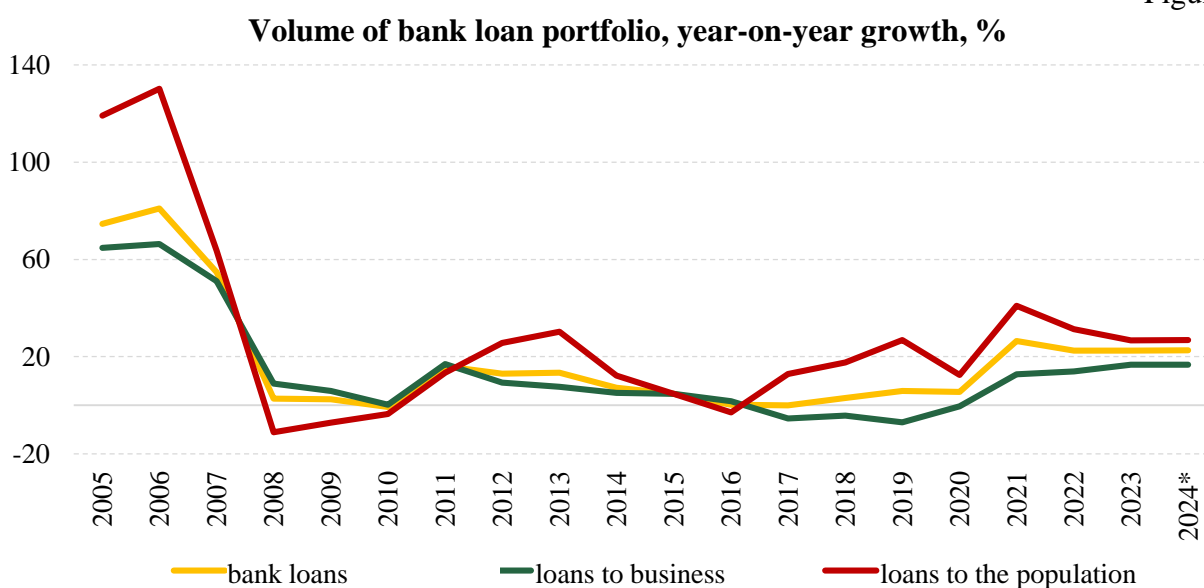
In 2015–2016, feeble business activity was observed because of significant deterioration in the terms of trade amid a sizeable drop in oil prices, which led to a reduction in nominal exports and budget revenues. Maintaining activity in the lending market in 2015–2016 was largely ensured by government concessional financing programs covering priority sectors of the economy.

In 2017, as economic activity gradually recovered, creditworthy borrowers began to show signs of a resurgence in lending. Both the volume of loans issued and the size of the loan portfolio

grew, but aggregate loan portfolio indicators were distorted by refinancing practices, including the practice of extending repayment terms. The merger of “Kazkommertsbank” JSC and “BTA Bank” JSC also had a great effect on the loan portfolio dynamics during this period. Since 2017, significant additional public funds have been allocated to improve the quality of banks’ assets, and the Banking Sector Resilience Enhancement Program has been implemented.

In 2018–2019, the loan portfolio expanded slightly amid strong growth in the retail portfolio. The corporate portfolio became smaller as a result of a reduction in non-performing loans and the withdrawal of insolvent banks from the system. After relatively weak loan portfolio growth of 3.0% in 2018, the total loan portfolio showed moderate growth in 2019, reaching 5.9% (Figure 1). However, this growth was primarily driven by an increase in the retail portfolio, while loans to legal entities showed negative dynamics.

Figure 1



* The loan portfolio growth rate in October 2024 compared to October 2023

Source: computed based on the NBK data.

In 2020, the spread of the coronavirus and the imposition of quarantine measures affected the development of the financial sector. Prolonged restrictive measures weakened the solvency of economic entities, exacerbating the systemic problem of a shortage of high-quality borrowers in the economy. Lending growth was supported by various government programs (continued implementation of the “Economy of Simple Things” program, support for entrepreneurship through the “DAMU” JSC the concessional lending program for business entities, the “Employment Roadmap for 2020-2021”, concessional mortgage lending programs, including “7-20-25”, agribusiness development programs, etc.). In 2020, a trend toward reduction in the share of loans to the corporate sector compared to loans to the population emerged. Thus, in December 2020, the share of the corporate loan portfolio was 48.5% compared to 52% in December 2019.

After a slowdown in growth rates in the post-pandemic period, lending activity of financial institutions recovered in 2021 amid rising business activity, the introduction of early withdrawal options for pension savings from the Unified Accumulative Pension Fund (UAPF), the implementation of anti-crisis programs, and increased demand from businesses. Furthermore, technological advances in banking instruments have simplified the lending process. As a result, the loan portfolio grew by 26.5% in December 2021, reaching a record high since 2008.

The next factor that impacted Kazakhstan’s credit market was the January 2022 events, as well as the worsening geopolitical situation globally. These events triggered a large-scale structural adjustment of the Kazakh economy: logistics deteriorated, and business activity declined. As a result of the geopolitical crisis, the presence of Russian subsidiary banks decreased.

Amid external and domestic inflation shocks, monetary conditions were tightened. Furthermore, similar to measures taken during the pandemic, borrowers were given the option of deferring loan payments. The main borrowers of banks in 2022 were households, amid an increase in consumer and mortgage loans. The annual growth in retail loans was almost three times higher than the corresponding increase in the corporate loan portfolio.

In 2023–2024¹, lending to the economy has been in a positive zone due to continued high growth rates in retail loans and accelerated growth in corporate loans. Retail loans continue to be the main driver of overall lending growth, primarily owing to consumer lending, which is accelerating due to the widespread adoption of installment plans. A significant slowdown in the growth rate of issued mortgage loans was observed in 2023 amid the reduction in limits under the concessional “7-20-25” program and the tightening of terms for Otbassy Bank’s bridge loans. However, mortgage lending began to show signs of recovery in 2024, including with the introduction of new mortgage programs from Otbassy Bank (Nauryz and Otau). Business loans are also showing growth, primarily owing to small businesses, including due to accelerated digitalization of financial services. Within the structure of small business loans, loans issued to individual entrepreneurs continue to show the greatest growth.

Thus, the credit market in Kazakh banking sector was formed by a combination of external and internal factors, the widespread implementation of government programs, and individual, discrete government decisions. Identifying key parameters from these factors will allow identifying the determinants of demand for credit resources from the population and businesses.

4. Research Methodology and the Data Used

To identify the determinants of retail and corporate lending, vector autoregression (VAR) models were constructed for loan portfolio balances/volumes. Models for retail loans were developed for two key segments: consumer loans and mortgages. The relationship between macroeconomic factors and business loans was established by constructing separate VAR models for various economic sectors, including agriculture, industry, transport, construction, trade, communication, and other industries.

A wide range of socioeconomic, financial, and fiscal indicators were used in the model development process. The final set of variables included in the models is presented in the Table 1.

Table 1

Variables Data

| Factors Included in the Models | |
|--------------------------------|---|
| LY | Short-term economic indicator (STEI) |
| LP | Consumer price index (CPI) |
| ICS | Index of current situation of the population (from the Population Survey on Inflation Expectations) |
| LINCOME | Per capita income |
| INT_RATE_CONS | Weighted average interest rate on new loans provided to the population |
| INT_RATE_MORT | Weighted average interest rate on new mortgage loans provided |
| INT_TRADE_KZT | Weighted average interest rate on new loans provided to the trade sector |
| INT_IND_KZT | Weighted average interest rate on new loans provided in the industrial sector |
| INT_CONSTR_KZT | Weighted average interest rate on new loans provided in the construction sector |
| INT_TRANSPORT_KZT | Weighted average interest rate on new loans provided in the transport sector |

¹ The period from January 2023 through February 2024.

| | |
|---------------------------|--|
| INT_COM_KZT | Weighted average interest rate on new loans provided for the communication sector |
| INT_AGR_KZT_SA | Weighted average interest rate on new loans provided for agriculture |
| INT_OTH_KZT | Weighted average interest rate on new loans provided for other sectors |
| LPORTF_CONSUMER | Consumer loan portfolio balances |
| LPORTF_MORTGAGE | Mortgage loan portfolio balances |
| LPORTF_KZT_IND | Loan portfolio balances in the industrial sector |
| LPORTF_KZT_AGR | Loan portfolio balances in the agricultural sector |
| LPORTF_KZT_TRD | Loan portfolio balances in the trade sector |
| LPORTF_KZT_CON | Loan portfolio balances in the construction sector |
| LPORTF_KZT_COM | Loan portfolio balances in the communication sector |
| LPORTF_KZT_TRA | Loan portfolio balances in the transport sector |
| LPORTF_KZT_OTH | Loan portfolio balances for other sectors |
| LVOLUME_CONSTR | Volume of construction works |
| LTRADE | Retail sales |
| LTRANSPORT | Gross value-added (GVA) of services of the transport sector |
| LCOMM_COMP | Gross value-added (GVA) of services of communication companies |
| RES_BUILD | Total area of commissioned residential buildings |
| PETRPRICE | Price of AI-92 gasoline |
| LGOVBUDGET_AGR | Government expenditures for agriculture |
| LGOVBUDGET_IND | Government expenditures under the “industry, architectural, urban planning and construction activities” item |
| FREIGHT_TRANSPORT | Intermodal shipping |
| TELECOMSERVICES | Volume of communication services |
| DUMMY_ENPF | Dummy variable for withdrawals of savings from the UAPF |
| DUMMY_MORT | Dummy variable designed to control for one-time deviation associated with a sharp contraction in the mortgage loan portfolio in April 2017 |
| DUMMY_CONS | Dummy variables designed to control for one-time deviations associated with a sharp contraction in the consumer loan portfolio in October 2015 and in July 2018 |
| DUMMY_AGR1, DUMMY_AGR2 | Dummy variables designed to control for the shock caused by a sharp contraction in the loan portfolio in the agricultural and industrial sector in the second half of 2018 and in January 2019 |
| DUMMY_IND1, DUMMY_IND2 | |
| DUMMY_TRADE | Dummy variable designed to control for the shock caused by a sharp contraction in the loan portfolio in the trade sector during the period from November 2017 through February 2018 |
| DUMMY_CON | Dummy variable designed to control for the shock caused by an increase in the loan portfolio in the construction sector during the period from November 2021 through February 2022 |
| DUMMY_C1, DUMMY_C2 | Dummy variables designed to control for the shock caused by a surge in the loan portfolio in the communication sector during the period from April 2019 through May 2019 |
| DUMMY_T1, DUMMY_T2 | Dummy variables designed to control for the shock caused by a surge in the loan portfolio in the transport sector during the period from September 2022 through January 2023 |
| DUMMY_OTH1, DUMMY_OTH2 | Dummy variables designed to control for the shock caused by a sharp contraction in the loan portfolio in other industries between October 2015 and June 2016 |

Based on theoretical assumptions and preliminary graphical analysis, the following assumptions were made regarding the influence of the presented indicators on the dependent variable.

— Economic activity indicators – short-term economic indicators (STEIs) – and growth rates in economic sectors (trade, construction, transportation, residential building commissioning, etc.) contribute to an increase in income for economic agents, which expands their potential for attracting credit. In this regard, the assumption of a likely increase in lending (consumer, mortgage, and lending to the relevant sector) seems reasonable.

— An increase in the general price level in the economy, in turn, can lead to a decrease in the purchasing power of economic agents, reducing the demand for loans to businesses and the population.

— Improving the current financial situation of the population has a positive impact on consumer lending. With a positive perception of their own financial situation, households are inclined to consume more, including through borrowing.

— The expansion of consumer lending is associated with higher consumer demand, which could lead to an increase in the trade volume index. At the same time, a further increase in trade activity creates the preconditions for increased demand for loans from retailers.

— Growing costs of fuel limit the financial capacity of transport companies to service current liabilities and attract new borrowings. Consequently, rising gasoline prices may have a dampening effect on lending to the transport industry.

— Increased government spending in a given sector can be a significant incentive for increased lending. Government support for businesses through preferential programs with subsidized interest rates and guarantees reduces the cost of borrowed funds, minimizes credit risks for banks, and ramps up investment activity. This creates favorable conditions for the growth of sector-specific lending.

— The increase in freight transportation volumes by all modes of transport is accompanied by an increased need for capital to upgrade and expand transport capacity, which could contribute to increased lending in the transport sector. At the same time, the growth in freight activity creates additional preconditions for further demand for loans from transport companies.

— The increase in the volume of communications services provided is driving investment activity among telecom operators, which may be reflected in heightened demand for loans in the industry. At the same time, the expansion of the range and volume of communications services creates additional incentives for further lending to companies in the sector.

— To keep track of the strong growth of mortgages in 2021 and the first months of 2022, a dummy variable for withdrawals from the UAPF was used, which has a positive impact on mortgage lending. Dummy variables for lending to economic sectors reflect the fact that loans are written off as part of the banking sector recovery and are expected to have a negative impact on the dependent variable.

The information base of the study rests on the data provided by official statistical sources: the National Bank of the RK, Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the RK, and Ministry of Finance of the RK.

To ensure a greater number of degrees of freedom, the modeling was conducted using monthly data from the period of inflation targeting implementation – from January 2016 to December 2023. Given the presence of seasonality, seasonal adjustment of variables was performed during the processing of the primary data using the X-12-ARIMA method. Next, indicators presented in nominal terms, with the exception of weighted average rates, were transformed into logarithms of real values. In the next stage of data processing, the time series were tested for stationarity using the augmented Dickey–Fuller (ADF) test. The results of the analysis showed that most variables exhibit non-stationarity (Appendix, Table 1). To reduce the data to stationarity, the first differences of the corresponding time series were calculated.

The original vector autoregression models included a large set of variables, which were subsequently reduced to eliminate multicollinearity, ensure the robustness of parameter estimates, and preserve the economic interpretability of the model.

In constructing models for retail and corporate lending, the optimal lag order was selected based on the results of statistical criteria, such as the Schwartz criterion (SC), the Akaike criterion (AIC), the Hanan-Quinn criterion (HQ), and the final projection error (FPE) criterion (Appendix, Table 2). Robustness testing of the models revealed that all roots of the characteristic polynomial (AR) are located within the unit circle in the complex plane, confirming the stationarity and stability of the selected models. Results of autocorrelation and heteroscedasticity testing indicate the absence of heteroscedasticity and serial correlation of the residuals (Appendix, Tables 3 and 4).

The significance of the VAR model parameters was assessed by comparing the observed Student's t-test value with the critical value. The theoretical consistency of the modeling results was verified using the signs of the coefficients and the cumulative impulse response graphs.

5. Description of the Structure and Results of the Loan Models

The rationale for dividing consumer loans into two categories stems from the unique characteristics of each retail lending segment, including loan tenor, loan amount, and risk level. Consumer loan dynamics are largely driven by household short-term needs, consumer sentiment, and the affordability of loan products. Meanwhile, mortgage lending is driven by household income levels, housing affordability, interest rates, and the availability of government support programs.

Consumer Loans. The VAR model of consumer loans (Table 2) included the STEI as a proxy for economic activity, the weighted average interest rate on new consumer loans, and the balances of the corresponding loan portfolio as endogenous variables. At the first stage, the model was supplemented with the consumer price index to ensure structure, but due to statistical insignificance, this indicator was subsequently excluded. Retail sales², index of current situation of the population (ICS)³ and a dummy variable of the consumer loan portfolio⁴ have been added to the VAR model as exogenous variables in order to keep track of additional factors of the population's demand for loans.

Table 2

Results of the Vector Autoregression Model for Consumer Loans*

| | D(LPOTRF_CONSUMER) |
|------------------------|-------------------------------------|
| D(LY(-1)) | 0.021703 (0.02154) [1.00754] |
| INT_RATE_CONS(-1) | 0.026300 (0.00733) [3.58681] |
| D(LPOTRF_CONSUMER(-1)) | 0.346318 (0.08626) [4.01468] |

² The third lag of the difference in the logarithms of retail turnover volumes was used as an exogenous factor due to the theoretically later reaction of loans to the growth in the supply of goods (under the influence of high demand in the market) and the significance of the indicator at the third lag.

³ The Index of Current Situation is the average of two sub-indices: the change in personal financial situation over the past year and the major purchase index. It is compiled based on a population survey as part of an assessment of inflation expectations.

⁴ A dummy variable that takes the value 1 during the period of observed significant deviation of the indicator and 0 in other periods is used to isolate a one-time effect and prevent bias in the model estimates.

| | |
|----------------|--------------------------------------|
| D(LTRADE(-3)) | 0.017454 (0.01881) [0.92787] |
| D(ICS) | 0.071564 (0.02956) [2.42065] |
| DUMMY_CONSUM | -6.101758 (1.28806) [-4.73715] |
| R-squared | 0.330532 |
| Adj. R-squared | 0.292921 |
| Sum sq. resids | 144.7771 |
| S.E. equation | 1.275425 |
| F-statistic | 8.788263 |
| Log likelihood | -154.8118 |
| Akaike AIC | 3.385512 |
| Schwarz SC | 3.546809 |
| Mean dependent | 0.719539 |
| S.D. dependent | 1.516775 |

Note: the constant term was excluded from the equation due to its insignificance.

* In the table here and below, the value without punctuation marks shows the regression coefficient for the explanatory variable and its sign, inside the usual brackets (...) the standard error of the regression coefficient is indicated, in curly brackets [...] the significance of the t-statistics of the regression coefficient.

The most significant indicators, in addition to the dummy variable, are the lag of the consumer loan portfolio, the weighted average rate, and the index of current situation (p-value < 0.05). The signs and graphs of the cumulative impulse responses illustrate the theoretically sound relationships between the variables. In the case of improving economic conditions and the personal financial situation of the population, expanding retail trade, and demand for credit, consumer loans tend to increase.

According to the modeling results, consumer loan dynamics depend largely on consumer demand and the population's subjective perception of their own financial situation, as well as, possibly, the availability of credit resources. It should be noted that, in addition to the cost of lending, the widespread digitalization of banking services, which is difficult to account for in the modeling, can also contribute to credit availability. Simplification of the consumer loan process and active marketing by commercial banks, while significantly influencing household financial behavior, create an additional incentive for consumption. Currently, accounting for these qualitative factors is difficult due to the lack of relevant quantified data; therefore, a potential for further analysis of consumer lending in this area is still there.

Mortgage Loans. The list of endogenous variables in the VAR model of mortgage loans (Table 3) included the consumer price index (CPI), the weighted average interest rate on new mortgages, and the remaining mortgage portfolio balance. Initially, two factors were planned for inclusion in the model – a short-term economic indicator and inflation – but both were statistically insignificant. However, to ensure the model's structure, it was decided to retain one variable with a higher t-statistic – inflation. The exogenous variables selected for the final model included the total floor area of residential buildings commissioned, the per capita income of the population in real terms, a dummy variable for withdrawals of savings from the UAPF⁵ and a dummy variable

⁵ The values of the dummy variable depending on the period were set at the following levels:
0 – before the option for an early withdrawal of pension savings by the population was introduced;
1 – the enforcement of amendments to the legislation on early withdrawal of pension savings before raising the sufficiency thresholds for early withdrawal of a part of the savings from the UAPF;
0.5 – in subsequent periods with new values of the sufficiency threshold.

for the mortgage loan portfolio⁶.

Table 3

Results of the Vector Autoregression Model for Mortgage Loans

| | D(LPORF_MORTGAGE) |
|-----------------------|--------------------------------------|
| D(LP(-1)) | -0.027225 (0.51155) [-0.05322] |
| D(INT_RATE_MORT(-1)) | 0.009226 (0.41084) [0.02246] |
| D(LPORF_MORTGAGE(-1)) | 0.083445 (0.11474) [0.72722] |
| C | 0.592872 (0.45020) [1.31692] |
| D(RES_BUILD(-1)) | 1.382794 (1.07526) [1.28601] |
| DUMMY_ENPF | 0.690314 (0.58575) [1.17852] |
| D(LINCOME(-1)) | 0.373496 (0.17552) [2.12796] |
| DUMMY_MORT | 12.90975 (2.53863) [5.08532] |
| R-squared | 0.317609 |
| Adj. R-squared | 0.263327 |
| Sum sq. resids | 341.4709 |
| S.E. equation | 1.969861 |
| F-statistic | 5.851179 |
| Log likelihood | -197.1260 |
| Akaike AIC | 4.273458 |
| Schwarz SC | 4.487154 |
| Mean dependent | 1.133181 |
| S.D. dependent | 2.295082 |

Among the variables, the per capita income coefficient, in addition to the dummy variable, demonstrates high statistical significance (p -value < 0.05). The cumulative impulse response graphs correspond to the theoretical impact of endogenous variables on mortgage lending.

According to the model, mortgage lending decreases in response to rising consumer prices – as a result of declining real income and growing housing costs (driven by rising prices for construction and related materials), housing and mortgage affordability decline. Conversely, rising real income leads to an increase in the mortgage portfolio. The introduction of new opportunities, such as expanding housing supply and using pension savings, has a positive effect on mortgage

⁶ A dummy variable that takes the value 1 during the period of observed significant deviation of the indicator and 0 in other periods is used to isolate a one-time effect and prevent bias in the model estimates.

lending. Meanwhile, bank interest rate increases discourage mortgage lending growth, according to the impulse response results.

According to the obtained results, the most significant factors in mortgage portfolio dynamics are household income and the ability of the population to withdraw pension assets early. It should be noted that when analyzing the model's results, it is necessary to take into account the prevailing position of the government (loans with rates significantly below market rates) in the mortgage market, which is reflected in the existing historical dynamics of interest rates and mortgage portfolio balances.

The division of corporate loans into individual sectors when analyzing macroeconomic determinants is necessary to account for the specifics of economic activity, financing needs, and the risk level of business entities in various economic sectors. Furthermore, the presence of significant government support for specific sectors may also influence the modeling results.

Agricultural Sector. The endogenous variables of the VAR model for agricultural loans (Table 4) included the weighted average interest rate on new loans issued to agriculture, government expenditure on agriculture (the expenditure item "agriculture, water, forestry, fisheries, specially protected natural areas, environmental protection and wildlife, land relations") and the balances of the loan portfolio. The exogenous variables of the model are presented in the form of dummy variables designed to control for the shock associated with a sharp reduction in the loan portfolio in the second half of 2018 and January 2019 (a drop of 44.6% in January 2019 compared to July 2018), caused by the write-off of problem loans as part of rehabilitation of the banking system. The inclusion of dummy variables helps neutralize the effect of this shock, which contributes to a more accurate assessment of the influence of other factors.

Table 4

**Results of the Vector Autoregression Model for Loans to Businesses
in the Agricultural Sector**

| | D(LPOTRF_KZT_AGR) |
|-----------------------|--------------------------------------|
| D(INT_AGR_KZT_SA(-1)) | -0.045502 (0.18041) [-0.25221] |
| D(INT_AGR_KZT_SA(-2)) | -0.141723 (0.17563) [-0.80694] |
| D(LGOVBUDGET_AGR(-1)) | -0.012934 (0.00476) [-2.71918] |
| D(LGOVBUDGET_AGR(-2)) | -0.021389 (0.00471) [-4.54129] |
| D(LPOTRF_KZT_AGR(-1)) | -0.180090 (0.04567) [-3.94333] |
| D(LPOTRF_KZT_AGR(-2)) | -0.158156 (0.04890) [-3.23414] |
| C | 0.577732 (0.24338) [2.37383] |
| DUMMY_AGR1 | -7.253650 |

| | |
|----------------|-----------------|
| | (0.39044) |
| | [-18.5781] |
| DUMMY_AGR2 | 8.607272 |
| | (1.08604) |
| | [7.92540] |
| R-squared | 0.824349 |
| Adj. R-squared | 0.808560 |
| Sum sq. resids | 436.7202 |
| S.E. equation | 2.215168 |
| F-statistic | 52.21071 |
| Log likelihood | -212.2779 |
| Akaike AIC | 4.515876 |
| Schwarz SC | 4.753271 |
| Mean dependent | -0.404849 |
| S.D. dependent | 5.062792 |

The initial model specification attempted to include the STEI parameter to account for the impact of the general economic cycle on agricultural lending volumes. However, after analyzing the results, it was decided to exclude this variable due to its statistical insignificance and the incorrect sign of the coefficient, indicating a missing or incorrect relationship between economic activity and dynamics of lending in the agricultural sector. Agriculture's heavy reliance on government incentives, seasonal and climate risks likely reduces its sensitivity to changes in economic activity.

All the signs of the coefficients in the final model correspond to theoretically justified relationships between variables, but some indicators demonstrate insignificance. In particular, the negative coefficient of the weighted average interest rate variable confirms the existence of an inverse relationship between lending rates and lending volumes. However, the statistical insignificance of this variable may be explained by the limited impact of interest rates on agricultural lending due to the widespread availability of loans with preferential rates.

The agricultural sector in Kazakhstan relies heavily on government support. The role of quasi-government financial institutions (e.g., the Agrarian Credit Corporation and KazAgroFinance) is gradually increasing. These organizations offer more attractive financing terms through concessional programs and subsidized loans, reducing agribusiness's dependence on traditional bank lending. Furthermore, a low liquidity of agricultural assets and limited ability to use land and other assets as collateral create additional risks for banks. Public spending on agriculture has been estimated to have an inverse effect on lending volumes. Expanding budget expenditures may reduce the need for loans from second-tier banks, as entrepreneurs may prefer more favorable terms and programs of government financing over traditional bank lending.

Thus, the insignificance of several variables in the model can be explained by the specific structure of extended agricultural lending (not just from commercial banks). As noted earlier, the volume of agricultural lending can be significantly influenced by external (non-economic) factors such as weather conditions and crop yields, which are difficult to factor in a standard econometric model. These factors can vary significantly from year to year, directly impacting the financial position of agricultural enterprises. However, incorporating these variables into the model is challenging due to the lack of quantified data.

Industry. The VAR model of industrial loans (Table 5) included the following endogenous variables: STEI, CPI, weighted average interest rate on new corporate loans, government spending on industry, architectural, urban planning, and construction activities, and loan portfolio balances. The exogenous variables in the model include dummies reflecting the shock caused by the sharp contraction of the loan portfolio in the second half of 2018 and in January 2019.

**Results of the Vector Autoregression Model for Loans to Businesses
in the Industrial Sector**

| | D(LPORF_KZT_IND) |
|-----------------------|---------------------------------------|
| D(LY(-1)) | 0.033816 (0.02281) [1.48222] |
| D(LY(-2)) | 0.014300 (0.02331) [0.61355] |
| D(LP(-1)) | 0.332383 (0.26780) [1.24114] |
| D(LP(-2)) | -0.163929 (0.26534) [-1.21873] |
| D(INT_IND_KZT(-1)) | -0.549567 (0.07993) [-6.87532] |
| D(INT_IND_KZT(-2)) | 0.192142 (0.08886) [2.16224] |
| D(LGOVBUDGET_IND(-1)) | -0.003203 (0.00146) [-2.19248] |
| D(LGOVBUDGET_IND(-2)) | -0.003441 (0.00141) [-2.44725] |
| D(LPORF_KZT_IND(-1)) | -0.178397 (0.07293) [-2.44620] |
| D(LPORF_KZT_IND(-2)) | 0.055044 (0.06392) [0.86118] |
| C | -0.010957 (0.23464) [-0.04670] |
| DUMMY_IND | 2.567444 (0.28360) [9.05295] |
| DUMMY_IND2 | -2.698886 (0.36758) [-7.34225] |
| R-squared | 0.713760 |
| Adj. R-squared | 0.673349 |
| Sum sq. resids | 132.7379 |
| S.E. equation | 1.249649 |
| F-statistic | 17.66277 |

| | |
|----------------|-----------|
| Log likelihood | -153.9230 |
| Akaike AIC | 3.406592 |
| Schwarz SC | 3.749496 |
| Mean dependent | 0.192062 |
| S.D. dependent | 2.186483 |

According to the model estimation results, the positive coefficient of the STEI variable indicates a potential impact of economic activity on lending volumes. However, this variable is statistically insignificant, as is the case with agricultural lending. This may indicate the sector's partial dependence on government support measures, which operate independently of economic cycles.

The inflation indicator demonstrates significance (p -value < 0.25) at the second lag, confirming the presence of a short time lag between price increases and their impact on lending. In particular, higher inflation may lead to increased business inflation expectations and a corresponding nominal increase in demand for loans to purchase materials and finance other production needs.

The correct direction of the relationship and statistical significance (p -value < 0.01) of the first lag of the weighted average rate demonstrates an inverse relationship between lending and interest rates, i.e., higher rates lead to a decrease in the availability of credit for businesses. However, the relationship between the indicators is unstable – at the second lag, the effect becomes positive. The main reason for this situation may be the implementation of the government support program for businesses in the industrial sector.

Government spending has a negative statistically significant effect on lending at the second lag (p -value < 0.25). Increased government spending through subsidies and other forms of government support reduces the need for market-based lending due to the reduced attractiveness of traditional bank financing for entrepreneurs.

Trade. In modeling loans to the trade sector (Table 6), we used endogenous variables such as STEI, CPI, volume of consumer loans, weighted average interest rate on new trade loans, and balances of the loan portfolio to the trade sector. A dummy exogenous variable was introduced to control for the shock caused by the sharp contraction in the loan portfolio between November 2017 and February 2018. This shock was caused by the write-off of problem loans as part of the banking system rehabilitation measures.

Table 6

Results of the Vector Autoregression Model for Loans to Businesses in the Trade Sector

| | D(LPORF_KZT_TRD) |
|-----------------------|--------------------------------------|
| D(LY(-1)) | 0.009857 (0.02813) [0.35043] |
| D(LY(-2)) | 0.083901 (0.02821) [2.97464] |
| D(LP(-1)) | -0.497870 (0.33745) [-1.47541] |
| D(LP(-2)) | 0.809734 (0.34076) [2.37625] |
| D(LPORF_CONSUMER(-1)) | 0.125208 (0.11827) [1.05864] |

| | |
|------------------------|--------------------------------------|
| D(LPOTRF_CONSUMER(-2)) | 0.396808 (0.11907) [3.33255] |
| D(INT_TRADE_KZT(-1)) | -0.647546 (0.16142) [-4.01154] |
| D(INT_TRADE_KZT(-2)) | 0.086553 (0.16959) [0.51037] |
| D(LPOTRF_KZT_TRD(-1)) | 0.084250 (0.07886) [1.06835] |
| D(LPOTRF_KZT_TRD(-2)) | -0.166346 (0.07789) [-2.13569] |
| C | -0.371637 (0.35798) [-1.03815] |
| DUMMY_TRADE | -4.083149 (0.51540) [-7.92236] |
| R-squared | 0.582096 |
| Adj. R-squared | 0.528643 |
| Sum sq. resids | 206.2773 |
| S.E. equation | 1.548733 |
| F-statistic | 10.88990 |
| Log likelihood | -175.5244 |
| Akaike AIC | 3.827029 |
| Schwarz SC | 4.143556 |
| Mean dependent | -0.195926 |
| S.D. dependent | 2.255805 |

The modeling results show that the STEI exhibits a positive but statistically insignificant effect on lending volume, indicating that short-term changes in economic activity have no immediate impact on demand for loans in the trade sector. However, the significance of the STEI increases significantly at the second lag (p-value < 0.01). In this context, it can likely be argued that economic activity influences credit demand not immediately, but with a slight lag. Increased economic activity in the short term creates the preconditions for expanding consumer demand, which encourages businesses to borrow more actively to meet increased consumer demand.

The impact of the CPI on trade finance is multidirectional. An increase in inflation in the first lag, due to a reduction in disposable income, leads to a decrease in potential consumer demand. This may subsequently lead to a decrease in the trade business's need for credit resources (the CPI coefficient is significant at a p-value < 0.15). Subsequently, the impact of inflation on trade finance becomes positive, which is difficult to interpret.

The growth in consumer lending at the second lag (p-value < 0.01) has a positive, statistically significant impact on trade sector loans. In response to the growth in consumer lending, a proxy for consumer demand, businesses may increase their borrowing to meet the heightened consumer demand.

The weighted average rate is a significant variable (p-value < 0.01) in the trade finance modeling. In this industry, demand for credit is particularly sensitive to interest rate fluctuations. The modeling results show that as interest rates increase, the demand for credit decreases at the

first lag due to reduced availability. However, at the second lag, the effect becomes positive, reflecting the influence of factors other than the cost of loan.

Construction Sector. In the VAR model of construction loans (Table 7), the endogenous variables were the CPI, mortgage portfolio balances, the weighted average interest rate on new loans provided to the construction sector, the volume of construction work, and the balance of the construction loan portfolio. A dummy variable for withdrawals from the UAPF was included in the model as an exogenous variable. An additional dummy exogenous variable was introduced to factor in the shock. An attempt was made to analyze the influence of the STEI variable in the first stage of modeling; however, due to statistical insignificance, it was excluded from the model. However, the CPI variable, despite its insignificance at the first lag, was retained in the model to provide greater structure.

Table 7

**Results of the Vector Autoregression Model for Loans to Businesses
in the Construction Sector**

| D(LPORF_KZT_CON) | |
|-----------------------|--------------------------------------|
| D(LP(-1)) | -0.026200 (0.39287) [-0.06669] |
| D(LP(-2)) | -0.704546 (0.39490) [-1.78413] |
| D(INT_CONSTR_KZT(-1)) | 0.103181 (0.20884) [0.49407] |
| D(INT_CONSTR_KZT(-2)) | -0.067200 (0.20160) [-0.33334] |
| D(LPORF_MORTGAGE(-1)) | 0.194411 (0.08489) [-2.29016] |
| D(LPORF_MORTGAGE(-2)) | 0.227772 (0.08692) [-2.62042] |
| D(LVOLUME_CONSTR(-1)) | -0.025104 (0.01663) [-1.50915] |
| D(LVOLUME_CONSTR(-2)) | 0.004431 (0.01570) [0.28219] |
| D(LPORF_KZT_CON(-1)) | 0.100632 (0.05075) [1.98302] |
| D(LPORF_KZT_CON(-2)) | 0.076273 (0.05040) [1.51349] |
| C | 0.027951 (0.42276) [0.06612] |

| | |
|----------------|--------------------------------------|
| ENPF_DUMMY | 1.911340 (0.17000) [11.2432] |
| DUMMY_CON | -5.215508 (0.38235) [-13.6407] |
| R-squared | 0.799315 |
| Adj. R-squared | 0.770983 |
| Sum sq. resids | 276.8021 |
| S.E. equation | 1.804576 |
| F-statistic | 28.21251 |
| Log likelihood | -189.9344 |
| Akaike AIC | 4.141519 |
| Schwarz SC | 4.484422 |
| Mean dependent | -1.068257 |
| S.D. dependent | 3.770872 |

According to the results, the CPI at the second lag (p-value < 0.1) and the remaining mortgage loan portfolio (p-value < 0.05) are statistically significant variables in the model.

The positive coefficient of the mortgage portfolio variable may indicate that an increase in mortgage lending contributes to housing demand, which, in turn, stimulates construction lending. The negative coefficient on the interest rate at the second lag reflects its lagged dampening effect on corporate lending.

The other variables, despite having the theoretically expected signs, did not demonstrate statistical significance.

The signs of the coefficients, despite their insignificance, allow drawing certain conclusions about the possible direction of their impact on lending volume. Construction volume also has a positive coefficient at the second lag, which explains the increase in demand for loans to finance new projects in response to increased activity in the construction sector.

