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Article

Practice of Forming Regional Tax Potential in the Transition to A "Green" Economy

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Abstract: This study is dedicated to a comprehensive assessment of the economic essence of tax potential in Uzbekistan's regions, the factors shaping it, and the dynamics of tax revenues across different regions. Tax potential is interpreted as the primary fiscal foundation ensuring state budget stability, and its intrinsic connection with economic growth, structural changes in industries, urbanization processes, and institutional reforms is substantiated. The empirical analysis encompasses the dynamics of direct and indirect taxes, resource and property taxes, and non-tax revenues by region from 2020 to 2024. The research findings indicate the presence of fiscal convergence among regions, while revealing that tax potential is expanding more rapidly in areas with high economic centralization. Industry, the service sector, and the real estate market emerge as the main drivers of the tax base, with the transition to a green economy and environmental investments evaluated as promising factors for diversifying regional tax potential. The study provides a scientific basis for the necessity of improving regional fiscal policy and tax administration.

Keywords: Tax Potential; Regional Fiscal System; Tax Base; Direct Taxes; Indirect Taxes; Fiscal Convergence; Regional Economic Development; Tax Administration; Green Economy; Budget Stability.

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1. Introduction

Systematic measures are being implemented in the country for a phased transition to "green" economy principles and modernization of the national economy, aimed at liberalizing foreign trade, tax and financial policies, stimulating entrepreneurial activity, and ensuring the inviolability of private property. At the same time, developing deep processing of agricultural products and expanding the tax potential of regions have been identified as priority areas [1], [2], [3].

Tax potential plays a decisive role in forming the state budget, with taxes constituting the main source of state revenue. They provide the necessary financial resources to support economic entities' activities, implement socio-economic programs, finance state investments, and realize strategic projects. For this purpose, organizational, legal, and institutional conditions are being consistently created to serve the expansion of the country's tax base and increase its tax potential.

"In accordance with the economic development and liberalization direction of the Action Strategy, over the past five years, the main economic reforms have focused on ensuring macroeconomic stability, reducing inflation, decreasing and simplifying the tax burden, diversifying economic sectors, creating a favorable business environment, improving infrastructure, and developing agriculture, economic integration, and the digital economy [4].”

Literature Review

In our country, the "New Uzbekistan Development Strategy for 2022-2026" outlines the following objectives: to implement the tasks defined in the strategy; to increase the effectiveness of measures taken to ensure "green" and inclusive economic growth within the framework of the Republic of Uzbekistan's strategy for transitioning to a "green" economy; to further expand the use of renewable energy sources and resource conservation across all sectors of the economy. Specifically, it aims to increase the production capacity of renewable energy sources by 15 GW and bring their share to over 30 percent of the total electricity production; improve energy efficiency in the industrial sector by at least 20 percent; and reduce energy consumption per unit of gross domestic product by 30 percent, including through the expanded use of renewable energy sources [5], [6], [7].

In our country, integrating the economic, social, and environmental components of financial, budgetary, and economic processes, viewed as a means of achieving sustainable development, is a complex task in implementing the Strategy for Socio-Economic Development of Uzbekistan until 2030.

These financial, economic, and social components present new challenges for society, such as achieving justice and providing targeted assistance to underprivileged segments of the population [8].

As a result of these processes, the concept of "tax potential" is emerging in scientific literature and entering practical discourse. Domestic and foreign scientists and leading experts are conducting scientific and practical research on the development of socio-economic processes in our country, the transition to a "green" economy, and increasing the tax potential of the regions [9].

According to Professor S.K. Khudoykulov, "Tax potential plays an important role in the process of distributing income, property, and other material assets in the interests of society as a result of economic behavior and income generation in enterprises and by individuals. Tax potential, on the one hand, serves as the primary tool for forecasting tax revenues to the state budget, and on the other hand, the state budget also acts as an important indicator in increasing the tax potential of the regions [10]."

Various factors influence the growth of tax potential. In particular, according to Khudoykulov S.K., "the main characteristic of financial factors among potential factors is that they quickly affect tax potential. Financial factors, including effective monetary policy instruments such as money supply, interest rates (refinancing rate), and loans for financial resources in the production sector, provide mechanisms for financial resources in monetary form in the economy and the state, while simultaneously stimulating production and influencing the formation of new tax potential [11]. However, it should be noted that monetary instruments have a dual effect. If the government raises interest rates, the demand for money increases and the utilization of financial resources intensifies, but very high interest rates can lead to negative consequences, even as they increase the volume of beneficial financial resources in the short term. The state can influence the financial policy of enterprises through various financial instruments, such as minimum statutory capital [12]."

