

INNOVATION SCIENCE AND TECHNOLOGY



Scopus || Electronic journal specializing in Scopus

ISSUE 4

 Acceptance of papers April, 2026



**Acceptance of
papers**

Published monthly



Topics

economics,
technology, social
sciences

ISSN 3060-5229



Digital
Object
Identifier



Visit the website
t.me/scopus_IST2100



EDITOR-IN-CHIEF:

Mirzaliyev Sanjar Makhmatjon ugli

DEPUTY EDITOR-IN-CHIEF:

Makhmudov Nosir Makhmudovich
DSc., Prof., Academician

DEPUTY EDITOR-IN-CHIEF:

Ochilov Bobur Bakhtiyor ugli – Senior
lecturer at TSUI

THE SCIENTIFIC-POPULAR ELECTRONIC
JOURNAL **"INNOVATION SCIENCE AND
TECHNOLOGY"** HAS BEEN REGISTERED
UNDER THE NUMBER **C-5669633** BY THE
AGENCY FOR INFORMATION AND MASS
COMMUNICATIONS (AOKA) OF THE
REPUBLIC OF UZBEKISTAN, EFFECTIVE
FROM OCTOBER 9, 2024.

CONTACTS

Phone: **+998 50 737 87 88**

Website: <https://ist-journal.uz>

Email: innovationist2025@gmail.com

The scientific electronic journal "Innovation Science and Technology" has been included in the list of scientific publications recommended for the publication of main scientific results of dissertations for the award of PhD and DSc degrees in economics and technical sciences, in accordance with the Resolution No. 370 of the Presidium of the Higher Attestation Commission of the Republic of Uzbekistan, dated May 8, 2025.

Editorial board:



Sharipov Kongiratbay Avezimbetovich,
Doctor of Technical Sciences (DSc), Professor



Abdurakhmanova Gulnora Kalandarovna, Doctor of
Economic Sciences (DSc), Professor



Cham Tat Huei,
Doctor of Philosophy (PhD), Professor (Malaysia)



Muhammad Imran Sadiq
Doctor of Philosophy in Economics (PhD), Professor,
Malaysia



Ahmed Aziz Ismail
Doctor of Technical Sciences (DSc),
Professor (Egypt)



Lee Chin
Doctor of Philosophy in Economics (PhD), (Malaysia)



Asongu SImplice
Doctor of Philosophy in Economics (PhD), Cameroon



Rui Dang
Doctor of Chemistry (DSc), Professor, China



Zahoor Ahmed
Doctor of Philosophy in Economics (PhD), Turkey



Shujaat Abbas
Doctor of Philosophy in Economics (PhD), Russia



Tina A Coffelt
Doctor of Philosophy in Educational Sciences (PhD),
USA



Abdikarimova Dinara Rustamxanovna
Doctor of Economic Sciences (DSc), Professor

Kurbonbekova Mohichehra Turobjonovna
Doctor of Economic Sciences (DSc), Professor

Alimardonov Ilkhom Muzrabshokovich
Doctor of Economic Sciences (DSc), Professor



Razakova Barno Sayfiyevna
Doctor of Philosophy in Economics (PhD)



Khasanov Sarvar Ulugbek ugli
Doctor of Philosophy in Economics (PhD)



Kholikova Rukhsora Sanjarovna
Associate Professor (PhD)

