

**VILNIUS UNIVERSITY**

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**AUDIT RISK ASSESSMENT MODEL**

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## INTRODUCTION

**Relevance of the subject matter.** The current business environment is constantly changing and getting increasingly complex. The recent changes of the global scale caused by the development of business and an excessive use of subjective decisions and estimates when drawing up financial statements have caused an increased pressure that eventually may lead to fraudulent financial reporting. The aim to show the better financial performance of the company sooner or later leads to its bankruptcy. The above statement is clearly supported by the recent crashes of large corporations (such as Enron, WorldCom, Parmalat), as well the collapse of one of the largest audit firms Arthur Andersen, in addition to the recent global financial downturn that started with the bankruptcy of the American investment bank Lehman Brothers and the failure of the financial services company Merrill Lynch. These recent developments undoubtedly make it absolutely necessary to enforce some essential changes in corporate governance, financial reporting and to ensure the role of the independent auditor in serving the public interest.

Audit firms are obligated to express an independent opinion on the truthfulness and fairness of the information presented in financial statements to enable the users to take informed economic decisions. Therefore, with a view to attaining this objective it is of utmost importance to further improve the audit methodology to accommodate it to the ever changing business environment and enable it to detect, on a timely basis, any material misstatements in financial statements that can arise either from fraud or error. This implies a clear necessity to further improve the detection and assessment of audit risk that an audit firm may encounter.

The audit theory has long ago established the necessity to produce a comprehensive assessment of audit risk, and in the 20th century audit approach transformed into “risk-based audit“ that specifically focused on the economic system in which the audited entity operates and the audit evidence on the risk caused by the system itself. However, in the absence of any developed clear-cut and unanimous audit risk assessment methodology the approach has not yet been applied in audit practice to any more tangible extent.

**The scientific problem and its investigation level.** The analysis of the research references in the area of audit performed for the purpose of the present paper duly substantiates the conclusion that in the course of the past three decades researchers have been on numerous occasions referring the subjects related to audit risk and its assessment possibilities.

For the first time the systemic approach towards the audit risk was expressed in 1983: The American Institute of Certified Public Accountants (AICPA) published the generally accepted audit risk model, otherwise referred to as the classical audit risk model. However, a number of researchers (Dodzh, 1992; Robertson, 1990; Kinney, 1989; Aldersley, 1989; Sennetti, 1990; Srivastava, Shafer, 1992; Beatie, Fearnley, Brandt, 2002; Turner, Mock, Srivastava, 2003; Bell, Peecher, Solomon, 2005) later on concluded that the model only to a limited extent disclosed the essence of the audit risk concept and therefore proposed their original audit risk model interpretations. Although it may be acknowledged that the new audit risk models to an extent eliminate certain deficiencies of the classical audit risk model, they are still not sufficiently comprehensive and fail to cover absolutely all issues related to the audit risk assessment that audit firms face when performing an audit of financial statements in the ever changing business environment.

Significant attention to the subject of audit risk has been devoted in a number of research papers including such authors as: *B. E. Cushing, J. K. Loebbecke (1983), D. R. Carmichael (1988, 2006), W. R. Kinney (1989), V. M. O'Reilly (1990), J. C. Robertson (1990), H. Johnson (1991), A. D. Šeremet, V. P. Suijc (1995), A. A. Arens, J. K. Loebbecke (1997), S. M. Byčkova (1998), V. V. Skobara (1998), T. E. Bayer (1999), K. M. Johnstone (2000, 2001), M. Davies (2001), R. W. Knechel (2001, 2007), V. Beatie, S. Fearnley, R. Brandt (2002, 2005), J. I. Turner, T. J. Mock, R. P. Srivastava (2003), S. Spector (2003), T. B. Bell, M. E. Peecher, I. Solomon (2005), S. H. Mitchel (2005), J. A. Fogarty, L. Graham, D. R. Schubert (2006), R. O. Whittington, K. Pany (2006)* and others. The works of the authors mentioned most ordinarily: 1) examine the concept of audit risk and its individual components; 2) identify the conditions and factors determining audit risk. However, these research papers don't generalise the entirety of all audit risk components and present a

comprehensive classification of conditions determining the audit risk or provide a sound conceptual audit risk model. Furthermore, only some of these researchers (*Cushing, Loebbecke, 1983; Robertson, 1990; Johnson, 1991; Byčková, 1998*) and *J. T. Sennetti (1990), R. P. Srivastava, G. R. Shafer (1992), W. S. Waller (1993)* engaged in the analysis of the correlation links between individual audit risk components and the impact of the assessment of these components upon the audit risk itself.

Papers of foreign researchers address the issues related to the assessment of audit risk in practice by carrying out empirical research in two directions: 1) the correlation between individual audit risk components (*Daniel, 1988; Waller, 1993; Dusenbury, Reimers, Wheeler, 2000; Kotchetova, Kozloski, Messier 2006*); 2) the dependence of the audit risk components upon the conditions and factors causing the audit risk (*Quadackers, Mock, Maijoor, 1996; Messier, Austen, 2000; Majid, Gul, Tsui, 2001; Graham, Bedard, 2003; Bhattacharjee, Moreno, 2002; Kizirian, Mayhew, Sneathen, 2005; Chen, Huang, Shih, 2006*). The above considerations lead to the conclusion that as of today no comprehensive audit risk assessment research have yet been carried out.

The subject matter of audit risk has also been investigated by a number of Lithuanian researchers. However, the theoretical research carried out by a number of researchers such as *D. Daujotaitė (2006), V. Lakis (2007), J. Kabašinskas and I. Toliatienė (1997), R. Kanapickienė (2001, 2004), J. Mackevičius (1999, 2001, 2009), I. Matickienė (1997), and J. D. Staliūnienė (2001)* is limited to the essential issues of the audit risk concept only, with the assessment of such risk being researched only partially and in a fragmentary manner while disclosing the assessment aspects of individual audit risk components only.

Although the research exercises referred to above do extend the concept of audit risk and the process of the assessment thereof, they do not present any more comprehensive or systemic audit risk assessment analysis, and neither they disclose the systemic approach towards audit risk assessment. With the above considerations taken into account the absence of a conceptual and methodologically substantiated audit risk assessment model remains an outstanding scientific issue that requires further comprehensive investigation.

**Object of the research** – audit risk assessment.

**Objective of the research** – having examined the audit risk concept and its assessment possibilities to develop an optimal audit risk assessment model and bring it into application in the today's business environment.

With a view to attaining the defined objective of the research the following **tasks** have been identified:

- examine the risk in economy by disclosing its nature and assessment;
- analyze the audit risk concept by identifying the audit risk components and their correlation links and principal peculiarities of the assessment thereof;
- carry out a critical comparative analysis of the audit risk models proposed in the research papers and generalize the directions to be covered by the audit risk assessment model developed by the author;
- examine the instances of any problems while assessing the audit risk in practice and identify principal areas for the improvement of audit risk assessment model developed by the author;
- develop a risk assessment model able to disclose a systematic approach towards the audit risk assessment and test the model on the basis of practical audit samples.

**Statements of the dissertation to be confirmed:**

1. The audit risk models proposed in the research papers and applied in practice does not reflect or cover the entirety of audit risk assessment issues that are ordinarily encountered by audit firms in performing an audit of financial statements in the rapidly changing business environment;

2. An audit risk assessment model must cover the following principal components: audit risk conditions (factors), audit risk components and the audit risk assessment process in performing an audit.

3. The correlation links between individual audit risk components must be identified while assessing the dependence of individual audit risk components or the overall assessment of such components.

**The innovativeness of the research exercise and the theoretical significance of the dissertation** are substantiated by the following results of the research:

- the analysis of the interpretations of audit risk and its assessment concept performed within the framework of the present paper facilitated to 1) implement a



broader approach to audit risk concept and formulate the exhaustive audit risk definition, 2) determine the principal theoretically substantiated audit risk concept scheme, 3) identify the principal audit risk components and 4) to classify of the principal conditions and factors determining the audit risk and its components;

- a systemic approach towards the audit risk assessment is proposed by the author.

The novelty of the approach is disclosed by its following features: 1) the audit risk assessment is related not only to the examination of individual audit risk components, but also to the general evaluation of the probability of the conditions and factors causing the appearance thereof and the impact of their effect; 2) identified the correlation between the individual audit risk components; 3) the audit risk assessment is related to the audit process as such;

- the original audit risk assessment model is developed by the author. This new model discloses and highlights: 1) the consistency of the audit risk assessment process; 2) the conditions that should be considered for the purpose of the assessment of individual audit risk components; 3) audit risk components that should be assessed; 4) the aggregation level at which the components should be assessed; 5) the correlation links between the individual audit risk components; 6) the method of estimation and evaluation of the individual audit risk components; 7) the nature of the relation between the audit risk assessment and the audit process as such; and 8) the way to attain the acceptable audit risk level. Thus the model actually implements the systemic approach towards the audit risk assessment;

**The practical significance of the present research paper.** The methodology for the quantitative evaluation of audit risk components is proposed and it enables 1) to identify all factors related to an audit risk component and the related evaluation of their occurrence probability and the impact; 2) to assess the factors in respect of their importance to the risk level and 3) to determine risk level based on overall risk and maximum risk ratio.

Therefore:

- the audit risk assessment model and the methodology for the quantitative evaluation of audit risk components proposed by the author of the present paper may be used by audit firms in their practical work when auditing financial statements

irrespective of the size and the nature of activity of the audited entity. Furthermore, with reference to the consistency audit risk assessment process audit firms may improve the audit risk methodologies currently used thereby and enhance their experience in the area concerned;

- the developed audit risk assessment model discloses the audit risk concept and serves as an instrumental tool for academic community to disseminate the knowledge on auditing in the public and conduct any further audit risk assessment research, and for the auditing standard setters serves as guidelines to be referred to for the purpose of developing clearer, more comprehensive and comprehensible audit risk assessment standards;

- the audit risk assessment model developed by the author may be also referred to by other users of financial statements, i.e., managers, shareholders of the entities and other finance specialists for exploring risks inherent to any business environment and making their assessment.

The above considerations and conclusions justify expectation that the results of the present doctoral dissertation will contribute to make informed decisions of audit firms and other market participants in the modern business environment.

**Methods of the research.** The theoretical research carried out for the purpose of the analysis of audit risk and its assessment aspects was essentially based on the *analysis* of the available research papers, *systematization*, *synthesis*, *abstraction*, *generalization* and *comparison*. For that purpose the author of the paper explored the related research papers in economics, management, accounting, auditing and other areas.

