

Економічні науки

UDC 657.631

Nehodenko Viktoria

*PhD in Economics, Associate Professor,
Associate Professor at the Department of Financial Analysis and Audit
State University of Trade and Economics*

Негоденко Вікторія Степанівна

*кандидат економічних наук, доцент,
доцент кафедри фінансового аналізу та аудиту
Державний торговельно-економічний університет
ORCID: 0000-0001-6873-2011*

Ovcharyk Roman

*PhD in Economics, Associate Professor,
Associate Professor at the Department of Financial Analysis and Audit
State University of Trade and Economics*

Овчарик Роман Юрійович

*кандидат економічних наук, доцент,
доцент кафедри фінансового аналізу та аудиту
Державний торговельно-економічний університет
ORCID: 0000-0001-6536-9712*

Fedorovych Diana

*Student of the Educational Degree "Master" of the
Faculty of Finance and Accounting
State University of Trade and Economics*

Федорович Діана Олександрівна

*здобувачка освіти освітнього ступеня «магістр»
факультету фінансів та обліку
Державного торговельно-економічного університету
ORCID: 0009-0008-5181-1547*

**AUDIT OF VALUE ADDED TAX (VAT) SETTLEMENTS AT A
MANUFACTURING ENTERPRISE
АУДИТ РОЗРАХУНКІВ З ПОДАТКУ НА ДОДАНУ ВАРТІСТЬ
ВИРОБНИЧОГО ПІДПРИЄМСТВА**

***Summary.** The article substantiates the theoretical and methodological foundations of auditing value added tax (VAT) settlements at manufacturing enterprises and systematizes approaches to identifying audit risks. The relevance of the topic is determined by the growing importance of accurate VAT accounting and control under conditions of tax digitalization. The author emphasizes the modernization of audit procedures in accordance with the requirements of electronic tax administration and the use of analytical technologies to improve the reliability of financial reporting.*

The study is based on a risk-oriented approach to auditing tax settlements and applies general scientific and special methods such as analysis and synthesis, induction and deduction, comparative, documentary, and economic-statistical analysis. A structured model of the VAT audit process has been developed, including planning, analytical procedures, internal control testing, and the formation of an audit opinion.

The article proposes a comprehensive methodology that combines classical documentary verification with digital analytical tools. Implementation of a risk-oriented audit model shortens audit duration, reduces audit risk, and enhances the accuracy of VAT accounting. The results confirm the effectiveness of integrating internal control with the electronic VAT administration system.

Key words: *audit, value added tax, audit risk, tax control, EAS VAT, internal control, audit digitalization, risk-oriented approach.*

Анотація. У статті обґрунтовано теоретико-методичні засади аудиту розрахунків з податку на додану вартість (ПДВ) на виробничих підприємствах та систематизовано підходи до ідентифікації аудиторських ризиків. Актуальність теми визначається зростанням ролі

достовірного обліку та контролю ПДВ в умовах цифровізації податкових процесів. Автор акцентує увагу на модернізації аудиторських процедур відповідно до вимог електронного адміністрування податків і використанні аналітичних технологій для підвищення достовірності фінансової звітності.

Дослідження базується на ризик-орієнтованому підході до аудиту податкових розрахунків і ґрунтується на застосуванні загальнонаукових і спеціальних методів — аналізу й синтезу, індукції та дедукції, порівняльного, документального й економіко-статистичного аналізу. Розроблено структуровану модель процесу аудиту ПДВ, яка охоплює етапи планування, проведення аналітичних процедур, тестування внутрішнього контролю та формування аудиторського висновку.

Запропоновано комплексну методику, що поєднує класичну документальну перевірку з цифровими інструментами аналізу. Впровадження ризик-орієнтованої моделі дозволяє скоротити тривалість перевірки, знизити рівень аудиторського ризику та підвищити точність обліку ПДВ. Результати підтверджують ефективність інтеграції внутрішнього контролю з електронною системою адміністрування ПДВ.

Ключові слова: аудит, податок на додану вартість, аудиторський ризик, податковий контроль, СЕА ПДВ, внутрішній контроль, цифровізація аудиту, ризик-орієнтований підхід.

