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CUSTOMS TAX PENALTIES AND CUSTOMS COMPLIANCE AUDITS IN BRAZIL, FROM THE PERSPECTIVE OF CARF, C-TPAT, ISO 28000, AND THE AEO PROGRAM – SECURITY

AUTUAÇÕES TRIBUTÁRIAS ADUANEIRAS E AUDITORIA DE COMPLIANCE ADUANEIRO NO BRASIL, SOB A ÓTICA DO CARF, C-TPAT, ISO 28000 E PROGRAMA OEA - SEGURANÇA

DETERMINACIONES TRIBUTARIAS ADUANERAS Y AUDITORÍAS DE CUMPLIMIENTO ADUANERO EN BRASIL, DESDE LA PERSPECTIVA DE CARF, C-TPAT, ISO 28000 Y EL PROGRAMA OEA – SEGURIDAD

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ABSTRACT

Brazilian foreign trade operates in a normative environment of high technical complexity, in which the Customs Administration has, over recent decades, consolidated a risk-based, selective control model that shifts a significant share of fiscal oversight to the post-clearance stage. This displacement generates an informational asymmetry — here termed the "green channel illusion" — whereby operators tend to interpret the expedited release of goods as definitive validation of regulatory compliance, even though it does not close the fiscal control cycle and may increase exposure to latent tax liabilities. This conceptual essay proposes an integrated reading of two risk domains traditionally treated in isolation: customs tax risk, manifested in tax assessments, penalties, and administrative litigation before the Administrative Council of Tax Appeals (CARF); and logistical security risk, evidenced by cargo contamination, seal violations, unauthorized access, and inadequate third-party management. The central thesis is that procedure management, risk management, and continuous training constitute transversal elements that can simultaneously mitigate customs risk across both domains. Drawing on systematic analysis of CARF decisions, the article identified recurrent non-compliance patterns in ten risk dimensions — 1. Logistics security, 2. Tax classification, 3. Customs valuation, 4. Origin, 5. Special customs procedures, 6. Description of goods, 7. Document management, 8. Third-party management, 9. Customs governance, and 10. Compliance and training culture — and proposes an integrated risk matrix, composed of a set of 4 tables that connect these 10 dimensions to procedural failures,

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required training, applicable preventive references (C-TPAT, ISO 28000, AEO Program), auditable evidence, failure consequences, and preventive audit procedures. The article concludes that the AEO Program should be understood not merely as a certification to be obtained, but as a management tool capable of generating relevant governance benefits prior to formal recognition by the Customs Administration.

Keywords: Customs Tax Penalties. Administrative Council of Tax Appeals (CARF). Customs Compliance Audit. C-TPAT. ISO 28000. Authorized Economic Operator (AEO).

RESUMO

O comércio exterior brasileiro desenvolve-se em um ambiente normativo de elevada complexidade técnica, no qual a Administração Aduaneira consolidou, ao longo das últimas décadas, um modelo de controle estruturado em torno de critérios de risco e de seletividade, que desloca uma parcela relevante da fiscalização para o período posterior ao desembaraço. Esse deslocamento gera uma assimetria informacional — aqui denominada "ilusão do canal verde" — pela qual os operadores tendem a interpretar a liberação célere da mercadoria como validação definitiva da regularidade da operação, quando, na realidade, não encerra o ciclo de controle fiscal e pode ampliar a exposição a passivos tributários latentes. Este ensaio conceitual propõe uma leitura integrada de dois domínios de risco tradicionalmente tratados de forma separada: o risco tributário-aduaneiro, materializado em autuações, multas e litígios administrativos perante o Conselho Administrativo de Recursos Fiscais (CARF); e o risco de segurança logística, evidenciado por contaminação de cargas, violação de lacres, acessos indevidos e gestão deficiente de terceiros. A tese central é que a gestão por procedimentos, a gestão de riscos e a capacitação contínua constituem elementos transversais capazes de mitigar simultaneamente ambos os domínios de risco aduaneiro. A partir da análise sistemática das decisões do CARF, o artigo identificou padrões recorrentes de desconformidade em 10 dimensões de risco — 1. Segurança logística, 2. Classificação fiscal, 3. Valoração aduaneira, 4. Origem, 5. Regimes aduaneiros especiais, 6. Descrição de mercadorias, 7. Gestão documental, 8. Gestão de terceiros, 9. Governança aduaneira, 10. Cultura de compliance e capacitação — e propõe uma matriz integrada de riscos, constituída por um conjunto de 4 tabelas, que conectam essas 10 dimensões a falhas de procedimento, à capacitação necessária, a referenciais preventivos aplicáveis (C-TPAT, ISO 28000, Programa OEA), a evidências auditáveis, às consequências das falhas e aos procedimentos preventivos de auditoria. Conclui-se que o Programa OEA não deve ser reduzido à obtenção de uma certificação, mas compreendido como uma ferramenta de gestão capaz de gerar benefícios relevantes de governança antes mesmo do reconhecimento formal pela Administração Aduaneira.

