DIMITAR A. TSENOV ACADEMY OF ECONOMICS, SVISHTOV
FACULTY OF ECONOMIC ACCOUNTING
DEPARTMENT OF CONTROL AND ANALYSIS OF ECONOMIC ACTIVITIES

ANTONIA GEORGIEVA ZHELEVA

OPPORTUNITIES FOR IMPROVING THE TECHNOLOGY OF THE POST-CLEARANCE CUSTOMS AUDIT

ABSTRACT

of the dissertation paper
prepared for the award of the scientific degree of PhD,
Doctoral Program „Accounting, Control and Analysis of Economic Activities (control and analysis)“

Supervisor:
Assoc. Prof. PhD Momchil Antov

SVISHTOV
2025

The dissertation work has been presented to the Department of Control and Analysis of Economic Activities and proposed for defence.

The dissertation work comprises 219 standard pages and consist of an Introduction Chapter, a Main Statement in three chapters, a Conclusion Chapter, Bibliography, a Statement of Authenticity and Reliability, and Appendices.

The public session of the scientific jury for the paper defence shall be held on 24.04.2026 at the Rectorate Main Hall of the Dimitar A. Tsenov Academy of Economics, Svishtov.

The defence materials shall be available for consultation at the Doctoral and Academic Development Office.

I. GENERAL CHARACTERISTICS OF THE DISSERTATION

1. Relevance of the topic

In recent years, the dynamic environment in which customs activities are carried out has been driven by factors such as growing international trade, increasingly complex supply chains, and global threats including terrorism, organized crime, the trade of dangerous goods and customs fraud. In the contemporary business environment, counterparties are demanding greater precision, expediency and cost-effectiveness, whilst concurrently facing stringent time constraints and constrained resources. It is evident that customs formalities can result in complications that hinder the efficiency of business processes. Concurrently, the obligation falls upon the customs control authorities to implement all requisite measures to prevent potential losses of customs duties and taxes on imports. It is achieved in order to protect the EU's financial and economic interests and to ensure the security and safety of citizens and businesses. The aforementioned factors contribute to the complexity of enforcing customs control legislation. In this context, post-clearance customs audit assumes a pivotal role in achieving a balance between the protection of society and the collection of budget revenue on the one hand, and the facilitation of trade through the control of international supply chains on the other. Moreover, the implementation of controls subsequent to the release of goods has been demonstrated to reduce the time and volume of customs formalities without compromising their effectiveness and efficiency.

The chosen dissertation topic is of relevance due to the theoretical and practical significance of issues related to the role of post-clearance customs audit. A pivotal element in this regard pertains to the technological framework employed in the execution of the process. Theoretically, the topic is significant because, despite the considerable number of publications on customs control, the problems of post-clearance customs audit remain insufficiently addressed. The practical

significance of the project lies in the necessity to enhance post-clearance customs audit technology, thereby ensuring that it remains commensurate with the dynamic evolution of international trade and the requirements of the impending customs reform in the EU. The modernization and improvement of technology utilized in the customs control process is imperative for the effective and efficient management of border control. The facilitates the collection of budget revenues, encourages compliance with customs legislation and helps to prevent and detect customs violations, thereby protecting the interests of citizens and businesses.

The intricacies inherent in the subject matter pose significant challenges for both customs authorities and economic operators. In this regard, an examination and analysis of the multifaceted nature and technology of post-clearance customs control is both interesting and worthwhile. The product under discussion is notable for its distinctive features, which are expressed through a variety of specific control methods.

2. Object and subject of the research

The object of the research is post-clearance customs audit**, and the subject** is the technology used to perform it.

3. Aims and objectives of the research

The dissertation aims to examine post-clearance customs audit from two perspectives: its essence and its technology. It will also consider the problems that accompany the process and suggest ways to improve it. In order to achieve the goal and prove the research thesis outlined below, the following **tasks** must be completed:

- clarify the nature of post-clearance customs audit and its application;
- examining the technology used to carry out post-clearance customs audit;
- identifying the main problems in the technology of post-clearance customs audit;

- substantiating proposals for overcoming the identified problems, and;

- outlining opportunities for improving the technology of post-clearance customs audit.

4. Research thesis

The thesis defended in the dissertation is that ***harmonizing the technology of post-clearance customs audit at the national and European levels and introducing modern digital tools into its application will help overcome many of the challenges facing the customs control process***.

5. Research methodology

The methodology used is closely aligned with the dissertation's defined object, subject, purpose, and tasks. The following methods were used in the development of the research:

- *scientific analysis* - specialized scientific literature on the topic of the dissertation was studied and analyzed;
- *dialectical method* – the state and development of post-clearance customs control and the technology used to perform it were examined*;*
- *comparative analysis* – the checks carried out in post-clearance customs control were compared;
- *descriptive analysis* – based on descriptive statistics, data from the author's practical research was classified in order to derive its general characteristics;
- *correlation analysis* – correlation analysis was used to determine the strength of the relationship between two variables.

IBM SPSS software was used to substantiate the research's results and to optimize data processing and analysis. Cramér's V coefficient was used to assess and confirm the statistical significance of the data. Based on this, only those aspects of the resesarch for which a statistically significant relationship was found

using the Chi-square test were analyzed. The p-values were examined, and the statistically significant aspects of the research with moderate to strong relationships between the two variables were discussed.

