

**PROSPECTS FOR THE DEVELOPMENT OF
FINANCE IN THE CONDITIONS OF
EUROPEAN INTEGRATION OF UKRAINE**

Monograph

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**P.34: PROSPECTS FOR THE DEVELOPMENT OF FINANCE IN THE
CONDITIONS OF EUROPEAN INTEGRATION OF UKRAINE**

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P.34 **Prospects for the development of finance in the conditions of European integration
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The monograph is dedicated to the consideration of the problems of the development of the financial market of Ukraine that are relevant in the context of European integration. Very important issues of today, which are highlighted in the monograph, are the restoration of budgetary stability and debt security of Ukraine in the post-war period, improvement of monetary and budgetary policy aimed at macroeconomic stabilization in the country. The authors emphasize the tools that can ensure anti-crisis regulation of the banking system, financial business management. The monograph examines the issues of ensuring the economic security of the construction industry, directions for improving the accounting policy in the field of business as a whole, and improving the quality of audits.

These and other aspects of the current problems and priority directions of the development of the financial market are devoted to the monograph of the team of authors who carry out up to date researches within the scientific school of the National University "Yuri Kondratyuk Poltava Polytechnic".

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CERTIFICATION AND DIGITIZATION AS MODERN METHODS OF IMPROVING AUDIT QUALITY

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Today, Ukraine is integrating into the world economy, creating conditions for attracting foreign capital. One of the problems on this path is the low quality and reliability of information about the financial and economic condition of enterprises. One of the options for improving the quality of financial information is the use of an audit institute.

In countries that do not have many years of experience of professional traditions in auditing, audit activity is defined as a tool for stabilizing the economy.

Audit activity is an independent professional activity of auditors and audit firms providing audit services. Its key aspect is the audit of financial statements, which performs an extremely important function and confirms the reliability and impartiality of information provided to users of financial statements. This ensures a significant reduction of the risks associated with making management decisions, increases trust in the enterprise on the part of partners and society.

Challenges related to the constant complication and increase in the number of business operations, digitalization of business processes, force audit firms to adapt and raise the quality standards of their activities, to introduce modern technologies, for example, audit software and data analysis tools. This will make it possible to respond appropriately to the risks of significant distortion of financial reporting in new realities, and will increase the efficiency and effectiveness of the task, ensuring a reduction in the number of errors due to the human factor. The use of digital technologies will reduce the time of individual tests, giving the auditor more time to focus on areas of increased audit risk. At the same time, the implementation of digital technologies in Ukraine is at a low level.

Increasing auditor certification requirements and bringing them closer to EU standards will allow auditors to integrate even more into the global community.

The market of auditing services in Ukraine remains open to foreign auditing firms and is characterized by fierce competition. Therefore, holding the market segment by Ukrainian auditing entities is possible only with the introduction of innovative auditing methods, digital technologies, increased requirements for attestation and restoration of trust in the value of domestic auditing services.

The issues of audit development in the conditions of digitalization are constantly in the field of view of scientists. R. Manita, Na. Elommalb, P. Baudier, L. Hikkerova [24] studied the impact of the use of computer technologies on the quality of audit services and the development of the audit firm. They proved that the digitization of business processes in the audit firm will improve the relevance of the audit and allow expanding the list of audit services. At the same time, the quality of the audit will improve by analyzing all the client's data.

Nezhiva M. and Minyailo V. [25] investigated the trends of audit digitization in the conditions of economic transformation and COVID-19. They proved that the technological integration of audit based on modern information systems increases the effectiveness of the auditor's analytical work.

The authors [17-19] studied the peculiarities of the implementation of complex auditing software (GAS) in different countries of the world..

The problem of auditor certification remains urgent and is widely discussed in the scientific works of such authors as Antonyuk O. R., Doroshenko O. O., Drozd I. K., Kuznetsova S. A. and Kuznetsov A. A. [4], Nazarova K O., Petryk O. A.

The special relevance of the problem is caused by the changes made to the procedure for the certification of auditors by the Law of Ukraine "On the Audit of Financial Statements and Auditing Activities" [2]. There are ongoing discussions about the extent to which the changes will contribute to increasing the auditor's social responsibility, whether the audit services market will not collapse on this basis.

Despite the current processes of harmonization of accounting and auditing in Ukraine with the provisions of the International Auditing Standards, the issues of compliance of the certification of auditors in Ukraine and in foreign practice remain uncoordinated.

The experience of the countries of the European Union [6, 7, 8], the USA and countries developing audit in the post-Soviet space is valuable for Ukraine. However, the problem of adapting the world experience of auditor certification to the program of national reforms is unresolved and requires in-depth research.

The purpose of the study is to justify the role of auditor certification and audit digitalization as factors in improving the quality of audit services and the possibility of Ukraine's integration into the world economy. Accordingly, the following tasks are set in the article:

- conduct an analytical review of the audit services market;
- analyze the quality of audit in Ukraine;
- investigate the level of digitization of audit in Ukraine;
- conduct a comparative analysis of the auditor certification process in different countries.

Audit in Ukraine has undergone three stages in its development: confirmatory, system-oriented and risk-oriented audit [1] (table 1).

During the confirmatory audit, the auditor's attention was directed only to a detailed check of primary documents, accounting registers and financial statements in order to confirm the reliability of accounting and reporting data.

The advantages of this approach to auditing are that it is the most objective, reliable and understandable from the point of view of customers and users. The main disadvantage is the high level of labor intensity and high expenditure of time and human resources, and as a result - the high cost of services. During a confirmatory audit, the auditor does not always reveal facts that occurred but are not reflected in the accounting.

With a system-oriented audit, the emphasis is shifted to the study of the effectiveness of the management system and internal control. Checking the accuracy of accounting and reporting involves the need to study the company's internal control system and make a decision about its effectiveness or ineffectiveness. This became the basis for making a decision about the need and scope of further detailed verification and materiality tests. If, based on the results of the assessment, the auditor established that the internal control system is effective, and then he made a decision to reduce the scope of the detailed examination of primary documents.

The advantages of this approach to the audit are the consistency and balance of the "effectiveness" and "duration" criteria of the audit. This method formed the basis of international auditing standards. He, in addition to confirming the truthfulness of financial statements, provides the client with information about the state of the internal control system.

The main disadvantage of the system-oriented approach to auditing is the difficulty of objective assessment of the client's internal control system and a significant level of subjectivity and professional judgment.

Table 1.

