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IMPROVING THE METHODOLOGY FOR THE COMPREHENSIVE ASSESSMENT OF AUDIT RISK AND MATERIALITY IN THE AUDIT OF COMMERCIAL BANKS' FINANCIAL STATEMENTS

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Abstract. This article improves the methodology for the comprehensive assessment of audit risk and materiality in the audit of commercial banks' financial statements. The research problem is the absence of a unified methodology for systematically assessing bank-specific risks and an approach that links materiality with prudential standards. Based on weighted assessment and case study methods, the Bank Risk Factor Index (BRFI) and a prudentially adjusted materiality model were proposed and tested using the case of JSC "People's Bank." As a result, a methodological approach was substantiated that makes it possible to reduce audit risk and increase the reliability of the audit opinion.

Keywords: audit risk, materiality, bank audit, BRFI index, audit risk model, IFRS 9, ECL, prudential standards, ISA 320.

Аннотация. В статье усовершенствована методология комплексной оценки аудиторского риска и уровня существенности при аудите финансовой отчётности коммерческих банков. Научная проблема исследования заключается в отсутствии единой методики системной оценки специфических банковских рисков и подхода, увязывающего уровень существенности с пруденциальными нормативами. На основе методов взвешенной оценки и кейс-анализа разработаны Индекс факторов банковского риска (Bank Risk Factor Index, BRFI) и модель определения уровня существенности, скорректированная с учётом пруденциальных требований. Предложенная методика апробирована на примере АО «Народный банк». Результаты исследования позволили обосновать методический подход, обеспечивающий снижение аудиторского риска и повышение надёжности аудиторского заключения.

Ключевые слова: аудиторский риск, существенность, аудит банков, индекс BRFI, модель аудиторского риска, МСФО (IFRS) 9, ожидаемые кредитные убытки (ECL), пруденциальные нормативы, МСА 320.

INTRODUCTION

Assessing audit risk and materiality is a key part of any audit engagement, as these assessments determine the scope of the audit, as well as the nature, timing, and extent of audit procedures. In the audit of commercial banks, this issue is particularly important, since banking activities are characterized by a complex combination of credit, liquidity, market, and operational risks, while bank reporting includes highly uncertain estimates, such as expected credit losses (ECL) under IFRS 9.

The practical consequences of this issue are evident in real-world situations. Errors in the measurement of estimated values, particularly ECL, in large banks can have a significant impact on capital and bring the bank closer to the limits of prudential standards. Failure to detect such errors in a timely manner during the audit process may affect the reliability of the audit opinion and reduce confidence in the financial system. Therefore, improving the assessment of audit risk and materiality in bank audits is an urgent scientific and practical task.

LITERATURE REVIEW

The theoretical foundations of audit risk methodology have been developed in the scientific literature over many years. The initial version of the audit risk model, expressed as $AR = IR \times CR \times DR$, was formalized in the U.S. standard SAS No. 47, "Audit Risk and Materiality," and later became the basis for international auditing standards. Mautz and Sharaf created the philosophical and methodological foundation of auditing by substantiating the postulates of internal control and the logic of evidence collection (Mautz and Sharaf, 1961). Later, the concept of audit risk became a central element of the risk-oriented audit paradigm (Arens et al., 2017; Hayes et al., 2014).

At the end of the twentieth century, the business risk audit approach developed within audit methodology. T. Bell, F. Marrs, I. Solomon, and H. Thomas proposed an approach based on analyzing an entity as a strategic system, encouraging auditors to consider business risks in addition to financial reporting misstatements (Bell et al., 1997). This approach is reflected in the modern version of ISA 315 as a requirement for a thorough understanding of the entity and its environment (IAASB, 2023).

Materiality is regulated by ISA 320, which defines the level of misstatement that could reasonably be expected to influence the economic decisions of users of financial statements (IAASB, 2023). The literature examines both quantitative and qualitative aspects of materiality; however, the issue of linking bank-specific prudential measures, such as capital adequacy and regulatory buffers, to materiality has not been sufficiently developed. The Basel Committee recommends that the external audit of banks should include dialogue with the regulator and take prudential considerations into account (Basel Committee on Banking Supervision, 2024).

ISA 315 (Revised 2019) places particular emphasis on inherent risk factors in risk assessment, including complexity, subjectivity, change, uncertainty, and susceptibility to misstatement (IAASB, 2023). Areas with high inherent risk are classified as significant risks, and the auditor performs specific audit procedures in relation to them. In banks, the assessment of expected credit losses (ECL) and financial instruments is considered a significant risk due to high levels of complexity, subjectivity, and uncertainty. The proposed BRFI index quantifies these inherent risk factors and links them to audit planning.