With a view to identify the relevance of the object of the research in practice the author employed the elements of social surveys and used the questionnaire interviewing method. The obtained results of the empiric research were processed by using the *quality* and *quantity data analysis methods*, e.g., graphic data representation, regressive analysis, in addition to the use of SPSS software tool.

*The inductive* as well as *deductive reasoning methods* were employed to obtain the knowledge of the object of the present dissertation and to attain the predefined objective. The primary method adhered to for the purpose of the present paper was the inductive reasoning approach: following the comprehensive analysis of the individual

components of the research object such components were incorporated into a single entirety. Thereafter, following the consistency of the deductive method the developed audit risk assessment model was disintegrated into its individual components that were then examined and assessed on an individual basis. Subsequently, the practical applicability of the developed model was tested by forming the relevant hypotheses that were confirmed/denied by subjecting them to *logical analysis*. The logical analysis method was also adhered to for the purpose of the generalization and comparison of theoretical statements and the results of empiric research and drawing up of conclusions.

**Scope and structure of the dissertation.** The dissertation is structured of an introduction, three parts and conclusions. The main research material is presented in 184 pages that also include 40 tables and 22 figures, with 25 annexes attached. The list of references contains 183 items.

## 1. THE THEORETICAL RESEARCH IN THE AREA OF THE AUDIT RISK ASSESSMENT UNDER THE CURRENT MARKET CONDITIONS

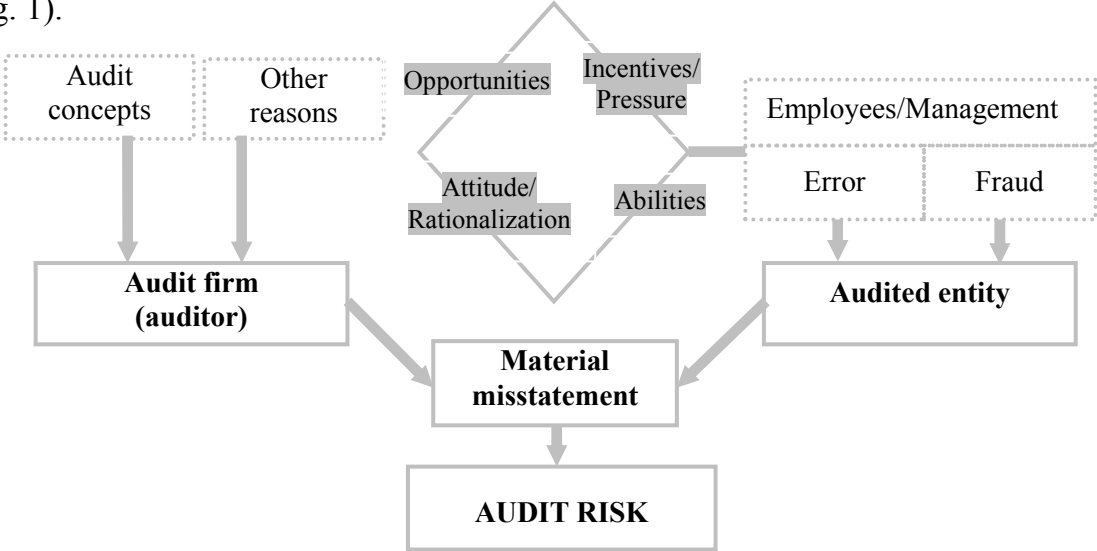
The analysis of a number of interpretations of the concept of audit risk allows the conclusion on the absence of any unanimous opinion on the use of the risk concept. In most instances the concept of risk is associated with the *probability of failure to reach the defined objective* (*Dabartinės lietuvių kalbos žodynas* (the Dictionary of the Modern Lithuanian Language) 2006; *Tarptautinių žodžių žodynas* (the Dictionary of International Words), 1985; Knight, 1921; Warren, 1992; Vaughan, 1997; COSO ERM, 2004; Urniežius, 2001; Mun, 2004). Other sources, however (*Ekonomikos terminų žodynas* (the Dictionary of Economics), 1994; Gronskas, 1993; Bagdonas, 1993; Garškienė, 1997; Rutkauskas, 2001; Lydeka, Drilingas, 2002; Laskienė, 2003) accentuate the *probability of loss possibly caused by risk*. Both interpretations point to the negative consequences (result) possibly caused by the risk factor. On the other hand, the Dictionary of the Modern Lithuanian Language (2006), Z. Lydeka, B. Drilingas (2002) and V. Gronskas (1993) define the concept of risk by pointing out that risk may be related to any *execution of actions and belief in luck in view of prevailing uncertain circumstances*. This approach highlights the principal factors causing any risk – uncertainty (unreliable situation or environment) and the instance of taking a decision or action.

Consideration of risk must in all cases be an important part of the decision-making process and a failure to properly assess the risk may lead to inadequate or inappropriate decisions. In its own turn the assessment of risk represents a general process of risk estimation and evaluation that involves the estimation of individual risks, identification of their occurrence probability and the overall impact of the risks upon the performance of an entity. Probability and impact are the two major components necessary for the comprehensive assessment of risk. The probability of risk and its possible impact are assessed by means of a predefined set of methods. A classification of the risk assessment methods could possibly facilitate the risk analysis and enhance the applicability of the methods concerned having regard to the specific circumstances. Therefore the author of the present research paper has suggested classifying the risk assessment methods into the following categories: 1) risk occurrence; 2) the theory of probability; 3) economic; 4) accumulated experience; and 5) modelling.

Thereafter it is considered expedient to assess whether a generalized risk management process, the essence of the risk assessment extracted as part thereof, and the proposed assessment methodology are to be applied to the assessment of the audit risk that an audit firm encounters when providing the financial statements audit service.

Research sources offer a variety of interpretations of the audit risk concept. The definition of audit risk proposed by a number of authors (Mackevičius, 1999; Lakis, 2007; Byčkova, 1998; Holmes, 1995; Arens, Loebbecke, 1997; Knechel, 2001), or in standards on auditing (ISA 200, 2006; 1 NAS<sup>1</sup>, 2006; 8 RFAVS<sup>2</sup>, 2005; 47 SAS<sup>3</sup>, 2006; 107 SAS<sup>4</sup>, 2006) do not present a sufficiently comprehensive description of audit risk: they fail to highlight a dual nature of audit risk, or the two possibilities of expressing an inappropriate auditor’s opinion.

The results of the audit risk concept analysis are generalized in the scheme (Fig. 1).



Source: Developed by the author.

**Fig. 1. The principal audit risk concept scheme**

The scheme shows the principal reasons causing material misstatements in financial statements: entity-related circumstances (employee/management error or fraud) and audit actions (the basis for performing an audit – audit concepts and other reasons). The approach being explored within the framework is much more extended as it covers

<sup>1</sup> 1 NAS – National Auditing Standard (Lithuania) No. 1 “Objective and General Principles Governing an Audit of Financial Statements”.

<sup>2</sup> 8 RFAVS – Standard on Auditing of the Russian Federation No. 8 “Assessment of audit risk and internal control”

<sup>3</sup> 47 SAS – Statement on Auditing Standards No. 47 “Audit risk and Materiality in Conducting an Audit”

<sup>4</sup> 107 SAS – Statement on Auditing Standards No. 107 “Audit risk and Materiality in Conducting an Audit”

all aspects of the audit risk concept. Therefore, the development of an optimal audit risk assessment model requires a more comprehensive analysis of the reasons causing material misstatements in financial statements.

In a number of research papers the audit risk assessment is related to the examination of a number of individual components of the audit risk only.

The assessment of the *risk of material misstatement at the overall financial statement level* is one of the most important and most challenging tasks for the auditor that subsequently affects the assessment of all other audit risk components. With this taken into consideration the conditions causing the appearance of risk are proposed to be classified into external and internal conditions of an entity, further seeking to ascertain whether the risk-causing conditions are related to the entity's business risk, commitment of fraud or any other circumstances related to the entity being audited (entity risk). In its own turn the business risk assessment should be based on the „top-down“ approach, i.e., an insight into the strategic business risks of an entity, then shifting to the process business risks, and in relation to fraud causes a possible fraud by employees or the management should be examined through the „fraud diamond“ (incentives/pressure, opportunities, attitudes/rationalization, abilities).

When defining the *inherent risk* the standards on auditing and certain authors (Johnson, 1991; Knechel, 2001; Ghosh, 2006; Whittington, Pany, 2006; Mackevičius 2009) specifically highlight the emergence of material misstatements: i.e., financial statement, account balances, etc. Meanwhile J. Mackevičius (1994), S. M. Byčkova (1998), V. V. Skobara (1998), A. D. Šeremet and V. P. Suijc (1995) indicate the reasons for the risk to appear, i.e., because of the characteristics of the entity itself, the surrounding environment, imperfection of the accounting system, etc. Nonetheless, the analysis of the inherent risk conditions led to the conclusion that the inherent risk is largely dependant upon the type of the element of the financial statements and/or the nature of the assertion made in respect of that element.

In research papers the definition of the *control risk* is most often based on its relation to the entity's internal control system. The internal control system is a process enforced by an entity and designed to ensure that the objectives defined by the entity are attained; and to manage the related business risk. In the opinion of the author of the

present research paper, to understand the entity's internal control system relevant to the audit and the efficiency of such system, the internal control system approach according to the COSO model (1992) (control environment, risk assessment, information and communication, control activities, and monitoring) should be accorded with the criteria defined under the CoCo internal control model (1995) – purpose, capability, commitment, and monitoring and learning.

The *detection risk* depends on the efficiency of the audit procedure and of its application (ISA 200, 2006, p. 313; 107 SAS, 2006, p. 1568). In some research papers (Mackevičius, 1999; Kabašinskas, Toliatienė, 1997; Arens, Loebbecke, 1995; Knechel, 2001, et al.) detection risk is directly related to the actions of the auditor. The author of the present paper maintains that the detection risk should be interpreted in a much wider sense, and the reasons causing this type of risk be classified into: 1) audit concepts, 2) auditor's characteristics, 3) audit actions, and 4) obtained assessment of the risk of material misstatement (inherent and control risk). While the detection risk itself should be classified into: 1) application of sampling: sampling risk; 2) nature of the audit procedures: audit procedures risk; 3) professional reasons, i.e., the professional risk that arises from the characteristics of the auditor and the deficiencies of the underlying audit concepts, or a failure to properly comply with them.

An auditor can achieve the acceptable audit risk level only by alleviating each or at least one audit risk component. Therefore the correlation links between the individual audit risk components must be sufficiently considered and clearly identified in the audit risk assessment.

