

TRANSFORMING THE INSTITUTIONAL BASIS OF DIGITAL AND GREEN TAXATION IN THE CONTEXT OF INTERNATIONAL INTEGRATION OF THE UZBEKISTAN ECONOMY

Turayev Alijon - Samarkand Institute of economics and service, Acting Associate Professor of the Department of Investments and Innovations, PhD

alijon.turayev@mail.ru

Ziyodova Rayhona – Samarkand Institute of economics and service, Faculty of Economics
3rd year student

rayhonaziyodova546@gmail.com

Abstract: Analyzes the issues of digitizing the tax system and radically transforming the institutional framework for the transition to a "green" economy in the context of the integration of the Uzbek economy into the international trade and investment system. The relevance of the research is determined by the need to implement the provisions of the global minimum tax rate (Pillar 2) of the BEPS 2.0 (Base Erosion and Profit Shifting) project, put forward by the "Digital Uzbekistan - 2030" strategy and the Organization for Economic Cooperation and Development (OECD), into national legislation. The article scientifically substantiates the issues of introducing the concept of "digital permanent establishment" in the taxation of digital economy entities, transferring tax benefits for IT Park residents to the Qualified Refundable Tax Credit (QRTC) mechanism, and introducing a Qualified Domestic Minimum Top-up Tax (QDMTT). Also, the indexation of excise tax rates, which will come into effect from 2025 within the framework of "green" taxation, the increase in the tax burden for water resources and mineral resources, and the transformation of the Strategic Environmental Assessment (SEA) system are analyzed. The study uses the ARDL (Autoregressive Distributed Lag) cointegration model to identify a J-shaped relationship between digitalization and state revenues, which shows an "inflection point" of 4.33 units. The results include strategic recommendations for preserving Uzbekistan's tax sovereignty and increasing investment attractiveness in the context of international integration.

Keywords: Digital taxation, green economy, BEPS 2.0, Pillar 2, QDMTT, IT Park benefits, institutional transformation, excise tax, J-shaped correlation, international integration, tax sovereignty, digital permanent establishment, QRTC, WTO membership.

Introduction

Tax is characterized by the convergence of digital technologies and environmental sustainability. The large-scale economic reforms of the Republic of Uzbekistan, which began in 2017, have made the country an active participant in international integration processes. In particular, the pursuit of membership in the World Trade Organization (WTO) and the adoption of OECD standards require the alignment of the national tax system with international rules. In this context, the transformation of the institutional framework for digital and green taxation is a decisive factor in ensuring not only fiscal stability, but also the country's global competitiveness. The rapid growth of the digital economy has called into question the principles of traditional taxation. The ability of transnational corporations (MNEs) to make profits without a physical presence ¹is leading to a erosion of the tax base and the transfer of profits to jurisdictions with low tax rates. For Uzbekistan, this issue is doubly urgent: on the one hand, preferential regimes are needed to stimulate the IT sector and e-commerce, and on the other hand, non-compliance with the requirements of the 15 percent global minimum tax rate (Pillar 2) set by the OECD may lead to the leakage of tax revenues to the budgets of other countries. ²At the same time, there is a need to transform tax policy in order to mitigate the effects of climate change and ensure "green" growth. Uzbekistan aims to increase the share of renewable energy sources to 30 percent by 2030. The legislative acts adopted in this direction in 2024-2025, including the indexation of excise tax rates and the renewal of the ecological expertise system, indicate the strong political will of the state. However, these processes are faced with many problems and contradictions at the institutional level. Assessing the effectiveness of tax incentives, improving the "tax agent" function for digital platforms, and introducing new mechanisms to encourage green investments require in-depth scientific and practical research.

Analysis of literature on the topic

The theoretical foundations of digital and green taxation have gone through a long evolutionary path, from classical economics to modern institutional approaches. The main debates on the taxation of the digital economy revolve around the concepts of "physical presence" and "economic presence". According to OECD research, traditional tax rules cannot correctly assess the value created by digital giants, which creates tax injustice on a global scale. ³ In the context of the Uzbek economy, research by O. Kasimov,

¹Organization for Economic Co-operation and Development (OECD). (2025). Roadmap for sustainable investment policy reforms in Uzbekistan. OECD Publishing.