6. Research limitations

The limitations of the research are related to the following:

•Given the limited scope of the research and the significant differences between customs and tax control (such as the control of excise goods), the research does not address the subsequent control of excise goods.

•The subject of the research is the technology of post-clearance customs audit in regimes concerning the import of goods. It indirectly affects the regimes for the export and transit of goods. The choice is dictated by the fact that export and transit regimes are less frequently subject to post-clearance audit. In addition, the control technology for import operations is similar to that for export and transit operations, but with a broader scope, which justifies its detailed examination.

•The data and normative acts on which the dissertation is based are current as of December 2025.

7. Research validation

The dissertation was discussed at a meeting of the Department of Control and Analysis of Economic Activity at D. A. Tsenov Academy of Economics – Svishtov. Parts of the research have been published in specialized scientific journals.

8. Application of the results of the research

In order to examine issues related to the practical application of post-clearance customs audit, the author surveyed economic operators and the specialized administration of the Customs Agency in the Republic of Bulgaria. Based on the empirical research results, the main problems in the implementation

of control were outlined, and possible guidelines for improving the technology of post-clearance customs audit were proposed.

II. EXTENT AND STRUCTURE OF THE DISSERTATION

The dissertation extent is 219 pages. The main content is 200 pages and consists of an introduction, three chapters, and a conclusion. The research is illustrated with 13 tables and 26 figures. The complete content of the dissertation also includes: a declaration of originality and authenticity; a bibliography of 122 sources, including titles of books, articles, normative acts, reports, standards, and online sources, of which 60 are in Cyrillic, 62 are in Latin, and 1 is an appendix.

The content of the research is structured as follows:

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III. MAIN CONTENT OF THE RESEARCH

The introductory part of the research substantiates the relevance and significance of the chosen topic. The object and subject of the research are defined. The aim of the research and the tasks for its implementation are specified. The thesis to be defended is formulated, the research methodology is presented, and the limiting conditions are outlined.

CHAPTER ONE. THEORETICAL ASPECTS OF POST-CLEARANCE CUSTOMS AUDIT

Chapter One is scientific and theoretical. The content is 65 pages and is structured in three paragraphs, within which the first task of the dissertation is completed.

Paragraph 1. ***Essential characteristics of post-clearance customs audit*** outline the main features of post-clearance customs audit (PCCA) to clarify its essence. A classification of PCCA according to the types of control is made, and the main functions it performs are analyzed.

Subparagraph 1.1. ***Essence and legal framework of post-clearance customs audit*** analyses the post-clearance customs audit. The views of various authors on the characteristics of post-clearance control in customs activities are systematized and critically analyzed. The legal framework that determines its essence and grounds for application at the national, European, and international levels is examined. The definition of post-clearance customs audit **is derived from the structured review of the material and accounting records kept by economic operators, and their comparison with the customs formalities performed for the import, export, and transit of goods.** The aim is to establish the legality of the controlled person's actions and to improve compliance with the established norm. Regardless of its strongly declarative nature and subsequent application, the control is increasingly playing a preventive role in customs activities. The preventive effect sought from the application of PCCA is essential

for minimizing the risk of deviations, optimizing administrative capacity, and encouraging compliance with legal requirements.

Subparagraph 1.2. ***Classification of post-clearance customs audit according to the types of control****,* post-clearance customs audit is classified by type. The Table 1 summarizes the main characteristics of post-clearance customs audit according to the various classification criteria.

Table 1
Classification of post-clearance audit according to types of control

Classification criteria depending on:	**PCCA as a type of control is:**
Protected interests	State control
Scope of the control activity performed	Specialized control
The existing legal relationship between the subject and the object	External control
The control methods used	Documentary and material control
The means used	Mechanized control
The objectives of the control function	Legality control
The object of control	Economic and financial control

Subparagraph 1.3. *Functions of post-clearance audit in customs activities'* lists the characteristic functions of PCCA, which are included in the general functional framework of customs control. A review of various authors' theories has identified additional functions that expand the scope of customs control. The main functions of post-clearance customs audit identified in the research are: preventive, auxiliary, economic, protective, informative, and fiscal. Post-clearance customs audit is characterized by a broad functional framework that determines its importance and guides the responsible and strict application of control technology by customs authorities. Expanding the scope of the customs control functional framework is important for clarifying the role and significance

of post-clearance customs audit within the system. The multifunctionality of post-clearance customs audit is a prerequisite for exploring opportunities to develop and improve it.

Paragraph 2. *Specific forms of post-clearance audit in customs activities* discusses the most commonly used post-clearance customs audit methods: **risk analysis**, **customs check**, and **monitoring**. It emphasizes that post-clearance audit significantly improves customs authorities' ability to monitor and control the movement of goods in modern international trade through the application of its various specific forms.

Subparagraph 2.1 *Risk analysis in post-clearance customs audit* examines the essential characteristics of risk analysis. Although it is a traditional form of preliminary control, it is widely used and of fundamental importance to the performance of post-clearance audit by customs authorities. Risk analysis largely determines subsequent effective customs control, so the customs administration should focus on improving its application.