Palavras-chave: Autuações Aduaneiras. Conselho Administrativo de Recursos Fiscais (CARF). Auditoria de Compliance Aduaneiro. C-TPAT. ISO 28000. Operador Econômico Autorizado (OEA).

RESUMEN

El comercio exterior brasileño se desarrolla en un entorno normativo de elevada complejidad técnica, en el que la Administración Aduanera ha consolidado, a lo largo de las últimas décadas, un modelo de control basado en criterios de riesgo y selectividad que desplaza una parte relevante de la fiscalización al momento posterior al despacho aduanero. Este desplazamiento genera una asimetría informacional — aquí denominada "ilusión del canal verde" — por la cual los operadores tienden a interpretar la liberación ágil de las mercancías como una validación definitiva de la regularidad de la operación, cuando, en realidad, no cierra el ciclo de control fiscal y puede ampliar la exposición a pasivos tributarios latentes. Este ensayo conceptual propone una lectura integrada de dos dominios de riesgo tradicionalmente tratados de forma separada: el riesgo tributario-aduanero, materializado en

determinaciones tributarias, multas y litigios administrativos ante el Consejo Administrativo de Apelaciones Tributarias (CARF); y el riesgo de seguridad logística, evidenciado por la contaminación de cargas, la violación de precintos, los accesos indebidos y la gestión deficiente de terceros. La tesis central es que la gestión por procedimientos, la gestión de riesgos y la capacitación continua constituyen elementos transversales capaces de mitigar simultáneamente ambos dominios de riesgo aduanero. A partir del análisis sistemático de las decisiones del CARF, el artículo identificó patrones recurrentes de incumplimiento en 10 dimensiones de riesgo — 1. Seguridad en la logística, 2. Clasificación fiscal, 3. Valoración aduanera, 4. Origen, 5. Procedimientos aduaneros especiales, 6. Descripción de mercancías, 7. Gestión documental, 8. Gestión de terceros, 9. Gobernanza aduanera y 10. Cumplimiento y cultura de formación — y propone una matriz de riesgos integrada, compuesta por un conjunto de 4 tablas que relacionan estas 10 dimensiones con fallos en los procedimientos. capacitación necesaria, referencias preventivas aplicables (C-TPAT, ISO 28000, Programa OEA), evidencias auditables, consecuencias de las fallas y procedimientos preventivos de auditoría. Se concluye que el Programa OEA no debe reducirse a la obtención de una certificación, sino que debe entenderse como una herramienta de gestión capaz de generar beneficios relevantes de gobernanza incluso antes del reconocimiento formal por parte de la Administración Aduanera.

Palabras clave: Determinaciones Tributarias Aduaneras. Consejo Administrativo de Apelaciones Tributarias (CARF). Auditoría de Cumplimiento Aduanero. C-TPAT. ISO 28000. Operador Económico Autorizado (OEA).

1 INTRODUCTION

Brazilian foreign trade operates in a regulatory environment of high technical complexity, in which the Customs Administration has, over the last decades, consolidated a control model structured around risk criteria, parameterization, and trade facilitation. This institutional arrangement, by moving a relevant part of the inspection, eventually to the moment after clearance, through customs review, post-dispatch audit, and the eventual constitution of a tax credit, produces an informational asymmetry (Akerlof, 1970; Spence, 1973; Stiglitz, 1975) that affects, in a particularly sensitive way, the risk management of foreign trade operators. The rapid release of goods, especially export goods, and even the parameterization in the green channel of goods from imports, tends to be perceived by operators as definitive material validation of the regularity of the operation – a perception that this article calls the "green channel illusion" – when, in reality, it does not end the cycle of fiscal control and significantly increases the probability of the insertion of illicit cargo that has been accumulated with the lawful cargo destined abroad (Alam & Ahammad, 2022; Nurwanto & Abbas, 2025).

Customs tax assessments, in this context, represent the legal-administrative formalization of the divergences between the taxpayer's interpretation and the Customs Administration's interpretation of the correct application of tax, customs, and exchange legislation to foreign trade operations. The *Administrative Council of Tax Appeals*, or, in Portuguese, *Conselho Administrativo de Recursos Fiscais* (CARF), is a privileged forum for observing these controversies, since its decisions reflect disputes that have already undergone the stages of inspection, challenge, administrative judgment of first instance, and voluntary or ex officio appeal (Macedo, 2025). The systematic analysis of CARF's decisions enables the identification of recurring patterns of non-compliance, control weaknesses, document insufficiencies, and governance deficiencies that, if properly understood, can serve as inputs for preventive audits of customs compliance (Costa et al., 2023).

At the same time, the field of security in the international logistics chain has developed normative and operational references aimed at mitigating the risks of contamination of licit cargo by illicit cargo, seal violations, unauthorized access to containers, unsafe routes, and poor third-party management. Programs such as the *Customs-Trade Partnership Against Terrorism* (C-TPAT), developed by U.S. Customs, and standards such as ISO 28000, which establishes requirements for supply chain security management systems, are benchmarks in this domain.

