The 'Flexible Declaration Scheme' of Japan Customs: Prevalence, Determinants, and Consequences*

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Abstract

This article examines the prevalence, determinants, and consequences of the Flexible Declaration Scheme in Japan, introduced in October 2017, which allows exporters and importers to declare transactions at a customs office where their shipments are not stored. Regarding the prevalence, our results show that the utilization rate of the Flexible Declaration Scheme increased by 27 percentage points for exports and 18 percentage points for imports over around four years after its introduction. We also show that the utilization rate varies significantly across sectors, regions, and years. Regarding the determinants, we find that customs brokers play the most significant role in explaining variations in the utilization rate relative to other factors such as partner countries and products. Regarding the consequences, we find that exporters and importers using this Flexible Declaration Scheme reduced the number of customs offices used for declarations and storage by more than 50%, suggesting that this customs procedure resulted in a consolidation of customs clearance operations.

* This paper presents research findings of an internal research project conducted by researchers of the Policy Research Institute (PRI), Ministry of Finance (MOF) Japan, using the export and import declaration data, aiming to contribute to the achievement of the administrative objectives of the MOF. In conducting this project, we strictly follow all prescribed procedures regarding data usage and publication of findings to ensure the confidentiality of the data. This article is an English version of the study first published in the Financial Review 160, pp. 64-91, S. Negishi, A. Sasahara, T. Otsuka, F. Ito, 2025, "The 'Flexible Declaration Scheme' of Japan Customs: Prevalence, Determinants, and Consequences" written in Japanese. The views expressed in this paper are those of the authors and do not represent the official views of the MOF or the PRI. The authors would like to thank many people who gave us invaluable comments, including Mr. Kenta Ando and the participants at the Financial Review Paper Discussion Meeting at the PRI. Sasahara acknowledges financial support from the JSPS KAKENHI Grant (24K16371, 21H00713, and 22H00063). All remaining errors are our own.

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JEL Classification: F14, F23, F68

I. Introduction

The global context surrounding customs has changed significantly. Over the 30 years between 1988 and 2018, Japan's trade increased by about 2.8 times and the number of export and import permits increased by about 5.5 times (Ministry of Finance Japan, 2020a). In 2024, the number of export declarations reached 34 million and the number of import declarations was about 190 million (Ministry of Finance Japan, 2024a, p. 60).[1, 2] In these contexts, Japan Customs has implemented various initiatives to ensure both trade facilitation and appropriate customs clearance, with the recent example of the "Flexible Declaration Scheme" (hereinafter referred to as the "Flexible Scheme" or just the "Scheme"), which allows exporters and importers having approval from Japan Customs or using customs brokers certified by Japan Customs to have declarations at a customs office where their shipments are not stored. Hereinafter, customs offices where export/import declarations are submitted and shipments are stored are referred to as "declared customs" and "stored customs", respectively.[3]

The purpose of this study is to clarify the prevalence, determinants, and consequences of the Flexible Scheme through a statistical analysis using the export and import declaration data held by Japan Customs. Reports released by the Japanese government and trade-related organizations suggest that the Scheme has been utilized in trade declarations. Given that a certain period has passed and related data have been accumulated since its introduction in 2017, we believe that this analysis contributes to the academic literature since the Scheme is a topic with significant room for research.

The results are summarized as follows. First, regarding the prevalence of it, its utilization rate among declarations eligible for the Flexible Scheme (the number of declarations using the Scheme divided by the total number of declarations) is found to have increased from approximately 19% to 46% in exports between 2017 and 2021. For imports, it increased from approximately 12% to 30% during the same period.[4] Thus, the utilization rate

[1] Japan Customs has changed its role to adapt to such a situation. In addition to maintaining order in trade through its traditional roles such as the collection of customs duty and the enforcement on illegal drugs, contributing to the sound development of trade and, consequently, the economy of Japan is now also an important mission for Japan Customs. To sum up, customs authority in Japan currently has three missions: "to realize a safe and secure society," "to collect customs duties and domestic consumption taxes appropriately and fairly," and "to promote further trade facilitation."

[2] Approximately 99.9% of export and import declarations are processed electronically through a system called "NACCS (Nippon Automated Cargo and Port Consolidated System)" (Ministry of Finance Japan, 2024a, p. 62).

[3] Japanese trade statistics provided by the MOF can show customs-level data, which is aggregated by stored customs. Furthermore, the statistics also provides port-level data, which is aggregated by not customs but ports where shipments are being loaded and unloaded.

of the Scheme has steadily increased since its introduction, suggesting that a considerable number of exporters, importers, and customs brokers find it useful to declare transactions at customs offices where their shipments are not stored.

Second, to gain a deeper understanding of the determinants of the Scheme's utilization rate, we conduct a regression analysis to examine which variables (exporters/importers, customs brokers, customs, trading partners in overseas, and products) best explain the variation in the utilization rate. The results show that the variable related to customs brokers explains most of the variation within the sample (approximately 61% to 81%), while the variables on goods and trading partners explained only a few percent of the variation. These findings suggest that the decision to use the Scheme is largely based on customs brokers, not on products or consignees/consignors in overseas.

Third, we examine how the introduction of the Flexible Scheme in October 2017 affected the number of customs offices and customs brokers' offices that exporters and importers use. Our analysis reveals that firms using the Scheme have reduced the number of customs offices by more than half. Furthermore, the reduction was greater for declared customs than for stored customs, suggesting that many exporters and importers have implemented a consolidation of declared customs. Related to the consolidation of customs offices by exporters and importers, customs brokers also reduced the number of their offices by approximately 4% between 2015 and 2020, where another quantitative analysis clarified that the speed of this reduction was particularly high after the introduction of the scheme, October 2017.

This article is related to a series of studies that examine the impact of trade facilitation measures by customs authorities and the presence of customs brokers on international trade. For example, Wilson et al. (2003, 2005) clarify that favourable customs environment expands trade with statistical significance.[5] In addition, Fernandes et al. (2016) suggest that a change in the customs procedure introducing preferential treatment for high compliance firms in Serbia led to a reduction in uncertainty regarding customs clearance time. Medin (2021), using transaction-level trade data from Norwegian manufacturers, shows that exporters and importers with smaller trade transactions tended to use customs brokers, stating that the presence of customs brokers contributes to increase trade. While the impact of changes in customs procedures and the presence of customs brokers on international trade have been examined as mentioned above, existing research remains limited. This paper focuses on a change in customs procedure in Japan, particularly the introduction of the Flexible Scheme, which can be considered a new case study in this series of research. Furthermore, this paper illustrates the customs brokers' role in trade facilitation from a new perspective, as we clarify that customs brokers play a significant role in the utilization of the Scheme.

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[4] The utilization rate for all declarations had risen from approximately 13% to 31% for exports, and from approximately 5.5% to 7.9% for imports during the same period.

[5] Wilson et al. (2003, 2005) used four indicators to measure the effect of trade facilitation: port efficiency, customs environment, regulatory environment, and e-business usage. Using a gravity model, they estimated the impact of each indicator on trade.

Previous research on the Flexible Scheme is quite limited, but the study by Matsumoto and Hasegawa (2022) is one exception. It analyses survey responses from trade-related firms on their utilization rate, purpose, and costs of using the Scheme, then show that many firms utilize it for streamlining their operations. This study complements their work by verifying whether their results can be quantitatively confirmed using the export and import declaration data. Conducting a statistical analysis using customs data contributes to future policy considerations in customs authorities in various countries, including Japan, and also has academic contributions as research utilizing declaration-level data makes it possible to obtain detailed pictures on how individual firms respond to a policy reform.

The remainder of this study is organized as follows. Section II provides an overview of the Flexible Scheme. Section III describes the export and import declaration data used in this study. Section IV clarifies the prevalence of the Scheme. Section V examines its determinants. Section VI conducts an analysis focusing on consequences of its introduction. Section VII states our conclusion.

II. Overview of the Flexible Scheme

This section provides an overview of the Flexible Scheme including its introduction background, outline, surrounding circumstances, and similar scheme in other countries.

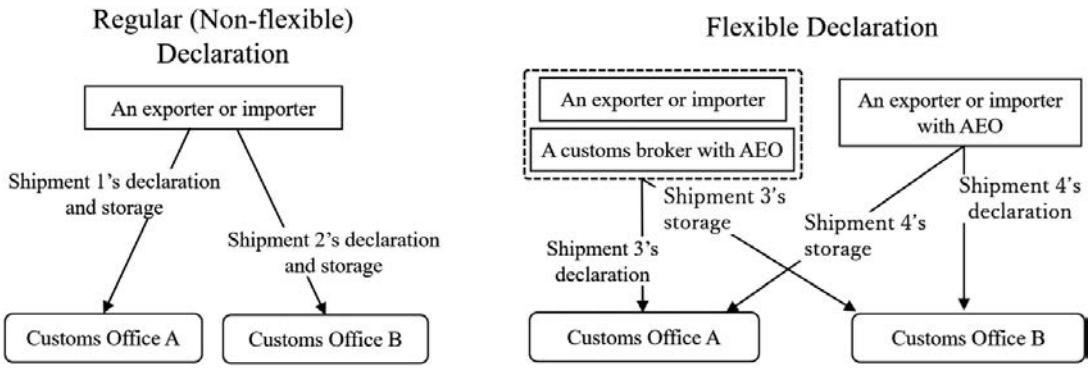
II-1. Introduction Background and Outline of the Flexible System

Customs declarations for both exports and imports in Japan, in principle, have long been made to stored customs, where the shipments are located, for the reason that customs officers at stored customs can deal with the entire process of customs clearance from declaration to permission, including examination on related documents and cargo inspection. It would enable swift responses to cargoes suspected of illegal export/import and ensure effective customs enforcement. On the other hand, from the viewpoint of convenience for business operators related to trade, such as exporters, importers, and customs brokers (hereinafter referred to as "trade-related operators"), allowing customs declarations at customs offices other than stored customs (hereinafter referred to as "non-stored customs") would broaden the choice of places for clearance, potentially leading to an improvement in supply chain networks and operation efficiency, as well as a cost reduction for trade-related operators.

