Eurasian Development Bank

Advanced Manufacturing Potential in Eurasia: Sectoral Niches for Growth

Report 25/11

Almaty — 2025

Ahunbaev, A., Adakhayev, A., Chuyev, S., Gnidchenko, A., Salnikov, V. (2025). *Advanced Manufacturing Potential in Eurasia: Sectoral Niches for Growth*. Reports and working documents 25/11. Almaty: Eurasian Development Bank.

The following experts participated in the preparation of materials: D. Galimov, E. Sabelnikova, V. Artemenko and E. Ablayev (*all employees of the Institute for Economic Forecasting of the Russian Academy of Sciences*)

Abstract

An export-raw material model of development has wired in the Eurasian region, comprising the countries of Armenia, Belarus, Kazakhstan, Kyrgyzstan, Russia, Tajikistan, and Uzbekistan. The region's industry is characterised by insufficient and non-homogeneous technological complexity, export specialisation in low-value-added sectors and import dependence in high-tech sectors, insufficient production cooperation between countries on intermediate products. These challenges can be overcome by diversifying production and exports. If the existing potential of medium- and high-processed manufacturing goods is realised, the combined effect of export growth, import substitution and increased economic output will exceed $510 billion per year. The chemical industry (*including pharmaceuticals*), machine building (*largely transport, particularly automotive*), metallurgy, and the food industry are expected to contribute most. The Eurasian region is facing a challenge that extends beyond the mere increase of exports and import substitution. The necessity lies in the establishment of a contemporary industrial system that is capable of ensuring domestic resource processing, job creation and technological development.

Keywords: Eurasian region, industrialisation, level of processing, industry, specialisation, export potential, import substitution, macroeconomic effects.

JEL: L16, L52, L60, F14, F47, C67.

The electronic version of the report is available on the website of the Eurasian Development Bank: https://eabr.org/analytics/special-reports/

ADVANCED MANUFACTURING POTENTIAL IN EURASIA: SECTORAL NICHES FOR GROWTH

KEY FINDINGS

ANALYTICAL REPORT'25

INDUSTRY ENSURES SPEED, QUALITY AND RESILIENT ECONOMIC GROWTH

Export growth potential

$71 billions

Import substitution potential

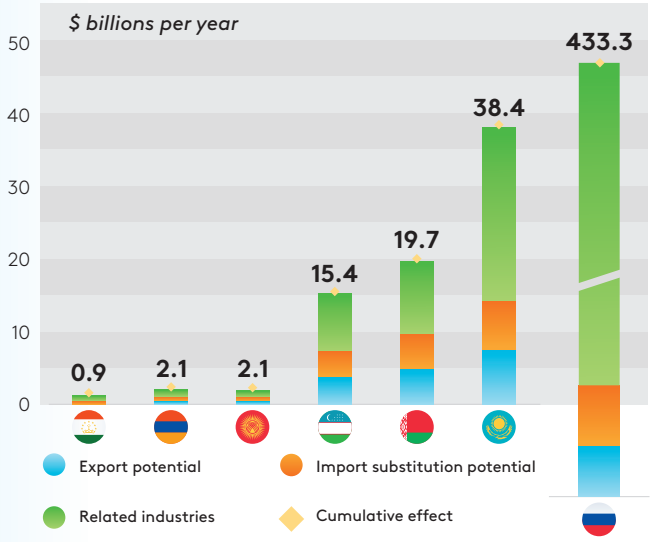
$81 billions

Growth potential in related industries

$361 billions

Production multiplier

$1.2–1.3 per $1 of additional production



PRIORITY HIGH-LEVEL PROCESSING INDUSTRIES

KEY INDUSTRIES WITH THE GREATEST CONTRIBUTION IN CUMULATIVE EFFECT

- Machine building (transport, in particular automotive)
- Chemical complex (including pharmaceuticals)
- Metallurgical complex
- Food industry

RELATED INDUSTRIES WITH THE GREATEST MULTIPLIER EFFECT

- Electric power industry
- Wholesale and retail trade
- Transport services
- Agriculture, etc.