The critical comparative analysis of the audit risk models proposed by different authors in a number of research papers (classical, expanded, W. R. Kinney (1989), S. J. Aldersley (1989), J. T. Sennetti (1990), R. P. Srivastava, G. R. Shafer (1992), ABREMA (1995), V. Beatie, S. Fearnley, R. Brandt (2002), J. L. Turner, T. J. Mock, R. P. Srivastava (2003) and T. B. Bell, M. E. Peecher, I. Solomon (2005) enabled the author to distinguish the characteristics features of the models on the basis of the model design, concept of components and the use thereof in an audit criteria. The results of the analysis have shown that all audit risk models are expressed in a certain form and are important in the audit process, since they: 1) provide a general understanding of the audit

risk and its components, although do not offer a specific methodology for the estimation of such risks; 2) distinguish the individual components of the audit risk; however, attempts to address the issue of the interdependence of the audit risk components are evident only in the audit risk models proposed by W. R. Kinney (1989), S. J. Aldersley (1989), R. P. Srivastava, G. R. Shafer (1992) and B. Bell, M. E. Peecher, I. Solomon (2005). Furthermore, the audit risk models expressed through the mathematical formula (classical, expanded W. R. Kinney (1989), J. T. Sennetti (1990), R. P. Srivastava, G. R. Shafer (1992) and ABREMA (1995): 1) prove that none of the audit risk components may be equal to zero; 2) provide a means to express one audit risk component in terms of other components, determines the scope of the audit procedures, the level of materiality which may be relevant when planning the statistical sampling; although the models do not provide any specific facilitation for assessing the audit risk and/or its individual components.

All the models considered, however, fail to fully disclose the essence of the audit risk assessment since they cannot fully reflect the entirety of all audit risk components and/or their principal characteristics:

1) *the conditions causing the audit risk have been addressed to only in selected audit risk models* (the expanded audit risk model does provide a certain understanding of the risk related to the application of the tests of details; the model proposed by J. L. Turner, T. J. Mock, R. P. Srivastava (2003) discusses the assessment of the risk due to fraud in terms of the components of the fraud triangle; the model of V. Beatie, S. Fearnley, R. Brandt (2002) distinguishes the risks of the independence and competence of the audit firm (auditor)). Although the model created by V. Beatie, S. Fearnley, R. Brandt (2002) does acknowledge the existence of the entirety of the audit risk components, i.e., the risk arising from the audited entity and the audit firm, the model additionally distinguishes the motivation risk, period and transaction-specific risks which make the model proposed by these authors even more complex rather than more understandable;

2) most audit risk models considered for the purpose of the present paper, with an exception of those proposed by R. P. Srivastava, G. R. Shafer (1992) and B. Bell, M. E. Peecher, I. Solomon (2005) *fail to resolve the aggregation issue*, i.e. they do not



demonstrate that the audit risk and each component thereof need to be (re)assessed not only on the assertion, classes of transactions or account balances level, but also on the financial statement level. To expand the audit risk assessment model an expedient approach is to address the audit risk aggregation issue at the overall financial statement level and at the individual assertion level. This view has been supported by H. Holmes (1995), B. K. Ghosh (2005), who, however, did not summarize the approach in their models.

3) it was only the audit risk models proposed by ABREMA (1995) and B. Bell, M. E. Peecher, I. Solomon (2005) that disclosed that *the audit risk and/or its components are (re)assessed at a certain stage of the audit*; however, none of the audit risk models considered disclose the iterative nature of the decision-making process. Still, any changes in the audit risk assessment certainly have an effect upon the auditor's work. Therefore in this respect the audit risk assessment model should be also further improved.

On the basis of the above considerations the author of the present paper defined the following directions to improve the audit risk assessment model: 1) the audit risk component entirety problem; 2) disclosure of the interdependence of the audit risk components; 3) practical application of the model for the assessment of the audit results; 4) resolving of the aggregation issue; 5) the iterative decision-making in the audit process. Although some research papers (Arens, Loebbecke, 1995; Mackevičius, 1999; Messier, Austen, 2000b, *et al.*) question the possibility to accurately assess the audit risk; such assessment for the purpose of the model proposed by the author of the present paper is an essential condition.

## **2. DEVELOPMENT OF THE AUDIT RISK ASSESSMENT MODEL**

With a view to determining the relevance of the object of the present research paper (audit risk assessment) the author of the paper carried out the questionnaire survey among Lithuanian auditors. The purpose of the survey was to identify and determine the experience of Lithuanian auditors in assessing the audit risk. For that purpose in October 2008, 30 questionnaires were distributed to targeted respondents. 8 questionnaires were not responded and the completed 22 questionnaires sufficed the minimum sample size

requirement thus constituting a representative sample. The responses were received with a 95 percent probability and a 20 percent error.

The results of the survey demonstrated that the classical audit risk model cannot be considered sufficiently effective for the purpose of assessment of audit risk in the modern business environment and has also proved difficult for auditors to apply in practice. The principal areas for the improvement of the audit risk assessment model would target the model to be able to: 1) demonstrate the interdependence of the audit risk components; 2) specify that the audit risk and/or its components are assessed at each stage of an audit and at different levels in order to achieve the acceptable audit risk level; 3) identify the audit risk components in the way enabling a distinction of the risk of material misstatement due to fraud or error, and a perception of the business risk of an audited entity as a constituent part of the risk of material misstatement, and a segregated analysis of sampling risk and non-sampling risk; 4) take into consideration other factors causing the audit risk. These and other considerations were taken into account by the author of the present paper while developing the original audit risk assessment model. The audit risk model proposed as a result of the research covered by the present paper consists of the audit risk assessment model structurograme, the audit risk components evaluation scale and the audit risk assessment scheme.

**The audit risk assessment model structurograme** (see. Fig. 2) is divided into three parts that distinguish the audit risk assessment model elements. The links between the individual elements of the model and the constituent parts of the elements are shown by arrows where the solid line shows the direct links and the dotted lines demonstrate the derivative (dependence) relations. The audit risk assessment model structurograme developed by the author of the present paper is distinguished for its following features: 1) the model represents a generalization of the *audit risk conditions*, that are grouped into relevant categories with identified internal relations, thus allowing the identification of the reasons leading to the emergence of the audit risk components; 2) the model identifies the principal *audit risk components* and *their correlations links* (the impact of the risk of material misstatement on financial statement level upon the assessment of the risk at the assertion level; it identifies the dual relationship between the risk of material misstatement at the assertion level and the detection risk); 3) the model demonstrates the

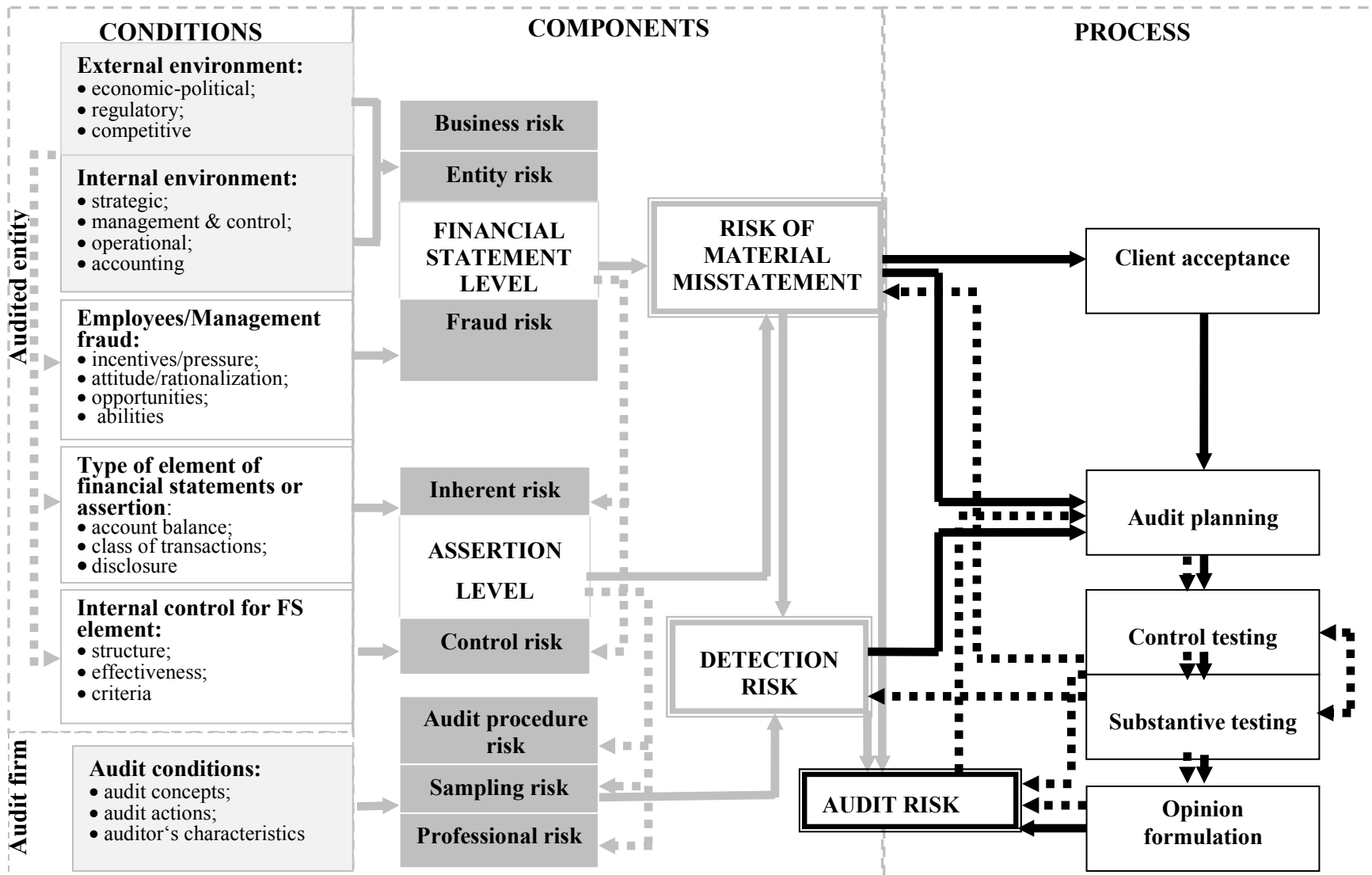


Fig. 2. Audit risk assessment model structurograme

continual character of the (re)assessment of the audit risk and its components during an audit and the related iterative decision-making process. These issues characteristic of the original model developed by the author had hardly been addressed in audit risk model proposed by other researchers.