In Uzbekistan, A.K. Ibragimov, N.K. Rizaev, and other scholars have studied the issues of adapting accounting, IFRS, and auditing practices to national conditions (Ibragimov et al., 2020).

RESEARCH METHODOLOGY

The study is based on a mixed-methods design, combining quantitative and qualitative approaches. Its methodological core consists of the weighted scoring method and the case study strategy. The weighted scoring method was used to summarize bank-specific risk factors into a single quantitative indicator. Each factor was assigned a weight and score based on its level of influence on audit risk. Expert judgment was applied to determine factor weights and the scoring scale.

To test the practical validity of the proposed methodology, JSC "People's Bank" was selected as the case study object. The basis for this selection is the bank's systemic importance, extensive branch network of 197 branches, high level of state ownership, and significant error in measuring expected credit losses (ECL) in 2021, which makes the bank a relevant practical case for testing the risk assessment methodology. Comparative analysis, clustering, and a systems approach were also used in the study.

The reliability of the study is based on data obtained from official sources, including the Central Bank, the State Statistics Committee, and the bank's financial and prudential reports. The validity of the study is ensured by the compliance of the proposed methodology with the requirements of ISA 200, ISA 315, ISA 320, and ISA 330, as well as the prudential recommendations of the Basel Committee. The methodological basis of the research also includes the International Standards on Auditing, the Law of the Republic of Uzbekistan "On Auditing Activities" No. ZRU-677 dated 2021, and Order No. 171 of the Ministry of Finance dated 2022.

ANALYSIS AND RESULTS

The theoretical core of audit risk assessment is the audit risk model, which is based on the following relationship: audit risk (AR) equals the product of inherent risk (IR), control risk (CR), and detection risk (DR). After determining the acceptable level of audit risk, the auditor assesses inherent risk and control risk and, on this basis, determines the required level of detection risk and, accordingly, the volume of substantive procedures to be performed. The higher the inherent and control risks, the lower the acceptable detection risk; therefore, the auditor needs to collect more audit evidence. Since banks are characterized by high inherent risk in relation to credit risk and expected credit losses (ECL), the scope of substantive procedures in these areas should be expanded. However, in practice, the assessment of inherent risk is often carried out qualitatively and

subjectively, without an objective and repeatable basis. Addressing this issue is the first task of the proposed methodology.

Audit risk is assessed at two levels: the financial statement level and the assertion level. Risk at the financial statement level is associated with factors affecting the financial statements as a whole, such as management integrity and going concern assumptions, while risk at the assertion level is associated with individual items and transactions. In a bank audit, for example, the valuation assertion, namely whether reserves are calculated correctly, and the existence assertion, namely whether loans are real, require special attention. The proposed BRFI index primarily serves to quantify inherent risk at the financial statement level and within the loan-loss reserve block, which the auditor then details at the assertion level. This two-level methodological approach is fully consistent with the requirements of ISA 315.

The proposed methodology is based on the audit risk model ($AR = IR \times CR \times DR$), but transforms the level of inherent risk (IR) from a subjective assessment into a quantitative and repeatable indicator. For this purpose, the Bank Risk Factor Index (BRFI) is proposed. The index is calculated using the following formula:

$$BRFI = \sum (w_i \times s_i),$$

where w_i is the weight of the i -th factor, with the sum of all weights equal to 1.0, and s_i is the score of the i -th factor on a scale from 1 to 5, where 1 indicates the lowest risk and 5 indicates the highest risk. The factors, their weights, and their impact on audit risk are presented in Table 1.

Table 1

Assessment matrix of bank-specific risk factors (proposal)¹

Risk factor	Weight (w_i)	Scale (s_i)	Impact
Credit risk and ECL uncertainty under IFRS 9	0.30	1–5	Internal Risk (IR)
Reserve estimation uncertainty	0.20	1–5	Internal Risk (IR)
State share and social loans	0.15	1–5	Internal Risk (IR)
Extensive branch network complexity	0.15	1–5	Control Risk (CR)
Operational and IT risks	0.10	1–5	Control Risk (CR)
Liquidity risk	0.10	1–5	Internal Risk (IR)
Total	1.00	—	IR/CR level

The calculated BRFI value determines the level of inherent risk: 1.0–2.3 indicates low risk, 2.4–3.6 indicates medium risk, and 3.7–5.0 indicates high risk. This value, together with control risk (CR), determines the acceptable level of detection risk (DR) and the scope of necessary substantive audit procedures. The advantage of the methodology is that it combines all the main bank-specific risk factors into a single quantitative index, allowing the auditor to assess risk objectively and repeatedly. This approach adapts the weighted and probabilistic methods discussed in the scientific literature (Bychkova, 2003; Messier et al., 2019) to the conditions of bank auditing.

