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FORENSIC AUDIT OF PUBLIC DEBT IN THE FINANCIAL CONTROL SYSTEM OF UKRAINE

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Abstract

Forensic audit of public debt is an important tool for ensuring financial transparency and effective public finance management. In the context of Ukraine, given the difficult economic situation and high level of public debt, the use of forensic audit is of particular importance. The study aims to conduct a forensic audit of Ukraine's public debt by assessing the consistency of financial statements of key government agencies, identifying discrepancies, and evaluating their potential impact on financial stability. The methodology includes a cross-analysis of financial data from the Ministry of Finance of Ukraine, the National Bank of Ukraine, the Accounting Chamber of Ukraine, and the State Treasury Service of Ukraine. The study also includes an assessment of compliance with international public sector auditing standards (ISSAI, IPSAS, and OECD principles). The results show discrepancies in key public debt indicators between the different reporting institutions, with variations in total debt, debt service costs, and classification methodologies. Key findings indicate inconsistencies in the timing of data publication, differences in accounting methodology, and gaps in debt transparency. These discrepancies pose risks to the effectiveness of financial policy, external creditworthiness, and overall macroeconomic stability. The study concludes that strengthening coordination between government agencies and integrating forensic audit mechanisms into the system of regular financial oversight is necessary to increase the transparency of public debt and reduce financial risks. The proposed recommendations will help to improve fiscal management and ensure the reliability of financial reporting in Ukraine's public debt management system.

Keywords forensic audit, public debt, financial control, debt management, Ukraine, financial security, risk assessment, transparency, fraud detection

JEL Classification M42, H63, H83

INTRODUCTION

In Ukraine, which has been in a full-scale war for almost three years, the financial system has undergone significant transformations, in particular, due to a significant increase in public debt. By the end of 2024, it reached a historic high of USD 166.06 billion (Ministry of Finance of Ukraine, n.d.), which poses difficult challenges for the state in terms of effective debt management and minimizing debt risks.

Military realities have significantly complicated the functioning of the state financial control system. The emergency regime of financial management, the need for quick decision-making, and resource mobilization have led to a situation where traditional audit and monitoring mechanisms have proved to be insufficiently effective. At the same time, the increased attention of international partners, creditors, and society to the targeted use of public funds, including loans, has raised the need for new approaches to financial control. This is especially important to ensure confidence in Ukraine's debt policy, the stability of the macroeconomic situation, and the prevention of financial risks. One of the most effective

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tools of independent financial control in such circumstances is a forensic audit, which combines investigative methods of analysis with traditional audit procedures.

Its purpose is not only to verify the compliance of financial transactions with legal norms but also to identify potential financial irregularities, analyze abnormal transactions, and assess the risks of inefficient debt management. In many countries, forensic audits are used as a preventive mechanism to prevent financial fraud, which is especially important in times of crisis, when the likelihood of abuse and inefficient use of financial resources increases. Despite its significant advantages, the system of independent audit of public finances in Ukraine remains underdeveloped. Although there are state bodies responsible for oversight in this area, such as the Accounting Chamber of Ukraine and the State Audit Service, their activities are often limited to regulatory and legal audits without in-depth investigative analysis of debt operations. This creates risks of non-transparency, inefficient use of credit funds, and a decrease in the level of trust on the part of international partners and the public. The lack of a comprehensive approach to public debt audit may have long-term negative consequences for the country's financial stability. Thus, in the context of a growing debt burden and challenges in financial control, Ukraine needs to introduce modern mechanisms for auditing and monitoring public debt. A forensic audit can be an effective tool for increasing transparency, preventing financial abuse, and ensuring the efficient use of debt resources.

1. LITERATURE REVIEW

Ensuring the transparency of public finance, effective control, and audit of financial flows are key tasks of public financial policy, especially in times of economic instability. In the current scientific literature, considerable attention is paid to the study of mechanisms for increasing the transparency of public finances, combating corruption risks, and ensuring effective monitoring of public debt. Deb (2018) and Bilan et al. (2025) note that low accountability and lack of effective financial control mechanisms are the main prerequisites for the abuse of public finances. Similarly, the study by Portilla et al. (2024) confirms that effective audit and independent financial monitoring mechanisms contribute to reducing corruption, improving the country's credit rating, and creating conditions for sustainable economic development.