INDUSTRIAL DEVELOPMENT — A STRUCTURED AND STRATEGICALLY DRIVEN PROCESS

The state — a proactive strategist

- Triple partnership priority: government–business–research synergy
- Balanced strategy: exports, import substitution, industrial cooperation
- Focused support for selected niche industries
- Investing in human capital through STEM development
- Building a reliable and predictable institutional framework

Industrial cooperation and openness — key to growth

- Eurasia — a key market for the middle and high processed products (avg. 59%, from 48% for Russia to 85% for Kyrgyzstan)
- Strongest cooperation gains — in chemicals, metallurgy and machine-building
- Openness enables scale economies and technology access

Adapting to new global shifts

- Adoption of digital technologies and Industry 4.0
- Deployment of green technologies (including in energy) and the circular economy
- Focus on next-generation industrialisation: biotech, advanced materials, etc.

Eurasian Development Bank

Full version analytical report

CONTENTS

SUMMARY

The industry of the Eurasian region (*which includes Armenia, Belarus, Kazakhstan, Kyrgyzstan, Russia, Tajikistan, and Uzbekistan)* is the largest sector of the economy, accounting for about 31% of the region's total GDP and equivalent to $834 billion as of 2024. Within this sector**, manufacturing** plays a key role**, generating 44.2% of the industry's gross value added,** or about $368 billion, which accounts for 13.6% of the region's GDP. At the global level, the manufacturing industry in the Eurasian region accounts for 2.2% of global value added in the sector. This corresponds to the region's share of global GDP, which stood at 2.4% in 2024.

↓ **Figure A. Importance of manufacturing in the countries of the Eurasian region, 2024**

Source: EDB calculations based on UNIDO and World Bank data.

The economies of the Eurasian region have historically developed according to an export- and raw material-based model, relying on the extraction and primary processing of resources and their export in exchange for imports of high-value-added goods. This means that countries in the region benefit from global value chains mainly during periods of high commodity prices, while remaining dependent on imports of machinery, equipment and components for investment and production. In addition, the similarity of many countries' export specialisation (*they compete on a number of similar raw materials)* and the limited size of the regional market hinder deep economic integration: excess production capacity is forced to focus on third-country markets.

The region's industry is characterised by insufficient and uneven technological sophistication. The most industrially developed countries — Russia and Belarus — have a relatively high share of medium- and high-value-added products (*Russia ranks 33rd in the world in terms of industrial competitiveness, Belarus 56th*). At the same time, smaller economies such as Kyrgyzstan (*115th)* and Tajikistan (*121st)* produce virtually no

high-value-added products, demonstrating the vulnerability of their industrial sectors. Common challenges for most countries include a low share of high-tech products in the structure of output and exports and insufficient export diversification. Exports continue to be dominated by low-value-added, low-processing goods (*first stage of processing)*, such as semi-finished metal products, basic chemicals, petroleum products, etc. Together, they form the basis of the region's foreign trade, keeping it on the periphery of global industrial expansion. There are a few exceptions: for example, in Armenia and Belarus, a significant share of exports already consists of more highly processed goods, facilitated by access to the large Russian market.

Overall, however, **the region's** limited presence in high-income segments of the global economy increases **its dependence on fluctuations in external demand for raw materials**. At the same time, there is a high degree of import dependence in the most technology-intensive industries. Even countries with developed industries are heavily dependent on imports of machinery, pharmaceuticals, fine chemicals and other knowledge-intensive products. Despite better diversification, Belarus remains dependent on external supplies, for example in the chemical complex and pharmaceuticals. In the region's small economies, high-tech manufacturing is largely absent. The potential for developing complex manufacturing is limited by the narrowness of the domestic market and demand, which makes import substitution a particularly pressing issue.

The structural problems of the current development model can be overcome by diversifying production and exports, shifting the focus towards higher-value-added products. Global experience shows that as countries' economies grow, they expand the range of goods they export, including more and more high-tech products. The development of high-value-added industries serves as a catalyst for economic growth, creating new niche industries, reducing environmental impact and promoting the transition to a technologically sovereign development model. In the context of global technological transformations, it is precisely the focus on complex, knowledge-intensive industries that becomes a determining factor for long-term stability and innovative leadership.

International experience shows that **in this situation**, **the state should not be a passive observer, but an active strategist**. State policy should design transitions between stages, prioritising sectors and supporting them through investment, education and scientific infrastructure. This means that industrial development is not a linear or deterministic process — it is a strategically managed, structured progress. The success of the transition between stages critically depends on the state's ability to accurately identify the optimal industries for each phase and to coordinate the implementation of support mechanisms.