CONTENTS

THE IMPACT OF FINANCIAL RISKS ON THE DEVELOPMENT OF REGIONAL ECONOMIC GROWTH DRIVERS AND OPPORTUNITIES FOR THEIR MITIGATION	17
Turopova Nigora Xolmurod qizi	
UTILIZATION OF INTERNAL RESERVES FOR INCREASING THE EFFICIENCY OF REGIONAL TOURISM (CASE STUDY OF THE REPUBLIC OF KARAKALPAKSTAN)	20
Naurizbaev Aliakbar Rustamovich	
MATHEMATICAL MODELS AND ALGORITHMS FOR PROCESSING NOISE DATA	23
Jovlieva Dilnoz Mustofa qizi	
ASSESSMENT OF THE IMPACT OF ENVIRONMENTAL RISKS IN BUSINESS ACTIVITIES AND WAYS TO REDUCE THEM.....	28
Abdukhamid Abdumalikovich Bektemirov	
A MULTI-LEVEL SYSTEM OF STATISTICAL INDICATORS FOR REGIONAL TRANSPORT INFRASTRUCTURE ASSESSMENT: METHODOLOGY AND APPROBATION	34
Keunimzhaev Mukhamedali Kuanyshaevich	
THE IMPACT OF BANKS ON THE FINANCIAL STABILITY OF THE ECONOMY OF THE REPUBLIC OF UZBEKISTAN	39
Usmonov Faridun Firdavsievich, Ishonkulova Feruza Asatovna	
EMPIRICAL EVALUATION OF MACRO- AND MICROECONOMIC FACTORS AFFECTING THE EFFICIENCY OF INVESTMENT ACTIVITY AND THEIR RELATIONSHIP WITH ECONOMIC EFFICIENCY	43
Aytmuratova Ulbike Jalgasovna	
MECHANISMS FOR IMPROVING ECONOMIC EFFICIENCY THROUGH OPTIMIZATION OF PRODUCTION RESOURCE POTENTIAL IN UZBEKISTAN	47
Sattarov Abdusamat Umirqulovich	
PROMISING DIRECTIONS FOR APPLYING FOREIGN EXPERIENCE IN THE DEVELOPMENT OF GREEN TOURISM IN UZBEKISTAN	52
Rakhimova Dilfuza Mirzakasimovna	
PRIORITIES FOR REGULATING FINANCIAL RELATIONS IN PROVIDING HOUSING TO THE POPULATION IN UZBEKISTAN.....	58
Khannarov Komiljon Karimovich	
IMPROVING THE ORGANIZATION OF PRODUCTION COST ACCOUNTING IN FULL-SYSTEM FARMS SPECIALIZING IN THE CULTIVATION OF CYPRINID FISH.....	62
Aitimbetov Amirbek Qoishibekovich	
THE TRANSFORMATIONAL ROLE OF SMALL BUSINESS IN UZBEKISTAN'S ECONOMIC DEVELOPMENT: A COMPREHENSIVE ANALYSIS BASED ON 2025 NATIONAL STATISTICS.....	68
Isakjanova Sabokhat Muhamedovna	
AN INTEGRATED METHODOLOGICAL FRAMEWORK FOR ADVANCING GREEN TOURISM MODELS IN THE DIGITAL ECONOMY ERA.....	79
Rasulova Nigora Yusupovna	
FACTORS AFFECTING THE COMPETITIVENESS OF COMPANIES.....	83
Kamoliddinov Ilhomjon Muhammadjonovich, Nosirov Eldor Nosirjon ugli	
THE ROLE OF INDUSTRIAL ENTERPRISES IN INCREASING THE EXPORT POTENTIAL OF THE UZBEK ECONOMY.....	88
Musayeva Shoira Azimovna	
DEVELOPMENT OF MARKET FACTORS TO ENSURE THE GROWTH OF THE ECONOMIC POTENTIAL OF THE ENTERPRISE (USING THE EXAMPLE OF THE SAG EXPRESS BRAND STORES)	92
Usmonova Dilfuza Ilkhomovna	
THE CONCEPT OF REGIONAL IMAGE AND ITS ECONOMIC CONTENT (THE CASE OF THE KHOREZM REGION).....	99
Dilshod Ibragimovich Ibodullayev	

DEVELOPMENT OF QUALITY MANAGEMENT SYSTEMS IN THE CONTEXT OF DIGITAL TRANSFORMATION	106
Shakhnoza Samandarovna Ziyadillayeva	
ADVANCED APPROACHES TO THE ASSESSMENT AND MANAGEMENT OF CURRENT FINANCIAL STABILITY IN JOINT-STOCK COMPANIES USING CFAR (CASH FLOW AT RISK) AND 3 Σ STATISTICAL RISK MODELS	114
Kurbonov Xayrilla	
DEVELOPMENT OF A PROGRAM FOR ANALYZING MEDICAL LABORATORY RESULTS USING ARTIFICIAL INTELLIGENCE MODELS.....	118
Gofurjonov Muhammadali, Kamolov Shamsiddin	
APPLICATION OF DIGITAL TRANSFORMATION IN IMPROVING MANAGEMENT STRATEGIES OF CONSTRUCTION MATERIALS INDUSTRY ENTERPRISES.....	122
Ubaydullayev Mukhammadjon Abdusamad o'g'li	
IMPROVING MECHANISMS FOR ENHANCING THE RESOURCE POTENTIAL OF ORGANIZATIONS IN THE EDUCATIONAL SERVICES SECTOR.....	125
Ibrohim Meliboyev	
ECONOMETRIC ANALYSIS OF THE RELATIONSHIP BETWEEN SERVICE QUALITY AND ECONOMIC EFFICIENCY.....	130
Khudoyorov Lochinbek Bahromovich	
MONETARY POLICY INSTRUMENTS IMPROVE USAGE PRACTICES	135
A.A. Ismailov	
E-COMMERCE ADOPTION IN TRADITIONAL STORES.....	140
Nuserov Bakhtiyor	
ENHANCING FINANCIAL SUSTAINABILITY AND OPERATIONAL EFFICIENCY OF JSC "HUDUDGAZTAMINOT": KEY FACTORS AND DIGITAL TRANSFORMATION STRATEGIES.....	146
Ergashev Muhibbek Aslamovich	
METHODS FOR IMPROVING AUTOMOTIVE FUEL QUALITY INDICATORS THROUGH THE USE OF ADDITIVES.....	151
Xushnayev Obid, Sheraliyev Ulugbek, Astonov Alisher	
MONETARY POLICY INSTRUMENTS.....	156
A.A. Ismailov	
THE ROLE OF STRATEGIC MANAGEMENT IN ENHANCING A COUNTRY'S INTERNATIONAL IMAGE: THE CASE OF SWITZERLAND.....	161
Idirisbaeva Hurliman Amanbay qizi, Kurolov Maksud Obitovich	
VOLUNTEER TOURISM: CURRENT IMPACTS AND FUTURE DIRECTIONS	170
Ossama Moustafa Elsetouhy	
COMPUTER GRAPHICS IN MODERN EDUCATION: PRACTICAL CAPABILITIES OF THE FIGMA PLATFORM.....	176
Maxamadov Rustam Xabibullayevich, Djamatov Mustafa Xatamovich	
DEVELOPING THE FINANCIAL SUSTAINABILITY OF HIGHER EDUCATION INSTITUTIONS BASED ON DIGITAL TECHNOLOGIES.....	182
Abdurasulov Sardor Tolqin ugli	
THE IMPORTANCE AND PROSPECTS OF TOURISM DEVELOPMENT	187
Ibodova Dilsora Ibodovna, Qosimov Jahongir Ruziboyevich	
STRATEGIES FOR OPTIMIZING THE STRUCTURE OF COMMERCIAL BANK ASSETS AND INCREASING EFFICIENCY IN UZBEKISTAN	194
Ibrohimov Davronbek Muhammadi o'g'li	
STRATEGIC DIRECTIONS FOR THE DEVELOPMENT OF EXPORTS OF PRODUCTS BASED ON ARTIFICIAL FIBERS.....	199
Raximov Furqat Jalolovich	
FUNDAMENTALS OF USING MARKETING RESEARCH TO IMPROVE SALES SYSTEM EFFECTIVENESS.....	206
Abduxalilova Laylo Tuxtasinovna	