Evolution of approaches to the audit procedure

Stages of audit development	The purpose of the audit	Audit methodology	Stages of the audit process
1	2	3	4
Confirmatory audit (1850 - end of 1940. XX century)	Prevention and detection of errors, abuses and fraud through a detailed analysis of each business transaction, information about which is provided in the records	Confirmation of records. Full audit of accounting records	<p>1. Initial stage</p> <p>1.1. Selection of the subject of the audit, familiarization with its business and accounting status. 1.2. Acquaintance with the charter, constituent documents, order on accounting policy and legal obligations of the client.</p> <p>1.3. Determining the scope of work, agreeing the amount of payment and drawing up agreements.</p> <p>2. Experimental stage</p> <p>2.1. Verification of business transactions and accounts.</p> <p>2.2. Adjustment of the audit plan.</p> <p>2.3. Verification of the veracity of reporting data.</p> <p>3. Final stage</p> <p>3.1. Analysis and generalization of inspection results.</p> <p>3.2. Preparation of the auditor's report and proposals for improving accounting.</p> <p>3.3. Acquaintance of the client with detected violations and proposals.</p> <p>3.3. Compilation of the act of completed works</p>
System-oriented audit (1949 – 1970)	Confirmation of the veracity of accounting data and financial reporting through control and analysis of the internal control system	Tests of the internal control system, balances on accounting accounts. A random check based on the results of the assessment of the internal control system	<p>1. Initial stage</p> <p>1.1. Selection of the subject of the audit, familiarization with its business and accounting status. 1.2. Acquaintance with the charter, constituent documents, order on accounting policy and legal obligations of the client.</p> <p>1.3. Evaluation of the internal control system. 1.4. Determination of the scope of work, agreement on the amount of payment and conclusion of the contract</p> <p>2. Research stage (or main)</p> <p>2.1. Examination of business transactions and accounts, compliance tests and substantive tests.</p> <p>2.2. Adjustment of the audit plan.</p> <p>2.3. Verification of the truthfulness of financial statements.</p> <p>3. Final stage</p> <p>3.1. Analysis and generalization of</p>

			<p>inspection results.</p> <p>3.2. Preparation of the auditor's report</p> <p>3.3 Preparation of proposals for improving accounting and improving the internal control system.</p> <p>3.4. Acquaintance of the client with detected violations and proposals for improving the accounting and internal control system.</p> <p>3.3. Compilation of the act of completed works</p>
Risk-oriented audit (з 1970 p.)	<p>Confirmation of the veracity of accounting data and financial reporting by analyzing internal control systems, assessing activity risks.</p> <p>Identification of the probability of a negative impact of various types of risks on the accounting system and the activity of the enterprise as a whole</p>	<p>Preliminary assessment of audit risk.</p> <p>Analysis of business risks.</p> <p>Tests of the internal control system, records in accounting</p>	<p>1. Initial stage</p> <p>1.1. Selection of the subject of the audit, familiarization with its business and accounting status.</p> <p>1.2. Acquaintance with the charter, constituent documents, order on accounting policy and legal obligations of the client.</p> <p>1.3. Evaluation of the internal control system.</p> <p>1.4. Assessment of inherent risk and control risk, calculation of audit risk and non-detection risk.</p> <p>1.5. Analysis of business risks.</p> <p>1.6. Determining the scope of work, agreeing the amount of payment and drawing up agreements.</p> <p>2. Experimental stage</p> <p>2.1. Examination of business transactions and accounts, compliance tests and substantive tests.</p> <p>2.2. Adjustment of the audit plan.</p> <p>2.3. Verification of the reliability of financial statements.</p> <p>3. Final stage</p> <p>3.1. Analysis and generalization of inspection results.</p> <p>3.2. Preparation of the auditor's report.</p> <p>3.3 Preparation of the auditor's proposals for improving accounting, improving the internal control system.</p> <p>3.4. Preparation of a map of risks and preventive actions.</p> <p>3.5. Acquaintance of the client with detected violations and proposals.</p> <p>3.6. Compilation of the act of completed works.</p>

In risk-oriented auditing, which is gaining particular popularity now, statistical and non-static methods of obtaining audit evidence are used, and the auditor pays attention not only to the

evaluation of the effectiveness of the internal control system, but also to the evaluation of internal risk factors. At the same time, the following factors are evaluated: the control environment, the presence of influence on management personnel, the parties involved in the operations, the financial condition of the enterprise.

This approach to auditing is the most progressive. It gives greater importance to audit evidence than that obtained based on the study of inherent risk factors. The use of the risk analysis method allows to reduce the volume of audit procedures as much as possible, without reducing its quality.

At the same time, the risk-oriented approach is quite complex, and therefore it is only beginning to be applied in Ukraine. The impetus for this was the changes made to the ISA and changes in the EU legislation in the field of audit, which took place in June 2016. They had a significant impact on the activities of public interest entities of the EU member states. On September 1, 2017, Ukraine became an associated member of the EU, which increased the importance of awareness of the need to improve the quality of audit activity by all audit firms of Ukraine.

It was the orientation of Ukraine towards the EU that led to the adoption of the new Law of Ukraine " On audit of financial statements and auditing" [2] and marked the beginning of a fundamentally new stage of development - the audit of social responsibility. The formation of a social responsibility audit characterizes the acquisition of a higher qualitative level of responsibility of the subject of the audit for the results of its activities before society and the state.

In order for Ukraine to meet business standards and be of interest to EU investors, the result of the implementation of the reforms should be the maximum approximation of the requirements for the quality of audit activity as a guarantee of safe business. Fundamental to this is the improvement of requirements for the quality of audits and certification of auditors.

The new legislation introduced completely new requirements for obtaining an auditor's charter, significantly complicated the procedure for obtaining an auditor's certificate, and increased requirements for the quality of audit activity subjects. All this led to a sharp reduction in the number of audit firms in recent years (table 2).

Table 2.

**Number of auditors and subjects of audit activity in Ukraine for 2017–2021
(as of the beginning of the period)**

Number of people	2017	2018	2020	2021	The absolute deviation of 2021 from			The growth rate of 2021 is relative		
					2017	2018	2020	2017	2018	2020
1. Auditors	2646	2653	2718	2713	67	60	-5	102,53	102,26	99,82
2. Audit firms	1008	959	899	893	-115	-66	-6	88,59	93,12	99,33
including										
2.1. Audit firms that conduct mandatory audits of financial statements	x	x	242	239	x	x	-3	x	x	98,76
2.2. Audit firms that conduct mandatory audits of financial statements of enterprises of public interest	x	x	88	84	x	x	-4	x	x	95,45

Source: calculated based on data from the Register of auditors and audit entities and Reports of the Audit Chamber of Ukraine [3].

At the beginning of 2021, 2,718 auditors were certified in Ukraine. This is less than in 2020 by five auditors.

At the beginning of 2021, only 893 audit firms were operating, which is significantly less than in previous years.

Compared to 2017, the number of audit firms decreased by 115 firms (or by 11.41%). This is explained by the increased requirements for the activities of audit firms.

The legislation imposes the most requirements on those audit firms that have the right to conduct audit firms that conduct mandatory audits of financial statements of enterprises of public interest. Therefore, the specific weight of audit firms that have the right to conduct audits of enterprises of public interest in the structure of all audit firms is only 9.4% (figure 3).

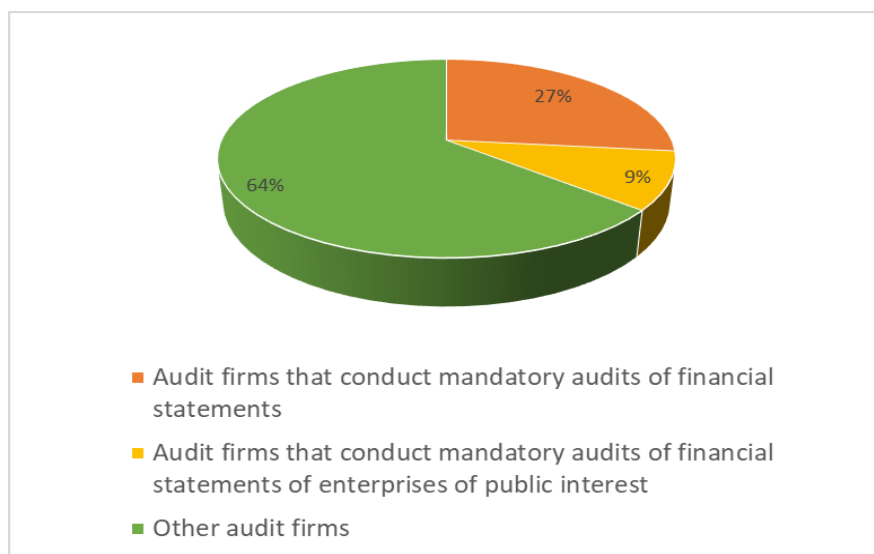


Fig. 1. The structure of audit firms is entitled to conduct a mandatory audit at the beginning of 2021, percentage

In recent years, there has been a general trend in Ukraine to reduce the number of non-audit services provided and proactive audits, which are the main source of income for small audit firms (table 3, Figure 2).