Subparagraph 2.2. *Essence and classification of checks carried out by post-clearance audit units* outlines the characteristics of checks as a specific form of post-clearance audit. It provides a classification of the types of checks carried out by post-clearance customs audit units (see Table 2).

Table 2
Classification of checks types

Classification criteria	Type of checks
Scope of the activity being checked	Re-check of a declaration pursuant to Art. 84 of the Customs Law
	Check within the framework of post-clearance audit pursuant to Art. 84a of the Customs Law
The nature of the check	Preventive check
	Operational check
	Conclusive check
Cause of action	On the occasion of an incident
	Scheduled check

Place of implementation	On-site check at the place of control
	Check at the customs administration

The checks are examined in more detail with respect to the first criterion, namely scope. According to the criterion, a distinction can be made between re-examining a declaration and carrying out a subsequent control check. The main differences affecting their correct application within post-clearance customs audit are examined separately (see Table 3).

Table 3:
Comparing the re-check of declarations with check within the framework of post-clearance customs audit.

Indicators	Re-check of declaration	Check within the framework of the post-clearance customs audit
Legal basis for performing the check	Article 84 of the Customs Act and Article 48 of the Customs Code	Article 84a of the Customs Act and Article 48 of the Customs Code
Method of assigning the check	Resolution	Only by a written order assigning the check
Check team	Employees of the "post-clearance customs audit" department and/or other employees of the customs administration	Mainly employees of the "post-clearance customs audit" department and, only if necessary, other employees of the customs administration
Scope of the check	Specific customs declaration	Several or all customs declarations (usually for three years)
Final report	Written report of findings or official use report	Report from the final discussion; written report of findings or official use report
Procedural actions	The Check report is not delivered unless the person requests the check	Formal delivery of an order and check report

Subparagraph *2.3.* *Characteristics of monitoring carried out within the framework of post-clearance customs audit* are derived the essential characteristics of monitoring. In modern customs activities, monitoring is applied not only as ongoing surveillance but also as follow-up surveillance of processes and phenomena that have occurred within the controlled object. The purpose of monitoring in customs control is to conduct a comprehensive review of the economic operator's business structure and, on this basis, identify and analyses specific risk areas in the trader's systems. Monitoring in post-clearance customs controls is carried out to verify the continuous compliance of economic operators' activities with the legal criteria provided for. The main classifications of monitoring carried out by customs control authorities are listed (see Table 4).

Table 4
Types of monitoring in the PCCA system

Criteria for classification of monitoring depending by:	**Type of monitoring**
The object	Monitoring of AEO
	Monitoring of persons who have received permission for general security or reduced security
The subject	External
	Internal

Paragraph 3. *Stages of post-clearance customs audit* is divided into three stages: preparatory, implementation, and completion. These stages are interrelated and are carried out sequentially.

As a result of the above, the first task of the dissertation has been ***achieved****, namely, to clarify the essence of post-clearance customs control and its applicable forms.* The views of several prominent authors on the characteristics of post-clearance control in customs activities have been systematised and critically analysed. The legal framework that determines its essence and the grounds for its

application has been examined. Based on the summaries and the specific features of PCC mentioned, its characteristic functions are identified and included in the general functional framework of customs control.

Based on scientific analysis, the complementary functions that determine the expansion of customs control scope are examined. ***The expansion of the functional framework of customs control*** provides insight into the context in which the role and significance of post-clearance customs control within the customs control system are clarified.

An essential aspect of the first chapter of the dissertation is the ***classification of the types of checks carried out during post-clearance customs control***. Their classification contributes to a better understanding and application of control. It clarifies the essence of post-clearance customs control and the objectives achieved by performing either type of check. In addition, a ***comparative analysis*** is made between the two main types of checks in post-clearance control – re-examination under Article 84 of the Customs Act and post-clearance control under Article 84a of the Customs Act.

CHAPTER TWO. TECHNOLOGY OF POST-CLEARANCE CUSTOMS AUDIT

The content of Chapter Two is 63 pages and is structured in four paragraphs. It examines the technology of post-clearance customs audit, focusing on the implementation of the second task set out in the research.

Paragraph 1. *Post-clearance audit of the customs value of goods,* analyses the specific features of customs value and outlines the technology for performing post-clearance audits of customs value as a key element of the taxation of goods.

Subparagraph 1.1. *Specific features of the customs value of goods* outline the characteristics and methods for determining it, which serve as a basis for studying the control technology applied. Customs value is a multi-component category with fiscal, economic, and statistical functions. Its complexity makes it

a key element of taxation and justifies the need for precise control technology in its determination and subsequent verification.

Subparagraph 1.2. *Technology of post-clearance audit of the customs value of goods* examines the technology of post-clearance audit of the customs value of goods, by individual stages, across several main areas – during the preparation, implementation, and completion of control activities (see Figure 4).