To develop an effective industrial policy, **two tasks** must be addressed simultaneously. On the one hand, following the conclusions of classical structuralism, it is necessary to identify industries with high import substitution potential in order to overcome

dependence on external supplies of finished products and move away from the peripheral role of a raw materials exporter. On the other hand, it is important to identify sectors that have competitive advantages and are capable of integrating into global production and technology chains. This approach requires an adaptive strategy: at each stage of development, support should be given to industries that correspond to current resource and institutional capabilities, while creating the conditions (*infrastructural, institutional and educational)* for a transition to more complex production.

Thus, the key task is to develop **an effective methodology for identifying niche industries** with potential for import substitution, export and integration into global innovation trends. This is what will ensure long-term competitiveness and sustainable economic growth.

The multi-stage model developed by the EDB points to the significant industrial potential of the Eurasian region. Today, **the region's additional export opportunities are estimated at $71 billion per year.** The most important potential export growth is expected in Kyrgyzstan, Uzbekistan and Armenia (*growth of 25–28%)*, while forecasts for Russia, Belarus, Kazakhstan and Tajikistan are more moderate (*growth of 12–17%)*. Second-stage-processing products dominate the structure of export growth potential (*the Russian Export Centre's product classification is used*). The main part is the potential associated with export diversification based on existing specialisation and competitive advantages. Full realisation of this potential could contribute to the complexity of the economy: in all countries of the region, the share of machine building in exports will increase, new specialised industries will emerge in some countries, and the stability of export revenues will increase due to a significant increase in the share of second-stage-processing products in exports.

↓ **Table A. Assessment of the industrial potential of the Eurasian region**

Country	Export growth potential $ billions	Growth rate %	Import substitution potential $ billions	Share of import substitution %	Indirect macro-effects $ billions	Total effect $ billions
Armenia	0.6	25	0.69	14	0.76	2.11
Belarus	5.07	16	5.01	13	9.65	19.73
Kazakhstan	7.75	13	6.70	17	23.91	38.35
Kyrgyzstan	0.56	28	0	16	0.77	2.11
Russia	52.61	12	63.46	26	317.19	433.26
Tajikistan	0.15	17	0	11	0	0.93
Uzbekistan	3.86	26	3.61	16	7.94	15.41
Total	70.67		80.63		360.60	511.89

Source: EDB estimates based on UN data in accordance with the methodology and based on 2019 prices.

The import substitution potential of the Eurasian region is comparable in scale to exports and amounts to **$81 billion per year**. In the long term, the maximum share of imports could be replaced in Russia (23%), due to the wide range of sector priorities in national strategic plans. In other countries of the region, the substitution potential will range from 11% to 16% of imports. The sectoral structure is dominated by second-stage processing products. If the import substitution potential is fully realised in a number of countries and sectors, the share of second-stage-processing products in imports will decline but remain moderately high overall, especially in machine building. Import substitution is not viewed in isolation, but as a mechanism for reducing the region's economic vulnerability, increasing technological resilience and adapting to external pressures. It is particularly important that its implementation be linked to opportunities for technological mobilisation and industrial renewal.

Ultimately, **the cumulative effect** of export growth, import substitution and increased output after realising the development potential of high-value-added industries in the Eurasian region will exceed **$510 billion per year** (*in 2019 prices*), with 70% of this effect being generated by indirect and induced effects of increased output. The remaining effect is distributed approximately equally between export growth and import substitution. The effect is interpreted as the annual additional volume of output destined for export and the domestic market (*as a result of import substitution)* and the provision of an initial demand impulse (*in the form of indirect and induced effects)*.

The following industries dominate the structure of the aggregate effect:

- chemical industry (*including pharmaceuticals*);
- machine building (*principally transport, in particular automotive*);
- metallurgical complex;
- food industry.

Significant indirect and induced effects from the development of high-value-added industries in the region are felt by such industries as:

- electric power;
- wholesale and retail trade;
- transport services;
- agriculture;
- chemical production;
- metallurgy.

It is important to bear in mind that focusing primarily on external markets can be dangerous, freezing domestic demand for high-value-added goods. **Balanced attention** could be paid **to exports, the development of the domestic market and industrial cooperation in the region**. The countries of the Eurasian region are already actively cooperating in the supply and processing of primary resources. Therefore, the main prospects for industrial cooperation in the region are mostly linked to trade at higher levels of processing, with a focus on the chemical complex (*using the energy resources of many countries in the region to develop the production of polymers and their further processing)*, metallurgy (*increasing the processing of metal products, including the development of products from special steels)* and machine building (*largely the development of equipment that maintains investment in mineral extraction and metallurgy)*.