The audit risk assessment model structurograme discloses the consistency of the audit risk assessment process that is of utmost importance for a comprehensive assessment of the audit risk. The audit risk assessment model, however, would be incomplete unless it offers a *practically applicable methodology for the assessment of audit risk and/or its components*.

Table 1

**Quantitative evaluation of the audit risk components**

Steps	Description
1. Factor identification	The examination of the related conditions and circumstances identifies all factors potentially causing audit risk.
2. Factor occurrence probability assessment	The occurrence probability is scored from 1 to 5: <i>1- very low,.... 5 – very high.</i>
3. Assessment of the impact of the factor	The impact is assessed at the scale from 1 to 5: <i>1 – very low (up to 1/10 of the size of the tolerable error), 2 – very low (equal to 1/10 of the tolerable error or higher, up to the level of a tolerable error), 3 – medium (equal to the tolerable error or higher; up to the material level), 4 – high (equal to material level or higher than material level up to by 10 times), 5– very high (by 10 times higher than the material level).</i>
4. Elimination of a factor of low impact	Where according to Step 3 the impact is scored very low or low (1-2 points according to the scale applied), the factor is from the further calculations eliminated.
5. Determination of the factor risk value (FR)	$FR_1 = Probability_1 \times Impact_1$
6. Calculation of the overall risk (OR)	$OR = FR_1 + FR_2 + \dots + FR_n$
7. Overall impact (OI) calculation	$OI = Impact_1 + Impact_2 + \dots + Impact_n$
8. Determination of the maximum risk (MR)	$MR = 5 \times OI$
9. Risk level determination (RL)	$RL = (OR / MR) \times 100\%$
10. Risk level evaluation (RL)	<i>RL:</i> <i>0-40% – low risk,</i> <i>41-60 % – medium risk,</i> <i>61-100% – high risk.</i>

Source: compiled by the author.

The author of the present paper has proposed a **methodology for the qualitative evaluation of the audit risk components** (see *Table 1*). The evaluation methodology is based on the identification of all audit risk factors, determination of their occurrence probability and possible impact and therefore established a systemic approach towards the audit risk assessment.

*Table 2*

**Business risk computation**

Entity's external environment		Risk assessment			Notes
Conditions	Factors	Probability (1-5)	Impact (1-5)	Probability * impact	
1. Economic – political	Significant economic and political changes in progress				
	Operations in economically volatile regions				
	Entity's operations affected by unstable markets				
	Increasing scope of business failures in the sector				
	Volatile currency rate				
	Excessive inflation/deflation				
	Imposed borrowing restrictions				
...					
2. Regulatory	Stringent regulation				
	Regulatory insight into the operations				
	New accounting requirements and significant changes in the corporate accounting policies				
	Changes and deficiencies in tax system				
	...				
3. Competitive	Tight competition in the sector				
	The sector is characterized by sudden growth/downturn or abrupt changes, numerous corporate bankruptcies				
	Adverse changes in the supply chain				
	The financial performance of the company are significantly different from the sector's average				
	Tangible decline in the customer demand				
	Difficulties with product/service buyers				
	Changes in the IT environment				
	Inability to attract staff with production-relevant skills				
...					
<b>OVERALL RISK</b>		<b>Line 1</b>			
<b>OVERALL IMPACT</b>		<b>Line 2</b>			
<b>MAXIMUM RISK (5*Line 2)</b>		<b>Line 3</b>			
<b>RISK LEVEL, percent (Line 1/Line 3*100)</b>		<b>Line 4</b>			

*Source: compiled by the author.*

The accuracy of the quantitative evaluation of each individual audit risk component will largely depend upon the identification of all related factors. To that end a very instrumental reference is the risk calculation tables compiled by the author of the paper (the sample on business risk is presented in *Table 2*). In the opinion of the author of the present paper the risk computation tables are to help avoid errors and inaccuracies and ensure a significantly more objective assessment of audit risk components. Therefore these tables are to be considered an important part of the methodology for the assessment of audit risk and/or its components.

The process of the determination of the impact of an individual audit risk component or its occurrence probability shall necessarily take into account the peculiarities of the factors/conditions causing the factors. The research and practical papers explored for the purpose of the present paper did not propose any specific methodology facilitating any scoring of an individual material misstatement risk at the financial statement or assertion level as low, medium or high depending on the scope of conditions causing the risk. Therefore the author proposed an original systemic approach by compiling the **audit risk components evaluation scale**. The approach offered by the author not only generalizes the expertise in the audit risk component assessment depending on the scope of the conditions causing the occurrence of the risk, it also shows the method to relate the qualitative assessment with the proposed quantitative evaluation of the audit risk components.

Another important consideration for the development of the audit risk assessment model is the *identification of the correlation links between the individual audit risk components*. For that purpose the author compiled the **audit risk assessment scheme** that provided a tool to disclose the correlation links between the individual audit risk components and the overall audit risk assessment. The links between the individual audit risk components are respectively identified through the *assessment* of the dependence of the individual audit risk components (i.e., the impact of the assessment of an individual component upon the assessment of another related audit risk

component), or through their overall assessment (for that purpose merging the assessment of several audit risk components to demonstrate their combined effect).

To summarize, it may be concluded that the audit risk assessment model proposed by the author of the dissertation covers the most important aspects of the assessment of audit risk and its components that had not been addressed or expressly disclosed in other research papers.

### **3. APPLICATION OF THE AUDIT RISK ASSESSMENT MODEL**

The audit risk assessment model proposed by the author of the present paper was tested in relation to the audit of the financial statements for the year ended on 31 December 2008 of two entities (UAB Šiluma and UAB Žuvila, titles changed) according to the formulated hypothesis.

The testing of the model showed that a primary task in relation to an audit is to obtain an understanding of the *entity's internal and external environment* by identifying all the material conditions or factors that might adversely affect the entity's abilities to attain its objectives. This requires an individual assessment of all components of the risk of material misstatement at the overall financial statement level: business risk, entity risk and the fraud risk. Thereafter, having regard to the materiality level and the tolerable error value as determined by the auditor, the exercise requires *the identification of all elements of financial statements and the respective assertions that are relevant from the viewpoint of the risk of material misstatement, and the computation of inherent and control risk*. The individual computations of the inherent and control risks thus obtained and the reference to the overall audit risk assessment scheme enable *the determination of the overall material misstatement risk at the assertion level*, otherwise, an overall assessment. Whereas the latter assessment should be further adjusted for the related risk of material misstatement at the overall financial statement level. Thereafter, the audit risk assessment is performed in the following course: 1) establishment of *a probable detection risk* on the basis of the computed value of the risk of

material misstatement at the assertion level (assessment of reverse dependence); 2) consideration of possible ways *to achieve the established level of detection risk through the interface of its components* (audit procedure risk, sampling risk and professional risk), and the required audit procedures enabling to substantiate the accuracy of the assertion of the financial statement element; 3) *performance of audit procedures to confirm/deny* the assessment of the audit risk components at the assertion level; 4) *assessment of the overall audit risk level* having regard to the audit risk assessments at the assertion level.

The exercise of testing the hypotheses raised for the present research yielded a number of conclusions: 1) the first, third and the fourth hypotheses were confirmed, i.e., the assessment of the risk of material misstatement at the overall financial statement level determines the assessment of the related risk of material misstatement at the assertion level ( $H_1$ ); to ensure an efficient audit, it is important to consider the reverse dependence between the risk of material misstatement at the assertion level and the assessment of detection risk ( $H_3$ ); the audit concludes by assessing the overall audit risk level having regard to the values of the audit risk at the assertion level ( $H_4$ ); 2) the wording of the second hypothesis ( $H_2$ ) was denied having concluded that the individual computation of the inherent risk and control risk enables more accurate computation of the risk of material misstatement at the assertion level.

## CONCLUSIONS

The theoretical and practical research of the audit risk assessment conducted within the framework of the present dissertation led to the following conclusions:

1. The analysis of the aspects of the risk in economy discussed in the research papers has led to the conclusion that the risk and the uncertainty are different concepts. They can be identified as one when the decision is accepted or the action is exercised under circumstances of unpredictable market economy (business environment). Consequently, the things to be considered in



defining the risk are: 1) it is related to the decision-making process, 2) it is related to loss and the objectives to be attained, 3) it is a probability category and 4) with its characteristic uncertainty. The systemic approach should be applied in assessing the risk that involves a general process of risk estimation and evaluation. During the process individual risks are calculated with identification of their occurrence probability and possible effect and the overall impact of the risks upon the performance of an entity is evaluated.

2. The comparative analysis of a number of definitions of the „audit risk” concept showed that the relevant research literature has not yet yielded a comprehensive description of the concept, as fail to highlight:

- the dual nature of the audit risk (a) due to the auditor’s fault or b) due to circumstances beyond the control of the auditor),
- two possibilities of expressing an inappropriate auditor’s opinion.

The definition of the audit risk should take a broader view and take the above issues into consideration, in other words, to define that audit risk means:

- 1) the risk of *existence of material misstatements*;
- 2) risk that the existing material misstatements *will remain undetected* and the auditor will express an inappropriate opinion;
- 3) the risk that the auditor will express an *inappropriate opinion about financial statements and the material misstatements present (absent) therein*.

All these essential aspects of audit risk are covered in the principal audit risk concept scheme developed by the author.

3. The generalization of the practical assessment of audit risk allowed the conclusion on the applicability of the systemic approach towards the audit risk assessment. The above considerations lead to the conclusion that overall *audit risk assessment should be related not only to the examination of individual audit risk components, but also to the overall assessment of the probability and the impact of the factors (conditions) causing the risk, also by identifying the correlation links between the individual audit risk components within the framework of the audit process itself*. Due to the performed analysis

of different audit risk assessment methods that are introduced in the systemic classification of the risk assessment methods proposed by the author and due to the limitations inherent to audit risk (subjective determination of the audit risk reasons (conditions and factors), probability and the impact of their occurrence) has been concluded that the sophisticated economic methods or methods offered by the theory of probability or computer modeling could hardly not be used by the auditors. The expedient approach in assessing audit risk is to employ the risk occurrence determination and/or accumulated experience methods.

4. As there is no one opinion in auditing theory and practice regarding the number of audit risk components and the classification of conditions determining audit risk components, this constituted a basis for distinguishing the principal audit risk components, classifying the audit risk conditions and generalizing of the correlation links between such components:

1) *the risk of material misstatement* must be perceived as occurring at the overall financial statement level and at the assertion level.