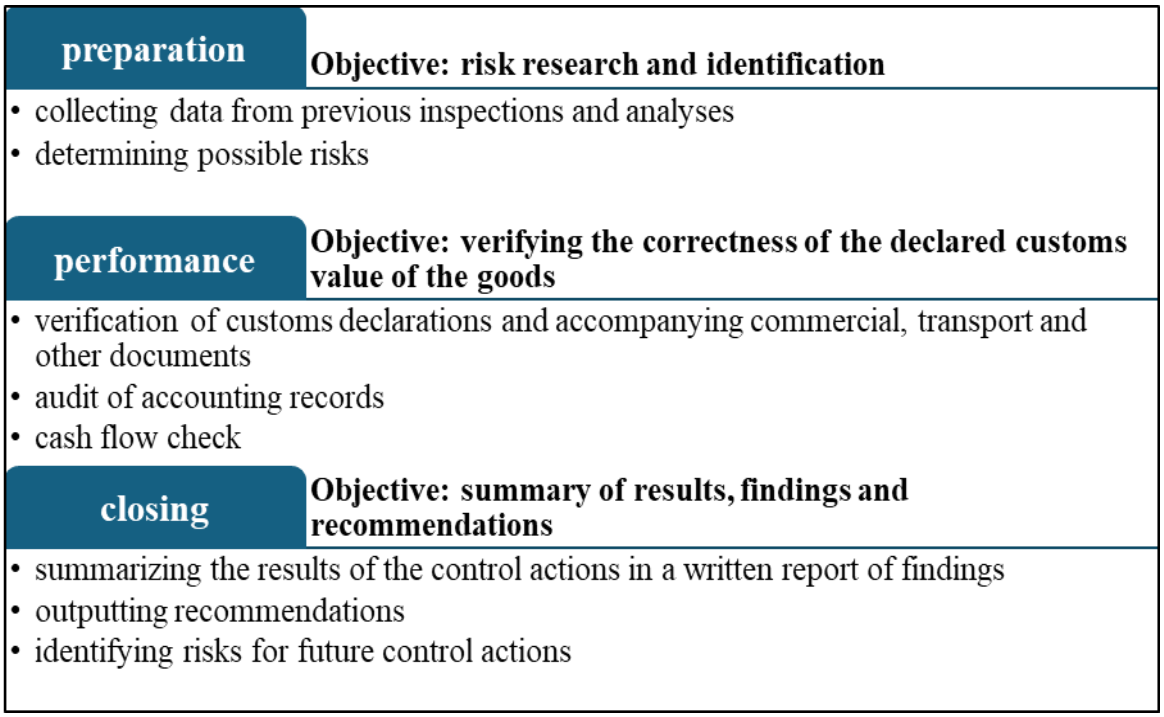

Figure 4. Technology of post-clearance audit over customs value

Paragraph 2. *Post-clearance audit of the origin of goods,* examines the specific features of the origin of goods and outlines the technology for performing post-clearance audits of origin as one of the key elements of taxation of goods.

Subparagraph 2.1. *Specific features of the origin of goods* outline the specific features of the preferential and non-preferential origin of goods. The origin of goods determines the use of preferences, trade measures, and customs rates. Correct determination of origin ensures compliance with international trade agreements, prevents unfair competition, and protects the economic and fiscal interests of the EU, its citizens, and economic operators.

Subparagraph 2.2. *Technology of post-clearance audit of the origin of goods* presents the technology of post-clearance audit of the origin of goods comprises three stages: preliminary, implementation, and completion. The technology is examined, depending on the type of origin being verified, in the following two main areas: preferential origin verification and non-preferential origin verification (see Figure 5).

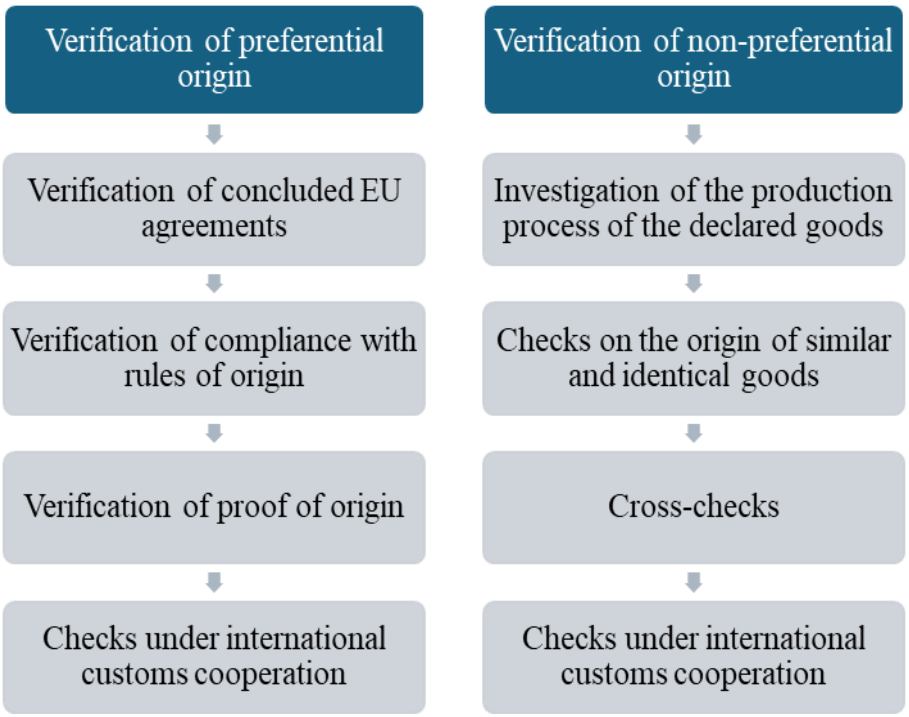

Figure 5. Technology of post-clearance audit over the origin of goods

Paragraph 3. *Post-clearance audit of the tariff classification of goods* describes the technology for post-clearance audit of the tariff classification of goods. The specific features of tariff classification are analyzed, and the stages of control are outlined.