Table 3.

Services provided by audit firms in Ukraine during 2019-2022, units

Type of engagement	Period			The absolute deviation		Growth rate, %	
	2019	2020	2021	2020 from 2019	2021 from 2020	2020 / 2019	2021 / 2020
Initiative Assurance engagement	4464	4115	3896	-349	-219	-7,82	-5,32
Mandatory Assurance engagement	6179	7358	7586	1179	228	19,08	3,10
Related services	5128	4061	3741	-1067	-320	-20,81	-7,88
Non-audit services	17473	15899	14784	-1574	-1115	-9,01	-7,01

Source: [3, 4].

It should be noted that during 2019-2021 there was an increase only in the number of mandatory assurance engagement, which, in the vast majority, small audit firms cannot perform,

because they do not meet the requirements of the Law of Ukraine "On the Audit of Financial Statements and Auditing" regarding the right conducting a mandatory audit, including enterprises of public interest.

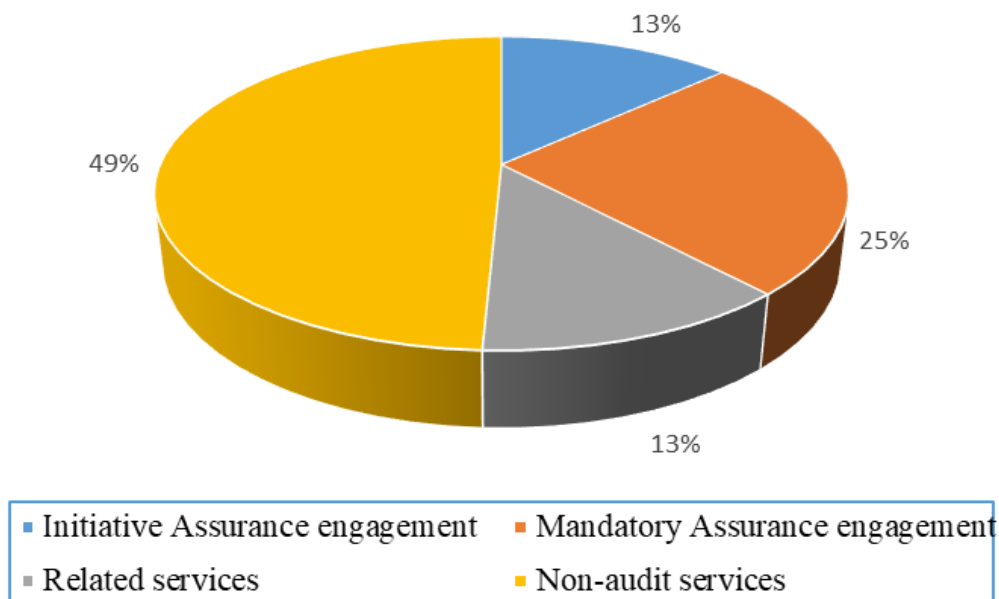


Fig. 2. Structure of services provided by audit firms in Ukraine in 2021

In general, the following problems can be identified in the activities of auditors:

- decrease in demand for initiative audit, related and non-audit services;
- complication of legislative requirements regarding audit activities;
- intense competitive pressure from the Big Four audit firms, international audit firms and domestic large audit firms;
- a low level of resistance to the occurrence of business risks due to a small number of qualified personnel and the lack of the possibility of conducting audits of enterprises of public interest, which significantly limits the scope of services provided;
- low level of management, automation of activities, organization of internal quality control and economic security system.

The impact of these problems is even more felt in the conditions of the war in Ukraine.

Today, the world is at the stage of the fourth industrial revolution, when computer technologies penetrate into all spheres of society.

Therefore, audit firms must adapt to new life realities, constantly improve the quality of their services, comprehensively implement digital technologies and provide the firm with professional personnel.

This is becoming more and more relevant in the conditions of growing competition in the audit services market and the significant influence of the Big-4.

Despite the fact that the market size in 2020 increased by 11% compared to the previous period, almost half of the audit services market is occupied by the "big four" firms [14] (рис. 1).

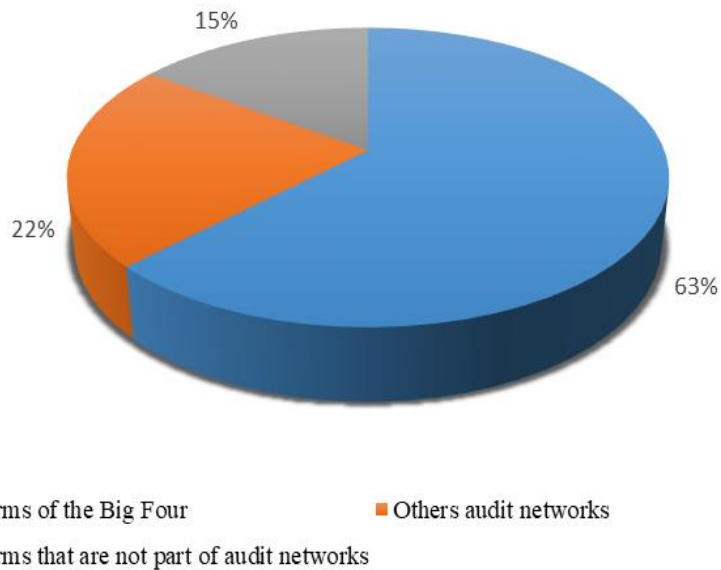


Fig. 3. Share of the value of audit services provided to enterprises of public interest by subjects of audit activity in 2020, %

Source: compiled by the author based on data [14].

Only those firms can withstand such a competitive struggle with international audit firms, which will start to implement innovative digital methods in time, increase the quality of personnel, which will allow to reduce the cost of the provided services, while increasing their quality.

In 2020, on the contrary, there is an increase in the average cost of one audit service provided by audit firms for each type of audit services (Figure 4) [14].