FASHION MARKETING AS AN INSTRUMENT FOR SHAPING CONSUMER-BASED BRAND VALUE.....	213
Navruz-Zoda Bakhtiyor Negmatovich, Aripova Makhliyo Salakhiddinovna	
ENSURING SUSTAINABLE GROWTH OF THE NATIONAL ECONOMY IN THE CONTEXT OF DIGITAL TRANSFORMATION, IMPROVING INNOVATIVE DEVELOPMENT STRATEGIES, AND ENHANCING THE EFFICIENCY OF IMPLEMENTING DIGITAL ECONOMY PRINCIPLES IN THE FINANCE, BANKING, AND TOURISM SECTORS	220
Inatullayeva Intizor Jamshid qizi, Uroqov Uchqun Yunusovich	
SOCIAL AND SECURITY PROBLEMS OF INNOVATIVE TOURISM DEVELOPMENT IN THE REGION.....	223
Q.A. Musakhanov	
DIGITAL ECONOMY AND INNOVATION AS FACTORS OF SOCIAL DEVELOPMENT IN UZBEKISTAN	228
Ibragimova Saodat Abdumuminovna, Sadullayeva Sevara Uchqun qizi	
THE SOCIAL INSURANCE SYSTEM OF THE UNITED STATES OF AMERICA	232
Javliyev Nuriddin Bektemir o'g'li	
DEVELOPMENT OF EFFECTIVE ORGANIZATIONAL-ECONOMIC MECHANISMS FOR TRANSITION TO THE INNOVATIVE MARKETING CONCEPT IN ENTERPRISES UNDER DIGITAL TRANSFORMATION	236
Bobomurodov Qayimjon Homidovich	
FOMO-DRIVEN PURCHASING IN E-COMMERCE FLASH SALES: AN INTEGRATIVE CONCEPTUAL FRAMEWORK	241
Muhammadiminov Abdukodir Bakhodirjon Ugli, Arciana Damayanti, Javliev Nuriddin Bektemir ugli	
PHYSICO-MECHANICAL PROPERTIES OF COARSE FEEDS	250
Yodgorov Jamoliddin Nomozovich, Yadgarov Sirojiddin Nomozovich	
EVOLUTION AND STANDARDIZATION OF SI MEASUREMENT UNITS IN THE INTERNATIONAL SYSTEM	255
Maxmudov Dostonbek Soyibjon o'g'li	
PROCEDURE FOR ACCOUNTING OF ESTIMATED LIABILITIES BY BUDGETARY ORGANIZATIONS	259
Jabbarova Charos Aminovna	
FEATURES OF AUDIT IN DEVELOPING INVESTMENT LENDING PRACTICES IN COMMERCIAL BANKS.....	263
Jamshid Mirzakhmedov	
ECONOMIC EFFICIENCY OF RENEWABLE ENERGY SOURCES: THE CASE OF SOLAR AND WIND ENERGY	271
Hayitov Jamshid Kholboyevich	
ADVANCED FOREIGN EXPERIENCE IN HIGHER EDUCATION FINANCING: THE CASE OF THE UNITED KINGDOM	275
Kurbanov Baxodir Negmatullayevich	
THE IMPACT OF DIGITAL DESTINATION IMAGE ON TOURIST SATISFACTION AND REVISIT INTENTION: EVIDENCE FROM UZBEKISTAN	279
Shaxnoza Almasovna Ashurova	
FACTORS INFLUENCING THE DEVELOPMENT OF THE CIRCULAR ECONOMY	287
Narzullaev Elmurod Shukhrat ugli	
IMPROVING STATE FINANCIAL SUPPORT FOR INVOLVING LOW-INCOME FAMILIES IN ENTREPRENEURSHIP	291
Erejepov Kuwanishbay Jienbay uli	
AGGREGATE FACTORS OF ENSURING REGIONAL ECONOMIC SECURITY AND THEIR CLASSIFICATION ...	296
Nurxonov Komiljon Tovkarayevich	
WAYS TO IMPROVE THE USE OF FOREIGN EXPERIENCE IN THE TRANSPORT AND LOGISTICS CLUSTER IN THE NEW UZBEKISTAN	301
Musayeva Shoira Azimovna	