*The risk of material misstatement at the overall financial statement level* is the risk arising from the internal and external environment of the audited entity. The analysis results show that the economic-political, regulatory and competitive conditions should be classed to the external environment of an audited entity and the entity's strategic, management and control, operational and accounting conditions referred to the internal environment. Therefore, in seeking to assess the audit risk appropriately, all these conditions should be examined considering the individual components of the risk of material misstatement at the overall financial statement level, such as a) business risk, b) fraud risk and c) entity risk. While assessing the business risk, the strategic business risks of the entity should be considered firstly, then shifting to the process business risks. When the fraud risk should be considered as possibility of fraud by the employees and management of the entity through the prism of the „fraud diamond”.

The *risk of material misstatement at the assertion level* is the risk related to the nature of a specific element of the financial statements and/or its assertion (inherent risk) and the control procedures applied in respect thereof (control risk). It has been proposed that the appropriateness of the control procedures of an audited entity is determined by examining a) the structure of the internal control system according to the COSO model, b) the effectiveness of its operations, as well as by employing the criteria defined by the CoCo model (purpose, capability, commitment, and monitoring and learning);

2) *detection risk* – the risk caused by the audit conditions should be perceived as a combination of the audit procedures, sampling and professional risks. The detection risk is the type of risk managed by the auditor at the assertion level. It was found out that: a) the *audit procedure risk* is related to an inappropriate application or selection of audit procedures for the examination of a specific financial statements element or a related assertion; b) *sampling risk* arises from the consideration that the audit conclusions produced on the basis of a sample data may be different from those arrived at in the event the identical audit procedures had been applied to the entire population; c) *professional risk* is related to the qualities of the auditor itself (experience, qualification) and/or imperfection of, or an inappropriate compliance with the principal audit concepts;

3) the overall audit risk assessment should duly take into consideration the interrelations of the audit risk components: a) the risk of material misstatement at the overall financial statement level directly affects the assessment of the risk of material misstatement at the assertion level; b) there is a direct relationship between the risk of material misstatement at the assertion level and the detection risk in the way that the higher is the risk of material misstatement the higher is the related detection risk; while c) the reverse relationship between the risk of material misstatement at the assertion level and the detection risk clearly shows that the acceptable level of risk may be attained only by alleviating one of these components. The relationships discussed above are important in the sense that they affect the application of

further audit procedures and ensure the efficiency of the audit firm's performance.

5. The critical comparative analysis of the audit risk models proposed by a number of authors in the area has shown that none of them could be considered sufficiently comprehensive and they fail to fully reveal the essence of the audit risk assessment, since they:

1) provide a general understanding of the audit risk and its components, although do not offer a specific methodology for the estimation of such risks;

2) distinguish the individual components of the audit risk, but not solve the issue of the interdependence of the audit risk components;

3) not fully disclose the entirety of the audit risk components and/or their main characteristics for the conditions causing the audit risk such as sampling, commitment of fraud and audited entity business risk and etc.,

4) fail to resolve the aggregation issue on the financial statement level and assertion level;

5) do not demonstrate that the audit risk and/or its components are (re)assessed at a certain stage of the audit, disclosing the iterative nature of the decision-making process for the purpose of the risk assessment.

Accordingly the following directions to improve the audit risk assessment model has been generalized: 1) the audit risk component entirety problem; 2) disclosure of the interdependence of the audit risk components; 3) practical application of the model for the assessment of the audit results; 4) resolving of the aggregation issue; 5) the iterative decision-making in the audit process.

6. The results of the survey demonstrated that Lithuanian auditors face with problems while assessing the audit risk such as: 1) the audit risk as economic category is hardly assessed; 2) the complexity of audited businesses; 3) the variety of conditions (factors) causing the appearance of the audit risk and its components; 4) the complexity of internal control system in audited entity; 5) the lack of knowledge and gained experience in this matter; 6) the absence of applicable auditing methodology and 7) the ignorance of other audit

risk assessment models that are applied in practice. Therefore principal areas for the improvement of the audit risk assessment model has been identified: 1) to demonstrate the interdependence of the audit risk components; 2) to specify that the audit risk and/or its components are assessed at each stage of an audit and at different levels in order to achieve the acceptable audit risk level; 3) to identify the audit risk components in the way enabling a distinction of the risk of material misstatement due to fraud or error, and a perception of the business risk of an audited entity as a constituent part of the risk of material misstatement, and a segregated analysis of sampling risk and non-sampling risk; 4) to take into consideration other factors causing the audit risk.

7. The audit risk assessment model proposed by the author of the research paper disclosures a systemic approach towards the audit risk assessment. The model: 1) *identifies principal audit risk components* while relating them with the conditions causing their appearance, 2) *identifies the correlation links* between the assessment of the individual audit risk components and the relation between the latter with the material misstatement in the financial statements and the audit risk, 3) *demonstrates the continual process of the (re)assessment of the audit risk and its individual components* to be exercised in each stage of the audit, 4) *proposes a method for the quantitative evaluation of the audit risk and/or its individual components* that is based on overall evaluation of occurrence probability and impact of the factors related to audit risk components.

8. The proposed audit risk assessment model is composed of:

1) *the audit risk assessment model structurograme* able to disclose the consistent nature of the audit risk assessment process that was not highlighted in other audit risk models proposed by other researchers. The audit risk assessment model structurograme: a) systemizes both the principal and the derivative conditions causing the appearance of the individual audit risk components (the external and internal environment of the audited entity, the conditions of the auditing); b) distinguishes the principal components of the audit risk (the risk of material misstatement and the detection risk) manifesting

themselves at different levels and shows their interdependence, c) the proposed audit risk assessment process demonstrates the feedback from any previous audit stages/actions and specifies the values of the audit risk components obtained from the completed assessment of a possible material misstatement.

2) *the audit risk components evaluation scale* that generalizes the guidelines for the assessment of the conditions causing the appearance of the individual audit risk components. The guidelines contribute to the emergence and accumulation of the operating experience in the assessment of the risk of material misstatement as they are able to demonstrate the cases where the individual components of the risk at the overall financial statement level or the assertion level are to be assessed as low, medium or high risks depending on the scale of the occurrence of the conditions causing the same. An important consideration in this respect is also the ability of the scale to relate the assessment of the audit risk components with the proposed quantitative evaluation.

3) *the audit risk assessment scheme* designed to facilitate the identification of the correlation links between the individual audit risk components both through the assessment of the dependence of the individual audit risk components, and their overall assessment, and to disclose the impact they produce upon the overall audit risk level. The audit risk assessment scheme developed for the purpose of the present research paper establishes the relations between the audit risk components manifesting themselves at the overall financial statement level and at the assertion level, and in this respect represents a significant improvement to the scheme showing the relation between the inherent, control and detection risks proposed in a number of research sources examined in the course of the present research.

4) *the methodology for the quantitative evaluation of the audit risk components* based on the 10 steps of the quantitative evaluation and the risk computation tables compiled by the author. The proposed methodology requires: 1) identification of all factors related to the audit risk component, 2) establishment of the probability of the occurrence of the same and their

impact, and 3) assessment of the overall level of the audit risk component. Other important considerations in relation to the assessment of the level of a specific audit risk component include: 1) factors whose effect is negligible, i.e., is below the value of the tolerable error, are eliminated from any further audit risk computations; 2) a reference to the computed value of the maximum risk that is equal to the product of the overall impact of the risk being assess and its maximum probability. The computation is based on the assumption that in respect of the auditor not all, but only possible material misstatements must be of relevance, and that it is only the factor occurrence probability level that can vary depending on the related circumstance and thus affect the level of the related risk, while its overall impact will remain unchanged.

9. The audit risk assessment model developed by the author of the present doctoral dissertation *meets all conditions relevant for the audit risk assessment*, i.e., the model:

- acknowledges the entirety of the audit risk components and their principal characteristics;
- discloses the interrelationship between the individual audit risk components;
- specifies that the audit risk and/or its individual components are assessed at each stage of the audit and at different level of its aggregation;
- defines the audit stages according to the applicable audit practice;
- reveals the iterative nature of the decision-making process for the purpose of the risk assessment; and
- is applicable when assessing the audit results.

The testing of the audit risk assessment model proposed by the author in relation to the concrete audits of financial statements confirmed: 1) the structure of the model (elements): audit risk conditions (factors), audit risk components and audit risk assessment process; 2) correlation links between the individual audit risk components both through the assessment of the dependence of the individual audit risk components, and their overall

assessment. Therefore it is applicable in practice: for all audits irrespective of the size and the nature of activity of the entity audited, and may be employed as an instrumental methodological tool for the audit risk assessment.

### **Published works on the topic of the dissertation.**

In research publications recognized by the Research Council of Lithuania.

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2. Jankūnaitė R. *Audito rizikos veiksniai globalioje ekonomikoje*. Ekonomika ir vadyba: Tarptautinės mokslinės konferencijos pranešimų medžiaga. Kauno technologijos universitetas, 2007, p. 46 – 53. ISSN 1822-6515.

Other publications:

1. Kanapickienė R., Holšanskienė V., Jankūnaitė R. *Priimtino audito rizikos lygio įvertinimas*. Konferencija „Studijų ir verslo integracija“ Straipsnių rinkinys, Kauno kolegija, 2005, p. 117 – 122. ISBN 9955-586-62-1.

2. Jankūnaitė R. *Požiūrio į rizikos vertinimą audite pokyčiai ir perspektyvos*. Apskaitos ir finansų mokslas ir studijos: problemos ir perspektyvos. Šeštosios tarptautinės mokslinės konferencijos straipsnių rinkinys, Nr. 1(6), 2008 m. spalio 24 d., Akademija, Kauno r., p. 40 – 45. ISSN 2029-1175.

3. Jankūnaitė R. *Audit risk model: need for revision?* Accounting and performance management perspectives in business and public sector organizations: Conference proceedings, May 8-9, 2009, Tartu, p. 35 – 46. ISBN 978-9949-19-122-2.

### **About the author**

Rita Jodelienė was born in Birzai on 29th of May in 1980.

A Bachelor degree in Business Administration and Management got in Lithuanian University of Agriculture, Economics and Management faculty in



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2004 July – 2008 November has worked in the Lithuanian Chamber of Auditors as an audit methodology specialist. Since 2008 November works in UAB „Ernst & Young Baltic” (an audit firm) as a consultant in auditing and assurance services.