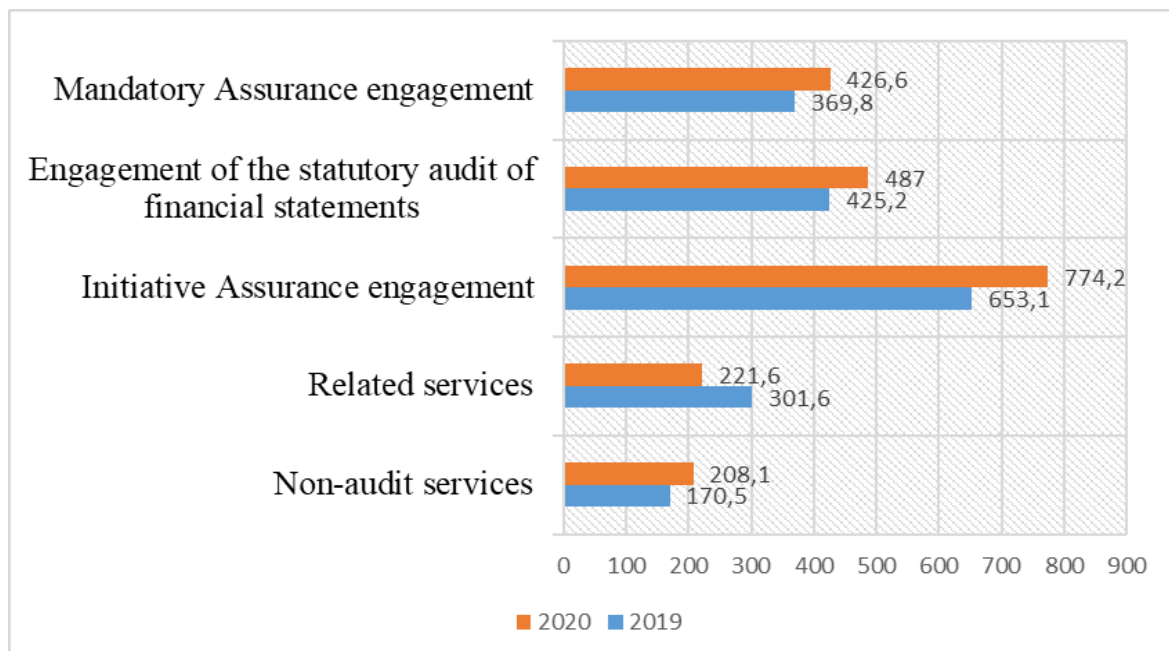


Fig. 4. The average cost of one service provided by auditing firms in 2019-2020, thousand UAH

Source: compiled by the author based on data [14].

At the same time, the quality of auditing services in Ukraine still remains at an average level. This is evidenced by the fact that at least one deficiency was found in almost 86% of audit entities

that passed the quality control inspection in 2019 and 2020 [14].

At the same time, the vast majority of audit firms that have the right to conduct mandatory audits of financial statements of enterprises of public interest" passed the audit with mandatory recommendations (in 2019, 8 audit entity or 50%, in 2020 17 audit entity or 59%, in 2021 25 audit entity or 61%).

During the inspection by Organization of public oversight of the auditing, the internal procedures of audit firms were studied, working documents, audit reports and other reports, contracts for the provision of audit services, internal administrative acts regarding

- compliance with the applied international auditing standards, independence requirements and other requirements of the Law, including ensuring the reliability of information submitted for inclusion in the Register of auditors and subjects of audit activity;

- the quantity and quality of used resources, including compliance with the requirements for continuous professional training of auditors;

- compliance with the requirements regarding remuneration for audit services, if they are established;

- effectiveness of the audit firm's internal quality control system;

- the reliability of the information in the audit firm's transparency report.

As the results of the study show, the vast majority of audit firms are currently experiencing difficulties in such areas:

- upon receipt of acceptable audit evidence in sufficient volume;

- when drawing up appropriate audit documentation;

- when checking accounts, ;

- when assessing audit risks;

- when applying the principles of due professional diligence and skepticism.

In addition, some audit firms have not yet implemented ISA 540 (Revised) "Auditing Accounting Estimates and Related Disclosures" in their operations.

Table 4 shows the areas of identified significant shortcomings in the performance of tasks from the mandatory audit of financial statements of enterprises of public interest.

In 2020, there are no significant changes in the areas of deficiencies and the frequency of their detection compared to the previous year. This indicates an unsatisfactory level of consideration by the audit entities of the generalized results of inspections of the Quality Inspection. Another reason is the failure of audit entities to take preventive measures to eliminate problems in advance.

The most frequent violations that significantly reduce the quality of audit services and were discovered by the Inspectorate during the inspection were:

- lack of sufficient and acceptable audit evidence;

- fragmentation of audit documentation;

- insufficient justification of audit risk assessment;

- cases of failure to apply the principles of due diligence and skepticism.

A large number of significant deficiencies leads to the existence of an increased risk of such audit firms not obtaining reasonable assurance that the financial statements as a whole do not contain a material misstatement due to fraud or error [14].

Table 4.

Disadvantages of performing audit engagement in 2020-2021

Areas in which significant deficiencies were identified during the audit	% of audit firms that were subject to inspection and in which a deficiency was found	
	2020 році	2021 році
Procedures for handling fraud	10	10
Assessment of risks of material misstatement	9	11
Adequacy of financial reporting and disclosures	8	9
Procedures in substance	7	6
Understanding internal control	6	6
Consideration by the auditor of other information	6	6
Analytical procedures in planning	4	4
Events after the reporting period	4	3
Accounting estimates, including fair value	4	4
Recognition of income	4	3
Audit report	4	6
Related party transactions	3	4
Testing of internal control measures	3	4
Quality of audit evidence	3	2
External confirmations	3	3
Audit sample	3	3
Consideration of court cases and claims	2	2
Inventory procedures	2	2
Balances at the beginning of the period	2	2
Written assurances	2	1
Materiality	2	2
Acceptance and continuation of relations with clients	2	1
Business continuity	2	1
Other	5	5

The consequence of this may be the expression of an unreliable audit opinion in the independent auditor's report and a decrease in public trust in the audit institute in Ukraine.

Another fact that testifies to insufficiently high quality of audit services is the fact of systematic application of fines by Audit Chamber of Ukraine and Audit public oversight body to audit entities (Table 5).

Table 5.

Disciplinary sanctions applied by Audit Chamber of Ukraine and Audit public oversight body to audit entities during 2020-2022

Type of disciplinary action	The number of audit entities, to which the penalty was applied		
	2020 рік	2021 рік	2022 рік
Suspension of the right to provide financial reporting audit services for a period of up to one year	6	6	3
Suspension of the right to provide audit services for a period of one to two years	-	1	2
Suspension of the right to provide audit services for a period of two to three years	2	-	-
Warning	25	30	1
In total	33	37	6

Source: compiled by the author based on data [8].

During 2020-2022, the most common type of professional liability of auditors was the application of a disciplinary sanction in the form of a warning. In 2021, the number of auditors who received a warning increased by 5 people (or by 20%) compared to the previous year.

Global trends characterize the activity of the development of the audit services market for the needs of the economy. In particular, it is expected that about 1.44 million people will be employed in the field of accounting and auditing in the USA in 2025 [3].

In 2019, the number of employees of the leader of the "Big Four" Deloitte worldwide was 312,028 specialists [4]. The market of auditing services in Ukraine remains open to foreign auditing firms and is characterized by fierce competition. Therefore, the retention of the market segment by Ukrainian auditing entities is possible only with increased requirements for the use of digital technologies, certification and restoration of trust in the value of domestic auditing services.

However, today the number of audit firms in Ukraine that use modern information technologies in their activities still remains low (Table 6, Figure 4).

Table 6.

Use of information technologies by audit firms

Question	Percentage of respondents who answered: %	
	Yes	No / undecided
Is software (including Word, Excell) used to automate the process of providing audit services?	60,8%	39,2%
Does the audit firm plan to implement software to automate the provision of audit services?	70,6%	29,4
Does the audit firm use software for data extraction and analysis (except for Excell) during the audit?	41,2%	58,8%
Does the audit firm use business process intelligence (GAS) software when conducting audits?	3,9%	96,1%
Does the audit firm use robotic process automation (RPA) to perform audit procedures?	7,8%	92,2%

Source: compiled by the author based on data [14].

Such a low level of audit automation in Ukraine is due to a number of reasons.