The general algorithm of the proposed methodology consists of the following sequential steps: first, based on an analysis of the bank's financial and prudential reports and internal control system, the auditor assigns a score from 1 to 5 to each risk factor presented in Table 1; second, each score is multiplied by the corresponding weight, and the BRFI index is calculated as the sum of the weighted scores; third, the resulting index is interpreted according to the established thresholds as low, medium, or high, and the level of inherent risk (IR) is determined; fourth, inherent risk, together with control risk (CR), determines the acceptable detection risk (DR) and the scope of substantive procedures; and fifth, the results are recorded in the audit documentation and re-evaluated annually based on updated data. This algorithm ensures a systematic and consistent assessment of risk at the audit planning stage.

The practical significance of the proposed BRFI index is clearly demonstrated by the case of JSC "People's Bank." The bank's main risk factors, including 100 percent state ownership, a large volume of socially oriented loans, a high level of problem loans and reserves, and the ECL measurement error detected in 2021, receive high scores in the index. In particular, the fact that the bank's capital decreased by approximately 1,333.7 billion soums, or about 29 percent, as a result of the ECL error in 2021 indicates a very high level of inherent risk in the area of credit risk and reserves. The application of the BRFI index to JSC "People's Bank" is presented in Table 2.

¹ Source: author development.

Table 2

Application of the BRFI index to JSC “People’s Bank” (calculation example)²

Risk factor	Weight	Score (1–5)	Weighted score
Credit risk and ECL	0.30	5	1.50
Reserve estimation uncertainty	0.20	5	1.00
State share and social loans	0.15	4	0.60
Wide branch network	0.15	4	0.60
Operational and IT risks	0.10	3	0.30
Liquidity risk	0.10	2	0.20
Total (BRFI Index)	1.00	—	4.20

As a result of the calculation, the bank’s overall BRFI index was 4.20 on a 5-point scale, which corresponds to a high-risk level. This result provides a clear practical conclusion for the auditor: it is necessary to significantly reduce detection risk (DR) in the bank audit, direct the main part of audit resources toward the verification of ECL and reserves, and apply independent recalculation and model validation procedures. The fact that the ECL error in 2021 occurred precisely in a bank with a high BRFI index confirms the predictive value of the methodology, as the index could have signaled such situations in advance.

The second element of the methodology is an improved prudentially adjusted model for determining materiality. According to the requirements of ISA 320, materiality is determined in relation to a selected benchmark. Among the main benchmark indicators used in banking audits, including total assets at 0.5–2%, equity at 1–5%, profit before tax at 5–10%, and net interest income at 1–3%, total assets and equity are considered the most appropriate for banks, as they are stable and systemically important indicators of banking activity. By contrast, a profit-based benchmark has limited applicability due to the volatility of bank profits. However, this traditional approach does not take into account the prudential position of the bank, particularly its proximity to the capital adequacy requirement, which creates a significant methodological gap in bank audits.

The proposed approach for banks involves introducing a prudential limit in addition to standard materiality. First, standard materiality is calculated, for example, as 0.5% of total assets or 3% of equity. Then, the prudential limit associated with the bank’s capital adequacy buffer is determined. Finally, materiality is set at the lower of these two values. A sample calculation is provided in Table 3.

Table 3

Sample calculation of severity taking into account the prudential ratio³

Step	Calculation method	Value (billion soums)
Default Severity	Total assets × 0.5% (46,491 × 0.5%)	232.5
Prudential restriction	10% of the capital buffer (≈ 2,280 × 10%)	228.0
Ultimate seriousness	min(standard; prudential)	228.0

The essence of the prudentially adjusted materiality approach is that, when determining the materiality level, the auditor takes into account not only the profit or asset base but also the capital buffer relative to the minimum prudential requirement. The smaller the buffer, the lower the materiality threshold should be set, since even a small misstatement may lead to a breach of prudential standards. In the case of JSC “People’s Bank,” with capital of approximately 8,000 billion soums, a capital adequacy ratio of 18.2 percent, and a minimum requirement of approximately 13 percent, the capital buffer is about 2,280 billion soums. The fact that the ECL error in 2021 reduced capital by 29 percent indicates that misstatements in estimated values may reduce capital adequacy below the required standard. Therefore, the auditor should set the materiality level at a relatively low level, taking this buffer into account.