²Ulugbek Tulakov. Taxation of the digital economy in Uzbekistan. (n.d.). ResearchGate.

³Organization for Economic Co-operation and Development (OECD). (n.d.). Pillar One – Amount B. OECD.

S. Omonova and M. Kasimov (2026) examined the relationship between digitalization and government revenues through cointegration analysis and proved that fiscal efficiency increases only after the digital governance index passes a certain level. These results confirm the existence of a "public sector productivity paradox" for developing economies: that is, in the early stages of digitalization, budget revenues decrease due to high infrastructure costs, and then sharply increase along a J-shaped curve.⁴ Theoretical views on green taxation are dominated by the Pigouvian tax and the "double dividend" hypothesis. According to this theory, by taxing polluting resources, it is possible to achieve both environmental improvements and economic efficiency by reducing taxes on labor or capital.

Analyzing Uzbekistan's position in the digitalization process, B. Ismailov emphasizes that the success of institutional reforms depends not only on technologies, but also on the extent to which the legal framework is aligned with international standards.

Also, the OECD's "Roadmap for Sustainable Investment Policy Reforms in Uzbekistan" (2025) report scientifically substantiated the need to shift tax incentives in the country from income-based to expenditure-based methods. A. Pulatov (2025) analyzed the experience of the "Google tax" in taxing the digital economy and showed the need to further improve the VAT mechanism for transnational B2B and B2C segments. However, the institutional "intersection points" of digital and green tax reforms and their synergistic effect in the context of international integration have not yet been sufficiently systematically analyzed.⁵

Research methodology

This study uses a combination of quantitative and qualitative analysis methods to assess the transformation processes in the tax system of Uzbekistan. The methodological basis of the study consists of the following stages:

1. **Econometric modeling (ARDL model):** The Autoregressive Distributed Lag (ARDL) cointegration method was used to study the long-term and short-term relationship between the level of digitalization and state budget revenues. It was based on quarterly data (84 observations) from 2004 to 2024.
2. **Structural Break Analysis:** Using the Bai-Perron and Zivot-Andrews tests, the impact of the reforms that began in 2016 on tax revenues in the Uzbek economy and the points of fundamental change in the system were identified.
3. **Comparative institutional analysis:** The compliance of the Tax Code of Uzbekistan (2025 edition) with the OECD BEPS Pillar 2 rules was studied in a

⁴Kasimov O., Omonova S., Kasimov M. Digitalization, Government Revenue, and Structural Breaks: An ARDL Cointegration Approach for Uzbekistan. *Journal of Tax Reform*. 2026;12(1):40–58

⁵Pulatov, Alisher. (2024). Taxation in the Digital Economy in Uzbekistan. 10.1007/978-3-031-55341-7_9.

comparative manner. The conflict of the benefits provided for IT Park residents with global minimum tax requirements was examined .

4. **Synchronous and diachronic analysis:** The dynamics of excise rates, water tax, and subsoil tax indicators planned for 2024 and 2025 under green taxation were analyzed.
5. **Index approach:** A composite digital governance index was formed using the Principal Component Analysis (PCA) method based on four indicators (e-government index, internet usage rate, number of mobile stations, and fiber optic infrastructure).

The research data is based on the latest 3-year (2023-2026) reports of the Tax Committee of the Republic of Uzbekistan, the Ministry of Economy and Finance, OECD, UNDP, and the World Bank.

Main part problem analysis and results

Uzbekistan has created one of the most attractive tax regimes in the world for IT Park residents in order to develop the digital economy. However, in the context of international integration, this regime conflicts with the global minimum tax rules (Pillar 2) adopted by the OECD . According to the rules of Pillar 2 , transnational groups with an annual turnover of more than 750 million euros are required to pay an effective tax rate (Effective Tax Rate - ETR) of at least 15 percent in each country where they operate.

Problem Analysis: Currently, the corporate income tax rate for IT Park residents is 0%. If a large multinational company operating in Uzbekistan (for example, international BPO centers) does not pay taxes here, the country where its head office is located (for example, the USA or the European Union) will collect the 15% difference to its budget through the "Income Inclusion Rule" (IIR) or "Undertaxed Profits Rule" (UTPR) mechanisms under Pillar 2. As a result, the benefit provided by Uzbekistan becomes useless for the investor, and tax revenues leave the country.