Overall, it should be noted that the downward trend in lending to the construction industry by second-tier banks began in 2009, amid the global financial crisis. Despite the active development of the construction industry and the growth in residential building commissioning, lending in this sector continues to decline. Even with the introduction of government support programs such as “7-20-25” and “Baspana Hit”, aimed at stimulating housing demand and increasing mortgage loan affordability, the downward trend in lending to the construction industry persists. In addition to borrowed funds, construction companies are actively using their own funds and also raising financing through equity participation and the securities market, which significantly reduces their dependence on bank loans.

Communication Sector. For the telecom industry loan model (Table 8), the following variables were selected: STEI, CPI, average weighted interest rate on new loans provided to the telecom industry, gross value added of telecom services, total telecom market size, and loan portfolio balances. To control for shock, separate dummy exogenous variables were additionally incorporated.

Table 8

Results of the Vector Autoregression Model for Loans to Businesses in the Communication Sector

| D(LPORF_KZT_COM) | |
|------------------|--------------------------------------|
| D(LY(-1)) | -0.037823 (0.06326) [-0.59793] |

| | |
|-------------------------|--------------------------------------|
| D(LP(-1)) | -3.180992 (0.64933) [-4.89888] |
| D(INT_COM_KZT(-1)) | 0.107307 (0.20921) [0.51292] |
| D(LCOMM_COMP(-1)) | -0.304121 (2.01756) [-0.15074] |
| D(LTELECOMSERVICES(-1)) | 0.163045 (2.07149) [0.07871] |
| D(LPORTF_KZT_COM(-1)) | 0.143281 (0.02985) [4.80049] |
| C | 2.043354 (0.63455) [3.22014] |
| DUMMY_C1 | 53.04487 (1.60247) [33.1019] |
| DUMMY_C2 | -20.07418 (0.92776) [-21.6372] |
| R-squared | 0.929924 |
| Adj. R-squared | 0.923695 |
| Sum sq. resids | 1268.801 |
| S.E. equation | 3.754702 |
| F-statistic | 149.2908 |
| Log likelihood | -266.7349 |
| Akaike AIC | 5.570403 |
| Schwarz SC | 5.806323 |
| Mean dependent | -0.090204 |
| S.D. dependent | 13.59252 |

According to the results, the CPI is negative and is a statistically significant variable in the model. Rising inflation leads to a decrease in lending to the industry. This is explained by the increased cost of borrowing and a reduced demand for loans.

The modeling results show that the coefficients for some variables correspond to the theoretically expected signs, despite their statistical insignificance. The gross value added of telecommunication services has a negative coefficient, which may point to a decreased need for borrowing with an increase in internal efficiency and profitability of enterprises. The overall size of the telecommunication market has a positive effect on lending, which is likely due to expanded investment opportunities and increased financial needs of companies in the industry.

It should be mentioned that the telecommunication industry is characterized by high business concentration, with a few large companies playing a dominant role in the market, making their lending decisions decisive for overall lending in the sector. For this reason, loan demand is largely dependent on the financial stability and profitability of major players. In this context, gross value added, which reflects the business activity and financial performance of leading enterprises, becomes a significant factor influencing lending volumes.

However, the STEI and the weighted average interest rate on new loans showed coefficients that differed from theoretical expectations. This suggests that their impact on lending during the reviewed period may be multidirectional, suggesting that lending to the telecommunication sector is dependent on the specific characteristics of this type of lending.

Transport Sector. The list of endogenous variables in the VAR model for lending to the transport sector (Table 9) includes STEI, CPI, the weighted average interest rate on new loans provided to the transport sector, GVA of transport services, the volume of intermodal shipping, and the remaining loan portfolio. The price of AI-92 gasoline is integrated into the model as an exogenous variable, serving as an indicator of changes in the cost of fuel and operating expenses in the transport sector. To control for the shock, separate dummy exogenous variables are additionally incorporated.

Table 9

**Results of the Vector Autoregression Model for Loans to Businesses
in the Transport Sector**

| D(LPORF_KZT_TRA) | |
|---------------------------|--------------------------------------|
| D(LY(-1)) | -0.308143 (0.05005) [-6.15685] |
| D(LY(-2)) | -0.082408 (0.05217) [-1.57974] |
| D(LP(-1)) | -0.742272 (0.52674) [-1.40917] |
| D(LP(-2)) | 1.149131 (0.51648) [2.22492] |
| D(INT_TRANSPORT_KZT(-1)) | 0.358906 (0.18447) [1.94560] |
| D(INT_TRANSPORT_KZT(-2)) | -0.066089 (0.17219) [-0.38381] |
| D(LTRANSPORT(-1)) | 0.154157 (0.04018) [3.83648] |
| D(LTRANSPORT(-2)) | 0.067716 (0.03779) [1.79195] |
| D(LFREIGHT_TRANSPORT(-1)) | 0.080079 (0.02144) [3.73581] |
| D(LFREIGHT_TRANSPORT(-2)) | 0.019410 (0.02064) [0.94063] |
| D(LPORF_KZT_TRA(-1)) | 0.030113 (0.05293) |

| | |
|-----------------------|--------------------------------------|
| | [0.56887] |
| D(LPOTRF_KZT_TRA(-2)) | 0.108757 (0.05742) [1.89399] |
| C | 0.492218 (0.47436) [1.03765] |
| D(PETRPRICE) | 0.160121 (0.04358) [3.67417] |
| DUMMY_T1 | 9.545777 (0.80536) [11.8528] |
| DUMMY_T2 | -10.56025 (0.86929) [-12.1481] |
| R-squared | 0.805925 |
| Adj. R-squared | 0.770423 |
| Sum sq. resids | 544.7600 |
| S.E. equation | 2.577482 |
| F-statistic | 22.70107 |
| Log likelihood | -223.1095 |
| Akaike AIC | 4.879786 |
| Schwarz SC | 5.301821 |
| Mean dependent | 0.185645 |
| S.D. dependent | 5.379370 |

According to the model estimates, the STEI indicator has a statistically significant but negative effect (p -value < 0.05 at the first lag) on lending in the transport sector. It is likely that during periods of economic growth, transport companies may use internal sources of funding, such as operating profits, instead of borrowing from commercial banks.

The statistically significant positive coefficient at the first and second lags (p -value < 0.1) for revenue from transport services (GVA) indicates that revenue growth in the transport sector stimulates demand for loans. Increased activity in this sector improves their financial soundness and creditworthiness, facilitating access to financing.

The variable for intermodal shipping has a positive and statistically significant coefficient at the first lag (p -value < 0.05). This is likely due to the fact that increased transport activity reflects increased demand for industry services and encourages companies to attract additional financial resources for expansion.

The negative coefficient of the CPI at the first lag may illustrate a situation in which inflation leads to a reduced demand for borrowed funds in the short term because of rising prices for working capital and investment products. However, at the second lag, the CPI becomes statistically significant (p -value < 0.05) and has a positive effect on lending, which may indicate a delayed effect of companies' adjustment to inflationary changes.

The modeling results show that interest rates on loans issued to the transportation industry have a positive and statistically significant coefficient at the first lag (p -value < 0.1), which is inconsistent with theoretical expectations, according to which rising interest rates should reduce loan demand. However, at the second lag, the expected negative effect of interest rates on lending is observed.

Given the obtained results, which deviate from theoretical expectations, it can be noted that the transportation industry is dominated by a few large companies. Large players have significant

financial resources and can make lending decisions based on their profitability and long-term strategies, not just the present value of borrowing. Given the high concentration of the sector, the behavior of large companies can have a proportionally stronger impact on total lending, regardless of changes in interest rates. Therefore, even with growing interest rates, loan demand may change only slightly.

Other Sectors. The VAR model for loans to other industries (more than 99 types of activities: professional, scientific and technical activities, administrative and ancillary services, etc.) includes the following endogenous variables: STEI, CPI, volume of lending to the trade sector, weighted average rate on new loans provided to other industries, and balances of the corresponding loan portfolio (Table 10). To control for the shock, separate dummy exogenous variables were additionally incorporated.

Table 10

**Results of the Vector Autoregression Model for Loans to Businesses
in the Other Sectors**

| | D(LPOTRF_KZT_OTH) |
|-----------------------|--------------------------------------|
| D(LY(-1)) | -0.142608 (0.01734) [-8.22631] |
| D(LY(-2)) | -0.015898 (0.01712) [-0.92883] |
| D(LP(-1)) | -1.859469 (0.19837) [-9.37376] |
| D(LP(-2)) | -0.306537 (0.20907) [-1.46622] |
| D(INT_OTH_KZT(-1)) | -0.002364 (0.05791) [-0.04083] |
| D(INT_OTH_KZT(-2)) | -0.006682 (0.05717) [-0.11689] |
| D(LPOTRF_KZT_TRD(-1)) | 0.459038 (0.04395) [10.4442] |
| D(LPOTRF_KZT_TRD(-2)) | 0.002902 (0.04817) [0.06024] |
| D(LPOTRF_KZT_OTH(-1)) | -0.308668 (0.04854) [-6.35947] |
| D(LPOTRF_KZT_OTH(-2)) | -0.039194 (0.04491) [-0.87274] |
| C | 1.924130 (0.19144) |

| | |
|----------------|--------------------------------------|
| | [10.0510] |
| DUMMY_OTH1 | 3.361857 (0.27094) [12.4083] |
| DUMMY_OTH2 | -3.263157 (0.24194) [-13.4876] |
| R-squared | 0.870197 |
| Adj. R-squared | 0.851872 |
| Sum sq. resid | 74.71282 |
| S.E. equation | 0.937536 |
| F-statistic | 47.48672 |
| Log likelihood | -125.7615 |
| Akaike AIC | 2.831867 |
| Schwarz SC | 3.174771 |
| Mean dependent | -0.169890 |
| S.D. dependent | 2.435959 |

Model estimates show significant coefficients for all variables at the first lag (p -value < 0.05), with the exception of interest rates. The negative STEI coefficient illustrates the link between stronger short-term economic activity and reduced lending in other industries. This can be explained by the fact that for other industries, stronger economic activity leads to the increased revenue, allowing companies to use their own funds, reducing their dependence on bank financing. Boosting inflation, in turn, can lead to a reduced demand for corporate loans.

Trade finance volumes have a positive impact on lending to other sectors. Lending to trade and other industries is likely more market-driven than lending to other sectors of the economy, as evidenced by the correlation in the dynamics of these indicators.

The weighted average interest rate on new loans provided to other sectors has a negative coefficient, consistent with the economic theory: higher interest rates lead to higher borrowing costs and, consequently, a decrease in demand for loans. Despite the statistical insignificance of this coefficient, the direction of its influence is consistent with theoretical expectations.

6. Conclusion

Kazakh credit market is characterized by unique development characteristics, shaped by a combination of macroeconomic, financial, social, and institutional factors. Expanding demand amid improved financial health and access to loans is fueling dynamic growth in the consumer lending segment. Mortgage lending growth is largely driven by government measures to improve housing affordability and rising real income for individuals. Corporate lending trends, in turn, are determined by the specific activities of companies in various industries.

In agriculture and industry, government spending and concessional programs have the greatest impact, resulting in the displacement of traditional bank lending. Since 2009, the construction industry has seen a sustained decline in lending. This is likely due to the construction companies' shift to alternative sources of financing, such as using their own funds, equity financing, and raising capital through the securities market. For the transport and communication industries, the main factor influencing lending volumes is the profitability of services provided. High concentration in these sectors dominated by large companies determines their financial soundness and long-term strategies, thus directly influencing their needs for borrowed funds. Meanwhile, in trade, lending is more dependent on economic activity, as bank loans remain the primary source of financing for businesses. Trade, like other industries, is characterized by low concentration, implying a predominance of small and medium-sized businesses that lack access to alternative sources of capital.

The academic novelty of this work lies in the fact that it is the first empirical analysis of lending in Kazakhstan on a disaggregated basis, i.e., separately for each major industry (for

corporate lending), as well as separately for consumer and mortgage lending (in the context of retail lending).

Thus, the impact of the same factors on corporate lending varies depending on the industry structure, the level of concentration, and the availability of alternative sources of financing, which necessitates taking these characteristics into account when analyzing lending dynamics in different sectors of the economy.

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Table 1

Results of Testing Variables for Stationarity

| # | Variables | | Augmented Dickey–Fuller test |
|----|-------------------|------------------|---|
| | | | H_0 : the variable has a unit root (non-stationary) |
| 1 | LY | level | 0.1957 |
| | | first difference | 0.0001*** |
| 2 | LP | level | 0.9745 |
| | | first difference | 0.0000*** |
| 3 | ICS | level | 0.4827 |
| | | first difference | 0.0000*** |
| 4 | LINCOME | level | 0.9671 |
| | | first difference | 0.0000*** |
| 5 | INT_RATE_CONS | level | 0.0000*** |
| | | first difference | 0.0000*** |
| 6 | INT_RATE_MORT | level | 0.5135 |
| | | first difference | 0.0001 |
| 7 | INT_TRADE_KZT | level | 0.6152 |
| | | first difference | 0.0000*** |
| 8 | INT_IND_KZT | level | 0.0746 |
| | | first difference | 0.0001*** |
| 9 | INT_CONSTR_KZT | level | 0.7398 |
| | | first difference | 0.0001*** |
| 10 | INT_TRANSPORT_KZT | level | 0.8354 |
| | | first difference | 0.0000*** |
| 11 | INT_COM_KZT | level | 0.5755 |
| | | first difference | 0.0000*** |
| 12 | INT_AGR_KZT_SA | level | 0.7663 |
| | | first difference | 0.0001*** |
| 13 | INT_OTH_KZT | level | 0.9467 |
| | | first difference | 0.0001*** |
| 14 | LPORTF_CONSUMER | level | 1.0000 |
| | | first difference | 0.0005*** |
| 15 | LPORTF_MORTGAGE | level | 0.9987 |
| | | first difference | 0.0000*** |
| 16 | LPORTF_KZT_IND | level | 0.7660 |
| | | first difference | 0.0000*** |
| 17 | LPORTF_KZT_AGR | level | 0.3319 |
| | | first difference | 0.0086*** |
| 18 | LPORTF_KZT_TRD | level | 0.1268 |
| | | first difference | 0.0000*** |
| 19 | LPORTF_KZT_CON | level | 0.9072 |
| | | first difference | 0.0000*** |
| 20 | LPORTF_KZT_COM | level | 0.1314 |
| | | first difference | 0.0000*** |
| 21 | LPORTF_KZT_TRA | level | 0.2654 |

| | | | |
|----|-------------------|------------------|-----------|
| | | first difference | 0.0000*** |
| 22 | LPORTF_KZT_OTH | level | 0.0014** |
| | | first difference | 0.0000*** |
| 23 | LVOLUME_CONSTR | level | 0.9866 |
| | | first difference | 0.0000*** |
| 24 | LTRADE | level | 0.3560 |
| | | first difference | 0.0000*** |
| 25 | LTRANSPORT | level | 0.9979 |
| | | first difference | 0.0000*** |
| 26 | LCOMM_COMP | level | 0.0182** |
| | | first difference | 0.0001*** |
| 27 | RES_BUILD | level | 0.2832 |
| | | first difference | 0.0000*** |
| 28 | PETRPRICE | level | 0.2104 |
| | | first difference | 0.0000*** |
| 29 | LGOVBUDGET_AGR | level | 0.0000*** |
| | | first difference | 0.0000*** |
| 30 | LGOVBUDGET_IND | level | 0.0000*** |
| | | first difference | 0.0000*** |
| 31 | FREIGHT_TRANSPORT | level | 0.9924 |
| | | first difference | 0.0000*** |
| 32 | TELECOMSERVICES | level | 0.9999 |
| | | first difference | 0.0000*** |

Note: significance level at 1% (***), 5% (**), 10% (*).

Table 2

Results of Selection of an Optimal Lag for Models

| # | Model | Akaike criterion (AIC) | Schwartz criterion (SIC) | Hannah–Quinn test (HQ) | Optimal Lag |
|---|--|------------------------|--------------------------|------------------------|-------------|
| 1 | VAR(1) for consumer loans | 13.13226* | 13.63899* | 13.33641* | 1 |
| 2 | VAR(1) for mortgage loans | 6.312388* | 6.988026* | 6.584586* | 1 |
| 3 | VAR(2) for loans to agricultural businesses | 17.97999* | 18.72993* | 18.28241* | 2 |
| 4 | VAR(2) for loans to businesses in the industry | 24.08065* | 25.88607* | 24.79002 | 2 |
| 5 | VAR(2) for loans to businesses in the trade sector | 15.56460* | 17.23114 | 16.23665 | 2 |
| 6 | VAR(2) for loans to businesses in the construction sector | 19.57020 | 21.35190 | 20.28931* | 2 |
| 7 | VAR(1) for loans to businesses in the communication sector | 19.97728* | 21.45746* | 20.57470* | 1 |
| 8 | VAR(2) for loans to businesses in the transport sector | 30.19321* | 32.82465 | 31.25528 | 2 |
| 9 | VAR(2) for loans to businesses in other sectors | 18.05024* | 19.83194 | 18.76935* | 2 |

Note: an optimal lag is determined on the basis of minimum value of an information criterion (AIC, SIC or HQ).

Table 3

Results of the Breusch-Godfrey test for autocorrelation of residuals

| # | Model | Lag | LRE* stat | Prob. | Rao F-stat | Prob. |
|--|--|-----|-----------|----------------|------------|---------------|
| H ₀ : no autocorrelation of residuals | | | | | | |
| 1 | VAR(1) for consumer loans | 1 | 10.28892 | 0.3276 | 1.152236 | 0.3277 |
| 2 | VAR(1) for mortgage loans | 1 | 8.527878 | 0.4819 | 0.950997 | 0.4821 |
| 3 | VAR(2) for loans to agricultural businesses | 2 | 8.672780 | 0.4680 | 0.967455 | 0.4681 |
| 4 | VAR(2) for loans to businesses in the industry | 2 | 32.50308 | 0.1440 | 1.320848 | 0.1445 |
| 5 | VAR(2) for loans to businesses in the trade sector | 2 | 33.02425 | 0.1305 | 1.342960 | 0.1310 |
| 6 | VAR(2) for loans to businesses in the construction sector | 2 | 30.10471 | 0.22039 | 1.218339 | 0.2211 |
| 7 | VAR(1) for loans to businesses in the communication sector | 1 | 36.13624 | 0.4623 | 1.006004 | 0.4636 |
| 8 | VAR(2) for loans to businesses in the transport sector | 2 | 48.52053 | 0.0794 | 1.376986 | 0.0802 |
| 9 | VAR(2) for loans to businesses in other sectors | 2 | 23.90594 | 0.5248 | 0.957222 | 0.5256 |

Note: if p-value (Prob.) > 0.05, the null hypothesis is not rejected, there is no auto-correlation of the residuals.

Table 4

Results of White's test for heteroscedasticity of residuals

| # | Model | Chi-sq | Prob. |
|---|--|----------|---------------|
| H ₀ : no heteroscedasticity of the residuals (the residuals are homoscedastic) | | | |
| 1 | VAR(1) for consumer loans | 17.39688 | 0.0967 |
| 2 | VAR(1) for mortgage loans | 3.400188 | 0.9961 |
| 3 | VAR(2) for loans to agricultural businesses | 23.14885 | 0.0810 |
| 4 | VAR(2) for loans to businesses in the industry | 23.51208 | 0.4898 |
| 5 | VAR(2) for loans to businesses in the trade sector | 16.31910 | 0.7997 |
| 6 | VAR(2) for loans to businesses in the construction sector | 33.34072 | 0.0971 |
| 7 | VAR(1) for loans to businesses in the communication sector | 12.47527 | 0.7107 |
| 8 | VAR(2) for loans to businesses in the transport sector | 26.99560 | 0.5719 |
| 9 | VAR(2) for loans to businesses in other sectors | 16.32427 | 0.8410 |

Note: if p-value (Prob.) > 0.05, the null hypothesis is not rejected, there is no heteroscedasticity of the residuals.

Assessing Effectiveness of the Government Support in Developing the Manufacturing Industry in Kazakhstan (Part 1)

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This paper is the first part of a review study that assesses the government support in developing Kazakhstan's manufacturing industry from 2003 to 2024 through the lens of achieving key strategic goals. The paper provides an overview of two industrial policy programs—the Industrial and Innovation Development Strategy (IIDS) of 2003–2015 and the Government Program for Accelerated Industrial and Innovation Development (GPAIID) of 2010–2014—which emphasized economic diversification and reduced dependence on resources.

The paper analyzes the effectiveness of tools used in achieving the program goals, the stated objectives and performance indicators, and their alignment with the actual challenges and opportunities of the country's manufacturing industry.

Key Words: government programs, manufacturing industry, industrial policy, diversification, commodity dependence, business roadmap.

JEL-Classification: H54, H60, L52, O25.

1. Preamble

The UNIDO Report¹ points out that, despite the rapid development of digital technologies, industry remains a key factor in the sustainable development of any economy. A number of studies and reports by international organizations also emphasize that the manufacturing industry serves as the foundation for economic sustainability, employment, and competitiveness, especially for developing countries, where it helps reduce dependence on the primary sectors. The development of this industry ensures the economic independence of countries, serves as the basis for adaptation to global changes, and plays a fundamental role in creating added value, developing innovation, and technological progress. It not only forms the domestic production potential for ensuring the country's competitiveness on the global stage but also determines the economy's resilience to external shocks. The importance of the manufacturing industry has particularly increased in the context of geoeconomic fragmentation amid the escalation of international military and trade conflicts. Given the importance of the manufacturing industry, government support to this sector is an important element in strengthening the country's industrial potential, especially in developing economies. Its advantage lies in the ability to stimulate the development of priority industries, attract investment, and create conditions for implementation of innovations. Support can contribute to the structural diversification of the economy and reduce dependence on resources.

Along with its advantages, such policies have drawbacks and are associated with certain risks. For example, inefficient resource allocation, reliance on government subsidies, the substitution of market mechanisms, and the suppression of market incentives can lead to a decline in productivity and competitiveness. Moreover, excessive government intervention in the economy can limit private initiative, and support to uncompetitive industries can artificially slow the economy's adaptation to modern conditions. Rodrik (2004), in his study on industrial policy, acknowledges that the government plays a key role in stimulating economic transformation, but emphasizes that success depends not so much on the degree of government intervention as on the quality of the institutions regulating this intervention. Therefore, in countries with poor institutional development, a significant role for the government in the economy can slow down the process of diversification and innovative development.

¹ UNIDO, Industrial Development Report – 2024. The New Era of Industrial Policy.

Thus, the role of government support requires a balanced approach, where its mechanisms should be aimed at creating conditions for long-term sustainable development, rather than short-term economic effects.

This study is based on a systematic review methodology aimed at assessing the effectiveness of government programs to support the development of the manufacturing industry in Kazakhstan during the period of 2003–2024. The analysis covers key stages of industrial policy, including the Industrial and Innovation Development Strategy (2003–2015), the Government Program for Accelerated Industrial and Innovation Development (2010–2014), and related initiatives such as the Business Roadmap 2020 and Productivity 2020. A systemic approach allowed comparing the goals, tools, and results of different program cycles and identify patterns in their implementation. The focus is on the relationship between stated goals and achieved results, as well as the influence of the institutional architecture on the effectiveness of government support measures. To enhance the reliability of the analysis, a triangulation method combining quantitative and qualitative data was used. The sources of information included official program passports, reports of the Supreme Audit Chamber, data from the Bureau of National Statistics, and reports of the National Bank of Kazakhstan. Additionally, information from reports of quasi-public companies and international organizations – the World Bank, OECD, UNIDO and the IMF – was used. The timeframe of Part I of the study spans three generations of industrial policy, enabling to trace its evolution and institutional continuity. Quantitative indicators, such as the share of manufacturing in GDP, the volume of non-resource exports, and labor productivity, were analyzed using descriptive and comparative statistical methods. All data were reconciled between statistical and audit sources to eliminate discrepancies. The methodological framework is based on principles of public program evaluation, examining the relationship between resources, tools, and final effects. The goal-result correspondence method was used to assess the degree of goal achievement. Program effectiveness was determined not only by the achievement of quantitative indicators but also by the institutional coordination of actions between agencies. External factors—global crises, commodity price fluctuations, and political and economic shocks—were considered as variables influencing implementation outcomes. The study does not involve collecting field data and is based exclusively on open, verifiable sources. The principles of academic integrity and replicability are adhered to through a transparent description of sources, methods, and analytical logic.

2. Government Programs as the Economic Policy Tool: from Theory to Practice

The theory of government support assumes that targeted measures can stimulate industrial development. However, their effectiveness depends on the appropriate selection of instruments and the institutional environment. South Korea provides an example: in the 1970s, a program to develop heavy and chemical industries – through concessional loans, tax breaks, import substitution, and infrastructure investment – enabled the growth of key sectors. Despite mounting debt, the program had a long-term effect: exports increased, related industries developed, and technological progress was maintained (Lane, 2019).

China also actively uses subsidies and protectionist measures to develop manufacturing companies – a strategy that has helped the country become the world’s factory, particularly in industries such as metallurgy and electronics. However, China’s experience with resource allocation efficiency is mixed. In their study, Jiang et al. (2018) analyze the impact of government subsidies on the development of the new energy vehicle industry in China from 2010 to 2015. According to their findings, subsidies had a positive impact on R&D investment among large final product manufacturers, but a similar effect was not observed among component suppliers. Moreover, as subsidy volumes increased, their incentive effect weakened, indicating a decline in the marginal efficiency of such measures.

According to the study *The Return of Industrial Policy in Data* (Evenett et al., 2024), more than 2,500 industrial policy measures were introduced globally in 2023, of which approximately 1,800 (71%) were trade-distorting. Developed countries were the most active, accounting for 70.9% of all distorting measures, while developing economies accounted for only 29.1%. China,

the European Union, and the United States were the main initiators, collectively implementing 47.7% of such measures. Developed economies more often used subsidies to support strategic industries, including manufacturing, while developing economies used trade restrictions. Such actions increase fragmentation of the global economy and provoke retaliatory measures from trading partners. This underscores the importance of systemic monitoring and evaluation of the impact of industrial policy, especially for resource-constrained countries.

3. Government Measures for the Manufacturing Industry: Kazakhstan's Experience

Like other countries, Kazakhstan has implemented a number of government measures to develop the industry over the past two decades, including those aimed at developing the manufacturing industry and diversifying the economy. As a reminder, according to the Law of the Republic of Kazakhstan "On Industrial Policy," the manufacturing industry is defined as a set of industries involved in the processing of raw materials, materials, substances, and components for new products (goods, including food products)².

The World Bank Report³ emphasizes that after a period of rapid growth in the 2000s, Kazakhstan's economy has faced stagnation: average annual GDP growth has fallen by more than half compared to the pre-crisis period, and total factor productivity growth has declined from ~4.5% per year over the period of 2000-2007 to ~0.9% per year over the period of 2012-2022. This period has essentially been marked as "Kazakhstan's lost decade." Low productivity and fundamental structural imbalances in the economy are recognized as the key reasons for the subdued growth. The report concludes that, despite long-term efforts to stimulate the non-resource sector through various government programs, the structure of the Kazakh economy remains poorly diversified.

Government industrial policy initiatives were initially driven by the need to overcome commodity dependence and transition to a sustainable economic growth model based on the production of high-value-added products. Because commodity dependence makes the economy vulnerable to external shocks and fluctuations in global prices, the need arises to create a sustainable non-resource sector. The production of complex industrial products is the result of advanced raw material processing, the implementation of modern technologies, and the use of innovation, which would allow the country to establish itself in global markets.

The development of the manufacturing industry in Kazakhstan is not just an economic priority, but a strategic step toward building an economy capable of generating high-value-added products, competing sustainably in global markets, and ensuring the country's long-term economic prosperity. Achieving these goals required a clear commitment by the government that could support the modernization of production processes, stimulate innovation, and strengthen export potential. To this end, since the early 2000s, Kazakhstan has been actively implementing various strategies and government programs, which, since 2021, have been transformed into national projects aimed at diversifying the economic structure (Figure 1). The implementation of these programs has taken place in several stages, including the development, adaptation, and implementation of various government support instruments, including those directly or indirectly affecting the manufacturing industry.

² The Law of the Republic of Kazakhstan dated December 27, 2021 No. 86-VII ZRK.

³ World Bank. (2023-2024). Shaping Tomorrow: Reforms for Lasting Prosperity.

Figure 1

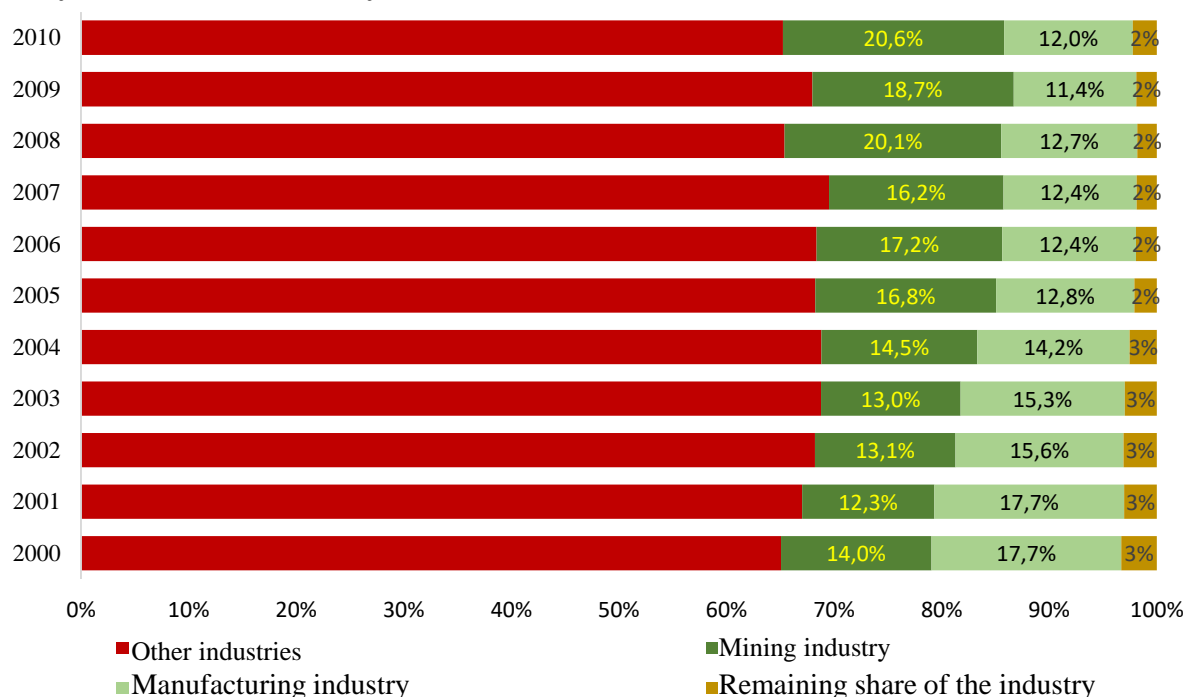
| Key Government Programs to Support the Manufacturing Industry Development | | | | |
|---|--|---|---|--|
| 1 | 2 | 3 | 4 | 5 |
| IIDS 2003-2015 | GPAIID 1 2010-2014 | GPIID 2 2015-2019 | GPIID 3 2020-2025 | National Project 2021-2025 |
| Multi-tasking | 4 key tasks | 4 key tasks | 4 key tasks | 6 key tasks |
| Goal: Transition from commodity dependence to the service-and-technology economy | Goal: Ensuring a sustainable and balanced growth through diversification and competitiveness | Goal: Increasing competitiveness through labor productivity and exports of processed goods | Goal: Promoting a competitive manufacturing industry in the domestic and foreign market | Goal: Diversifying the economy |
| - law-drafting, establishing national development institutes, industrial zones, clusters, a support to break-through projects | - designing the Industrialization Map, promoting exports, supporting regional projects, a focus on infrastructure projects, various SME support measures | - focus on top-priority sectors, emphasis on labor productivity and export orientation, qualification enhancement programs, SME service-based support | - a new Law on Kazakhstan’s industrial policy was drafted, a support to efficient enterprises, designing a list of priority products, digitalization, a unified approach to the industrial policy | - supporting the domestic car industry, repatriation of strategic facilities, commodity preferences to processors, actualization of the Concept for the MI Development for 2023-2029 |
| in 2010 the Program was wrapped up ahead of schedule | The Program was implemented as per schedule | The Program was implemented as per schedule | in 2021 the Program was wrapped up ahead of schedule | in 2024 the Program was wrapped up ahead of schedule |
| These government programs are discussed in Part 1 of this paper | | These government programs will be discussed in Part 2 of this paper | | |

3.1. Program 1. Industrial and Innovation Development Strategy of the Republic of Kazakhstan for 2003-2015

In the early 2000s, Kazakhstan’s economy experienced a rapid increase in its commodity dependence. The share of oil exports relative to GDP increased from 8% in 1998 to 27% in 2004, accompanied by an increase in total exports from 30% to 47% of GDP. These trends were driven by a favorable foreign economic environment, the attraction of foreign direct investment in the oil sector, and the development of export infrastructure. At the same time, the share of industry’s gross value added (GVA) in GDP declined: from 34.6% in 2000 to 31.3% in 2003. Since 2004, the mining sector’s share of GVA has exceeded that of the manufacturing industry (Figure 2). A significant increase in foreign exchange proceeds contributed to appreciation of the national currency, an increase in household income, and expansion of imports, which, on the one hand, ensured accelerated economic growth and made it possible to form the National Fund, but, on the other hand, made the economy more vulnerable to external shocks and created additional challenges for the development of non-resource sectors, including the manufacturing industry.

Figure 2

Dynamics of the Industry in the Structure of Gross Value-Added in 2000-2010 (as %)



Source: ASPR BNS

An important step towards economic diversification was the “Industrial and Innovation Development Strategy of the Republic of Kazakhstan for 2003-2015” (IIDS), the first comprehensive program aimed at reducing commodity dependence and transitioning to a service-technological development model. The “IIDS 2003-2015” was implemented in three stages (Fig.3).

Figure 3

Implementation Plan of the IIDS for 2003-2015 in 3 Stages

| I stage 2003–2005 | II stage 2006–2010 | III stage 2011–2015 |
|--|---|--|
| creating the legislative and institutional framework to support industrialization as well as the launch of the first innovation projects | II. developing the infrastructure, industrial zones and clusters, and support of the “break-through” projects in the manufacturing industry | III. implementing innovation technologies, increasing labor productivity and developing export-oriented industries |

The IIDS’s target indicators are 8-8.4% annual growth in the manufacturing industry, increasing its share of GDP to 13%, ramping up non-resource exports, reducing the share of metallurgy in the industry’s added value, and increasing the share of agricultural processing.

To implement the strategy, a National Innovation System was created, which included the Development Bank of Kazakhstan (DBK), the Investment Fund of Kazakhstan (IFK), the National Innovation Fund (NIF), the State Insurance Corporation (SIC), the Center for Marketing and Analytical Research, and others. Special economic zones (SEZs) and technology parks also began operating in the regions in the mid-2000s.

In 2005, seven top-priority clusters were identified: metallurgy, oil and gas engineering, textiles, transport and logistics, tourism, food processing, and construction materials. Sub-sectoral programs were developed in parallel (in chemistry, petrochemistry, metallurgy, and mechanical engineering).

Since 2006, social entrepreneurship corporations (SECs) have been established in the regions as instruments of cluster policy and local economic development. In 2007, the “30 Corporate Leaders of Kazakhstan” initiative was launched, encompassing key non-resource projects aimed at achieving the 2030 target.