As a result of these considerations, the Flexible Scheme which grants flexibility in choosing customs offices to declare was introduced on October 8, 2017, limited to trade-related operators joining the Authorized Economic Operator Program (hereinafter referred to as the "AEO"), who have received approval/certification from Japan Customs subject to fulfilling some requirements such as having the ability to conduct export/import operations properly.[6] As shown in Figure 1, in the case of regular declaration without using the Scheme (hereinafter referred to as "Non-flexible Declaration"), the export/import declaration and cargo storage must be conducted at the same customs office. However, with declarations un-

der this Scheme (hereinafter referred to as the "Flexible Declarations"), "AEO exporters/importers" or "exporters/importers declaring to customs through AEO customs brokers" are allowed to declare and store cargoes at different customs offices. The separation of customs office to declare and to store is expected to reduce the burden for customs clearance on trade-related operators and further improve efficiency of their businesses.

Figure 1. Outline of the Flexible Scheme



Source: Drawn by the authors based on MOF's explanatory material at the Council on Customs, Tariff, Foreign Exchange and Other Transactions (Ministry of Finance Japan, 2020b, p. 25)
Note: In the Flexible Declarations, it is also possible to choose the regular declarations to stored customs.

II-2. Situation Surrounding the Flexible Scheme

As more than seven years have passed since the introduction of the Flexible Scheme as of 2024, we can grasp how traders utilize the Scheme from publicly available documents released by the Japanese government and trade-related organizations. For example, in MOF's explanatory document at the Council on Customs, Tariff, Foreign Exchange and Other Transactions held in October 2020 (Ministry of Finance Japan, 2020b), it states that the Scheme is utilized by both customs and business operators, and its utilization rate in 2019 was approximately 13% (p. 25). Furthermore, according to the survey by Matsumoto and Hasegawa (2022), approximately 84% of AEO customs brokers utilized the Scheme (p. 141), and the authors also pointed out that the number of AEO customs brokers has significantly increased since the start of the Scheme (p. 134).

Thus, it can be thought that the implementation of the Scheme had a positive impact on the AEO program. Moreover, according to the Japan Customs Brokers Association (2020)'s survey conducted in 2020, 80% of AEO customs brokers utilized the Scheme (p. 4), where streamlining operations and reducing costs through the consolidation of declared customs,

[6] According to Japan Customs (2025a), as of September 1, 2025, there are 228 AEO exporters, 102 AEO importers, and 266 AEO customs brokers.

as well as the use of non-stored customs, are their main purposes for their utilization (pp. 6-7).

II-3. Similar Scheme in Foreign Countries

A similar initiative of the Flexible Scheme can be seen in the EU. In this region, cargo clearance is, in principle, conducted at customs offices having jurisdiction over the location of the cargoes. However, as of 2025, preparations are underway to introduce the "Centralized Clearance" system that authorises business operators to submit declarations locally (i.e., at a customs office in the EU country where they are located) for goods that are located in another EU country, although the operators must be certified by customs authorities of the EU to receive this preferential treatment (European Union, 2025).[7] This system can be considered a trade facilitation measure similar to the Flexible Scheme in Japan.

The results of this study, which shows the prevalence of Japan Customs' Flexible Scheme, can also be helpful for foreign customs authorities that are planning to introduce similar trade facilitation measures. Therefore, this article presents a case study that can be referenced when foreign related authorities consider introducing similar schemes in the future.

III. Data

This study uses the export and import declaration data in Japan held by Japan Customs through customs clearance procedures, including export and import declarations. We specifically use the data on both general declarations and manifest declarations for eight years from January 1, 2014 to December 31, 2021.[8] An overview of the data is shown in Figure 2, describing that the export and import declaration data include information on exporters/importers, trading partners, prices of goods, commodity names, etc., for each declaration. In conducting this research, we ensure the individual information remains confidential to avoid any impact on customs authority's operations. While this dataset contains a wide range of variables, this study uses those necessary for identifying the Flexible Declarations, and for grasping characteristics of each declaration including details of the cargoes and customs offices.[9] Table 1 summarizes the names of the main variables and the reasons why we use them.

[7] As of July 2024, the introduction of the Centralized Clearance system has been postponed to the end of 2025 (JETRO, 2024, p. 2).

[8] Manifest declaration is a simplified declaration procedure in Japan available for air cargoes based on House Air Waybills. Cargoes with this type of declaration need to fulfil certain conditions (e.g., the price of individual cargo is JPY 10,000 or less for imports and JPY 200,000 or less for exports).

[9] For details on variables included in the export and import declaration data, refer to item 3 (Contents of Available Data) of the Ministry of Finance Japan (2024b).

Figure 2. Example of Import Declaration Data

Declaration ID	Declaration date	Name of consignor	Importer ID	Importer name	NACCS code	Invoice price	Invoice currency code	Fare	Customs value	Tariffs	Customs duty taxable quantity	Customs duty taxable quantity unit
12345678900	2014/01/01	SOY SAUCE INTERNATIONAL LIMITED	1234567890123-9000	ZAIMUSOKEN CO., LTD	2103100005	200,000	JPY	50,000	250,000	18,000	2,000	KG
23456789010	2016/05/15	KAWARA S.A.	2345678901234-0000	KANZEIKYOKU CO., LTD	6905100005	2,000	USD	500	273,750	5,475	5	MT
34567890120	2020/12/31	BALL LLP	3456789012345-0000	SMART ZAIKAN LLC	9506320003	2,000	EUR	500	324,550	0	2,500	NO

Source: Depicted by the authors based on a document published by the MOF (Ministry of Finance Japan, 2021, p. 12)
Note: The information provided, including the names of consignors and importers, is hypothetical and for illustrative purposes only.

Table 1. Main Variables

	Variable name	Purpose of using the variable
Common across exports and imports	Exporter ID (or Importer ID)	Capture declaration information for each exporter (or importer)
	Mode of transportation	Identify the mode of cargo transportation (air or sea)
	Declared customs code	Identify the declared customs used
	Stored customs code	Identify the stored customs used
	Flexible Scheme use flag	Identify whether the Flexible Scheme was used
	Transaction ID (Note 1)	To construct the dataset
Exports only	Declaration date	Identify the declaration date
	Declaration price	Identify the price
	Customs broker code	Identify the customs broker used
	Destination country code	Identify the destination country
Imports only	Declaration date	Identify the declaration date
	Customs value	Identify the price
	Customs broker code	Identify the customs broker used
	Source country code	Identify the source country
	Representative tariff code (Note 2)	Identify the HS code

Source: Depicted by the authors based on the export and import declaration data
Note 1: This variable is not included in manifest declaration data.
Note 2: This variable shows 4-digit HS code for trade product(s) having the highest customs value in one declaration. This variable is not included in manifest declaration data.

IV. Prevalence of the Flexible Scheme

The main purpose of this section is to grasp the details about how trade-related operators have utilized the Flexible Scheme. We focus on the utilization rate of this Scheme as an indicator of its prevalence and examine the trend of the rate from various perspectives for both exports and imports.

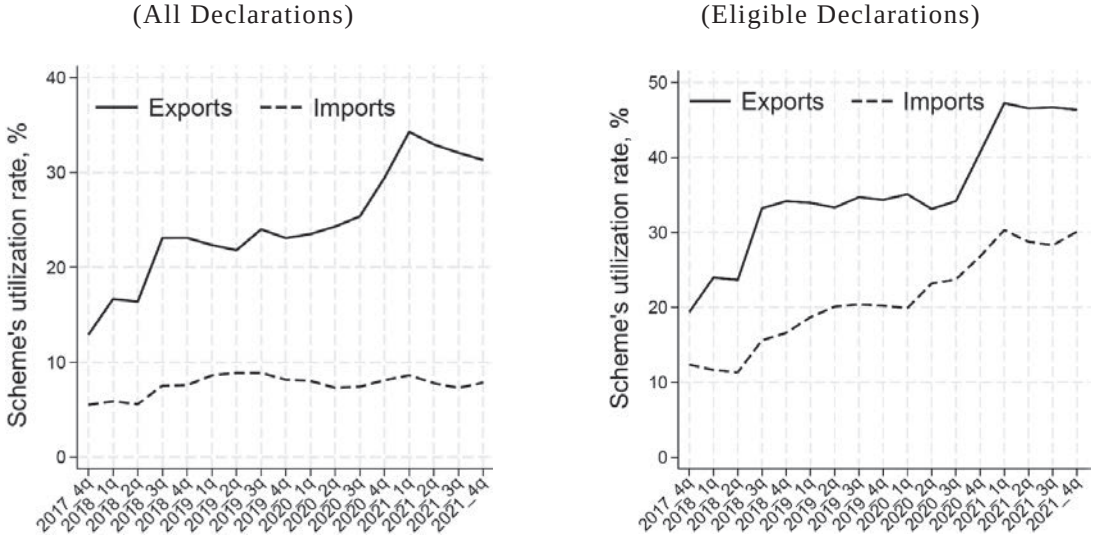
IV-1. Utilization Rate Trend

Using general and manifest export/import declaration data from October 8, 2017 (i.e., the starting date of the Flexible Scheme) to December 31, 2021, we construct declaration-level datasets for both export and import. Then, we use the variable named "Flexible Scheme use flag" for each declaration to distinguish whether it was a Flexible Declaration when calculating the utilization rate for each quarter to draw graphs.

According to the left graph in Figure 3, the utilization rate for all declarations shows increasing trends for both imports and exports. However, compared with exports, which show a large increase of approximately 18 percentage points, from around 13% to 31% in about four years, the increase in imports was smaller, at approximately 2 percentage points from about 5.5% to 7.9%. Furthermore, throughout the period, the overall utilization rate for exports (about 25.3%) was about three times higher than that for imports (about 7.7%).