It should be noted that not only the quantitative but also the qualitative aspect of materiality is important in a bank audit. Some misstatements, although small in monetary value, may be considered material by nature. These include violations of prudential norms, unusual transactions with related parties, situations that raise doubts about the integrity of management, and signs of fraud. Therefore, the prudentially adjusted materiality model requires that, in addition to quantitative thresholds, misstatements affecting capital and prudential norms be assessed qualitatively as material. In addition, the auditor determines performance materiality, usually at

² Calculation based on the author’s methodology and real data of JSC “Khalq Bank”.

³ Author development (values are entered from financial and prudential reports of the bank).

50–75 percent of overall materiality, as well as a clearly trivial threshold, which reduces the risk that undetected misstatements will exceed overall materiality.

The two proposed tools, namely the BRFI index and prudentially adjusted materiality, together form a holistic audit strategy. For JSC “People’s Bank,” which has a high BRFI index of 4.20, the auditor determines a low detection risk and sets materiality at a relatively low level, taking into account the prudential buffer. As a result, broad and in-depth substantive procedures are planned in the areas of ECL and reserves. Such an integrated approach allocates audit resources in proportion to risk, maximizes the likelihood of detecting material misstatements similar to those identified in 2021, and increases the reliability of the audit opinion.

It should be noted that a high BRFI index requires specific substantive procedures from the auditor. In the areas of ECL and reserves, these include reviewing the methodology, inputs, and key assumptions of the ECL model used by the bank in accordance with the requirements of ISA 540; developing an independent auditor’s point estimate or range and comparing it with the bank’s estimate; conducting a risk-based sample review of loan files; and, where necessary, involving a specialist in accordance with ISA 620. This approach significantly increases the likelihood of detecting misstatements in areas of high uncertainty.

The BRFI index is also closely related to the assessment of the going concern assumption. Liquidity and credit risk factors that receive high scores in the index directly affect the bank’s ability to continue operating for the foreseeable future. Therefore, the auditor assesses going concern by comprehensively analyzing prudential indicators, liquidity position, and capital adequacy in accordance with the requirements of ISA 570. This analysis is naturally compatible with the prudentially adjusted materiality model, since both rely on the capital adequacy buffer.

The expected effect of implementing the methodology is manifested in three directions. First, bank-specific risks are summarized in a single quantitative indicator, making audit planning more objective. Second, audit resources are distributed proportionally to risk, and high-risk areas, particularly ECL and reserves, are sufficiently covered. Third, the probability of detecting misstatements that affect prudential standards increases. Thus, reducing audit risk and increasing the reliability of the audit opinion are ensured simultaneously, which represents the main result of this scientific innovation.

The advantages of the proposed methodology over the traditional approach can be demonstrated through comparison. In traditional practice, the auditor qualitatively assesses inherent risk as “low,” “medium,” or “high,” which may lead to differences in assessment between auditors and reduce repeatability. The BRFI index scores each risk factor separately and combines them using a weighted approach. As a result, the assessment becomes quantitative, transparent, and reproducible. In addition, the separation of factors and their scores in the index strengthens audit documentation in accordance with ISA 230 and facilitates external control of audit quality.

It is also important to assess the sensitivity of the methodology. The factors with the greatest weight in the BRFI index, namely credit risk and ECL at 0.30 and uncertainty in reserve valuation at 0.20, have the strongest impact on the index value. This is logical, since these areas form the largest estimated values in a bank’s financial statements and have the highest level of uncertainty. In the case of JSC “People’s Bank,” the high scores of these two factors, namely 5 points each, accounted for 2.50 units of the total index, or more than half of the overall value of 4.20. This confirms that the methodology accurately reflects the bank’s actual risk profile.

The bank’s internal control system is of decisive importance in assessing the level of control risk (CR). According to the requirements of ISA 315, the internal control system consists of five components in accordance with the COSO model: the control environment, risk assessment, control activities, information and communication, and monitoring. In banks, this system is complex and includes automated systems and multi-level controls. The factors “branch network complexity” and “operational and IT risks” in the BRFI index quantitatively reflect aspects that affect control risk.

