

# Artificial Intelligence as a factor of economic transformation: new directions of regulation and growth in the economy of Uzbekistan

Istora Abdusalomova

ORCID: 0009-0001-3055-6291

i.abdusalomova@nordicuniversity.org

International Nordic University

**Abstract:** This article analyzes the role of artificial intelligence technologies in the transformation of the economy of the Republic of Uzbekistan from both theoretical and practical perspectives. It examines digital platforms, data-driven governance, structural changes in the labor market, and new approaches related to the state's monetary and fiscal policy. The study also highlights the significance of artificial intelligence in enhancing the efficiency of business processes, improving public services, and shaping new sources of national economic growth. The findings substantiate that, under the conditions of Uzbekistan, intellectual transformation serves as an important driver of economic modernization.

**Keywords:** artificial intelligence, digital transformation, platform economy, monetary policy, inflation, labor market, economic growth, public administration

## Introduction

The profound technological shifts observed in the global economy are accelerating the structural renewal of national economic systems. In particular, artificial intelligence technologies are fundamentally transforming decision-making mechanisms in the spheres of production, services, finance, trade, and public administration. Artificial intelligence is no longer merely an instrument of automation; rather, it is increasingly emerging as a new institutional model for the governance of economic processes.

In the Republic of Uzbekistan, the transition to a digital economy, the provision of public services in electronic form, the implementation of platform-based solutions, and the development of data-driven governance systems are likewise regarded as priority areas. For this reason, assessing the impact of artificial intelligence on economic transformation, identifying its opportunities and risks, and developing effective mechanisms for regulating this process have become pressing scholarly concerns.

## Theoretical Foundations of Artificial Intelligence and Economic Transformation

In contemporary economic literature, artificial intelligence is interpreted as a new factor of economic growth. Its impact is manifested primarily in three major directions: first, in increasing labor productivity; second, in enhancing the efficiency of resource utilization; and third, in fostering new business models. From this perspective, artificial intelligence should be understood not simply as a technological innovation, but as an expression of the transition of productive forces and managerial relations to a qualitatively new stage of development.

Systems operating on the basis of artificial intelligence enable enterprises to analyze large volumes of data in real time, forecast the dynamics of supply and demand, reduce logistics costs, identify customer needs, and optimize operational decisions. As a result, the adaptability and competitiveness of economic entities within the market environment are significantly enhanced.

The Practical Significance of Artificial Intelligence in the Economy of Uzbekistan

The structural characteristics of Uzbekistan's economy determine a number of promising directions for the implementation of artificial intelligence technologies. Above all, particular importance is attached to such areas as the digital monitoring of production processes in industry, yield forecasting in agriculture, the identification of credit risks in the banking system, and the automated processing of data in tax and customs authorities.

Moreover, the development of the e-government system creates an institutional foundation for introducing elements of artificial intelligence into public administration. For instance, management efficiency can be improved through the analysis of user behavior in the provision of public services, the automated classification of appeals, the offering of services tailored to specific needs, and the reduction of bureaucratic procedures.

In addition, artificial intelligence technologies are becoming an important instrument for identifying socio-economic disparities across regions and for analyzing indicators related to employment, prices, consumption, investment, and production. This, in turn, strengthens the targeted nature of regional policy and enables a more rational allocation of state resources.

Platform Economy and New Regulatory Mechanisms

The platform economy, which is closely linked to the development of artificial intelligence, is currently giving rise to a new form of economic relations. Digital platforms accelerate the movement of goods and services, reduce the distance between producers and consumers, lower intermediation costs, and reshape market infrastructure in a fundamentally new manner.

However, the rapid development of the platform economy also generates a number of regulatory challenges. These include algorithmic pricing mechanisms, the concentration of market dominance in the hands of a limited number of major

platforms, the security of consumer data, the accuracy of tax-base determination, and the preservation of a competitive environment. Under the conditions of Uzbekistan, addressing these issues requires a clear legal definition of digital platform activities, the gradual introduction of the principles of algorithmic transparency, and the improvement of institutional norms governing the use of data.

In this sense, traditional methods of economic regulation must now be reconsidered in accordance with the logic of digital platforms. This is because changes in prices, demand, and supply on platforms occur much more rapidly than in conventional markets. Consequently, real-time data, operative monitoring, and forecasting instruments are becoming increasingly important for regulators.

### Monetary Policy, Inflation, and Artificial Intelligence

The growing role of artificial intelligence in the economy is also imposing new requirements on monetary policy. Above all, alongside traditional methods, big data and machine-learning models may be employed in assessing price dynamics and forecasting inflationary processes. This is particularly important for capturing rapid changes in retail trade, e-commerce, and service markets.