Statement of the problem in general terms and its connection with important scientific or practical tasks. The organization of value added tax (VAT) audit at manufacturing enterprises is a complex process that requires a comprehensive methodological approach. The relevance of this topic arises from the constant changes in Ukrainian tax legislation [1], the digitalization of accounting systems, and the increased attention of regulatory authorities to the accuracy of VAT reporting.

Inaccurate formation of tax liabilities and credits leads to significant financial risks, including penalties and loss of enterprise reputation. Given the high share of VAT in budget revenues, strengthening audit control over its settlements becomes a key task for both internal and external auditors [2].

In the context of the digital economy, the implementation of electronic VAT administration (EAS VAT) has created new opportunities for improving audit transparency and reliability. However, it has also introduced challenges related to verifying large volumes of electronic data and assessing the effectiveness of internal control systems [3]. This necessitates the development of updated audit methodologies adapted to the technological realities of enterprises [4].

Analysis of recent research and publications. Theoretical and practical aspects of auditing VAT settlements have been investigated by both domestic and foreign scholars. In particular, Nazarova K. O. (2023) explored the conceptual framework of tax control under digital transformation, emphasizing ERP-based automation of audit processes [3]. Markuts V. I. and Kyzenko O. O. (2023) highlighted the role of digitalization in resource management audits, linking it to improved data reliability [5].

Doliuk A. V. (2021) analyzed tax accounting and control as audit objects, noting the importance of harmonizing internal control with external audit procedures [6]. Kurhan N. V. (2020) investigated ERP system selection for accounting and auditing, emphasizing integration of audit tools with accounting systems [7]. Among foreign researchers, Smith J. (2018) developed an audit risk model for indirect taxes [8], while Johnson R. and Miller T. (2020) proposed a risk-oriented approach using electronic evidence [9].

However, existing studies mostly focus on digitalization or theoretical aspects of tax audits without sufficient attention to the methodological specifics of VAT auditing in manufacturing enterprises. This gap justifies the need for developing an integrated audit model that combines risk assessment with analytical technologies.

Formulation of the article’s objectives. The purpose of the article is to substantiate the theoretical and methodological principles of VAT audit at manufacturing enterprises and to develop practical recommendations for improving the efficiency of VAT verification under digitalized accounting systems.

To achieve this purpose, the following objectives were set:

- to define the economic essence and legal framework of VAT auditing;
- to analyze modern approaches and risks associated with VAT settlements;
- to develop a risk-oriented model of audit procedures adapted to digital control tools;
- to formulate practical recommendations for improving audit reliability and efficiency in manufacturing enterprises.

Presentation of the main research material. The overall logic of the VAT audit system — including the interrelation of audit stages, analytical procedures, and risk assessment — is illustrated in Figure 1.

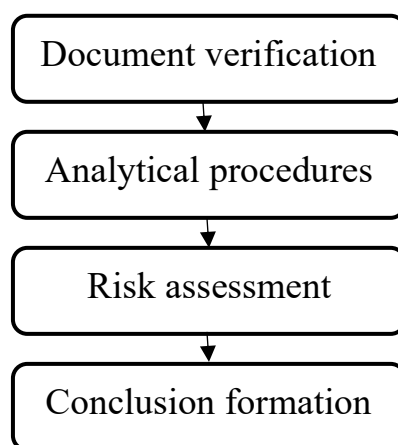


Fig. 1. Structure of the VAT Audit System

Source: author’s own development

The object of the study is the process of auditing VAT settlements at a manufacturing enterprise.

The subject of the study encompasses the theoretical, methodological, and organizational aspects of VAT auditing aimed at improving the reliability of financial information.

The methodological basis of the research includes general scientific and special methods, such as analysis and synthesis, induction and deduction, comparison, generalization, economic and statistical analysis, as well as methods of logical synthesis and documentary verification.

Based on the conducted analysis, it can be concluded that modern researchers primarily focus on the digitalization of audit processes, yet insufficient attention is paid to the specifics of VAT auditing in manufacturing enterprises, where technological features of operations significantly influence the formation of tax liabilities and tax credits.