In Brazil, the Brazilian *Authorized Economic Operator Program* (AEO Program), originally governed by *Receita Federal do Brasil* (RFB) Normative Instruction No. 1,598/2015

and later reorganized by subsequent rules, is currently regulated by RFB Normative Instruction No. 2,318/2026, within a normative framework reinforced by Complementary Law No. 225/2026.

Within its Security and Compliance dimensions, the AEO Program outlines measures to protect the international logistics chain and ensure the tax and customs compliance of foreign trade operators. This conceptual essay proposed an integrated reading of these two risk domains (David et al., 2026) – tax-customs and logistical security – based on the following central thesis: customs tax assessments, when observed from the perspective of CARF, reveal patterns of non-compliance, control weaknesses, document insufficiencies, and governance deficiencies that can be used as inputs for preventive audits of customs compliance. In addition, the risk of licit cargo being contaminated by illicit cargo, usually addressed in the field of logistics chain security, also stems from procedural failures, control weaknesses, low traceability, poor third-party management, and insufficient training of the professionals involved. In this sense, management by procedures, risk management, and continuous training are transversal elements capable of mitigating both tax and administrative risks, which can culminate in tax assessments, and logistical security risks, which can result in cargo contamination, operational interruptions, and loss of institutional reliability.

It is essential to clarify, from the outset, the institutional distinctions between the referentials mobilized in this work. It is not intended to equate, in an institutional nature, the CARF, the C-TPAT, the ISO 28000, the AEO Program, and the customs compliance audit. The CARF is taken as *an ex post* space for the formalization of customs tax controversies; the C-TPAT and ISO 28000 are mobilized as security references for the international logistics chain; the AEO Program is understood as a customs model of partnership, security, compliance, and governance; and the customs compliance audit is treated as an organizational practice capable of converting these references into procedures. controls, evidence, training, and monitoring routines.

The article was organized into four main sections, in addition to the Introduction. Section 2 presents the Theoretical Foundations, articulating 5 subsections: (i) Customs administration, selectivity and subsequent control; (ii) Management by procedures: executable and traceable control; (iii) Risk Management as a conceptual link; (iv) Training as a cultural and operational factor; and (v) C-TPAT, ISO 28000, AEO Program: complementary frameworks and management tools. Section 3 presents the Methodology based on a narrative and interpretative review. Section 4 presents the Results and Discussion of the article, organized into an integrated set of 4 tables that, when combined, form a matrix of customs risks identifying 10 dimensions. Section 5 summarizes the Conclusions, limitations,

and agenda for future research.

1.1 CARF AS A SOURCE OF ORGANIZATIONAL LEARNING

The CARF, a joint collegiate body linked to the *Ministry of Fazenda*, serves as a privileged forum for identifying recurring customs controversies, as its decisions reveal control weaknesses, documentary insufficiencies, and governance deficiencies in foreign trade operations. Among the most frequent topics, the fraudulent interposition of third parties, tax classification, customs valuation, origin, special customs regimes, description of goods, and documentary consistency stand out. In this context, the "green channel illusion" takes on particular relevance: the release without physical or documentary verification tends to be perceived by the importer as definitive validation of the operation, although it does not conclude the fiscal control cycle, especially in the face of the post-dispatch audit.

Hence, the possibility of forming latent tax liabilities, hidden until their formalization by an infraction notice. Under the analytical key of information asymmetry, it is observed that, for a long period, the importer held an informational advantage over the cargo, while Customs decided based on statements that were often incomplete, inaccurate, or insufficiently documented; this pendulum, however, has been rebalanced by a Customs Administration increasingly driven by data, risk management, selectivity, and high-capacity informational tools. Thus, the CARF should be understood not only as a retrospective instance of litigation but as a prospective source of organizational learning, capable of guiding preventive audits of customs compliance and risk management models applicable to the customs context (Akerlof, 1970; Costa et al., 2023; Macedo, 2025; Rossi et al., 2017; Spence, 1973; Stiglitz, 1975).

1.2 CUSTOMS COMPLIANCE AUDIT: BETWEEN LOGISTICS SECURITY AND TAX COMPLIANCE

Customs compliance auditing is an organizational practice that articulates, in an integrated manner, two dimensions traditionally treated separately: tax compliance and international supply chain security. This dual function — preventing tax risks that can culminate in tax assessments and preventing security risks that can result in cargo contamination — stems from the recognition that both risk domains share common causes: procedural failures, control weaknesses, low traceability, poor third-party management, and insufficient training of the professionals involved (David et al., 2026).

The connection between the CARF and the customs compliance audit is directly manifested: the patterns of controversy revealed by the CARF decisions constitute priority

points of attention for the preventive audit. If the analysis of CARF decisions reveals, for example, that assessments of undervaluation are often associated with related-party transactions lacking adequate documentation of price adjustments, the customs compliance audit should prioritize verifying contracts, invoices, and royalty documentation for such transactions. If CARF decisions reveal that assessments of incorrect tax classification are frequent in certain product categories, the customs compliance audit should prioritize reviewing classifications in these categories, including obtaining technical reports and consulting administrative precedents (Macedo, 2025).