Subparagraph 3.1. *Specific features of the tariff classification of goods* discuss the main principles of the classification of goods. Its role as one of the main elements of customs taxation is emphasized.

Subparagraph 3.2. *Technology of post-clearance audit of the tariff classification of goods* describes the technology of post-clearance audit of the tariff classification of goods. The individual stages of the control activities are

identified (see Figure 8). The various control methods, instruments, and sources that customs authorities can use during the post-clearance audit of the tariff classification of goods are outlined.

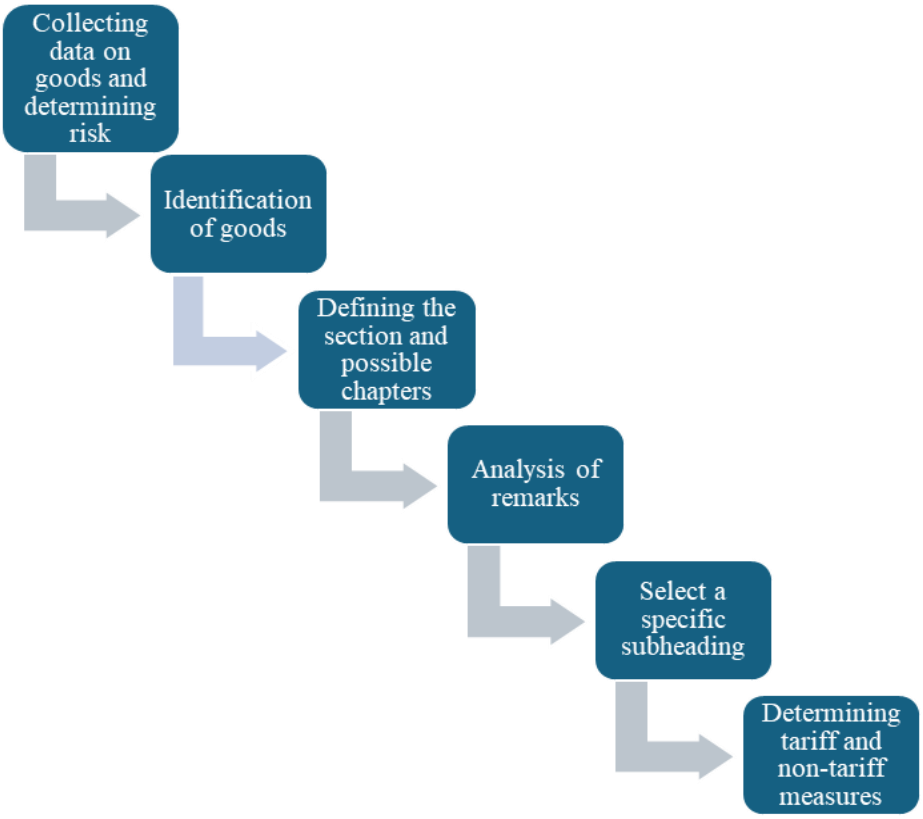

Figure 8. Technology of post-clearance audit over the tariff classification of goods

Paragraph 4. *Post-clearance audit of Authorised Economic Operators* describes the technology for post-clearance audit of Authorised Economic Operators. The specific features of the AEO status are analyzed, and the control procedures for the individual criteria for obtaining an AEO authorization are outlined.

Subparagraph 4.1. *Specific features of the status Authorised Economic Operators* outlines the main features of the AEO status. The benefits of the certificate for Authorised Economic Operators for customs simplifications (AEOC) and for Authorised Economic Operators for security and safety (AEOS) are summarized.

Subparagraph 4.2. *Technology of post-clearance audit over Authorised Economic Operators* outlines the technology for performing post-clearance audits on Authorised Economic Operators. The various control actions, methods, techniques, and tools used by customs authorities at each stage of the control process are analyzed.

As a result of the presentation in the second chapter of the research, the second task of the research has been achieved – to examine the technology of post-clearance customs audit. Based on the technological features of post-clearance audit, the main problems in implementing control actions are identified, thereby **partially achieving the third task set in the dissertation**. On this basis, the following problems are summarized:

First, the technology of post-clearance audit of customs value should be updated and standardized in line with the dynamic introduction of new information solutions in business reporting, which are outpacing the development of the control procedures applied.

Second, there is no established and standardized technology for verifying the connection between persons and their impact on the customs value of goods. It necessitates enhanced cooperation with the revenue authorities, the application of rules governing the relationship between persons, and the assessment of their impact on the determination of the customs value of goods.

Third, the process of classifying goods during post-clearance customs audit has been found difficult, and there is a lack of appropriate control tools to assist in verifying the classification. It creates the conditions for the introduction of automated procedures and digital tools to classify goods in the correct tariff heading.

Fourth, there are complex control procedures for establishing the actual origin of goods. It creates a need to digitize the submitted certificates and all documents related to proving origin and documentary control.