Since a large part of banking operations is automated, the reliability of information technology controls is crucial in determining the audit approach. Information technology controls are divided into two types: general IT controls, including system access, change management, and data security, and application controls. If these controls are effective, the auditor can rely on tests of controls to reduce the scope of substantive procedures; otherwise, substantive procedures should be expanded. Therefore, a high IT risk score is taken into account as a factor increasing control risk in the BRFI index.

In response to the assessed audit risk, the auditor applies tests of controls and substantive procedures based on ISA 330 and collects evidence using various methods in accordance with ISA 500. In banks, external confirmations under ISA 505, such as written confirmations from correspondent banks, counterparties, and debtors; analytical procedures under ISA 520, such as analysis of indicators and ratios; and the use of an expert under ISA 620, such as involving a specialist to assess the ECL model or collateral value, are widely used. A high BRFI index requires increasing the volume and depth of these procedures.

When collecting audit evidence, if full testing is not possible, audit sampling under ISA 530 is used. Sampling may be performed statistically or non-statistically, and its size depends on the level of risk: the higher the risk, the larger the sample. In areas with a high BRFI index, such as ECL and reserves, the auditor expands the sample size or switches to full testing of significant items. Thus, the BRFI index also forms the quantitative basis for a risk-based sampling approach.

The role of the methodology in ensuring audit quality is also noteworthy. The auditor should document the procedures performed, the evidence obtained, and the conclusions reached in accordance with the requirements of ISA 230. Since the BRFI index and prudential materiality calculations are clearly reflected in the audit documentation, they ensure the explainability and reproducibility of the auditor's decisions. This, in turn, strengthens the quality control required by the audit organization's quality management standards, including ISQM 1 and ISQM 2.

Increasing the reliability of the audit opinion is the ultimate goal of the methodology. By systematically identifying high-risk areas and directing adequate audit procedures toward them, the auditor reduces the risk of expressing an inappropriate opinion on financial statements containing material misstatements, that is, audit risk. This relationship represents the main theoretical and practical contribution of the proposed scientific novelty: the quantitative assessment of bank-specific risks and the linkage of materiality to prudential standards increase the reliability of the audit opinion on an objective basis.

At the same time, it is necessary to take into account the limitations of the proposed methodology. First, the weights and scores of the risk factors included in the BRFI index are determined on an expert basis and should be tested across different banks and conditions, with revisions made where necessary. Second, the reliability of the index depends on the quality of the auditor's professional judgment, as an incorrectly assessed factor may distort the entire index. Third, the methodology is not a universal template but a flexible tool that must be adapted to the specific characteristics of each bank, for example, the presence of Islamic finance elements or extensive foreign operations. Despite these limitations, the methodology represents an important step toward the systematic, objective, and prudentially justified assessment of audit risk and materiality in bank audits.

CONCLUSIONS AND RECOMMENDATIONS

As a result of the research, a comprehensive methodology for assessing audit risk and materiality in the audit of commercial banks' financial statements was improved. The first element of the methodology, the Bank Risk Factor Index (BRFI), combines bank-specific risk factors into a single quantitative indicator through weighted assessments and allows for the objective determination of the level of inherent risk (IR). The second element, the prudentially adjusted materiality model, links materiality to the capital adequacy buffer, thereby increasing the likelihood of detecting misstatements that may affect prudential standards.

Testing the methodology using the case of JSC "People's Bank" confirmed its practical validity. The bank's BRFI index was 4.20, which corresponds to a high-risk level and requires the auditor to reduce detection risk and direct audit resources toward ECL and reserves. The fact that the actual ECL error in 2021 occurred precisely in a situation characterized by high risk and limited capital buffers demonstrated the predictive value of the proposed methodology.

Based on the results obtained, the following recommendations are proposed: first, audit organizations should use the BRFI index as a tool for assessing inherent risk when planning bank audits; second, a prudentially adjusted model should be used to determine materiality in bank audits, taking into account the capital buffer; third, methodological guidelines for assessing audit risk and materiality specific to bank audits should be developed and approved at the level of the regulatory body and the Chamber of Auditors; and fourth, auditors should receive appropriate training before the methodology is introduced into practice.

The theoretical significance of the study lies in enriching the theoretical and methodological foundations for assessing audit risk and materiality in bank audits. Its practical significance is explained by the possibility of using the developed BRFI index and prudential materiality model in the activities of audit organizations, commercial banks, and regulatory authorities. In future studies, it would be promising to statistically substantiate the BRFI index weights based on a large empirical sample, link the index with digital audit tools, including Computer-Assisted Audit Techniques (CAATs), and test it using different types of banks.

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