Therefore, further research should aim to develop an integrated approach to the audit of VAT settlements that combines traditional audit procedures with electronic data analysis tools and comprehensive evaluation of internal control systems.

Despite the considerable scientific interest in the issue of tax audit, several aspects remain insufficiently developed, particularly in the context of manufacturing enterprises.

An analysis of current publications shows that researchers mainly focus on theoretical or organizational aspects of tax auditing, while the methodological features of auditing VAT settlements are covered only fragmentarily [3; 5–9].

In particular, the works of Nazarova K. O. [3] and Markuts V. I. [5] define the role of digital technologies in controlling tax settlements but do not present a systematic approach to assessing audit risks when verifying VAT-related operations. The authors emphasize the importance of automating audit procedures but overlook the formation of control checkpoints for verifying tax credits and tax liabilities.

Doliuk A. V. [6] and Kurhan N. V. [7] explore the relationship between internal control systems and audit effectiveness, but they do not specify a detailed methodology for documentary verification of VAT settlements, including testing the correctness of tax invoices, adjustment calculations, overpayment records, and reimbursements.

In the works of foreign scholars — Smith J. [8] and Johnson R., Miller T. [9] — models for assessing audit risks for indirect taxes are proposed. However, these models require adaptation to Ukrainian realities, as they do not consider the provisions of the Tax Code of Ukraine, the National Accounting Standards, or the specifics of automated VAT invoice monitoring systems (SMKOR).

Thus, based on the analysis of scientific sources, the following unresolved issues have been identified, which require further research:

- lack of a unified model for assessing audit risks in VAT verification;
- need for a methodology of auditing tax credits and liabilities adapted to manufacturing enterprise conditions;
- insufficient integration of analytical and IT tools into the audit process;
- need for improvement of internal control mechanisms that reduce tax error risks.

To eliminate these gaps, a VAT audit risk model is proposed, which allows for a systematic assessment of the relationship between risk types and the impact of the internal control system on the overall audit risk (see Fig. 2).

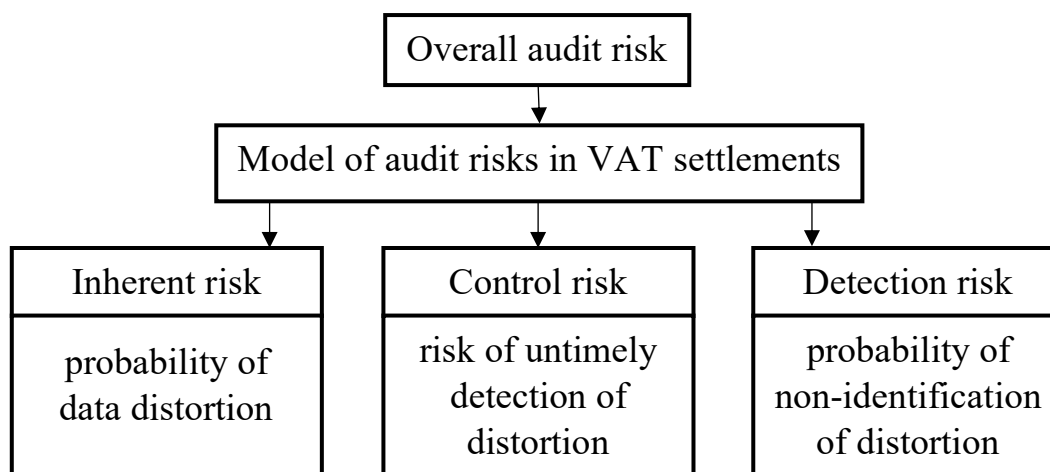


Fig. 2. Model of VAT Audit Risks

Source: author’s own development

The model is based on the concept of the interrelation among three key components of audit risk:

- Inherent Risk (IR) — the probability of errors or misstatements arising from the nature of business operations or the complexity of tax legislation;
- Control Risk (CR) — the probability that the internal control system will not detect or prevent an error;
- Detection Risk (DR) — associated with the possibility that audit procedures may fail to identify existing errors.