Fifth, there is the same administrative burden both before the issuance of an AEO permit and during the monitoring of its activities. To the end, it is necessary to simplify the applicable procedures to optimize the control's impact on the AEO's activities.

Sixth, there is a lack of a uniform, accurate technology for verifying the financial criteria used to analyses the AEO's solvency. It is necessary to establish a uniform methodology for quick, accurate analysis to support post-clearance customs audit.

In **conclusion**, the lack of a **uniform technology for post-clearance customs audit imposes** an additional administrative burden on both customs authorities and economic operators. In this regard, the control tools should be adapted and improved in line with the dynamics of economic processes and the capabilities of modern technologies.

CHAPTER THREE. PROBLEMS IN THE TECHNOLOGY OF POST-CLEARANCE CUSTOMS AUDIT AND POSSIBILITIES FOR OVERCOMING THEM

The content of **Chapter Three** is 63 standard pages and is structured in three paragraphs. It is practical in nature and focuses on implementing the third and fourth tasks. It presents the results of a practical survey of customs officers and economic operators on the technology used for post-clearance customs audit. A comparative analysis of theoretical studies and empirical research has identified the main problems. Guidelines are presented for overcoming the challenges facing control and opportunities for improving its technology, which would have a positive impact on the activities of economic operators.

Paragraph 1. *Problems in the technology of post-clearance customs audit arising from the organization of customs activities* are presented in the results of a practical research conducted among economic operators and customs administration employees. As a result of the descriptive and correlational analysis,

the following **organizational problems** were identified, which have a direct impact on the technology of post-clearance customs audit:

First, differences in the control procedures applied create conditions for unequal treatment of economic operators. The differences in the control procedures applied directly relate to discrepancies in the technology for controlling the customs value, origin, and tariff classification of goods, and, last but not least, the activities of economic operators. The lack of uniform customs procedures by the control authorities creates conditions for violating the principles of legal certainty, equality, and protection of the interests of economic operators.

Second, there is a lack of effective coordination and timely communication at both horizontal and vertical levels among individual customs administrative units. It leads to inconsistencies and discrepancies in post-clearance control. It hurts the interaction and communication between the control authorities carrying out post-clearance customs control and those carrying out preliminary and ongoing control. As a result, there are delays, difficulties, and inefficiencies in the application of post-clearance customs control technology.

Third, there is a lack of digitized and automated control procedures. As a result, there are delays and inefficiencies in risk analysis, customs check and monitoring. With the application of modern information technologies, customs authorities could easily, quickly, and accurately cover the entire volume of reporting by the controlled entity and achieve optimal, efficient use of their resources.

Subparagraph 2. *Problems in the technology of post-clearance customs audit arising from the operational activities of the customs administration* have been identified in the implementation of the PCCA. They significantly hinder the application of post-clearance customs control and are a prerequisite for inefficiency in customs authorities' actions. Operational problems can be systematized as follows:

First, the existence of administrative burdens and duplicative control activities. The circumstance negatively impacts the PCCA and its ability to perform its preventive and supportive functions. Facilitating customs procedures and partnering with economic operators are essential to optimizing control activities, simplifying customs formalities, and improving post-clearance customs audit.

Second, a lack of practical risk analysis and post-control evaluation. The problem is a prerequisite for the inefficiency of control technology and inconsistency in the actions of control authorities. When conducting a formal, superficial risk analysis, customs authorities fail to target controls effectively, risking the oversight of important factors and wasted resources. A follow-up assessment would be important for the timely recording of ineffective actions by customs control authorities, identifying opportunities to improve technology, and establishing good practices in control activities.

Paragraph 3. *Guidelines for improving the technology of post-clearance customs audit* outlines guidelines for improving the technology of PCCA based on the analyses and studies conducted. These are systematized in Table 13.

Table 13
Reference points for improving the technology of post-clearance customs control

Stage	Responsible	Target	Control actions	Control tools
Selection	GD PCA	Drawing up the annual plan program of the units for post-clearance audit and selection of economic operators that will be subject to control	• Common risk analysis at EU level and selection of IBs • Assignment of checks and monitoring	• Single European Importer and Exporter File • AI-powered Risk Analysis
Preparation	Verification team	Providing a complete information and analytical database for conducting an effective control process	• Risk analysis • Control plan development	• European database • Customs and Tax administration information arrays • Digital checklists • Risk analysis using AI

Execution	Verification team	• Verification of identified risks • Obtaining factual information about selected risks • Establishing the legality of the actions of the inspected person in the application of customs regimes and trade policy measures	• Service of an inspection/monitoring order and request for documentation • Verification of the correctness of the determination of the customs value, origin and tariff classification of the goods/ verification of the fulfillment of the AEO criteria	• Digital checklists • Specialized software for data analysis and detection of errors and discrepancies • Blockchain technologies in documentary checks of supply chains • AI in control of taxation elements
Closing	Verification team	Summary of results	• Conducting a closing discussion • Preparing closing documents	
Implementation of the results	Territorial customs units and departments	Implementation of the results of the control activities carried out	• Issuance of decisions • Sanctions • Collection of due public state receivables – customs duties and VAT	• Dissemination of results of post-clearance audit through various media sources • Compilation of reports and predictive models using AI
	GD PCA	Analysis of the results of the post-clearance audit carried out	• Evaluation of the effectiveness of the post-clearance audit • Publicizing the results achieved from the post-clearance audit	

Subparagraph 3.1. *Guidelines for standardizing the technology of post-clearance customs audit* outline standards at the national and European levels. It is essential for harmonizing control procedures. The opportunities offered by the new EU customs reform – a single EU customs authority, a central European risk analysis platform, and a program for trust and check traders – are analyzed, and options for their optimal implementation for post-clearance customs audit purposes are proposed. Proposals include establishing a Main Directorate for Post-Clearance Audit at the national level, introducing a single economic operator file, implementing team rotation, and task profiling in post-clearance audit units. Guidelines are presented for improving interaction and coordination between customs and tax administration authorities.