One of them is the resistance of the staff to the introduction of new progressive work tools. As a rule, employees of audit firms do not realize the importance of software. They do not want to study the capabilities of information systems. This problem can be eliminated by increasing auditors' awareness of the benefits of digital technologies.

The first source is a combination of practical activities and personal learning. This is the most suitable way, where the presented technology would be accepted and implemented by the auditing company.

The second source is participation in seminars held by professional organizations. The value of the provided information lies in new, different approaches to the study of audit information systems. During the seminar, colleagues can share perspectives that are not available to a regular lecturer. However, the seminars include expenses, not only for the programs, but also for travel,

accommodation and lost work time. In addition, some seminars do not provide in-depth technical and practical competence in software solutions for auditing.

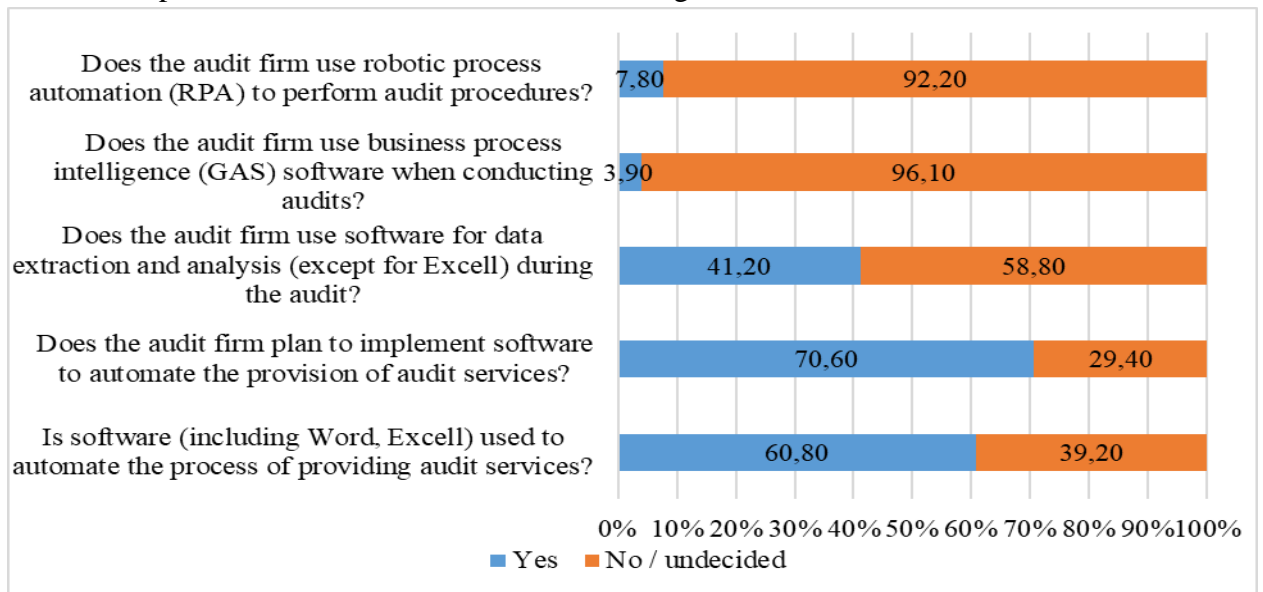


Fig. 4. Automation of audit services in Ukraine as of the beginning of 2022, Percentage of respondents

A third source is found in the traditional university academic environment. Therefore, higher education institutions, when developing their educational programs, should take into account the requirements of employers as much as possible. This will ensure the competitive advantages of own graduates in the audit services market.

Another reason for the low level of audit digitalization is the lack of a clear classification of computerized audit methods and the lack of awareness of the benefits of their application.

According to the International Standards for the Professional Practice of Internal Auditing, "Technology-based Audit Techniques are automated audit tool, such as generalized audit software (hereinafter GAS), test data generators, computerized audit programs, specialized audit utilities, and computer-assisted audit techniques (CAATs) [16] (Figure 5).

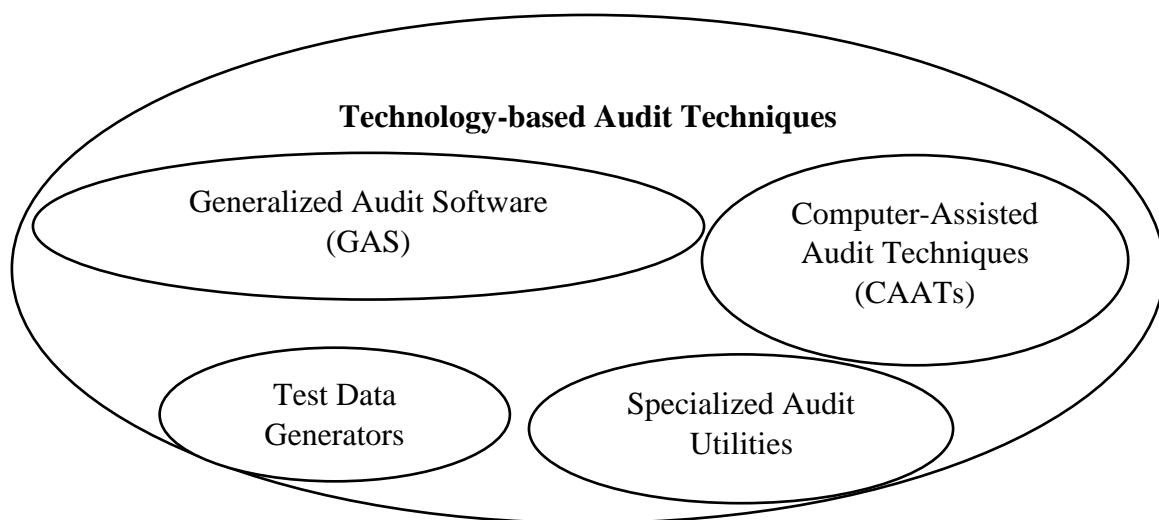


Fig. 5. The place of generalized audit software in Technology-based Audit Techniques in accordance with the International Standards of Professional Practice of Internal Audit (2017 edition)

In scientific circles, there is an opinion that Generalized Audit Software (GAS) is one of the forms of Computer-Assisted Audit Techniques (CAAT), which include: utility Software, Test Data, Parallel Simulation, Integrated Test Centers (ITF), Embedded Audit Modules (EAM). In turn, complex audit software is divided into commercial and independently developed by the enterprise (Figure 6).

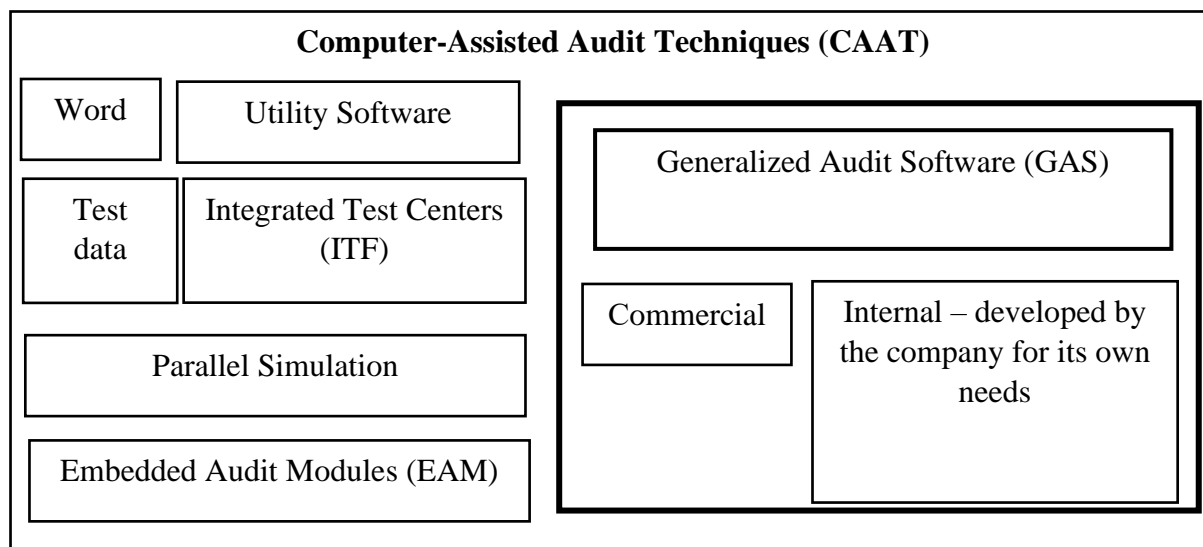


Fig. 6. Generalized Audit Software (GAS) as part of Computer-Assisted Audit Techniques (CAAT)