The financial and non-financial measures of the IIDS covered a wide range of instruments: project lending through the Development Bank of Kazakhstan (DBK), leasing financing through DBK-Leasing, grant support for innovation through the National Investment Fund (NIF), export risk insurance through the State Insurance Company (GSK), investment participation by the Investment Finance Company (IFK), and analytical support from the Center for Marketing and Analytical Research (later KAZNEX INVEST and KAZAKH INVEST). The NIF also participated in the creation of venture funds in the telecommunications and technology sectors.

According to the IIDS Passport⁴, the scheduled annual funding amounted to approximately \$1.2 billion. Significant budget support was provided for capitalization of development institutions, the bulk of which was directed to the Development Bank of the Republic of Kazakhstan, the Investment and Finance Corporation, and the National Investment Fund. Financing also covered the development of the special economic zone, including the construction of infrastructure facilities and administrative buildings. Additional funds were allocated from the Government of the Republic of Kazakhstan’s reserve. In addition to the national budget, sources included development institutions, national holdings and companies, agricultural production cooperatives, as well as international organizations and donor agencies.

In 2008–2009, Kazakhstan felt the effects of the global financial crisis: export potential weakened, oil and metal prices fell, and the national currency depreciated. In response, the government adopted anti-crisis measures using the budget, transfers from the National Fund of the Republic of Kazakhstan, and external borrowing. Despite these extensive efforts, the IIDS was phased out in early 2010. Actual results fell far short of the target: average annual growth in the manufacturing industry failed to reach the expected level, its share of GDP declined from 14.2% in 2003 to 11.4% in 2009, and its share of total industry dropped from 43% to 32% (Table 1).

Table 1

**Key Indicators of the Manufacturing Industry after Implementation of 2 Stages
of the IIDS from 2003 to 2009**

| Indicator | Plan | Fact |
|--|-----------------------------|--|
| Average annual growth rates in the manufacturing industry (MI) | 8-8.4% | 1.1%* not achieved <i>(PPI of the manufacturing industry for 7 years)</i> |
| The MI share in the GDP structure | 13% | 11.3% not achieved <i>(in 2009)</i> |
| Increase in productivity of PPE in the MI | no clear indicators | 16.7 <i>(Average Annual Coefficient of Renewal for 7 years)</i> |
| Annual increase in fixed capital investments in the manufacturing industry, transport and communications and energy sector | 4-5 trln tenge | 600 bln tenge <i>(Average annual fixed capital investments in the said industries over 7 years)</i> not achieved |
| The reduction in the share of metallurgy and metal working in | from 40.1% to 27-28% | 44% not achieved |

⁴On the Industrial and Innovation Development Strategy of the Republic of Kazakhstan for 2003-2015 (as amended on July 2, 2008).

| | | |
|---|---------------------|-----------------------------|
| the value-added structure of the MI | | |
| The increase in the share of agricultural product processing in the structure of the MI | up to 45-46% | 25% not achieved |

Source: ASPR BNS

Despite diversification efforts, the share of metallurgy in the manufacturing industry increased, while the share of processed agricultural products, on the contrary, decreased. The study entitled “Structural Shifts in the Manufacturing Industry of Kazakhstan” (Karimbaeva et al., 2020), based on an analysis of data for 1990-2019, points out that the minimum value of the structural shift coefficient in the manufacturing industry, equal to 0.7, was observed between 2005 and 2009. Thus, as a result of the IIDS implementation, the commodity dependence in the Kazakh economy not only persisted but also intensified.

3.2. Program 2. The Government Program for Accelerated Industrial and Innovation Development for 2010-2014

In 2008-2009, Kazakhstan faced the severe consequences of the global crisis, which threatened macroeconomic stability. In response, anti-crisis measures were implemented, including a transfer of over 2.1 trillion tenge from the National Fund. Under these circumstances, and following the early completion of the IIDS in 2010, the Government Program for Accelerated Industrial and Innovation Development of the Republic of Kazakhstan for 2010-2014 was adopted (GPAIID)⁵. Its goal was to ensure sustainable and balanced economic growth through diversification and increased competitiveness, with an emphasis on non-resource and traditional industrial sectors. Unlike the IIDS, the GPAIID included specific implementation tools – the Republican Industrialization Map⁶, Layout of Production Facilities⁷, sectoral and regional programs.

The GPAIID identified four key objectives: developing priority sectors (metallurgy, petrochemicals, mechanical engineering, etc.); building infrastructure and improving conditions for industrialization; supporting industrial zones and clusters; and stimulating public-private partnerships. Expected results included increasing the share of manufacturing in GDP, improving labor productivity, and ramping up non-resource exports and their share in the production structure. To achieve these goals, approximately 25 sectoral programs were developed and a multi-level implementation system, led by the Ministry of Industry and New Technologies, was established.

The Program included direct support measures (subsidies, preferential loans, guarantees, tax breaks, access to infrastructure) and indirect ones (improving the investment climate, developing technology parks and transfer centers, and personnel training). Development institutions (the Development Bank of Kazakhstan, the “Damu” Enterprise Development Fund, Kazyna Capital Management, and the National Agency for Technological Development), as well as national holding companies and the Samruk-Kazyna National Welfare Fund) participated in its implementation.

The GPAIID included key measures to support priority sectors: developing energy, transport, and information and communications infrastructure, modernizing the raw materials base, training personnel, and stimulating innovation. Important areas included simplifying administrative procedures, promoting competition, technical regulation, implementing energy-efficient technologies, and supporting exports. The Program included tax breaks, subsidies, assistance with certification, and participation in international exhibitions. Domestic demand was

⁵ PD RK dated March 19, 2010 No. 958

⁶ GD RK dated April 14, 2010 No.303

⁷ GD RK dated April 14, 2010 No.304

stimulated by prioritizing domestic products in public procurements. The main investment projects were reflected in the Republican and regional industrialization maps.

Since 2010, the Kazakhstan Industry Development Institute (KIDI), later renamed as QazIndustry, has been providing monitoring and analytical support for the GPAIID. The Institute was responsible for methodological support, assessing the effectiveness of measures and industry programs, and coordinating with the regions.

GPAIID Financing

The GPAIID financing system had a multi-tiered and institutionally complex structure, and implementation was plagued by coordination difficulties between operators, risks of duplication of functions, and insufficient monitoring of the repayment and effectiveness of funds. The SAC's conclusion⁸ stated that from 2010 to 2014, 86.2% of GPAIID expenditures (3,678 billion tenge out of 4,269 billion tenge) were directed toward infrastructure development, while 13.8% (590.8 billion tenge) was spent on industrialization.

The GPAIID financial support was redistributed through two main channels: development institutions and private operators (Table 2).

Table 2

Major Channels of GPAIID Financing

| Indicator | Public Channel | Private Channel |
|-----------------------|---|---|
| Financing source | Budget resources, transfers from the NF RK, development institutes | Resources of second-tier banks, foreign investors, and private companies |
| Operators | National Welfare Fund “Samruk-Kazyna”, DBK, DBK-Leasing, KazAgro, National Innovation Fund, Investment Fund of Kazakhstan, DAMU Foundation, KAZNEX INVEST, State Insurance Corporation for Export Credit and Investment Insurance, Kazyna Capital Management, Kazagrofinance, Agrarian Credit Corporation, agricultural production cooperatives and akimats | Second-tier banks, private equity funds, multinational corporations, direct and venture investors |
| Financial instruments | Equity participation in capital, concessional loans, interest rate subsidies, guarantees, government grants, innovation grants, leasing, compensation for export promotion, export insurance, co-financing of investment projects through SEZs and IZs, support for SMEs through subsidies and guarantees | Commercial lending, microloans, leasing, direct investment in production projects |

The key sources of funding for GPAIID were the national budget and the National Fund of the Republic of Kazakhstan. They provided funding for system-wide measures (education, standardization, export support), infrastructure development (SEZ, transport, energy), concessional lending and subsidies under such programs as “BRM 2020”, “Productivity 2020”, and others. National management holding companies and quasi-public companies participated in implementation of the program: NWF “Samruk-Kazyna” (infrastructure and industrial projects), “KazAgro” (agricultural sector), DBK (industrial and export projects), “KazExportGarant” (export

⁸SAC, “The Final Assessment of the Implementation of the Government Program for Industrial and Innovation Development of the Republic of Kazakhstan for 2015-2019”

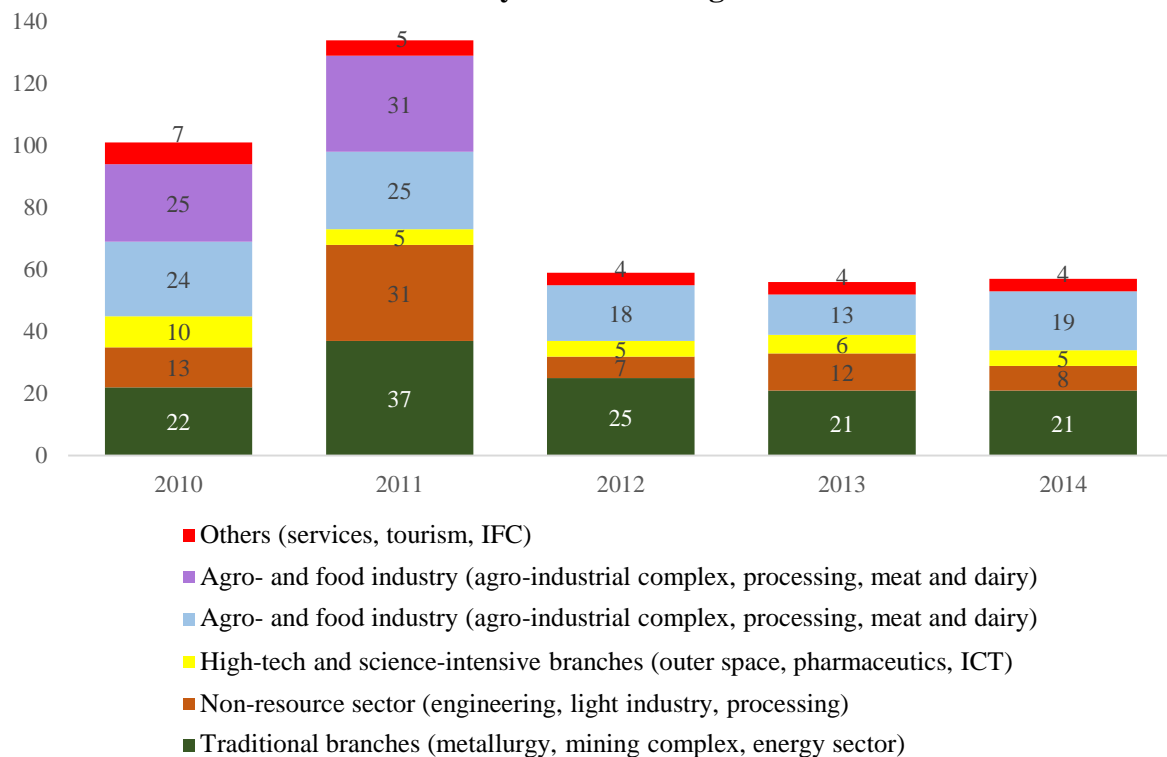
insurance). Financial instruments covered both direct (subsidies, guarantees, tax breaks) and indirect support (institutional reforms, technology parks, personnel training).

Republican Industrialization Map (2010–2014). The Republican Industrialization Map (RIM) under the 2010–2014 GPAIID was the primary tool for project selection and coordination of capital investments in the non-resource and infrastructure sectors. Following the program’s approval, the “Samruk-Kazyna” National Welfare Fund was tasked with implementing 21 investment projects. According to SAC⁹, 770 projects worth 3,086.6 billion tenge with the expected creation of 127,019 jobs were included in the national and regional industrialization maps.

The composition of the RIM was reviewed annually: in 2011, it included 134 projects; by 2014, it had dropped to 59 (Fig. 3), reflecting both the completion of some initiatives and the tightening of criteria – emphasis was placed on feasibility, cost-effectiveness, and alignment with strategic priorities. Despite the stated goals of transitioning to an innovation economy, the RIM’s focus remained primarily on traditional industries and infrastructure.

Figure 4

Distribution (the Number) of Projects of the Republican Industrialization Map under the GPAIID by Sectors during 2010-2014



Source: GD RK dated 14.04.2010 (as amended before 24.02.2014), “On the Republican Industrialization Map for 2010-2014”

An analysis of the RIM structure for 2010-2014 shows that, in the early stages, large capital-intensive projects in the resource and infrastructure sectors – mining and metallurgy, energy (TPPs, overhead power lines, substations), transport (railways, logistics centers), and construction – predominated. The RIM also included projects loosely related to industrialization goals, such as the Abu Dhabi Plaza multifunctional complex, the tourism and entertainment complex in the Burabay Free Economic Zone, the Kenderli resort area, the Shymbulak ski resort in Almaty, and certain space initiatives. Their inclusion raised questions about their alignment with the GPAIID strategic objectives, which focused on developing the manufacturing sector.

⁹ Auditor's Opinion “Evaluation of the effectiveness in implementation of projects included in the republican and regional industrialization maps, as well as the analysis of asset management of a quasi-public sector entity”, 2022

Since 2013, the RIM structure has undergone changes, shifting its focus to manufacturing, mechanical engineering, and chemicals. Projects emerged for the production of auto components, solar panels (KAZ PV), production modernization, and knock-down (KD) vehicle assembly (SsangYong). However, such initiatives had limited impact on the formation of value chains and technology transfer.

Regional project allocation initially focused on traditional industrial centers (Pavlodar, Karaganda, East Kazakhstan Oblast, Atyrau, Almaty, and Astana), but RIM later began to consider single-industry towns and small cities as part of its territorial alignment. The continued inclusion of infrastructure and energy projects (Bozshakol, Aktogay, hydroelectric power plants, thermal power plants, and power transmission lines) created favorable conditions for the placement of production facilities, but did not always directly impact production efficiency or export potential.

A significant portion of the projects were implemented by national and quasi-public operators (Samruk-Kazyna, KazAgro, and the Development Bank of Kazakhstan), while SME participation remained minimal. Only by 2013 did local and niche initiatives begin to emerge, but their scale was incomparable to systemic projects. The exclusion of agricultural projects from the RIM and their transfer to the agro-industrial complex can be seen as a step toward sectoral consolidation and the elimination of duplication.

Thus, through the RIM, the objectives of national industrialization were partially achieved: sectoral shifts were ensured, geographic coverage was expanded, and infrastructure was strengthened. However, an excessive focus on large projects, weak integration with SMEs, and insufficient flexibility in project selection remained, limiting the potential for genuine economic diversification.

Instruments and Measures of Support to the GPAIID. Given limited access to external financing and a shortage of “long” money among second-tier banks, the GPAIID relied on domestic sources and government support instruments. It was planned to attract 6.28 trillion tenge in fixed capital investments in priority sectors. The Republican Industrialization Map envisaged three forms of support: government (concessions, guarantees), resource (infrastructure, raw materials, energy), and financial (subsidies, participation of national companies, financing through development institutions and STBs).

Among the special programs, “Export 2020” is worth mentioning – it provided grants for up to 50% of product promotion costs and was aimed at strengthening Kazakhstan’s position as an exporter of processed goods. However, the program’s impact was limited – the primary support was concentrated in traditional industries, while the share of high-value-added products remained low.

The “Productivity 2020” Program aimed to improve the competitiveness of manufacturing companies through technological modernization and increased labor productivity. Support included technological audits, training, subsidies, and grants for equipment upgrades. However, despite the recorded high depreciation of PPE (up to 60%), the results were modest: according to the Kazakh Industry and Export Center, 210.5 billion tenge in investments were attracted against 388 million tenge in expenditures, while the BRK Leasing financed only 14 modernization transactions in 2015. The program focused heavily on equipment, while management transformations and human resource development remained on the periphery, limiting its long-term impact.

The “Business Roadmap-2020” Program (BRM 2020)¹⁰ with a two-stage implementation period from 2010 to 2020 has become an important tool for integrating business and the public sector within the framework of the GPAIID at the regional level.

The program was developed by the Ministry of Economic Development and Trade of the Republic of Kazakhstan, with the DAMU Foundation acting as the financial agent and also responsible for monitoring the program’s implementation. The main goal of BRM 2020 was

¹⁰ GD RK dated April 13, 2010 No. 301.

“ensuring sustainable and balanced growth of regional entrepreneurship in non-resource sectors of the economy, as well as preserving existing jobs and creating new permanent jobs”.

Table 3

BRM 2020 Target Indicators (I Stage)

| # | BRM 2020 Target Indicators |
|----|--|
| 1. | Reducing the cost of loans totaling at least 400 billion tenge annually |
| 2. | Increasing the share of manufacturing industry in the GDP structure to a level of at least 12.5% by 2015 |
| 3. | Increasing the share of non-resource exports to at least 40% of total exports by 2015 |
| 4. | Increasing the volume of non-resource exports to a level of at least 43% of the total production of the manufacturing industry by 2015 |
| 5. | Increasing labor productivity in the manufacturing industry by at least 1.5 times by 2015 |

Source: GD RK dated April 13, 2010 No. 301

The BRM 2020 set three key objectives: supporting new business initiatives, improving the business sector, and developing export-oriented industries. Subsequently, the objective of export development was replaced by the objective of reducing entrepreneurs' foreign exchange risks, and the objective of strengthening entrepreneurial potential was added.

Table 4

Instruments BRM 2020 by Areas

| Area | Instruments (Financial and Non-Financial Measures) |
|--|---|
| 1. Supporting new business initiatives | 1. Interest rate subsidies 2. Partial guarantee for loans 3. Developing production infrastructure |
| 2. Rehabilitating the business sector | 1. Interest rate subsidies 2. Tax deferrals 3. Other enterprise rehabilitation measures |
| 3a. Supporting export-oriented production facilities | 1. Interest rate subsidies on existing exporter loans |
| 3b. Mitigating foreign exchange risks of entrepreneurs (from 31.12.2010) | 1. Interest rate subsidies on existing exporter loans |
| 4. Strengthening business capacity | 1. Building an infrastructure for entrepreneurial support 2. Training under the “Business Adviser-I” project 3. Training under the “Business Adviser-II” project 4. Preparing entrepreneurs to participate in privatization 5. Service support to business 6. Supporting advanced small and medium-sized enterprises in implementing consulting projects (BAS Program) 7. Training SME top managers 8. Creating business incubators 9. Maintaining business relations with foreign counterparts (“Business Relations” Project) 10. Developing youth entrepreneurship |

Source: Report on the State of SME Development in Kazakhstan and its Regions. The “DAMU Foundation”,

2013

Initially, in 2010 30 billion tenge was intended to be allocated from the national budget¹¹. At the same time, the document “On Approval of the Business Roadmap 2020 Program” showed the total amount of 154.3 billion tenge allocated from the national budget for implementation of the program during 2010-2014 (Table 5).

Table 5

Resources Allocated for the BRM 2020

| Years | Budget (bln tenge) |
|-------|--------------------|
| 2010 | 15.4 |
| 2011 | 28.3 |
| 2012 | 36.6 |
| 2013 | 39.1 |
| 2014 | 34.9 |
| Total | 154.3 |

The program’s financial assistance mechanism was complex and multi-layered, limiting its accessibility for entrepreneurs. The main problems were excessive bureaucracy and lengthy approval and coordination processes.

Entrepreneurs had to go through several stages of approval to receive subsidies and guarantees, including applications to second-tier banks, approval from the DAMU Fund, and coordination with local executive bodies.

Subsidies were provided to financially sound enterprises whose activities had to be in priority sectors, which excluded many small companies and startups. At the same time, banks took a cautious approach to lending, adhering to a conservative lending policy with high requirements to borrowers.

Figure 5

The Number of Implemented Projects in the Manufacturing Industry through the “DAMU” Enterprise Development Fund

The total number of implemented projects – 3 269



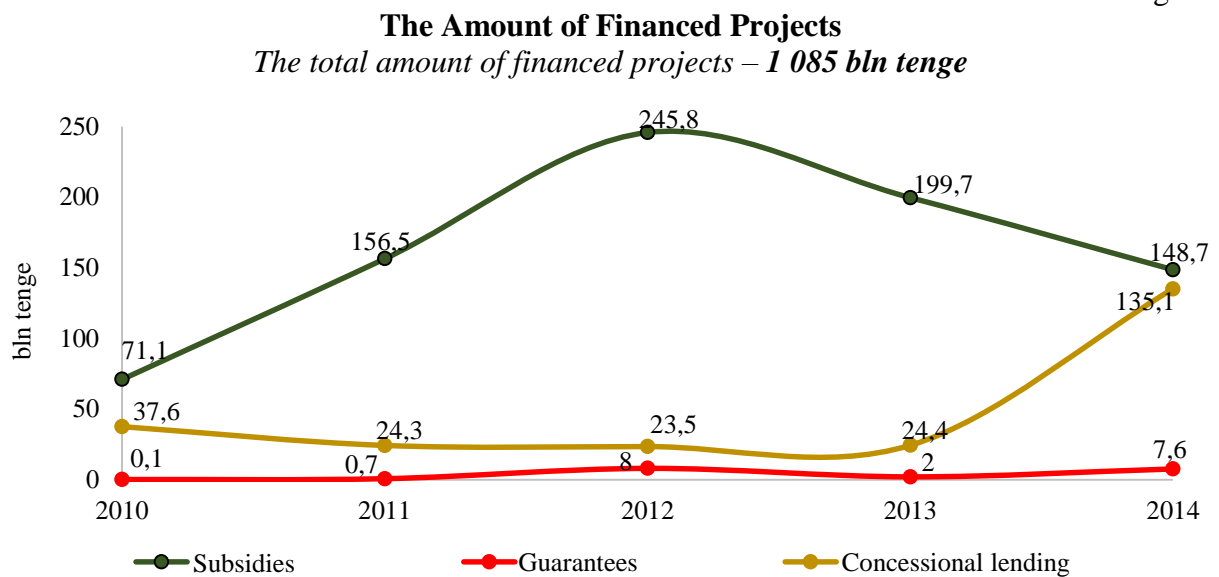
During the first five-year period of the GPAIID, from 2010 to 2014, the DAMU Enterprise Development Fund, with active government support, implemented 3,269 projects (Figure 5) totaling 1,085 billion tenge.

The key financing instruments were interest rate subsidies, loan guarantees, and concessional lending. Subsidies were used most actively, particularly in 2012, when 576 projects were implemented. Since 2013, the role of concessional lending has increased, with the volume of subsidies in 2014 almost equaling that of subsidies (513 and 530 projects, respectively). This may indicate a shift in priorities within the government support system toward more direct and large-

¹¹ GD RK dated April 13, 2010 No. 301

scale credit incentives. The guarantee mechanism, despite a slow start, also began to gradually increase its volume, reaching 184 projects by 2014, reflecting the growing focus on ensuring access to the SME financing, particularly those without sufficient collateral.

Figure 6



Source: “Analytical Review of the State of the Manufacturing Industry in Kazakhstan and in the CIS Countries”, “DAMU” EDF <https://damu.kz/poleznaya-informatsiya/informatsiya-fonda/analitika>

Since 2010, there has been a sharp increase in the volume of subsidies, reaching a peak in 2012 (Figure 6). Between 2009 and 2010, the government simultaneously launched a number of sectoral and regional programs through the DAMU Fund, including the “Stabilization Program (3 tranches)”, “DAMU Ondiris”, “Program for supporting SMEs in the manufacturing industry using funds from the National Fund of the Republic of Kazakhstan (3 tranches)”, “Damu-Regions”, “Program for conditional placement of funds in STBs for subsequent microloans to female entrepreneurs”, “Program for SME financing through a loan from the Asian Development Bank (3 tranches)”, “Program for financing leasing transactions of SMEs (using own funds)”, “Program for SME financing through a loan from the EBRD (3 tranches)”, “Program for financing leasing transactions of SMEs operating in the manufacturing industry”, and the “Program for financing SME projects in small towns of the Republic of Kazakhstan”. However, by 2013, subsidy volumes were declining, likely due to market saturation and the completion of the initial stages of the programs. Meanwhile, by 2014, the volume of concessional lending increased, possibly owing to stricter requirements for the efficient use of budget funds. Guarantee instruments remained minimal, despite their importance for SMEs lacking collateral.

GPAIID Outcomes: BRM 2020. Despite the scale of support, the reach of various business forms, and the diversity of instruments, the overall effect in terms of structural transformation of the economy was limited. Although manufacturing was the focus of many programs, large-scale government support did not translate into a sustainable shift toward a non-resource-based economy.

It should also be taken into account that, with such large volumes of public funding and a large number of implemented programs, there is a possibility that some resources may have been used inefficiently or distributed in violation of principles of fairness and transparency.

Analysis of the BRM 2020 key indicators points to a low level of target achievement, despite the scale of support for small and medium-sized enterprises in the non-resource sector. Of the five target indicators announced for the period of 2010–2014, four were not achieved, and only one formally exceeded the target. (Table 6).

Table 6

Implementation of the BRM 2020 Key Indicators

| Indicator | Plan | Actual (for 5 years) |
|---|---|--|
| The cost of loans was going down every year | totaling at least 400 bln tenge | It's difficult to measure, but the share of loans to the MI in STB's overall loan portfolio has grown slightly |
| Increasing the share of manufacturing industry in the GDP structure | at least 12.5 % | 10.3% not achieved |
| Increasing the share of non-resource exports | at least 40 % in total exports | 35% not achieved |
| Increasing the volume of non-resource exports | at least 43 % of the volume of aggregate production in the MI | 54% *achieved |
| Increasing labor productivity in the manufacturing industry | at least 1.5 times | 1.2 times not achieved |

Source: BNS and NBK data, the author's computations

Note: *Doubtful relevance

The key indicator – annual loan reductions of at least 400 billion tenge – proved difficult to measure: despite the active use of subsidies, guarantees, and concessional lending, an objective assessment of this indicator is difficult. Moreover, the share of loans to the manufacturing industry in STB's overall portfolio remained low, not exceeding 12%, calling into question the systematic nature and depth of economic diversification.

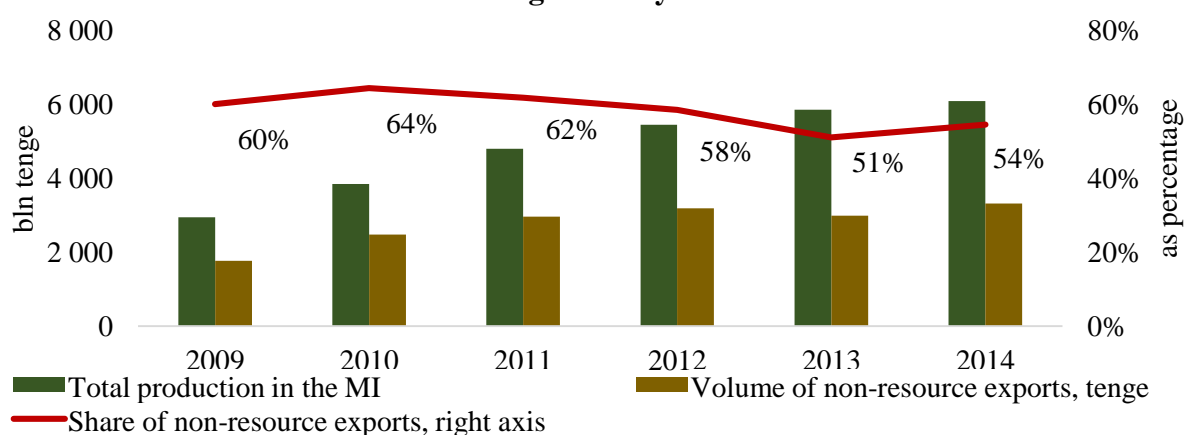
The manufacturing industry's share of GDP, at the end of the five-year period, was only 10.3%, compared to a target of at least 12.5%, indicating a weak structural effect of the program. The share of non-resource exports also fell short of the set target: with a target of 40%, the actual figure was 35%, demonstrating the instability of export destinations in non-resource sectors.

Labor productivity in the manufacturing industry showed a 1.2-fold increase only, compared to the planned 1.5-fold increase, indicating the limited technological impact of the implemented measures, insufficient modernization, and low investment in human capital.

The only indicator formally exceeding the target – non-resource exports as a share of aggregate production – was 54%, compared to the target of 43%. However, this result cannot be considered a convincing success, since, as data analysis shows, this indicator was higher in 2009, at around 60% (Figure 7), and by 2014, it had declined rather than increased. Therefore, exceeding the target reflects an incorrectly defined initial target base rather than actual progress.

Figure 7

The Share of Non-Resource Exports of the Volume of Aggregate Production in the Manufacturing Industry in 2009-2014



Source: BNS and NBK data

An analysis of the effectiveness of the BRM 2020 program implementation as conducted by the SAC¹², revealed a number of systemic problems. Specifically, regional coordination councils approved projects without sufficient justification for providing government support. Budget funds were used to connect infrastructure to facilities that were not operational or had not yet been commissioned. Furthermore, unjustified refusals to subsidize loan interest rates were observed. In 2013, the amount of subsidies was increased from 13.6 to 14.0 billion tenge due to the fact that grant expenses were not initially included in budget requests, which also is an evidence of insufficient development of the financing mechanism at the planning stage.

Taken together, all these factors indicate that, despite its broad scope and scale, the BRM 2020 Program failed to achieve a systemic shift toward sustainable industrialization and economic diversification in its initial phase. An additional factor that may explain the gap between stated goals and actual results is limited transparency and accountability in the mechanisms for distributing credit resources, especially given the presence of parallel programs implemented through various funding channels.

Possible reasons for the low effectiveness of BRM 2020 include insufficient access to funding for manufacturing companies, the limited effectiveness of government support mechanisms, a low level of innovation activity among SMEs, and unclear prioritization of industries, some of which did not meet the stated goals of diversification and industrial development.

A closer examination of the BRM 2020 program reveals a shift in emphasis over time from industrial development to the development of service infrastructure and business support. Instead of directly stimulating industrial projects, a significant portion of the program's resources was allocated to non-production support measures – such as consulting, training, mentoring, business plan subsidies, and startup financing, including in the service sector. However, the contribution of these instruments to the long-term structural transformation of the economy appears limited. Nevertheless, it is worth emphasizing that non-financial support measures are important and necessary elements of the small and medium-sized business development ecosystem. Their role is particularly significant for aspiring entrepreneurs and regional SMEs in need of institutional and competency support. However, including these instruments as key resource allocation areas within the industrially oriented program, as the BRM 2020 was positioned, appears methodologically inappropriate. Similar support measures could have been implemented within the framework of another program aimed at developing entrepreneurial competencies, digitalization, or SME support services, without compromising the strategic objectives of structural economic transformation. The BRM 2020 should have focused on stimulating the real manufacturing sector, increasing export potential, and technological modernization – precisely those areas that require systemic and long-term financial and investment support.

The list of priority economic sectors included in the program also raises additional questions. For example, the eligible areas included areas such as education, healthcare, and social services, which are difficult to consider as drivers of export-oriented growth. At the same time, a number of high-tech and promising industries were excluded from the program, as priority was given to more traditional and less profitable sectors.

An analysis of the corporate portfolio structure of banks, which were the main channels for redistributing financial flows under the program, during the GPAIID and BRM 2020 period reveals a high share of loans provided to companies in the trade, construction, and other easily recouped sectors. For example, at the end of 2014, trade accounted for 20%, construction for 9.4%, and other sectors for over 50% of STB's total portfolio.

Despite the manufacturing industry being the primary focus of support programs, the share of loans provided to manufacturing companies in the total loan portfolio of second-tier banks did not exceed 11.2% (Table 8).

¹² The Accounts Committee Report on Execution of the National Budget for 2013

Manufacturing companies faced difficulties in obtaining loans due to the lack of adequate collateral, the lengthy investment cycle, and the companies’ own weak financial discipline.

Table 7

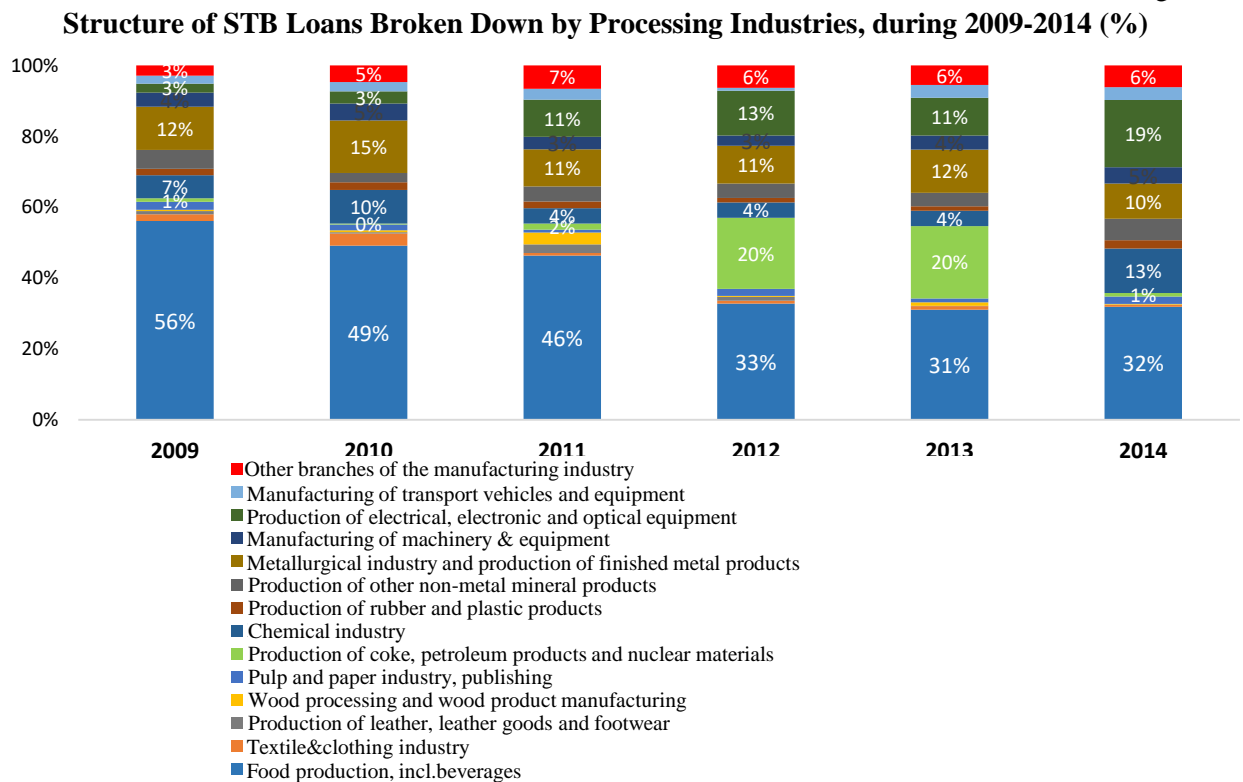
Loans Provided to the Manufacturing Industry during 2009-2014 in the Overall Volume of STB Loans, bln tenge

| | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|---|---------------|--------------|---------------|----------------|----------------|---------------|
| STB loans, total | 4 102 | 3 794 | 5 778 | 7 249 | 8 348 | 10 599 |
| Loans provided to the MI (short-term+long-term) | 375 (9.1%) | 383 (10%) | 560 (9.6%) | 811 (11.1%) | 937 (11.2%) | 964 (9.1%) |

Source: NBK data

The distribution of credit resources across manufacturing industry sectors remained uneven (Figure 8). The most notable trend was a decline in the food industry’s share of total loans to 32% by 2014, whereas at the beginning of 2010, this sector accounted for 49% of loans to the manufacturing industry.