METHODS OF THEORETICAL ANALYSIS OF METAL FORMING PROCESSES.....	308
Rakhimov T.O., Norboyev Abror Baxtiyor o'g'li	
SOCIAL AND SECURITY PROBLEMS OF INNOVATIVE TOURISM DEVELOPMENT IN THE REGION.....	316
Q.A. Musakhanov	
ARTIFICIAL INTELLIGENCE INTEGRATION IN RETAIL: IMPACT ON ASSORTMENT MANAGEMENT AND DYNAMIC PRICING.....	321
Achilova Shirin Shavkat qizi, Fayzullayeva Diyora Anvar qizi	
MODERN TRENDS IN IMPROVING CORPORATE GOVERNANCE SYSTEMS IN INDUSTRIAL ENTERPRISES.....	327
Xusanova Malohat Mingnorovna	
THE EVOLUTION OF DIGITAL PAYMENT SYSTEMS AND THEIR IMPACT ON THE FINANCIAL BEHAVIOR OF THE POPULATION	333
Susanna S. Alieva	
FROM EXPERIMENTAL RESEARCH METHODS: ADVANTAGES AND DISADVANTAGES OF THE MAGNETRON SPUTTERING METHOD.....	338
Sobirova Tursunoy Abdipatto qizi	
IMPROVING STATE FINANCIAL SUPPORT FOR THE IMPLEMENTATION OF WATER-SAVING TECHNOLOGIES IN THE REPUBLIC OF KARAKALPAKSTAN	345
Seitnazarov Baxadir Muratbaevich	
ARTIFICIAL INTELLIGENCE INTEGRATION IN RETAIL: IMPACT ON ASSORTMENT MANAGEMENT AND DYNAMIC PRICING.....	351
Achilova Shirin Shavkat qizi, Fayzullayeva Diyora Anvar qizi	
PRIORITY DIRECTIONS FOR IMPROVING ECONOMIC STABILITY IN ENTERPRISES.....	357
Iminova Nargizaxon Akramovna	
ENHANCING FORECASTING APPROACHES FOR VALUE ADDED TAX AND EXCISE TAX REVENUES IN THE CONTEXT OF THE DIGITAL ECONOMY	364
Sherzod Kh. Dusiyarov	

ENHANCING FORECASTING APPROACHES FOR VALUE ADDED TAX AND EXCISE TAX REVENUES IN THE CONTEXT OF THE DIGITAL ECONOMY

Sherzod Kh. Dusiyarov

Associate Professor, Department of Economics, Finance and Accounting

TMC Institute

PhD in Economics

Abstract. This article provides a comprehensive analysis of existing approaches to forecasting revenues from Value Added Tax (VAT) and excise taxes. Based on official statistical data covering the period 2020–2026, the study examines the dynamics of tax revenues and identifies the key factors influencing their formation. In addition to macroeconomic indicators such as economic growth, particular emphasis is placed on institutional and administrative determinants, including the effectiveness of tax administration, changes in tax policy, VAT refund mechanisms, and the impact of the shadow economy.

The findings indicate that conventional forecasting approaches do not fully capture the underlying mechanisms of tax revenue formation. In response, the study proposes a simplified integrated model that combines both economic and institutional factors. This approach enhances the accuracy of tax revenue forecasting, improves the effectiveness of budget planning, and contributes to strengthening fiscal sustainability.