Scientific works on financial control consider various aspects of its implementation in public administration. In particular, Encarnación (2023) identifies the main components of effective financial monitoring, among which independent audit institutions, transparency of the budget process, and public control mechanisms play a key role. At the same time, Handoko et al. (2022) show that only a comprehensive approach to financial control allows identifying systemic violations and abuses in the field of public finance. In the context of Ukraine, Shkolnyk and Koilo (2018) demonstrate that the existing financial control system has a number of shortcomings, including the lack of effective expenditure monitoring and limited mechanisms for independent audits of public borrowing.

Forensic audit as a specialized financial control tool is attracting increasing attention from researchers. According to Flores and Jhumka (2017), it is an effective method of investigating financial crimes, as it combines the analytical methods of traditional audit with criminal analysis methods. Sembiring and Widuri (2023), Kampanakis and Yavuz (2015) emphasize that the main purpose of a forensic audit is not only to verify the compliance of financial statements with legal requirements but also to identify hidden financial crimes.

Aguirre and Flores (2019) emphasize that forensic audit has a wide scope and allows for the identification of fraud schemes, inefficient use of financial resources, and money laundering.

There are discussions about the differences between forensic audit and forensic accounting. For example, Deb (2018) argues that both concepts are synonymous, as they involve detecting financial manipulation and fraudulent schemes. However, the study by Álava et al. (2021), Alrawashedh (2023) proves that forensic accounting covers a wider range of studies, including forensic examinations

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and financial consulting, while forensic audit focuses mainly on identifying irregularities in accounting and financial reporting.

A significant amount of research is devoted to forensic audits in the corporate sector. Tušek and Klikovac (2013), Shonhadji and Irwandi (2024) analyze the effectiveness of its application in the banking sector, particularly in preventing fraud with financial assets. Studies by Burke and Opeskin (2000), and Szezyńska et al. (2009) show that most forensic audit methods are used to detect fraud in commercial entities, while their use in public administration remains limited.

The application of forensic audit to public financial control is considered much less frequently. For example, the study by Adesina et al. (2020) shows that in countries such as the United States, the United Kingdom, and Canada, forensic audit is actively used to prevent financial abuse in the public sector. Abdul-Baki (2019) notes that in countries with high public administration standards, forensic audit is a key element of the system of public financial control, which allows for assessing the transparency of budget expenditures and the efficiency of public funds.

Research on forensic audit of public debt is even less developed. Escolano (2010) discusses some aspects of the use of forensic audits for the analysis of debt obligations, but they do not form a unified methodological approach to its implementation. In their research, Chen et al. (2016) emphasize the importance of an independent audit of debt policy, noting that in the context of the financial crisis, public borrowing often becomes the object of manipulation, which requires enhanced control.

In Ukraine, the issues of forensic audit of public debt remain insufficiently studied. Despite research in the field of public financial control, there is no comprehensive analysis of forensic audit methods in public debt. This creates a significant gap in research and practical application of forensic audit to ensure transparency of debt operations. Given the growth of Ukraine's public debt, the need for effective control over public borrowing, and increased corruption risks, the study of forensic audit methods for public debt is extremely relevant and requires further scientific substantiation.

The study aims to conduct a forensic audit of Ukraine's public debt by analyzing the consistency of financial statements of key government agencies, identifying discrepancies in debt data, assessing their potential impact on financial stability, and developing recommendations for improving transparency and control in public debt management.

2. METHODS

The study of the forensic audit of Ukraine's public debt is based on a comprehensive approach to the analysis of financial statements, which involves assessing the consistency of debt indicators between different government agencies, identifying discrepancies in data, and identifying risks to financial control.

The methodological approach used in this study combines the normative analysis of the forensic audit of public debt, cross-checking of data between government agencies, and assessing the causes of possible discrepancies and possible consequences for the country's financial stability.

To accomplish these tasks, official data from the Ministry of Finance of Ukraine, the National Bank of Ukraine, the Accounting Chamber of Ukraine, and the State Treasury Service of Ukraine were used. The sources of information are these institutions' monthly, quarterly, and annual reports containing data on the total amount of public and guaranteed debt, its structural breakdown into external and internal liabilities, debt service costs, interest rate dynamics, average debt maturity, and debt-to-GDP ratio. This study applies an adapted approach to forensic audit, which takes into account the partially limited access to public debt accounting data in Ukraine and relies on official data from open sources.