Although trade-related operators determine whether to use the Scheme at every declaration, this cannot be used in the case that neither the exporter/importer nor the customs broker obtains AEO status. To eliminate the effect of such cases, we also compute the utilization rate limited to declarations by AEO exporters/importers or AEO customs brokers (hereinafter referred to as "eligible declarations"). The right graph in Figure 3, showing the trend of the utilization rate for eligible declarations, reveals a significant increase in the rate not only for exports but also for imports.[10] Specifically, between 2017 and 2021, the utiliza-

Figure 3. Utilization Rate Trend



Source: Authors' calculation based on the export and import declaration data

[10] Eligible declarations accounted for about 35.2% of all declarations over the entire period.

tion rate for exports had increased sharply from approximately 19% to 46%, and that for imports had also increased significantly from approximately 12% to 30%. The average rate for the entire survey period was approximately 21.9% for imports and 36.4% for exports, where the latter was around 1.7 times higher than the former.

The trends in Figure 3 suggest a growing prevalence of the Scheme, showing a steady increase in its utilization rate for both exports and imports. It implies that a considerable number of trade-related operators realize the benefits from declaring at customs offices where their shipments are not stored. While the increase in the utilization rate for all import declarations is moderate, a significant increase is observed when limited to eligible declarations. These findings do not imply that the Scheme is unused for imports. Instead, it suggests that an inclusion of the large number of declarations that are not eligible for the Scheme in the first place—those filed by importers who have neither access to an AEO-certified broker nor their own AEO status—lowers the total utilization rate. In recent years, the expansion of cross-border e-commerce has led to a sharp increase in imports of online-order shipping (Japan Customs, 2025b). Even individual consumers who do not have AEO can easily conduct this kind of import behaviour, resulting in many declarations where the Scheme cannot be adopted for imports. Furthermore, the reason that the Scheme is used more for exports than imports is probably because, unlike import declarations, export declarations do not have procedures related to customs duty payment, making it easier for trade-related operators to separate their operations at declared customs from those at stored customs, in addition to the understatement of the utilization rate due to the inclusion of declarations that are not eligible for the Scheme in the first place.

IV-2. Utilization Rate by Category

The decision of whether to use the Flexible Scheme may be affected by the characteristics of declarations, including their exporters, importers, and products. To examine the role of each factor in explaining the Scheme's utilization rate, we focus on the following six aspects of declarations: “Who,” “Whom,” “When,” “Where,” “What,” and “How.” Then, we compute the Scheme’s utilization rates based on the six aspects for exports and imports as shown in Table 2.[11]

Figure 4 (exports) and Figure 5 (imports) show the trend of using the Flexible Declarations by category. Overall, the magnitude and the trend of the utilization rate varies among categories. It shows that, in terms of characteristic ① (by industry), the utilization rate for exporters and importers classified as manufacturers was higher than that of other industries, and the former increased significantly from 2018 to 2021. Focusing on characteristic ② (by trading partners’ region), the utilization rate of the Scheme in trading with African countries was almost unchanged from 2018 to 2021. Regarding characteristic ③ (by location of declared customs), there are areas with high prevalence such as Kanto, Chubu, and Kansai re-

[11] In categorization, we utilize graphs to visualize the average utilization rates from various aspects.

Table 2. Categorization of Export and Import Declarations

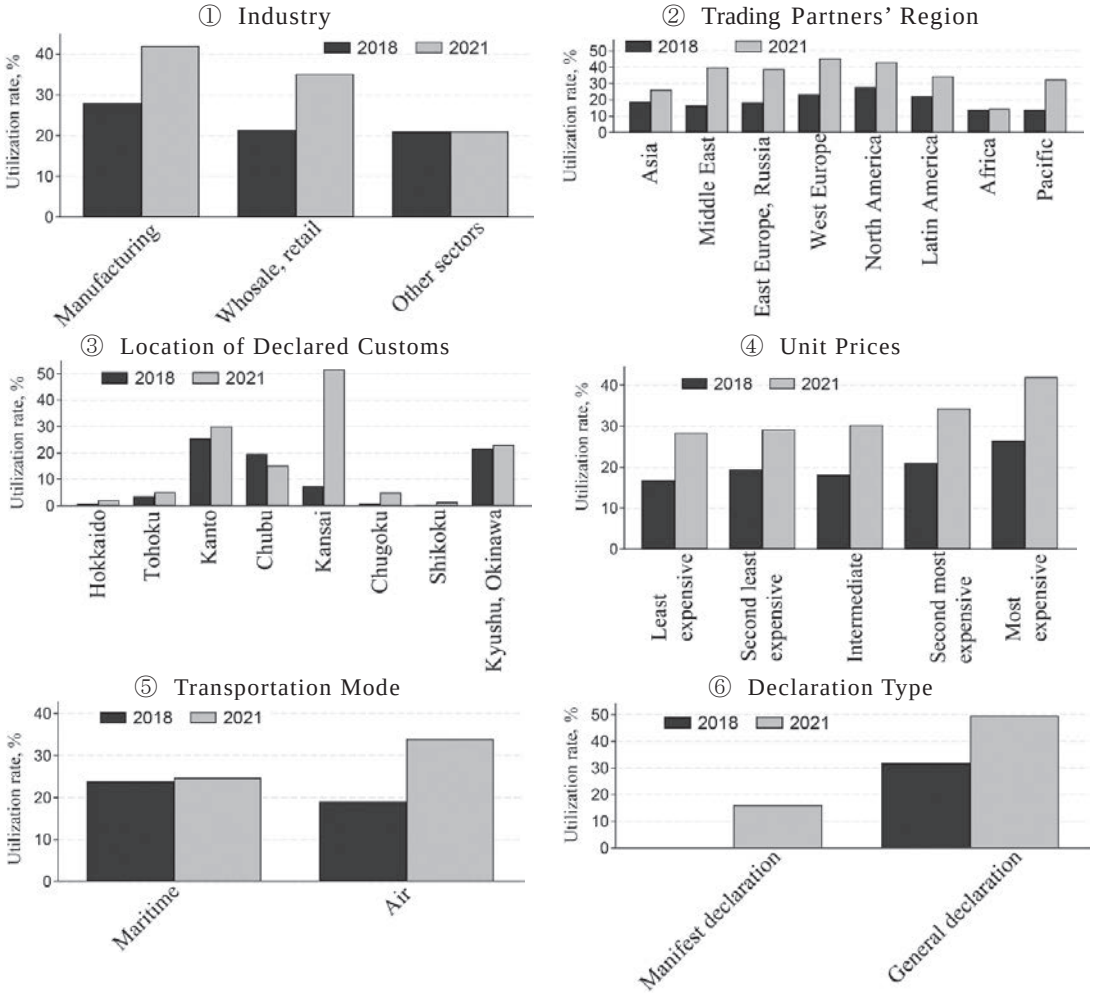
Info.	Characteristics	Method of classification
Who	① Industry	Importers and exporters are classified into three categories: "Manufacturing," "Wholesale and Retail," and "Other sectors." For this classification, the export/import declaration data is merged with information from the Basic Survey of Japanese Business Structure and Activities conducted by the Ministry of Economy, Trade and Industry (hereinafter referred to as the "Kikatsu Data"), using the industrial classification information contained in the Kikatsu Data (Note 1).
Whom	② Trading partners' region	The trading partner countries and regions are classified into eight categories—"Asia," "Middle East," "Central and Eastern Europe/Russia, etc.," "Western Europe," "North America," "Central and South America," "Africa," and "Oceania"—using the geographical classification table from the trade statistics (Japan Customs, 2024).
When		The transition is examined by comparing the utilization rates in 2018 and 2021.
Where	③ Location of declared customs	The customs offices for declaration are classified into eight categories based on their address information: "Hokkaido," "Tohoku," "Kanto," "Chubu," "Kansai," "Chugoku," "Shikoku," and "Kyushu & Okinawa."
What	④ Unit prices	The unit price per kilogram (KG price) is calculated from the declared value and cargo weight, and the prices are classified into five levels based on their magnitude (Note 2).
How	⑤ Transportation mode	The relevant data items are used to classify shipments into two categories: "maritime cargo" and "air cargo."
	⑥ Declaration type	The relevant data items are used to classify declarations into two categories: "general declarations" and "manifest declarations."

Source: Summarized by the authors based on the export and import declaration data
Note 1: Regarding the matching of export/import declaration data with firm-level information from the Basic Survey of Japanese Business Structure and Activities (Kikatsu), we use the method explained in Appendix C of Ito et al. (2025).
Note 2: As there are declarations such as manifest declarations lacking information on products (i.e., HS code) to some extent, we adopted unit price as the substitute variable for "What" information to avoid a significant loss in the number of samples.

gions, and areas with low prevalence such as Hokkaido, Chugoku, and Shikoku regions. Additionally, especially in 2021, the Scheme was used more widely for imports than exports. As for characteristic ④ (by unit prices), there is a positive correlation between the utilization rate and unit prices per declaration for exports, while imports show a different trend with the highest utilization rate in the lowest category. Regarding characteristic ⑤ (by transportation mode), the utilization rate for maritime cargo was almost constant (exports) or decreased (imports) over the period, while the rate for air cargo increased during the same period. The final characteristic ⑥ (by declaration type) indicates that the utilization rate for manifest declarations was significantly lower than that for general declarations.

