
Impact of the abolition of the de minimis duty-free regime on the organization of transport flows in international e-commerce

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Abstract: The article examines the impact of the abolition of the de minimis duty-free regime in the United States on the transformation of transport flows in international e-commerce in the context of the digitalization of global trade. It is demonstrated that the rapid expansion of simplified customs clearance procedures for low-value shipments, driven by the increase in the duty-free threshold, has led to the emergence of a distinct transport and customs import framework oriented toward mass deliveries via international postal and express channels under the direct-to-consumer model.

It is established that this shift has reoriented the traditional model of customs regulation from the control of large consignments to the management of millions of small parcels, significantly complicating the implementation of the state's fiscal and security functions. The study analyzes the institutional and economic drivers behind the abolition of the de minimis regime, including the growth of import volumes, losses in budget revenues, risks associated with illicit trade, and increased competitive pressure from global e-commerce platforms.

The paper substantiates that the elimination of de minimis triggers a structural reconfiguration of transport and logistics flows, including a trend toward cargo consolidation, the development of warehousing infrastructure within the importing country, and the growing importance of domestic distribution networks. It is argued that, under these new conditions, the transport system ceases to function solely as a physical channel for the movement of goods and instead transforms into an integral component of customs infrastructure, facilitating the collection, processing, and transmission of data required for customs control.

The increasing role of carriers, postal operators, and digital platforms as participants in customs compliance is emphasized, particularly in terms of ensuring data accuracy and the timely calculation of customs duties. The article concludes that contemporary customs regulation is increasingly evolving into a system for managing information flows within logistics chains, where the effectiveness of control is determined by the level of digitalization, data standardization, and the integration of customs and transport processes. This transformation is critical for shaping effective trade policy and ensuring the economic security of the state.

Keywords: de minimis, customs regulation, transport flows, e-commerce, international logistics, low-value shipments, postal operators..

1. Introduction

The rapid growth of e-commerce and imports through small postal and express shipments has placed customs administrations before a strategic dilemma: how to simultaneously ensure the speed of goods clearance, the competitiveness of logistics systems, and the full implementation of fiscal and security functions in the movement of goods across customs borders. In the United States, this dilemma has become particularly acute due to the large-scale expansion of the *de minimis* regime—

an instrument of customs facilitation that provides exemption from duties and simplified clearance procedures for imported goods whose customs value does not exceed the statutory threshold of USD 800. As a result, the volume of such shipments has reached unprecedented levels, forming a distinct transport and customs import framework oriented toward mass small-scale deliveries.

The increase in low-value shipments has led to a transformation in the very logic of customs control: from a traditional model, where large consignments constituted the primary unit of regulation, to a model focused on managing millions of small parcels, which are physically impossible to inspect using conventional methods without significantly slowing down logistics processes. This, in turn, has reshaped the organization of transport flows: international postal services, express delivery, and direct-to-consumer models have increasingly displaced the traditional scheme of wholesale imports, warehousing, and subsequent domestic distribution that previously dominated international trade.

At the same time, this transformation has created a number of systemic challenges for customs regulation, including a decline in the level of control, increased complexity in the administration of customs duties, heightened risks of illicit trade, and losses in state budget revenues. In response to these challenges, the United States decided in 2025 to abolish the *de minimis* regime, marking a significant institutional step toward rethinking the role of customs control in the context of the digital economy and globalized trade.

The aim of this article is to analyze the impact of the elimination of the *de minimis* regime on the organization of transport flows in international e-commerce.

2. Object and subject of research

The object of the study is international commodity flows in e-commerce, formed as a result of the movement of small postal and express shipments.

The subject of the study is the impact of the abolition of the *de minimis* duty-free regime in the United States on the transformation of the customs clearance system, the redistribution of roles and responsibilities among importers, carriers, postal operators, and e-commerce platforms, as well as changes in the configuration of transport flows, cost structures, and risk levels in international e-commerce.