Keywords. Value Added Tax (VAT), excise tax, tax revenues, forecasting, tax administration, digital economy, fiscal policy, budget revenues

Annotatsiya. Mazkur maqolada qo‘shilgan qiymat solig‘i (QQS) va aksiz solig‘i tushumlarini prognozlashning mavjud yondashuvlari kompleks tahlil qilinadi. 2020–2026-yillarni qamrab olgan rasmiy statistik ma‘lumotlar asosida soliq tushumlari dinamikasi o‘rganilib, ularning shakllanishiga ta‘sir etuvchi asosiy omillar aniqlanadi. Iqtisodiy o‘sish kabi makroiqtisodiy ko‘rsatkichlar bilan bir qatorda, soliq ma‘murchiligining samaradorligi, soliq siyosatidagi o‘zgarishlar, QQS qaytarish mexanizmlari hamda yashirin iqtisodiyot ta‘siri kabi institutsional va ma‘muriy omillarga alohida e‘tibor qaratilgan.

Tadqiqot natijalari shuni ko‘rsatadiki, an‘anaviy prognozlash yondashuvlari soliq tushumlari shakllanishining real mexanizmlarini to‘liq aks ettira olmaydi. Shu munosabat bilan maqolada iqtisodiy va institutsional omillarni birlashtiruvchi soddalashtirilgan integrallashgan model taklif etiladi. Ushbu yondashuv soliq tushumlarini prognozlash aniqligini oshiradi, byudjet rejalashtirish samaradorligini kuchaytiradi hamda fiskal barqarorlikni mustahkamlashga xizmat qiladi.

Kalit so‘zlar: qo‘shilgan qiymat solig‘i (QQS), aksiz solig‘i, soliq tushumlari, prognozlash, soliq ma‘murchiligi, raqamli iqtisodiyot, fiskal siyosat, byudjet daromadlari

Аннотация. В данной статье представлен комплексный анализ существующих подходов к прогнозированию поступлений налога на добавленную стоимость (НДС) и акцизного налога. На основе официальных статистических данных за период 2020–2026 гг. исследуется динамика налоговых поступлений и выявляются ключевые факторы, влияющие на их формирование. Наряду с макроэкономическими показателями, такими как экономический рост, особое внимание уделяется институциональным и административным факторам, включая эффективность налогового администрирования, изменения налоговой политики, механизмы возмещения НДС и влияние теневой экономики.

Результаты исследования показывают, что традиционные методы прогнозирования не в полной мере отражают реальные механизмы формирования налоговых поступлений. В этой связи в работе предлагается упрощенная интегрированная модель, объединяющая экономические и институциональные факторы. Данный подход позволяет повысить точность прогнозирования налоговых поступлений, улучшить эффективность бюджетного планирования и способствует укреплению фискальной устойчивости.

Ключевые слова: налог на добавленную стоимость (НДС), акцизный налог, налоговые поступления, прогнозирование, налоговое администрирование, цифровая экономика, фискальная политика, доходы бюджета

INTRODUCTION

In the context of globalization and the rapid development of the digital economy, ensuring the stable formation of public budget revenues has become a key priority for all countries. In this regard, indirect taxes, particularly Value Added Tax (VAT) and excise taxes, play a crucial role as major sources of government financial resources.

In recent years, the digitalization of the economy, the expansion of trade activities, and ongoing reforms aimed at improving tax administration have significantly transformed the mechanisms of tax revenue generation. These developments, in turn, require a fundamental reassessment of existing tax revenue forecasting methods.

In practice, tax revenue forecasts are often based on general macroeconomic indicators such as Gross Domestic Product (GDP) and consumption levels. However, such approaches are not sufficient to fully reflect the actual processes underlying tax revenue formation. In particular, factors such as changes in tax policy, the effectiveness of tax administration, the level of tax compliance, and financial flows, including VAT refunds and tax arrears, are not adequately incorporated into traditional models.

Moreover, the presence of the shadow economy further limits the accurate formation of the tax base. As a result, significant discrepancies may arise between forecasted and actual tax revenues.

From this perspective, under modern economic conditions, it is necessary to move beyond purely macroeconomic approaches and adopt a comprehensive framework that incorporates institutional and administrative factors alongside economic indicators. Such an approach allows for a more realistic and accurate assessment of tax revenue dynamics.

The primary objective of this study is to analyze existing approaches to forecasting VAT and excise tax revenues, identify their limitations, and develop practical recommendations for improving forecasting methodologies.

In the course of the study, statistical analysis, comparative analysis, and simplified economic modeling methods were employed to examine tax revenue dynamics and develop forecasting insights.

LITERATURE REVIEW

The issue of tax revenue forecasting has been extensively examined in economic literature and represents one of the key research areas within public finance. Existing studies in this field have primarily focused on identifying the relationship between tax revenues and macroeconomic indicators.