These results suggest that the accessibility of the Flexible Scheme varies depending on the characteristics of export and import declarations. In 2018, the Scheme's utilization rate was extremely low for manifest declarations, which might suggest that the year 2018 was somewhat special, requiring a cautious analysis. Furthermore, it is interesting to see the significant difference in the trend of the utilization rate between air cargo and maritime cargo. The sharp increase in the rate shown in Figure 3 can be considered as mainly due to the increase in the use of the Scheme for air freights. In contrast, for sea cargos exports, the demand to use the Scheme stays almost constant at about 25% between 2018 and 2021. The nearly constant utilization rate might be due to the fact that Japan's maritime exports are mainly handled by large-scale bulk shipping by containers, and these ships tend to have

Figure 4. Utilization Rate Trend by Category (Exports)

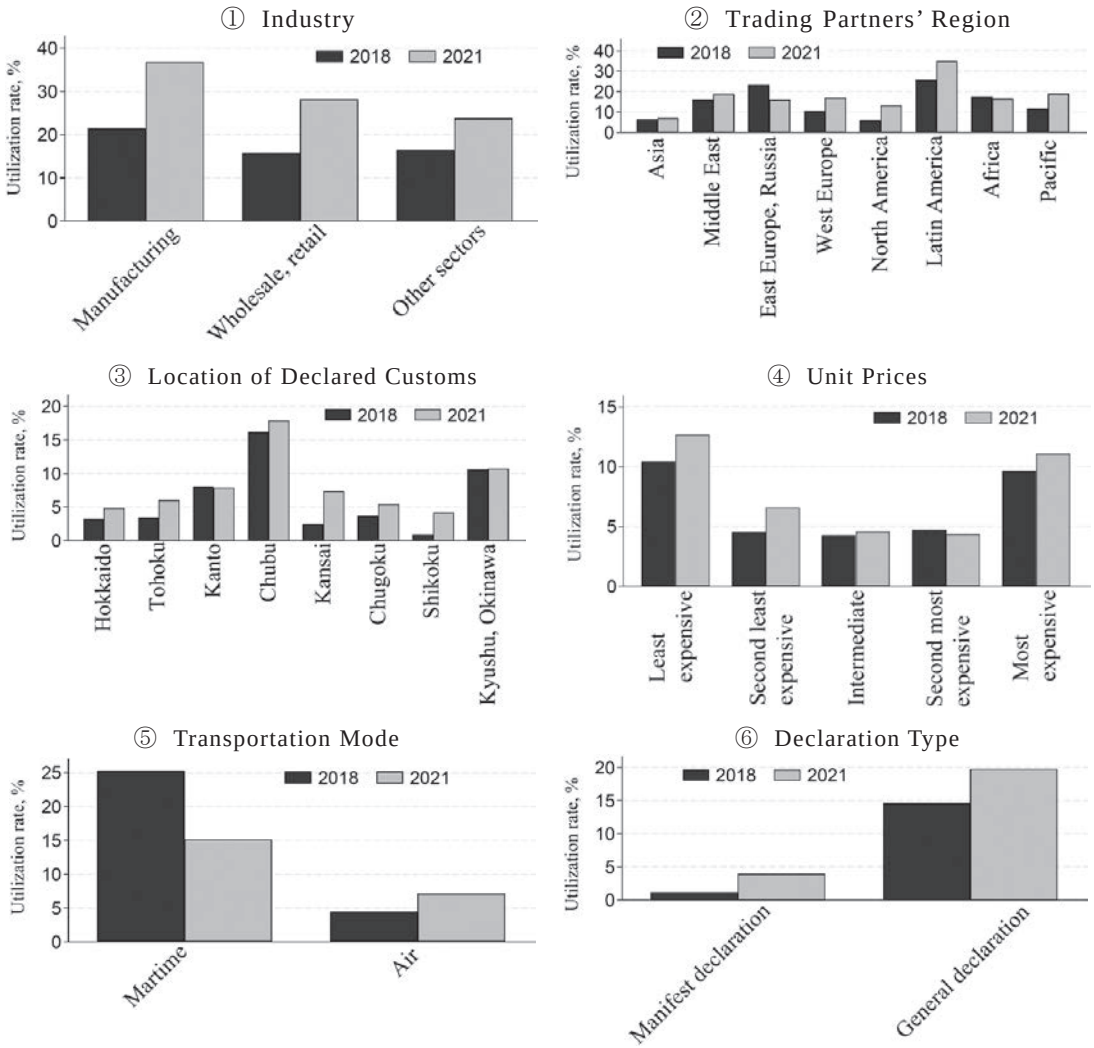


Source: Authors' calculation based on the export and import declaration data
Note: The numbers from ① to ⑥ correspond to those in Table 2.

fixed transportation routes, resulting in a small change in demand for choosing the Flexible Declaration. This interpretation is consistent with Figure 4 ③ indicating that the utilization rate of the Scheme in regions with large international airports such as Kanto and Kansai was higher than that in regions with large seaports.

The analysis in this section aims to provide an overview of the prevalence of the Flexible Scheme, so the results visually represent the trend of how the Scheme has been used. Therefore, it is important to note that the influence of confounding factors has not been eliminated. For example, there is a positive correlation observed between the utilization rate and unit prices in exports (④ in Figure 4), while no such correlation is seen in imports (④ in Figure 5). This suggests that a regression analysis is needed to fully grasp the determi-

Figure 5. Utilization Rate Trend by Category (Imports)



Source: Authors' calculation based on the export and import declaration data
Note: The numbers from ① to ⑥ correspond to those in Table 2.

nants of the Scheme's utilization rate.

V. Determinants of the Utilization of the Flexible Scheme

The previous section has shown that, although the Scheme's utilization rate has increased since its introduction, the rate varies depending on the characteristics of export/import declarations, such as exporters/importers, declared customs, and mode of transportation. To clarify the source of the variations, it is necessary to conduct a detailed analysis of these characteristics. Accordingly, in this section, following the methodology of Coşar and

Demir (2018), we perform a regression analysis to identify the factors that influence the Scheme's utilization rate.[12]

Specifically, based on the information on export and import declarations summarized in Table 2, we construct five variables: exporter (importer), customs broker, customs office, trading partner, and product. In light of the previous section's findings, we restrict the analysis to the year 2019, when the utilization rate for both exports and imports was relatively stable, and excluded manifest declarations, which have extremely low utilization rates. Furthermore, we define customs brokers at the branch-office level, customs offices at declared customs level, trading partners as a combination of the partner country/region and the mode of transport (maritime or air cargo), and products categorized based on declared unit prices (price per kilogram).[13] Then, for each combination of these variables, we calculate the Scheme's utilization rate for exports:

$$FlexRate^{EX}_{ijklm} = \frac{Export^{Flex}_{ijklm}}{Export_{ijklm}} \tag{1}$$

where $Export_{ijklm}$ denotes the number of export declarations of product m by exporter i through broker j at customs office k to export to country l. The variable $Export^{Flex}_{ijklm}$ denotes the number of export declarations of the same characteristics and used the Scheme. Since $Export^{Flex}_{ijklm} \leq Export_{ijklm}$, it follows that $0 \leq FlexRate^{EX}_{ijklm} \leq 1$. The same calculation applies to imports:

$$FlexRate^{IM}_{ijklm} = \frac{Import^{Flex}_{ijklm}}{Import_{ijklm}} \tag{2}$$

where i denotes an importer rather than an exporter.

Subsequently, we regress the utilization rate on each set of dummy variables or dummies based on a combination of the variables and compare the values of Adjusted R-squared (hereinafter referred to as the "R-squared"). This allows us to quantify the explanatory power of each variable or their combinations in explaining the variation in utilization rates, that is, their influence on the utilization of the Scheme. For example, the impact of each variable is estimated using the following fixed effects model.

$$FlexRate^{n}_{ijklm} = \alpha + \mu_i + \varepsilon_{ijklm} \tag{3}$$

where $n = EX$ or IM, and μ_i denotes exporter fixed effects (or importer fixed effects). Based on the R-squared, we quantify the explanatory power of the exporter (or importer) dummies in explaining the variations of the Scheme's utilization rate. Furthermore, the explanatory

[12] Coşar and Demir (2018) conduct an analysis similar to that in this section, using firms, products, partner countries, ports, and combinations of these variables to examine how the tendency to choose containerized shipping is related to the characteristics of the cargo.

[13] Regarding the variable of customs brokers, for example, "Tokyo branch" of customs broker A differs from its "Osaka Branch." Moreover, regarding the variable of customs offices, for example, "Headquarters" of Tokyo Customs differs from its "Narita Air Cargo Sub-branch." Furthermore, regarding the variable of products, unit prices was used as its proxy variable to avoid sample size decrease caused by declarations without information on trading item classification (i.e., HS code). As a result, in terms of the number, approximately 95% of export declarations and about 99% of import declarations were subject to our analysis. Additionally, in this section, additional analysis using HS code information was also conducted.

power of variable pairs is estimated using, for example, the following fixed effects model.

$$FlexRate^{n}_{ijklm} = \beta + \mu_{jk} + \varepsilon_{ijklm} \quad (4)$$

where μ_{jk} denotes "broker-customs office pair" fixed effects. By estimating equation (4), we obtain the *R*-squared, which allows us to assess the extent of the influence of the combination of "customs broker" and "customs office" (declared customs) on the utilization of the Scheme.[14]

The results are presented in Table 3. Among the five variables—exporter (importer), customs broker, customs office, trading partner, and product—the customs broker dummies have the greatest explanatory power, accounting for approximately 81% of the variation in the utilization rate within the sample for exports and about 61% for imports. Then, customs office dummies and exporter/importer dummies follow. Notably, the influence of customs office differed significantly between exports and imports, accounting for about 57% in exports and about 28% in imports. Focusing on the combined effects of variables, the results indicate that most of the variation in the utilization of the Scheme (approximately 96% for exports and about 86% for imports) can be explained by the combination of three variables: exporter (importer) dummies, customs broker dummies, and customs office dummies.

Moreover, for some variable pairs, the *R*-squared obtained from a regression including a pair of variables (combined fixed effects) exceeds the sum of the *R*-squared values from two regressions in which each variable is included separately (individual fixed effects). Specifically, for the "exporter/importer–trading partner" pair (approximately 57% for exports and 48% for imports), which combines exporter/importer (about 33% for exports and 28% for imports) and trading partner (about 8% for exports and 5% for imports), the explanatory power increased by around 15 percentage points for both exports and imports. In addition, for imports, the "importer–customs office" pair (approximately 67%), which combines importer (about 28%) and customs office (about 28%), shows an increase in the explanatory power by around 10 percentage points.