Subparagraph 3.2. *Guidelines for digitizing post-clearance customs audit* outline opportunities for the implementation and optimal use of modern digital tools in PCCA technology. In post-clearance audit of economic operators, digital data processing tools and the capabilities of artificial intelligence and blockchain technologies can support the gradual transition from conventional to electronic checks and monitoring. Specialized data analysis software that identifies errors and inconsistencies at an early stage can enhance the preventive nature of post-clearance customs audit.

The digitization of customs control processes could significantly reduce the administrative burden on both the administration and businesses by streamlining procedures and automating many of them. The dissertation substantiates proposals for the implementation of artificial intelligence in the PCCA on the elements of taxation of goods – customs value, origin, and tariff classification. The possibilities for introducing blockchain technologies into international supply chains to track goods from production to sale are explored, which would help achieve transparency in the performance of customs formalities and improve compliance with customs requirements.

The analyses carried out highlight the need to improve post-clearance customs audits to keep pace with the dynamic development of international trade and the requirements of the upcoming customs reform. With the reduction in the volume of checks at the preliminary and current stages of customs control, post-clearance audit serves as a key instrument for exercising control and correcting deviations.

The research concludes that ***the opportunities opening up for control, and indeed for all customs activities, in light of the digital transformation in customs, provide a solid basis for improving and optimizing control procedures***. The existence of simplified customs procedures will facilitate control by minimizing the need for complex procedures. Timely interaction with economic operators will help identify discrepancies promptly and avoid heavier penalties.

Fragmented and self-serving digitization and modernization of control processes would have the opposite effect, significantly complicating customs formalities. That is why attention should be paid to each stage of the control process, as well as to the methods, means, and tools used to achieve comprehensive digitization of the control impact in the context of reform.

As a result of the presentation in Chapter 3, the ***third and fourth objectives*** of the research have been achieved: the main problems affecting the technology of post-clearance customs audit have been identified, and proposals for overcoming them have been substantiated. A detailed examination of the individual elements of taxation, which are the main subject of control impact in the PCCA, outlines the organizational and operational problems identified in the practical research. Based on the research's results, it is proven that a large part of the challenges related to the technology of control over customs value, goods origin, tariff classification, and AEO are due to problems in the organization and operational activities of the control authorities. These results allow for a systematic presentation of specific guidelines for improvement, as they represent an opportunity to develop post-clearance customs audit over the objects studied.

CONCLUSION

The dissertation examines the contemporary challenges and opportunities for improving customs control technology in the context of globalizing digitalization, raising expectations for the effectiveness of customs control authorities. The research is structured based on a deductive-inductive model of organizing information. In the **first chapter**, the general theoretical framework of PCCA is presented using the deductive method. The **second chapter** examines the individual thematic units of control technology, and the **third chapter** analyses the survey results and, on this basis, identifies the main problems and solutions to overcome them, thereby improving the technology of post-clearance customs audit.

The analyses show that, despite regulations and established procedures, there are significant differences in the application of customs control technology, insufficient coordination and communication, and duplicated control activities. It leads to delays, ineffective control and difficulties for economic operators. The survey supports the research thesis on the need for uniform, digitized customs control technology, revealing the fundamental weaknesses in current practice - lack of uniform technology, organizational communication difficulties, and operational problems. By assessing the opportunities and effects of digitization, the research reveals respondents' attitudes and their positive assessment of the modernization of the Customs Agency. Issues related to the PCCA's role and its impact on economic operators underscore the need for structured, unified control procedures.

To prove the ***research thesis***, based on theoretical research and the analysis of the conducted surveys, arguments are presented that demonstrate that opportunities such as the implementation of digital tools and the standardization and clearance of customs control technology at national and European levels will improve it and help overcome the challenges facing the customs control process.

The overall development could update the manual for carrying out checks within the framework of post-clearance audit and align it with current business requirements, taking into account technological advances across all areas related to customs activities. Improvements in post-clearance customs control technology enhance the role of identifying deviations in the application of the legislative framework, sanctioning offenders, and establishing new customs obligations. With the growth of international trade and the increasing pressure on EU borders, the focus should be on the preventive role and importance of post-clearance customs audits.

The digitization of post-clearance customs audit tools will contribute to the development of international trade, the sustainability of supply chains, the improvement of the investment environment, and the strengthening of relations

between the public and private sectors. The proposed improvement measures aim not only to optimize strategic control activities, but also to increase trust between businesses and customs authorities. They are linked to the EU's strategic objectives for innovative and sustainable control within the customs union and align with international customs practices.