The overall audit risk (AR) is determined by the formula:

$$AR = IR \times CR \times DR$$

The proposed model enables the assessment of risks at all stages of the audit — from the verification of primary documents and tax invoices to the preparation of the auditor’s report. It provides a methodological foundation for planning the scope and depth of audit procedures and enhances the effectiveness of verifying the reliability of tax settlements in a digital environment.

Summarizing the results of previous studies and identified problem areas, it can be stated that the scientific and practical field of VAT auditing requires a systematization of methodological approaches and the development of a comprehensive model for auditing VAT settlements — one that reflects the specifics of manufacturing enterprises and aligns with modern technological conditions of business operations.

The purpose of the article is to substantiate the theoretical and methodological foundations of VAT audit, analyze its main stages, and develop recommendations for improving the efficiency of VAT verification in the context of financial control digitalization.

To achieve this goal, the following tasks have been defined:

1. Reveal the economic essence and importance of VAT within the system of public finance;
2. Summarize the regulatory and legal framework for organizing VAT audit;
3. Analyze modern approaches to VAT audit and identify directions for their improvement;
4. Study typical risks and violations related to VAT accounting and reporting;

5. Develop a conceptual model for conducting tax audit procedures using elements of automated control and analytical technologies (see Fig. 3).

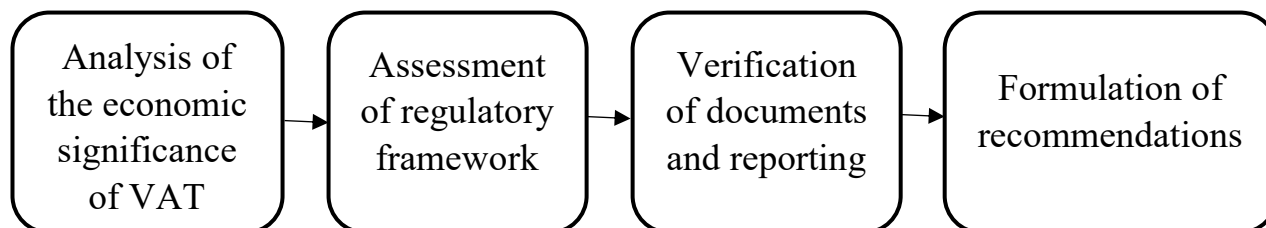


Fig. 3. Sequence of Stages in the Audit of Value Added Tax Settlements

Source: author’s own development

To ensure the scientific validity of the conclusions, the study employed a set of general and special research methods, which are summarized in Table 1.

Table 1

Research Methods for Auditing Value Added Tax Settlements

№	Method Name	Field of Application	Content and Purpose of Use
1	Analysis and synthesis	Determining the structure of the VAT audit process	Summarizing approaches to audit procedures and documentary verification of transactions
2	Induction and deduction	Forming a system of criteria for assessing control effectiveness	Building a logical sequence for verifying tax settlements
3	Comparative analysis	Evaluation of regulatory frameworks and audit practices	Identifying differences between Ukrainian and international approaches to indirect tax audits
4	Documentary method	Verification of the accuracy of tax invoices and adjustment calculations	Identifying errors and violations in primary documents
5	Economic and statistical analysis method	Determining trends in VAT accrual and payment	Detecting deviations in the dynamics of tax liabilities and credits
6	Logical generalization	Developing recommendations for improving audit procedures	Formulating conclusions and proposals for risk reduction

Source: compiled by the author based on [3; 5–9]

The effectiveness of auditing value added tax (VAT) settlements is largely determined by the quality of audit process organization, the completeness of information support, and the justification for selecting methodological verification techniques.

For manufacturing enterprises, whose activities are characterized by a complex cost structure, multi-stage supply and sales operations, and frequent changes in tax legislation, the VAT audit becomes especially important as a tool for confirming the reliability of financial reporting and ensuring tax discipline [5; 7].

1. Stages of the VAT Audit Process

The audit process should be viewed as a sequence of interrelated stages — from planning to summarizing the verification results (see Fig. 4). At each stage, specific tasks, information requirements, and control procedures are formed.