3. Aim and Objectives of the Study

To achieve the stated aim, the article addresses the following objectives: to characterize the institutional nature of the *de minimis* duty-free regime and the reasons for its abolition in 2025; to determine the impact of the simplified customs regime on the organization of international transport flows and the development of logistics; to analyze new procedural channels for the clearance of low-value shipments following the abolition of *de minimis*, in particular the *informal entry* mechanism; and to assess the implications for international postal services, express carriers, e-commerce platforms, and end consumers.

4. Literature Review

The scientific and analytical literature on the *de minimis* duty-free regime demonstrates that this mechanism has long evolved beyond a purely technical tool of customs simplification. In contemporary research, it is increasingly considered as an element of trade policy and digital logistics. One notable study is the article by S. Holloway and J. Rae, devoted to *de minimis* thresholds in APEC economies. The authors argue that increasing *de minimis* thresholds can generate a net economic benefit by reducing government administrative costs, business compliance costs, and transit times. In their approach, *de minimis* is viewed primarily as a tool for rationalizing customs administration rather than merely a tax exemption [1].

An alternative perspective is presented by S. Pope, C. Sowiński, and I. Taelman. They tested the hypothesis of a direct relationship between the *de minimis* threshold in the EU and the systematic undervaluation of imported goods. Their study did not confirm a direct correlation between the threshold itself and the undervaluation of customs value; however, it identified a broader issue—low awareness among market participants and the need for improved interaction between businesses and customs authorities [2]. This is an important conclusion, as it cautions against overly simplistic interpretations: not every compliance issue can be directly attributed to the existence of *de minimis*.

Bryce C. Blegen approaches the issue more broadly, framing it as a crisis of the traditional border clearance model in the era of e-commerce. According to his view, modern customs procedures were historically designed for large-scale cargo flows, whereas e-commerce generates vast volumes of small, direct-to-consumer shipments. The combination of small parcels, simplified procedures, and limited data requirements renders traditional approaches to control and fiscal administration increasingly ineffective [3].

Momchil Antov, analyzing new EU rules on the taxation of low-value consignments, emphasizes the dual effect of the reform. On the one hand, the introduction of a new model, particularly the Import One-Stop Shop (IOSS) mechanism, facilitates procedures for market participants, enhances transaction transparency, and enables the advance administration of tax liabilities at the point of sale. This reduces customs delays and increases the predictability of logistics processes. On the other hand, the researcher notes that the abolition of duty exemptions for low-value imported consignments significantly complicates the work of customs authorities, as the volume of processed declarations sharply increases, requirements for data quality become more stringent, and the issue of effective risk management becomes more pressing. As a result, a new balance emerges between procedural simplification and increased administrative burden, directly affecting the speed and structure of international transport flows in e-commerce [4].

Thus, changes in *de minimis* thresholds partially influence the increase in imports of retail e-commerce goods and the reduction in the cost of imported goods, but they do not have a significant effect on overall customs revenue [5].

Juha Hintsa, examining the Brazilian experience, demonstrates that regulatory restructuring of small-parcel flows improves data quality, enables more precise allocation of human and technological resources in risk management, and enhances tax control [6]. This conclusion directly indicates that after the reduction or revision of *de minimis*, the critical resource becomes not so much the physical intensification of control as the availability of high-quality digital data prior to cargo arrival.

Chao Fang and Shuzhong Ma argue that following the EU reform, which eliminated tax exemptions for small consignments and required platforms to collect taxes, online sales from China to EU countries decreased by nearly 50%, while the primary burden of the additional tax costs was borne by consumers [7].

Finally, Yingying Liang, Liangliang Guo, Jianlu Li, Shuang Zhang, and Xiangyun Fei demonstrate that the scale of international e-commerce largely depends on logistics infrastructure, the customs environment, the administrative capacity of the state, and the level of cross-border logistics services [8].

Meanwhile, Xiaofeng Li, Jing Ma, and Shan Lishow that the growth of e-commerce requires the intellectualization of customs declaration processes and automated recognition of product descriptions [9].

Taken together, these studies provide a scientific basis for the conclusion that the abolition of *de minimis* without automation and digital pre-arrival control almost inevitably distorts transport flows, slowing them down and increasing their cost. The *de minimis* regime blurs the boundaries between tax administration, trade policy, and customs control, as small flows are more difficult to track and classify [10].