Figure 8



Source: NBK data

At the same time, financial flows were redistributed in favor of other sectors, particularly the chemical industry. Metallurgy received a stable, but gradually declining, share of credit resources over the past five years – from 15% in 2010 to 10% in 2014. The share of loans provided to companies producing rubber and plastic products showed the largest increase – from 2% to 13%. At the same time, lending volumes to companies in the textile and clothing industry steadily declined: the share of this category in banks’ portfolios fell from 3% in 2010 to 1% in 2014.

Achieving Target Indicators for the GPAIID. During the implementation of the GPAIID, the program’s target indicators underwent significant changes. In the 2010 version, the indicators were defined as percentages and absolute values—for example, GDP growth of at least 7 trillion tenge, and the manufacturing industry’s share of GDP at 12.5%. They also envisaged an increase in non-resource exports to 40% of total exports and an increase in labor productivity in the manufacturing industry by at least 1.5 times. However, by 2013, the focus shifted. Instead of

specific shares, the emphasis was placed on percentage growth compared to the 2008 levels: an increase in GVA in the non-resource sector by 39.5%, and in manufacturing by 43.6%. The section on Kazakhstani content in procurement was significantly expanded. While the initial goal was to achieve local content of up to 60% for goods and 90% for services, these targets were later differentiated by purchasing entity category (government agencies, national companies, subsoil users, and systemically important enterprises), which, on the one hand, increased granularity but, on the other, complicated progress assessment. At the same time, certain indicators remained unchanged: a 1.5-fold increase in labor productivity in the manufacturing industry, a 10% reduction in energy intensity of GDP, and an increase in the share of innovation enterprises to 10%.

A revision of both the quantitative benchmarks and the logic for evaluating results in an attempt to improve the program's precision and manageability, however, has led to a certain "dilution" of the original transformational intent of the GPAIID. The emphasis has shifted from deep structural diversification to quantitative growth. This approach allows for the demonstration of formal achievements, but does not guarantee a shift in the economic growth model to a non-resource-based, industrial and innovation model, and demonstrates the difficulties in achieving the initially ambitious goals.

Of the 12 target indicators in the GPAIID program in 2013, only five directly related to the manufacturing industry. These five targets were included in the comparative analysis (Table 8).

Table 8

Key GPAIID Indicators: Targets and Actual Performance in the Manufacturing Industry during the Period of 2010-2014

| # | Indicator | Plan | Actual (over 7 years) |
|---|---|--|---|
| 1 | Growth of GVA in the non-resource sector in real terms by 2015 | at least 39.5 % vs. the 2008 level | 36.8 % not achieved |
| 2 | Growth of the manufacturing industry in real terms by 2015 | 43.6 % vs. the 2008 level | 27.8 % not achieved |
| 3 | Growth of the value of non-resource (processed) exports | не менее чем на 30 % vs. the 2008 level | -7.7% not achieved |
| 4 | Growth in labor productivity in the manufacturing industry (in comparable prices of 2008) | the growth of at least 1.5 times vs. the 2008 level <i>in real terms</i> | 1.1 times <i>to the level of 2008 in real terms</i> |
| 5 | Share of enterprises active in term of innovations | up to 10 % of the number of operating enterprises | 8.1 % <i>in 2014</i> |

Source: the author's computations and BNS data

The GVA of the non-resource sector in nominal terms shows growth with a gradual slowdown. The indicator itself was calculated based on the index of physical GVA of the non-resource sector, which reflects changes in the real volume of produced goods and services compared to the baseline year of 2008 (Figure 9). The main reason for the failure to meet the target indicator in 2014 was unfavorable external economic environment, which significantly affected the implementation of projects aimed at developing the non-resource sector of the Kazakh economy. In particular, in 2014, economic growth in trading partner countries slowed significantly (because of sanction restrictions against Russia), which led to decreased demand for Kazakh exports. An additional negative factor was the drop in world prices for metals and metallurgical products that traditionally account for a significant share of Kazakhstan's non-resource exports, thus affecting the overall GVA dynamics.

Figure 9

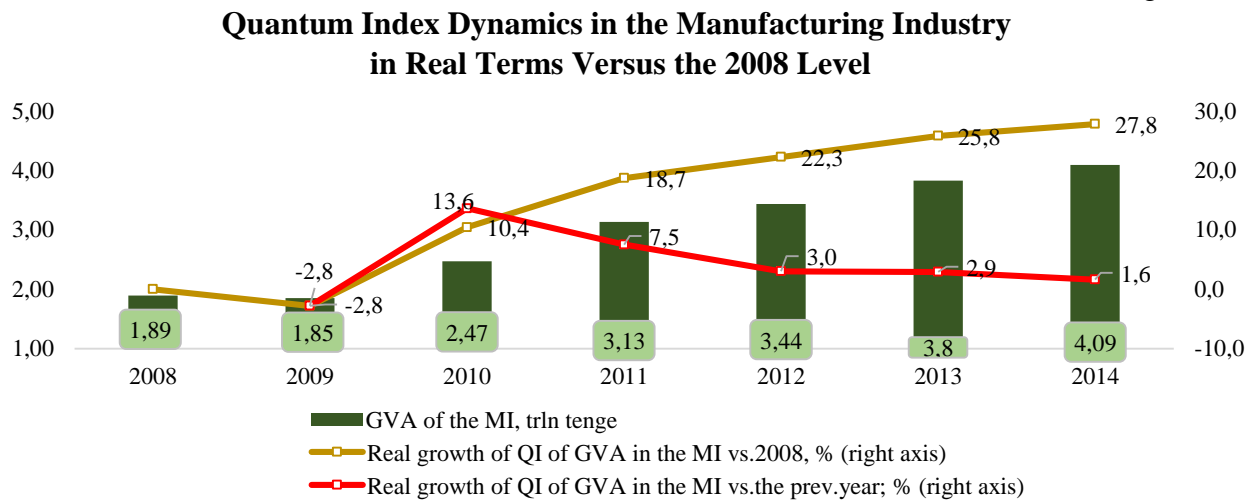


Source: BNS data and the author’s computations

However, internal factors also contributed to the failure to meet the indicator, including management and organizational issues. Despite the significant amount of allocated public resources, they were often allocated to costly infrastructure projects that did not always have a direct and immediate impact on the non-resource sector.

It should also be noted that non-resource GVA as an indicator is not sufficiently representative for assessing the development of the manufacturing industry, as it includes data on both goods and services, and its broad scope blurs the contribution of a specific industry. It combines data on manufacturing with sectors such as trade, transportation, and finance, which could cause the expansion of services to obscure the true decline in manufacturing.

Figure 10

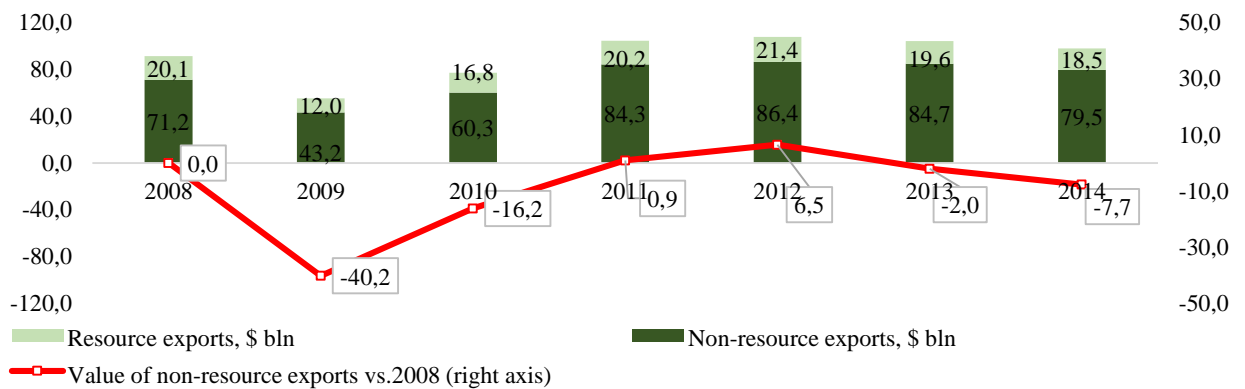


Source: BNS data and the author’s computations

Figure 10 shows positive trends in manufacturing industry’s GVA following the 2009 decline. Real growth, calculated using the GVA index, demonstrates overall positive cumulative growth over the entire first five-year period. However, the declining trend in real growth compared to the previous year indicates the exhaustion of the manufacturing industry’s potential. The “Manufacturing industry growth in real terms of 43.6% compared to 2008” indicator was not achieved, remaining at 27.8%.

Figure 11

Value of Non-Resource Exports – at least by 30 % vs. the 2008 Level

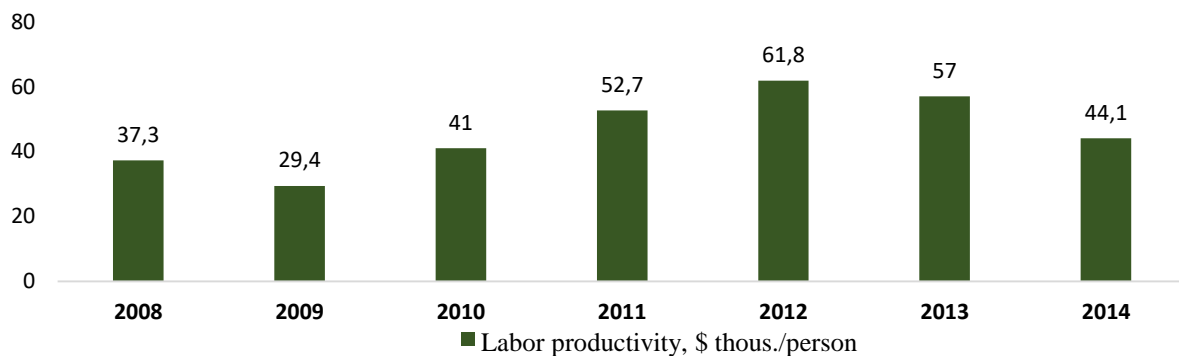


Source: BNS data, NBK and the author’s computations

Exports gradually recovered after the global financial crisis (Figure 11), but declined again starting in 2013, driven by deteriorating global market conditions and declining demand in main trading partners. Internal factors included insufficient diversification of the export basket, the low competitiveness of Kazakhstan’s non-resource goods, and weak integration into international value chains, which ultimately failed to offset the negative impact of external shocks on Kazakhstan’s exports.

Figure 12

Labor Productivity in the Manufacturing Industry – at Least by 1.5 Times Vs. the 2008 Level in real Terms (in Comparable Prices of 2008)



Source: BNS data

From 2008 to 2014, as part of the GPAIID program in Kazakhstan, labor productivity in the manufacturing industry increased. However, this growth fell short of the stated indicative target. In fact, by the end of 2014, it had gone up from \$37,300 per person to \$44,100, representing an increase of only 18.2% and 1.2 times the 2008 level.

Productivity peaked in 2012 at \$61,800 per person, followed by a sharp decline to \$57,000 in 2013 and \$44,100 in 2014. This could indicate mounting structural problems in the sector: declining capacity utilization, weak equipment upgrades, falling export demand, and, likely, a reorientation of investment. Thus, after an initial increase, labor productivity began to decline midway through the program’s implementation, negating the impact of the first years of modernization.

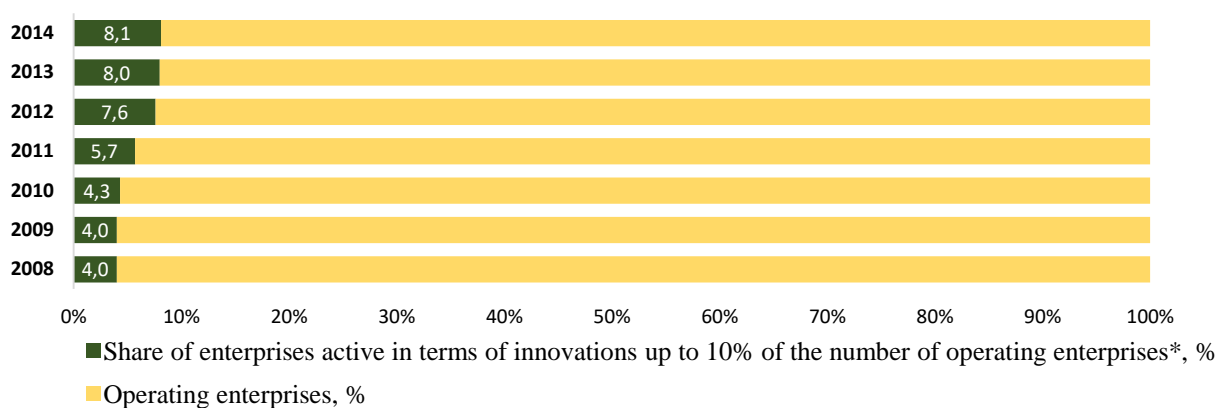
A sectoral analysis revealed that the greatest relative growth was achieved in mechanical engineering and light industry, which is explained by a low starting base and a relatively successful import substitution program. The chemical, pharmaceutical, and food industries experienced moderate but steady growth. Meanwhile, in metallurgy, labor productivity, after a sharp increase by 2012 (to \$118,000/person), began to decline, reaching only \$84,200/person by 2014. This

decline in metallurgy significantly impacted the overall productivity index for the manufacturing industry, given the industry's weight in the GVA structure.

Despite the positive dynamics, the indicative indicator for the share of enterprises active in terms of innovations (at least 10%) was not achieved, and the achieved share of 8.1% is an evidence of a partial success of the program (Figure 13).

Figure 13.

Share of Enterprises Active in Terms of Innovations up to 10 % of the Number of Operating Enterprises



Source: BNS data

A significant jump in the growth of the share of enterprises active in terms of innovations was observed in 2012 (an increase to 7.6%), especially against the background of previous indicators (4.0% in 2008-2009, 5.7% in 2011). Subsequently, the share increased insignificantly (8.0% in 2013; 8.1% in 2014), never overcoming the 10% barrier.

At the industry level, the distribution of active enterprises active in terms of innovations was uneven. For example, in the oil and gas sector, the share of enterprises active in terms of innovations increased from 1.5% in 2008 to 11.2% in 2014. This can be explained by both global competition and the active implementation of digital and extractive technologies. In the nuclear industry, this figure tripled – from 15.4% to 47.1%, making it the undisputed leader in innovation activity in 2014. High rates were also observed in mechanical engineering (from 6.0% to 27.3%) and in the agro-industrial complex (from 3.7% to 11.4%), showing fostered efforts to modernize technological processes in these areas.

At the same time, the share of innovation enterprises in the mining and metallurgy sector declined from 13.7% in 2008 to 12.5% in 2014, despite its strategic importance for industrialization. This is an evidence of exhaustion of development potential without a major technological breakthrough. In the light industry, despite the formal increase in the share of innovation enterprises (from 1.1% to 11.1%), their absolute numbers remain low, and the impact is poorly scalable.

Thus, sustainable growth in innovation production was achieved only in certain sectors and through targeted projects, while a widespread transformation of enterprise business models toward innovation never occurred. Without institutionalizing the innovation environment, large-scale incentives for R&D, and the creation of technology transfer chains, achieving such a target is extremely difficult.

3.3. Findings Regarding the IIDS 2003-2015 and the GPAIID 2010-2014

This article examines two key programs that laid the foundation for state industrial policy in Kazakhstan: the Industrial and Innovation Development Strategy of the Republic of Kazakhstan for 2003–2015 (IIDS) and the Government Program for Accelerated Industrial and Innovation Development for 2010–2014 (GPAIID). Both programs aimed to diversify the economy, reduce dependence on raw materials, and develop a competitive manufacturing industry.

Despite stated ambitions for technological modernization and development of the non-resource sector, the implementation of the two stages of IIDS yielded limited results. The third stage was never implemented, and the program itself was terminated early. It demonstrated modest success – primarily in the area of regulatory and institutional reforms – but its impact on the actual growth of the manufacturing industry was insignificant.

Target indicators, mostly designed for the long term, were not achieved by 2015. Specifically, full-fledged high-tech production chains, including the development of the petrochemical industry, were not launched, despite significant budget transfers. The cluster policy proved untenable: businesses demonstrated no willingness to cooperate, there was no single coordinator, and the institutional environment was insufficiently mature to launch a full-fledged cluster model. Instead of a cluster approach, a sectoral focus was intensified, with an emphasis on special economic zones, industrial zones, and technology parks, often without integration with science and business.

Export support has become an additional weakness. The State Insurance Corporation's export risk insurance efforts have been ineffective, failing to provide effective protection for non-resource producers. Systemic problems with the IIDS include a technology trap, a lack of service infrastructure, weak technology transfer, a lack of venture capital initiatives, and sluggish private sector participation.

Overall, the main reasons for the IIDS's failure were related to imbalances in strategic planning, the dominance of infrastructure investments without creation of a sustainable business ecosystem, and insufficient coordination between government institutions and the scientific and technological base. These factors made it impossible to transition to an industrial-innovation model within the established timeframes and goals.

The second program, the Government Program for Accelerated Industrial and Innovation Development (GPAIID), inherited many of the structural weaknesses of the IIDS. Moreover, none of the five target indicators directly related to manufacturing industry development were achieved, indicating the program's low effectiveness despite large-scale budgetary and development institution investments.

The program's main shortcoming was its multi-sectoral approach, which lacked a clear and logical connection between the selected sectors and their priorities. This contributed to the dispersion of resources, weakened focus on key areas, and significantly increased the budget burden. Furthermore, the constant changes in target indicators during the GPAIID implementation complicated effective monitoring and reduced the transparency of evaluating the achieved results. The lack of a unified and integrated monitoring system made it impossible to objectively assess how effectively budgetary resources were used and the actual impact of industrial projects.

According to the Supreme Audit Chamber, approximately only 42% of all projects implemented under the GPAIID program reached full capacity, with the majority of these projects in traditional sectors rather than high-tech industries. This proves that a significant proportion of initiatives failed to meet the goals of diversification and innovation development, calling into question the validity of project selection and the efficient use of resources.

The Republican Industrialization Map, despite some successes in terms of geographic expansion and diversification of individual sectors, was overly focused on large projects involving public and quasi-public sector companies. The project selection methodology itself was declarative and inert, leading to the recurrent inclusion of the same initiatives that failed to deliver real structural changes to the economy. Although agricultural projects were rightly excluded from the Industrialization Map as inconsistent with the program's goals, it paradoxically included tourism and service infrastructure facilities that, despite their economic importance, were not linked to the development of the manufacturing sector. This was an evidence of dilution of the selection criteria and a decline in the level of project alignment with the original GPAIID objectives.

The key government support instruments under the GPAIID were four programs: Business Roadmap 2020, Productivity 2020, Exporter 2020, and Investor 2020. Despite the existence of numerous additional sectoral programs and measures, these four instruments were the primary focus in achieving the industrial and innovation development goals. Of these, only BRM 2020

functioned sustainably, although its implementation encountered significant challenges. The Productivity 2020 and Exporter 2020 programs demonstrated extremely poor results, failing to achieve most of their stated goals, while the Investor 2020 program was essentially never launched, leaving no discernible trace in either official statistics or open sources.

One of the elements of the GPAIID was the development of SEZs, which were conceived as an important mechanism for industrialization and the stimulation of non-resource exports. However, in practice, their contribution to economic diversification proved limited. Most investments were directed not toward industrial production, but toward the construction of administrative and social infrastructure. Furthermore, foreign investment in SEZs also remained low – less than 9% – which undermined the goal of attracting external technology and integrating into global value chains. The SEZ output consisted primarily of low-processed goods and products assembled from imported components. The level of technological development of most enterprises was low, and the export performance of SEZs was extremely sluggish: their contribution to the country's total exports did not exceed 0.1%, while the share of exports in the structure of output within SEZs amounted to approximately 3.5%.

The main deficiency of the GPAIID financing system was that most of the funding came from the public sector, while private investment fell short of planned levels. This created dependence of enterprises on public funding and limited the long-term sustainability of industrial growth.

Many projects never reached their logical conclusion and were either rejected or postponed and rescheduled for subsequent government programs. For example, the localization of railcar production, announced as part of the GPAIID 2010-2014, continues to feature in current plans, which stipulate an increase in localization of passenger railcar production to 35.2% by 2029.

A negative factor is the low tax return of manufacturing enterprises compared to those in the raw materials sector, demonstrating persistent imbalances and the insufficient economic impact of the diversification policy. The situation was further exacerbated by the 2014 external crisis, associated with a sharp drop in global oil prices and the weakening of the national currency, which negatively impacted the final indicators of the first stage of industrialization. As a result, despite large-scale investments and a wide range of government support measures, the structural transformation of the economy was not fully realized, and significant industrialization projects failed to make the expected contribution to Kazakhstan's economic development.

In 2014, at the Meeting devoted to the Government report on the effort to implement the GPAIID, the President said: "We have failed to create a critical mass of successful industrial projects based on innovation, modern technologies, projects that would serve as a launching pad for an industrial revolution."¹³.

4. Conclusion

Since 2003, Kazakhstan's manufacturing industry has received support through a number of broad government initiatives that complemented each other but often duplicated measures envisaged by direct industrial programs. This fragmentation of efforts, along with institutional and strategic shortcomings, has affected the results of key government initiatives: the IIDS 2003-2015 and GPAIID 2010-2014 achieved only limited results and identified fundamental problems in industrial policy approaches. None of the key target indicators directly related to the manufacturing industry development were achieved. Industrialization was promoted primarily through administrative approaches with a heavy dependence on government funding and ineffective participation of the quasi-public sector. Structural imbalances in the economy, insufficient technological cooperation, and low private investment persisted despite significant budget expenditures. Nevertheless, the GPAIID became the first large-scale experiment in industrialization, enabling to detect systemic flaws.

¹³https://www.akorda.kz/ru/events/astana_kazakhstan/participation_in_events/soveshchanie-po-otchetu-pravitelstva-o-rabote-po-realizacii-programmy-industrialno-innovacionnogo-razvitiya-strany

The second part of a comprehensive analysis of government measures to support Kazakhstan's manufacturing industry will assess the changing industrialization architecture following the launch of the Government Program for Industrial and Innovation Development for 2015-2019 (GPIID 2) and 2020-2025 (GPIID 3). Particular attention will be paid to the transformation of the BRM 2020 program and its second phase, which expanded support instruments but also exacerbated issues of resource misuse and excessive budget burdens. A separate section will be devoted to new framework initiatives – the Economy of Simple Things and the National Project “Sustainable Economic Growth Aimed at Improving the Welfare of Kazakhstanis.”

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2. Government Decree of the Republic of Kazakhstan dated 17.07.03 No.256
3. Government Decree of the Republic of Kazakhstan dated 25.06.05 No.633
4. Government Decree of the Republic of Kazakhstan dated 13.04.20 No.301
5. Government Decree of the Republic of Kazakhstan dated 14.04.10 No.303
6. Government Decree of the Republic of Kazakhstan dated 14.04.10 No.304
7. Government Decree of the Republic of Kazakhstan dated 05.12.14 No.1276
8. Presidential Decree of the Republic of Kazakhstan dated 17.05.03 No.1096
9. Presidential Decree of the Republic of Kazakhstan dated 19.03.10 No.958

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2. Auditor's Opinion "Evaluation of the effectiveness in implementation of projects included in the republican and regional industrialization maps, as well as an analysis of the asset management of a quasi-public sector entity"
3. Auditor's Opinion "State audit of the effectiveness of special economic zones", 2021
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2. Annual Report of the "BRK-Leasing" JSC, a subsidiary of the Development Bank of Kazakhstan JSC, from 2007 to 2015
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The Comparative Analysis of Foreign Direct Investments: the Case of Kazakhstan and Other Countries

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This paper provides a comparative analysis of net foreign direct investment flows in Kazakhstan and several other countries, grouped by the level of economic development and the role of the oil sector in the economy. The study focuses on the dynamics of net foreign direct investment inflows, both with and without reinvestment. Particular attention is paid to the negative dynamics of net foreign direct investment inflows in Kazakhstan and its dependence on the resource sector.

The main contribution of the paper lies in identifying factors that limit the attraction of new investors and comparing investment dynamics in Kazakhstan with other countries. The novelty of the study is in the detailed analysis of reinvestment and its sectoral distribution, which allows for a deeper understanding of the structure of foreign direct investment.

The results of the study highlight the need for economic diversification, improving the business environment, and developing incentives to attract new investment.

Key Words: foreign direct investments, FDI net inflow, reinvestments.

JEL-Classification: F21, O16, O57.

1. Preamble

Foreign direct investment (FDI) is a category of cross-border investment in which a resident of one country acquires a stake of 10% or more in the equity capital of an enterprise resident in another country, thereby establishing control or exercising significant influence over the management of that enterprise. FDI encompasses not only the initial capital investment but also subsequent flows between related parties, including reinvested earnings and intra-group debt transactions. Although FDI is often viewed in a macroeconomic context as a source of capital, its significance extends far beyond financial flows: it contributes to job creation, technology transfer, expanded export opportunities, and the development of host country infrastructure.

To more accurately understand how much foreign capital is actually flowing into a country, it is important to distinguish between two types of indicators: gross and FDI net flows. FDI gross inflows reflect the total amount of incoming funds but do not reflect how much capital is leaving the country, for example, through the repayment of loans to foreign investors, the repatriation of profits, or the sale of shares and assets by foreign participants. Therefore, gross indicators may be unrepresentative in assessing the actual inflow of new foreign capital: high gross inflow figures do not always indicate increased interest in the economy. In contrast, FDI net inflows account for both inflows and outflows, reflecting the real increase in capital in the economy. In practice, there are two methods for accounting for FDI net inflows, based on different versions of the International Monetary Fund's Balance of Payments Manual: the fifth edition (BPM5) and the sixth edition (BPM6). Both approaches include three components: equity, reinvested earnings, and debt instruments (financial loans, trade credits, and other debt). The key difference between them is the treatment of reverse investment, that is, investments made by resident subsidiaries in their foreign parent companies. In BPM5, such amounts are subtracted from the total inflow, while in BPM6 they are recorded separately – under the investment abroad by residents section. The BPM5 methodology seems more logical in the context of analyzing foreign capital remaining in the economy at the end of the reporting period. The United Nations Conference on Trade and Development (UNCTAD) generally publishes data on FDI inflows using the BPM5 methodology, unless explicitly stated otherwise.

FDI net inflows excluding reinvested earnings are particularly important when analyzing investment activity. This indicator reflects new investment in a country’s economy, i.e., the extent to which foreign investors are actively entering a market or expanding existing businesses. Reinvestments are an important component of FDI net inflows, but they represent more of a support for ongoing operations than an inflow of “fresh” capital.

This study examines the research question: how have the dynamics of FDI net inflows and FDI net inflows excluding reinvestment changed in Kazakhstan compared to global trends, and what factors limit new FDI inflows to Kazakhstan. The main objective of the paper is to identify differences between global trends in FDI net inflows and the situation in Kazakhstan and determine the dynamics of FDI net inflows excluding reinvestment.

The relevance of the study is determined by the impact of FDI on economic development, strategic planning, and international relations. The analysis tests the hypothesis that the dynamics of FDI net inflows into Kazakhstan are mainly determined by large project cycles in the oil and gas sector, which may cause the inflow of new foreign capital (FDI without reinvestment) to diverge from overall global dynamics.

2. Global Trends in the FDI Net Inflow

Several key trends have characterized FDI dynamics in recent decades. According to the UNCTAD “Global Economic Fracturing and Shifting Investment Patterns” report, one important trend has been the long-term stagnation of global FDI flows. Since 2010, their growth has slowed significantly and has ceased to match the growth of global trade and GDP (Table 1). This phenomenon is also associated with a decline in activity in global value chains (GVCs).

Table 1

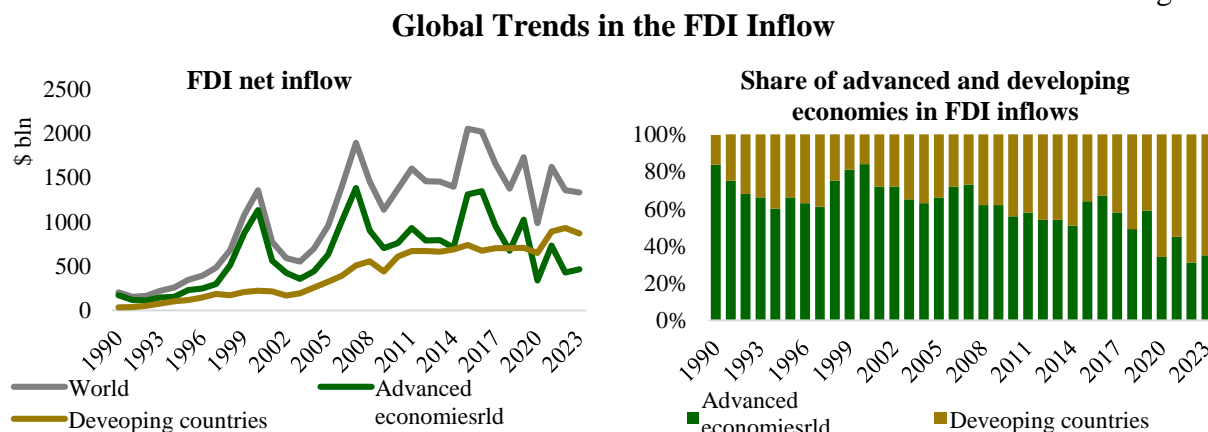
Growth Rates of Global Indicators of FDI, Trade and GDP

| Indicator | 1990s | 2000s | 2010s | 2020s |
|--------------|-------|-------|-------|-------|
| FDI | 16% | 8% | 0% | 2% |
| Trade | 6% | 9% | 3% | 8% |
| GDP | 4% | 7% | 3% | 5% |

Source: UNCTAD

Among the global changes, a redistribution of FDI shares between developed and developing countries is also prominent. Over the past two decades, the share of developing countries in FDI inflows has increased significantly, and since 2020, it has exceeded that of developed countries, reaching 65% in 2023 (Figure 1). This is explained by the fact that developing economies offer investors higher growth rates and ample opportunities for long-term investment, in contrast to the relatively stable and mature economies of developed countries.

Figure 1



Source: UNCTAD, World Investment Report 2024

Another significant trend is the deglobalization of manufacturing in terms of FDI. Manufacturing FDI has been stagnating, and with the onset of the COVID-19 pandemic, its dynamics have become negative. While global manufacturing activity and investment remain robust, their international component is declining, indicating a trend toward deglobalization.

Furthermore, the transformation of the global value chain is shifting the focus of FDI from core production processes to services. According to UNCTAD, from 2020 to 2023, 81% of global greenfield FDI was directed to the services sector. Investments are increasingly being directed to areas such as business services, information and communications technology (ICT), and marketing services. Consequently, the development of the services sector can attract modern types of investment and facilitate integration into new stages of the GVC.

However, attracting investment is complicated by rising geopolitical tensions. These tensions lead to a reduction in investment between countries with different political positions, forcing countries to adapt their capital raising strategies. Furthermore, the growing instability of global investment relationships limits opportunities for diversifying funding sources and increases the risk of losing existing investors.

Thus, an analysis of global FDI trends underscores the importance of considering both global factors and the specific characteristics of national economies. For a deeper understanding of the dynamics of FDI in Kazakhstan, a comparative analysis of Kazakhstan and a number of countries was conducted, based on the criteria of the level of economic development and the importance of the oil component.

3. Methodology

The analysis presents data on FDI net inflows for 19 countries from 2007 to 2023. This period covers significant changes in the global and regional economies that affect FDI dynamics, including the 2008–2009 crisis, the decline in oil prices in 2014–2016, and the COVID-19 pandemic. When selecting countries for a comparative analysis of FDI dynamics in Kazakhstan and other countries, two key criteria were identified: the level of economic development and significance of the oil component in the economy. Countries were classified as developed or developing to identify differences in investment trends depending on the level of economic development. This classification can help determine how the conditions and incentives for foreign investment differ between high- and low-income countries. The IMF World Economic Outlook classification was used to distinguish countries between developed and developing ones.

The second criterion is significance of the oil component in the economy. Countries dependent on oil production and exports may exhibit distinct FDI dynamics related to oil price volatility and global energy trends. Using data from the Energy Institute, KPMG, and Kearney's Statistical Review of World Energy, we selected countries that are net oil exporters – that is, where oil production exceeds consumption – as well as countries that are the largest net oil importers. Such selection allows for a comparison between economies dependent on oil exports and countries where the oil sector plays a lesser role, and to examine the relationship between economic structure and FDI dynamics.

The countries selected for analysis were grouped as follows:

- developed countries with a significant oil component in the economy: Canada, Norway, the USA;
- developing countries with a significant oil component in their economies: Kazakhstan, Kuwait, Nigeria, Brazil, Oman, Azerbaijan;
- developed economies-net importers of oil: Japan, South Korea, Germany, France, Italy;
- emerging economies-net oil importers: India, Turkey, Thailand, Poland, the Philippines.

Some key oil market players, as well as some major oil importers, were not included in the analysis due to the lack of available data on FDI flows and profit reinvestment.

To ensure data comparability, the study utilizes the BPM5 methodology for recording FDI, as used in UNCTAD statistics. This allows for a long-term assessment of the inflow of foreign capital remaining in the economy.

The analytical approach includes a comparison of FDI dynamics across country groups, an analysis of average values and structural shifts, a comparison of FDI behavior in Kazakhstan with global trends, and an analysis of the sectoral mix of reinvested earnings.