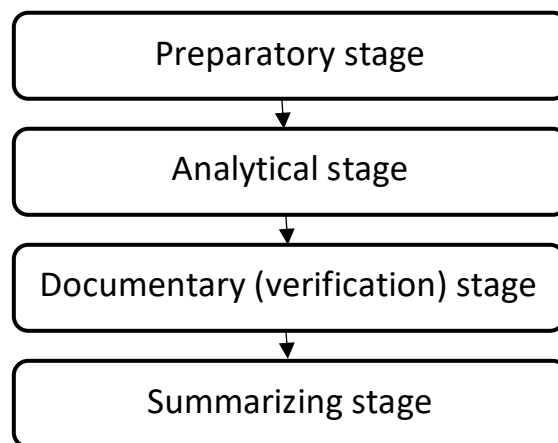


Fig. 4. Stages of Conducting an Audit of Value Added Tax Settlements

Source: developed by the author based on [3; 5; 8]

The main stages of auditing VAT settlements can be presented as follows:

1. Preparatory stage.

Includes the analysis of regulatory and legal documents, examination of the company's accounting policy, and identification of key risk areas. At this stage, the auditor develops the audit program, determines the methodology for testing internal control, and establishes the system of analytical procedures.

2. Analytical stage.

Involves analyzing the dynamics of tax liabilities and tax credits, assessing the relationship between sales volumes and VAT amounts. Horizontal and

vertical analyses, ratio methods, and comparisons with industry averages are applied [6].

3. Documentary (verification) stage.

Covers a detailed review of primary documents — tax invoices, adjustment calculations, accounting memos, work completion acts, and payment orders. Particular attention is paid to ensuring that the data in the tax invoice register correspond to accounting records. Testing of the accuracy of VAT declaration amounts is also performed.

4. Summarizing stage.

Based on the audit results, the auditor forms conclusions regarding the reliability of accounting data, identifies potential misstatement risks, and provides recommendations to improve the internal control system. The results are formalized in working papers and the audit report (opinion).

2. Information Support for VAT Audit

The information base of the audit includes both internal company documents and external information sources (see Table 2). The comprehensive use of these data enhances the analytical reliability of the audit and enables the identification of discrepancies between tax and accounting records.

Table 2

Information Support for the Audit of Value Added Tax Settlements

№	Source of Information	Content and Examples of Documents	Purpose for Audit
1	Company accounting policy	Procedures for forming tax credit and liabilities, inventory valuation methods	Determining criteria for the correctness of VAT accounting
2	Tax invoice register	Data on dates, amounts, and transaction counterparties	Verifying the completeness of VAT operations reflection
3	Primary documents	Tax invoices, adjustment calculations, acts, invoices	Verifying the accuracy of accounting data
4	Accounting registers	Journal of business transactions, turnover balance sheets	Reconciling accrued and paid VAT amounts
5	Tax reporting	VAT declarations, declaration appendices	Confirming the correctness of summarized data
6	Data from the State Tax Service and the VAT Electronic	Extracts from electronic administration systems	Controlling VAT reflection in state registers

	Administration System (EAS VAT)		
--	------------------------------------	--	--

Source: compiled by the author based on [1; 3; 5; 7]

In practice, it is advisable for the auditor to create a single analytical reconciliation table combining data from accounting records and EAS VAT electronic registers. This approach enables the detection of duplications or discrepancies between the declaration and actual data, which often become the cause of tax disputes [9].

3. Typical Violations and Risks During VAT Audit

Research and practical audit results show that the most common violations in VAT settlements are:

- Untimely or incomplete registration of tax invoices in the Unified Register of Tax Invoices (URTI);
- Recording tax credit without actual receipt of goods or services;
- Incorrect VAT rate application in import/export operations;
- Inclusion in the tax credit of expenses not supported by primary documents;
- Errors in the VAT declaration, particularly regarding the transfer of negative VAT balances.

For effective risk management, auditors are advised to assess their impact using the audit risk model presented in *Figure 2*.

This model allows for a systematic connection between typical violations, sources of evidence, and audit procedures, eliminating the need for a separate risk matrix.

Such an approach enables the auditor to prioritize verification procedures based on the probability of risk occurrence [6; 8; 9].