Considering that the use of the Scheme is determined by decisions made for each individual declaration, the results suggest that its utilization is not decided at the level of traded products or trading partners, but rather by the entities handling trade operations—specifically, customs brokers, declared customs, and exporters/importers, with customs brokers playing a particularly central role. Regarding customs brokers, apart from cases where the exporter or importer has obtained AEO status, the use of the Scheme requires that the customs broker with AEO. Moreover, customs brokers may also decide to use the Scheme for purposes such as improving operational efficiency or reducing costs. Thus, it is unsurprising that the extent of the Scheme's utilization varies across customs brokers (and their branch offices).[15] In addition, the relatively high explanatory power of customs offices suggests that

[14] To verify the robustness of these analyses, we also conducted: (1) an analysis based on variables constructed by redefining products using HS codes (representative 4-digit tariff codes) instead of declared unit prices; (2) an analysis based on variables constructed by redefining customs offices from declared customs to stored customs; (3) an analysis based on variables constructed by changing the analysis period from 2019 to 2021; and (4) an analysis based on variables constructed by limiting the sample to eligible declarations. The results of these analyses are presented in Table A1 of Appendix 1.

Table 3. Variables' Explanatory Power for the Scheme's Utilization Rates

	Exports	Imports
Variables		
Exporters (Importers), *i*	0.328	0.280
Customs brokers, *j*	0.807	0.608
Customs offices, *k*	0.572	0.278
Trading partner countries, *l*	0.077	0.052
Products, *m*	0.012	0.006
Variable pairs		
Exporters (Importers)-Customs brokers, *ij*	0.912	0.810
Exporters (Importers)-Customs offices, *ik*	0.810	0.673
Exporters (Importers)-Trading partner countries, *il*	0.565	0.480
Exporters (Importers)-Products, *im*	0.284	0.148
Customs brokers-Customs offices, *jk*	0.875	0.674
Customs brokers-Trading partner countries, *jl*	0.839	0.643
Customs brokers-Products, *jm*	0.814	0.611
Customs offices-Trading partner countries, *kl*	0.622	0.345
Customs offices-Products, *km*	0.583	0.283
Trading partner countries-Products, *lm*	0.105	0.061
Exporters (Importers)-Customs brokers-Customs offices, *ijk*	0.956	0.858
Sample size		
Exporters (Importers), *i*	214,955	2,322,773
Customs brokers, *j*	1,729	1,803
Customs offices, *k*	177	179
Trading partner countries, *l*	458	347
Products, *m*	998	1,000

Source: Authors' calculation based on the export and import declaration data
Note 1: Manifest declarations are excluded from the analysis.
Note 2: The unit of customs brokers is branch offices; the unit of customs offices is declared customs; the unit of trading partners is defined as the partner country/region combined with the mode of transport (maritime or air cargo); and the unit of products is declared unit prices (price per kilogram) category.
Note 3: The reason for the substantial difference in sample size between exports and imports is that this analysis includes declarations by parties without exporter/importer ID (including ordinary consumers who act as importers of e-commerce cargoes), and such declarations account for a large share of imports.

Flexible Declarations are concentrated at certain customs branches, indicating that trade-related operators may consider factors such as the convenience and processing capacity

[15] As an example of customs brokers' decision-making in utilizing the Flexible Scheme, FedEx (2018) announced in August 2018 that FedEx Japan, as a customs broker, consolidated the export and import declarations for all cargo handled at its serving airports to the Tokyo Customs Headquarters by utilizing the Scheme.

(know-how and manpower) of individual customs offices when making Flexible Declarations. In this regard, the observed increase in explanatory power from the combination of importers and declared customs suggests that certain importers consistently file the Flexible Declarations with specific customs offices. Additionally, several other combinations also exhibit such "synergistic effects" in the utilization of the Scheme, suggesting that underlying mechanisms behind these effects requires a more detailed analysis.

VI. Consequences of the Introduction of the Flexible Scheme

This section evaluates the effects of the Flexible Scheme along two dimensions. First, it assesses changes in logistics patterns, specifically the variation in transportation distances between ports and customs offices following the Scheme's introduction. Second, it examines the Scheme's role in consolidating customs procedures, as noted in media reports, considering the perspectives of both customs offices and customs brokers.

VI-1. Distance between Seaports/Airports and Customs Offices Used

Through use of the Flexible Scheme, trade-related operators have been able to select declared and stored customs most convenient for them. Since physically relocating cargoes entails transportation costs, it is plausible that these operators utilize the Scheme to reduce such costs. More specifically, under the hypothesis that the use of the Scheme changes the distance between ports and stored customs, we calculate the distances between ports and stored customs, as well as between stored and declared customs, separately for the Flexible and Non-flexible Declarations, disaggregated by mode of transport (maritime or air cargo) and by export versus import transactions. For these calculations, we use the latitude and longitude of ports and customs offices to compute the average straight-line distance between the two relevant locations for each declaration in every year from 2016 to 2021, spanning the period before and after the introduction of the Scheme.

Figure 6 presents the average distances between ports and stored customs, as well as between stored and declared customs, for export cargo. For 2016, prior to the introduction of the Scheme, only the average distance between loading port and stored customs is shown. For 2017 and later, following the introduction of the Scheme, the figure shows not only the average distance between loading port and stored customs for declarations utilizing the Scheme, but also the average distance between stored and declared customs. For comparison, the average distance between loading port and stored customs for the Non-flexible Declarations is also shown for 2017 and later. The results indicate that for maritime cargo (left panel of Figure 6), while the average distance between loading port and stored customs for Non-flexible Declarations (regular declarations) remained almost constant at around 20-25 km, for the Flexible Declarations the average distance between loading port and stored customs decreased to around 10 km.

At the same time, the average distance between stored and declared customs gradually

increased from approximately 7 km to around 20 km, suggesting that most of the overall increase in average distance is attributable to the increase in the distance between stored and declared customs. For air cargo, as shown in the right panel of Figure 6, while the average distance between loading port and stored customs for Non-flexible Declarations remained almost flat at around 40-60 km, for Flexible Declarations, similar to maritime cargo, the average distance between loading port and stored customs decreased to below 20 km (around 40 km only in 2021), while the average distance between stored and declared customs increased significantly. Specifically, the average distance between stored and declared customs expanded from approximately 50 km in 2017 to about 210 km in 2019, and although it subsequently decreased somewhat, it still remained at around 140 km as of 2021.[16]

Figure 7 illustrates the average distance between ports and customs offices for imported cargo. The time-series variation in average distances shows a trend similar to that of exported cargo, such as a decrease in the average distance between unloading port and stored customs. On the other hand, the increase in average distances for cargo under Flexible Declarations is greater than in the case of exports: for maritime cargo, the average distance between stored and declared customs reaches up to approximately 50 km in 2021, while for air cargo it reaches up to approximately 350 km in 2019.

These results suggest that the use of the Scheme has led to a behavioural shift among trade-related operators toward selecting stored customs located closer to ports. As noted in Footnote 2 in Section I, export and import declarations are generally conducted electronically, and thus physical distance is considered unrelated to the declaration process itself. However, the introduction of the Scheme provided an option to store cargoes closer to ports, which may indicate that trade-related operators are optimizing the physical transportation costs of their cargoes.

VI-2. Consolidation of Customs Brokers' Operations

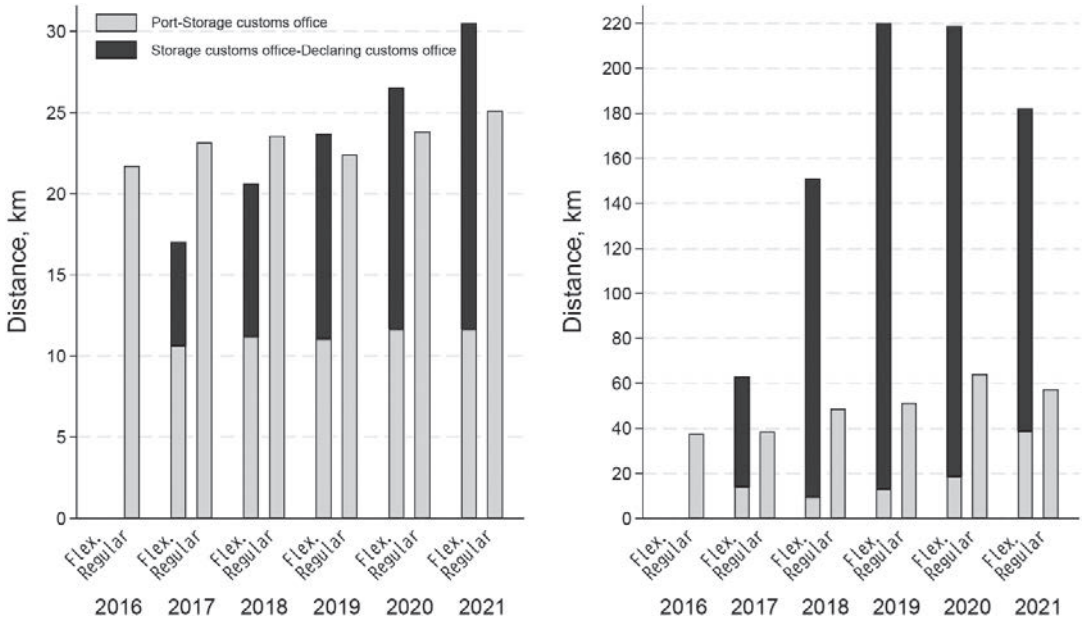
Prior to the introduction of the Flexible Scheme, the operational areas of customs broker offices were restricted, under the Customs Brokerage Act (Tsukangyō-hō), to the jurisdiction of the customs offices where they had filed notifications to conduct business (hereinafter referred to as the "operational area restriction"). However, along with the implementation of the Scheme, Japan Customs abolished this operational area restriction in October 2017. As a result of this regulatory revision, all customs brokers, regardless of whether they hold AEO status, became able to file export and import declarations with customs offices nationwide, enabling them to expand into regions where they do not maintain offices and to diversify their services (Ministry of Finance Japan, 2020c, p. 1).

According to a survey conducted by the Japan Customs Brokers Association (Japan Customs Brokers Association, 2020), 34% of AEO customs brokers using the Scheme reported

[16] The straight-line distance between Tokyo and Nagoya is approximately 250 km, and that between Tokyo and Osaka is approximately 400 km.