David et al. (2026) examined the relationship between AEO certification and the culture of compliance in Brazilian companies, identifying that adherence to the AEO Program is associated with significant improvements in customs governance, internal controls, team training, and third-party monitoring. This finding reinforces the thesis that the AEO Program, when properly implemented, constitutes a management tool capable of strengthening both tax compliance and logistics security.

2 THEORETICAL FOUNDATIONS

2.1 CUSTOMS ADMINISTRATION, SELECTIVITY AND SUBSEQUENT CONTROL

Contemporary customs administration is structured around two apparently contradictory, but conceptually complementary objectives: trade facilitation and effective control of import and export operations. The Revised Kyoto Convention, adopted by the *World Customs Organization* (WCO) in 1999, establishes principles and recommended practices for the simplification and harmonization of customs procedures, including the adoption of risk-based control systems, the use of information and communication technologies, and the implementation of partnership programs between customs and economic operators (World Customs Organization, 2010).

As a structuring element of the contemporary model of customs control, risk management is presented, through which, instead of indistinctly submitting all foreign trade operations to uniform procedures of physical and documentary verification, the customs administration selects, according to previously defined criteria and processed in an automated manner, those operations that will be submitted to different levels of control. In Brazil, in the context of imports, the RFB parameterizes taxes and distributes customs declarations among the green, yellow, red, and gray channels, corresponding, respectively, to automatic clearance, documentary verification, documentary and physical verification, and verification of evidence of fraud. In addition to this control, there is the administrative treatment exercised by consenting agencies, such as Anvisa, Mapa, Inmetro, ANP, Ibama,

Exército/DFPC and Secex/Decex, which, depending on the nature of the goods and the applicable requirement, can also carry out parameterized controls within the scope of the DUIMP, in the Portal Único de Comércio Exterior, through green, yellow, and red channels. In exports, selectivity is manifested in turn through the green, orange, and red channels. In all these plans, the underlying logic is the same: to grade the intensity of the control according to the criticality attributed to the operation, the merchandise, the operator, the compliance history, and the available informational elements, concentrating inspection resources on the operations with the highest risk and giving greater fluidity to those considered less critical. (Alam & Ahammad, 2022; Nurwanto & Abbas, 2025)

The Customs Balance of RFB for 2024 (Secretaria Especial da Receita Federal do Brasil, 2025) shows the high prevalence of the green channel in Brazilian customs clearance: in imports, more than 97.5% of the declarations went directly through this channel, while the percentage of selection for channels other than the green channel was only 2.41%. In exports, although the report does not present an equivalent overall consolidated percentage, it informs that, in December 2024, 99.3% of export declarations from AEO-Security operators and 98.59% of declarations from non-certified exporters were automatically released in the green channel. These numbers should not be read as a weakness of control, but as an expression of operationally necessary selectivity. In an environment that, in 2024, registered more than 5 million foreign trade declarations, the generalization of the ex ante physical and documentary conference would produce retention incompatible with the continuity of the national flow of imports and exports. To this reality is added the recognized limitation of institutional capacity: according to the union registration of the Sindifisco Nacional (Sinfrerj, 2022) about 5,000 auditors would have retired without full replacement in previous years, reducing the number of career staff by approximately 40%, which, even if it comes from a class source, illustrates the tension between operational volume, available structure, and the need to preserve fluidity. That is why trade facilitation, more than an international guideline, becomes a non-negotiable operational obligation of contemporary customs: to inspect fewer operations at the time of dispatch, but to inspect them better, based on risk, intelligence, data, and subsequent control.

The international literature has documented the growing use of artificial intelligence, machine learning, and *Robotic Process Automation* (RPA) technologies in customs administration, both to improve selectivity criteria and to increase the efficiency of post-clearance auditing. Vijayakumar (2025) examined the use of data-centric technologies for customs risk management for supply chain security, identifying that the integration of multiple data sources — including foreign trade data, intelligence data, trading partner data, and cargo

tracking data — enables customs to identify risk patterns with greater accuracy and anticipate emerging threats.

Gao & Kuang (2023) analyzed the use of RPA to enable risk data analysis in the post-clearance audit of Chinese customs, demonstrating that the automation of repetitive data collection, organization, and analysis tasks allows auditors to focus efforts on more value-added activities, such as analyzing complex cases and identifying fraud patterns. Ehrke-Rabel (2025) examined the potential of artificial intelligence to overcome information asymmetry in tax enforcement, arguing that machine learning algorithms can identify patterns of tax evasion that would be imperceptible by traditional auditing methods. Borysenko et al. (2022) proposed a risk management model for the global customs area, structured around four dimensions: (i) fiscal risks, related to tax collection; (ii) security risks, related to the prevention of illicit acts; (iii) health and environmental risks, related to the protection of the population and the ecosystem; and (iv) intellectual property risks, related to the protection of trademarks and patents.