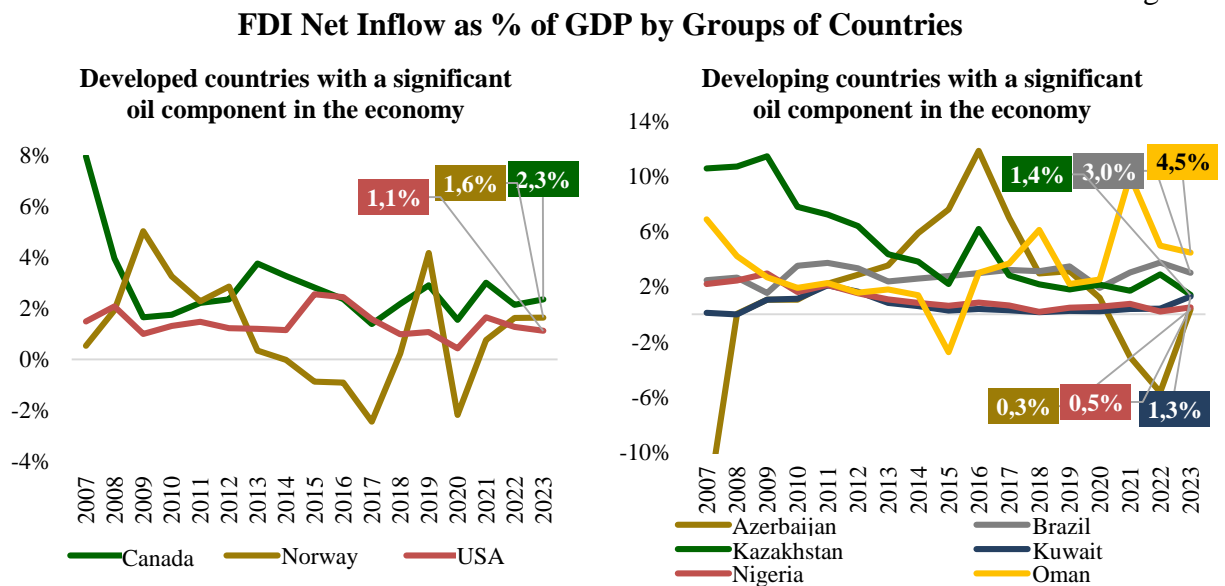
4. Review and Analysis of Foreign Direct Investments by Groups of Countries

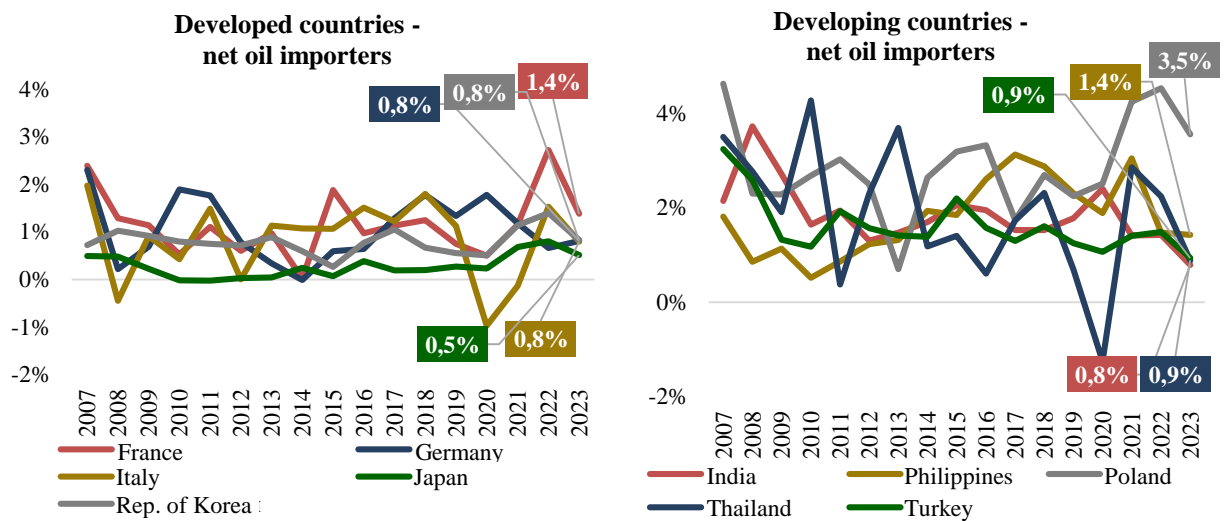
There is no consistent and obvious correlation in FDI net inflows as a share of GDP among country groups. However, since 2014, some similarities in the dynamics of FDI net inflows have been observed among both developed and developing net oil-importing countries (Figures 2 and 3). FDI inflows to these countries have shown similar responses to external events, such as the sharp drop in oil prices in 2015 and the COVID-19 pandemic in 2020.

In developed net oil-importing countries, FDI net inflows as a share of GDP vary between 0.4% and 1.6%. These countries exhibit a diversity of sectors attracting FDI. For example, France has seen significant investment in manufacturing, ICT, and the financial sector. Germany has attracted significant investment in the automotive industry, mechanical engineering, and technology. Italy, in turn, focuses on manufacturing, particularly luxury goods, as well as professional, scientific, and technical services. Japan excels in its investments in finance and insurance, technology and pharmaceuticals, and the automotive sector. South Korea primarily attracts FDI in the services sector and in technology and electronics.

In developing countries that are net importers, the ratio of FDI net inflows to GDP is also consistently positive, ranging from 1.3% to 3.1%. These countries are also characterized by a diversity of industries attracting FDI. In particular, India receives significant investment in the service sector, especially in computer software and hardware, as well as in construction. The Philippines receives investment primarily in the manufacturing, finance and insurance, real estate, and ICT sectors. Poland attracts FDI primarily in manufacturing, especially in the automotive industry, and IT services. Thailand focuses on manufacturing, tourism, and electronics. Turkey, meanwhile, attracts FDI in the textile industry and construction.

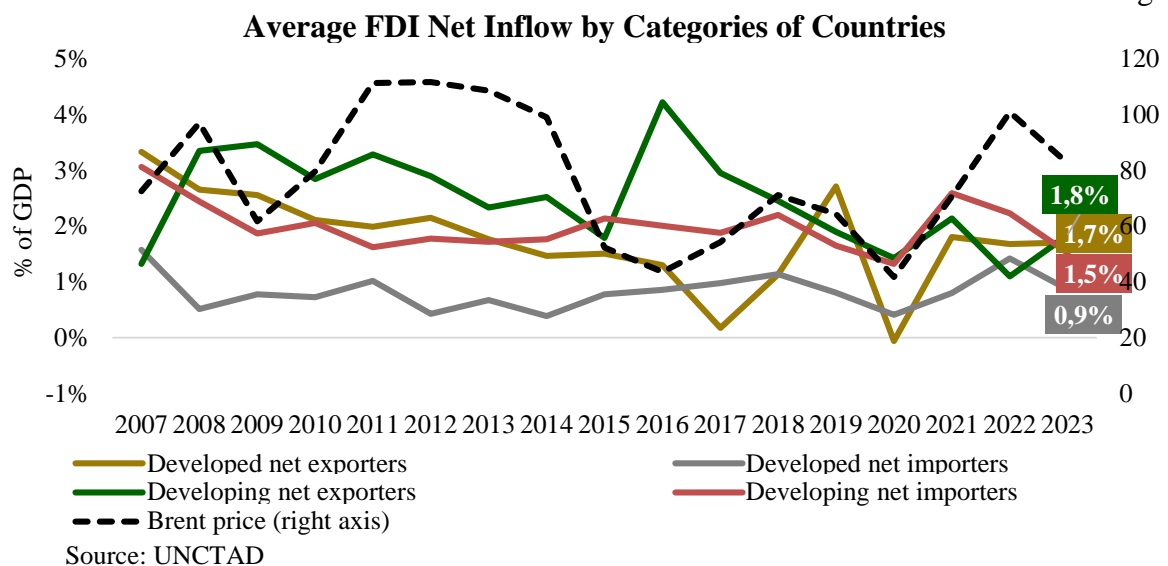
Figure 2





Source: UNCTAD

Figure 3



Source: UNCTAD

The dynamics of FDI net inflows into developed and developing net oil-exporting countries differ significantly. For example, in 2016, FDI net inflows into developed oil-exporting countries declined, driven by the decline in global oil prices. At the same time, despite unfavorable price conditions, developing oil-exporting countries experienced an increase in FDI inflows. Kazakhstan and Azerbaijan contributed the most to this increase, with FDI net inflows as a percentage of GDP increasing from 2.2% to 6.2% and from 7.6% to 11.9%, respectively. Moreover, this figure in Azerbaijan increased largely due to a decline in GDP, while in Kazakhstan, FDI net inflows doubled to USD 8.5 billion. Investments in infrastructure restoration at the Kashagan field, following a lengthy shutdown caused by accidents, played a significant role in this increase. In addition, in 2016, TCO partners made a final decision to finance the future expansion project at the Tengiz field, which also led to an increase in FDI inflows.

Overall, FDI net inflows to developing countries that are net oil exporters as a percentage of GDP are higher than those to developed countries. This may be due to the focus of developed countries' investment on resource-rich emerging markets.

Over the past 10 years, oil prices have shown little correlation with FDI inflows into developed and developing net oil importing countries – the correlation coefficient for 2014–2023 is only 28% and 19%, respectively. Oil prices are moderately correlated with FDI inflows into developed net oil exporting countries, where the correlation coefficient is 44%. However, although

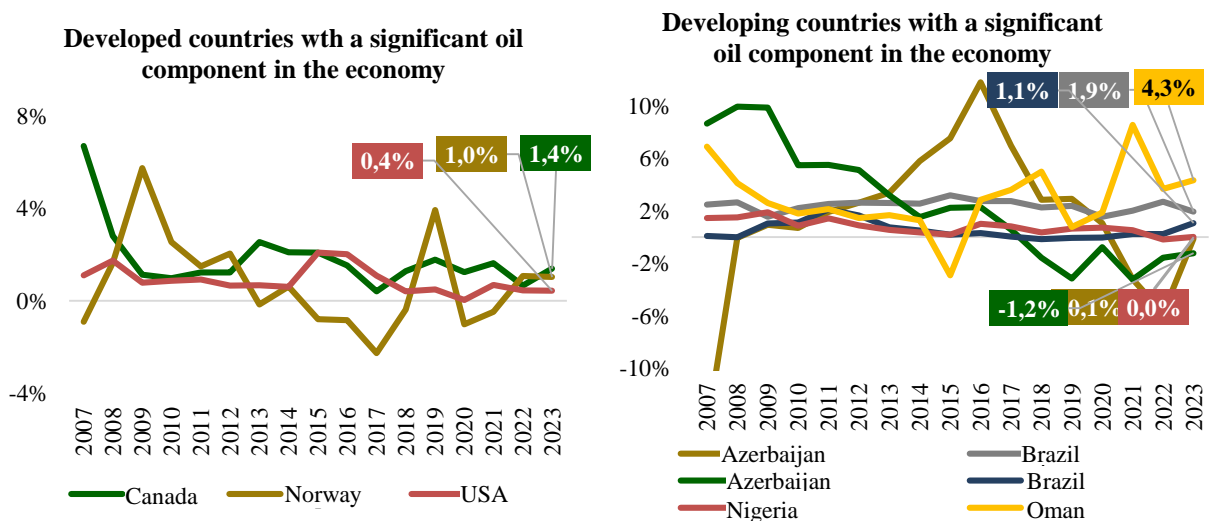
oil prices significantly influence the economic situation in developing oil exporting countries, FDI net inflows into these countries are less correlated with oil prices – 25%¹. A possible explanation is that in developing oil-exporting countries, FDIs are often directed toward long-term projects—extractive industries, infrastructure, and manufacturing. These investments are more difficult and expensive to withdraw or suspend in the short term, so they ensure relative stability of FDI inflows even during periods of declining oil prices. In developed countries, FDIs are often focused on more diversified and mature sectors of the economy, including services and technology. These sectors are more sensitive to external economic shocks, as investors can more quickly reduce or freeze capital investment in response to uncertainty. Because developed countries are more integrated into the global financial system, in the event of crises or a decline in confidence, investors can more quickly redirect capital or temporarily withdraw assets, which can lead to sharp fluctuations in FDI.

FDI net inflows excluding reinvested earnings are an indicator that assesses a country’s investment attractiveness for new capital investment. This indicator is lower than FDI net inflows including reinvestment, particularly in developing countries with a significant oil component in their economies (Figures 4 and 5, Table 2).

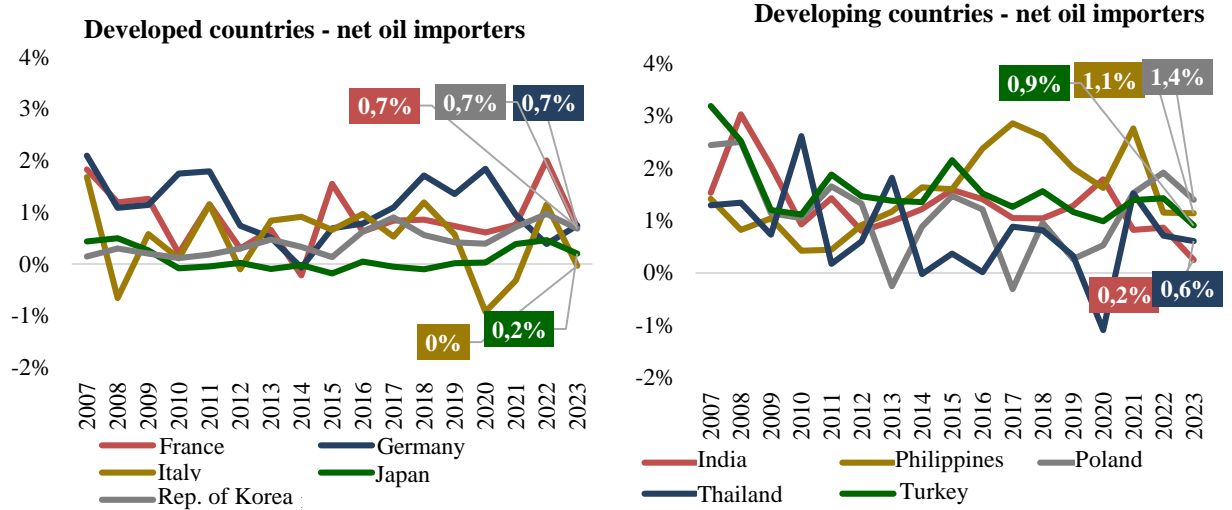
The share of reinvested earnings in total FDI inflows is an important indicator of foreign investor behavior in a country. A low value for this indicator may be an evidence of a lack of investor confidence in the long-term sustainability of the economy, unfavorable business conditions, or the presence of significant risks. However, a decline in the share of reinvestment does not always indicate a decline in confidence. It may also be the result of a lack of suitable projects for further reinvestment in the current period, especially if significant funds have already been invested in development. Furthermore, at a certain stage of the investment cycle, companies may begin to repatriate profits, ending the active investment phase. It is also important to consider the structure of the overall FDI inflow: if the main growth is provided by new investments, and the volume of reinvested earnings remains stable or grows more slowly, the share of reinvestment will decline, despite the preservation or even strengthening of investor interest in the country’s economy.

Figure 4

FDI Net Inflow as % of GDP Excluding Reinvestments, by Groups of Countries

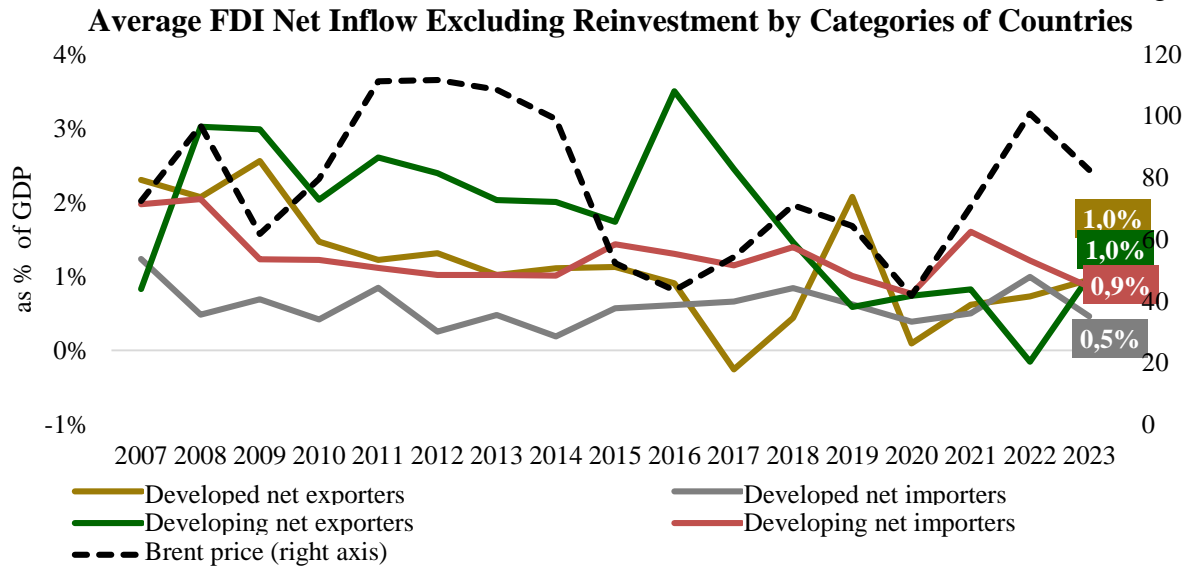


¹ Azerbaijan was excluded from the calculations due to an anomalous spike in the time series, which could have distorted the overall dynamics. Including Azerbaijan makes the correlation negative – (-)38%.



Source: UNCTAD

Figure 5



Source: UNCTAD

Table 2

Comparing the FDI Net Inflow Including and Excluding Reinvestment as % of GDP by Group of Countries

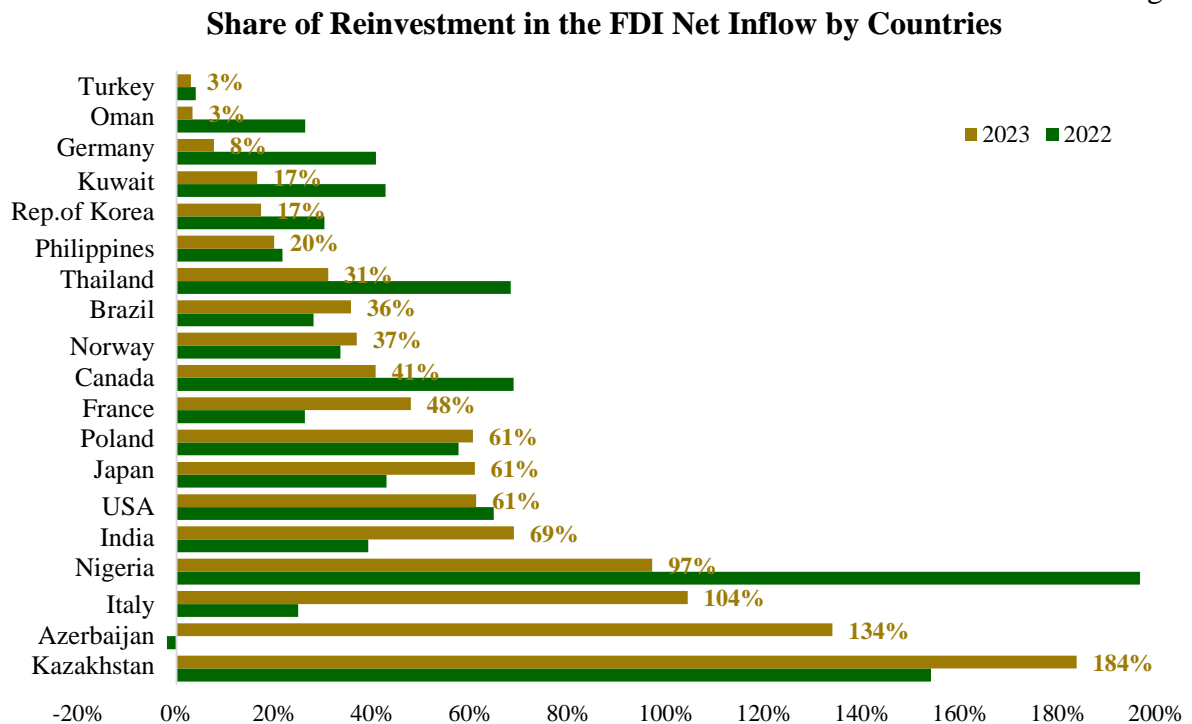
| Countries | FDI net inflow as % of GDP | | | FDI net inflow excl. reinvestment as % of GDP | | | Difference (incl. reinvestment - excl. reinvestment) | | |
|--|----------------------------|-------------|-------------|---|-------------|-------------|--|-------------|-------------|
| | 2021 | 2022 | 2023 | 2021 | 2022 | 2023 | 2021 | 2022 | 2023 |
| Developed countries with a significant oil component in the economy | 1.8% | 1.7% | 1.7% | 0.6% | 0.7% | 1.0% | 1.2% | 0.9% | 0.7% |
| Canada | 3.0% | 2.1% | 2.3% | 1.6% | 0.7% | 1.4% | 1.4% | 1.5% | 1.0% |
| Norway | 0.8% | 1.6% | 1.6% | -0.5% | 1.1% | 1.0% | 1.2% | 0.5% | 0.6% |
| USA | 1.6% | 1.3% | 1.1% | 0.7% | 0.5% | 0.4% | 0.9% | 0.8% | 0.7% |
| Developed countries - net oil importers | 0.8% | 1.4% | 0.9% | 0.5% | 1.0% | 0.5% | 0.3% | 0.4% | 0.4% |
| France | 1.1% | 2.7% | 1.4% | 0.8% | 2.0% | 0.7% | 0.4% | 0.7% | 0.7% |
| Germany | 1.2% | 0.7% | 0.8% | 1.0% | 0.4% | 0.7% | 0.2% | 0.3% | 0.1% |
| Italy | -0.1% | 1.5% | 0.8% | -0.3% | 1.2% | 0.0% | 0.2% | 0.4% | 0.8% |
| Japan | 0.7% | 0.8% | 0.5% | 0.4% | 0.5% | 0.2% | 0.3% | 0.3% | 0.3% |
| Rep. of Korea | 1.1% | 1.4% | 0.8% | 0.7% | 1.0% | 0.7% | 0.4% | 0.4% | 0.1% |

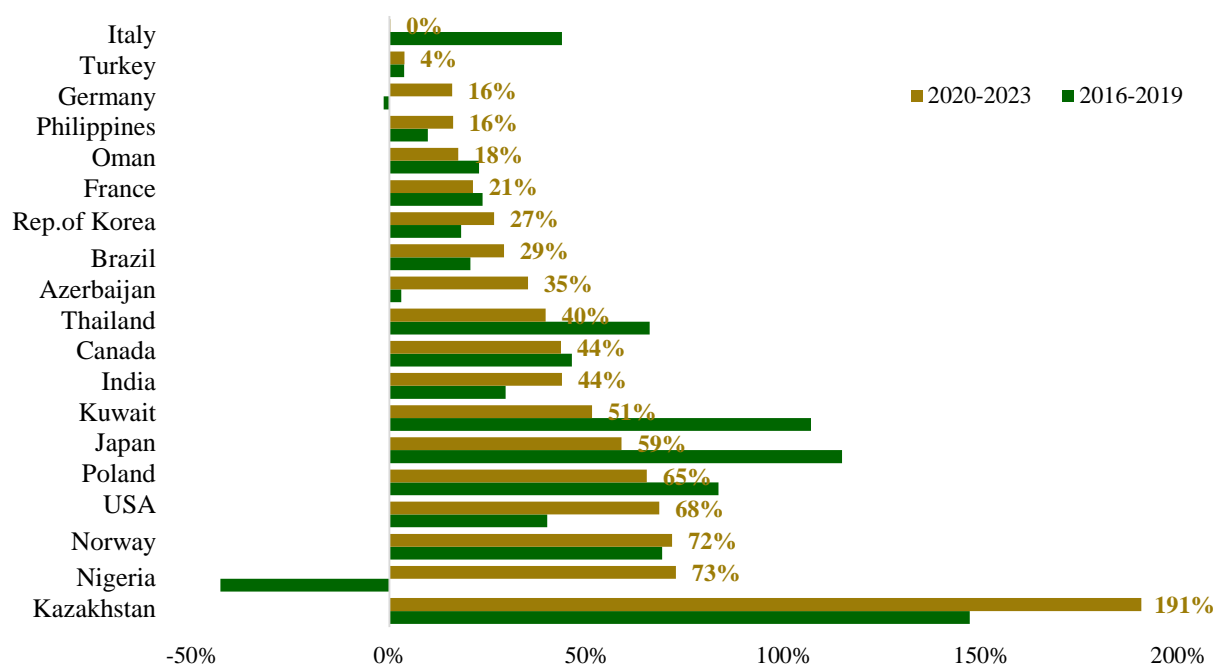
| | | | | | | | | | |
|---|-------------|-------------|-------------|-------------|--------------|-------------|-------------|-------------|-------------|
| Developing countries with a significant oil component in the economy | 2.1% | 1.1% | 1.8% | 0.8% | -0.2% | 1.0% | 1.3% | 1.2% | 0.8% |
| Azerbaijan | -3.1% | -5.7% | 0.3% | -3.2% | -5.8% | -0.1% | 0.1% | 0.1% | 0.5% |
| Brazil | 3.0% | 3.8% | 3.0% | 2.0% | 2.7% | 1.9% | 1.0% | 1.1% | 1.1% |
| Kazakhstan | 1.7% | 2.9% | 1.2% | -3.2% | -1.6% | -1.2% | 4.9% | 4.5% | 2.4% |
| Kuwait | 0.4% | 0.4% | 1.3% | 0.2% | 0.2% | 1.1% | 0.1% | 0.2% | 0.2% |
| Nigeria | 0.8% | 0.2% | 0.5% | 0.5% | -0.2% | 0.0% | 0.2% | 0.4% | 0.5% |
| Oman | 10.1% | 5.0% | 4.5% | 8.6% | 3.7% | 4.3% | 1.5% | 1.3% | 0.1% |
| Developing countries - net oil importers | 2.6% | 2.2% | 1.5% | 1.6% | 1.2% | 0.9% | 1.0% | 1.0% | 0.7% |
| India | 1.4% | 1.4% | 0.8% | 0.8% | 0.9% | 0.2% | 0.6% | 0.6% | 0.5% |
| Phillipines | 3.0% | 1.5% | 1.4% | 2.8% | 1.2% | 1.1% | 0.3% | 0.3% | 0.3% |
| Poland | 4.2% | 4.5% | 3.5% | 1.5% | 1.9% | 1.4% | 2.7% | 2.6% | 2.1% |
| Thailand | 2.8% | 2.2% | 0.9% | 1.5% | 0.7% | 0.6% | 1.3% | 1.5% | 0.3% |
| Turkiye | 1.4% | 1.5% | 0.9% | 1.4% | 1.4% | 0.9% | 0.0% | 0.1% | 0.0% |

Source: UNCTAD

In 2023, the lowest reinvestment share of FDI net inflows among the reviewed countries was observed in Oman and Turkey, at just 3% each (Figure 6). This is explained by high inflation and an unstable political situation in Turkey, and slowing economic growth and uncertainty related to global oil prices in Oman. These factors could have impacted investor confidence and their willingness to reinvest earnings back into the country.

Figure 6





Sources: IMF, LSEG (Thomson Reuters), UNCTAD

A high reinvestment rate means that existing investors are not repatriating capital, i.e., not withdrawing a significant portion of earned profits through dividends, but rather directing it toward further development of the enterprise. This may be an evidence of a healthy economy attractive for long-term investment, economic stability, and growing domestic demand, which also brings in new investment. In 2023, developed countries such as the United States and Japan, which are experiencing stable economic development, as well as developing countries such as India and Poland, which are demonstrating positive economic indicators, showed a high reinvestment rate of 60-70% of total FDI inflows.

However, if reinvestment exceeds FDI net inflows, this indicates low interest from new investors. New investors are reluctant to enter the economy due to risks or uncertainty, while existing investors continue to reinvest profits to complete projects or try to recoup previously invested funds. In 2023, among developed countries, only Italy saw negative FDI net inflows excluding reinvestment: reinvestment exceeded FDI net inflows by 4% (Figure 6). This may be caused by the slowing economic growth due to the ongoing tightening of the ECB's monetary policy, which continued to affect the cost of borrowing for households and businesses, as well as slow wage growth and high inflation, which negatively impacted real incomes. Furthermore, reduced demand for housing, coupled with reduction in the number of projects approved under the now-cancelled "superbonus" tax program, led to a decline in construction activity, which previously played a key role in economic growth. These factors discouraged new foreign investment as investors sought more stable conditions in which to place their capital.

Among developing countries, negative FDI net inflows, excluding reinvestment, were observed primarily in countries with a significant oil component in their economies: Kazakhstan and Azerbaijan. In 2023, the share of reinvestment in total FDI inflows in Kazakhstan reached its highest value among all the countries analyzed: reinvestment exceeded total FDI net inflows by 1.8 times, indicating a lack of new capital investment. In the short term, this allows for the maintenance of the production base and current levels of activity, but in the long term, it increases the vulnerability of the investment model to external shocks and reduces the potential for technological innovation.

In Azerbaijan, FDI net inflows, excluding reinvestment, have also been negative over the past three years. In 2023, reinvestment in this country exceeded FDI inflows by 1.3 times. Moreover, in 2022, the share of reinvested profits in FDI net inflows in Azerbaijan was negative.

This is driven by the fact that the overall FDI net inflow was negative, despite the positive volume of reinvestment. This situation occurs when there is a net outflow of funds from other components (equity and/or debt instruments). A negative equity may indicate that non-residents have sold assets or stakes in local companies, reduced their participation in the registered capital, or withdrawn funds as a result of liquidation or reorganization. A negative balance of debt instruments, on the other hand, means that the repayment of loans and credits to foreign investors exceeds their new borrowings.

Based on trends of profit reinvestment in the countries under consideration, several factors can be identified that influence FDI and reinvestment dynamics. First, there's macroeconomic stability, including sustained GDP growth and inflation control. For example, Norway's stable economic policy, accompanied by a steady exchange rate of the krone, creates favorable conditions for long-term investment. In Nigeria, high inflation and exchange rate instability negatively impact investor confidence, limiting investment in non-resource sectors.

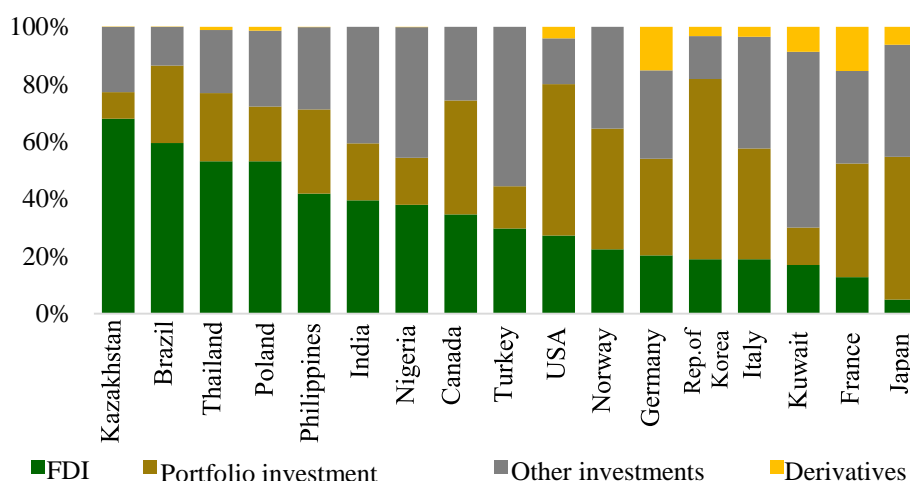
Second, political stability is also a significant condition for attracting FDI. Turkey, for example, has lost a significant portion of its reinvestment due to political instability and changes in domestic and foreign policy. In contrast, Canada's stable political situation makes the country attractive to international investors. India is also showing positive dynamics, attracting foreign capital thanks to extensive reforms aimed at liberalizing the economy and improving the business climate.

Third, the quality of the business environment, including ease of doing business, also determines the level of FDI. Poland, by actively improving administrative procedures and introducing tax incentives, has become one of the leaders in Central Europe in attracting investment. In Thailand, government business support programs, particularly in the tourism industry, have significantly contributed to the growth of FDI. Digital infrastructure is also becoming increasingly important. Countries with developed ICT infrastructure, such as South Korea, are seeing increased investment in the technology and service sectors.

It is noteworthy that the structure of liabilities to investors varies depending on the level of economic development. Among developed countries, portfolio investment predominates, while among developing countries, FDI accounts for the largest share of liabilities to foreign investors (Figure 7). For example, in Kazakhstan, 68% of foreign investment is FDI, 23% is other investment, and only 9% is portfolio investment. In South Korea, FDI accounts for only 19%, other investments account for 15%, and portfolio investment accounts for a significant portion (63%). This may be explained by the fact that portfolio investment is primarily directed to developed countries, as they are characterized by relatively low risk and stable financial markets. Investors prefer to invest in countries with a more predictable economic situation and a high level of investor protection.

Figure 7

Mix of Liabilities to Investors by Countries in 2023



Source: IMF

In developing countries, investors face higher risk, making FDI preferable as it allows for longer-term relationships and asset control. Developing countries also often require significant investment in physical infrastructure, extractive industries, and manufacturing, where FDI plays a key role. FDI typically includes not only capital but also the transfer of technology and management expertise.

Developed countries already have established the infrastructure and developed economies, so capital inflows through portfolio investment are more focused on expanding and diversifying existing financial assets.

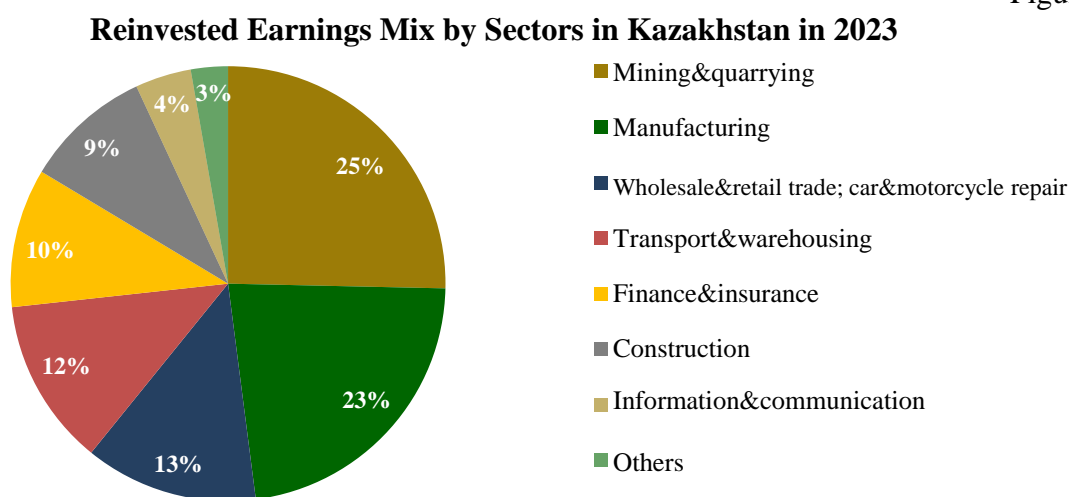
5. Comparing FDI in Kazakhstan and Worldwide

FDI dynamics in Kazakhstan differ markedly from global trends. One of Kazakhstan's key characteristics is its negative FDI net inflow excluding reinvestment. Unlike most of the reviewed countries, Kazakhstan has been experiencing outflows exceeding new investment inflows since 2018. This raises questions about the long-term sustainability of the country's investment policy. By comparison, countries such as Poland, the Philippines, and India have demonstrated a steady inflow of new investors. This is due both to the availability of competitive projects and to a more diversified economy, attracting capital to various sectors.

The negative FDI net inflow trend in Kazakhstan is linked to several factors. These include the limited number of new large-scale projects of significant interest to investors and the high level of dependence on the resource sector. This limits the potential for attracting investment in non-resource sectors, which are the main drivers of FDI in countries showing positive trends.

The structure of reinvestment by industry in Kazakhstan shows a pronounced concentration in the mining and manufacturing industries, which together account for approximately 48% of all reinvestment (Figure 8). This confirms the dominance of the resource sector in the country's investment activity. Mining is directly linked to the extraction of natural resources such as oil, gas, and metals and represents the core of the resource-driven economy. At the same time, some part of Kazakhstan's manufacturing industry is inherently resource-based, as it consists of primarily processed natural resources without significant added value. Therefore, investment in the manufacturing sector also significantly supports the resource model.

Figure 8



Source: NBK

Furthermore, wholesale and retail trade, transportation and warehousing, financial services, and construction account for approximately 45% of reinvestment. It's worth mentioning that oil and gas are also present in sectors such as transportation and trade. This further increases investment activity's dependence on primary commodity flows.

Other sectors, including information technology, real estate, and professional and scientific activities, each account for less than 5%, while sectors related to social services, education, and

the arts contribute virtually nothing to the reinvestment of foreign capital. This highlights the need to stimulate investment in human capital and technology, especially in the context of the global transition to a digital economy.

Kazakhstan is characterized by a high share of FDI related to natural resource extraction, making the economy vulnerable to fluctuations in commodity prices. In contrast, countries such as Norway and Canada, despite some dependence on the oil sector, have successfully diversified their economies through the development of innovation and green technologies. This allows them to maintain stable capital inflows even amid volatile commodity markets.