According to international research, the dynamics of tax revenues are closely associated with economic growth. In particular, empirical findings by organizations such as International Monetary Fund confirm the existence of a stable and positive relationship between tax revenues and Gross Domestic Product (GDP) (IMF, 2011). However, such approaches have certain limitations in fully capturing the complex mechanisms underlying modern tax systems.

A number of studies have proposed the use of elasticity coefficients in tax revenue forecasting. This approach enables the assessment of the responsiveness of tax revenues to changes in economic activity (United Nations, 2014). Nevertheless, its analytical scope remains limited due to the insufficient consideration of institutional and administrative factors, particularly those related to the effectiveness of tax administration.

In recent years, multi-factor regression models have gained increasing prominence. These models incorporate a wider range of explanatory variables, including inflation, consumption levels, tax rates, and other macroeconomic indicators. Although such approaches tend to achieve higher levels of statistical accuracy, their main limitation lies in the insufficient representation of certain critical determinants, most notably the effectiveness of tax administration (OECD, 2023).

International experience further demonstrates that the efficiency of tax administration plays a decisive role in enhancing tax revenues. According to studies conducted by the Organisation for Economic Co-operation and Development, improvements in tax administration can lead to significant increases in budget revenues even without raising statutory tax rates (OECD, 2024). This highlights the growing importance of institutional capacity and administrative performance in shaping fiscal outcomes.

Within the European Union, the concept of the "VAT gap" has become widely used as an analytical tool. This indicator reflects the difference between expected and actual VAT revenues and serves as an important measure for identifying inefficiencies and structural weaknesses within the tax system (European Commission, 2023).

In addition, recent research increasingly emphasizes the role of digital technologies in transforming tax administration. In particular, the implementation of electronic invoicing systems has been identified as an

effective mechanism for improving tax compliance and increasing revenue collection (World Bank, 2016).

However, a critical review of the existing literature reveals that most models tend to analyze the determinants of tax revenue formation in isolation. The interrelationships between economic, institutional, and administrative factors are not sufficiently integrated, which limits the explanatory power of these approaches.

Therefore, achieving more accurate tax revenue forecasting requires the adoption of a comprehensive framework that integrates economic, institutional, and administrative determinants within a unified analytical model.

In line with this perspective, the present study proposes a model aimed at improving the forecasting of VAT and excise tax revenues based on an integrated approach that combines these key factors.

RESEARCH METHODOLOGY

This study adopts an integrated methodological framework to examine the forecasting of Value Added Tax (VAT) and excise tax revenues. The analysis is based on official statistical data covering the period from 2020 to 2026, enabling the identification of both temporal dynamics and structural patterns in tax revenue formation.

The research employs a combination of complementary analytical methods to ensure methodological robustness:

Statistical analysis is used to evaluate year-by-year dynamics of tax revenues and to identify underlying trends in their development;

Comparative analysis is applied to examine differences between VAT and excise tax revenues, particularly in terms of their stability and responsiveness to economic conditions;

Trend analysis is conducted to assess the overall direction and sustainability of revenue growth over time;

A simplified analytical model is utilized to estimate forecast values based on key determinants, including the tax base, growth rate, and effective tax rate.

Within the scope of the study, the principal factors influencing tax revenue formation are identified as economic growth, tax policy, the effectiveness of tax administration, and financial flows, particularly VAT refund mechanisms.

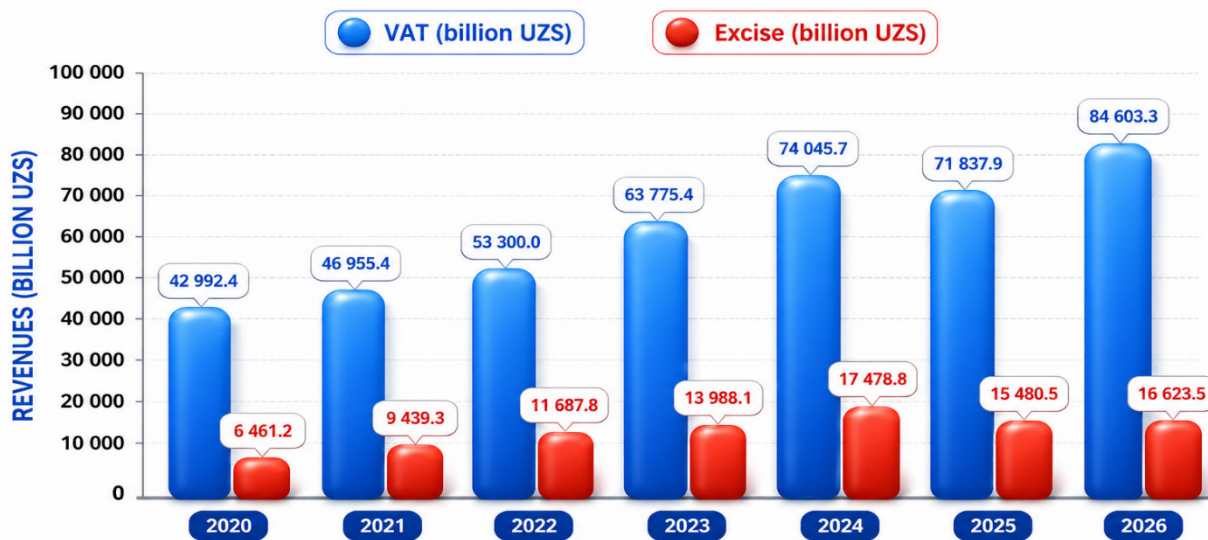
By incorporating both economic and institutional determinants, the proposed methodological approach provides a more comprehensive and realistic framework for tax revenue forecasting. As a result, it enhances the accuracy of forecasts compared to conventional methods that rely predominantly on aggregated macroeconomic indicators.