2.2 MANAGEMENT BY PROCEDURES: EXECUTABLE AND TRACEABLE CONTROL

Procedural management is a central element of any effective internal control system. Procedure should not be confused with unproductive bureaucracy; On the contrary, a well-designed procedure constitutes an executable, traceable, and auditable control that allows the organization to demonstrate diligence, identify deviations, correct failures, and promote continuous improvement (Rossi et al., 2017).

In the customs context, management by procedures is articulated around ten essential components: (i) clear responsibilities, including the definition of who does what, when and how; (ii) standardized routines, including the formalization of sequences of activities, decision criteria and control points; (iii) segregation of duties, including the separation between those who execute, those who review and those who approve; (iv) formalized decision criteria, including the definition of objective parameters for recurrent decisions; (v) traceability, including the ability to reconstruct, at any time, the sequence of activities carried out; (vi) documentation of evidence, including the recording of information, documents and analyses that support decisions; (vii) periodic review, including systematic assessment of the adequacy and effectiveness of procedures; (viii) monitoring of deviations, including the identification, registration and analysis of non-conformities; (ix) treatment of non-conformities, including the investigation of causes, the implementation of corrective actions and the verification of effectiveness; and (x) continuous improvement, including the incorporation of lessons learned and the updating of procedures.

The articulation between management by procedures and customs compliance is evident in both the tax-customs and logistics domains. In the first, procedural flaws favor tax classification errors, inadequate description of goods, valuation inconsistencies, mistaken tariff frameworks, non-compliance with special regimes, documentary weaknesses, absence of technical memory, and repetition of practices that can culminate in the formation of latent tax liabilities (Costa et al., 2023; Macedo, 2025; Sehn, 2022). In the second, the insufficiency of procedures compromises physical inspections, seal controls, access management, route evaluation, partner selection, operational monitoring, and the ability to demonstrate diligence, increasing exposure to cargo contamination events and violations of the logistics chain (David et al., 2026).

Thus, procedural flaws constitute a common point between tax customs and logistical risks. Management by procedures is thus presented as a transversal control infrastructure, capable of simultaneously sustaining tax compliance, logistical security, and the robustness of the customs compliance system, provided that the procedures are properly designed, documented, implemented, and continuously monitored (Rossi et al., 2017).

2.3 RISK MANAGEMENT AS A CONCEPTUAL LINK

In the customs context, risk management is an axis of decision-making rationalization, by allowing controls, audits, and training to be directed to the most critical operations, goods, partners, and procedures (Rossi et al., 2017). Its relevance lies precisely in its ability to integrate two dimensions that are often treated separately: the tax-customs risk, materialized in assessments, fines, latent liabilities, and litigation in the CARF; and the logistical risk, evidenced by cargo contamination, violation of seals, improper access, uncontrolled third parties, and loss of operational traceability (Vijayakumar, 2025).

Although distinct in their manifestations, these risks stem, to a large extent, from common governance weaknesses: insufficient procedures, poorly documented controls, nonexistent evidence, inadequate training, and poor management of third parties. That is why CARF, compliance auditing, internal procedures, training, and the AEO Program can be articulated in the same preventive logic: CARF reveals risk patterns that have already materialized; the audit converts them into checkpoints; the procedures formalize routines and responsibilities; training makes controls effective; and the AEO organizes these elements into an integrated model of security, compliance, and customs governance (David et al., 2026; Macedo, 2025).

2.4 TRAINING AS A CULTURAL AND OPERATIONAL FACTOR

Training is the link that gives procedures effectiveness, density to risk management, and consistency to the compliance culture. Without adequate technical training, well-designed procedures are reduced to formalities, risk matrices become abstract exercises, and integrity programs remain in the realm of good intentions. In the customs field, organizational diligence is not presumed: it is demonstrated by continuous training, training records, skills assessment, and development plans, elements that, in the event of a tax assessment or logistics security incident, can evidence a preventive posture, reduce operational vulnerabilities, and qualify the organization's administrative defense (David et al., 2026; Rossi et al., 2017).

2.5 C-TPAT, ISO 28000, AEO PROGRAM: COMPLEMENTARY FRAMEWORKS AND MANAGEMENT TOOLS

The C-TPAT, ISO 28000, and the AEO Program constitute complementary references, though of different natures: the first two focus predominantly on the security of the international logistics chain, while the AEO, in its broader configuration, operates as an instrument of customs governance, articulating tax security and compliance. C-TPAT structures requirements aimed at the physical integrity of cargo, access control, security of facilities, people, processes, partners, and information; ISO 28000, in turn, organizes supply chain security under the logic of a management system, with policy, risk assessment, controls, incident response, monitoring, internal audit, and continuous improvement.