According to M.S. Ismoilov, "the following blocks influence the process of forming the tax potential of the region: regulatory-legal, economic, and budgetary blocks" [13].

According to E.A. Filatova, the factors of tax potential can be conditionally divided into external and internal factors. External factors are those that affect the tax potential of the region through federal influence mechanisms or include the initial conditions for the region's development. Internal factors are those influenced by regional and municipal authorities [14].

According to M.S. Shemyakin, the factors forming tax potential are: technological, natural-ecological, social, value systems, political, legal, and economic (including the quality of tax administration) [15].

The author of the article "Factors of Formation of the Tax Potential of the Region," R.V. Batashev, focuses on the effective management of resources related to tax potential, emphasizing that this concept is a mechanism of complex relationships. In his opinion, it is expedient to divide the factors forming tax potential into subjective and objective. From this perspective, subjective factors are determined at the subfederal level and are fully or partially dependent on the overall development concept of the region. Objective factors are those independent of the regional economic policy concept, primarily determined by historical and natural-climatic conditions, as well as the federal center's concept.

According to T.S. Vasileva, among the factors influencing the magnitude of a region's tax potential, external factors (such as inflation, informational and methodological influences, budgetary rules for the tax system, the level of tax burden, and changes in tax legislation) and internal factors (including innovative environment, geographical location, population size, economic development of the region, natural and climatic conditions, shadow economy, political situation, structure and specialization of industries, and industrial policy) can be specifically mentioned.

Based on the opinions of various authors and scientific and practical approaches, it is evident that tax potential and its determining factors have different manifestations. The manifestation and implementation of tax potential are directly linked to economic, social, financial, and tax spheres (concepts, strategies, and "roadmaps"), and it is shaped by business entities, regions, and the entire national economy.

These scientific views of leading scholars and researchers on the tax potential of regions demonstrate that it serves to enhance the social and economic indicators of the regions.

2. Methodology

This study aims to assess the tax potential of regions as a complex economic category and to determine the functional relationship between fiscal opportunities and regional economic development. The theory of fiscal federalism, concepts of regional economic growth, and the institutional approach to the endogenous formation of the tax base were adopted as the methodological foundation. Tax potential is interpreted as a multifactorial system, its volume determined by the economic structure of the region, the level of production diversification, urbanization, investment activity, resource base, and the quality of tax administration.

The research design is based on quantitative empirical analysis, employing panel data methodology. The regions of Uzbekistan (provinces, the Republic of Karakalpakstan, and the city of Tashkent) were selected as the observation units, covering the period from 2020 to 2024. This period is characterized by the post-pandemic recovery stage of the fiscal system, the deepening of institutional reforms, and the introduction of green economy elements. The data includes indicators of direct taxes, indirect taxes, resource and property taxes, as well as non-tax revenues by region.

An integral indicator was developed for the quantitative assessment of tax potential. It is expressed in the following generalized functional form:

$$\boldsymbol{TP_i = f(DT_i, IT_i, RT_t, NT_i, GRP_i, IND_i, SERV_i, URB_i, INV_i, INST_i}$$

where:

TP — the tax potential of the area;

DT — direct tax receipts;

IT — indirect tax revenue;

RT — resource and property taxes;

NT — non-tax income;

GRP — gross regional product;

IND — industrial share;

$SERV$ — share of the services sector;

URB — level of urbanization;

INV — volume of investments;

$INST$ — proxies for institutional effectiveness.

To eliminate differences in units of measurement and variance, the indicators were standardized based on z-transformation. Subsequently, weight coefficients were determined through Principal Component Analysis (PCA), and the integral index was calculated. This approach reduces subjective weighting errors and reflects the structural composition of the fiscal base.

A multiple factor regression model was applied to determine the influence of factors:qo'llanildi:

$$\boldsymbol{TP_{it} = \alpha + \beta_1 IND_{it} + \beta_2 SERV_{it} + \beta_3 URB_{it} + \beta_4 INV_{it} + \beta_5 GREN_{it} + \beta_6 INST_{it} + \varepsilon_{it}}$$

Here, the GREEN variable represents indicators of green investments and resource efficiency. The model was evaluated using fixed effects (FE) and random effects (RE) approaches, and the optimal specification was selected using the Hausman test. Multicollinearity was checked based on the VIF criterion, and White robust standard errors were applied to address heteroscedasticity.

