

DEVELOPMENT DIRECTIONS FOR COMPETITIVE INDUSTRIAL SECTORS IN THE CONTEXT OF INTEGRATION INTO GLOBAL VALUE CHAINS

Farmonova Maftuna Norpulat qizi

e-mail: farmonovam8@gmail.com

*Lecturer at the Department of Sectoral
Economics and Accounting,
Tashkent University of Applied Sciences*

Abstract

This article examines the development directions for competitive industrial sectors in the context of integration into global value chains, using Uzbekistan as a case study. The research evaluates industrial competitiveness through production capacity, manufacturing structure, investment activity, export potential, technological modernization, import dependence, and the ability of industrial enterprises to participate in international production networks.

The study applies dynamic analysis, structural analysis, comparative analysis, and criteria-based assessment. The results show that Uzbekistan's industrial sector has demonstrated stable growth in recent years. In 2025, industrial output reached 1,101.1 trillion soums, while the physical volume index of industrial production amounted to 106.8%. Manufacturing accounted for 947.2 trillion soums, or 86.0% of total industrial output. However, the persistence of a negative foreign trade balance and the high role of imported machinery and technological equipment indicate the need to strengthen industrial competitiveness through deeper integration into global value chains.

The article proposes several development directions, including technological modernization, export diversification, development of high value-added production, improvement of product quality, expansion of industrial clusters, integration of small and medium-sized enterprises into value chains, and increasing the effectiveness of investment projects.

Keywords: *global value chains, industry, competitiveness, manufacturing, export diversification, technological modernization, industrial clusters, Uzbekistan.*

Introduction

In the modern global economy, the competitiveness of industrial sectors increasingly depends on their ability to participate in global value chains. Global value chains mean that different stages of production, such as design, supply of raw materials, processing, assembly, logistics, marketing, and after-sales services, are distributed across several countries. Therefore, the competitiveness of industry is determined not

only by production volume, but also by technological capacity, productivity, product quality, compliance with international standards, and access to foreign markets.

For developing countries, integration into global value chains can become an important mechanism for industrial modernization, export expansion, technology transfer, and productivity growth. However, successful participation in global value chains requires a strong manufacturing base, investment attractiveness, developed infrastructure, qualified labor force, and effective industrial policy.

In Uzbekistan, industry plays an important role in economic development, employment, investment activity, regional growth, and foreign trade. In 2025, industrial output reached 1,101.1 trillion soums, and the physical volume index of industrial production amounted to 106.8%. Manufacturing was the largest industrial sector, accounting for 947.2 trillion soums, or 86.0% of total industrial output [2].

The “Uzbekistan — 2030” Strategy identifies the expansion of export potential, the development of high value-added products, and the increase in the number of exporting enterprises as important priorities of national economic development [1]. Therefore, the development of competitive industrial sectors in the context of integration into global value chains is directly connected with the country’s long-term strategic goals.

The purpose of this article is to analyze the main factors affecting the competitiveness of industrial sectors in the context of global value chain integration and to develop practical recommendations for strengthening their development.

Literature Review

The issue of industrial competitiveness and global value chain integration has been widely studied in economic literature. Industrial competitiveness is generally understood as the ability of industrial sectors to produce goods that can compete in domestic and foreign markets in terms of quality, price, productivity, technology, and international standards.

M. Porter’s theory of competitive advantage explains that the competitiveness of industries depends not only on natural resources or low production costs, but also on innovation, productivity, supporting industries, firm strategy, and the quality of the business environment [5]. This approach is important for developing high value-added and technologically advanced industrial sectors.

D. Rodrik considers industrial policy as an important instrument for structural transformation in developing countries. According to his approach, the state should support sectors that can increase productivity, expand exports, and create new competitive advantages in the economy [6].

Gereffi, Humphrey, and Sturgeon explain that global value chains are based on different forms of coordination between lead firms, suppliers, and producers. Their approach shows that industrial enterprises need not only production capacity, but also

quality standards, technological capabilities, logistics efficiency, and stable cooperation with international partners in order to participate successfully in global value chains [7].