In this context, the AEO Program should be understood less as a formal certification to be obtained and more as a management tool capable of inducing standardization, clarity of responsibilities, process mapping, risk identification, formalization of procedures, training, production of evidence, monitoring of third parties, and strengthening of the compliance culture. While AEO-Security dialogues directly with C-TPAT and ISO 28000 regarding inspections, seals, access, partners, and the integrity of the logistics chain, AEO-Compliance is closely aligned with CARF and tax auditing, requiring greater rigor in tax classification, customs valuation, origin, special regimes, and documentation. Thus, properly implemented, the AEO is projected as an integrated model of governance, security, and compliance, whose managerial benefits can precede — and, in certain cases, surpass — the formal certification itself (David et al., 2026; International Organization for Standardization, 2023; Macedo, 2025; Sullivan & Garza, 2021).

3 METHODOLOGY

This article has a conceptual and essayistic nature, based on a narrative and interpretative review of references on customs administration, administrative tax litigation, compliance audits, risk management, security of the international logistics chain, and the AEO Program. Without intending to develop its own empirical investigation or causally measure the effects of AEO certification, the study articulates, on the one hand, the customs tax assessments and the judgments of the CARF as *ex post* manifestations of controversies and non-conformities already formalized; and, on the other hand, the compliance audit, the C-TPAT, ISO 28000 and the AEO as preventive governance references, procedures, controls, evidence, training and risk management. The central premise is that tax-customs risks and logistics security risks, although distinct in their manifestation, stem from common governance weaknesses, such as the absence of formalized procedures, insufficient controls, low traceability, poor third-party management, and inadequate training. Thus, the methodological contribution of the article consists of the construction of a conceptual matrix that integrates litigation, auditing, and prevention, taking the CARF as a source of learning about risks already materialized, the compliance audit as a preventive verification mechanism, and the AEO Program as a management tool aimed at compliance, security, and continuous monitoring.

4 RESULTS AND DISCUSSION

The discussion allows us to argue that customs tax assessments and the risks of cargo contamination, although belonging to different fields, can be mitigated on the same management basis: clear procedures, risk management, internal controls, continuous training, evidence documentation, and third-party monitoring. From this perspective, the CARF is no longer just a judgment instance but also a source of preventive learning, as the controversies formalized in it reveal non-conformities, documentary weaknesses, and interpretative divergences that can be converted into audit points, procedure reviews, and training programs.

Likewise, tax, customs, and logistical risks share common organizational roots, since errors in classification, valuation, origin, regimes, and description often result from the same managerial precariousness that favors failures in inspection, sealing, access control, routes, and third parties. Thus, management by procedures translates risk into executable routine; risk management orders priorities; training makes controls effective; and the AEO Program, more than a certifying seal, presents itself as a management tool capable of inducing process mapping, definition of responsibilities, production of evidence, monitoring, and preventive

culture, whose benefits can precede and, in certain cases, surpass the formal certification itself.

4.1 INTEGRATED CUSTOMS RISK MATRIX

The integrated customs risk matrix, presented across 4 tables (Table 1 to Table 4), shows that the different dimensions of exposure — tax, administrative, and logistical — share common structural causes, such as procedural failures, insufficient training, weak controls, document deficiencies, and low governance maturity. From this perspective, CARF, C-TPAT, ISO 28000, and AEO Program do not present themselves as exclusive references but as complementary: the first reveals patterns of controversy already formalized in litigation; the following two offer parameters for supply chain security; and the latter integrates security and compliance into a customs governance model.

It follows that the customs compliance audit, when guided by systematic, documented, and traceable procedures — such as classification review, contract analysis, origin verification, control of special regimes, document evaluation, third-party management, and training — constitutes an essential instrument of organizational diligence and simultaneous mitigation of fiscal, operational, and reputational risks (Gina et al., 2021; International Organization for Standardization, 2023; Macedo, 2025; Rossi et al., 2017).

Table 1

Dimensions: 1. Logistics security, 2. Tax classification, 3. Customs valuation

Dimension	1. Logistics security	2. Tax classification	3. Customs valuation
Typical Manifestation	Cargo contamination by illicit goods, seal breach, improper access to containers, unsafe routes, unreliable partners	Incorrect NCM classification, aliquot error, inappropriate classification of complex technology products, chemical products, multifunctional machines	Under-invoicing, royalties not added to the transaction value, undeclared price adjustments, transactions between related parties without proper documentation
Procedural Failure	Absence of physical inspection procedure of containers and vehicles, absence of sealing procedure, absence of access control procedure	Absence of a tax classification review procedure, lack of technical consultation, absence of technical memory, and lack of periodic review	Absence of transaction value analysis procedure, lack of documentation of price adjustments, absence of related party analysis, and lack of royalty documentation
Necessary Training	Training in physical inspection of goods, identification of signs of violation, seal control, access control to facilities, evaluation of routes, and partners	Training in Mercosur Common Nomenclature (NCM), General Rules of Interpretation of the Harmonized System, CARF jurisprudence, and consultation of administrative precedents	Training in the WTO Customs Valuation Agreement, alternative valuation methods, related party analysis, royalty documentation, and adjustments