Developing countries such as India, the Philippines, and Thailand have taken a different approach: they actively attract investment in manufacturing and services, relying on a growing domestic market, low labor costs, and tax incentives. Kazakhstan, in contrast, continues to face challenges in diversifying its economy, limiting opportunities for capital inflows into non-resource sectors. This creates a gap between the potential and actual results in attracting FDI.

Along with structural features of the economy, the identified trends in FDI net inflows into Kazakhstan can be explained by a number of alternative factors: changes in the global distribution of investment flows, increased geopolitical fragmentation, and rising uncertainty in global markets, which influence the decisions of multinational companies.

Kazakhstan's political and economic relations with key partners such as Russia, China, and the EU also play a significant role. Sanctions, trade restrictions, and international conflicts have a significant impact on the investment climate.

6. Findings

Kazakhstan faces a number of structural constraints in attracting FDI. High dependence on the resource sector, limited economic diversification, and weak integration into global competitive environments are deterring new investors.

Since 2018, positive FDI net inflows into Kazakhstan have been driven primarily by reinvestment of earnings by existing investors. However, by 2024, even inclusive of reinvestment, net inflows turned negative, indicating the onset of active repatriation of previously invested capital, particularly for large investment projects in the resource sector. This underscores the exhaustion of the previous investment momentum and the absence of new sources of growth.

In this context, the need to develop a new investment model focused on attracting high-quality capital investment in non-resource sectors with high added value becomes clear. Without this, the country risks facing a further decline in investment activity and a loss of competitiveness in the competition for international capital.

A comparison with international experience shows that sustainable FDI growth in these countries is achieved through the development of non-resource industries, integration into GVCs, and investment in innovation and sustainable technologies, which allows for a more balanced structure of FDI inflows.

Based on the analysis, the following key findings can be identified.

1. The limited inflow of new investment highlights the need to create structural conditions for the sustainable attraction of new investors.
2. Diversification of the economy and development of non-resource sectors are critical to reducing dependence on the oil and gas sector and increasing resilience to external shocks.
3. Integration into global production chains and improvement of the institutional environment, including protection of property rights, regulatory transparency, and infrastructure development, can significantly enhance the investment attractiveness of Kazakhstan.
4. Stimulating investment in knowledge-intensive and green technologies, as well as human capital, should be part of a long-term FDI strategy that is in line with global trends and challenges.

This analysis is based on international statistical data, which ensures comparability and objectivity, but has some limitations. The analytical approach focuses on comparing trends and structural differences between groups of countries without using econometric methods for statistical testing of causal relationships. This limits the ability of rigorous empirical validation of

the proposed interpretations, but is a natural feature of descriptive cross-country analysis, which aims to identify patterns and compare dynamics. Therefore, further research could focus on quantitative assessment of the factors influencing FDI inflows using econometric methods.

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A Macroeconomic Picture of Commodity-Driven Economies: A View Through the Lens of Data

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This paper provides a comparative analysis of macroeconomic indicators for Kazakhstan and several commodity-exporting countries, with the aim of identifying differences and similarities in their monetary and fiscal policies. This study analyzes the level and dynamics of external assets, balance of payments indicators, and the degree of economic diversification, as well as the monetary and fiscal policy regimes of a group of commodity-exporting countries.

The analysis revealed that the choice of exchange rate regime is determined not only by the level of economic development but also by the volume of external assets. Thus, the presence of significant reserves allows for intervention and the maintenance of a fixed exchange rate regime, while countries with limited savings typically choose a floating exchange rate regime.

Developing non-resource sectors is a key mechanism for reducing dependence on commodity revenues and increasing resilience to external shocks. Fiscal policy also exhibits significant variability: some countries are taking steps to diversify budget revenues and implement fiscal rules, while others remain highly dependent on oil and gas revenues. In general, models that combine a floating exchange rate and an inflation targeting regime with strict fiscal discipline are considered sustainable.

Key Words: commodity-driven economies, the Dutch disease, monetary policy, fiscal policy, exchange rate regimes.

JEL-Classification: E50, E61, E63.

1. Preamble

Many commodity-driven economies face a paradox whereby growing export revenues from the resource sector are accompanied by the displacement of the non-resource sector and the accumulation of macroeconomic imbalances (the “Dutch disease”). In such circumstances, fiscal and monetary policies play a key role in smoothing out external economic shocks and ensuring sustainable development.

International experience demonstrates a wide range of approaches: from successful models, such as Norway, to examples where commodity booms were accompanied by deteriorating macroeconomic indicators. However, there is no universal formula for sustainable development for countries with high commodity dependence, as the effectiveness of economic policy is largely determined by the institutional environment, the level of economic diversification, and the strategy for managing foreign exchange and fiscal flows.

In the case of Kazakhstan, whose economy is heavily dependent on oil and metal exports, the volatility of external economic conditions and low economic diversification continue to pose a particular challenge to long-term growth. In this context, it is of interest to analyze the experiences of countries with similar export basket structures, using their macroeconomic indicators to construct a “picture of commodity-driven economies.”

Thus, the aim of this paper is to identify similarities and differences in approaches to macroeconomic policy between Kazakhstan and a number of other resource-dependent countries. Specifically, the structure and dynamics of external assets, the degree of economic diversification, the balance of payments, and the fiscal balance of the countries will be examined. This can serve as a basis for analyzing the sustainability of national macroeconomic management models in the face of commodity revenue volatility.

2. Literature Review

A wide range of literature has been devoted to studying the economies of resource-rich countries and their macroeconomic policies. Much of the literature describes the “Dutch disease” as one of the most important problems in commodity-driven economies. The term “Dutch disease” describes the negative impact of growing revenues from natural resources on other sectors of the economy. A striking example is the Netherlands, where increased foreign exchange inflows following the discovery of large gas fields led to a strengthening of the national currency (The Economist, 1977) and, consequently, a decrease in the price competitiveness of the manufacturing industry.

To reduce such risks, exporting countries employ various macroeconomic policy instruments that help mitigate the negative effects of commodity shocks. As Bevan et al. (1999) point out, expansion of government spending due to commodity revenues can exacerbate inflationary processes and increase demand for non-tradable goods and services, which, in turn, contributes to further appreciation of the real exchange rate and aggravates structural imbalances in the economy. Berg et al. (2012) note that contractionary monetary policy aimed at sterilizing the inflow of foreign currency helps limit money supply growth and mitigate inflation risks. Thus, the monetary policy of resource-rich countries can serve as a stabilizing factor, mitigating the impact of the “Dutch disease” on inflation and the exchange rate.

Norway’s example is often cited in the literature as a successful model for overcoming the negative consequences of the “Dutch disease.” As Torvik (2009) notes, key elements of Norway’s strategy included the creation of a government oil fund (Government Pension Fund Global), investing a significant share of oil revenues abroad, and strict fiscal discipline aimed at preventing an economic overheating. This minimized pressure on the real exchange rate and supported the competitiveness of the manufacturing sector.

As a number of authors have emphasized, the presence of natural resources complicates the development of an effective spending strategy, as it contributes to the formation of an extractive government. Implicit evidence is that in oil-exporting countries, the economic cycle and fiscal expenditures are correlated with global oil prices (Husain et al., 2008; Aliyev, 2012).

Overall, the transition from the “resource curse” to long-term and sustainable growth is only possible with the implementation of a balanced macroeconomic strategy, in which fiscal policy plays a special role. Specifically, limiting government spending during boom periods, reducing the budget’s dependence on volatile revenues, and investing a portion of export earnings in foreign assets are considered necessary elements of an anti-crisis strategy (van der Ploeg & Venables, 2011; Gelb, 1988).

However, there are no universal solutions applicable to every resource-dependent economy. Baunsgaard et al. (2012) and Venables (2016) note that effective management of commodity revenues requires consideration of each country’s institutional characteristics, the level of financial market development, and export structure. In this context, the adaptability of economic policy becomes particularly important, as it allows for the specific characteristics of each country to be taken into account when choosing mechanisms for responding to external shocks.

In such circumstances, the focus and effectiveness of fiscal and monetary policies, capable of mitigating the consequences of resource dependence and supporting sustainable growth, are crucial. The experience of a number of countries shows that the development of institutional approaches aimed at mitigating resource shocks and effectively managing commodity revenues contribute to the reduction of macroeconomic imbalances.

3. A Comparative Analysis of Macroeconomic Indicators of Commodity-Driven Economies

In this paper, to conduct a comparative analysis of macroeconomic indicators, countries that are net exporters of raw materials were selected: Saudi Arabia, the UAE, Russia, Norway, Kazakhstan, Angola, Azerbaijan, Qatar, Nigeria, Algeria (exporters of oil and natural gas), Canada (oil and metals), Mexico (oil), Australia (metals and coal) and Peru (metals).

The selection was made taking into account not only the resource-based nature of the economy but also the diversity of macroeconomic policy models, including fiscal (the presence of

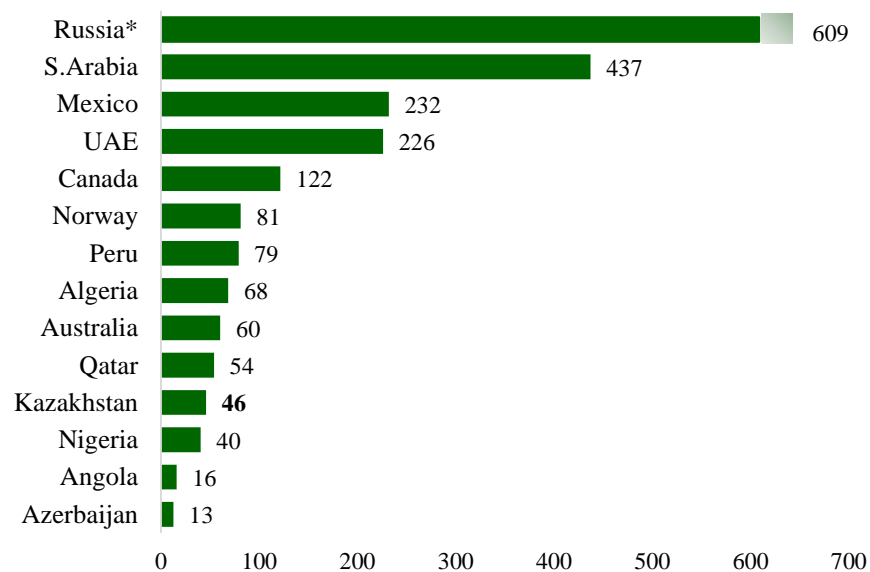
a fiscal rule, the level of the tax burden, the degree of diversification of budget revenues, etc.) and monetary approaches (various monetary policy and exchange rate regimes), as well as differences in countries' income levels (high, medium, and low). Limiting the sample to 14 countries was necessary to preserve analytical value and ensure the comparability of macroeconomic indicators. A larger sample would have made it difficult to conduct an accurate comparative analysis.

3.1. Foreign Assets

Macroeconomic policy plays an important role in countering the negative consequences of large and volatile foreign exchange inflows (Adam et al., 2009; Prati and Tressel, 2006). One of the tools of macroeconomic policy is international reserve management. This is because the accumulation or use of reserves helps reduce the risks associated with the volatility of foreign exchange proceeds and the effects of the “Dutch disease”.

Figure 1

Gold and Foreign Exchange Reserves as of January 1, 2025, USD Bln



Source: IMF.

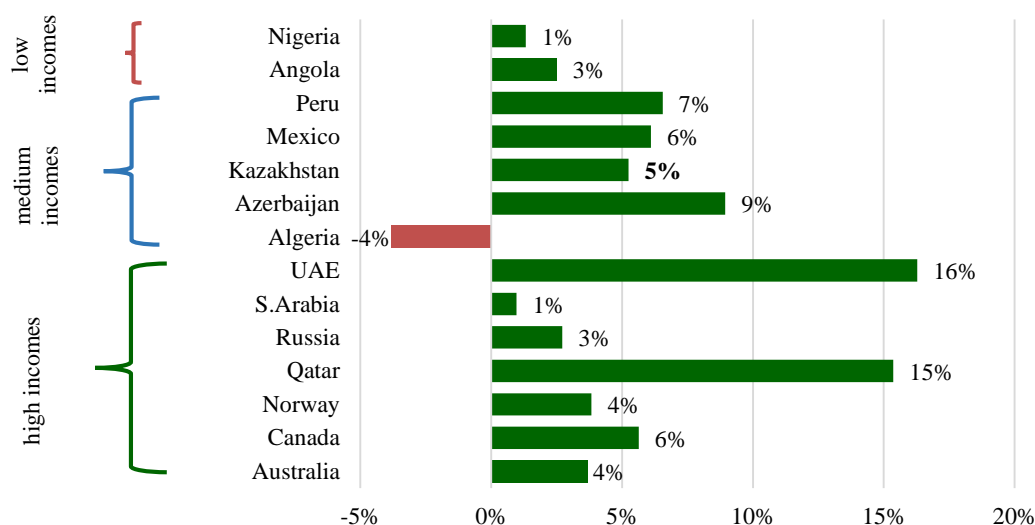
*Note. Russia's international reserves include the liquid portion of the National Welfare Fund, which, according to open source data (ratestats.com, tadvise.ru), accounts for 32% of the Fund's assets, or \$37.8 bln.

At first glance, Russia appears to be the undisputed leader in terms of international reserves (Figure 1). However, it's important to mention that this volume includes the liquid portion of Russia's sovereign wealth fund, the National Welfare Fund. Furthermore, because of sanctions imposed by Western countries, almost half of the reserves are frozen.

Saudi Arabia also holds impressive gold and foreign exchange reserves, which reached \$732 billion during the high oil prices of 2013–2014, and remains among the top countries in terms of reserves.

Notably, although Mexico ranks only 17th in terms of oil reserves, its gold and foreign exchange reserves are higher than those of Canada (ranked second in the world by oil reserves), the UAE (#7), Nigeria (#10), Kazakhstan (#12), and Qatar (#13). Despite the country facing a virtually permanent negative trade balance, the local currency is supported by remittances from the United States, Canada, Spain, and other countries to Mexicans. This, combined with a free-floating exchange rate regime, has meant that during periods of low oil prices, Mexico's reserves have declined only slightly—by an average of 3.5% from 2015 to 2017.

Average Growth Rates of Gold and Foreign Exchange Reserves in Countries with Different Income Levels* in 2011–2024



*Note: Classification of countries by income level according to the World Bank.

Source: IMF, the author's computations.

On average, over the past 15 years, the highest annual growth in reserves among high-income countries was observed in the UAE (16%) and Qatar (15%) (Figure 2). The UAE is one of the few countries whose reserves continue to grow despite commodity price volatility and global economic and political shocks. This is due to the gradual diversification of the economy, a developed financial system, and active investment promotion (the presence of special economic zones, major financial centers, and a flexible tax system).

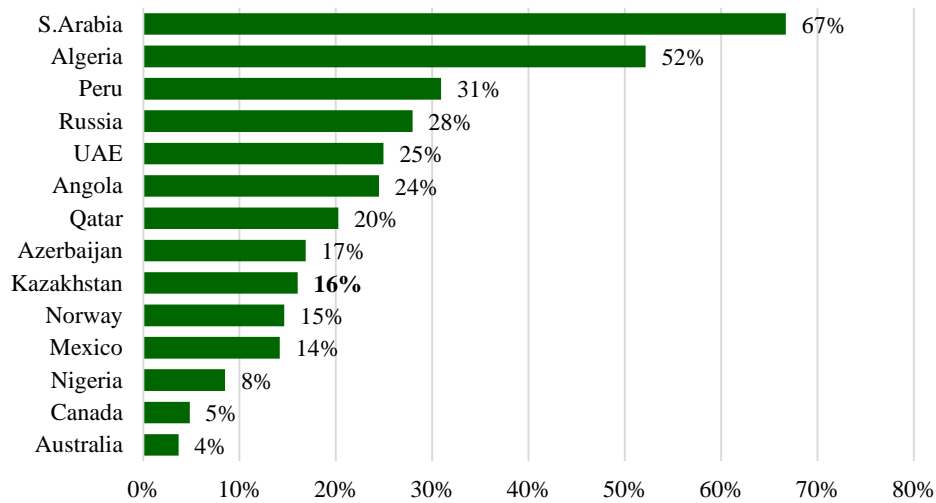
Qatar's reserves doubled in 2018 after a sharp drop in 2017 to \$15 billion as a result of the conflict with Arab countries. This conflict restricted trade and air travel for Qatar, putting pressure on the country's external assets. However, the country's reserves quickly recovered thanks to rising gas prices (which account for approximately 80% of exports), support from Turkey and other countries, and policies aimed at stimulating the domestic economy.

Azerbaijan demonstrated annual growth of 9%, the highest rate among middle-income countries. The increase in reserves was supported by a stable trade surplus due to large oil and gas projects with foreign participation (Azeri-Chirag-Guneshli, Shah Deniz, etc.), personal transfers to Azerbaijanis from other countries, and the development of the transportation sector (the Southern Gas Corridor, the North-South and West-East transport corridors, the Baku seaport, and the Baku-Tbilisi-Ceyhan and Baku-Supsa oil pipelines), which ensure a stable inflow of foreign currency. However, reserves have not yet recovered to the 2014 level, when they reached \$15 billion.

In Kazakhstan, reserves grew by an average of 5% annually from 2010 to 2024. This growth was primarily driven by the increase in monetary gold in reserves following the National Bank of Kazakhstan's exercise of its priority right to purchase gold in 2011, as well as rising gold prices. The share of gold in reserves increased from 11% in 2010 to 52% in 2024.

Algeria's reserves have been declining by 4% annually. From a record high of \$192 billion in 2013, Algeria's reserves fell to \$68 billion in 2024. This occurred despite repeated devaluations of the dinar, restrictions on foreign exchange transactions, and controls on foreign exchange flows aimed at stabilizing the foreign exchange market and preserving the country's reserves.

The low-income countries in this study experienced a decline in reserves as a result of the fall in oil prices in 2015–2017. However, Nigeria, unlike Angola, reached pre-crisis reserves by the end of 2024. A tight monetary policy and loans from international financial institutions allowed Nigeria to rebuild its reserves.

Gold and Foreign Exchange Reserves to GDP on Average during 2011–2024

Source: IMF, the author's computations.

Saudi Arabia's gold and foreign exchange reserves averaged 67% of GDP in 2011-2024 (Figure 3). This means that if oil revenues decline sharply, Saudi Arabia's reserves would be sufficient to offset the negative effects of the crisis. Developed countries such as Canada and Australia have low reserve levels (4-5%) relative to the size of their economies. Kazakhstan's reserve-to-GDP ratio is comparable to that of countries such as Azerbaijan, Norway, and Mexico – 14-17%.

It should be noted that there is no universal threshold for assessing the adequacy of international reserves as a percentage of GDP. The IMF assesses the adequacy of developing countries' reserves using various metrics: import coverage in months (min. 3 months), short-term external debt coverage (min. 100%), broad money coverage (min. 20%), and the ARA composite metric¹ (in the range of 100%-150%). Reserve adequacy ratios for these metrics are presented in Table 1. These indicators are applied much less frequently to developed countries or are considered less relevant. This is due to the fact that the currencies of such countries are freely convertible, financial markets are developed, and investor confidence is high. Therefore, in these countries, there is no need to accumulate reserves.

Table 1

Gold and Foreign Exchange Reserves Adequacy Ratios at end-2024*

| Country/ratio | Gold and foreign exchange reserves to: | | | |
|---------------|--|--|------------------------|--------------------|
| | imports (>3 months) | short-term external debt (>100%) | money supply (>20%) | ARA (100%-150%) |
| Azerbaijan | 5.4 | 155% | 37% | NA |
| Algeria | 16.8 | 4556% | 40% | NA |
| Angola | 7.5 | 204% | 85% | 91% |
| Kazakhstan | 7.4 | 121% | 53% | 171% |
| Mexico | 4.1 | 447% | 30% | 128% |
| Peru | 13.6 | 575% | 59% | 248% |
| Russia | 19.3 | 65% | 46% | 331% |
| UAE | 5.1 | 299% | 36% | NA |

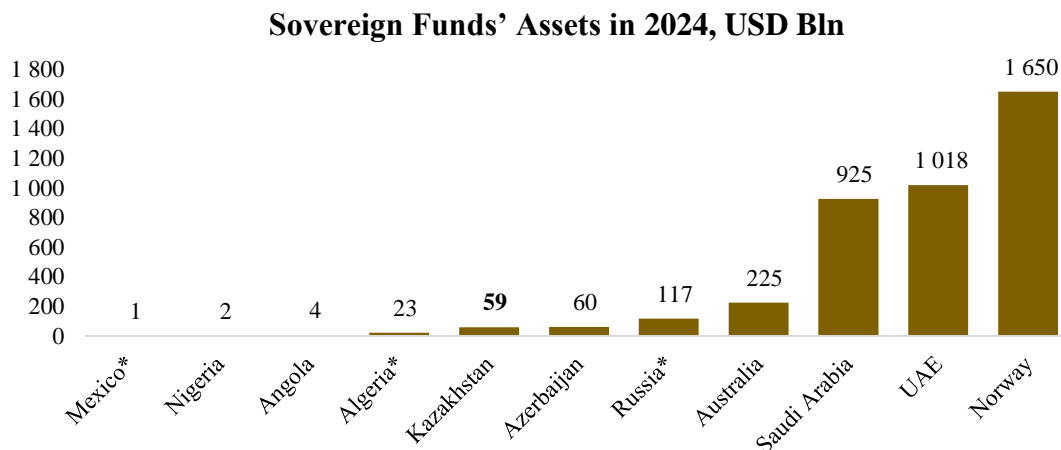
*Note: IMF does not publish calculations of the specified indicators for the remaining countries in the sample under consideration.

Source: IMF, NBK.

¹ Assessing Reserve Adequacy

In many countries, revenues from oil and gas exports are accumulated primarily in sovereign wealth funds rather than in foreign exchange reserves. As a result, total external assets, including reserves and sovereign wealth fund assets, are significantly higher than official reserves. Sovereign wealth funds play a key role in smoothing economic fluctuations, creating a cushion against falling commodity prices, and accumulating savings for future generations (Figure 4).

Figure 4

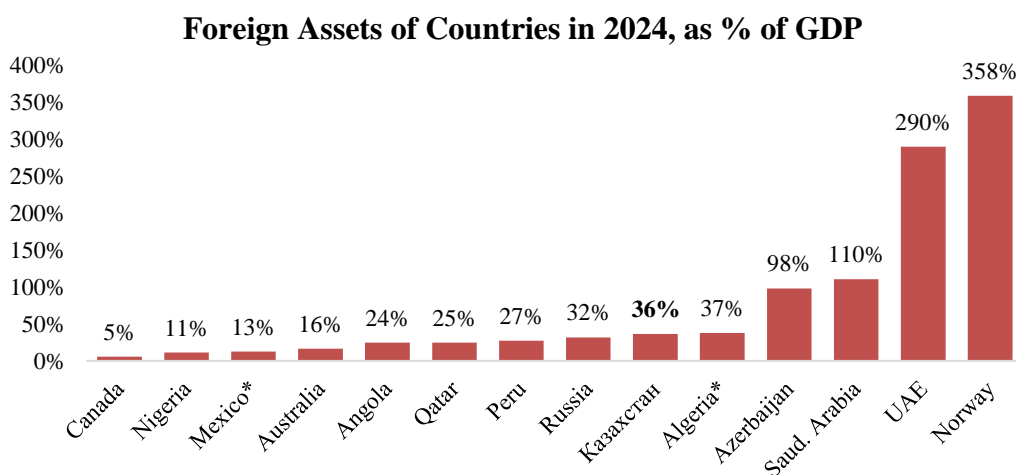


*Note: 1. Data on Mexico’s and Algeria’s sovereign wealth funds is available for 2023. Data on Qatar’s and Peru’s sovereign wealth funds is unavailable. Canada has only local funds. Russia’s sovereign wealth fund assets are presented taking into account the liquid portion of the National Wealth Fund, which is included in international reserves statistics.

Source: [International Forum of Sovereign Wealth Funds](#)

The UAE and Norway’s external assets (reserves plus sovereign wealth funds) significantly exceed their GDP, while those of Saudi Arabia and Azerbaijan are at comparable levels (Figure 5). Three of these countries maintain fixed exchange rates, which seems reasonable given the size of their external buffers. Norway, despite its floating exchange rate regime, has accumulated petrodollars thanks to its policy of not “eating” oil revenues. (“the 3% rule”²), tight supervision and institutional independence of the sovereign fund.

Figure 5



*Note: Data on foreign assets of Mexico and Algeria is presented for 2023.

Source: the author’s computations.

Having a significant amount of external assets allows countries to intervene in the foreign exchange market when various shocks arise, mitigating the negative impact on their economies.

² The Norwegian government may spend no more than 3% of the total amount of the Government Petroleum Fund per year within the state budget, which corresponds to the expected long-term real return of the fund.

At the same time, a free-floating exchange rate regime is more suitable for countries with more modest external savings, absorbing imbalances in the foreign exchange market.

3.2. The Degree of Economic Diversification

One of the key indicators that enable to assess the resilience of the economy to external shocks associated with fluctuations in commodity prices is the degree of diversification of the economy.

In this paper, the analysis of the level of economic diversification of the considered group of countries is based on the data of the Economic Diversification Index (EDI), developed by the Mohammed bin Rashid School of Government³ (MBRSG) in 2020. The EDI covers three key aspects: diversification of production, trade, and government revenue (the default weight for each indicator is 33.3%).

The EDI is calculated using a panel dataset covering 115 countries for the period of 2000–2023. In the first stage of the calculation, principal component analysis (PCA) is applied to each set of indicators to obtain three sub-indices. In the second stage, the sub-indices are aggregated into an overall EDI index by calculating a simple arithmetic mean. Each of the three diversification dimensions is assessed based on the following set of indicators:

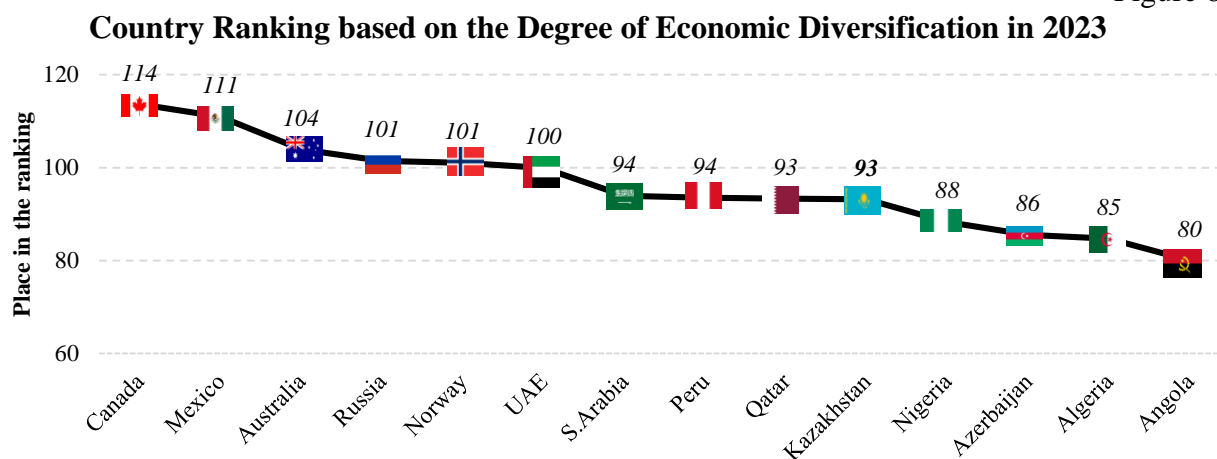
1. The degree of production diversification is calculated based on 9 indicators, such as the share of value added by sector (agriculture, industry, services), value added in the manufacturing industry per capita, and the share of high-tech production.

2. The degree of trade diversification is calculated based on 10 indicators, such as the value of exports and imports of goods and services, the share of raw materials in goods exports, the share of industrial and high-tech industrial goods in exports, goods exports to GDP, as well as indices of concentration of export and import goods and markets.

3. The assessment of the degree of diversification of government revenues includes the following 6 indicators as a percentage of GDP: excise revenues, income tax revenues, revenues from goods and services tax, total tax revenues, total government revenues, and revenues from foreign trade.

This index thus measures the degree of an economy's dependence on a limited number of sectors or resources, such as oil, gas, and metals, and allows one to assess its resilience to external shocks. EDI values above 100 reflect a high level of economic diversification compared to the baseline established in 2000. The index is normalized so that a value of 100 corresponds to the average level of diversification of countries worldwide in 2000, which is taken as the baseline. Values above 100 therefore indicate that a country's economy is significantly more diversified than the global average in the baseline period (Figure 6).

Figure 6



Source: economicdiversification.com

³ A government-run research and development institution founded in 2005 in the UAE.

Countries with higher EDI values (Canada, Mexico, Australia) have been able to significantly diversify their budget revenue sources and develop non-oil sectors.

At the same time, countries with low diversification indices (Angola, Algeria, Nigeria) remain dependent on oil and gas revenues, and their macroeconomic policies are often procyclical. Limited revenue and tax bases, underdeveloped non-oil sectors, and import dependence make these economies particularly vulnerable. Azerbaijan, also characterized by low EDI values, has seen increased fiscal discipline in recent years, manifested by the implementation of a budget rule, expenditure restructuring, and a gradual increase in non-oil revenues. These measures form the basis for a more balanced macroeconomic policy and reduced vulnerability to external price shocks.

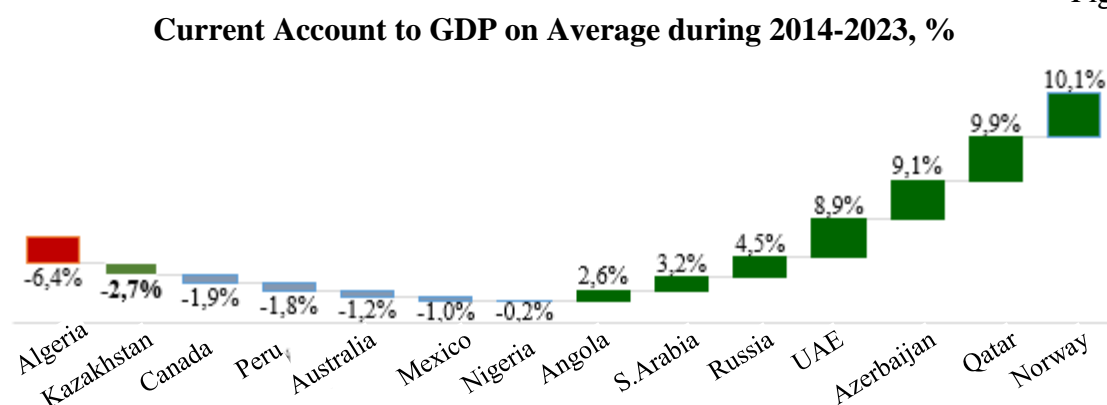
In countries in the intermediate zone (e.g., Russia, the UAE, Norway), macroeconomic policies have demonstrated varying degrees of effectiveness. In the case of Norway, this is strict fiscal discipline and a fund for future generations; in the UAE, it's an active investment policy and efforts to stimulate non-resource sectors of the economy.

Thus, a high level of diversification is typically the result of an effective macroeconomic strategy aimed at reducing commodity dependence, creating sustainable sources of income, and developing domestic production and exports. This underscores the need for a comprehensive and long-term economic policy in countries seeking to overcome the consequences of the “resource curse”.

3.3. Balance of Payments Status

The current account balance is a macroeconomic indicator that reflects the state of external economic stability and the nature of structural imbalances, particularly in resource-dependent economies. A current account surplus generally signals a favorable external economic environment and facilitates the accumulation of external assets. However, in conditions of weak export diversification, a persistent surplus may also reflect structural dependence on commodity prices and vulnerability to external shocks. A current account deficit may indicate the increasing pressure on the economy and the need for external financing.

Figure 7



Source: IMF

To identify similarities and structural differences in their external positions, the reviewed countries were divided into groups. The first group consists of economies with a current account surplus (average current account to GDP ratio over 2014–2023 greater than 2%): Angola, Saudi Arabia, Russia, the UAE, Azerbaijan, Qatar, and Norway (Figure 7). A positive current account balance over a long period is typically stemming from a stable trade balance with limited domestic demand, as well as low levels of foreign capital participation in the country's economy. In the cases of Angola, Saudi Arabia, Azerbaijan, and Qatar, the current account surplus is estimated to be less sustainable than in Russia and Norway. This is due to the fact that the economy of the latter is more diversified (EDI values are greater than 100), the deficit in the balance of services is

relatively low ((-) 1.6% in Norway and (-) 1.8% in Russia versus (-) 9% in the remaining countries in this subgroup of countries for 2014–2023), budget rules are implemented, and the national currency has a free floating exchange rate regime.

The second group consists of economies with a balanced current account (current account within $\pm 2\%$ of GDP), which are most often characterized by a more diversified structure of foreign trade flows. These include Canada, Mexico, and Australia. Meanwhile, in countries such as Peru and Nigeria, a small current account deficit does not fully reflect the state of the economy. These are developing countries with heavy reliance on resources, significant pressure on exchange rates, and, as a result, frequent foreign exchange interventions. Furthermore, in Peru and Nigeria, the balance of secondary income is positive (on average 2.5% and 5%, respectively), reflecting their dependence on foreign transfers.

The third group consists of countries with moderate current account deficits (current account balances range from -2% to -5% of GDP) and are dependent on external financing. This group of countries includes Kazakhstan, which has historically been characterized by current account deficits. This is due to consistently high demand for imports in the context of limited domestic supply (the share of imports of goods in GDP averaged 21% in 2014–2023), as well as high payments of income to foreign investors (the ratio of income payments to exports of goods exceeds 36%).

The fourth category includes countries with high current account deficits (current account deficits greater than 5% of GDP). These countries are characterized by structural imbalances in their external positions and the need for long-term economic policy adjustments. Algeria, which has an average negative trade balance of -2.7% of GDP among the countries in the sample, falls into this group. This may indicate that a large portion of export revenues is being used to purchase imports due to insufficient domestic production.

Thus, current account values do not always reflect structural differences in countries' external economic positions. Most countries with floating exchange rate regimes have more stable external economic flows. An important factor is the presence of fiscal rules that balance the current account, mitigating the effects of the "Dutch disease".

3.4. Fiscal Balance

Budget revenues in resource-rich countries are typically quite volatile. Budget expenditure dynamics are determined by the state and are either procyclical or countercyclical. Overall, only four of the countries under consideration – Norway, Qatar, Azerbaijan, and the UAE – have had a positive fiscal balance on average over the past 10 years.

Norway's fiscal balance is one of the most resilient among countries with a developed resource sector. As at end-2023, the fiscal burden⁴ in the country was about 40% of GDP. In the case of Norway, this tax burden reflects the high degree of income redistribution through the budget system, whereby a significant portion of funds accumulated in the form of taxes and social contributions is directed toward social benefits and pensions (approximately 40% of total budget expenditures), funding for healthcare (17%), and education (10%). Social contributions play a significant role in the structure of tax revenues, accounting for approximately 25% of all tax revenues. Despite the fact that the corporate income tax in the oil and gas sector reaches 78% (for other businesses, a rate of 22% applies), the share of oil and gas revenues in the budget is relatively low (approximately 15%) compared to other commodity-producing countries. This is explained by the peculiarities of Norway's fiscal model, where the majority of oil and gas revenues are accumulated not directly in the budget, but in the Norwegian Petroleum Fund. Under the fiscal

⁴ The tax burden is an indicator reflecting the ratio of total tax revenue to a country's GDP. It allows assessing the share of added value created in the economy that the government extracts through taxes and mandatory contributions. The tax burden is not a purely positive or negative phenomenon: in countries with effective institutions and high levels of public trust (for example, Norway), it ensures the funding of high-quality public services and social security. At the same time, in economies with less developed public administration, an excessive tax burden can discourage business activity and strengthen the shadow economy.

rule, no more than 3% of the fund's total value is allocated to the budget annually, reducing the dependence of current budget expenditures on commodity market volatility. Norway's fiscal policy is thus characterized by a combination of a progressive personal income tax system, effective taxation of the oil and gas sector, and a developed social security system, while simultaneously accumulating reserves in the National Pension Fund. This ensures long-term budget sustainability and reduces vulnerability to external shocks associated with fluctuations in energy prices.