The table below shows the difference between IT Park residents and the general tax regime, as well as the changes expected from 2025:⁶

Tax type	IT Resident (Current)	Park General regime (from 2025)	BEPS Pillar 2 Impact
Corporate Income Tax (CIT)	0%	15%	If ETR is below 15%, the difference will be charged.

⁶ Ernst & Young Global Limited (EY). (2025, January 15). Changes in taxation in Uzbekistan from 2025. https://www.ey.com/en_uz/technical/tax-alerts/2025/01/changes-in-taxation-in-uzbekistan

JShDS (PIT)	7.5%	12%	Incentives for employees are maintained
Dividend tax	5%	10%	Reduced rate advantage
Social tax	0%	12-25%	Reduces operating costs
E-commerce (CIT)	7.5% (until 2024)	10% (from 2025)	Gradual rate increase

Scientific commentary: The analysis shows that in order to maintain tax sovereignty, Uzbekistan needs to introduce a Qualified Domestic Minimum Top-up Tax (QDMTT) mechanism by 2026. Through this mechanism, Uzbekistan itself will collect the difference of less than 15 percent, as a result of which tax revenues will remain in the national budget. It is also recommended to transfer the current "tax holidays" to the "Qualified Refundable Tax Credits" (QRTC) system, which is in line with OECD rules. Since QRTC is considered a refundable payment (subsidy) from the budget, rather than a tax reduction, it does not reduce the effective tax rate under Pillar 2.

The J-shaped model of digitalization and fiscal efficiency

how the transformation of digital tax administration (online NCM, electronic invoicing, AI-monitoring) will affect government revenues, the results of the ARDL cointegration model were analyzed.

Analysis of Results: The study found a non-linear, i.e. U- or J-shaped relationship between the level of digitalization and tax revenues. The main parameters of the model are as follows:

- **F-statistic:** 10.586 (significant at the 1% level), which confirms the presence of long-run cointegration.
- **Error Correction Factor (ECM):** -1.181. This indicates that deviations in the system return to equilibrium at a rate of 118% per quarter.
- **Inflection Point:** 4.33 units.

$$Y_{revenue} = \alpha + \beta_1 Digitization + \beta_2 Digitization^2 + \gamma GDP_{elasticity}$$

According to this formula, until the digitization index reaches 4.33 units, there will be a decline or stagnation in state revenues, as the costs of implementing the system exceed its benefits. Uzbekistan crossed this threshold in the fourth quarter of 2016, and digital tax administration is now having a positive effect on the state budget. The elasticity of gross domestic product (GDP) is 1.345, which means that a 1%

increase in GDP leads to a 1.345% increase in tax revenues . This indicates that the hidden economy is shrinking through digital transformation.⁷

Green taxation: 2025 reforms and ecological fiscalism

Uzbekistan's green tax system has been enriched with strict fiscal measures and new institutional rules in 2024-2025. The main goal is to reduce the economy's energy and resource consumption.

Changes to the Tax Code (2025):

- 1. in excise tax rates:** Starting April 1, 2025, excise rates for petroleum products (gasoline, diesel, aviation fuel) and fuels sold to the end consumer will be indexed by an average of 10 percent.
- 2. Water resource use: Water** tax rates are being increased by 10 percent for industrial enterprises, power plants, and soft drink producers , and almost double for other sectors of the economy.
- 3. Excise tax on sweet drinks:** A new excise tax of 500 soums per liter will be introduced for still sweet teas and juices .

The table below compares the green taxation trends for 2024-2025:⁸

Resource / Activity Type	Status 2024	Transformation in 2025	Institutional purpose
Gasoline and diesel excise tax	Base rate	+10% indexation	Reducing emissions
Water tax (industry)	Average rate	+10% to +100%	Increasing water efficiency
"Green" energy certificates	Test project	Advanced implementation	Promoting renewable energy
Environmental Assessment (SEA)	Optional/Old system	Mandatory (Law No. 1036)	Environmental filtering of investment projects
Mineral resources (marble, granite)	Total rate	Separate fixed rates	Wise use of resources

Scientific commentary: The Law "On Environmental Expertise and Strategic Environmental Assessment" (ORQ-1036), which will enter into force on August 25, 2025, will bring Uzbekistan's green tax system to a new level. Now, any large investment project must undergo a mandatory Strategic Environmental Assessment