Preventive Reference	C-TPAT, ISO 28000, AEO-Security	AEO-Compliance, CARF, Harmonized System Convention	AEO-Compliance, CARF, WTO Valuation Agreement
Auditable Evidence	Physical inspection records, seal controls, access records, incident reports, partner assessments	Technical classification reports, formal consultations with the Federal Revenue Service, records of periodic review of classifications, and technical memory of decisions	Commercial contracts, commercial invoices, royalty documentation, related party analysis, price adjustment documentation, technical decision memory
Consequence of the Failure	Contamination of cargo by illicit acts, loss of AEO or C-TPAT certification, criminal sanction, interruption of operation, loss of institutional reliability	Tax assessment for incorrect classification, fine, interest, litigation at CARF, and formation of latent tax liability	Tax assessment for under-invoicing, disallowance of declared value, fine, interest, litigation in CARF, and formation of latent tax liability
Preventive Audit Procedure	Audit of physical inspection procedures, verification of seal records, analysis of access controls, evaluation of trading partners, review of transport routes	Review of critical classifications, verification of technical reports, consultation of CARF precedents, and analysis of consistency between classifications of similar products	Verification of commercial contracts and invoices, analysis of royalties and price adjustments, documentation of transactions between related parties, analysis of consistency between declared value and market value

Source: Elaborated by the authors.
Note. AEO = Authorized Economic Operator; CARF = Administrative Council of Tax Appeals; C-TPAT = Customs-Trade Partnership Against Terrorism; ISO 28000 = Supply Chain Security Management Systems; NCM = Mercosur Common Nomenclature; WTO = World Trade Organization.

Table 2

Dimensions: 4. Origin, 5. Special customs procedures, 6. Description of goods

Dimension	4. Origin	5. Special customs procedures	6. Description of goods
Typical Manifestation	Inadequate certificate of origin, rules of origin not complied with, tariff preference improperly applied, and insufficient production documentation	Failure to comply with extinction deadlines, deviation of purpose, lack of inventory control, absence of admission documentation, and write-off	Insufficient, inadequate, or inconsistent descriptions in import and export declarations, lack of standardization of descriptions
Procedural Failure	Absence of origin verification procedure, lack of production documentation, failure to review rules of origin, and lack of certificate verification	Absence of a procedure for controlling special regimes, lack of monitoring of deadlines, absence of inventory control, and lack of documentation	Absence of a procedure for standardizing descriptions, lack of document review, and absence of technical memory
Necessary Training	Training in rules of origin, trade agreements, substantial processing criteria, production documentation, and certificates of origin	Training in special regimes (drawback, temporary admission, customs warehouse, etc.), accessory obligations, inventory controls, extinction deadlines	Training in requirements for the description of goods, technical nomenclature, accessory obligations, and standardization of descriptions
Preventive Reference	AEO-Compliance, CARF, trade agreements (Mercosur, ALADI, etc.)	AEO-Compliance, CARF, Customs Legislation (Customs Regulation)	AEO-Compliance, CARF, Customs Legislation

Auditable Evidence	Certificates of origin, production documentation, regional content analysis, technical report of decisions, and formal consultations	Inventory controls, records of admission and termination of regimes, deadline monitoring reports, and purpose documentation	Import and export declarations, commercial documents, technical reports, and technical reports of decisions
Consequence of the Failure	Disallowance of tariff preference, tax assessment, fine, interest, litigation in CARF, and formation of latent tax liability	Tax assessment for misuse of purpose, loss of special regime, collection of suspended taxes, fine, interest, litigation at CARF	Tax assessment for inadequate description, difficulty in defending in the CARF, formation of latent tax liabilities, risk of incorrect classification
Preventive Audit Procedure	Verification of certificates of origin, analysis of applicable rules of origin, production documentation, and regional content, and consultation of CARF precedents	Verification of inventory controls, analysis of extinction deadlines, documentation of admission and termination of regimes, and analysis of the purpose of operations	Verification of goods description pattern, comparison between commercial documents and customs declarations, consistency analysis between descriptions of similar products

Source: Elaborated by the authors.
Note. AEO = Authorized Economic Operator; CARF = Administrative Council of Tax Appeals; C-TPAT = Customs-Trade Partnership Against Terrorism; ISO 28000 = Supply Chain Security Management Systems; NCM = Mercosur Common Nomenclature; WTO = World Trade Organization.

Table 3
Dimensions: 7. Document management, 8. Third-party management

Dimension	**7. Document management**	**8. Third-party management**
Typical Manifestation	Inconsistency between commercial, financial, logistical, and customs documents, absence of mandatory documents, and lack of document traceability	Carriers, warehousers, customs brokers, and freight forwarders not assessed, absence of *due diligence*, lack of monitoring
Procedural Failure	Absence of document management procedure, lack of organized files, absence of traceability, and lack of version control	Absence of third-party evaluation and monitoring procedure, lack of *due diligence*, and absence of formalized contracts
Necessary Training	Training in document obligations, document traceability, file management, version control, and document auditing	Training in third-party *due diligence*, supplier assessment, contract management, and performance monitoring
Preventive Reference	AEO-Compliance, ISO 28000, CARF	C-TPAT, ISO 28000, AEO-Security and Compliance
Auditable Evidence	Organized document archive, document audit trails, traceability trails, and version controls	Third-party contracts, supplier assessments, performance monitoring records, and *documented* due diligence
Consequence of the Failure	Tax assessment due to document inconsistency, difficulty in defending the CARF, formation of latent tax liabilities, and loss of AEO certification	Contamination of cargo by the act of a third party, tax assessment by the act of a customs broker, loss of AEO or C-TPAT certification, joint and several liability
Preventive Audit Procedure	Verification of document completeness, analysis of consistency between commercial, financial, logistical, and customs documents, document traceability test	Verification of third-party evaluation procedures, contract review, performance monitoring records, and critical *partner* due diligence