To determine interregional fiscal convergence, σ-convergence and β-convergence models were applied. The dynamics of the coefficient of variation indicate a reduction in disparities between regions, while regression-based β-convergence empirically confirms that growth is faster in regions with a lower initial level.

To ensure the reliability of the results, a sensitivity (robustness) analysis was conducted: alternative weighting schemes, logarithmic transformations, and scenarios for excluding certain regions were examined. All statistical calculations were performed using the *Stata* and *R* software packages.

Thus, the research methodology is grounded in principles of theoretical substantiation, multidimensional empirical analysis, econometric rigor, and systematic interpretation of regional fiscal processes. This approach enables the identification of the internal structure of regional tax potential, growth drivers, and convergence trends, while also establishing a scientific foundation for refining fiscal policy with regional differentiation.

3. Results and Discussion

Today, the scope of studying factors that influence the improvement of tax potential and socio-economic and financial conditions is constantly expanding. This process is a natural phenomenon associated with the development and changes in national and global economic and financial relations.

Table 2.1. Forecast of the main macroeconomic indicators for the development of the Republic of Uzbekistan in 2025 and target projections for 2026-2027 [4][1]

No.	Indicators	Prognosis for 2025	Targets	
			2026	2027
1.	Gross Domestic Product (GDP), in trillion soums	1 630	1 866	2 125
2.	Growth rate of Gross Domestic Product, in percentage	6,0	6,1	6,3
3.	Consumer price index, compared to December of the previous year, in percent	7-8	5-6	5
4.	Growth rate of industrial production, in percentage	6,1	6,2	6,1
5.	Growth rate of production in agriculture, forestry, and fisheries, in percentage	4,1	4,2	4,3
6.	Growth rate of market services, expressed as a percentage	14,5	15,1	15,0
7.	Percentage growth rate of construction work	14,2	10,2	7,3

According to national forecasts, despite the ongoing complex geopolitical and external economic situations, Uzbekistan's economy is expected to grow by 6% in 2024-2025, and by 6.1% and 6.3% in 2026 and 2027, respectively.

The growth rate of industrial production is projected to be 6.9% in 2024, 6.1% in 2025, and 6.2% and 6.1% in 2026 and 2027, respectively. Growth rates in agricultural production are forecast to reach 4.1% in 2024-2025, 4.2% in 2026, and 4.3% in 2027. The growth rate of market services is expected to be around 14% in 2024, 14.5% in 2025, and approximately 15% in 2026-2027.

The inflation rate in Uzbekistan is projected to be around 9% in 2024, 7% in 2025, and to decrease to 5% by 2027. As a result of the adoption of several decrees and resolutions by the President of the Republic of Uzbekistan on the country's socio-economic development, State Budget expenditures for 2024 are expected to be revised and increased by 1.5% compared to the approved budget.

At the same time, the consolidated budget deficit will not exceed 4% of the gross domestic product. Based on long-term fiscal goals and macroeconomic forecasts, including the aim of keeping the consolidated budget deficit below 3% of GDP in the medium term, consolidated budget revenues for 2025 are projected at 431.1 trillion soums, or 26.4% of GDP, and expenditures at 480.3 trillion soums, or 29.4% of GDP.

Based on various authors' opinions and scientific and practical approaches, it is determined that tax potential and its determining factors have different manifestations. The manifestation and implementation of tax potential are directly related to the economic, social, financial, and tax spheres (concepts, strategies, "road maps"), which are shaped by business entities, regions, and the economy of the country as a whole.

The tax potential of regions depends on many factors, and for its effective increase, it is necessary to consider economic, social, political, and environmental aspects. Management and adaptation to changes in these areas will significantly increase a region's tax revenues.

Increasing tax potential and its factors is the main tool in forming the state budget. This ensures sustainable financing of important economic and social spheres, economic growth and social stability, as well as stimulates innovation and sustainable development. It is important that states, striving to optimize tax systems, effectively use all their potential

[1] Law of the Republic of Uzbekistan, No. ORQ-1011 dated 24.12.2024 https://lex.uz/ru/docs/7277618

to form an effective budget that meets society's needs. Thus, developing tax potential becomes a crucial task in ensuring the country's stability and well-being.