IV. REFERENCE TO THE SCIENTIFIC CONTRIBUTIONS IN THE DISSERTATION

I. Contributions of a scientific and applied nature.

1. ***The functional framework of post-clearance customs audit has been identified and systematized. Based on the studied features of post-clearance customs audit, its characteristic functions have been identified and systematized, thereby complementing the general functional framework of customs control.*** The disclosure of the scope and supplementation of the functional framework of post-clearance customs audit is essential for the theory of customs control.

2. The types of checks carried out during post-clearance customs audit have been classified. The features and specifics of the two main types of checks in PCCA have been highlighted. It has been achieved through a comparative analysis of the re-check under Article 84 of the Customs Act and the post-clearance check under Article 84a of the Customs Act. Distinguishing between them is essential for the proper exercise of control powers.

II. Contributions of a practical nature.

1. ***The technology of post-clearance customs audit about the customs value, origin, and tariff classification of goods and the monitoring of authorized economic operators is outlined.*** The individual stages, control instruments and methods used are identified, and the control actions to be carried out in the implementation of specific forms of post-clearance customs audit are set out in sequence. It is essential for the practical implementation of post-clearance customs audit.

2. ***Specific problems in post-clearance customs audit technology have been identified and systematized.*** The problems are outlined based on a practical research. They are divided into the following groups: those arising from the organization of customs activities and those arising from the operational activities of the customs administration. The proposed options for reducing these problems

aim to help the customs administration overcome the challenges of post-clearance customs audit.

V. LIST OF PUBLICATIONS RELATED TO THE TOPIC OF THE DISSERTATION

Studies (1)

1. Antov, M., Kostova, S., Zhelev, Z., Peicheva, B., & **Zheleva, A.** (2025). The impact of the new customs reform in the EU on the functional and methodological approaches to customs control, Almanac of Scientific Research, Volume 33, 2025, 149-186, ISSN 1312-3815

Articles (1)

1. Zheleva, A. (2025). Post-clearance customs control and tax audit – opportunities for joint implementation, E-Journal VFU, 24, 628-644, ISSN 1313-7514

Reports (2)

1. Zheleva, A. (2025). Opportunities for application of artificial intelligence in post-clearance customs audit, Corporate decisions for economic development – strategic planning, reporting and sustainability, Svishtov: AI Tsenov, pp. 399-404, ISBN: 978-954-23-2609-0

2. Zheleva, A. (2023). The "Trust and Check" Concept – A Challenge for Ex-Post Control of Approved Economic Operators, Challenges for finance and financial reporting in the context of multiple crises, Svishtov: AI Tsenov, pp. 511-515, ISBN: 978-954-23-2427-0

VI. REPORT ON THE IMPLEMENTATION OF THE MINIMUM NATIONAL REQUIREMENTS UNDER THE REGULATIONS FOR THE APPLICATION OF THE LAW ON THE DEVELOPMENT OF ACADEMIC STAFF IN THE REPUBLIC OF BULGARIA

by PhD student Antonia Georgieva Zheleva

for fulfilling the minimum national requirements for awarding the educational and scientific degree of "doctor" in the field of higher education
3. Social, economic, and legal sciences,
pursuant to Article 2b of the Act on the development of the academic staff in the Republic of Bulgaria

1. Studies published in non-refereed peer-reviewed journals or published in edited collective volumes

№	Publication	Points
1.	Antov, M., Kostova, S., Zhelev, Z., Peicheva, B., & Zheleva, A. (2025). The impact of the new customs reform in the EU on the functional and methodological approaches to customs control, Almanac of Scientific Research, Volume 33, 2025, 149-186, ISSN 1312-3815	3 p.

2. Articles published in non-refereed peer-reviewed journals or published in edited collective volumes

№	Publication	Points
1.	Zheleva, A. (2025). Post-clearance customs control and tax audit – opportunities for joint implementation, E-Journal VFU, 24, 628-644, ISSN 1313-7514	10 p.

3. **Reports published in non-refereed peer-reviewed journals or published in edited collective volumes**

№	Publication	Points
1.	Zheleva, A. (2025). Opportunities for application of artificial intelligence in post-clearance customs control, Corporate decisions for economic development – strategic planning, reporting and sustainability, Svishtov: AI Tsenov, pp. 399-404, ISBN: 978-954-23-2609-0	10 p.
2.	Zheleva, A. (2023). The "Trust and Check" Concept – A Challenge for Ex-Post Control of Approved Economic Operators, Challenges for finance and financial reporting in the context of multiple crises, Svishtov: AI Tsenov, pp. 511-515, ISBN: 978-954-23-2427-0	10 p.

VII. DECLARATION OF ORIGINALITY AND AUTHENTICITY

In connection with the procedure for obtaining an educational and scientific degree "Doctor" in the scientific specialty: "Accounting, Control and Analysis of Economic Activity (Control and Analysis)," I declare:

1. The results and contributions in the dissertation on the topic: "Opportunities for improving the technology of the post-clearance customs audit" are original and have not been borrowed without permission from studies and publications in which the author has not participated.

2. The information presented by the author in the form of copies of documents and publications, personally compiled reports, etc., corresponds to the objective truth.

22.11.2025 Declarator:……..…….

Svishtov (Antonia Zheleva)