Despite a long-standing fiscal surplus, Qatar remains dependent on oil revenues, which account for nearly 80% of budget revenues. Qatar has no VAT, mandatory social security contributions, or personal income tax for both residents and non-residents. Furthermore, a 10% corporate tax is levied only on non-residents. Qatar's fiscal policy provides a favorable tax regime for businesses and individuals, while maintaining high levels of public spending, including on infrastructure, healthcare, and education. Thus, fiscal sustainability is ensured primarily by a favorable foreign economic environment, rather than by a broad domestic tax base.

The UAE also offers a favorable tax regime for households and the corporate sector. Individuals, both resident and non-resident, are exempt from income tax, as are dividends, interest, and capital gains. There are also no social security contributions, with the exception of UAE citizens, for whom employers are required to make pension contributions. A 5% VAT rate was introduced only in 2018, and a corporate tax rate of 9% on taxable profits over AED 375,000 (approximately USD 100,000) and 0% on profits below this threshold was introduced on June 1, 2023. The introduction of these taxes entails a gradual diversification of budget revenue sources with the aim of reducing dependence on oil and gas revenues. Budget expenditures are primarily directed toward infrastructure development (30-35% of total expenditures), which is the main driver of economic growth and is aimed at diversifying the economy. Overall, the UAE's fiscal profile is stable due to the presence of sovereign wealth funds capable of absorbing external shocks and a limited debt burden.

Azerbaijan's fiscal system is characterized by a moderate tax burden (18%) and continued dependence on the oil and gas sector (50% of the state budget). Despite this, Azerbaijan has a moderately strict tax regime (VAT rate – 18%, CIT – 20%, personal income tax - 14-25%) compared to countries with more liberal tax regimes, such as Qatar and the UAE. The main items of public expenditure in Azerbaijan are social protection (23.6%), healthcare (21.5%), and defense and national security (20.3%), demonstrating the government's priority attention to maintaining social stability and ensuring internal and external security. Azerbaijan's fiscal model is based on a broader tax base, unlike Qatar and the UAE. This allows for a slightly more balanced formation of budget revenues in the context of commodity dependence.

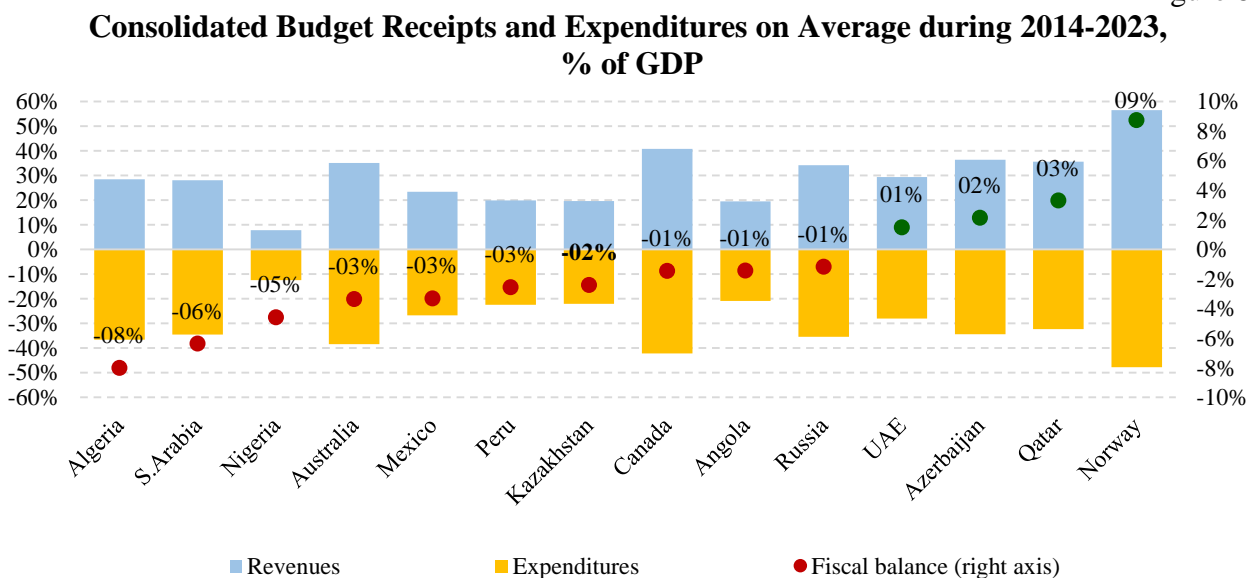
The nature of consolidated budget deficits varies across countries with different income levels. For example, in high-income countries like Australia and Canada, dependence on commodity revenues is low (less than 10% of total government revenue), while the tax system is balanced: in these countries, income tax accounts for more than a third of all tax revenues. Fiscal incentives are only applied during global crises (such as the global financial crisis or pandemic). Therefore, the presence of a consolidated budget deficit does not pose a significant threat to macroeconomic stability in developed economies with strong institutions, a large tax base, and access to domestic and external borrowing.

Middle-income countries such as Mexico and Peru show a moderate dependence of government revenue on commodity revenues, accounting for approximately 20-30% of the budget. Furthermore, the structure of tax revenues is quite diversified: the main sources are VAT (a third of taxes) and corporate tax (approximately 25-30%). In the case of Mexico, strict budget discipline under the Fiscal Responsibility Act requires maintaining a "primary budget balance" (before interest on debt servicing), while limited borrowing due to strict congressional limits contributes to a contractionary nature of fiscal policy with an emphasis on long-term growth. Peru is also a fiscally responsible country, despite its dependence on metal exports. However, unlike Mexico, Peru's fiscal policy is more flexible and allows for budget deficits driven by investment spending, particularly on infrastructure.

Kazakhstan's fiscal policy is largely procyclical (Zhakupova M., Khanet A., 2023). Revenue is generated largely through transfers from the National Fund (20.4% of budget revenues in 2024) and export customs duties on oil (5.8% in 2024). At the same time, state budget expenditures are expanding due to debt servicing, social welfare and social security, education, healthcare, and infrastructure projects. To limit the rate of expenditure growth aimed at stabilizing public spending and increasing fiscal discipline, a budget rule was introduced in Kazakhstan in 2022. The essence of this rule is that the Government, when forming the budget for the following year, annually sets a cutoff price for oil, which is used to determine the amount of the guaranteed transfer when forming the budget for the next planning period. Thus, the fiscal rule is a kind of safeguard designed to protect the country's budget from price fluctuations in important export revenues, such as oil and gas. However, assessing the effectiveness of this mechanism will require several years of observation.

Fiscal balance analysis shows that resource-rich countries rely on oil and gas revenues to varying degrees. However, some are attempting to diversify their budget revenues by increasing/introducing tax rates and implementing fiscal rules.

Figure 8



Source: World Bank, the author's computations.

3.5. Monetary Policy Regimes

Inflation targeting is the most common monetary policy regime among the reviewed countries. It is used in 50% of cases (7 out of 14 countries), primarily in conjunction with a floating exchange rate. This is consistent with international practice, whereby moving away from a rigid exchange rate peg requires a nominal anchor to ensure price stability. Examples of such countries include Canada, Australia, Norway, Russia (under sanctions and exchange controls), and Mexico (Table 2). These countries exhibit current account surpluses or small deficits, strict fiscal discipline alongside a broad tax base, and, most importantly, the highest economic diversification indices in the group of countries analyzed. This, therefore, creates the necessary conditions for effective use of inflation targeting.

In Kazakhstan, the transition to an inflation-targeting regime began in August 2015. Over the past 10 years, this has enabled the economy to cope with a number of shocks (the COVID-19 pandemic, geopolitical instability, etc.) and increased the transparency of the National Bank of Kazakhstan, particularly in the decision-making process regarding the base rate. However, the implementation of the inflation targeting regime faces a number of challenges, both internal and external, requiring coordination with budget policy.

The Gulf States (Qatar, the UAE, and Saudi Arabia) adhere to fixed exchange rate regimes, and therefore exchange rate stability is the guiding principle for monetary policy. This is logical, given the relative size of these countries' foreign assets and the current account surpluses.

A number of countries (Azerbaijan, Algeria, and Nigeria) employ transitional exchange rate regimes and less common monetary policy regimes, such as monetary aggregate targeting or the absence of an explicit nominal anchor. Such combinations typically indicate a transitional economy and some potential limitations for central banks in pursuing a fully-fledged monetary policy. An example of such limitations is the low degree of economic diversification (the lowest EDI value in the sample of resource-rich countries). Taken together, these characteristics indicate that these economies are not ready to implement fully-fledged inflation targeting regimes and point to the persistence of hybrid monetary policy models.

Commodity-exporting countries exhibit a wide range of exchange rate regimes and monetary policy approaches. The most sustainable models are considered to be those with floating exchange rates combined with inflation targeting, which are characteristic primarily of upper-middle-income countries with independent central banks, developed financial markets, and high levels of transparency.

At the same time, developing countries more often adhere to fixed or intermediate regimes. This is due either to limited institutional capacity and low confidence in monetary policy, or, conversely, to the presence of significant external reserves that allow for currency interventions during crises and maintain exchange rate stability.

Table 2

Exchange Rate and Monetary Policy Regimes of Exporters of Primary Products

| # | Country | Exchange Rate Regime | Monetary Policy Regime |
|----|-------------------|---|------------------------------|
| 1 | Australia | Freely floating | Inflation targeting |
| 2 | Azerbaijan | Fixed within a narrow range ⁵ | Other * |
| 3 | Algeria | A transitional regime with an adjustment option | Monetary aggregate targeting |
| 4 | Angola | Floating | Monetary aggregate targeting |
| 5 | Kazakhstan | Floating | Inflation targeting |
| 6 | Canada | Freely floating | Inflation targeting |
| 7 | Qatar | Fixed | Exchange rate targeting |
| 8 | Mexico | Freely floating | Inflation targeting |
| 9 | Nigeria | Fixed Monetary aggregate targeting | Monetary aggregate targeting |
| 10 | Norway | Freely floating | Inflation targeting |
| 11 | UAE | Fixed | Exchange rate targeting |
| 12 | Peru | Floating | Inflation targeting |
| 13 | Russia | Freely floating | Inflation targeting |
| 14 | S.Arabia | Fixed | Exchange rate targeting |

Note. Countries with a different monetary policy regime include those that, de facto, do not have an explicitly established nominal anchor, but rather track several different macroeconomic indicators when conducting monetary policy.

Source: AREAER Report, IMF, 2022.

4. Conclusion

This study analyzed key economic indicators for a group of oil and gas exporting countries. The following conclusions were reached.

⁵ An exchange rate regime in which a country's currency is held stable against another currency or basket of currencies within a narrow band (usually $\pm 2\%$) for at least six months, without the official announcement of a fixed parity or hard anchor.

1. Having external assets at a high ratio to GDP allows countries to adhere to a fixed exchange rate regime and mitigate the negative impact of external shocks on the economy through foreign exchange market interventions. At the same time, a free-floating exchange rate regime is more suitable for countries with more modest external savings relative to GDP, as it helps absorb foreign exchange market imbalances.

2. The development of non-oil sectors as a result and instrument of macroeconomic strategy reduces commodity dependence and creates sustainable sources of income, which is especially relevant for countries seeking to overcome the effects of the “resource curse”.

3. Similar current account figures can mask different patterns of foreign trade flows. A floating exchange rate regime, combined with fiscal rules, promotes greater sustainability of economic growth and reduces the risk of the “Dutch disease”.

4. Fiscal balance analysis shows that the degree of budget revenue dependence on oil and gas revenues varies across countries. However, some are attempting to diversify budget revenues by increasing/implementing tax rates and implementing fiscal rules.

5. Floating exchange rates and inflation targeting are most sustainable in countries with more developed institutions, transparent policies, and independent central banks. Developing economies more often adhere to fixed or mixed regimes, either due to limited resources and institutional weaknesses, or due to the presence of significant reserves.

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Corporate Culture Diagnostic at the National Bank of Kazakhstan: Tools and Implementation

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This study focuses on diagnosing the corporate culture of the National Bank of Kazakhstan (NBK) using a mixed-methods research design that integrates quantitative and qualitative approaches. The aim was to identify both the current and preferred cultural profiles within the organization and to analyze how employees at different hierarchical levels perceive the institution's values and cultural characteristics.

Grounded in well-established theoretical frameworks - such as Edgar Schein's model of organizational culture and the Competing Values Framework (CVF) by Cameron and Quinn - the research employs the Organizational Culture Assessment Instrument (OCAI) as its primary diagnostic tool. Survey participants were asked to distribute 100 points among four cultural archetypes: hierarchy, clan, market, and adhocracy. A total of 160 employees participated in the study, including 20 branch directors, 26 mid-level managers, 39 members of the leadership reserve, and 75 specialists. In addition, 107 employees took part in the focus groups.

Complementary focus group interviews provided in-depth insights into the dominant cultural traits, internal narratives, and shared assumptions across the organization. These qualitative findings helped contextualize the numerical data and allowed for a deeper interpretation of the cultural dynamics at play.

The results revealed that NBK's current culture is best described as a hybrid of hierarchical and clan elements. While this model is appreciated for its structure, order, and professionalism, it is increasingly seen - particularly by younger and mid-level staff - as overly rigid and resistant to change. There is a strong preference among many employees for a shift toward a more flexible, innovation-driven, and collaborative culture, typically associated with the adhocracy and clan types.

This context-specific diagnosis highlights the misalignment between the present organizational culture and employees' aspirations. The results highlight the importance of developing tailored cultural transformation initiatives focused on greater transparency, flexibility, and participatory leadership. In addition, the applied methodology and obtained insights may offer practical guidance for other institutions seeking to harmonize their internal culture with shifting professional standards and societal demands.

The study was conducted jointly with Okeshev N. K., Division of Learning and Personnel Development of the Human Capital Development of the National Bank of the Republic of Kazakhstan, for whose contribution to the study, the author of the article expresses gratitude.

Keywords: Corporate Culture, Competing Values Framework (CVF), Hierarchical Culture, Clan Culture, Adhocracy, Mixed-methods research, Organizational Culture Assessment Instrument (OCAI), Cultural Transformation.

JEL-classification: M12, M14.

1. Introduction

“Corporate culture is commonly described as a set of shared values, beliefs, and practices that shape how employees and management interact and make decisions” (Investopedia, 2022). It operates as an internal compass that guides behavior and decision-making at all levels of the organization.

This issue is especially pertinent to public institutions and regulatory bodies, where rigid organizational structures and external oversight must be balanced with internal flexibility and a culture of trust. These organizations operate under distinct limitations that influence the

development, maintenance, and evolution of their internal culture, setting them apart from private-sector entities.

Amid growing demands for institutional modernization and innovation, understanding corporate culture has become more than a theoretical exercise - it is a practical imperative. Diagnosing cultural dynamics enables organizations to align leadership behaviors, employee expectations, and strategic priorities.

This study explores the corporate culture of the National Bank of Kazakhstan (NBK), a central financial authority with a long-standing institutional history. The goal is to assess how employees perceive the current culture and what kind of culture they aspire to create. To achieve this, we employ the Competing Values Framework (Cameron & Quinn, 1999) and the Organizational Culture Assessment Instrument (OCAI), allowing for a structured comparison between the “as-is” and “preferred” states of organizational culture.

The research applies a mixed-methods design, integrating quantitative survey data with qualitative insights from structured focus groups. This dual approach facilitates a deeper understanding of not only statistical patterns but also the symbolic and emotional dimensions of culture as perceived by employees.

The findings offer practical implications for cultural transformation initiatives in large public institutions. They highlight areas of misalignment between current practices and employee values, and identify opportunities to foster a more open, participatory, and innovation-friendly organizational climate.

2. Theoretical Framework

2.1. Overview of Corporate Culture Theories. Organizational culture represents a foundational set of shared principles, expectations, and conduct that influences the way people interact and operate within the organization. Foundational works by scholars such as Deal and Kennedy (1982), Schein (1992), and Kotter and Heskett (1992) have emphasized the strategic role culture plays in influencing organizational performance, coherence, adaptability, and leadership effectiveness.

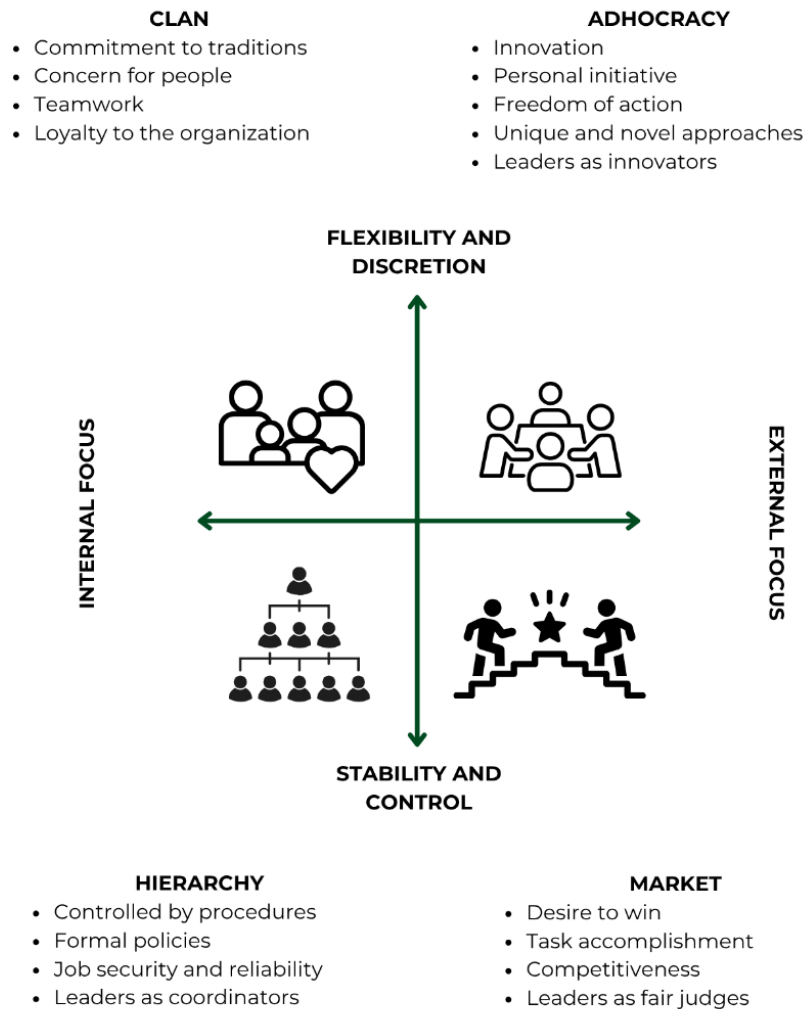
Schein (1992) introduced a multi-layered model of culture, distinguishing between observable artifacts, espoused values, and underlying assumptions. According to Kotter and Heskett (1992), adaptable cultures that align with external changes can lead to sustained economic performance, while rigid, misaligned cultures may hinder growth. Empirical research further links culture to key outcomes such as employee commitment, innovation, and strategic execution (Denison, 1990; Van der Post et al., 1998).

Importantly, studies have shown that corporate culture must be understood within its organizational and national context. What proves effective in entrepreneurial or private-sector organizations may not translate well into public or regulatory institutions, which operate under different structural and normative constraints (Herget, 2023).

2.2. The Competing Values Framework The Competing Values Framework (CVF) (Cameron & Quinn, 1999) is one of the most influential models for analyzing organizational culture. It classifies culture into four quadrants based on two core dimensions: (1) internal focus and integration vs. external focus and differentiation, and (2) stability and control vs. flexibility and discretion. The four culture types are (see in Picture 1):

- **Clan:** A collaborative and family-like environment emphasizing mentorship, loyalty, and participation.
- **Adhocracy:** A dynamic, entrepreneurial culture that values innovation, creativity, and risk-taking.
- **Market:** A competitive, goal-oriented culture focused on results, achievement, and measurable targets.
- **Hierarchy:** A formalized, structured culture with emphasis on procedures, rules, and efficiency.

Types of Corporate Culture



Source: Cameron, K. S., & Quinn, R. E. (1999). *Diagnosing and Changing Organizational Culture: Based on the Competing Values Framework*. Addison-Wesley.

The strength of the CVF lies in its ability to capture tensions between competing demands, making it especially useful for diagnosing complex and multi-layered institutions.

2.3. The Organizational Culture Assessment Instrument (OCAI). The Organizational Culture Assessment Instrument (OCAI), introduced by Cameron and Quinn (1999), is a commonly applied tool based on the Competing Values Framework. It evaluates six fundamental aspects of organizational culture: dominant characteristics, leadership style, employee management, cohesion mechanisms, strategic priorities, and success criteria.

As part of the assessment, participants allocate 100 points across the four cultural archetypes for each dimension - once to represent the existing culture, and again to indicate their desired future culture. This dual-assessment approach enables organizations to: quantitatively assess the cultural status quo; evaluate cultural gaps between existing organizational culture and desired values; design targeted interventions for culture change and alignment.

According to Herget (2023), the OCAI offers a proven methodology for empirically diagnosing organizational culture and can be adapted for use in both private and public institutions. It allows for nuanced analysis across units, departments, or hierarchical levels, enhancing the precision of cultural audits.

2.4. Empirical Studies on Organizational Culture and Effectiveness. Numerous empirical studies have demonstrated a strong connection between organizational culture and performance outcomes across various industries and national contexts. For example, research by Rashid,

Sambasivan, and Johari (2003) in Malaysia, utilizing the cultural typology developed by Deshpande and Farley, revealed that “the nature of an organization's culture plays a significant role in shaping employee commitment and enhancing overall organizational effectiveness”.

Similarly, research by Kotter and Heskett (1992), Denison (1990), and Van der Post et al. (1998) confirms the association between strong, adaptable cultures and strategic execution. Studies by Schwartz and Davis (1981) and Scholz (1987) further connect culture to the success of organizational change initiatives.

A recent case study from British Medical Journal (BMJ), conducted using the Culture15 diagnostic tool, provides a practical example of this link. The diagnostic identified behavioral gaps and cultural misalignments that were acting as barriers to innovation and high performance. Using a combination of surveys, focus groups, and executive interviews, the organization was able to design culture-shift strategies centered around agility, decisiveness, and transparent leadership communication (Culture15, 2023).

3. Methodology

The study employed a mixed-methods approach, combining quantitative and qualitative techniques to capture both statistically significant data and contextual interpretations. The Organizational Culture Assessment Instrument (OCAI), grounded in the Competing Values Framework, was used as the primary tool for data collection. Participants were instructed to distribute a total of 100 points across four cultural types - Hierarchy, Clan, Market, and Adhocracy - within two categories: the current organizational culture and their preferred future culture. This assessment was applied to six key dimensions: dominant characteristics, organizational leadership, employee management, organizational glue, strategic emphases, and success criteria. For each dimension, respondents allocated points to reflect the extent to which each cultural type described their organization. This process was repeated twice: once to reflect the current organizational culture, and once to capture their vision of the preferred future culture.

A total of 160 employees of the NBK participated in the study, including both survey and focus group participants. Of these, the following took part in the OCAI survey: 20 branch directors, 26 mid-level managers, 39 members of the leadership reserve, and 75 specialists.

In addition to the survey, qualitative data was collected through a series of structured, in-person focus group sessions (107 employees volunteered to participate). During these sessions, participants discussed key topics face-to-face, responding to guiding questions and engaging in open dialogue moderated by facilitators. The focus groups aimed to gather deeper insights into the following areas: perceptions of the strengths and weaknesses of the corporate culture, characteristics of the perfect employee, societal stereotypes and associations related to the NBK, attitudes toward change and innovation, and preferences concerning internal communication and leadership.

This integrated design enabled the study to not only quantify the organization's cultural profile but also to reveal the emotional and symbolic dimensions of the internal environment, as perceived by employees across hierarchical levels.

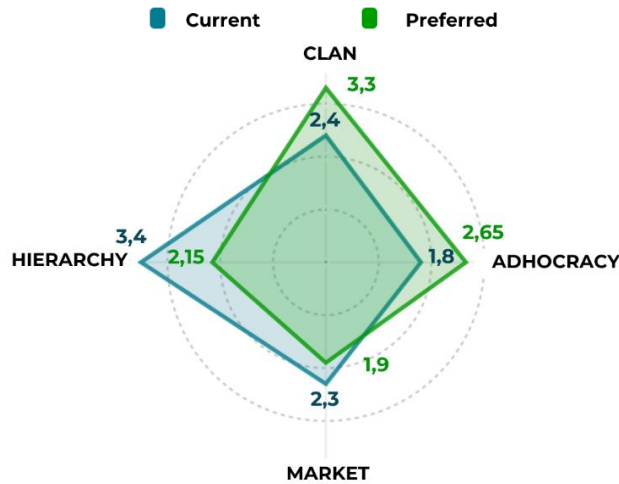
4. Analysis and Findings

The results of the study indicate that the current corporate culture at the NBK is characterized by a blend of hierarchical and clan models. The dominance of hierarchical elements is reflected in the emphasis on stability, control, procedural rigor, and strict regulation, which, according to respondents, ensure professionalism and reliability. However, this model is also perceived as overly rigid, inflexible, and insufficiently innovative.

According to the OCAI results (Picture 2), the "as-is" culture received high scores for Hierarchy and Market types, while in the "preferred" culture category, employees expressed a clear preference for Adhocracy and Clan types. This shift suggests a desire for greater openness, flexibility, engagement, collaboration, and innovation.

Picture 2

Current and Preferred Corporate Cultures at the NBK

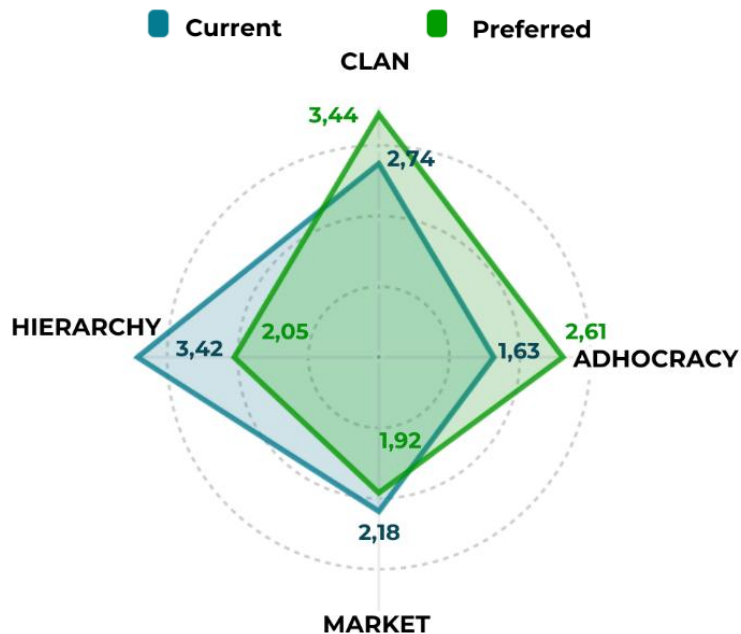


Cultural Preferences by Job Group. A breakdown of the current and preferred cultural profiles by job groups reveals noticeable differences in perceptions and expectations:

39 Members of the Leadership Reserve (Picture 3): Current culture: strong inclination toward Hierarchy (3.42) and Clan (2.74); Preferred culture: sharp shift to Clan (3.44) and Adhocracy (2.61). The leadership reserve aspires to move from rigid structure to more collaborative and innovative environments, indicating readiness for transformational leadership and modern approaches.

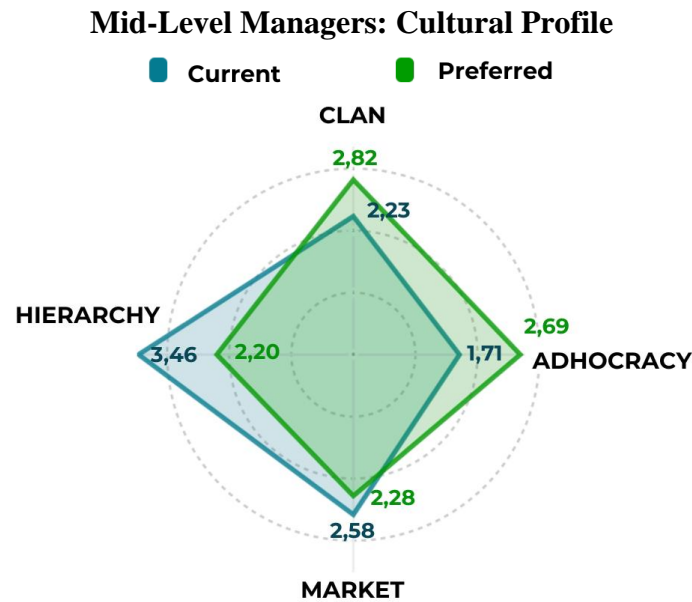
Picture 3

Leadership Reserve Group: Cultural Profile



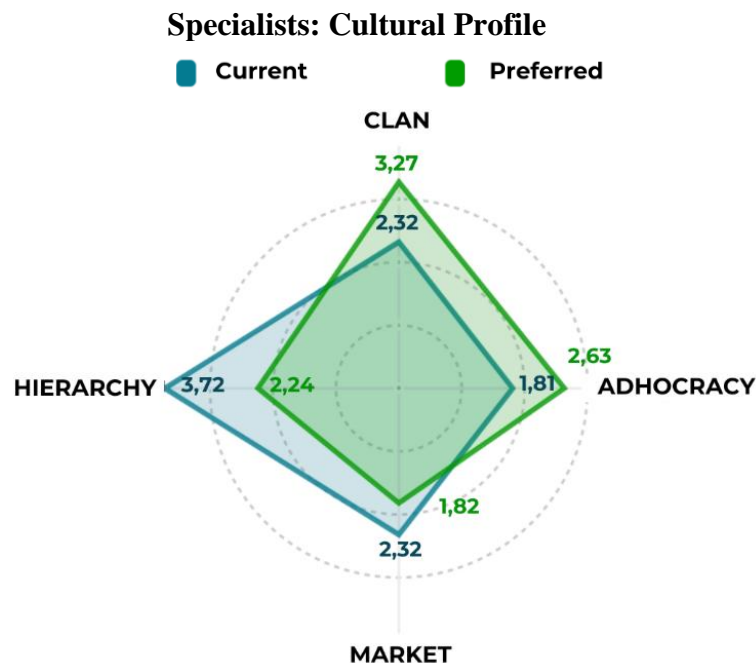
26 Mid-Level Managers (Picture 4): Current culture: again, high for Hierarchy (3.46) and Market (2.58); Preferred culture: priority on Adhocracy (2.69) and Clan (2.82). This group recognizes the value of innovation and teamwork and desires to reduce bureaucratic dominance while keeping performance orientation.

Picture 4

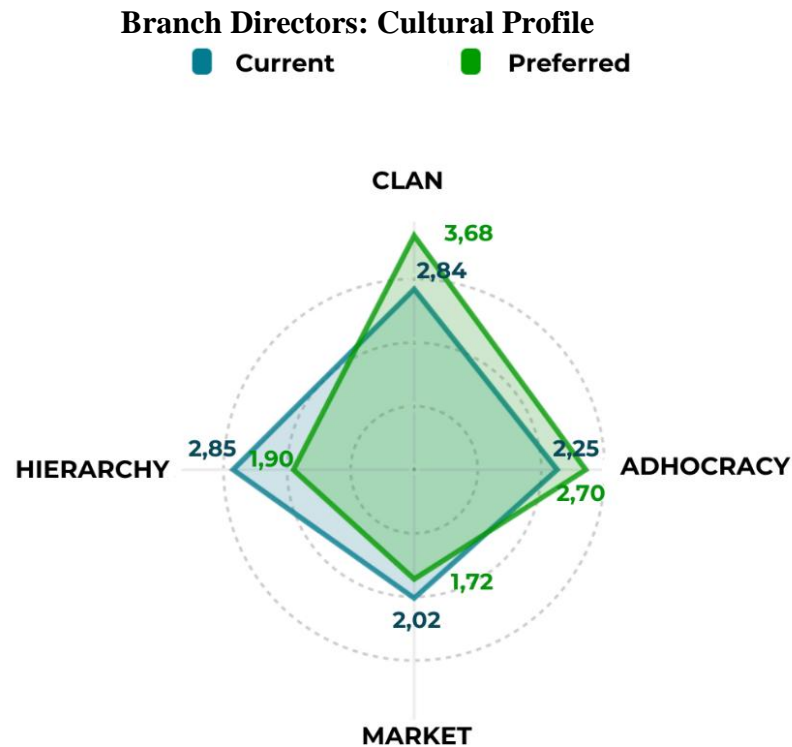


75 Specialists (Picture 5): Current culture: heavily inclined toward Hierarchy (3.72); Preferred culture: strong move toward Clan (3.27) and Adhocracy (2.63). Specialists want a more human-centric, supportive, and flexible environment, shifting away from top-down rigidity to collaborative culture.

Picture 5



20 Branch Directors (Picture 6): Current culture: relatively moderate Hierarchy (2.85) and Clan (2.84); Preferred culture: clear preference for Clan (3.68) and Adhocracy (2.70). Even among senior field leadership, there is a visible call for more trust, engagement, and employee involvement, with a decrease in command-and-control methods.



The focus groups provided deeper insights into these tendencies. Key strengths of the current culture identified by participants included:

- organizational stability and confidence in its long-term functioning (19.8%),
- The NBK’s independence (stemming from its special status as the central financial institution that operates autonomously and reports directly to the President of the Republic of Kazakhstan) (15.5%),
- collegial politeness and friendliness (15%),
- opportunities for professional development (6.4%),
- and the Strategic importance of work tasks (6.4%).
- Among the perceived weaknesses of the current culture were:
 - excessive bureaucracy and inflexible processes (8.4%),
 - inconvenient schedules that hinder work-life balance (6.7%),
 - lack of job rotation between departments (6.7%),
- An important topic that emerged during the discussions was the public associations that arise when the NBK is mentioned. Employees noted that:
 - they are often mistaken for employees of second-tier banks,
 - there is a perception that they are “well-off” or have access to insider information.

At the same time, positive characteristics such as “smart,” “successful,” and “educated” were also mentioned, reflecting a desire to associate the NBK’s activities with professionalism and a high level of competence.

5. Conclusion

This study suggests that the corporate culture of the National Bank of Kazakhstan is predominantly shaped by hierarchical features, complemented by elements of clan culture that emphasize collegiality and professionalism. While these characteristics contribute to the institution’s stability and operational consistency, some employees - particularly those at the mid-level, in specialist roles, and within the leadership reserve - express concerns that the current culture may not fully meet the demands of a rapidly evolving environment.

Findings from both the OCAI survey and focus group discussions indicate a growing interest among staff in moving toward a more flexible, collaborative, and innovation-friendly organizational culture. There appears to be a strong aspiration to reinforce the values associated with adhocracy and clan types, including openness to new ideas, inclusive leadership, and improved internal communication.