The step-by-step algorithm of the forensic audit of Ukraine's public debt proposed in this study is shown in Figure 1.

The proposed algorithm allows us to systematically conduct a forensic audit of public debt, identify the main problems in reporting, identify possible risks, and develop recommendations to improve the effectiveness of control over public borrowing.

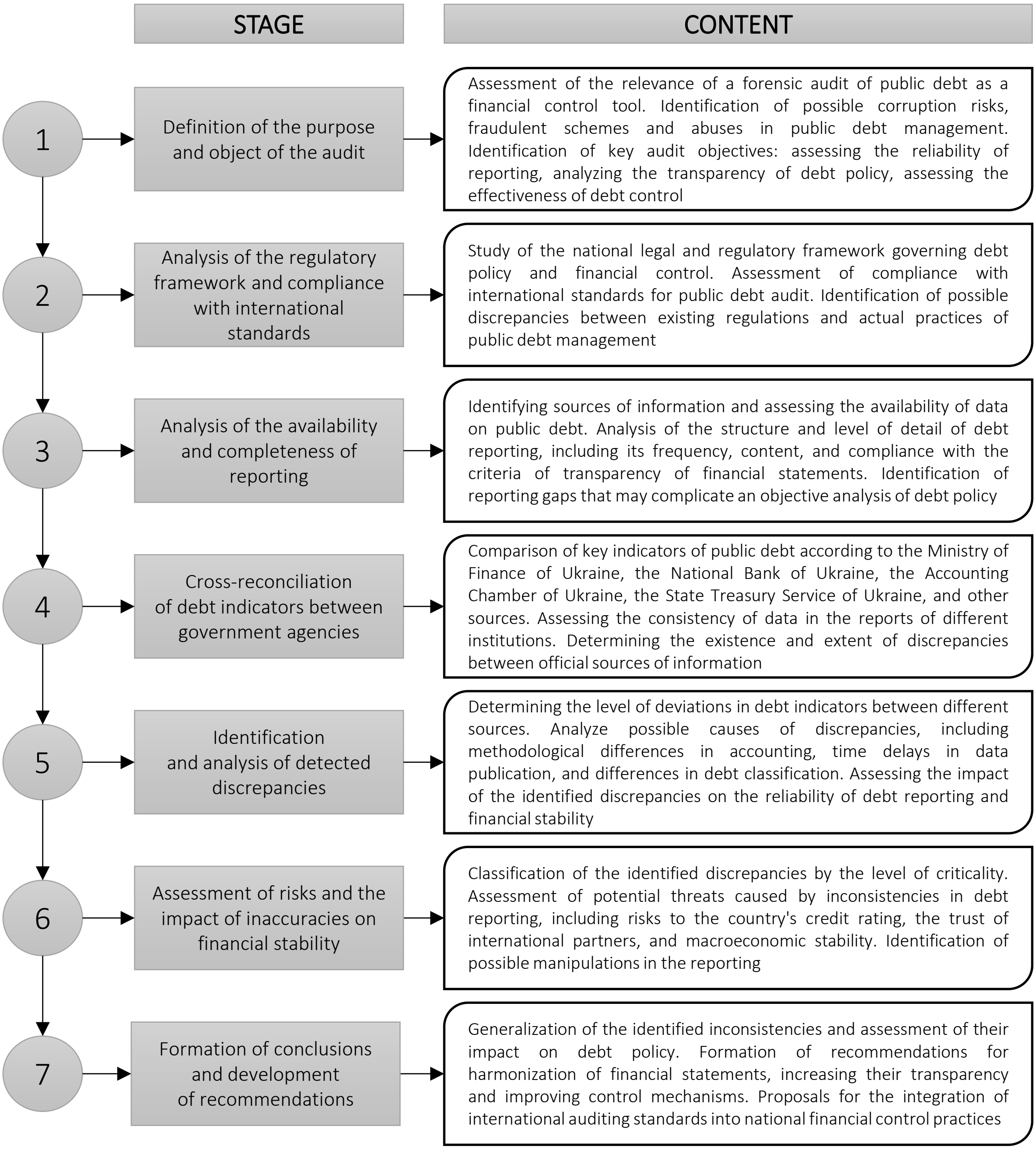

Figure 1. Algorithm for conducting a forensic audit of the public debt of Ukraine