## AUDITO RIZIKOS VERTINIMO MODELIS

**Temos aktualumas.** Verslo aplinka nuolat keičiasi ir sudėtingėja. Globalizacijos ir technologijų sukelti verslo pokyčiai, didėjantis subjektyvių sprendimų ir įvertinimų naudojimas sudarant finansines ataskaitas, lemia spaudimą, kurio dažna išvada – apgaulingos finansinės ataskaitos. Apgaulės būdu siekimas pagerinti įmonės finansinę būklę anksčiau ar vėliau priveda prie jos bankroto. Tai įrodo ir stambiųjų korporacijų („Enron“, „WorldCom“, „Parmalat“) bei vienos didžiausių audito įmonių „Arthur Andersen“ žlugimas, o taip pat visai neseniai pasaulį ištikusi finansų krizė, prasidėjusi nuo JAV investicinio banko „Lehman Brothers“ bankroto ir finansinių paslaugų įmonės „Merill Lynch“ nesėkmės. Šie įvykiai reikalauja esminių permainų reguliuojant įmonių veiklą ir jų finansinių ataskaitų sudarymą bei užtikrinant nepriklausomo audito vaidmenį visuomenės interesui.

Audito įmonės yra įpareigosios pareikšti nepriklausomą nuomonę apie informacijos, pateiktos finansinėse ataskaitose, teisingumą ir tikrumą, kad apskaitos informacijos vartotojai galėtų priimti svarbius ekonominius sprendimus. Todėl norint įgyvendinti šį iškeltą tikslą, svarbu tobulinti audito atlikimo metodiką taip, kad ji būtų suderinta su besikeičiančia verslo aplinka ir laiku padėtų nustatyti dėl klaidos ar apgaulės atsiradusius reikšmingus iškreipimus finansinėse ataskaitose. Tai reiškia, kad turi būti tobulinamas audito rizikos, su kuria susiduria audito įmonė, nustatymas bei vertinimas.

Būtinybė įvertinti audito riziką audito teorijoje yra gerai žinoma, o XX a. pab. auditas pradėjo transformuotis į „riziką paremtą auditą“, kuris didelį dėmesį skiria ekonominei sistemai, kurioje veikia audituojama įmonė, ir audito įrodymams apie jos nulemtą riziką. Tačiau iki šiol šis požiūris nesulaukė platesnio pritaikymo audito praktikoje, nes nebuvo sukurta aiški ir vieningai suprantama audito rizikos vertinimo metodologija.

**Mokslinė problema, jos ištyrimo lygis.** Atlikta audito krypties sisteminė mokslinės literatūros analizė leidžia teigti, kad per tris paskutinius

dešimtmečius įvairūs tyrėjai kėlė klausimus, susijusius su audito rizika ir jos vertinimo galimybėmis.

Pirmą kartą sisteminis požiūris į audito riziką pateiktas 1983 metais: Amerikos sertifikuotų viešųjų buhalterijų institutas (angl. sutr. *AICPA*) paskelbė visuotinai priimtina audito rizikos modelį – klasikinį audito rizikos modelį. Tačiau mokslininkai (Dodž, 1992; Robertson, 1990; Kinney, 1989; Aldersley, 1989; Sennetti, 1990; Srivastava, Shafer, 1992; Beatie, Fearnley, Brandt, 2002; Turner, Mock, Srivastava, 2003; Bell, Peecher, Solomon, 2005) ištyrė, kad šis modelis tik iš dalies atskleidžia audito rizikos sampratos esmę, ir todėl pateikė savas audito rizikos modelio interpretacijas. Nors galima pripažinti, kad naujieji audito rizikos modeliai panaikina tam tikrus klasikinio audito rizikos modelio trūkumus, visgi jie nėra išsamūs ir neatspindi visų audito rizikos vertinimo klausimų, su kuriais besikeičiančioje verslo aplinkoje susiduria audito įmonės, atlikdamos finansinių ataskaitų auditą.

Nemažai dėmesio audito rizikai užsienio mokslo darbuose skyrė: *B. E. Cushing, J. K. Loebbecke (1983), D. R. Carmichael (1988, 2006), W. R. Kinney (1989), V. M. O'Reilly (1990), J. C. Robertson (1990), J. T. Sennetti (1990), H. Johnson (1991), R. P. Srivastava, G. R. Shafer (1992), W. S. Waller (1993), A. D. Šeremet, V. P. Suijc (1995), A. A. Arens, J. K. Loebbecke (1997), S. M. Byčkova (1998), V. V. Skobara (1998), T. E. Bayer (1999), K. M. Johnstone (2000, 2001), M. Davies (2001), R. W. Knechel (2001, 2007), V. Beatie, S. Fearnley, R. Brandt (2002, 2005), J. I. Turner, T. J. Mock, R. P. Srivastava (2003), S. Spector (2003), T. B. Bell, M. E. Peecher, I. Solomon (2005), S. H. Mitchel (2005), J. A. Fogarty, L. Graham, D. R. Schubert (2006), R. O. Whittington, K. Pany (2006)* ir kiti. Šiuose darbuose dažniausiai: 1) nagrinėjama audito rizikos ir atskirų komponentų samprata; 2) identifikuojamos audito riziką lemiančios sąlygos bei veiksniai. Tačiau čia neapibendrinama audito rizikos komponentų visuma, nepateikiama išsami audito riziką lemiančių sąlygų klasifikacija bei visa tai neapjungta į išsamų audito rizikos sampratos modelį. Be to, tik nedaugelis šių mokslininkų (*Cushing, Loebbecke, 1983; Robertson, 1990; Sennetti 1990;*

*Johnson, 1991; Srivastava, Shafer, 1992; Waller, 1993; Byčkova, 1998*) analizavo ryšius tarp atskirų audito rizikos komponentų ir jų įvertinimo įtaką audito rizikai.

Audito rizikos vertinimo problemos praktikoje užsienio mokslo darbuose tikrinamos atliekant dviejų krypčių empirinius tyrimus: 1) tarpusavio ryšių tarp atskirų audito rizikos komponentų (*Daniel, 1988; Waller, 1993; Dusenbury, Reimers, Wheeler, 2000; Kotchetova, Kozloski, Messier 2006*); 2) audito rizikos komponentų priklausomybės nuo juos lemiančių sąlygų (veiksnių) (*Quadackers, Mock, Maijoor, 1996; Messier, Austen, 2000; Majid, Gul, Tsui, 2001; Graham, Bedard, 2003; Bhattacharjee, Moreno, 2002; Kizirian, Mayhew, Sneathen, 2005; Chen, Huang, Shih, 2006*). Tai leidžia teigti, kad visaapimantys audito rizikos vertinimo tyrimai nėra įgyvendinti.

Audito rizikos problematika nagrinėjama ir Lietuvoje. Tačiau *D. Daujotaitės (2006), V. Lakio (2007), J. Kabašinsko ir I. Toliatienės (1997), R. Kanapickienės (2001, 2004), J. Mackevičiaus (1999, 2001, 2009), I. Matickienės (1997)* ir *J. D. Staliūnienės (2001)* atliktuose teoriniuose tyrimuose nagrinėjami tik esminiai audito rizikos sampratos klausimai, o jos vertinimas tiriamas fragmentiškai, atskleidžiant atskirų audito rizikos komponentų vertinimo aspektus.

Nors minėti moksliniai tyrimai praplečia audito rizikos sampratą ir vertinimo procesą, tačiau juose nepateikiama išsami, sisteminė audito rizikos vertinimo analizė ir neatskleidžiamas sisteminis požiūris į audito rizikos vertinimą. Atsižvelgiant į tai, konceptualaus ir metodologiškai pagrįsto audito rizikos vertinimo modelio nebuvimas yra aktuali sprendžina mokslinė problema.

**Tyrimo objektas** – audito rizikos vertinimas.

**Tyrimo tikslas** – ištyrus audito rizikos sampratą ir jos vertinimo galimybes, sudaryti optimalų audito rizikos vertinimo modelį ir pritaikyti jį šiandieninėje verslo aplinkoje.

Siekiant iškelto tikslo, sprendžiami tokie **uždaviniai**:

- išnagrinėti rizikos ekonomikoje prigimtį ir vertinimą;

- išanalizuoti audito rizikos sampratą, nustatant audito rizikos komponentus ir jų tarpusavio ryšius bei esminius jų vertinimo ypatumus;
- atlikti kritinę mokslo darbuose siūlomų audito rizikos modelių lyginamąją analizę ir apibendrinti kryptis, kurias turi tenkinti darbo autorės sudarytas audito rizikos vertinimo modelis;
- ištirti su kokiomis problemomis susiduriama audito praktikoje vertinant audito riziką ir išskirti audito rizikos vertinimo modelio pritaikymui būtinas sąlygas;
- sudaryti audito rizikos vertinimo modelį, kuris atskleistų sisteminių požiūrį į audito rizikos vertinimą, ir jį patikrinti konkrečių auditų pavyzdžiu.

#### **Ginamieji disertacijos teiginiai:**

1. Iki šiol mokslo darbuose pateikti ir praktikoje taikomi audito rizikos modeliai neatspindi visų audito rizikos vertinimo klausimų, su kuriais besikeičiančioje verslo aplinkoje susiduria audito įmonės, atlikdamos finansinių ataskaitų auditą.

2. Audito rizikos vertinimo modelis turi apimti šiuos pagrindinius elementus: audito rizikos sąlygas (veiksnius), audito rizikos komponentus ir audito rizikos vertinimo procesą audito metu.

3. Tarpusavio ryšiai tarp audito rizikos komponentų turi būti identifikuojami per atskirų audito rizikos komponentų priklausomybės ar bendrąjį jų vertinimą.

**Mokslinį tyrimų naujumą ir teorinę darbo reikšmę** nusako teoriniai tyrimų rezultatai:

- atlikta audito rizikos ir jos vertinimo sampratos interpretacijų analizė leido: 1) pritaikyti platesnį požiūrį apibrėžiant audito riziką ir nustatyti teoriškai pagrįstą audito rizikos sampratos principinę schemą, 2) išskirti esminius audito rizikos komponentus ir 3) suklasifikuoti audito riziką ir jos komponentus lemiančias sąlygas bei veiksnius;
- pasiūlytas sisteminis požiūris į audito rizikos vertinimą. Šio požiūrio naujumą atskleidžia tai, kad: 1) audito rizikos vertinimas siejamas ne tik su

atskirų audito rizikos komponentų nagrinėjimu, bet ir su juos lemiančių sąlygų (veiksnių) tikimybės bei pasireiškimo įtakos bendru įvertinimu; 2) identifikuoti tarpusavio ryšiai tarp atskirų audito rizikos komponentų; 3) audito rizikos vertinimas susietas su pačiu audito procesu;

- sudarytas patobulintas audito rizikos vertinimo modelis. Darbo autorės audito rizikos vertinimo modelyje nauja tai, kad jis išsamiai parodo: 1) audito rizikos vertinimo proceso nuoseklumą; 2) sąlygas, į kurias reikia atsižvelgti vertinant konkrečius audito rizikos komponentus; 3) vertintinus audito rizikos komponentus; 4) audito rizikos komponentų vertinimo lygmenis; 4) tarpusavio ryšius tarp audito rizikos komponentų; 5) audito rizikos komponentų apskaičiavimo bei įvertinimo būdą; 6) audito rizikos vertinimo sąsajas su pačiu audito procesu; ir 7) kaip pasiekti priimtina audito rizikos lygį. Taigi šis modelis įgyvendina sisteminių požiūrį į audito rizikos vertinimą.