Now, to comprehensively analyze the tax revenues of the Republic of Uzbekistan, we will examine them by region (Figure 1).

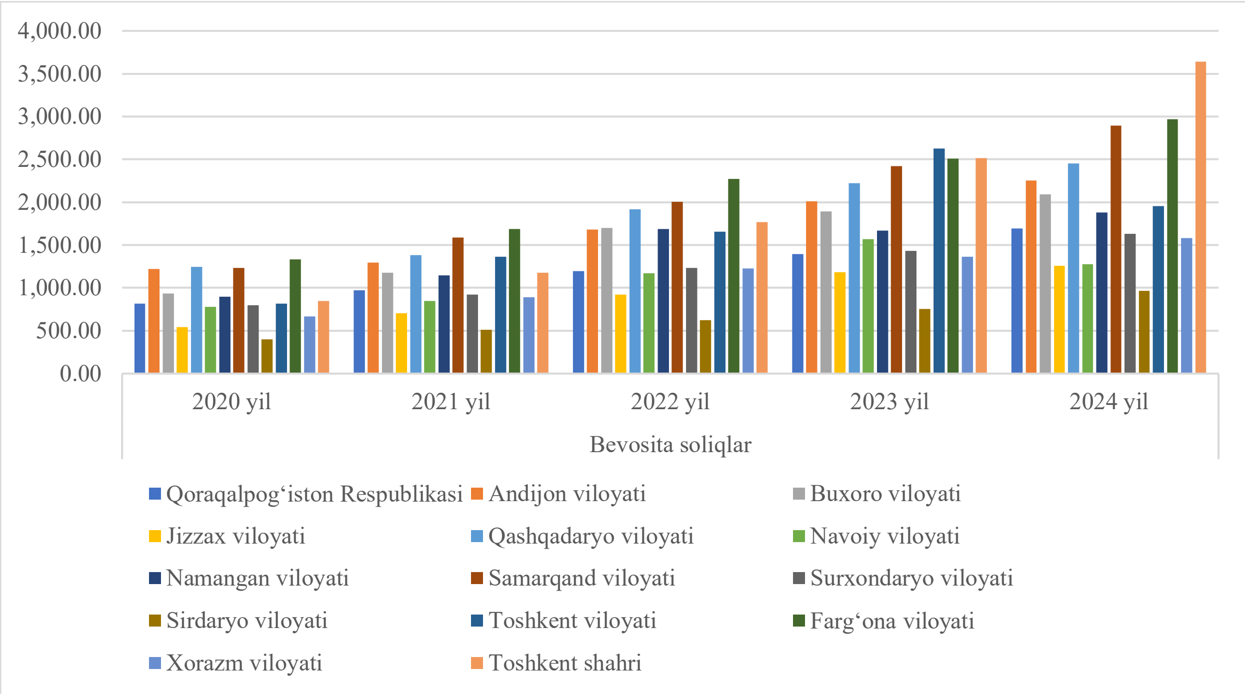

Figure 1. Direct tax revenues by region during 2020-2024. Author's analysis based on data from the website https://openbudget.uz/.

This reflects the dynamics of direct tax revenues across regions from 2020 to 2024 and indicates that fiscal indicators have entered a high-intensity growth phase. Consistent growth is observed in all regions over time, signifying an expansion of the tax base and deepening of income-generating economic activities.

Taking 2020 as the base year, by 2024 the highest growth is projected for Tashkent city: indicators are expected to increase approximately 3.0-3.5 times, equivalent to 200-250% real growth. This is attributed to urban economic expansion, concentration of large enterprises, and growth in high-income segments.

Among major regions, revenues in Samarkand and Fergana regions increased by ~140-170% and ~150-180% respectively between 2020-2024. This demonstrates that growth in industry, the service sector, and household incomes in these regions has broadened the direct tax base.

In the middle-tier regions - Kashkadarya, Andijan, and Namangan - growth rates range from 120-160%. This indicates steady fiscal expansion, closely following a linear trend.

Regions with a relatively low initial base - Jizzakh, Syrdarya, and Khorezm - show growth rates around 160-200%, suggesting a fiscal convergence process: despite small absolute volumes, relative growth is rapid.