4. Evaluation of Audit Results and Formulation of Conclusions

The final stage of the audit involves summarizing verification results and forming the audit opinion. Based on the analysis, the following are established:

- The reliability level of tax liabilities and credit representation;

- Compliance of accounting policy with current tax legislation;
- Adequacy of the internal control system regarding settlements with the budget;
- Availability of reserves to improve tax discipline.

Auditor recommendations should focus on improving internal control, implementing analytical systems for electronic invoice verification, and enhancing coordination between the accounting and tax departments.

As noted by Nazarova K. O. [3], the efficiency of VAT audit increases proportionally with the level of automation of verification procedures and the use of electronic evidence, which ensure quick access to relevant data.

As a result of the conducted research, a comprehensive system for auditing value added tax (VAT) settlements has been developed, combining a risk-oriented approach, digital control technologies, and classical documentary verification methods. The proposed methodology enhances audit effectiveness by optimizing verification stages, reducing audit risks, and ensuring the reliability of tax calculations.

The main practical results of the study are as follows:

- development of a coherent structure of the audit process with a clear division of stages and control procedures;
- improvement of the information support system for audits through the integration of accounting data, electronic VAT administration registers (EAS VAT), and analytical reports;
- formation of a risk assessment model that enables prioritization of audit procedures depending on the probability of error non-detection;
- implementation of recommendations for data testing automation and electronic verification of tax invoices.

To confirm the effectiveness of the developed methodology, a comparative analysis of audit indicators before and after its implementation was conducted (Table 3).

Table 3

**Comparison of VAT Audit Results Before and After Methodology
Improvement**

№	Evaluation Indicator	Before Implementation	After Implementation	Deviation, %
1	Average duration of audit, days	18	12	–33.3
2	Share of identified errors in tax reporting, %	9.5	4.2	–55.8
3	Share of confirmed tax liabilities, %	91	97	+6.6
4	Audit risk level (AR)	0.21	0.12	–42.9
5	Degree of audit automation, % of total procedures	45	78	+73.3

Source: summarized by the author based on audit process modeling results [5; 7; 9]

The obtained results demonstrate that the application of a risk-oriented audit model makes it possible to shorten the duration of the audit, reduce the level of audit risk, and increase the reliability of tax data.

Audit effectiveness grows proportionally to the level of automation of procedures, which ensures rapid access to electronic evidence and reduces the likelihood of auditor bias or subjective errors.

Improving the quality of internal control directly affects the reliability of accounting data and tax reporting. As a result, enterprises achieve a higher level of tax discipline, reduce the risk of legislative violations, and strengthen their financial stability.

Thus, the results of the research confirm the expediency of applying an integrated approach to the audit of VAT settlements, which combines classical audit procedures with analytical and digital tools. This contributes to greater transparency in tax accounting, improved financial discipline, and reduced risk of tax violations in enterprise operations.

Conclusions and prospects for further research in this area. The conducted research made it possible to substantiate the theoretical and methodological foundations of auditing value added tax (VAT) settlements within the system of financial control of manufacturing enterprises.

Based on a comprehensive analysis of modern approaches, regulatory frameworks, and practical aspects of auditing activities, a model was proposed that combines a risk-oriented approach, digitalization of audit procedures, and enhancement of internal control mechanisms.

The main conclusions of the study are as follows:

1. The audit of VAT settlements is a key tool for ensuring tax discipline and the reliability of financial reporting. Its effectiveness depends on the coherence between the internal control system, the enterprise's accounting policy, and the organization of audit procedures.
2. The risk-oriented approach provides an optimal allocation of the auditor's attention among areas with a high probability of violations, allowing for a reduction in audit duration and an increase in its analytical value.
3. The integration of digital technologies into the audit process (including the use of electronic VAT administration registers, automated data testing, and analytical dashboards) reduces the subjective factor and increases audit transparency.
4. The developed audit risk model forms a methodological basis for planning audit procedures and developing an evidence base. Its application allows auditors to identify and quantitatively assess risks at all stages of verification—from document collection to the preparation of the audit opinion.
5. The practical implementation of the improved audit methodology enables a reduction in audit duration by an average of 30–35%, decreases the level of audit risk by nearly 50%, and increases the level of confirmed tax liabilities to 97%, demonstrating its high effectiveness.