**Praktinė darbo reikšmė.** Pasiūlyta nauja audito rizikos komponentų kiekybinio įvertinimo metodika, kuri įgalina: 1) identifikuoti visus su audito rizikos komponentu susijusius veiksnius, įvertinant kiekvieno jų pasireiškimo tikimybę ir įtaką; 2) vertinti veiksmų svarbą atsižvelgiant į jų įtakos lygį; 3) nustatyti rizikos lygį remiantis bendros rizikos ir maksimalios rizikos santykiu. Todėl:

- sukurtu audito rizikos vertinimo modeliu ir audito rizikos komponentų kiekybinio įvertinimo metodika gali naudotis audito įmonės praktikoje, atlikdamos finansinių ataskaitų auditą, nepriklausomai nuo audituojamos įmonės dydžio ir veiklos pobūdžio. Taip pat audito įmonės, remdamosi pasiūlytu audito rizikos vertinimo proceso nuoseklumu, patobulins savo turimas audito rizikos vertinimo metodikas ir sustiprins savo patirtį šioje srityje;

- sudarytas audito rizikos vertinimo modelis, atskleidžiantis audito rizikos sampratą, yra tinkama mokslinė priemonė akademinės profesijos atstovams skleisti žinias visuomenei apie auditą bei atlikti tolesnius audito rizikos vertinimo tyrimus, o audito standartų leidėjams – gairės, kuriomis

remiantis būtų parengti aiškesni, išsamesni bei suprantamesni audito rizikos vertinimo standartai;

- sudarytu audito rizikos vertinimo modeliu ir pasiūlytu jo pritaikymu gali remtis ir kiti finansinių ataskaitų naudotojai, t. y. įmonių vadovai, akcininkai bei finansų specialistai, tirdami verslo aplinkoje pasireiškiančias rizikas ir atlikdami jų vertinimą.

Atsižvelgiant į tai, šio darbo rezultatai palengvins audito įmonių bei kitų rinkos dalyvių priimamus sprendimus šiandieninėje verslo aplinkoje.

**Mokslinio tyrimo metodai.** Teoriniams tyrimams, analizuojant audito rizikos ir jos vertinimo aspektus, naudotasi *mokslinės literatūros analize, sisteminimu, sinteze, abstrahavimu, apibendrinimu ir lyginimu*. Nagrinėta ekonomikos, vadybos, apskaitos ir audito bei kitų sričių mokslinė literatūra.

Siekiant išsiaiškinti praktines audito rizikos vertinimo problemas, atliktas empirinis tyrimas. Jo metu naudoti socialinių tyrimų organizavimo elementai, taikytas anketinės apklausos metodas. Gauti empirinio tyrimo rezultatai apdoroti pasitelkus *kokybinės* bei *kiekybinės* duomenų analizės metodus, pvz.: grafinių duomenų vaizdavimą, regresinę analizę, bei panaudojant programinę įrangą SPSS.

Disertacijos objekto pažinimui ir iškeltam tikslui pasiekti taikyti *indukcijos* ir *dedukcijos* metodai. Pirmiausia remiamasi indukciniu metodu: išnagrinėjamos tyrimo objekto sudedamosios dalys, kurios paskui sujungiamos į vieną visumą. Po to, taikant dedukcinio metodo nuoseklumą, sudarytas audito rizikos vertinimo modelis yra skaidomas į sudedamuosius elementus, kurie nagrinėjami ir vertinami atskirai. Tikrinant sudaryto modelio pritaikymą praktikoje, suformuluojamos hipotezės, o joms priimti/atmesti taikoma *loginė analizė*. *Logine analize* taip pat naudotasi apibendrinant bei palyginant teorinius teiginius ir empirinių tyrimų rezultatus bei darant išvadas.

**Disertacijos apimtis ir struktūra.** Disertaciją sudaro įvadas, trys dalys ir išvados. Pagrindinė tyrimo medžiaga išdėstyta 184 puslapiuose, įskaitant 40

lentelių ir 22 paveikslus. Taip pat pateikiami 25 priedai. Panaudotos literatūros sąrašą sudaro 183 šaltiniai.

## IŠVADOS

Atlikus teorinius bei praktinius audito rizikos vertinimo tyrimus, suformuluotos šios išvados:

1. Ištyrus mokslo šaltiniuose aptariamus rizikos ekonomikoje sampratos aspektus, nustatyta, kad rizika ir neapibrėžtumas yra skirtingos koncepcijos, kurios galėtų būti tapatinamos tik tuomet, kai priimamas sprendimas ar vykdomas veiksmas, esant nenuspėjamai rinkos ekonomikai (verslo aplinkai). Todėl apibrėžiant riziką būtina atsižvelgti į tai, kad rizika 1) susijusi su sprendimo priėmimu, 2) susijusi su nuostoliais ir siekiamu tikslu, 3) yra tikimybinė kategorija ir 4) jai būdingas neapibrėžtumas. Norint tinkamai įvertinti riziką turi būti taikomas sisteminis požiūris, kuris apima bendrą rizikų apskaičiavimo ir įvertinimo procesą. Šio proceso metu atskiros rizikos yra apskaičiuojamos, nustatant jų tikimybę ir galimą įtaką bei įvertinama bendra šių rizikų įtaka įmonei.

2. Atlikus mokslo darbuose pateikiamos sąvokos „audito rizika“ analizę, nustatyta, kad ši sąvoka apibūdinta nepakankamai išsamiai, nes neakcentuojama:

- dvejopa audito rizikos prigimtis, t. y. galimybė atsirasti rizikai dėl a) auditoriaus kaltės ir b) nuo jo nepriklausančių aplinkybių;
- galimi netinkamos auditoriaus išvados pareiškimo atvejai.

Todėl apibrėžiant audito riziką būtina taikyti platesnį požiūrį ir įvertinti, kad audito rizika tai:

- 1) rizika, kad *egzistuoja reikšmingi iškraipymai*;
- 2) rizika, kad *egzistuojantys reikšmingi iškraipymai liks nepastebėti* ir bus pareikšta neteisinga auditoriaus nuomonė;
- 3) rizika, kad auditorius *pareišk netinkamą nuomonę apie finansines ataskaitas* ir joje (ne)esančius reikšmingus iškraipymus.



Visi šie esminiai audito rizikos sampratos aspektai atsispindi darbo autorės sukurtoje audito rizikos sampratos principinėje schemeje.

3. Apibendrinus audito rizikos vertinimo praktiką, nustatyta, jog turi būti taikomas sisteminis požiūris į audito rizikos vertinimą, t. y. *audito rizikos vertinimas turėtų būti siejamas ne tik su atskirų audito rizikos komponentų nagrinėjimu, bet ir su juos lemiančių veiksnių (sąlygų) tikimybės bei pasireiškimo įtakos bendru įvertinimu, atskleidžiant ryšius tarp atskirų audito rizikos komponentų ir visa tai susiejant su pačiu audito procesu.* Išanalizavus skirtingus rizikos vertinimo metodus, kurie pateikiami sukurtoje sisteminėje rizikos vertinimo metodų klasifikacijoje, ir įvertinus audito rizikai būdingus apribojimus (subjektyvus audito rizikos priežasčių (veiksnių ir sąlygų), tikimybės ir pasireiškimo įtakos nustatymas) galima daryti išvadą, kad ją tiriant netikslinga naudoti sudėtingų ekonominių, tikimybių teorijos ar kompiuterinio modeliavimo metodų. Nustatyta, kad vertinant audito riziką tikslinga *remtis rizikos pasireiškimo nustatymo ir(ar) sukauptos patirties rizikos vertinimo metodais.*

4. Kadangi audito teorijoje ir praktikoje nėra vieningos nuomonės dėl audito rizikos komponentų skaičiaus ir juos lemiančių veiksnių (sąlygų) klasifikacijos, todėl buvo išskirti esminiai audito rizikos komponentai, suklasifikuotos audito rizikos sąlygos bei apibendrinti tarpusavio ryšiai tarp atskirų audito rizikos komponentų:

1) *reikšmingo iškraipymo rizika* turi būti suprantama kaip pasireiškianti a) finansinių ataskaitų lygmeniu ir b) tvirtinimo lygmeniu.

*Reikšmingo iškraipymo rizika finansinių ataskaitų lygmeniu* – rizika kylanti iš audituojamos įmonės išorės ir vidaus aplinkos. Nustatyta, kad audituojamos įmonės išorės aplinkoje tikslinga išskirti ekonomines-politines, reguliavimo ir konkurencines sąlygas, o vidaus aplinkoje – strategines, valdymo ir kontrolės, veiklos bei apskaitos sąlygas. Tačiau norint tinkamai įvertinti audito riziką, visos šios sąlygos turi būti nagrinėjamos svarstant atskirus reikšmingo iškraipymo rizikos finansinių ataskaitų lygmeniu komponentus: a) verslo riziką, b) apgaulės riziką ir c) įmonės riziką. Nustatyta,

kad vertinant verslo riziką pirmiausia turi būti žiūrima į įmonės strategines verslo rizikas, po to į proceso verslo rizikas, o apgaulės riziką tikslinga nagrinėti per samdomų darbuotojų ar vadovybės „apgaulės rombo“ prizmę.