3. RESULTS

A forensic audit of public debt is one of the key instruments of financial control aimed at detecting fraudulent schemes, corruption risks, and abuses in public finance management. Its effective implementation is possible only if clear methodological approaches based on international auditing standards are applied, such as:

1. International Public Sector Accounting Standards (IPSAS, n.d.) regulate the principles of recognition and disclosure of public debt in financial statements, which is a key aspect of its accounting and audit. In particular, IPSAS 1 defines the general requirements for the presentation of financial statements, IPSAS 19 regulates the measurement of liabilities and possible risks, and IPSAS 22

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establishes criteria for disclosing information about the state's financial position, including debt obligations and the management mechanisms. Compliance with these standards is a prerequisite for ensuring the transparency of the state's debt policy and preventing possible financial irregularities.

2. The World Bank's methodology for public debt management is presented in the framework of the Debt Management Performance Assessment (DeMPA), which includes an analysis of the institutional structure, the level of coordination between debt management bodies, and the transparency and accountability of debt policy (World Bank, n.d.).

3. An important tool is also the Medium-Term Debt Management Strategy (MTDS), which defines the principles of developing public debt management strategies taking into account macroeconomic risks. The World Bank emphasizes the need to use clear mechanisms of financial control and debt burden assessment to ensure the long-term sustainability of public debt (World Bank & IMF, n.d.).

4. The Basel Principles for Effective Banking Supervision (BCBS, 2024) regulate financial control, including public debt. They contain requirements for risk assessment, transparency of debt transactions, and the introduction of mechanisms for monitoring macroeconomic stability. Adherence to these principles helps avoid systemic financial crises that can result from inefficient debt management.

5. The Organization for Economic Co-operation and Development (OECD, n.d.) defines the main standards of transparency in public debt management, which regulate mandatory disclosure of information on the state's debt policy, the use of financial instruments, and the provision of independent audits of debt obligations. Compliance with these standards is critical for increasing trust in public administration and avoiding financial manipulation.

6. The International Standards of Supreme Audit Institutions (ISSAI), developed by INTOSAI, defines the principles of public audit and control applicable to the analysis of public debt. In particular, ISSAI 200 "Fundamentals of Financial Reporting Auditing" sets out requirements for assessing the reliability of information on debt obligations, ISSAI 400 "Principles of Compliance Auditing" regulates approaches to assessing the state's compliance with legal and regulatory acts in the field of debt management. The use of ISSAI standards in the process of forensic audit provides a systematic approach to identifying possible inconsistencies in reporting and assessing the effectiveness of debt policy (INTOSAI, n.d.).

According to these guidelines (Table 1), a forensic audit of public debt should cover three main areas:

- financial audit – verification of the correctness of debt accounting, compliance of financial statements with established standards, and overall transparency in the presentation of information;
- compliance audit – assessment of compliance with laws and regulations in the field of public debt management;
- efficiency audit – analysis of the feasibility of borrowings, the level of their economic impact, and potential risks to the state's financial stability.

In addition, in international practice, a fairly established approach to conducting an audit of the effectiveness and evaluation of methods for public debt management has been formed, the institutional basis of which is the system of relevant INTOSAI standards (guidelines), which are still not fully used in Ukraine (Table 1).

Considering all the above, the forensic audit of Ukraine's public debt should be based on the comprehensive application of international IPSAS standards, World Bank methodology (DeMPA, MTDS), ISSAI standards, Basel principles of banking supervision, and OECD transparency standards.

It should be noted that the national audit standards of Ukraine are partially adapted to international requirements, but their compliance remains

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Table 1. ISSAI Structure 5400-5499 – Guidelines on Audit of Public Debt

Source: Compiled from INTOSAI (2021a, b, c, d, e, f, g).

Standard	Title	Function
ISSAI 5410	Guidance for Planning and Conducting an Audit of Internal Controls of Public Debt	Stimulates the implementation of transparent management and appropriate reporting on the state of public debt
ISSAI 5411	Debt Indicators	Describes 3 clusters of indicators used for public debt analysis
ISSAI 5420	Public Debt Management and Fiscal Vulnerability: Potential Roles for SAIs	Defines the role of supreme audit institutions in the process of implementing effective practices in public debt management and debt security
ISSAI 5421	Guidance on Definition and Disclosure of Public Debt	Defines the range of issues related to the disclosure of information on public debt
ISSAI 5422	An Exercise of Reference Terms to Carry Out Performance Audit of Public Debt	Formalizes the structure and procedure for auditing public debt performance
ISSAI 5430	Fiscal Exposures: Implications for Debt Management and the Role for SAIs	Substantiates the fundamental aspects of financial threats that should be taken into account in the process of debt security management
ISSAI 5440	Guidance for Conducting a Public Debt Audit – The Use of Substantive Tests in Financial Audits	Provides a generalized approach to the audit of public debt efficiency

incomplete. The assessment of the harmonization of national regulation with international standards revealed a number of problems:

- lack of clearly defined forensic audit methods in the regulatory framework of Ukraine, which complicates the application of uniform approaches to the analysis of debt transactions and financial violations;
- limited detail of fraud risk assessment procedures, including insufficient implementation of ISA 240 (Auditor's Responsibilities for Fraud) and ISA 250 (Review of Laws and Regulations in the Audit of Financial Statements);
- insufficient integration of forensic and economic analysis into the forensic audit of public debt, which reduces its effectiveness compared to international practices.

Eliminating the existing discrepancies between national and international standards is a prerequisite for improving the effectiveness of forensic audit of public debt in Ukraine.

However, formal compliance with standards is only a basic level of financial control. An important tool for detecting financial irregularities is the use of modern analytical methods, including cross-checking data and analyzing anomalies in the reporting of various government agencies. Discrepancies between the official financial documents of different state institutions may indicate potential manipulation of debt indicators, incorrect reflection of transactions, or intentional concealment of financial risks.

Different government agencies responsible for managing, monitoring, and auditing Ukraine's public debt use their own methodologies and approaches to collecting, recording, and disclosing information. This can lead to differences in reported indicators, even if they reflect the same economic phenomenon. Table 2 compares the completeness of reporting on key debt indicators between the Ministry of Finance of Ukraine, the National Bank of Ukraine, the Accounting Chamber of Ukraine, and the State Treasury Service of Ukraine.

The results show that the most complete data are published by the Ministry of Finance of Ukraine, the main body responsible for public debt management. At the same time, other institutions may have limited access or use different approaches to accounting for certain indicators. For example,

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Table 2. Availability of public debt data in various government agencies

Indicator	Ministry of Finance of Ukraine	National Bank of Ukraine	Accounting Chamber of Ukraine	State Treasury Service of Ukraine
Total public and guaranteed debt	Yes	Yes	Partially, only in audit reports	Partially, only in the reports on the implementation of the budget
Public external debt	Yes	Yes	No, only an assessment of the effectiveness of management	No, only cash payments
Government Internal Debt	Yes	Yes	No, only individual debt transactions	No, only cash payments
Total debt in US dollars	Yes	Yes	No data available	No data available
Share of external debt in total debt (%)	Yes	Yes	No data available	No data available
Share of domestic debt in total debt (%)	Yes	No	No data available	No data available
Debt service costs	Yes	No data available	Performance analysis only	Yes
Average Interest Rate	Yes	Only an estimate in macroeconomic forecasts	No data available	No data available
Average debt repayment period	Yes	Yes	No data available	No data available
Debt-to-GDP ratio	Only in debt strategy reports	Yes	No data available	No data available

the National Bank of Ukraine focuses primarily on external debt, as this indicator has a direct impact on international reserves and macroeconomic stability. The Accounting Chamber of Ukraine, as an audit body, assesses the effectiveness of the debt policy but does not provide up-to-date operational data. The State Treasury Service controls cash payments on debt obligations but does not always have access to general information on public debt. Thus, the lack of full interaction between these institutions can lead to incomplete or fragmented information in open sources, which creates risks for the transparency of the state debt policy.

A forensic audit of public debt involves cross-analysis of data from different sources, but not all indicators can be fully comparable between government agencies due to differences in calculation methodology, different frequency of updates, and specific internal accounting procedures. Table 3 serves as a supplement to Table 2 in terms of explaining possible reasons for discrepancies in the publication of public debt data.

Thus, Table 3 contains an analysis of those indicators that can be compared, even if only partially, which allows us to assess the level of consistency of reporting by different bodies. The analysis shows that these indicators are: total public and guaranteed debt; public external and internal debt; debt service costs; and average debt maturity. These indicators can be verified through cross-checking between the Ministry of Finance of Ukraine and the National Bank of Ukraine, as both institutions publish relevant data. However, the reports of the Accounting Chamber of Ukraine, which audits debt policy, should be taken into account to assess the effectiveness of debt management. At the same time, the State Treasury Service only handles cash transactions for debt service, which makes it difficult to include it in financial analysis.