Figure 6. Distance between Ports, Stored Customs, and Declared Customs (Exports)

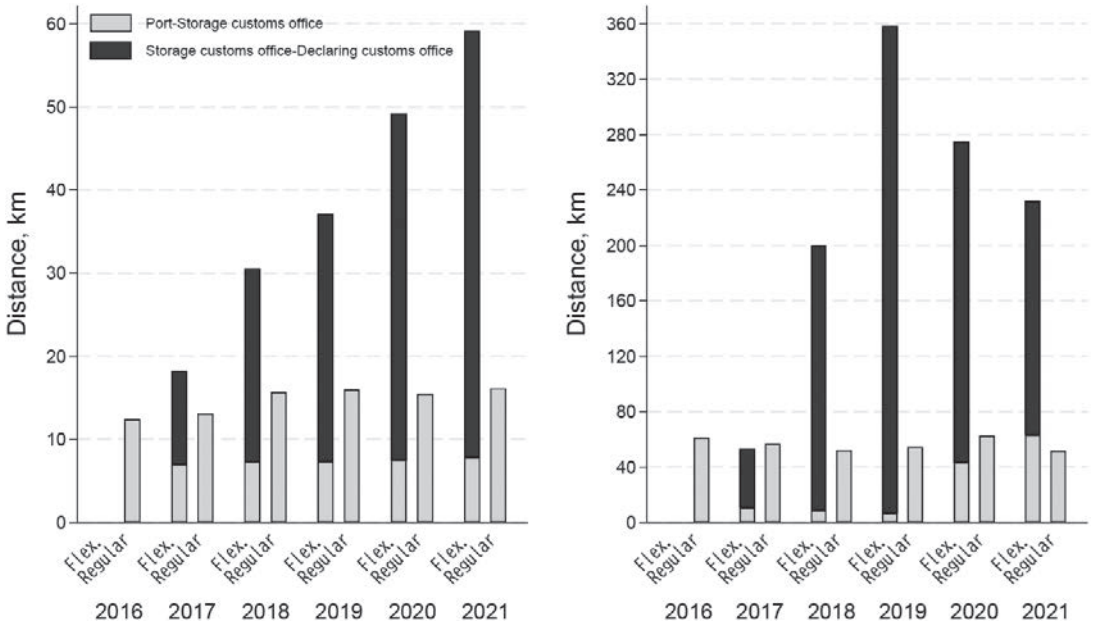
(Maritime Transport) (Air Transport)



Source: Authors' calculation based on the export and import declaration data

Figure 7. Distance between Ports, Stored Customs, and Declared Customs (Imports)

(Maritime Transport) (Air Transport)



Source: Authors' calculation based on the export and import declaration data

that they had consolidated their declared customs to improve operational efficiency and reduce costs, while 17% reported consolidating their customs broker offices. In addition, it reports that the Scheme enables AEO customs brokers not only to have gained the flexibility to change and consolidate their declared offices in line with their operational needs and the types of cargo handled, but also to consolidate and integrate their customs broker offices to optimize personnel allocation (Cargo News, 2020).

These qualitative insights suggest that the implementation of the Scheme has brought changes in the use of customs offices and customs broker branches. In this sub-section, we attempt a quantitative examination of these changes.

VI-2-1. Consolidation of Customs Offices Before and After the Flexible Scheme's Introduction

Regarding the consolidation of customs offices used, we first examine how the number of customs offices used changed before and after the introduction of the Flexible Scheme. Specifically, for entities that used a certain number of customs offices (set at 10 or more) in 2016 (before the introduction of the Scheme) and had export/import records in 2018 (after the introduction of the Scheme), we calculate the ratio of the number of customs offices used before and after the Scheme's introduction:[17]

$$\text{N of customs offices}_{i,2018}/\text{N of customs offices}_{i,2016} \tag{5}$$

where the numerator represents the number of declared (or stored) customs used by exporter/importer i in 2018, and the denominator represents the number of customs offices used by the same exporter/importer i in 2016.[18] We visualize the distribution of this variable and compute its median.

Figure 8 shows the distribution of the variable in equation (5) for both the Flexible and the Non-flexible Declarations (regular declarations), with the distribution for export declarations displayed first and that for import declarations on second. For both exports and imports, the upper graphs illustrate the distribution of the ratio of declared customs (where the numerator represents declared customs), while the lower graphs illustrate the distribution of the ratio of stored customs (where the numerator represents stored customs). These figures reveal that, for both exports and imports, as well as for both declared and stored customs, the number of offices used for Flexible Declarations decreased significantly. While the number of offices used for Non-flexible Declarations showed only a slight decrease, the number of offices used for Flexible Declarations was concentrated at a ratio of 0.5 or lower compared to 2016, with the median indicating a reduction of more than half.[19]

Figure 9 presents a scatter plot illustrating the relationship between changes in the number of declared customs and changes in the number of stored customs for each exporter/im-

[17] The number of exporters was 2,677, and the number of importers was 4,818.

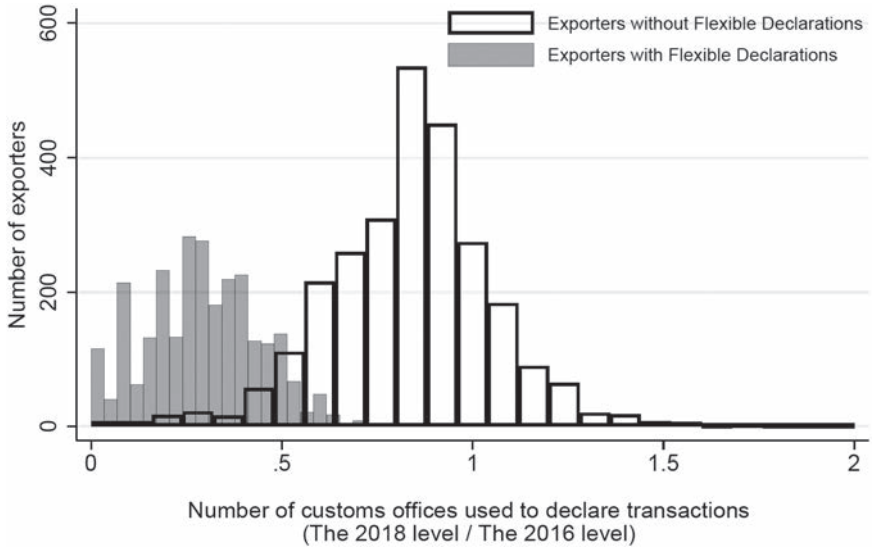
[18] The number of declared customs was equal to that of stored customs in 2016, before the introduction of the Flexible Scheme, as it was necessary to make declaration and storage at the same customs office at that time.

[19] The observation in Figure 8 that a non-negligible number of exporters and importers exhibit a ratio of zero for the number of customs offices in the Flexible Declarations suggests that a substantial subset of these entities—potentially including those with low import frequency—have not adopted the Flexible Scheme.

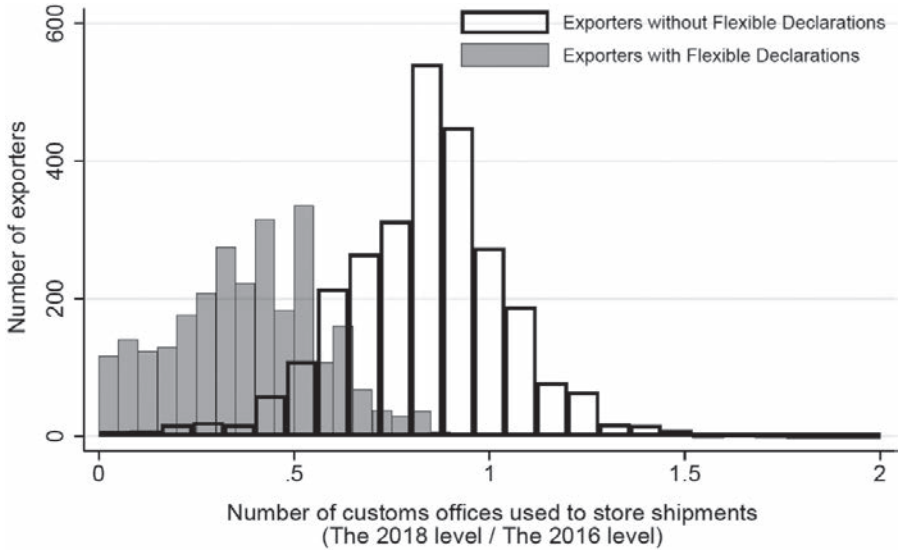
porter, confirming a positive correlation between the two ratios. In other words, exporters and importers that consolidated their declared customs also tended to consolidate their stored customs. Moreover, as most firms fall within the range where both the ratio of declared customs and the ratio of stored customs are less than or equal to 1, the finding of consolidation previously observed in the histograms is reaffirmed. Furthermore, in both plots,

Figure 8. Consolidation of Used Customs Offices for the Scheme's Users and Non-users

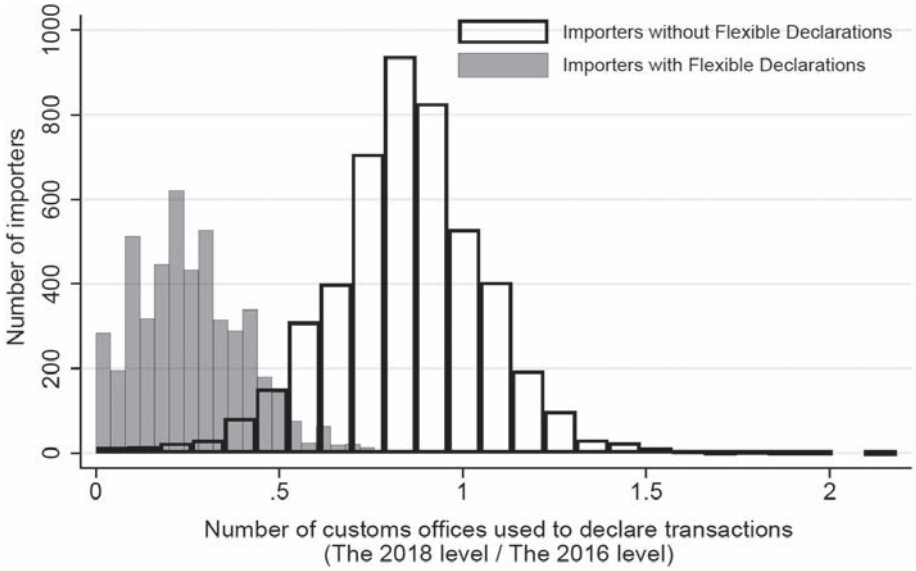
Exports, the After/Before Ratio for N. of *Declared* Customs