The World Bank emphasizes that global value chains can provide developing countries with opportunities for trade-led development, productivity growth, employment creation, and technology transfer. However, the benefits of global value chains depend on domestic reforms, infrastructure, investment climate, and the ability of local firms to move from simple assembly to higher value-added activities [8].

UNIDO highlights that modern industrial development should be connected with digital transformation, job creation, industrial decarbonization, and sustainable growth [9]. OECD studies on Uzbekistan also emphasize the importance of improving the investment environment, supporting export diversification, aligning trade and investment policies, and integrating small and medium-sized enterprises into global value chains [10].

Thus, the literature shows that the development of competitive industrial sectors in the context of global value chains depends on product quality, productivity, technological modernization, investment efficiency, export diversification, localization, industrial clusters, and integration into international production networks.

Methods

The study uses a statistical and analytical approach. The information base consists of official data from the National Statistics Committee of Uzbekistan, the “Uzbekistan — 2030” Strategy, World Bank materials on global value chains, UNIDO reports, and OECD studies on investment policy reforms in Uzbekistan.

The following methods were used:

Dynamic analysis was used to assess changes in industrial production, foreign trade, and investment activity.

Structural analysis was applied to evaluate the share of manufacturing and other industrial sectors in total industrial output.

Comparative analysis was used to compare export and import indicators and to identify the level of import dependence.

Criteria-based assessment was applied to identify the main factors influencing industrial competitiveness and global value chain integration.

The main indicators were calculated using the following formulas:

$$U_i = (X_i / X_j) \times 100$$

where U_i is the share of a specific industrial sector in total industry, X_i is the output of a specific sector, and X_j is total industrial output.

$$S = E - M$$

where S is the foreign trade balance, E is exports, and M is imports.

$$I_o = (I_t / I_{t-1}) \times 100$$

where I_0 is the growth rate of investment, I_t is investment in the current year, and I_{t-1} is investment in the previous year.

Results

The analysis shows that Uzbekistan has a growing industrial base for integration into global value chains. In 2025, total industrial output amounted to 1,101.1 trillion soums. Manufacturing accounted for 947.2 trillion soums, or 86.0% of total industrial production. Mining and quarrying accounted for 7.0%, while electricity, gas, steam supply, and air conditioning accounted for 6.4% [2].

Table 1.

Main industrial indicators of Uzbekistan, 2025¹

Indicator	Value
Total industrial output	1,101.1 trillion soums
Physical volume index of industrial production	106.8%
Manufacturing output	947.2 trillion soums
Share of manufacturing in total industry	86.0%
Share of mining and quarrying	7.0%
Share of electricity, gas and steam supply	6.4%

Table 1 shows that manufacturing has a dominant position in Uzbekistan's industrial structure. This creates a favorable basis for producing processed and finished goods, which is important for participation in global value chains. However, the high share of manufacturing should be supported by technological modernization, product quality improvement, certification, and export-oriented production.

Foreign trade indicators also show the importance of strengthening industrial competitiveness. In 2025, Uzbekistan's foreign trade turnover reached 81,166.8 million USD. Exports amounted to 33,812.3 million USD, while imports reached 47,354.5 million USD. As a result, the foreign trade balance was negative and amounted to -13,542.2 million USD [3].

Table 2.

Foreign trade indicators of Uzbekistan²

Indicator	2023, million USD	2024, million USD	2025, million USD
Foreign trade turnover	63,528.6	67,238.4	81,166.8

¹ Prepared by the author based on data from the National Statistics Committee of Uzbekistan

² Prepared by the author based on official statistics

Exports	24,869.5	27,270.1	33,812.3
Imports	38,659.1	39,968.3	47,354.5
Balance	-13,789.6	-12,698.2	-13,542.2

Table 2 shows that Uzbekistan's foreign trade turnover and export volume increased during 2023–2025. However, imports remained higher than exports in all analyzed years. This indicates that import dependence in machinery, technological equipment, and certain industrial goods remains an important challenge. Therefore, integration into global value chains should not be limited to exporting raw materials or low value-added products. It should focus on expanding processed, technologically advanced, and high value-added industrial exports.