The regulatory and procedural dimension of the issue is reflected in CBP materials, which demonstrate a gradual transition from minimal data requirements toward enhanced transparency of

shipments, more detailed product descriptions, and the application of *informal entry* procedures [11–12].

A separate body of sources focuses on the fiscal and security arguments for the reform. Materials from The White House, CBP, and DHS link the abolition of *de minimis* to efforts to combat smuggling, unfair competition, and losses in fiscal revenues [12–14].

5. Research methods

The research methodology is based on a combination of institutional, comparative legal, statistical, and logistics analysis. The study utilizes: regulatory acts and official guidance from CBP and The White House; macroeconomic statistical data from the U.S. Census Bureau and the Bureau of Economic Analysis (BEA); analytical and news sources on developments in international postal services, e-commerce, and transport flows.

The research logic involves a sequential examination of three levels: regulatory (changes in the customs regime), operational (reconfiguration of clearance procedures and redistribution of responsibilities among stakeholders), and transport (changes in the structure of international and domestic flows). This approach makes it possible to assess *de minimis* not merely as a customs privilege, but as a factor shaping the architecture of e-commerce logistics..

6. Research results

In the classical model of customs regulation, the object of customs control and clearance is a consignment of goods transported across the customs border within the framework of a foreign trade contract. This approach is based on customs legislation, according to which procedures are applied to goods as a unified object of declaration, identified as a commercial batch, accompanied by a single set of shipping documents, and processed through a standardized customs declaration. Within this model, the consignment determines the parameters of customs control, including classification, customs value, country of origin, and duty calculation, ensuring the systematic application of tariff and non-tariff measures. The primary responsibility for the accuracy of declared information lies with the declarant [15].

However, the rapid development of international e-commerce and the expansion of the *de minimis* regime have significantly transformed this model. The object of customs regulation is increasingly shifting from aggregated commercial consignments to individualized shipments addressed to end consumers. This is accompanied by fragmentation of goods flows, reduced data volume in declarations, and simplified customs procedures. Under such conditions, the classical model of customs clearance is gradually losing its universality, giving way to a model of mass processing of low-value shipments based on automated declaration, pre-arrival electronic data exchange, and platform-based tax administration. Accordingly, the abolition or restriction of *de minimis* leads to a reverse transformation—from individualized flows back toward the consolidation of goods and a restructuring of international logistics.

For the transport system, this has meant a shift toward direct-to-consumer international delivery, replacing the traditional model in which goods are first cleared through customs, stored in warehouses in the importing country, and only then distributed through domestic logistics chains. This trend is particularly evident in e-commerce flows from China. Major platforms such as Temu and Shein have developed supply chains in which orders are fragmented into small parcels that formally fall below the USD 800 threshold and are shipped directly to consumers via air mail or express delivery. Based on the analysis of the literature, it can be argued that the U.S. decision to terminate the *de minimis* regime was largely driven by the growth of such shipments, many of which are associated with Chinese e-commerce platforms.

From a transport logistics perspective, this represents a transformation of the unit of control: instead of containers, pallets, and consignments, there emerges a massive flow of small packages

moving through international networks and distributed via courier systems directly to households. This creates a fundamental regulatory challenge: customs authorities must either accept a high-volume, low-data model based on trust (minimal data—maximum speed) or return to a traditional model of declaration, classification, and taxation, which requires logistics systems to adapt and inevitably increases costs. A key issue is therefore the customs formalities applicable to small shipments after the abolition of *de minimis*.

U.S. customs legislation provides the *informal entry* mechanism for shipments valued up to USD 2,500 as an alternative to *formal entry*, involving a simplified documentation package and, in many cases, no requirement for a customs bond. The regulatory basis for *informal entry* is set out in 19 CFR Part 143 Subpart C, which specifies eligibility criteria and procedures. CBP guidance also outlines the practical steps for submitting *informal entry* declarations, including interaction with the port director and the provision of required data [16].