Source: Elaborated by the authors. Note. AEO = Authorized Economic Operator; CARF = Administrative Council of Tax Appeals; C-TPAT = Customs-Trade Partnership Against Terrorism; ISO 28000 = Supply Chain Security Management Systems; NCM = Mercosur Common Nomenclature; WTO = World Trade Organization.

Table 4

Dimensions: 9. Customs governance, and 10. Compliance and training culture

Dimension	9. Customs governance	10. Compliance and training culture
Typical Manifestation	Absence of formalized customs policy, lack of defined responsibilities, absence of a governance body, lack of appetite for defined risk	Staff without proper training, procedures not internalized, over-reliance on the green channel, and blind delegation to third parties
Procedural Failure	Absence of a customs governance structure, lack of a formalized customs policy, and absence of a decision-making body	Absence of a continuous training program, lack of a compliance culture, and absence of competency assessment
Necessary Training	Training in corporate governance applied to foreign trade, customs compliance, risk management, and policy definition	Continuous training in all critical areas of foreign trade: tax classification, customs valuation, origin, special regimes, logistics security, customs compliance
Preventive Reference	AEO-Compliance, ISO 28000, CARF	AEO-Compliance, C-TPAT, ISO 28000
Auditable Evidence	Documented customs policy, organizational chart of responsibilities, minutes of governance body meetings, and definition of risk appetite	Training records, competency assessments, documented training programs, and professional development plans
Consequence of the Failure	Recurrent assessments, accumulated tax liabilities, loss of institutional reliability, difficulty in defending in CARF, loss of AEO certification	Repetition of errors, formation of latent tax liabilities, vulnerability to tax assessments, vulnerability to cargo contamination, loss of AEO certification
Preventive Audit Procedure	Verification of customs governance structure, analysis of customs policy, assessment of defined responsibilities, analysis of decision-making bodies	Verification of continuous training programs, analysis of training records, evaluation of team competencies, analysis of professional development plans

Source: Elaborated by the authors.
Note. AEO = Authorized Economic Operator; CARF = Administrative Council of Tax Appeals; C-TPAT = Customs-Trade Partnership Against Terrorism; ISO 28000 = Supply Chain Security Management Systems; NCM = Mercosur Common Nomenclature; WTO = World Trade Organization.

The 10 dimensions proposed by this study are: 1. Logistics security, 2. Tax classification, 3. Customs valuation, 4. Origin, 5. Special customs procedures, 6. Description of goods, 7. Document management, 8. Third-party management, 9. Customs governance, and 10. Compliance and training culture can be examined in detail in Tables 1-4.

5 CONCLUSION

This article aimed to discuss, from a conceptual perspective, the relationship between customs tax assessments, compliance auditing, management by procedures, risk management, training, and the AEO Program. The analysis allowed us to sustain that CARF, by formalizing controversies that have already matured in administrative litigation, offers an important source of preventive learning for companies, auditors, and compliance managers.

The main contribution of the study is to demonstrate that tax-customs risks and logistical security risks should not be treated as disconnected agendas. Although they

manifest themselves in different ways — tax assessments, fines, latent liabilities, administrative litigation, cargo contamination, violation of seals, or failures by third parties — both depend on a common governance infrastructure: clear procedures, effective controls, documented evidence, risk management, and continuous training.

In this context, the customs compliance audit serves a relevant preventive function by transforming patterns of controversy and operational vulnerabilities into checkpoints, control tests, and action plans. C-TPAT and ISO 28000 contribute more directly to the logistics security dimension, while the AEO Program, comprising its Security and Compliance dimensions, enables the integration of supply chain security, tax compliance, and customs governance.

It is therefore concluded that the AEO Program should not be reduced to obtaining a certification. Its implementation can serve as a management tool, yielding tangible benefits even before formal recognition by the Customs Administration. By prompting the organization to map processes, formalize responsibilities, train teams, monitor third parties, and document evidence, the AEO helps reduce structural vulnerabilities and strengthen the compliance culture.

As a limitation, the article is conceptual and does not aim to empirically test the relationship among AEO implementation, reductions in fines, and mitigation of cargo contamination events. Future research may apply the proposed matrix to certified and non-certified companies, to specific sectors of foreign trade, or to administrative court bases to verify the extent to which the maturity of procedures, controls, and training is associated with lower exposure to customs risks.

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