Investment activity is also an important condition for industrial competitiveness and global value chain integration. In 2025, fixed capital investment reached 591.1 trillion soums, which was 10.5% higher than in 2024 [4]. This creates a financial basis for industrial modernization, technological renewal, and the development of export-oriented production.

Table 3.

Main directions for improving industrial competitiveness in global value chains³

Direction	Importance for domestic industry	Importance for global value chain integration
Product quality improvement	Strengthens local production	Helps meet international standards
Technological modernization	Increases productivity	Supports higher value-added production
Export diversification	Expands industrial sales	Reduces dependence on limited markets
Industrial clusters	Develops regional specialization	Creates stable supplier networks

³ Prepared by the author.

Investment efficiency	Expands production capacity	Attracts foreign partners and technology
SME integration	Supports local entrepreneurship	Connects small firms to international production chains
Certification and standards	Improves product reliability	Facilitates access to foreign markets

Table 3 summarizes the main directions for improving industrial competitiveness in the context of global value chain integration. The data show that product quality, technological modernization, export diversification, industrial clusters, investment efficiency, SME integration, and certification systems are key factors for strengthening competitiveness. These directions help local enterprises move from simple production to higher value-added stages of global value chains.

Discussion

The results show that Uzbekistan has important opportunities for developing competitive industrial sectors in the context of global value chains. The large share of manufacturing in total industrial output indicates that the country has a strong base for expanding processed and finished goods. This is especially important because participation in global value chains requires stable production capacity and the ability to supply intermediate or finished industrial goods to international markets.

At the same time, the negative foreign trade balance shows that import dependence remains a serious challenge. The high level of imports indicates that domestic production does not fully meet demand for machinery, equipment, and technologically complex industrial goods. Therefore, local production of machinery, industrial equipment, components, chemical products, and processed materials should become a priority.

The World Bank notes that global value chains can support development by creating opportunities for trade, productivity growth, and technology transfer, but countries need reforms that correspond to their stage of development [8]. For Uzbekistan, this means that industrial policy should support not only export growth, but also the movement of domestic enterprises toward higher value-added activities.

UNIDO's approach also shows that modern industrial policy should focus on digitalization, job creation, industrial decarbonization, and sustainable development [9]. In this context, Uzbekistan's integration into global value chains should be based not only on low production costs, but also on technological renewal, environmental standards, and productivity growth.

OECD studies on Uzbekistan emphasize that closer alignment of trade and investment policies can help integrate small and medium-sized enterprises into global value chains and support export diversification [10]. This is especially important for

regions where industrial potential exists but enterprises need better access to finance, logistics, certification, and foreign markets.

Thus, the development of competitive industrial sectors requires a combined approach. On the one hand, domestic production capacity, localization, and industrial clusters should be strengthened. On the other hand, enterprises should be integrated into international production networks through export diversification, quality standards, technology transfer, and cooperation with foreign investors.

Conclusion

The study shows that Uzbekistan has significant potential to develop competitive industrial sectors in the context of integration into global value chains. Industrial output, manufacturing capacity, export growth, and investment activity create an important basis for strengthening competitiveness. However, import dependence, negative foreign trade balance, limited high value-added exports, and the need for technological modernization remain key challenges.

Based on the analysis, the following recommendations are proposed:

First, industrial enterprises should improve product quality and comply with international standards in order to enter global value chains.

Second, technological modernization should be accelerated in manufacturing sectors, especially in machinery, chemical products, electrical equipment, and processed materials.

Third, export diversification should be strengthened by increasing the share of high value-added and finished industrial goods in exports.

Fourth, industrial clusters should be developed to create stable supplier networks and strengthen cooperation between large enterprises and small firms.

Fifth, investment projects should be assessed not only by the amount of capital invested, but also by their impact on exports, technology transfer, productivity, localization, and employment.

Sixth, small and medium-sized enterprises should be integrated into global value chains through certification, logistics support, digital platforms, and cooperation with foreign partners.

Overall, integration into global value chains should become one of the key directions for developing competitive industrial sectors. This can be achieved through technological modernization, export diversification, investment efficiency, industrial clustering, and the improvement of international standards.

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