The need **for industrial cooperation** is also explained by the fact that in order to master new technologies and produce related new goods, it is necessary to ensure both economies of scale and mutual exchange of experience. Given the rapid pace of technological development in the coming decade, it will not be enough for the countries of the Eurasian region to develop specialisation in related high-value-added products and support the growth of strategic industries; it will be rational to create a basis for both the development and industrial use of new and emerging technologies. Technological trends cannot be fully realised without an appropriate basis, which must be formed, among other ways, through realisation of the potential for development of high-value-added industries.

In strategic terms, the key task for the Eurasian region is to formulate **an active industrial policy** focused on economic diversification and the development of high-value-added industries. At the same time, efforts to replace imports could be combined with the expansion of export potential in order to simultaneously reduce vulnerability to external shocks and occupy niches in high-income segments of the global market. An important condition is the coordination of national strategies and the formation of complementary specialisations among the countries of the region, which will make it possible to create full-fledged regional value chains and strengthen economic integration.

The sectoral focus could be **on the chemical industry (*including pharmaceuticals*), machine building, metallurgy and the food industry**, as these sectors have the greatest growth potential and can provide a significant multiplier effect. In addition, niche industries in the second stage of processing need to be developed in each country to form national growth points and build on local advantages. An important task is to localise the production of key components and reduce critical import dependence, which will strengthen economic security and create a basis for further expansion into foreign markets.

In terms of technology, the long-term priorities are the **digitalisation and automation of production based on the Industry 4.0 concept** (*the introduction of artificial intelligence, robotisation, the Internet of Things and digital twins*). At the same time, the development of biotechnology, pharmaceuticals and new materials, including nanomaterials and composites, could be encouraged, and the principles of environmental sustainability and the circular economy should be implemented. This set of measures will not only increase the technological complexity of manufactured products, but also integrate the Eurasian region into global innovation processes.

In the management sphere, it is crucial to develop a **model of partnership between the state, business and the scientific community**, which will make it possible to coordinate priorities and accelerate technology transfer. It is desirable to improve the industrial policy management system, introduce transparent indicators and KPIs, regularly monitor results and adjust support measures. At the same time, it is necessary to invest in human capital by modernising educational programmes, developing engineering and management skills, and encouraging academic mobility. This set of measures is rounded off by improving the institutional environment and investment climate, which will attract resources to new industries and create favourable conditions for long-term industrialisation.

All proposed measures are interrelated and require **comprehensive implementation**. Strategic initiatives set the overall direction and are necessary for coordinating efforts, sectoral measures focus on specific growth areas, technological steps ensure long-term competitiveness, and management reforms create favourable conditions for transformation. Based on the strengths and weaknesses identified in the analysis, these recommendations are designed to help the countries of the Eurasian region work together to move towards a more sophisticated industrial structure, reduce their vulnerability to external shocks and ensure sustainable economic growth on a new technological basis.

The development of high-value-added industries in the Eurasian region is not simply a matter of economic diversification, but **a fundamental prerequisite for achieving long-term sustainable development**. Investment in high-tech sectors directly contributes to the achievement of broader national development goals that go beyond simply increasing gross domestic product. This is because value is created not only by the volume of goods produced, but also by their complexity, knowledge intensity and innovative nature. The transition to such production means a profound transformation of the region's economic philosophy, shifting the focus from quantitative indicators to qualitative ones, from volume to added value. This approach is the most effective tool for reducing poverty, improving educational potential, and forming a broad middle class. The employment opportunities that are engendered by technology-intensive industry are distinguished by elevated levels of productivity and remuneration. The middle class, in turn, serves as the

basis for sustainable domestic demand and an incentive for further diversification. Concurrently, the greater flexibility and adaptability of industrial production and exports serves to mitigate vulnerability to external shocks. This makes it possible to increase the stability of the economy, stimulate innovation and strengthen the region's position in the global market.

In the long term, the countries of the Eurasian region face the challenge of not simply increasing exports and import substitution, but of **building a modern industrial system capable of ensuring domestic processing of resources, creating new jobs and technological development**. The region's potential lies in its combination of natural advantages and the opportunity to form strategic sectors of the economy based on modern industrial policies. The countries of the region have a powerful raw material and energy base, ranging from rare earths and metals to water and agricultural resources, making them potential leaders of a new wave of industrialisation.