Thus, following the abolition of the *de minimis* regime, a portion of low-value imports is expected to shift into the *informal entry* category: while not fully equivalent to traditional consignment-based clearance, these shipments are nonetheless returned to the legal framework of declaration, classification, and taxation.

However, the reform also entails socio-economic costs directly linked to transport and customs clearance. On the day of the abolition, *The Guardian* reported expectations of higher prices for small online purchases, potential delivery delays, and discussions of a regressive impact, as lower-income households are more likely to purchase inexpensive goods. At the same time, authorities emphasized the need to close a “loophole” facilitating tariff evasion and illicit trade [17].

At the procedural level, the elimination of *de minimis* intensifies the challenge of classification and customs valuation for millions of small items that previously did not require detailed descriptions. Product descriptions become critical: vague labels such as “gift,” “accessories,” or “sample” prevent customs authorities from correctly determining duty rates and hinder carriers from automating duty calculations, leading to delays and increased costs due to manual processing. For risk management systems, insufficiently detailed descriptions expand the shadow zone. This directly affects transport operations: sorting centers must implement data validation at the intake stage, while international sellers must adapt product catalogs and invoicing systems to customs coding requirements. These changes disproportionately affect small businesses and artisans using international postal services, for whom customs compliance becomes relatively more expensive compared to product value.

7. Analysis of Results

The *de minimis* regime supported a model of mass small-parcel direct international shipping. Under this model, millions of individual orders—often processed via marketplaces—cross borders through postal and express channels with minimal data and simplified procedures. Therefore, its abolition implies a shift in the transport and organizational model [3; 4; 6].

The first consequence is a transition from individual shipments to consolidated cargo. As small parcels lose their duty-free or simplified advantages, it becomes economically more efficient to consolidate shipments, pre-sort goods, import larger batches into regional or overseas warehouses, and then distribute them domestically.

The second consequence is a redistribution among delivery channels. Under *de minimis*, international e-commerce relied heavily on postal and express channels. After its abolition, there is a growing role for bulk transportation to customs-logistics hubs, increasing the importance of bonded warehouses, fulfillment centers, and last-mile domestic logistics. In effect, the border increasingly shifts to consolidated logistics nodes.

The third consequence is a complication of the time structure of flows. As Holloway and Rae demonstrated, the economic benefits of *de minimis* are partly associated with reduced transit time [1]. Its abolition, without compensatory digital solutions, leads to longer order–clearance–delivery cycles,

manifested in increased pre-arrival analysis time, higher declaration volumes, more frequent control stops, and reduced flow velocity [1; 3; 9].

The fourth consequence is a shift in risk management criteria. Under *de minimis*, the primary challenge was insufficient data and the overwhelming volume of small shipments. After its abolition, the workload does not disappear but shifts toward deeper analysis of data on sellers, platforms, product categories, values, routes, payments, and recipients. As a result, automated systems for product recognition, pre-arrival declaration, and digital risk profiling become critically important.

8. Conclusions

The *de minimis* regime should not be regarded merely as a tax exemption. Rather, it constitutes a structural element of the institutional architecture of international e-commerce logistics, supporting high-frequency, low-cost cross-border shipments of small parcels.

A review of the relevant literature allows for several general conclusions. First, proponents of higher *de minimis* thresholds emphasize reductions in administrative costs, accelerated customs clearance, and benefits for consumers. Second, other scholars highlight the risks of lost tax revenues, competitive distortions, and the overburdening of customs systems. Third, recent studies demonstrate that digitalization and automated risk management are key prerequisites for an effective transition following the restriction or abolition of the *de minimis* regime.

From a transport and logistics perspective, the abolition of *de minimis* results in:

1. the consolidation of shipment flows.
2. a shift from direct-to-consumer cross-border parcel delivery toward hub-and-warehouse-based distribution models.
3. longer delivery cycles in the absence of digital compensation mechanisms.
4. an increased role of large platforms and vertically integrated logistics operators.
5. a transition from formal customs control to data-driven, intelligence-based control systems.

Therefore, the abolition of the *de minimis* regime should be interpreted not as an isolated fiscal measure, but as a catalyst for the profound restructuring of international transport flows within the digital economy.

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