ANALYSIS AND RESULTS

Within the framework of this study, the dynamics of Value Added Tax (VAT) and excise tax revenues were analyzed over the period 2020–2026. The empirical analysis is based on official statistical data, ensuring the reliability and consistency of the findings.

The examination of revenue trends over this period allows for the identification of key patterns in the development of indirect tax revenues, as well as the assessment of their responsiveness to both economic and institutional factors. In particular, the analysis focuses on changes in revenue levels, growth trajectories, and the relative stability of VAT and excise tax revenues (Figure 1).

Dynamics of VAT and Excise Tax Revenue Forecasts (2020–2026)



Note: The figures represent forecasted tax revenues, not actual collections.

Source: Author's calculations.

Figure 1. Dynamics of VAT and Excise Tax Revenue Forecasts (2020–2026)¹

First, during the period 2020–2024, Value Added Tax (VAT) revenues exhibit a stable upward trend. This growth can be attributed to increasing economic activity as well as improvements in tax administration. Over this period, VAT revenues increased by approximately 1.7 times, indicating a significant expansion of the tax base and enhanced compliance.

Second, in 2025, a short-term decline in VAT revenues is observed. This fluctuation may be associated with adjustments in tax policy, cyclical economic factors, or the expansion of certain tax incentives.

Third, in 2026, a sharp increase is recorded, with VAT revenues exceeding 84 trillion UZS. This growth reflects the combined effects of tax base expansion, accelerated digitalization processes, and strengthened tax control mechanisms.

In contrast, the dynamics of excise tax revenues display a more complex pattern. Although an overall upward trend is observed during 2020–2024, the growth is uneven, with noticeable fluctuations in certain years.

A significant decline in excise revenues is observed in 2025, which may be explained by changes in consumption patterns or adjustments in excise tax policy. In 2026, however, a recovery trend emerges.

The analysis demonstrates that:

VAT revenues follow a relatively stable and predictable growth trajectory;

excise tax revenues are more volatile and sensitive to external factors;

tax revenues are influenced not only by economic growth but also by the effectiveness of tax administration and fiscal policy measures.

These findings indicate that relying solely on traditional forecasting approaches is insufficient for accurately capturing the dynamics of tax revenue formation.

Furthermore, the analysis confirms that existing approaches to forecasting VAT and excise tax revenues are not sufficiently effective, as they do not fully incorporate all relevant determinants influencing tax revenues.

In response to the identified limitations, this study proposes a simplified integrated forecasting model:

$$T = B \cdot r \cdot s$$

where:

— T — projected tax revenue;

— B — tax base;

— r — growth coefficient;

— s — effective tax rate.

This model captures the fundamental factors influencing tax revenue formation within a unified analytical framework.

¹ Author's calculations based on official statistical data and the proposed forecasting model

Model Advantages. The proposed approach offers several key advantages:

First, the model is simple and practically applicable. It does not require complex econometric calculations and allows for rapid forecasting.

Second, the tax base is considered the primary determinant, enabling the model to reflect real economic changes more accurately.

Third, the inclusion of a growth coefficient allows the model to capture economic dynamics, making it particularly relevant for forecasting growth trends.

Fourth, the effective tax rate incorporates both tax policy and administrative efficiency, distinguishing this model from traditional approaches.

Directions for Model Enhancement. To further improve the proposed model, it is advisable to incorporate additional determinants that can enhance its analytical precision. In particular, the following factors should be considered:

- the inclusion of VAT refund volumes as a separate indicator, given their direct impact on net revenue outcomes;

- accounting for the level of tax arrears, which affects the timing and completeness of revenue collection;

- improving the accuracy of the tax base by adjusting for the size of the shadow economy;

- evaluating the effectiveness of digital tax administration systems as a proxy for compliance and enforcement efficiency.

The integration of these variables would allow the model to better capture both economic and institutional dimensions of tax revenue formation.