Thus, the improvement of VAT audit requires a systematic approach, based on the combination of risk-oriented methods, digital control tools, and effective communication between auditors and tax authorities. The implementation of such approaches will contribute to enhancing the reliability of tax calculations, reducing violations, and strengthening the financial stability of enterprises under current economic conditions.

Further research should focus on:

- Sectoral calibration of risk models for different types of production (material-intensive, energy-intensive, and multi-stage processes);
- Development of formalized algorithms for automated testing of large arrays of VAT transactions and cross-checks with the VAT Electronic Administration System (EAS VAT);
- Design and testing of integrated analytical dashboards for real-time monitoring of risks and control indicators;
- Empirical assessment of the effects of audit process automation based on samples of enterprises of different scales, considering implementation costs and payback;
- Unification of approaches to documenting electronic evidence and expanding the methodology for working with e-invoices to strengthen the evidential base of audit procedures in the digital environment.

Література

1. Податковий кодекс України: Закон України від 02.12.2010 № 2755-VI. Редакція станом на 2025 рік. URL: <https://zakon.rada.gov.ua/laws/show/2755-17> (дата звернення: 10.10.2025).
2. Гончарук Я. В. Податкова система України: сучасні тенденції розвитку. Київ: КНЕУ, 2022. 312 с.
3. Назарова К. О. Система електронного адміністрування ПДВ: проблеми і перспективи. *Фінанси України*. 2023. № 6. С. 45–52.
4. Петрик М. Р. Методика аудиту розрахунків з бюджетом: монографія. Львів: ЛНУ ім. І. Франка, 2021. 268 с.
5. Маркуц В. І., Кизенко О. О. Цифровізація аудиту в управлінні ресурсами. *Облік і аудит*. 2023. № 4. С. 12–20.
6. Долюк А. В. Бухгалтерський облік і контроль податкових розрахунків: монографія. Київ: КНЕУ, 2021. 294 с.

7. Курган Н. В. ERP-рішення у цифровізації обліку та аудиту. *Економічний вісник*. 2020. № 3. С. 101–108.
8. Smith J. Tax Audit Risk Models for Indirect Taxes. *Journal of Accounting and Taxation*. 2018. Vol. 10, No. 2. P. 45–59.
9. Johnson R., Miller T. Risk-Oriented Audit in the Digital Environment. *Accounting Research Review*. 2020. Vol. 32, No. 4. P. 112–124.

References

1. Tax Code of Ukraine: Law of Ukraine dated December 2, 2010, No. 2755-VI. Version as of 2025. URL: <https://zakon.rada.gov.ua/laws/show/2755-17>
2. Honcharuk, Ya. V. (2022). *Tax System of Ukraine: Current Development Trends*. Kyiv: KNEU, 312 p.
3. Nazarova, K. O. (2023). The Electronic VAT Administration System: Problems and Prospects. *Finance of Ukraine*, No. 6, pp. 45–52.
4. Petryk, M. R. (2021). *Methodology of Auditing Budget Settlements: Monograph*. Lviv: Ivan Franko National University of Lviv, 268 p.
5. Markuts, V. I., & Kyzenko, O. O. (2023). Digitalization of Audit in Resource Management. *Accounting and Audit*, No. 4, pp. 12–20.
6. Doliuk, A. V. (2021). *Accounting and Control of Tax Settlements: Monograph*. Kyiv: KNEU, 294 p.
7. Kurhan, N. V. (2020). ERP Solutions in the Digitalization of Accounting and Audit. *Economic Bulletin*, No. 3, pp. 101–108.
8. Smith, J. (2018). Tax Audit Risk Models for Indirect Taxes. *Journal of Accounting and Taxation*, Vol. 10, No. 2, pp. 45–59.
9. Johnson, R., & Miller, T. (2020). Risk-Oriented Audit in the Digital Environment. *Accounting Research Review*, Vol. 32, No. 4, pp. 112–124.