Based on the analysis, the main problems related to discrepancies in the data on Ukraine's public debt were identified and are presented in Table 4.

Thus, implementing these measures will increase the transparency of Ukraine's public debt, reduce the risks of manipulating financial indicators, and help improve financial discipline.

4. DISCUSSION

In this study of the forensic audit of Ukraine's public debt, a comprehensive approach was applied, including cross-checking data from official sources and analyzing methodological approaches to debt accounting. The use of information from the Ministry of Finance of Ukraine, (n.d.), the

Table 3. Comparison of public debt indicators according to different institutions: methodological discrepancies, frequency of updating, and accounting features

Indicator	Ministry of Finance of Ukraine	National Bank of Ukraine	Accounting Chamber of Ukraine	State Treasury Service of Ukraine	Possible causes of discrepancies
Total public and guaranteed debt	Published monthly	Published in macroeconomic reviews	Analyzes compliance and efficiency	In reports on budget execution	Different data update periods, different accounting methods
Public external debt	Detailed data on the currency structure	Published as part of the balance of payments	Evaluates the effectiveness of the debt policy	In reports on payments	Differences in currency conversion, accounting for different creditors
Government Internal Debt	Includes data on government bonds and government loans	Generalized data in financial statistics	Checks the legality of individual borrowings	Controls cash payments on debt	Differences in accounting for short-term and long-term liabilities
Total debt in US dollars	Converts at the current exchange rate	Publishes as part of macroeconomic indicators	Does not submit	Does not submit	Use of different conversion rates
Share of external debt in total debt (%)	Published monthly	Defines as part of external liabilities	Does not submit	Does not submit	Different approaches to calculating total debt
Share of domestic debt in total debt (%)	Published monthly	Includes only the banking sector	Does not submit	Does not submit	Differences in the methodology for accounting for government borrowings
Debt service costs	Includes all expenses	Does not report	Analyzes the effectiveness of expenditures	Displays cash payments	Differences in the treatment of short-term payments
Average Interest Rate	Publishes for debt instruments	Takes into account in macroeconomic forecasting	Does not submit	Does not submit	Different calculation methods, use of weighted average or fixed rate
Average debt repayment period	Determines based on current contracts	Takes into account only external debt	Does not submit	Does not submit	Differences in the treatment of short- and long-term debt instruments
Debt-to-GDP ratio	Determines based on real and forecast GDP	Publishes in macroeconomic reviews	Does not submit	Does not submit	Use of different GDP data

Table 4. Recommended actions in case of discrepancies or inaccuracies

Level of discrepancies/ inaccuracies	Type of inaccuracy	Possible causes	Possible consequences for financial stability	Recommended actions
Minor (< 1%)	Some differences in figures from different sources	Different update dates, rounding, technical errors	Minimal impact, may cause temporary misunderstandings between debt management agencies	Check the date of publication and calculation methodology, and record it in the report
Moderate (1-5%)	Differences between official figures	Differences in methodology, use of different databases	Deterioration of forecast accuracy, inconsistencies in official reports, reduced confidence in reporting	Conduct additional analysis, request clarifications from relevant institutions
Essential (5-10%)	Differences in the structural components of the debt	Different treatment of debt instruments	Distortion of debt indicators, difficulty in determining the real debt burden	Agree on the classification with all stakeholders, make clarifications
Critical (> 10%)	Significant differences between sources	Methodological errors, inaccuracies in currency conversion, unreported debt liabilities	Significant financial risks, possible problems with international partners, and rising borrowing costs	Conduct a detailed forensic audit, initiate an independent investigation
Uncertain data	Lack of key information in some sources	Late publication, limited access to information	Inability to adequately analyze debt policy, risk of investor misinformation	Apply to the relevant authority with a formal request to publish the data
Suspicion of manipulation	Incorrect or artificially changed indicators	Possible attempts to conceal or distort financial data	Loss of confidence of international creditors, downgrading of the country's credit rating, risk of financial crisis	Initiate an official investigation, contact the anti-corruption authorities

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National Bank of Ukraine (n.d.), the Accounting Chamber of Ukraine (n.d.), and the State Treasury Service of Ukraine (n.d.) allowed us to assess the level of transparency of reporting and identify discrepancies in the reflection of public debt.