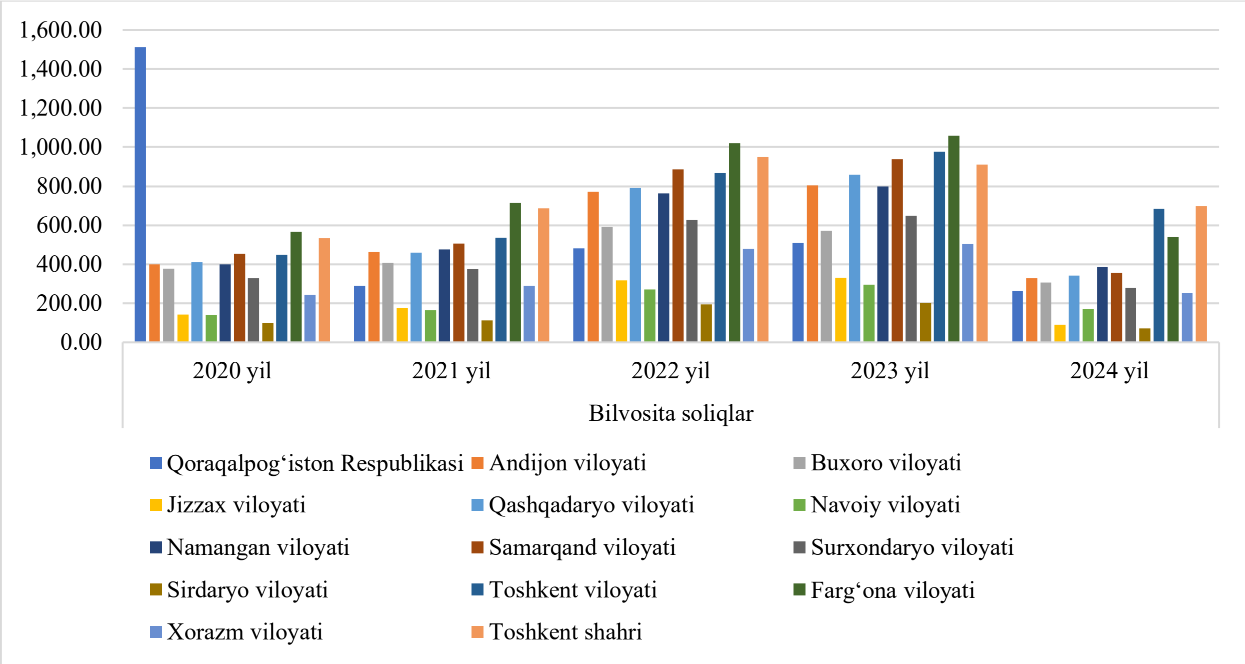

Figure 2. Income from indirect taxes by region during 2020-2024. Author's analysis based on data from https://openbudget.uz/ website.

It reflects the dynamics of indirect tax revenues by region. As can be seen from the graph, the overall trend in indicators is positive, with most regions showing an increasing trend over time. This indicates a deepening of the fiscal base, which is directly related to the expansion of consumption, trade turnover, and the service sector.

Compared to the base year (2020), one of the highest relative growths by 2024 is observed in the Fergana region - revenues have increased approximately 2.5 times, which represents an increase of more than 150%. Similarly, in the Samarkand region and Tashkent region, growth in the range of 120-160% is observed for the period 2020-2024. The expansion of retail trade, services, and the consumer market in these regions has broadened the base for indirect taxes.

In the city of Tashkent, indicators remain at a high absolute level, with an increase of ~90-110% expected by 2024 compared to 2020. Since the tax base in this capital region is already large, the relative growth is lower than in other regions, but it maintains its leadership in absolute volume.

Regions with a relatively small base - Jizzakh region and Syrdarya region - show growth rates around 140-180%, which indicates the presence of interregional fiscal convergence. However, in the Republic of Karakalpakstan, after the high initial indicator in 2020, a decline is observed in subsequent years, with a decrease of ~55-60% projected by 2024 compared to 2020. This can be explained by a one-time factor or a base effect.

The most active growth stage in the time period is 2021-2023, with annual growth in most regions being around 15-30%. An increase in dispersion suggests that the fiscal gap between regions is widening, but the overall positive dynamics indicate an expansion of the consumption-based tax base at the national level.