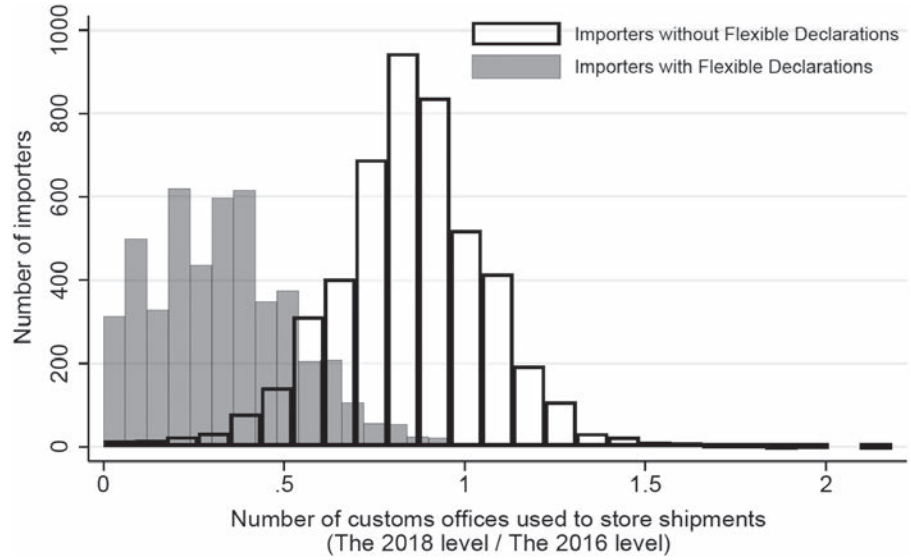
Exports, the After/Before Ratio for N. of *Stored* Customs



Imports, the After/Before Ratio for N. of *Declared* Customs



Imports, the After/Before Ratio for N. of *Stored* Customs



Source: Authors' calculation based on the export and import declaration data

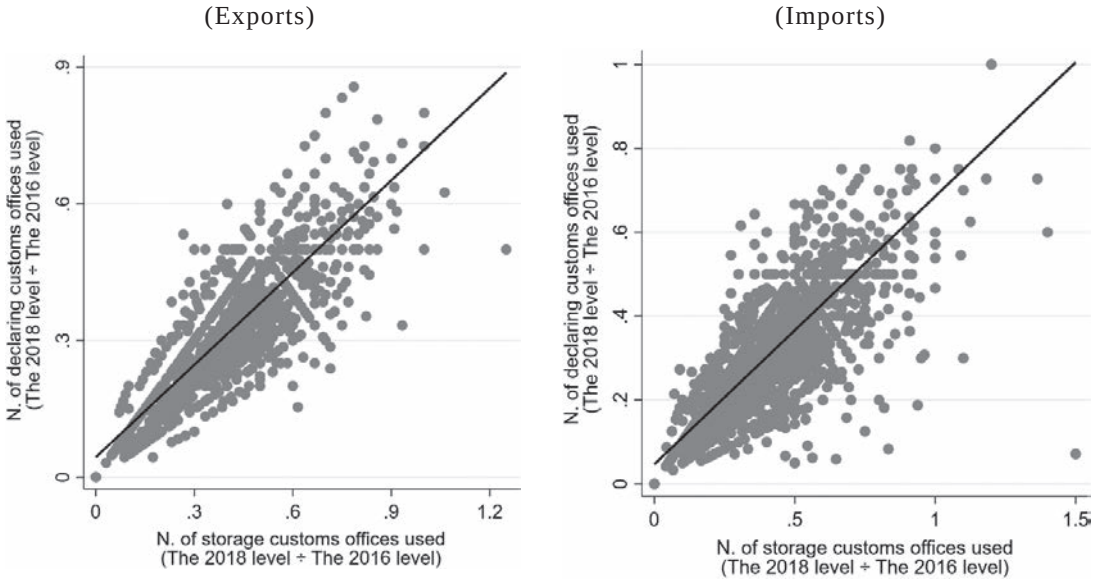
Note 1: The analysis targets exporters and importers that used 10 or more declared or stored customs in 2016.

Note 2: For exports, the median of "number of declared customs in 2018 ÷ number of declared customs in 2016" is 0.83 for the Non-flexible Declarations and 0.30 for the Flexible Declarations. The median of "number of stored customs in 2018 ÷ number of stored customs in 2016" is 0.83 for the Non-flexible Declarations and 0.38 for the Flexible Declarations.

Note 3: For imports, the median of "number of declared customs in 2018 ÷ number of declared customs in 2016" is 0.83 for the Non-flexible Declarations and 0.25 for the Flexible Declarations. The median of "number of stored customs in 2018 ÷ number of stored customs in 2016" is 0.84 for the Non-flexible Declarations and 0.31 for the Flexible Declarations.

the line of best fit displayed a slightly flatter slope than the 45-degree line.

Figure 9. Correlation between the Ratio for Declared Customs and the Ratio for Stored Customs



Source: Authors' calculation based on the export and import declaration data
Note: The horizontal axis represents "number of stored customs used in 2018 ÷ number of customs offices used in 2016," and the vertical axis represents "number of declared customs used in 2018 ÷ number of customs offices used in 2016." The sample size of the left scatter plot is 2,677 with an *R*-squared of 0.76. The sample size of the right scatter plot is 4,818 with an *R*-squared of 0.74.

Regarding the relationship between the introduction of the Scheme and the consolidation of customs offices used, it is not surprising that the Scheme's utilization has led to the consolidation of business tasks related to export/import declarations by trade-related operators, resulting in a reduction in the number of customs offices required for the declarations. However, the above analysis reveals that not only declared customs but also stored customs have been consolidated. Moreover, the consolidation of declared customs appears to have progressed slightly more than that of stored customs. These findings highlight that trade-related operators are fully leveraging the Scheme, flexibly modifying and consolidating customs offices to use in pursuit of greater operational efficiency and cost reduction.[20]

[20] The Flexible Scheme permits certain AEO operators to file export and import declarations at non-stored customs, making possible not only the "flexible choice of *declared* customs" but also the "flexible choice of *stored* customs." For example, in the event of a disaster such as a typhoon, the Scheme enables scenarios such as: (1) keeping the storage location (stored customs) unchanged while changing the location where declarations are carried out—and, accordingly, changing declared customs—if the business site performing declarations is damaged and staff cannot report to work; or (2) keeping declared customs unchanged while relocating the storage location outside the affected area—and thus changing stored customs—if the original storage location has been damaged.

VI-2-2. Consolidation of Customs Office Usage by AEO Status

In the previous sub-section, we examine overall changes in the number of customs offices used. In this sub-section, we conduct the analysis by AEO category (e.g., AEO customs brokers, AEO exporters/importers, and entities that are both AEO customs brokers and AEO exporters/importers) and calculate the ratios of declared and stored customs used before and after the introduction of the Flexible Scheme for each category, in order to assess whether there are differences in consolidation trends among them.

Table 4 presents the average ratios of the number of declared and stored customs used for exports and imports, categorized by AEO type. Overall, the use of the Scheme resulted in a statistically significant reduction in both declared and stored customs. In particular, a notable decrease in the number of customs offices used is observed for Flexible Declarations by AEO exporters/importers, while other categories also exhibited an approximate halving of the number of customs offices used under the Scheme. Furthermore, for entities engaged in both exports and imports, the reduction in the number of customs offices used with the Scheme is even greater.

VI-2-3. Regression Analysis on Consolidation of Used Customs Offices

This sub-section examines which factors—including the AEO status—are strongly correlated with the consolidation of customs offices observed earlier using a regression analysis. As in Section V, the analysis is limited to general declarations, and we construct a panel dataset of "exporter/importer–transport mode (maritime or air transport)" for the period from 2018 to 2021. Using this dataset, we estimate a fixed effects model controlling for both exporter/importer fixed effects and year fixed effects.[21]

The regression equation for the export side is as follows:

$$\begin{aligned}\ln(C_{fmt}^{k,Export}) = {} & \beta_0 + \beta_1 D_{fmt}^{Flex} + \beta_2 D_{ft}^{AEO-Broker} + \beta_3 D_{ft}^{AEO-OWN} + \beta_4 D_{ft}^{AEO-Broker-OWN} \\ & + \beta_5 D_m^{Sea} + \beta_6 (D_{fmt}^{Flex} \times D_{ft}^{AEO-Broker}) + \beta_7 (D_{fmt}^{Flex} \times D_{ft}^{AEO-OWN}) \\ & + \beta_8 \ln(V_{fmt}^{Export}) + \beta_9 \ln(N_{fmt}^{Export}) + \phi_f + \phi_t + \varepsilon_{fmt}\end{aligned} \tag{6}$$

where $C_{fmt}^{k,Export}$ denotes the number of customs offices of type k (type is either declared customs or stored customs) used by firm f in year t when exporting via mode m (maritime transport or air transport); D_{fmt}^{Flex} denotes the dummy variable taking unity if firm f utilized the Flexible Scheme in year t for mode m transportation at least once; $D_{ft}^{AEO-Broker}$ denotes the dummy variable taking unity if firm f exported through an AEO customs broker at least once in year t; $D_{ft}^{AEO-OWN}$ denotes the dummy variable taking unity if firm f is an AEO exporter/importer; $D_{ft}^{AEO-Broker-OWN}$ is the dummy variable taking unity if firm f exported through an AEO customs broker at least once in year t, and firm f itself is also an AEO exporter/importer. The variable D_m^{Sea} denotes the dummy variable taking unity if it is a maritime shipment; V_{fmt}^{Export} denotes the value of exports (JPY) by firm f by mode m in year t; N_{fmt}^{Export} denotes the

[21] As some exporters/importers have no trade records in certain years, the panel data used are unbalanced.