Practical Applications of the Model. The proposed model can be applied in several key areas of fiscal management:

- forecasting government budget revenues;

- supporting tax policy design and planning;

- conducting analytical assessments of tax revenue performance;

- developing short-term revenue projections.

Overall, the model serves as an effective complementary tool to traditional forecasting approaches. By integrating economic and administrative factors, it contributes to improving the accuracy and reliability of tax revenue forecasts.

CONCLUSION AND RECOMMENDATIONS

This study provides a comprehensive analysis of existing approaches to forecasting Value Added Tax (VAT) and excise tax revenues. The findings demonstrate that conventional forecasting methods primarily rely on macroeconomic indicators and do not fully capture the broad range of factors influencing tax revenue formation.

The empirical analysis for the period 2020–2026 reveals that VAT revenues exhibit a relatively stable growth trajectory, while excise tax revenues display greater variability. This confirms that tax revenue dynamics are shaped not only by economic growth but also by tax policy, administrative efficiency, and other institutional factors.

Based on these findings, the study proposes a simplified integrated model that combines economic and administrative determinants. The results indicate that this approach can significantly enhance forecasting accuracy and support more stable and effective budget revenue planning.

Based on the results of the study, the following policy recommendations are proposed:

First, tax revenue forecasting frameworks should extend beyond macroeconomic indicators to include the effectiveness of tax administration and the dynamics of financial flows.

Second, VAT refund processes should be incorporated into forecasting models in order to provide a more accurate estimation of net tax revenues.

Third, further digitalization of tax administration—particularly through the implementation of electronic invoicing systems and real-time monitoring tools—should be prioritized to improve compliance and enhance revenue collection.

Fourth, reducing the size of the shadow economy is important for expanding the tax base and strengthening budget revenues.

Fifth, a differentiated approach to forecasting should be adopted, whereby simplified models are used for short-term projections, while more comprehensive frameworks are applied for medium- and long-term forecasting.

The findings of this study highlight the importance of adopting an integrated approach to tax revenue

forecasting in the context of a modern digital economy. The proposed model represents a practical and analytically grounded tool that can contribute to improving tax system performance and supporting the sustainable management of public finances.

REFERENCES

1. Organisation for Economic Co-operation and Development (2024). *Consumption Tax Trends 2024: VAT/GST and Excise, Core Design Features and Trends*. Paris: OECD Publishing.
2. Organisation for Economic Co-operation and Development (2023). *Tax Administration 2023: Comparative Information on OECD and Other Advanced and Emerging Economies*. Paris: OECD Publishing.
3. European Commission (2023). *VAT Gap in the EU: Report 2023*. Luxembourg: Publications Office of the European Union.
4. European Commission (2019). *VAT Refunds and Reimbursement: A Quantitative and Qualitative Study*. Brussels: European Commission.
5. World Bank (2016). *Can Electronic Tax Invoicing Improve Tax Compliance? Evidence from the Republic of Korea*. Washington, DC: World Bank.
6. United Nations (2014). *Tax Revenue Forecasting: A Guide for Practitioners*. New York: United Nations.
7. International Monetary Fund (2011). *Revenue Mobilization in Developing Countries*. Washington, DC: IMF.
8. Sergey Sinelnikov-Murylev (2018). *Tax Revenue Forecasting and Budget Policy*. Moscow: Gaidar Institute Press.

Proofreader: Zokir ALIBEKOV
Layout and Designer: Oloviddin Sobir ugli

2026. № 4

© When materials are reproduced, the INNOVATION SCIENCE AND TECHNOLOGY journal must be cited as the source. Authors are responsible for the accuracy of the information in materials and advertisements published in the journal. Editorial opinions may not always align with those of the authors. Submitted materials will not be returned to the editorial office.

To publish articles in this journal, you may submit articles, advertisements, stories, and other creative materials through the following links. Materials and advertisements are published on a paid basis.

You may subscribe to the journal at any time using the following details. Once subscribed, please send a screenshot or photo of your payment confirmation to our Telegram page @iqtisodiyot_77. Based on this, we will send the latest issue of the journal to your address each month.

“The journal “INNOVATION SCIENCE AND TECHNOLOGY” has been registered by the Agency for Information and Mass Communications under the Administration of the President of the Republic of Uzbekistan from 09.10.2024 under the registration number №390637. License number: C-5669633. PNFL: 30407832680027

Our address: Tashkent city, Yunusobod district, 19th block,
House 17.



Acceptance of articles

Published every
monthly



Directions

Social, economic, political,
technological, scientific



Scopus || Scientific electronic journal specializing in Scopus

CERTIFICATE NUMBER: №390637

ORDER NUMBER ACCORDING TO THE LICENSE REGISTER: C-5669633

CONTACT:



Contact us
+998 50 737 87 88



Telegram channel
t.me/scopus_IST2100



Journal official website
<https://ist-journal.uz/index.php/IST>