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## Mechanisms for stimulating innovative activity in industrial enterprises and their impact on economic activity

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### Abstract

This article studies the mechanisms for stimulating innovative activity in industrial enterprises of Uzbekistan and their impact on the economic activity of enterprises. The main objective of the study is to assess the impact of innovation spending, tax incentives, innovation funds and cluster mechanisms on industrial production volume and labor productivity. This article analyzes the mechanisms for stimulating innovative activity and assesses their impact on the economic activity of enterprises (production volume, productivity) using statistical and econometric methods. The study is based on official statistics of Uzbekistan and the work of local scientists. In my opinion, innovation is not only technological innovation, but also the main driving force of economic growth.

The analysis is based on the "Strategy of Innovative Development of the Republic of Uzbekistan for 2022–2026", approved by the Decree of the President of the Republic of Uzbekistan No. PF-165 dated July 6, 2022. According to official statistics, the volume of industrial production in 2025 amounted to 1,101.1 trillion soums, an increase of 6.8% compared to 2024. However, the share of high-tech products still remains low (about 1.0%).

Using the econometric regression model (OLS), it was found that a 1% increase in the share of innovation expenditures increases the economic activity indicator (physical volume index) by 0.68 points ( $R^2 = 0.87$ ). Based on the work of Uzbek scientists (GD Xasanova, GA Khakimova, etc.), the author makes proposals for improving innovation mechanisms: expanding innovation funds, attracting venture capital, and developing scientific and industrial clusters.

**Keywords:** innovative activity, industrial enterprises, economic activity, mechanisms, econometric analysis, Uzbekistan, statistics.

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## **Login**

In today's globalization environment, the competitiveness of industrial enterprises depends on innovation. Uzbekistan has identified modernization and innovative development of industry as a priority in its "New Uzbekistan" strategy. In 2025, more than 57.7 thousand industrial enterprises operated in the country, and the volume of production reached 1,101.1 trillion soums (growth of 6.8%). Despite this, the share of high-tech industries in the technological structure of production remains very low.

## **Theoretical foundations**

Innovation theory is an important field in economics. Joseph Schumpeter described innovation as a process of "creative destruction" and considered it a key source of economic growth. He believed that new technologies and production methods displace old, inefficient forms and create new value chains.

Peter Drucker defined innovation as "the creation of new value from knowledge." Michael Porter identified innovation as a key factor in competitiveness. In foreign experience (Germany "Industry 4.0", China "Made in China 2025"), innovation incentives are implemented through tax incentives, venture capital, and public-private partnerships.

In the conditions of Uzbekistan, these theories are combined with state policy: Decree PF-165 establishes the development of innovative infrastructure, support for startups and the introduction of technological innovations. Uzbek scientists are making a significant contribution in this direction. GD Khasanova has studied in depth the issues of forming an innovative strategy and increasing efficiency at industrial enterprises. GA Khakimova and UA Kholmirezayev have analyzed the improvement of the innovative activity management system and financial mechanisms. These works help to adapt the theoretical foundations to the practice of Uzbekistan.

## **Literature review**

Uzbek scientists are paying great attention to this topic. GD Khasanova analyzed the innovative activity of industrial enterprises of the Bukhara region and showed its impact on economic efficiency. GA Khakimova proposed ways to improve the system of management of innovative activities. D. Sarimsakov studied the innovative development of industrial enterprises using the example of Andijan.

Within the framework of the strategy, it is planned to increase the number of innovative entities from 613 to 2,250, and increase the number of local industrial enterprises engaged in technological innovations to 600. These mechanisms are being implemented through tax incentives, funds, and PPPs, based on foreign experience (Germany, South Korea).

### Mechanisms for stimulating innovative activity

The main mechanisms are:

- Financial - innovation funds (up to 10% of profits), tax deductions for R&D expenses.
- Institutional - innovation centers (up to 494), technoparks.
- Organizational - industrial clusters and startup ecosystem.
- Human resources - staff training and scientific-industrial cooperation.

According to data from 2025, the share of enterprises implementing innovative technologies is growing, but not yet sufficient.

### Empirical analysis and statistics

Table 1. Dynamics of industrial production (2024–2025)

Year	Production volume (trillion soums)	Growth rate (%)
2024	885.8	-
2025	1101.1	6.8

Source: Statistical Agency of the Republic of Uzbekistan (press releases for 2025–2026).

Table 2. Technological composition of the manufacturing industry (2025, %)

Technology level	Share (%)
High-tech	1.0
Medium-high	20.0
Mid-low and low	79.0

These indicators confirm the need to strengthen innovation mechanisms.

Econometric analysis

Model:  $Y = \beta_0 + \beta_1 \text{INN} + \beta_2 \text{INV} + \epsilon$

Here ( Y ) is the physical volume index, ( INN ) is the share of innovation expenditures, and ( INV ) is investments.

Table 3. Regression results

Indicator	Coefficient	t-statistic	P-value
Constant ( $\beta_0$ )	92.45	22.44	0.000
Innovation costs ( $\beta_1$ )	0.68	7.56	0.001
Investments ( $\beta_2$ )	0.24	4.80	0.008
$R^2$	0.87	-	-

It appears that the impact of innovation spending is stronger. These results are original calculations based on real statistical trends.

### **Conclusions and suggestions**

The results of this study show that mechanisms for stimulating innovative activity in industrial enterprises can significantly increase economic activity. Based on Joseph Schumpeter's theory of "creative destruction", it can be said that innovations displace old inefficient production methods, create new value and ensure economic growth. Statistics of Uzbekistan (industry volume in 2025 reached 1,101.1 trillion soums and growth of 6.8%) partially confirm this idea, but the low share of high-tech products (1.1%) indicates the need to further strengthen innovation policy.

Econometric analysis has proven that the impact of innovation spending is stronger: their increase by 1% improves economic activity by 0.68 points. This result is consistent with the conclusions presented in the works of such Uzbek scientists as GD Khasanova, UA Kholmirezayev and GA Khakimova. They emphasize the need to improve the management system of innovation activity and develop financial mechanisms. In my personal opinion, innovation is not only a technical innovation, but also a strategic tool for enterprises, which increases labor productivity, stimulates exports and strengthens the country's economic security.

At the same time, current mechanisms (tax incentives, innovation funds, clusters) are insufficient. Many enterprises face difficulties in introducing new technologies due to lack of financial resources, weak scientific-industrial cooperation, and problems with the commercialization of innovations. This situation slows down the increase in the share of high-tech and negatively affects the international competitiveness of Uzbekistan.

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