The observed differences between current and preferred cultural profiles point to potential opportunities for cultural development. A gradual, well-considered transformation strategy could help address existing structural rigidities, enhance cross-functional collaboration, and promote a working environment that encourages adaptability and initiative. Consideration of employee expectations regarding work-life balance, career mobility, and participation in decision-making processes will also be important.

Overall, the study highlights the value of conducting context-sensitive cultural assessments in public institutions with formal governance structures. The insights generated may inform efforts to better align internal cultural practices with the changing expectations of employees. Additionally, the approach and findings may prove useful for other regulatory or public organizations considering similar cultural development initiatives.

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Assessing the Perception by the Population of the National Bank of Kazakhstan's Communications: Economic Narratives and Twin-Deficit

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This study examines key elements of the communication environment, institutional conditions, and monetary policy parameters in Kazakhstan in the context of their impact on the measures taken by the National Bank of Kazakhstan to enhance transparency and openness.

An analysis of the constraints affecting the effectiveness of the communicative approaches applied is also conducted, focusing on the problem of the twin deficit in communications – a trust deficit and a deficit of understanding [1]. These categories reflect the institutional and cognitive levels of perception of central bank signals. A trust deficit is expressed in low public confidence in the integrity, consistency, and predictability of the regulator's actions, while a deficit of understanding is associated with difficulties in interpreting economic information, as well as linguistic and cognitive barriers. Together, these components form the systemic problem of the "communication gap", characteristic of countries with developing financial systems. An adapted T&U-Framework model is used to analyze these components, where the T component reflects the perception of institutional transparency, integrity, and consistency, and the U component reflects the clarity, readability, and accessibility of the communication language. This approach allows assessing the extent to which central bank transparency leads not only to information but also to public understanding and trust.

The main academic innovation in this paper is the analysis of empirical data – the results of a marketing survey conducted specifically for this study among professional market participants, as well as findings from surveys and focus groups among the general public.

Key Words: monetary policy, communication policy, twin-deficit, confidence and understanding deficit, financial literacy, behavioral economics, narrative economics, inflation targeting.

JEL-Classification: E52, E58, D83, G41, L82.

1. Preamble

In 2015, Kazakhstan officially transitioned to an inflation targeting (IT) regime, which requires the central bank to use transparent and understandable communications. Professional financial market participants and analysts primarily define this concept as the completeness of information disclosed by the regulator. However, the general public evaluates these characteristics more in terms of the regulator's ability to clearly and unambiguously explain its decisions and the expected impact. Therefore, increasing the transparency of monetary policy and the use of communication tools as an element of monetary policy (MP) is becoming one of the key issues on the agenda of central banks. The effectiveness of this communication channel is significantly influenced by the specifics of the local communication environment and general media trends, which determine the formats and tools for interacting with target audiences.

In Central Asian countries, of which Kazakhstan is a part, structural economic problems and the low level of financial literacy among the population are still the main constraints to the effective application of these approaches. One of the key indicators of financial literacy is prudent financial behavior, which is considered an important element of behavioral economics. This is confirmed by the results of a financial literacy study conducted by the Agency for the Development and Regulation of the Financial Market of the Republic of Kazakhstan in 2023. According to the

study, 16.3% of the population reports stable accumulation of financial resources, and social media is the main source of financial knowledge (48.2% of respondents).

These constraints are also compounded by global media trends associated with a large information flow, attention deficit, and a focus on fast-paced, clickable news. Among the most significant global trends in terms of changing contexts in the information space, digitalization, and their impact on behavioral economics and markets is the concept of the spread of information “viruses” and narratives, formulated by the Nobel laureate Robert Shiller and outlined in his book, *Narrative Economics: How Stories Go Viral and Drive Major Economic Events* [2]. Due to its historically established communication twin-deficit, Kazakhstan is in the active phase of this narrative spiral, which shapes people’s beliefs and, ultimately, their behavior when making economic decisions.

Local media trends in the country include public demand for fast and open communications, a reorientation of public information policy within the framework of the “Listening Government” concept, and the rapid growth in the share and influence on economic processes of audiences consuming information in the state language, Kazakh. In this context, the findings of a study conducted by Kursiv Research in 2024 [3] are indicative. Respondents who prefer to consume content in Kazakh noted that they experience difficulties reading industry articles and materials due to the complexity of their presentation and the overload of terminology. At the same time, financial and economic topics are of greater interest to this audience from the perspective of business management, investment, and increasing personal income.

This paper examines the history of development and evolution of central bank communications, academic and practical approaches to this issue, and the influence of the aforementioned key local and global media trends on the communication practices employed by the National Bank of Kazakhstan since the transition to inflation targeting. The paper also presents an analysis of segregated data from independent marketing surveys among professional market participants, as well as the results of focus groups among the general public, conducted by the National Bank of Kazakhstan in 2022–2025.

To achieve the goals and objectives of this study, a combined methodology was chosen, incorporating both qualitative and quantitative data collection methods. Focus groups and online/offline surveys served as the primary tools. Quantitative data was obtained primarily through questionnaires (surveys), which allowed for the formation of a statistically relevant sample and the conduct of correlation analysis. Qualitative data, in turn, was collected through focus groups and face-to-face interviews, enabling a more in-depth exploration of respondents’ opinions, motives, and expectations. This approach allowed for a comprehensive study of the perceptions of various target audiences regarding monetary policy, which is particularly important given the lack of extensive empirical data on this topic.

This combination of methods is widely used in marketing and communications, as it allows for context assessment, identification of key patterns, and testing of hypotheses and generalizations across a broad sample.

The study utilized an adapted the methodology from the Joint Vienna Institute and Deutsche Bundesbank (2023–2024), supplemented by the T&U-Framework proposed by the authors. This allowed for segmentation of respondents not only by professional background but also by perception type – institutional (T) and cognitive (U). Such segmentation enabled to quantify the growth of trust and understanding over time. Thus, the methodological combination of quantitative and qualitative methods within the T&U-Framework allowed not only to assess the level of transparency in the National Bank of Kazakhstan’s communications but also to identify differences between institutional openness and cognitive clarity.

2. Literature Review

A key parameter of monetary policy, determining the effectiveness of the information channel as an instrument, is transparency. Geraats (2002) defines central bank transparency as “the absence of asymmetric information between monetary policymakers and other economic agents”.

From this perspective, communication serves to reduce or eliminate information asymmetries, allowing monetary policy to perform its functions more effectively.

More broadly, transparency is characterized by “the extent to which the public understands the monetary policy decision-making process” (Winkler, 2000) [4].

As Saxton (1997) [5] notes, transparent monetary policy facilitates the formulation of long-term objectives, improves financial market efficiency, strengthens credibility of central banks, and minimizes the risk of political interference in policy decisions.

Research by Morris and Shin (2002) [6], Sims (2003) [7], Kahneman (2003) [8], and Blinder (2004) [9] shows that uncoordinated or excessive communication can, paradoxically, reduce the signal-to-noise ratio, thereby undermining the effectiveness of monetary policy. This underscores the importance of strategic and consistent communication.

Middeldorp (2011) [10] writes that higher levels of transparency significantly reduce interest rate volatility. Furthermore, transparency improves forecast accuracy and minimizes market expert disagreement.

Key instruments for assessing transparency include systems such as the Eiffinger–Geraats index and the Dincer–Eichengreen index (2007, 2014) [11]. These indices measure transparency across multiple dimensions, providing a robust framework for understanding how communication practices align with institutional and operational mandates. The sample compiled by the authors of this index in 2007 included data from 120 central banks through 2010. The highest value of the transparency index (the degree of openness of the central bank was assessed on a scale from 1 to 15) in 2010 was assigned to the Bank of Sweden, the Reserve Bank of New Zealand, the Central Bank of Hungary and a number of other European countries (from 14.5 to 11.5).

The National Bank of Kazakhstan's transparency index in this sample was 6, demonstrating a certain positive trend, as this indicator stood at 3.5 from 1998 to 2004. The most transparent central banks among the CIS countries examined by the authors were Armenia and Moldova. The results of the study, updated in 2014, once again confirmed the growth of transparency in both developed and developing countries.

Asylbekov (2022) [12] presented the results of an empirical assessment of National Bank Kazakhstan's transparency using the Eiffinger-Geraats index, which resulted in a transparency score of 12.5 out of 15 (83.4%). As the researcher notes, in recent years there has been an increase in the openness of communication policies across all index components, but procedural and informational transparency, including subindices such as explanation of monetary policy strategy and regulator decisions, the quality and timeliness of information provided by the regulator, and the disclosure of intentions regarding future actions/priorities have been the main drivers of this growth. In this regard, the author believes that there is a need to refocus the regulator's attention from the volume of information provided to the quality of public understanding of the National Bank signals, since currently only about half of its target audience fully perceives information within the framework of the communication policy.

A wide range of studies on the impact of transparency as a tool in an inflation-targeting regime have also been presented. Research shows that the introduction of inflation targeting has contributed to improved macroeconomic conditions compared to countries that used other approaches to monetary policy (IMF, 2006; Roger, 2009) [13], [14].

Batini and Laxton (2005) [15] emphasize the importance of developing a reliable economic data base. Based on an analysis conducted by the International Monetary Fund (IMF) (2006), it was concluded that reducing the level of dollarization of the financial sector is also a key factor in improving the effectiveness of monetary policy when implementing the IT.

Today, as Hammond (2012) [16] notes, there are five key elements of successful inflation targeting, two of which are “transparent communication, including explanation of the central bank's plans and decisions, and strengthening the accountability of the central bank”.

Regarding the experience of using communication tools in the IT regime in Kazakhstan, Kalibayev (2024) [17] in his work on improving the regulation of inflationary processes in Kazakhstan asserts that the National Bank is recommended to more actively use monetary policy

instruments, such as interest rate management and the reserve money. An important aspect in the context of the effective application of these measures is the transparency and predictability of the National Bank's actions, which contributes to the management of market expectations and increased confidence in monetary policy.

One of the tools of modern monetary policy is also forward guidance (FG) – a framework for managing market expectations by announcing the future path of interest rates. This is especially important during periods of crisis. However, as researchers note, the use of FG is associated with certain costs. First, this tool can be perceived as an obligation of the central bank, which complicates the flexibility of monetary policy (Mishkin, 2004; Goodhart, 2001) [18], [19]. Second, changes in external conditions can lead to a divergence between the announced and actual policy, which, in turn, reduces credibility of the central bank (Issing, 2005) [20].

Thus, inflation targeting and forward guidance remain key monetary policy tools today, whose effectiveness depends on adherence to institutional and economic prerequisites, as well as proper management of expectations.

Empirical research further emphasizes the role of communication in shaping the behavior of households and firms. For example, an article in the *Journal of Banking & Finance* (2021) [21] provides evidence that central bank announcements can significantly influence inflation expectations, especially among better financially informed households. Moreover, a study by the Central Bank of Uruguay (2021) [22] points to the growing importance of forward guidance in emerging markets and developing countries. Many central banks have adopted formal inflation targeting systems, but face certain challenges in terms of trust and communication.

A research paper prepared by the Hong Kong Monetary Authority (2024) [23] notes that, in addition to setting interest rates, central banks are increasingly shaping financial conditions by adjusting the content and frequency of their public statements.

In the context of assessing the dynamics of the National Bank of Kazakhstan's transparency, the findings of a study conducted by Turekhanova and Mekenbayeva (2021) [24] are of interest, saying that an important task is assessing the effectiveness of central bank communications. As the authors point out, researchers working in this area have been addressing this issue for many years, using various methods and techniques, and their further development is extremely relevant.

This study also analyzes methods and techniques for assessing the effectiveness of central bank communication policies in terms of the use of text readability assessment methods, such as the Flesch-Kincaid Index, the Coleman-Liau Index, the Automatic Readability Index (ARI), the Dale-Chall Readability Formula, and text content analysis using machine learning methods (Evstigneeva, Sidorovskiy), presented by the Bank of Russia analysts in 2021. Taken together, these studies support the view that communication is not simply a supplement to monetary policy, but a fully integrated tool. Its strategic use can more firmly anchor expectations, reduce market volatility, and guide decision making by households and corporations.

3. Background

Central bank communications today is a complex sphere that integrates such areas as politics, macroeconomics, journalism, marketing, IT, big data, and behavioral economics.

The evolution of central bank communications and historical shifts in approach have occurred in stages: from Montagu Norman's "Never explain and never apologize" principle to Ben Bernanke's approach of "Monetary policy is 98% talk and only 2% action. That's why communication is so important", and Christine Lagarde's emphasis on public understanding—transparency has become both a best practice and a significant aspect of monetary policy in the 21st century (Figure 1). Leading monetary policymakers today view communication not simply as a support function but as the primary lever of monetary policy.

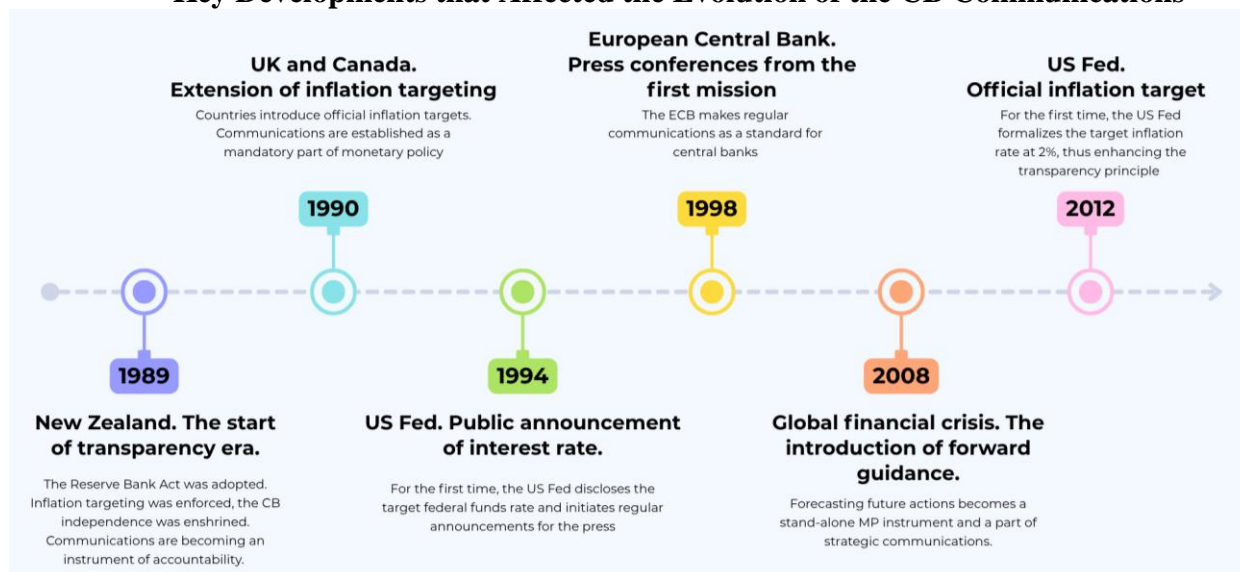
The turning point that raised the need for central banks to develop direct communication with markets was the adoption of the Reserve Bank of New Zealand Act in 1989, which introduced the "inflation targeting" regime. This law gave the central bank clear authority to maintain inflation

within the target range set by the government and obligated the governor to explain policy to markets and the general public. Accountability was the key principle.

In 1994, the US Federal Reserve began announcing its interest rate target and issuing official press statements.

Figure 1

Key Developments that Affected the Evolution of the CB Communications



Following the 2008 global financial crisis, forecasting future actions—“forward guidance” – became an important tool for managing market expectations by increasing the predictability of monetary policy.

In 2012, Mario Draghi’s “Whatever it takes” statement restored confidence in the Eurozone monetary policy at the height of the European debt crisis. This decisive statement demonstrated the power of clear and authoritative communication to calm financial markets.

Recognizing the importance of transparency, the IMF launched the Central Bank Transparency Code (CBT) in 2020 [25]. The CBT provides a framework for assessing and enhancing transparency in five key areas: governance, policy, operations, performance, and official relations. The Code also emphasizes the need to protect confidential information and financial stability. This assessment framework was applied in 2021–2024 in countries such as Canada, Chile, Morocco, and Uganda, leading to improved communication policies and the implementation of more systematic approaches to monetary policy communication by these central banks based on international standards. It is worth mentioning that the National Bank of Kazakhstan has also been assessed under the IMF Central Bank Transparency Code in 2025.

Thus, communication is widely viewed as a strategic function and an important aspect of modern monetary policy, particularly one based on inflation targeting.

As reported by the International Monetary Fund (2023), 45 countries currently use the IT, including several countries in the Caucasus and Central Asia (CCA).

According to an analysis conducted by IMF experts [26], key structural factors that reduce the effectiveness of monetary policy and its communication include underdeveloped financial markets in the CCA, dollarization, continued reliance on foreign exchange interventions to regulate exchange rate volatility, and low levels of trust in central banks, as well as elevated inflation and disruptions in global supply chains in the post-COVID period. At the same time, central banks in several CCA countries have implemented inflation-targeting regimes supported by flexible exchange rates, including Armenia, Georgia, Kazakhstan, Kyrgyzstan, and Uzbekistan. The IMF document emphasizes three key policy priorities to address these challenges: expanding the operational independence of central banks, increasing exchange rate flexibility, and enhancing central bank credibility and transparency.

An analysis conducted by the Communications Department of the National Bank of Kazakhstan has shown that central banks of Central Asian countries utilize social media and press releases as integral tools for communicating monetary policy, particularly decisions regarding the base rate. Platforms such as Facebook, Instagram, Telegram, and YouTube are widely used, offering multilingual content and employing various formats, including infographics, videos, and live streams, to engage stakeholders. However, significant differences remain in the degree of interactivity and depth of engagement with the audience. For example, the central banks of Kyrgyzstan and Uzbekistan disclose a significant amount of statistical information and utilize a broader range of audience engagement tools, including interactive formats, while the central banks of Tajikistan and Turkmenistan adhere to more conservative approaches in their information policies.

4. Experience of the National Bank of Kazakhstan

The National Bank of the Republic of Kazakhstan transitioned to inflation targeting in 2015. The main stages and aspects of the regulator's monetary policy are outlined in a review article by the National Bank (V. Tutushkin, 2019) [27], which says: "Inflation targeting largely depends on managing expectations; a clear and transparent communication policy is crucial. Since the transition to the IT regime, the frequency and volume of the National Bank communications with the market have been consistently increasing".

The main parameters of the ongoing communications work are published in the regulator's annual report, which points out that systemic communication is carried out in key areas such as monetary policy, ensuring financial stability, managing gold and foreign exchange reserves, managing the assets of the National Fund and the Unified Accumulative Pension Fund, and modernizing the financial infrastructure. The National Bank's Macroprudential Policy, published in 2024, defines key vectors and principles, including mitigating systemic risks through transparent and open communications built on the principles of credibility and openness.

The regulator's key medium-term goals in communications include increasing transparency and predictability of the National Bank for the professional community, as well as promoting understanding and trust among the general public. Communication tools include briefings on the base rate according to the annual schedule, meetings with the expert community, media interaction, monitoring and analyzing the information environment, information support for external events featuring the National Bank speakers, and training for journalists. The regulator's website, as well as social media pages on Facebook, Telegram, Instagram, TikTok, and YouTube are the main direct communication channels.

5. Findings from the Survey of Professional Market Participants and Media

To study the current expectations of target audiences, the National Bank's communication department conducted a marketing survey in November 2022 and February 2025 entitled "How Transparent and Accessible are the National Bank's Communications for Professional Market Participants?" The survey was distributed through the working electronic databases of media outlets, experts, the Association of Financiers of Kazakhstan, the Astana International Financial Center, the Unified Accumulative Pension Fund, and the National Bank's regional branches in Astana and Almaty.

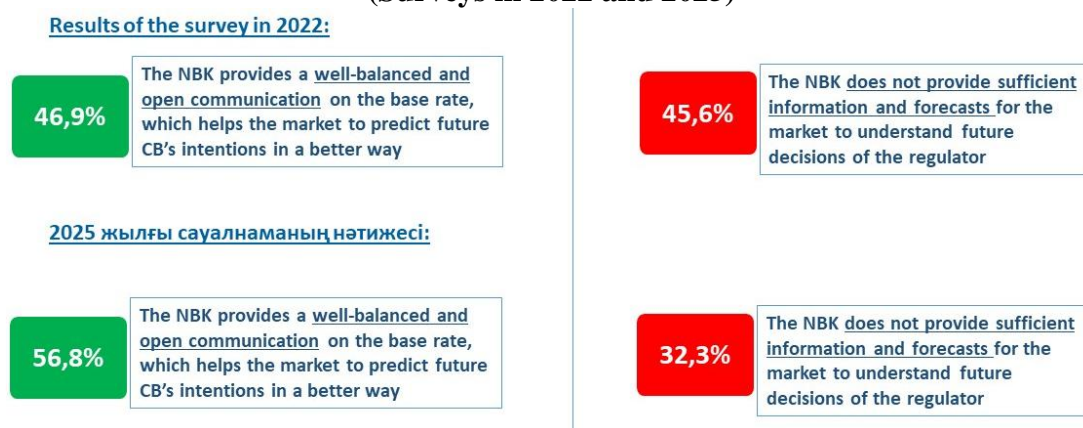
The main objectives of the study conducted based on the methodology and questionnaires presented by the Joint Vienna Institute and Deutsche Bank Open Dialogue in 2023 and 2024 during training sessions for central bank communication and forecasting teams and adapted to local specifics, were to identify "areas for improvement" in communications with the financial market and specialized media, determine the relevance of the problem of the twin deficit in communications (deficit of trust/understanding) for this target audience, and assess the current level of transparency of the National Bank of Kazakhstan in relation to financial market participants.

More than 800 respondents (representatives of the financial sector, the media, communication departments of government agencies and businesses, the expert community, and students majoring in economics) took part in the surveys.

The survey analyzed trends in perceptions of transparency and effectiveness of the National Bank communications. Comparing the survey results revealed both general trends and new accents reflecting the specifics of the current economic situation and media environment. Significant positive dynamics were observed in a key indicator for the central bank: communication of base rate decisions. While in November 2022, only 46.9% of respondents rated the National Bank communications on the base rate as balanced and open, in February 2025, this figure was 56.8% (Figure 2). These figures indicate that the National Bank needs to improve the quality and quantity of interactions not only with the general public, the primary economic agent under the inflation targeting regime, but also with professional market participants. However, the overall positive dynamics in assessing communications on the base rate confirm that the regulator’s communication tactics and strategy are improving and align with current market demands.

Figure 2

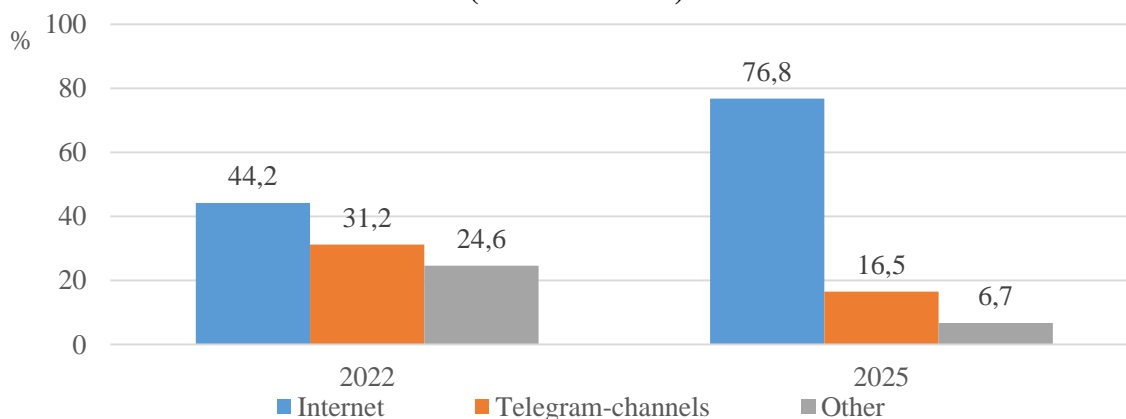
Assessment of the National Bank’s Communications about the Base Rate (Surveys in 2022 and 2025)



The use of the National Bank website as an official and reliable source of information also showed positive trends: while 44.2% of respondents regularly accessed the website in 2022, by 2025, the share of those who mentioned that the National Bank website is the primary source through which they primarily obtain information about the regulator’s activities increased to 76.8% (Figure 3). Meanwhile, the share of those who prefer Telegram channels as their primary source for analytics and news decreased from 31.2% to 16.5%. This trend indicates growing financial market trust in the official resources of the National Bank.

Figure 3

Trends in Preferences of the Sources of Information about the National Bank’s Activities (2022 and 2025)



However, despite positive trends in transparency and frequency of communications, a certain trust deficit in the regulator's communications remains, especially during periods of high volatility in the foreign exchange market. The focus group analysis revealed that some respondents still perceive official statements from the National Bank as reactive rather than proactive. This suggests that institutional trust is formed not only through openness but also through the perceived predictability and consistency of the central bank's actions. This aspect can be illustrated by the information noise that arose on social media and Telegram channels during discussions of new banknotes or possible currency restrictions. Despite the lack of real basis, the rumors generated short-term surges of anxiety and required an official refutation. This example demonstrates that trust is not only a matter of facts, but also of the speed of response, the tone of communication, and the clarity of explanations.

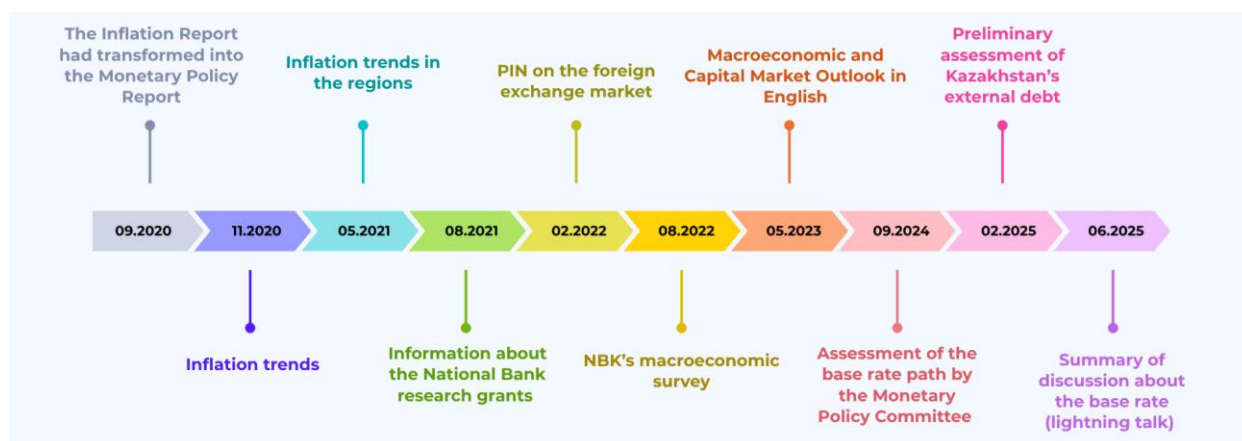
According to the T&U Framework, the T (trust) component is enhanced by the perception of fairness, predictability, and signal stability. To systematically monitor these parameters, it would be advisable to consider implementing a Communication Trust Index (T-index), which would allow for regular measurement of the level of institutional trust in the National Bank among various audiences. Such metric could form the basis for calibrating the strategy for engaging with the professional community and the media.

Thus, despite the positive dynamics of the National Bank's transparent communications, the challenge remains in strengthening long-term trust, especially in the face of information noise and heightened public sensitivity to economic signals.

It should also be noted that in 2020–2025, the National Bank of Kazakhstan expanded the range of information and analysis it publishes. Thus, documents such as Inflation Trends in the Regions, the Macroeconomic Situation Report, the Macroeconomic Survey, and others began to be published regularly (Figure 4).

Figure 4

Extension of the List of Published Information and Analytics of the National Bank of Kazakhstan in 2020–2025



According to respondents, one of the key challenges in the context of effective communications between the central bank and the financial market remains the problem of overcoming the so-called communication twin deficit (a deficit of trust and understanding). Moreover, according to professional participants, the importance of this aspect as a barrier to communications is only growing, especially among Kazakh-speaking audiences and in the regions.

Key findings from marketing surveys among professional market participants reveal a number of significant trends. First and foremost, there has been an increase in the proportion of respondents who believe that low financial literacy is the main barrier to understanding monetary policy – this figure rose from 50% in 2022 to 53.9% in 2025. The number of participants who advocate for simplified information presentation formats and expanded educational projects also increased, from 54.8% to 59%.

When comparing data from 2022 and 2025, it is also worth mentioning a significant increase in the number of professional respondents who preferred to participate in the survey in the Kazakh language, which also indicates an increase in the share of Kazakh-speaking specialists in the financial sector.

Looking at the key findings from an age and generational perspective, the majority of economics students surveyed, who constitute approximately 15% of the entire sample (over 60%) believe that without a systematic expansion of educational initiatives, including interactive formats and accessible infographics, it will be difficult to achieve significant changes in improving financial literacy.

Therefore, in the coming years, the National Bank of Kazakhstan will need to continue increasing efforts to equalize access to information, taking into account language factors and regional specifics, as well as improve the feedback mechanism for students and young professionals.

6. Findings from Extended Surveys and Focus Groups

Findings from extended surveys and focus groups conducted in 2024 indicate that respondents believe the National Bank's strengths and advantages lie in its professional competence and operational transparency. They also believe the National Bank has a well-trained and experienced team, which ensures the continuity and independence of monetary policy. Furthermore, respondents emphasize the importance of the National Bank's role in ensuring macroeconomic stability, particularly in managing the base interest rate and the national currency exchange rate. However, respondents also identified factors such as global economic instability and interactions with government agencies as barriers and areas for improvement. These aspects, according to respondents, also limit the bank's influence on inflation and overall economic stability.

Data from extended surveys and focus groups confirms a lack of awareness among the general public about the functions and responsibilities of the National Bank. When asked "What functions/tasks does the National Bank of the Republic of Kazakhstan perform?", the most frequently incorrect answer was that the National Bank issues loans to individuals (64%), while the correct answers were cash flow control and management (56%) and currency regulation and control (54%). Judging by the survey results, engagement with the general public, which involves raising awareness of the regulator's functions and responsibilities as well as developing more targeted and transparent strategies for managing inflation expectations, remains a key area for improvement.

As tools for addressing these issues, respondents suggested measures such as improving financial literacy, especially in regions where access to information is limited. According to focus group participants, the National Bank should also ensure that technical information is simplified for a wider audience while maintaining transparency and consistency.

Based on the survey and research results, the National Bank of Kazakhstan is currently faced with the task of increasing public understanding of monetary policy and its economic implications and centralizing communications. This should take into account differences in awareness and trust levels among residents of cities and regions. These differences reflect a general trend across Central Asian countries, where audiences with higher levels of education and urbanization demonstrate a better understanding of the regulator's actions.

7. Constraints of the Study

This study, despite its comprehensiveness and scope, has a number of constraints that should be considered when interpreting the results.

First, there is potential bias. The authors of the study are employees of the Information and Communications Department – Press Service of the National Bank of the Republic of Kazakhstan, which creates a risk of confirmation bias when assessing the effectiveness of the communications

policy. Despite striving for objectivity and the use of empirical data, it must be acknowledged that perceptions of the results may partially reflect the organization's internal beliefs and experiences.

Second, a methodological limitation is related to the sample type. Surveys were distributed to existing National Bank contact databases: professional market participants, experts, media outlets, branches, and partner structures. This convenience sampling limits the representativeness of the data and does not fully reflect the opinions of all financial market segments. It is likely that the proportion of respondents already involved in interactions with the National Bank is higher than the market average, which could have influenced the results.

Conducting subsequent surveys by independent research centers or academic institutions would improve reliability and reduce the effect of institutional affiliation.

Furthermore, external macroeconomic and media context factors, such as currency market dynamics, inflation, and social media coverage, could have influenced the perception of communications.

Taking into account the above limitations, the results of the study should be considered as representative in terms of describing trends and dynamics, but require further clarification in subsequent empirical tests.

8. Empirical Results and Prospects

The results of surveys conducted (2022–2025) demonstrate a steady increase in transparency and trust in the National Bank of Kazakhstan's communications:

- the share of respondents assessing communications regarding the base rate as open and balanced increased from 46.9% to 56.8%;

- trust in the National Bank's official website increased from 44.2% of respondents to 76.8%;

- the share of those who prefer Telegram channels as their primary source of information decreased from 31.2% to 16.5%.

- 53.9% of respondents identified low levels of financial literacy as the main barrier to understanding monetary policy, while 59% supported simplifying the formats for presenting information.

At the same time, a significant cognitive gap remains between institutional and mass audiences: 64% of respondents still incorrectly believe that the National Bank of Kazakhstan issues loans to individuals. This confirms the presence of a persistent Understanding Deficit component.

In terms of Trust Deficit, focus group data show that some respondents perceive official statements as reactive rather than strategic. To overcome this gap, the development of systemic metrics is proposed: the T-index (Communication Trust Index) and the U-index (Communication Understanding Index), which will allow for quantitative assessment of trust and understanding dynamics over time.

A promising area for further research is the analysis of “information noise”—episodes of misinformation and distorted perceptions of regulator's decisions in the media. For example, rumors about new banknotes or restrictions on foreign exchange transactions on social media temporarily influenced perceptions of bank policy, requiring prompt refutation. Studying such cases will help refine mechanisms for correcting information distortions and increase the robustness of trust. Furthermore, future research could focus on assessing the correlation between inflation expectations and communication activity, as well as comparative analysis with practices in other countries in the region where transparency indices are being implemented (e.g., the Bank of Russia's BATI and InFOM).

In the long term, the key task is a transition from “informative transparency” to “understandable transparency”, where each central bank signal is accompanied by an explanation of how it impacts people's lives, prices, and economic stability.

9. Conclusion

The review of academic literature and analysis of international practice presented in this paper demonstrate that the modern approach recognizes the significant impact of transparent central bank communication on building trust and helping shape public expectations regarding inflation and interest rates. Open and systematic communication shapes inflation expectations and helps central banks fulfill their obligations to ensure price stability and economic growth. However, for developing countries in Central Asia, a prerequisite is that such communications be targeted to a broad audience and utilize mechanisms to simplify and adapt complex financial and economic content to modern media trends.

Theoretically, the phenomenon of a trust and understanding deficit proves that transparency alone does not guarantee effectiveness. Communication must be not only quantitative but also qualitative—understandable, predictable, and trustworthy. The empirical T&U-Framework model allows us to interpret transparency as a function of two variables: T—trust in the institution and its signals; and U—understanding and assimilation of information by society. The balance between these variables becomes a key factor in the effectiveness of monetary policy.

Thus, central bank communications are not an auxiliary but a strategic tool of monetary policy, ensuring manageability of expectations and macroeconomic stability. At the same time, well-balanced communications can also help financial markets better predict the central bank's future intentions.

The presented results of surveys among professional market participants and the general public show that for the National Bank of Kazakhstan, the most pressing task at this stage is to further enhance the transparency and accessibility of communications for all key target audiences. At the same time, a longer-term strategic vector for building communications with the market is to overcome the historically established “twin deficit” of trust and understanding through systematic communication of decisions, as well as educational programs and projects.

A potentially promising area for future research is a more in-depth analysis of impact by the National Bank's communications on financial market volatility during various phases of the economic cycle—pre-crisis, crisis, and post-crisis periods. Particular attention should be paid to studying the mechanisms for targeted correction of information noise, as well as the effectiveness of targeted regulatory signals in conveying strategic and tactical intentions in a turbulent media environment. Such approach will help clarify the structural role of the communications channel not only in managing expectations but also in mitigating market uncertainty during periods of high volatility.

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