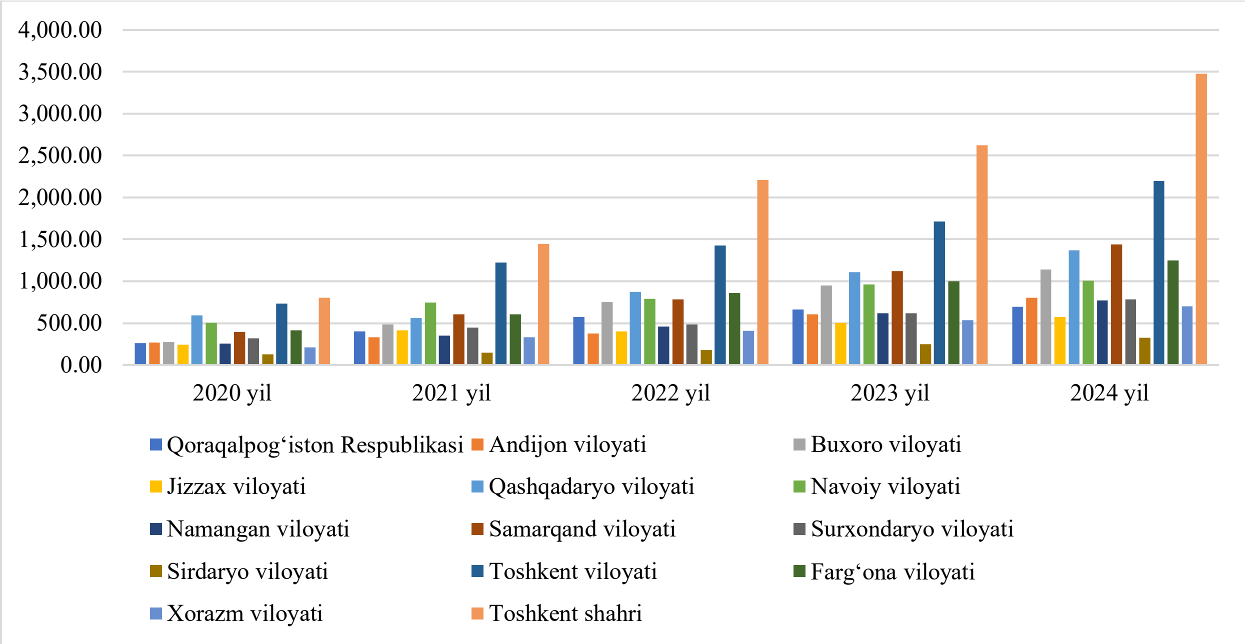

Figure 3. Revenue from resource payments and property tax by region during 2020-2024. Author's analysis based on data from https://openbudget.uz/ website.

Compared to the base period, the highest growth by 2024 will be recorded in Tashkent city. Revenues will have increased by almost 3.5-4 times, which represents a growth of 250-300%. This result has been shaped by the rapid development of the real estate market in the capital and the concentration of high-value properties.

Among the regions, Tashkent region, Samarkand region, and Fergana region show high growth rates, with increases ranging from 180-220% between 2020-2024, respectively. The expansion of industrial zones, housing construction, and infrastructure projects in these areas has broadened the resource and property tax base.

In the middle group regions – Kashkadarya region, Andijan region, and Namangan region - growth is around 140-170%, with a stable linear trend observed. Regions with a relatively low initial base – Jizzakh region and Syrdarya region - also show growth of 160-200%, indicating the presence of interregional fiscal convergence.