*Reikšmingo iškraipymo rizika tvirtinimo lygmeniu* – rizika, susijusi su konkrečiu finansinių ataskaitų elementu ir(ar) jo tvirtinimo pobūdžiu (įgimta rizika) ir jų atžvilgiu taikomomis kontrolės procedūromis (kontrolės rizika). Pasiūlyta, kad audituojamos įmonės kontrolės procedūrų tinkamumas turi būti nustatomas nagrinėjant a) vidaus kontrolės sistemos struktūrą pagal COSO modelį, b) jos veikimo efektyvumą ir naudojant CoCo modelio kriterijus (tikslas, atsidavimo, pajėgumo, stebėsenos ir mokymosi);

2) *aptikimo rizika* – rizika, kurią lemia audito sąlygos turi būti suprantama kaip audito procedūrų, atrankos ir profesinės rizikos derinys. Aptikimo rizika yra auditoriaus valdoma rizika tvirtinimo lygmeniu. Nustatyta, kad a) *audito procedūrų rizika* susijusi su netinkamu audito procedūros pritaikymu ar parinkimu konkrečiam finansinių ataskaitų elementui ar jo tvirtinimui tirti; b) *atrankos rizika* kyla dėl to, kad audito išvados padarytos remiantis atrankos duomenimis, gali skirtis nuo išvadų, jei tos pačios audito procedūros būtų taikytos visai visumai; c) *profesinę riziką* lemia auditoriaus savybės (patirtis, kvalifikacija), pagrindinių audito koncepcijų netobulumas ar tinkamas jų nesilaikymas;

3) audito rizikos vertinime turi būti atsižvelgta į tarpusavio ryšius tarp audito rizikos komponentų, nes: a) reikšmingo iškraipymo rizika finansinių ataskaitų lygmeniu tiesiogiai lemia susijusios reikšmingo iškraipymo rizikos, pasireiškiančios tvirtinimo lygmeniu, vertinimą; b) egzistuoja tiesioginis ryšys tarp reikšmingo iškraipymo rizikos tvirtinimo lygmeniu ir aptikimo rizikos, t. y. kuo didesnė reikšmingo iškraipymo rizika, tuo didesnė ir su ja susijusi aptikimo rizika; o c) atvirkštinis ryšys tarp reikšmingo iškraipymo rizikos tvirtinimo lygmeniu ir aptikimo rizikos rodo, kad priimtina audito rizikos lygį galima pasiekti sumažinus vieną iš šių komponentų. Minėti ryšiai svarbūs tuo, kad jie lemia tolesnių audito procedūrų atlikimą ir užtikrina audito įmonės darbo efektyvumą.

5. Kritinė mokslo darbuose siūlomų audito rizikos modelių lyginamoji analizė parodė, kad nė vienas iš analizuotų audito rizikos modelių nėra pakankamai išsamus ir pilnai neatspindi audito rizikos vertinimo esmės, nes šie modeliai:

1) pateikia bendrą supratimą apie audito riziką ir jos komponentus, tačiau *nesiūlo konkretaus būdo, kaip šias rizikas apskaičiuoti*;

2) išskiria atskirus audito rizikos komponentus, bet *neišsprendžia audito rizikos komponentų priklausomybės problemas*;

3) iki galo neatspindi audito rizikos komponentų visumos ir/ar jų pagrindinių charakteristikų dėl *audito riziką lemiančių sąlygų* (dėl atrankos taikymo, apgaulės pasireiškimo, audituojamos įmonės verslo rizikos ir pan.);

4) neišsprendžia *agregacijos problemas* finansinių ataskaitų ir atskiro jų elemento tvirtinimo lygmeniu;

5) neparodo, kad audito rizika ir/ar jos komponentai per(vertinami) tam tikrame audito etape, atskleidžiant *iteratyvinę sprendimų priėmimo* rizikos vertinimo procese *prigimtį*.

Atsižvelgiant į tai, apibendrintos audito rizikos vertinimo modelio tobulinimo kryptys: 1) audito rizikos komponentų visumos problema; 2) audito rizikos komponentų priklausomybės atskleidimas; 3) modelio pritaikymas praktikoje vertinant audito rezultatus; 4) agregacijos problemos išsprendimas; 5) iteratyvinis sprendimo priėmimas audito procese.

6. Anketinės apklausos rezultatai parodė, kad Lietuvos auditoriai, vertindami audito riziką, susiduria su šiomis problemomis: 1) audito riziką kaip ekonominį reiškinį sunku įvertinti; 2) audituojamos įmonės verslo sudėtingumas; 3) sąlygų (veiksnių) lemiančių audito riziką ar jos komponentus įvairovė; 4) audituojamos įmonės vidaus kontrolės sistemos sudėtingumas; 5) sukauptos patirties ir žinių stoka; 6) tinkamos audito atlikimo metodikos neturėjimas ir 7) kitų praktikoje taikomų audito rizikos vertinimo modelių nežinojimas. Todėl išskirtos audito rizikos vertinimo modelio pritaikymui būtinos sąlygos:

1) parodyti audito rizikos komponentų tarpusavio priklausomybę;

2) nurodyti, kad audito rizika ir/ar jos komponentai vertinami kiekviename audito etape ir skirtingu pasireiškimo lygmeniu tam, kad būtų pasiektas priimtinas audito rizikos lygis;

3) audito rizikos komponentus išskirti taip, kad reikšmingo iškraipymo rizika būtų skiriama į pasireiškiančią dėl apgaulės ir dėl klaidos; audituojamos įmonės verslo rizika būtų suprantama kaip sudėtinė reikšmingo iškraipymo rizikos dalis, o aptikimo rizika dėl atrankos ir ne dėl atrankos taikymo būtų analizuojama atskirai;

4) atsižvelgti į kitus veiksnius, lemiančius audito riziką.

7. Sukurtas audito rizikos vertinimo modelis perteikia sisteminį požiūrį į audito rizikos vertinimą. Šiame modelyje: 1) *įvardinti esminiai audito rizikos komponentai*, susiejant su jų pasireiškimą lemiančiomis sąlygomis (veiksniais); 2) *identifikuoti ryšiai* tarp atskirų audito rizikos komponentų įvertinimo bei jų ryšys su reikšmingu finansinių ataskaitų iškraipymu ir audito rizika; 3) *parodytas nuolatinis* audito rizikos ir jos komponentų (*per*)vertinimo procesas, kuris vykdomas kiekviename audito etape; 4) *pasiūlytas audito rizikos ir jos komponentų kiekybinis įvertinimo metodas*, kuris remiasi juos lemiančių sąlygų (veiksnių) tikimybės ir pasireiškimo įtakos bendru įvertinimu.

8. Audito rizikos vertinimo modelis susideda iš:

1) *audito rizikos vertinimo modelio struktūrogramos*, atskleidžiančios audito rizikos vertinimo proceso nuoseklumą, kuris neakcentuojamas taikomuose audito rizikos modeliuose. Audito rizikos vertinimo modelio struktūrogramoje: a) susistemintos tiek pagrindinės, tiek išvestinės sąlygos, lemiančios audito rizikos komponentus (audituojamos įmonės išorės ir vidaus aplinka, audito sąlygos); b) išskirti esminiai audito rizikos komponentai (reikšmingo iškraipymo rizika ir aptikimo rizika), pasireiškiantys skirtingais lygmenimis, ir parodyta priklausomybė tarp jų; c) pateiktas audito rizikos vertinimo procesas rodo grįžtamuosius ryšius iš ankstesnių audito etapų/veiksmų ir patikslina audito rizikos komponentų dydžius, atlikus galimo reikšmingo iškraipymo įvertinimą;

2) *audito rizikos komponentų įvertinimo skalės*, kurioje apibendrintos sąlygų, lemiančių konkrečių audito rizikos komponentų pasireiškimą, įvertinimo gairės. Šios gairės formuoja vieningą reikšmingo iškraipymo rizikos įvertinimo praktiką, nes rodo, kada atskiros jos komponentės finansinių ataskaitų ar tvirtinimo lygmeniu priklausomai nuo jų lemiančių sąlygų pasireiškimą masto turi būti įvertinamos kaip maža, vidutinė ar didelė rizika. Svarbu ir tai, kad šioje skalėje kokybinis audito rizikos komponentų vertinimas yra susiejamas su pasiūlytu kiekybiniu įvertinimu;

3) *audito rizikos vertinimo schemas*, skirtos identifikuoti tarpusavio ryšius tarp audito rizikos komponentų tiek per atskirų audito rizikos komponentų priklausomybės, tiek per bendrąjį jų vertinimą ir atskleisti jų įtaką bendram audito rizikos lygiui. Sukurta audito rizikos vertinimo schema, susieja audito rizikos komponentus, pasireiškančius finansinių ataskaitų lygmeniu ir tvirtinimo lygmeniu, ir taip gerokai patobulina iki šiol audito literatūros šaltiniuose nagrinėtą įgimtos, kontrolės ir aptikimo rizikų sąveikos schemą;

4) *audito rizikos komponentų kiekybinio įvertinimo metodikos*, kuri grindžiama 10 kiekybinio įvertinimo žingsnių ir sudarytomis rizikų apskaičiavimo lentelėmis. Pagal šią metodiką: 1) turi būti identifikuojami visi su audito rizikos komponentu susiję veiksniai, 2) nustatoma jų pasireiškimą tikimybė ir įtaka bei 3) įvertinamas bendras audito rizikos komponento lygis. Tačiau nustatant konkretaus audito rizikos komponento lygį būtina: a) eliminuoti veiksnius, kurių įtaka yra maža, t. y. nesiekia toleruotinos klaidos dydžio; b) remtis apskaičiuotu maksimalios rizikos dydžiu, kuris lygus tiriamos rizikos bendros įtakos ir maksimalios tikimybės sandaugai. Toks skaičiavimas grindžiamas tuo, kad auditoriui turi būti svarbūs ne visi, o tik galimi reikšmingi iškraipymai ir tik veiksnio pasireiškimą tikimybės laipsnis priklausomai nuo aplinkybių gali varijuoti ir tuo pačiu keisti susijusios rizikos lygį, o jo įtaka liks nepakitusi.

9. Sukurtas audito rizikos vertinimo modelis *tenkina visas audito rizikos vertinimui svarbias sąlygas*, t. y. jis:

- pripažįsta audito rizikos komponentų visumą ir jų pagrindines charakteristikas;
  - atskleidžia priklausomybę tarp audito rizikos komponentų;
  - nurodo, kad audito rizika ir/ar jos komponentai vertinami kiekviename audito etape ir skirtingu pasireiškimo lygmeniu;
  - pateikia audito etapus pagal taikomą audito praktiką;
  - atskleidžia iteratyvinę sprendimų priėmimo rizikos vertinimo procese prigimtį ir
    - yra taikytinas vertinant audito rezultatus.

Atliktas audito rizikos vertinimo modelio patikrinimas konkrečių auditų pavyzdžiu patvirtino: 1) jo sandarą (elementus): audito rizikos sąlygas (veiksnius), audito rizikos komponentus ir audito rizikos vertinimo procesą audito metu; 2) tarpusavio ryšius tarp atskirų audito rizikos komponentų per atskirų audito rizikos komponentų priklausomybės ir bendrąjį jų vertinimą. Todėl šis modelis yra taikytinas praktikoje: visiems auditams nepriklausomai nuo audituojamos įmonės dydžio ir veiklos pobūdžio, ir tinkama metodinė audito rizikos vertinimo priemonė.

### **Trumpos žinios apie autore**

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