In Uzbekistan’s economy, containing inflation, ensuring price stability, and managing the expectations of business entities are among the priority objectives of monetary policy. In this context, the use of artificial intelligence technologies provides the Central Bank and other economic institutions with the opportunity to analyze market conditions more deeply, assess the effects of monetary decisions more accurately, and identify various risks at an early stage.

Furthermore, as digital payment systems, electronic trading platforms, and platform-based services continue to expand, the very nature of money circulation is also changing. As a consequence, the formulation of monetary policy increasingly requires taking into account the “digital footprint” of the economy. This, in turn, necessitates the transformation of monetary governance into a more technologically advanced and data-driven system.

The impact of artificial intelligence on the national economy manifests itself differently across sectors. The following table systematizes its principal areas of application, expected outcomes, and potential risks in the context of Uzbekistan.

Table 1.

Main Areas of the Impact of Artificial Intelligence on Uzbekistan’s Economy and Their Expected Outcomes

Area	Form of AI Application	Expected Positive Outcome	Potential Risks
Industry	Monitoring production processes, identifying faults in advance, and optimizing resource consumption	Labor productivity increases, production costs decline, and overall production efficiency improves	High initial costs and technological dependence

Agriculture	Yield forecasting and analytical management of irrigation and agrotechnical measures	More rational use of resources, increased yields, and reduced losses	Uneven development of digital infrastructure
Banking and finance	Assessing credit risks, analyzing customer behavior, and detecting fraud	Improved quality of financial services, faster decision-making, and reduced risks	Data-security concerns and algorithmic errors
Public administration	Automating electronic services, classifying appeals, and developing management decisions on the basis of data	Improved quality of public services, fewer bureaucratic barriers, and greater administrative efficiency	Problems related to the protection of personal data
Trade and platform economy	Forecasting demand, generating individualized offers, and algorithmic price management	Greater market adaptability, expanded trade volume, and improved responsiveness to consumer needs	Risk of monopolization and lack of pricing transparency
Labor market and education	Analyzing competencies, adapting retraining programs, and developing digital skills	Improved quality of human capital, emergence of new professions, and a more adaptable labor market	Reduction of low-skilled jobs and skills mismatch

### Transformation of the Labor Market and the Human Capital Question

The most visible impact of artificial intelligence is manifested in the labor market. On the one hand, it automates numerous repetitive and standardized operations, thereby reducing corporate costs and increasing productivity. On the other hand, it transforms the content of certain professions, generates demand for new competencies, and alters traditional forms of employment.

Under the conditions of Uzbekistan, this process is of particular importance, since in a labor market characterized by a high proportion of young people, the issues of professional adaptation and retraining acquire strategic significance. The economy now requires not only formally qualified specialists, but also human capital capable of working with data, understanding digital tools, possessing analytical thinking, and demonstrating technological adaptability.

For this reason, a new model of cooperation must be formed between higher education institutions, the vocational education system, and business entities. Within this framework, the adaptation of curricula to labor-market needs, the development of short-term retraining courses, the expansion of artificial intelligence literacy, and the support of social groups that may be negatively affected by technological change should become priority tasks.

### Opportunities and Risks of AI-Based Economic Growth

Artificial intelligence technologies may generate a number of positive outcomes for Uzbekistan’s economy. These include lower production costs, improved quality of management, greater efficiency in resource utilization, and an increase in the volume of innovative products and services. Most importantly, additional opportunities are

created for the transition from an extensive model of economic growth to an intensive one.

However, this process is not free from risks. First, technological inequality may intensify, meaning that the digital divide between large enterprises and small business entities may continue to widen. Second, issues related to data security, cybersecurity, and the protection of personal information may become more acute. Third, the emergence of skills mismatches in the labor market and the contraction of certain professions remain possible. Fourth, excessive dependence on external technological solutions may create challenges from the perspective of national economic security.

Therefore, the implementation of artificial intelligence should be regarded not merely as a technical task, but as a complex transformation process requiring the harmonious interaction of economic, social, legal, and institutional factors.

### Conclusion

The results of the study demonstrate that artificial intelligence is emerging in the Republic of Uzbekistan as an important factor shaping a new stage of economic transformation. It has strategic significance for increasing production efficiency, improving public administration, advancing the platform economy, and creating new points of economic growth.

At the same time, the effective application of these technologies is closely linked to a strong institutional environment, clear legal regulation, data security, a modern education system, and the development of human capital. Consequently, in the context of Uzbekistan, transforming artificial intelligence into a driver of economic modernization requires more than the mere introduction of technology; it demands an integrated approach that harmonizes regulatory, organizational, and personnel policies.

In the future, it is precisely the integration of artificial intelligence, digital platforms, and data-driven governance that may become one of the key conditions for strengthening the competitiveness of the national economy, reinforcing macroeconomic stability, and ensuring sustainable economic growth.

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