Comparison with other studies shows that most research papers focus on the analysis of forensic audits in the corporate sector. In particular, the study by Tušek and Klikovac (2013), Ningsih et al. (2024) focuses on intra-corporate fraud, while this paper focuses on the public sector. Similarly, Aguirre and Flores (2019) consider the general aspects of using forensic audit to combat fraud, but their approach does not take into account the specifics of public finance. The study by Álava et al. (2021) emphasizes the importance of forensic audit as a tool for controlling public financial flows, confirming the need for further research in this area.

One of the main advantages of the applied methodological approach is a multi-level assessment of reporting, which takes into account not only formal discrepancies in the data but also potential causes of such discrepancies. This ensures a more comprehensive understanding of the problem and allows assessing the effectiveness of existing control mechanisms. For example, Burke and Opeskin (2000) demonstrate that limited use of independent sources of information can lead to an underestimation of the scale of financial irregularities, which is confirmed in this study.

However, the analysis has certain limitations. Available public data may not contain complete information on debt obligations, making it difficult to identify all possible violations (Deb, 2018; Portilla et al., 2024).

Further research in this area could focus on comparing the Ukrainian practice of forensic audit with the approaches of international financial institutions (Chen et al., 2016). This would allow us to assess the effectiveness of existing control mechanisms and identify opportunities to adapt the international experience to improve financial transparency in Ukraine.

Thus, the results of this study complement existing scientific approaches to the forensic audit of public debt and offer practical recommendations for improving the financial control system (Shkolnyk & Koilo, 2018). Further research in this area will contribute to increasing the transparency of public finances and strengthening the mechanisms for preventing financial irregularities.

CONCLUSION

As a result of the study, a forensic audit of Ukraine's public debt was conducted, which allowed us to assess the consistency of financial reporting between the main state institutions, identify differences in debt indicators, and assess their impact on the country's financial stability. Significant inconsistencies in the indicators of the total debt burden, debt service costs, and structural characteristics of debt obligations were identified, which indicates that there are methodological differences in reporting approaches between the Ministry of Finance of Ukraine, the National Bank of Ukraine, the Accounting Chamber of Ukraine, and the State Treasury Service of Ukraine. One of the key factors behind the discrepancies is differences in the classification of debt instruments, the frequency of financial statement updates, and heterogeneity in data consolidation methods.

An analysis of the regulatory framework has shown that Ukraine's debt accounting system does not fully comply with international standards, in particular the requirements of ISSAI 5400-5499, IPSAS, and OECD principles, which can make it difficult to assess the real debt burden. This creates risks for an objective analysis of debt policy, reduces the level of trust in official financial statements, and may affect the country's investment attractiveness. Insufficient transparency in debt reporting makes it difficult to assess the effectiveness of public financial control and may contribute to the concealment of financial mismanagement.

Based on the findings, recommendations were developed to address the identified discrepancies, including harmonization of the public debt accounting methodology, synchronization of reporting between key financial authorities, introduction of an independent audit of public debt, and improvement of mechanisms for monitoring debt operations. In addition, the mechanisms for responding to the identified discrepancies depending on their level of criticality were identified, which will help improve the effectiveness of financial control. The results obtained are of practical importance for improving the system of public debt audit, improving the quality of financial reporting, and reducing the risks associated with inaccuracies in debt indicators.

Further research can be aimed at analyzing the impact of forensic audit on reducing corruption risks in public finance, expanding the methodological basis of the audit by using AI tools to automatically detect anomalies in reporting, and adapting international approaches to public debt control to national conditions. Improving the forensic audit mechanisms will help increase the transparency of public finances, ensure an appropriate level of debt control, and strengthen Ukraine's macroeconomic stability.

AUTHOR CONTRIBUTIONS

Conceptualization: Hanna Filatova.
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Formal analysis: Olena Kravchenko.
Investigation: Hanna Filatova, Nataliia Ovcharova.
Methodology: Hanna Filatova.
Project administration: Hanna Filatova.
Validation: Nataliia Ovcharova.
Visualization: Olena Kravchenko.
Writing – original draft: Hanna Filatova.
Writing – review & editing: Nataliia Ovcharova, Olena Kravchenko.

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