The timeliness of implementing Generalized Audit Software (GAS) in Ukraine is confirmed by the fact that auditors among other software products in the USA, India and EU countries [17] most often use it.

The main advantages of using GAS are:

- speeding up the audit, increasing the volume of work performed by the auditor in the same period of time [18, 19];
- improving the quality and reliability of the auditor's work [18, 19];
- improvement of business understanding, improvement of audit creativity [19];
- more in-depth analytical research [20];
- improvement of the discipline and cooperation of the audit team with the structural divisions of the enterprise [19].

At the same time, the reasons preventing the implementation of Generalized Audit Software in different countries are, in the vast majority, common (Table 7).

It should be noted that complex audit software is practically not used in Ukraine. Auditors prefer systems-oriented or risk-oriented approaches to auditing using a sample research method [22].

We believe that this is a disadvantage, because the fundamental difference of complex audit software is that it allows you to check the entire general population, the entire set of documents or accounts of analytical accounting, without increasing the time for conducting the audit. This is extremely relevant for Ukraine, as a country with an increased risk of fraud and distortion of data in accounting and reporting.

Studies have shown that at some innovative, competitive enterprises (the vast majority with foreign investments) when conducting internal audits, complex audit software is still successfully

used, in particular, Audit Command language (ACL), Interactive Data Extraction and Analysis (IDEA), Statistical Analysis System (SAS).

Table 7

Problems of implementing Generalized Audit Software in the world

Country, year of study	Reasons that prevent the implementation and use of GAS
Singapore, 2005, [20]	Availability of own corporate systems. Difficulties in using Generalized Audit Software and its cost. Auditors prefer compliance testing and evaluation of the internal control system without the use of Generalized Audit Software.
USA, 2017, [17]	Ignorance of auditors regarding the benefits of using Generalized Audit Software. High cost of Generalized Audit Software. Psychological barriers
Australia, 2018, [18]	The use of Generalized Audit Software is not one of the most important KPIs, and internal auditors who use Generalized Audit Software do not receive additional compensation for it.
South Africa, 2017, [21]	Difficulty building queries with the right set of analytics. Access to relevant and accurate organization data is not always available. Lack of time and resources to implement Generalized Audit Software, unwillingness to pay higher salaries for auditors who are familiar with Generalized Audit Software.
USA, Great Britain, 2016, [19]	Low support from management, colleagues and professional organizations. Ignorance of auditors about the benefits of using Generalized Audit Software. Voluntary use of Generalized Audit Software
Ukraine, 2020 [22]	High cost, not understanding the benefits, not wanting to change, not trusting computer technology

This software has the ability to read computer data from different types of databases and generate different types of queries when performing audit tasks, meaning that this software can be used for both compliance testing and substantive testing.

Table 8 compares ACL and IDEA as the most common types of GAS in Ukraine.

Table 8

Comparison of ACL and IDEA as types of Generalized Audit Software

	ACL	IDEA
advantage	1) flexible architecture (audit planning, independent development and adjustment of audit scenarios (possibility of applying own methods);	1) Versatility, the ability to download any structured information in various formats;
	2) focus on external audit;	2) using the method of successive exclusions
	3) high level of security;	
	4) the ability to process large volumes of data, focus on fraud detection	
	5) automated collection of analytical information;	5) the possibility of phased implementation;
	6) online support and training;	6) the possibility of integration with the existing system used by the auditor;
	7) availability of a library of analytical tests that the auditor can use when writing conclusions	7) using more than a hundred integrated tests;
		8) the possibility of recording analytical procedures, with their further reproduction in the future
Disadvantages	cost of acquisition and maintenance	
	lack of a Ukrainian-language interface	
	the need for specialized training	

The data in Table 8 show that both IDEA and ACL are equipped with functionality for conducting various types of audits: each type separately, as well as a full-scale holistic assessment.

These systems are specialized professional auditing software, the functionality of which ensures the extraction (copying) of data from the audit firm's client reports and their further analysis using queries, stratification, samples, determination of lost sequences, statistical analysis, calculations, search for data duplication, summary tables, cross-tabulation, etc.

The general characteristics of the ACL and IDEA software differ only in the special tools that the developer has laid in the basis of the creation of this software product, namely: ACL - based on the assessment of the risks of tax evasion, and IDEA - based on the method of successive exclusions.

At the same time, we note that the complex audit software ACL provides greater opportunities and can significantly simplify the audit process (78%), but at the same time it is quite difficult to use and requires long-term training and special knowledge in the field of IT.

After analyzing the capabilities of ACL and IDEA, evaluating its advantages and disadvantages, we concluded that at the initial stage of the introduction of automated audit in Ukraine, it is advisable to use the IDEA software, because its platform can be integrated into the system used by the auditing company.

To use this software, the auditor needs basic knowledge in the field of IT, because the CaseWare IDEA kit contains a built-in package of tips, guides and training programs. Therefore, it will significantly speed up and simplify data analysis procedures, significantly reduce the amount of work time spent on conducting an audit, and therefore its cost. And, as a result, audit efficiency and the probability of fraud detection will increase due to the reduction of human intervention in the selection of risks for verification, analysis of the entire population and in-depth audit research.

Today, almost the only type of GAS used by Ukrainian auditors is Excel. However, compared to other comprehensive audit software, it does not allow investigating the integrity of client data and has limited functionality.

Despite the significant advantages of digital technologies, the conducted research showed that software products are not able to completely replace the auditor. At the same time, they can significantly speed up and facilitate the audit process in the following areas:

- 1) formation of the audit sample based on the specified parameters. The program will automatically calculate the most risky transactions, and suggest that they be prioritized in the study;
- 2) carrying out mathematical calculations and analysis of a significant array of data;
- 3) creation of new rules for data analysis and modification of existing rules;
- 4) monitoring data changes during their integration into various subsystems;
- 5) preservation of information regarding all conducted analyses;
- 6) preservation of information on detected deviations and automatic expansion of the sample in case of exceeding the established limits;
- 7) conversion of data into various formats, which are necessary for their uploading to various systems (allows to reduce the time in additional processing of information);
- 8) reducing the risk of audit errors;
- 9) increasing the reliability of the received data;
- 10) creation and management of working documents (both online and offline);
- 11) the possibility of providing access with defined rights to audit documents to representatives of the control body; to the customer; to a third-party auditing company and other interested parties;

- 12) avoiding double editing of the same file by using a special blocking mechanism and automatic warning of editing;
- 13) creation of requests for any section of the audit, which can be sent to the client or a third-party organization by means of electronic communication;
- 14) introduction, assessment and management of risks faced by the organization;
- 15) attaching files of various formats to the audit;
- 16) creation of multi-year audit plans based on the results of the client's past audits;
- 17) use of available built-in tests;
- 18) recovery of mistakenly deleted files or checks.