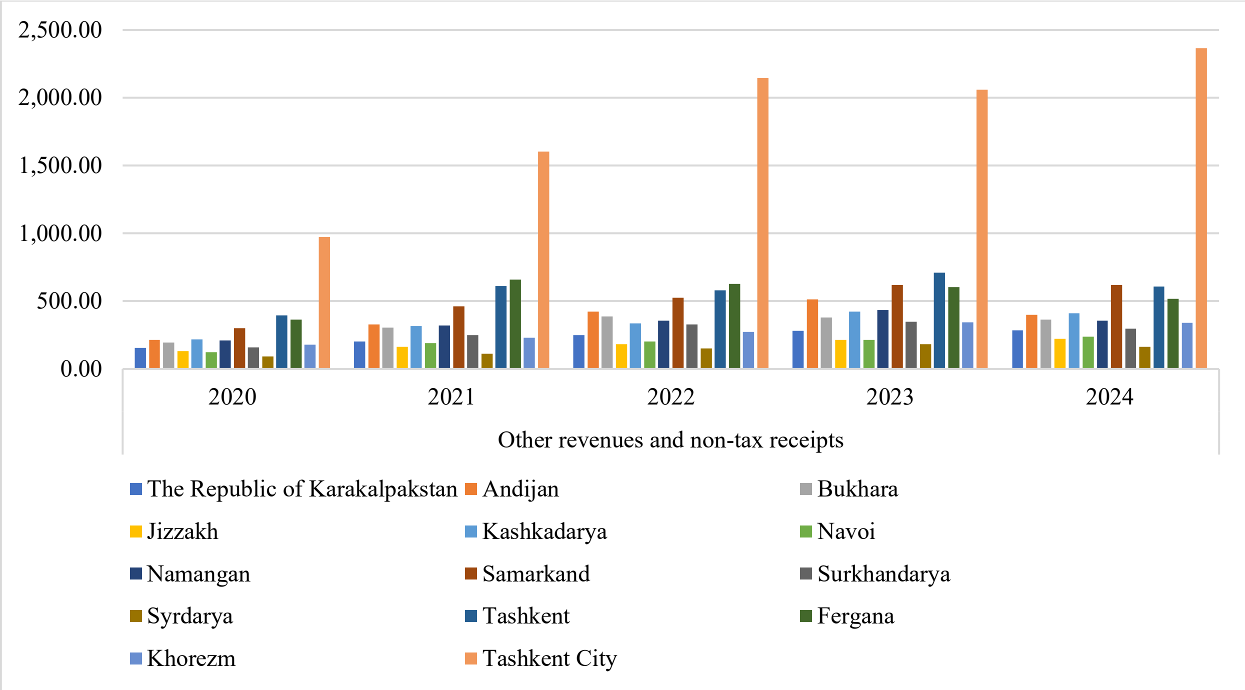

Figure 4. Revenue from other income and tax-free receipts by region during 2020-2024. Author's analysis based on data from https://openbudget.uz/ website.

Represents the dynamics of other income and non-tax revenues by region from 2020 to 2024. Revenues of this type usually include fines, use of state assets, fees, and other non-fiscal sources. The graph shows a generally increasing trend, but this growth is uneven compared to tax revenues and is characterized by sharp jumps in some regions.

The largest absolute volume and growth is attributed to the city of Tashkent. Compared to 2020, revenues in 2024 are expected to increase by approximately 2.3-2.5 times, that is, a growth of 130-150%. The sharp jumps in 2021-2022 indicate that this type of income is sensitive to administrative decisions or one-time payments.

Among the regions, Tashkent, Fergana, and Samarkand regions showed stable growth, achieving 90-130% growth in the period 2020-2024. The high turnover of state assets and the scale of economic activity in these regions have increased the volume of non-fiscal revenues.

In the middle group regions - Kashkadarya, Bukhara, and Namangan - growth is around 70-110%, and a linear trend is observed. Regions with a relatively small base - Jizzakh and Syrdarya - have growth rates in the range of 100-140%, which indicates the presence of relative convergence.

The most active growth phase in terms of time corresponds to 2021-2023. Annual additional growth in most regions is in the range of 15-30%. The high level of dispersion indicates that this type of income is not stable across regions, but depends on administrative and institutional factors.

In conclusion, the transition to a green economy opens new opportunities for Uzbekistan and serves to increase the state's tax potential. The main factors in this process are the development of green technologies, investment in environmental projects, support for sustainable agriculture, raising public awareness, introducing environmental taxes, and international cooperation. These measures will serve not only to increase tax revenues but also to create a more sustainable and environmentally friendly future for the country.

4. Conclusion

This study assesses the economic aspects of regional tax potential in Uzbekistan, its formative factors, and tax revenue dynamics across regions. It interprets tax potential as the primary fiscal base for state budget stability, linking it to economic growth, sectoral changes, urbanization, and institutional reforms. The empirical analysis examines direct and indirect taxes, resource and property taxes, and non-tax revenues by region from 2020 to 2024.

Findings indicate fiscal convergence among regions, with faster tax potential expansion in economically centralized areas, particularly the capital agglomeration. Industry, services, and real estate market activity emerge as key tax base drivers. The transition to a green economy, resource efficiency, and environmental investments are projected to diversify regional tax potential. The study advocates for optimizing regional fiscal policy, improving tax administration, and coordinating structural economic reforms across regions.

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