⁷Kasimov O., Omonova S., Kasimov M. Digitalization, Government Revenue, and Structural Breaks: An ARDL Cointegration Approach for Uzbekistan. Journal of Tax Reform. 2026;12(1):40–58. <https://doi.org/10.15826/jtr.2026.12.1.239>

⁸ Ernst & Young Global Limited (EY). (2025, January 15). Changes in taxation in Uzbekistan from 2025. https://www.ey.com/en_uz/technical/tax-alerts/2025/01/changes-in-taxation-in-uzbekistan

(SEA) in order to receive tax benefits or be implemented. This is fully consistent with the OECD's "Responsible Business Conduct" (RBC) principles.⁹

International integration and tax administration barriers

A number of institutional obstacles remain on the path of Uzbekistan's WTO membership and integration into the international financial system :

1. **Discretionary powers in investment treaties:** According to an OECD report , discretionary powers of ministries and departments in granting tax incentives under investment treaties in Uzbekistan remain high. This reduces the level of transparency and predictability for international investors.
2. **List " of FDI restrictions :** Currently, there is no clear list of sectors closed or restricted to foreign investors, which creates uncertainty in tax planning. The OECD recommends the formation of this list and its strengthening at the legislative level .
3. **Digital infrastructure disparities:** According to UNDP (2025) , while 99 percent of Uzbekistan's population is covered by 2G and 90 percent by 3G, limited 5G networks and low digital literacy in rural areas are creating inequalities in the collection of digital taxes (e.g., on e-commerce).

Conclusion and suggestions

the Uzbek economy, the transformation of the digital and green taxation system is of strategic importance for the country's sustainable development and adaptation to global minimum tax standards. Based on the results and analysis obtained during the study, the following conclusions and proposals are put forward:

Conclusions:

- The J-shaped relationship between digitalization and fiscal revenues indicates that Uzbekistan has entered the "efficiency phase" in digital tax administration. Crossing the 4.33-unit threshold has created a solid foundation for expanding the tax base.
- The implementation of OECD BEPS Pillar 2 rules requires a review of Uzbekistan's current IT Park incentive system. Otherwise, taxes not paid by large transnational corporations will end up in the coffers of foreign countries, not in the budget of Uzbekistan.
- Green tax reforms (increasing excise rates and the SEA system) that will come into effect in 2025 are the country's fiscal response to the fight against climate change . However, these measures must be carried out in parallel with

⁹Global Green Growth Institute (GGGI). (2025, May 14). Uzbekistan adopts new law on strategic environmental assessment with support from GGGI. <https://gggi.org/uzbekistan-adopts-new-law-on-strategic-environmental-assessment-with-support-from-gggi/>

technological modernization so that they do not negatively affect economic growth rates.

Suggestions:

1. **Introducing the concept of QDMTT into the Tax Code:** In order to ensure Uzbekistan's tax sovereignty, a Qualified Domestic Minimum Top-up Tax mechanism should be introduced starting in 2026. This would ensure that the 15 percent minimum tax revenue paid by large MNEs remains within the country.
2. **Transforming benefits into QRTC: Instead of** tax holidays for residents of IT Parks and free economic zones , a cost-based system of Qualified Refundable Tax Credits should be introduced. This will comply with OECD standards and maintain investment attractiveness.
3. **Introducing the concept of a Digital Permanent Establishment (Digital PE):** It is necessary to legally strengthen the mechanism for direct taxation of transnational digital platforms (Google, Meta, OpenAI) based on the criteria of "Significant Economic Presence", without relying on physical presence.
4. **Differentiation and subsidization of green excise taxes:** It is proposed to direct additional revenues from increasing excise rates on fuel to the "Green Fund" and use it as tax rebates for enterprises that introduce energy-saving technologies.
5. **Strengthen institutional coordination:** It is necessary to create a single digital platform between the Ministry of Economy and Finance, the Tax Committee, and UzIPA to assess the tax consequences of investment projects (under Pillar 2). This will allow investors to calculate their effective tax rates in advance and reduce risks.

These transformations will accelerate Uzbekistan 's integration into the global economy, while ensuring budget stability and building a "green" future.

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