In Ukraine, there is no requirement for auditors to use complex auditing software. But, in our opinion, it will eventually become the need of the hour. This is explained, first of all, by the fact that mass digitalization and advanced technologies, which are already used by most of the successful enterprises-clients of audit firms, require the latter to be more innovative and to fully use the advantages provided by the latest information technologies in auditing.

The special urgency of the problem of increasing the staffing of audit firms is determined by the changes made to the procedure for the certification of auditors by the Law of Ukraine "On the Audit of Financial Statements and Auditing" [2]. There are ongoing discussions about the extent to which the changes will contribute to increasing the auditor's social responsibility, whether the audit services market will not collapse on this basis.

Despite the current processes of harmonization of accounting and auditing in Ukraine with the provisions of International Standards, the issues of conformity of certification of auditors in Ukraine and in foreign practice remain unresolved.

The experience of the countries of the European Union [6, 7, 8], the USA and countries developing audit in the post-Soviet space is valuable for Ukraine.

However, the problem of adapting the world experience of auditor certification to the program of national reforms is unresolved and requires in-depth research.

The auditor bears moral-ethical, civil-legal, administrative and criminal responsibility for the expressed positive or negative opinion, if it does not correspond to the actual state of affairs [10, p. 46]. It is this that significantly increases the requirements for auditors' qualifications, and therefore for their certification.

Valid until October 2018, the auditor certification procedure in Ukraine ensured a two-stage screening of candidates for obtaining an auditor certificate. In 2017, the largest number of candidates since 2013 – 319 – were admitted to the 1st stage of the qualification exam, of which 89.7% of candidates successfully passed the exam and passed the 1st stage, which corresponds to the general trend (Table 9).

Of the number admitted to the second stage of the qualifying exam, 74.9% passed the exam, which is the highest figure since 2013. However, the share of the initial number of candidates admitted to take the qualifying exam is the smallest for the studied period - 42.0%.

Thus, in 2017, there was an increase in interest in the development of auditing activities in Ukraine. At the same time, the quality of preparation for passing the qualification exam has decreased, which has affected the specific weight of candidates who have received an auditor's certificate.

At the same time, trust in auditors is decreasing in Ukraine. We share the opinion of K.S. Nazarova, who notes: "the systematized results give grounds for asserting that deficiencies in the current legislation of audit activity are present at all its levels and hinder the effective provision of

audit services [10, c. 57]". Due to the low level or absence of audit risk insurance and the imperfection of the system of external audit quality control, the imperfect mechanism of professional recognition of auditors, the demand for audit services decreases, the number of subjects of audit activity decreases, and the level of public trust in auditors. The auditor certification system is a guarantee of trust in the quality of audit services.

Table 9

Results of the qualifying exam for obtaining an auditor's certificate for 2013–2017

Year	1 stage			2 stage			
	candidates are admitted to take the exam	successfully passed the exam	% of the total number of candidates, %	candidates are admitted to take the exam	successfully passed the exam	% of the total number of candidates to 2 stage, %	% of the total number of candidates, %
2013	152	127	83,6	156	106	67,9	69,7
2014	18	16	88,9	16	14	87,5	77,8
2015	138	124	89,9	153	82	53,6	59,4
2016	125	109	87,2	143	70	49,0	56,0
2017	319	286	89,7	179	134	74,9	42,0

Source: calculated by the authors based on the Reports of the Audit Chamber of Ukraine [3]

It should be noted that since 2018, there has been a sharp reduction in the number of passed exams for obtaining an auditor's certificate, which is connected with the adoption of the Law of Ukraine "On the Audit of Financial Statements and Auditing" [2].

Therefore, it is important to improve the procedure for certifying auditors and the organization of quality control of audit services. Some positive changes in this direction in Ukraine were implemented in 2018 with the adoption of the Law of Ukraine "On the Audit of Financial Statements and Audit Activity" [2], which generally corresponds to the practices of countries that have implemented Directive 2006/43/EC of the European Parliament and of the Council on mandatory audit of annual reporting and consolidated reporting, and requirements established in Ukraine.

The conducted study of approaches to the certification of auditors in Ukraine and abroad led to the conclusion that the criteria used to determine the qualification of future auditors are similar. These are requirements for:

- 1) education of a candidate for a certificate;
- 2) the procedure for passing qualification exams and their number;
- 3) requirements for work experience of a candidate for obtaining an auditor's certificate;
- 4) validity period of the certificate.

Approaches to the certification of auditors in different countries of the world are systematized according to the specified criteria in Figure 7.

A comparative analysis of the auditor certification process in different countries demonstrates high requirements for auditor certification, which contributes to the high quality of audit services. Common features are requirements for higher education, examination procedures and practical training. Some differences are due to the conceptual vision of the role of audit in strengthening the country's economic position in the world. In particular, in some countries, not only practical experience in the field of accounting is required, but also internships in auditing firms, a good reputation and the absence of a criminal record.

As for Ukraine, the loyalty of requirements for the certification of auditors until 2018 attracts attention. Since October 2018, a differentiated approach to the certification procedure has been used in Ukraine.

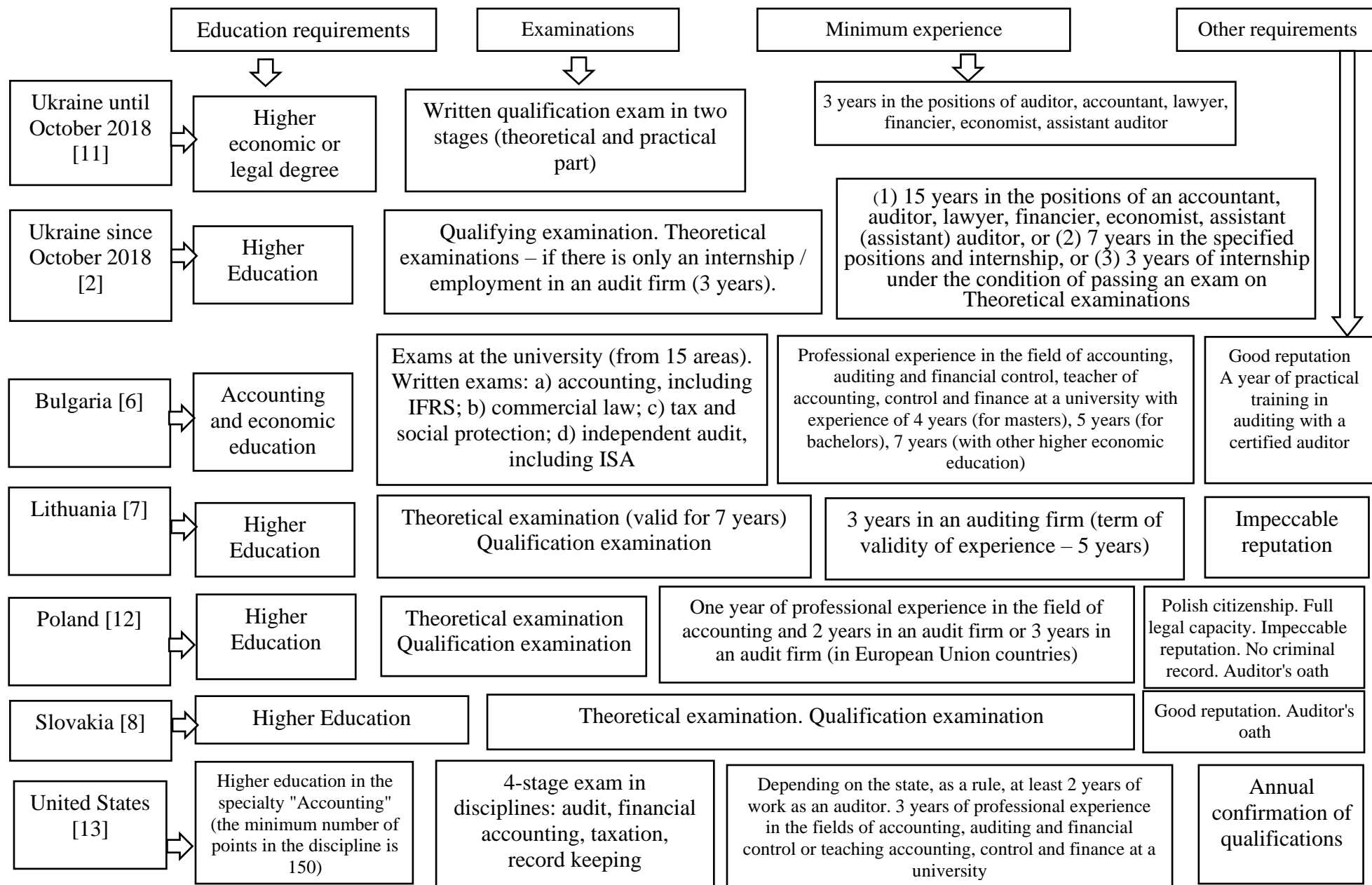


Fig. 7. Comparative characteristics of requirements for the certification of auditors in different countries of the world

According to the first option for obtaining an auditor's certificate in Ukraine, a person with a higher education and more than three years of work experience or internship in an auditing firm has this. She must pass two exams: Theoretical examination and Qualifying examination.

Theoretical examination includes the following components:

- 1) standards of professional ethics and professional independence;
- 2) international standards on auditing;
- 3) legal basis of auditing and methodology of the audit (professional skills);
- 4) risk management and internal control;
- 5) financial analysis;
- 6) management accounting;
- 7) international financial reporting standards;
- 8) accounting theory and legislative basis of accounting and financial reporting;
- 9) tax legislation and legislation on the unified social tax;
- 10) economic, civil and labour legislation;
- 11) corporate legislation and legislation on re-establishing debtor solvency or declaring it bankrupt;
- 12) information technologies and computer systems;
- 13) finance of the enterprises;
- 14) economics of the enterprise and statistics. [2].

According to the second scenario, a person who has a higher education, more than 15 years of activity in the field of accounting or law and has passed a Qualifying examination receives the right to receive an auditor's certificate.

The third option provides that the right to receive an auditor's certificate is acquired by a person who has a higher education, at least 7 years of professional activity, 3 years of internship in an auditing firm and has passed a qualification exam.

During 2020-2021, the auditor certification procedure has been improved.

Despite the fact that the law was adopted in 2018, the final formation and improvement of the regulatory framework for the certification of auditors took place only in recent years.

The main regulatory documents regarding the certification of auditors, which were adopted in 2020-2022, include:

- The procedure for passing exams for the certification of auditors (order of the Ministry of Finance of Ukraine dated 07.06.2020 No. 399);
- Procedure for enrolling theoretical knowledge (Order of the Ministry of Finance of Ukraine dated 01.06.2020 No. 286);
- Internship procedure (order of the Ministry of Finance of Ukraine dated 07.06.2020 No. 398);
- Procedure for continuous professional training of auditors (order of the Ministry of Finance of Ukraine dated 07.06.2020 No. 400).

In the same period, the Commission for certification and identification of business entities, which have the right to conduct continuous training of auditors and educational activities in the field of auditing, is created.

During 2020, the Attestation Commission recognized 14 legal entities and 3 professional organizations of auditors as meeting the requirements for conducting educational events. They were included in the List of persons who can conduct educational events.

At the end of 2020, a competition for the accreditation of exam preparation centers was announced, and in 2021, the Attestation Commission accredited 7 educational centers for the preparation and conduct of exams to obtain an auditor's certificate.

On September 24, 2021, the first qualification exam for the certification of auditors was held, in which 54 candidates took part. Only 11 candidates passed the exam, which is 20% of the total number.

Another exam was held a month later. 70 auditor candidates took part in it. Only 20 candidates successfully passed this exam, which is almost 29% of the total number [23]. Which once again confirms the low level of knowledge of applicants for obtaining an auditor's certificate.

Currently, the world is entering the era of the Fourth Industrial Revolution, which causes the penetration of information technologies into all spheres of society. This, in turn, is reflected in the methods used by auditors when providing audit services. At the same time, despite the intensifying competition and the positive impact of digital technologies on the quality and efficiency of audits, today in Ukraine there is still a low level of automation of auditing firms. In the conditions of digitization of society and the increase of data, this situation will lead to an increase in shortcomings during the audit and the number of fines applied by the controlling bodies to the subjects of audit activity. One of the ways to increase the quality of the audit while reducing the time for its implementation is the introduction of complex audit software, which has proven its relevance in the developed countries of the world.

The main goal of implementing software solutions in the activities of auditing companies should be:

- unification of the main audit processes;
- performance of audit procedures in a single standardized way;
- automation of analytical tools;
- increasing the efficiency of data analysis;
- reducing the cost of the audit;
- approximation of the domestic audit practice to the uniform international best practice;
- improving the quality of the conducted audit;
- reducing manual work of the auditor;
- synchronization of the work of the entire audit team;
- saving and automatic analysis of all revealed information obtained in the audit process;
- work with a large amount of information;
- speeding up the work of the audit team.

The analysis of the audit services market of Ukraine for the years 2013–2020 showed a decline in the activity of domestic auditing entities. In the context of the country's integration into the world economy, it is urgent to restore public trust in the domestic audit, increase the value of the audit opinion, and improve the quality of audit services. Associate

membership in the EU forces you to take into account the updated provisions of the EU audit legislation, covering several areas: from the activities of the audit firm to restrictions on additional services that can be provided to businesses. A number of member states already enforce mandatory auditor rotation, and all EU member states are allowed to go beyond EU rules to impose stricter measures as they wish.

A comparative analysis of the process of auditor certification in different countries showed that since October 2018, the requirements for the certification of auditors in Ukraine meet the expectations of the world audit. The increase in requirements for certification brought Ukraine closer to the implementation of priorities for the development of audit activity: protection of the interests of users of financial and other economic information; satisfaction of the internal needs of the professional market of auditing services of Ukraine; ensuring recognition of the important role of the audit profession in society; improvement of regulatory activity in the field of audit. A differentiated approach to the procedure for obtaining an auditor's certificate will contribute to the deregulation of the industry, which will strengthen the quality of audit services, contribute to the creation of new markets in the field of audit activity, and strengthen the fight against manifestations of unfair competition in the market of audit services. The updated certification procedure confirms the value of audit activity, makes it impossible to "accidentally" receive it. This contributes to the return of public and global business trust to auditors in Ukraine.

In our opinion, the next step in the integration of the national audit into the world economy is to improve the content of the audit opinion in accordance with the information needs of various types of business, depending on the scale and complexity. We see the above as a perspective for further research.

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