Table 4. Ratio of the Number of Used Customs Offices, by AEO Category

(Exporters)

Comparison of the number of customs offices used between 2016 and 2018		Mean		Wilcoxon signed-rank test	
		Regular (Non-flexible)	Flexible	z -stat.	*p*-val.
All entities excluding non-AEO entities	Declared customs	0.88	0.42	30.117	0.000
(*N* =1,227)	Stored customs	0.88	0.54	28.142	0.000
AEO customs brokers	Declared customs	0.89	0.44	27.517	0.000
(*N* =1,027)	Stored customs	0.89	0.56	25.735	0.000
AEO exporters	Declared customs	0.75	0.05	7.866	0.000
(*N* =82)	Stored customs	0.74	0.06	7.843	0.000
AEO customs brokers and AEO exporters	Declared customs	0.88	0.48	9.374	0.000
(*N* =118)	Stored customs	0.88	0.63	7.919	0.000

(Importers)

Comparison of the number of customs offices used between 2016 and 2018		Mean		Wilcoxon signed-rank test	
		Regular (Non-flexible)	Flexible	z -stat.	*p*-val.
All entities excluding non-AEO entities	Declared customs	0.92	0.43	36.225	0.000
(*N* =1,767)	Stored customs	0.92	0.56	33.344	0.000
AEO customs brokers	Declared customs	0.92	0.44	35.072	0.000
(*N* =1,657)	Stored customs	0.92	0.57	32.333	0.000
AEO importers	Declared customs	0.71	0.04	6.334	0.000
(*N* =53)	Stored customs	0.71	0.07	6.326	0.000
AEO customs brokers and AEO importers	Declared customs	0.94	0.49	6.491	0.000
(*N* =57)	Stored customs	0.94	0.68	4.939	0.000

(Exporters and importers)

Comparison of the number of customs offices used between 2016 and 2018		Mean		Wilcoxon signed-rank test	
		Regular (Non-flexible)	Flexible	z -stat.	*p*-val.
Entities engaging in both exports and imports	Declared customs	0.85	0.30	45.095	0.000
(*N* =2,713)	Stored customs	0.85	0.38	44.813	0.000

Source: Authors' calculation based on the export and import declaration data
Note: The Wilcoxon signed-rank test examines whether there is a difference in the ratio of the number of customs offices used between 2016 and 2018, depending on whether the Scheme was utilized.

number of export declarations by firm f by mode m in year t; ϕ_f denotes exporter fixed effects; ϕ_t denotes year fixed effects; ε_{fmt} denotes the error term. The equation also includes the interaction terms, $D_{fmt}^{Flex} \times D_{ft}^{AEO-Broker}$ and $D_{fmt}^{Flex} \times D_{ft}^{AEO-OWN}$.[22] The same regression is estimated for the import side as well.

The estimation results are presented in Table 5. Focusing first on exports, as shown in columns (1) and (2), firms that began using the Scheme during the period reduced the number of declared customs they utilized by approximately 26% ($\exp(-0.295)-1 = -0.255$, hereafter the same) and the number of stored customs by approximately 16%. Exporting firms that began using AEO customs brokers also reduced the number of declared customs by about 3% and the number of stored customs by about 4%. Exporting firms that obtained AEO status did not show a statistically significant reduction in the number of declared customs, but they did reduce the number of stored customs by approximately 12%, which is statistically significant at the 10% level. Furthermore, the coefficients for the interaction terms between the Scheme utilization dummy and the AEO exporter dummy ($D_{fmt}^{Flex} \times D_{ft}^{AEO-OWN}$) are negative and statistically significant in both columns (1) and (2). According to the estimated coefficients, exporting firms that obtained AEO and began using the Scheme reduced the number of declared customs by approximately 53% and the number of stored customs by approximately 47%.[23] On the other hand, the coefficients for the interaction terms between the Scheme utilization dummy and the AEO customs broker dummy ($D_{fmt}^{Flex} \times D_{ft}^{AEO-Broker}$) are positive and statistically significant. However, the sum of the coefficients for the Scheme utilization dummy (D_{fmt}^{Flex}) and this interaction term suggests that the combined effects for both declared and stored customs remain negative. In other words, firms that began making the Flexible Declarations through AEO customs brokers reduced the number of customs offices they used, but the degree of consolidation (magnitude of reduction) was smaller compared to exporters that obtained AEO themselves and began making the Flexible Declarations directly.

Columns (3) and (4) present the estimation results using the number of declared customs and the number of stored customs for imports as dependent variables, yielding results largely consistent with those for exports. However, the degree of consolidation was greater for imports than for exports: firms that began using the Scheme reduced the number of declared customs by approximately 26% and the number of stored customs by approximately 9%. Based on the coefficients of the interaction term between the Scheme utilization dummy and the AEO importer dummy ($D_{fmt}^{Flex} \times D_{ft}^{AEO-OWN}$), firms that obtained AEO status themselves and began using the Scheme for imports reduced the number of declared customs by approximately 61% and the number of stored customs by approximately 52%.[24] These results are consistent with the findings in Figure 9, which indicate that consolidation was more pronounced for declared customs than for stored customs.

These results suggest that the use of the Scheme significantly reduced the number of both declared and stored customs utilized, with a relatively stronger correlation between the

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[22] Since the Flexible Scheme can only be used by customs brokers or exporters/importers who have obtained AEO status, it might appear that the dummy D_{fmt}^{Flex} and the interaction terms $D_{fmt}^{Flex} \times D_{ft}^{AEO-Broker}$ and $D_{fmt}^{Flex} \times D_{ft}^{AEO-OWN}$ are perfectly collinear. However, in this analysis, the Flexible Declarations are defined separately for maritime and air cargo. Therefore, for example, even the same exporter/importer may choose not to use the Scheme for maritime cargo while using it for air cargo, making it possible to estimate the coefficients of both interaction terms.

[23] $\exp(-0.295-0.455)-1 = -0.528$ and $\exp(-0.173-0.461)-1 = -0.469$, respectively.

[24] $\exp(-0.306-0.643)-1 = -0.613$ and $\exp(-0.091-0.649)-1 = -0.523$, respectively.

reduction in declared customs and the use of the Scheme. Considering this alongside the previous analysis by AEO status, which shows that the degree of reduction in the number of customs offices was particularly pronounced for AEO exporters and importers, it suggests that the most substantial behavioural changes resulting from the use of the Scheme occurred among AEO exporters and importers.

Table 5. Determinants of Consolidation of Utilized Customs' Office

	Exports		Imports	
	ln(N. of declared customs) (1)	ln(N. of stored customs) (2)	ln(N. of declared customs) (3)	ln(N. of stored customs) (4)
Flexible declaration scheme utilization dummy	-0.295***	-0.173***	-0.306***	-0.091**
	(0.019)	(0.022)	(0.032)	(0.036)
Use of AEO customs broker dummy	-0.030***	-0.044***	-0.090***	-0.101***
	(0.002)	(0.002)	(0.001)	(0.001)
AEO exporter (or AEO importer dummy)	-0.097	-0.131*	0.030	-0.008
	(0.078)	(0.078)	(0.058)	(0.070)
`AEO exporter (or AEO importer) and AEO customs broker use' dummy	0.041	-0.006	0.094*	0.045
	(0.075)	(0.075)	(0.055)	(0.065)
Maritime transport dummy	0.047***	0.043***	-0.039***	-0.049***
	(0.002)	(0.002)	(0.002)	(0.002)
Flexible declaration dummy×Use of AEO customs broker dummy	0.154***	0.085***	0.177***	0.036
	(0.019)	(0.022)	(0.032)	(0.036)
Flexible declaration dummy×AEO exporter (or importer dummy)	-0.455***	-0.461***	-0.643***	-0.649***
	(0.042)	(0.055)	(0.065)	(0.086)
ln(Export values) (or ln(Import values))	0.022***	0.022***	0.023***	0.027***
	(0.000)	(0.000)	0.000	0.000
ln(N. of export declarations) (or ln(N. of import declarations))	0.116***	0.123***	0.132***	0.137***
	(0.001)	(0.001)	(0.001)	(0.001)
Sample size	681,637	681,637	1,248,650	1,248,650
R-squared	0.249	0.252	0.296	0.291
Year fixed effects	Yes	Yes	Yes	Yes
Exporter fixed effects (or importer fixed effects)	Yes	Yes	Yes	Yes

Source: Authors' calculation based on the export and import declaration data
Note: Numbers in parentheses are robust standard errors. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. The analysis covers the period from 2018 to 2021. All regression equations include a constant term, which is not reported in the table.

VI-2-4. Consolidation of Customs Broker Offices Before and After the Introduction of the Flexible Scheme

The previous sub-sections demonstrate that the introduction of the Flexible Scheme led to a consolidation of both declared customs and stored customs used by exporters and importers. It is plausible that, in response to these demand side changes in customs declarations (i.e., by exporters and importers), the supply side (i.e., customs brokers) has also adjusted the number of their offices.[25] Therefore, this sub-section focuses on the supply side and examines how the introduction of the Scheme has affected the number of customs bro-

ker offices.

First, to determine whether the consolidation of customs broker offices—mentioned in the previously cited survey results and media reports—took place, and if so, when and to what extent, we construct monthly data on the number of customs broker offices for the period from 2015 to 2020, covering approximately three years before and after the regulatory reform. Using these data, we visualize changes in the number of customs broker offices before and after the introduction of the Scheme.[26]

Figure 10 presents the trends in the total number of customs broker offices, the number of offices of AEO customs brokers, and the number of offices of customs brokers with experience using the Scheme, where the January 2015 level is normalized to unity.[27] Overall, the number of customs broker's branch offices declined by approximately 4% over six years, with minor fluctuations, and the downward trend appears to have intensified following the introduction of the Scheme in October 2017.[28] Compared to this overall trend, the number of offices of AEO customs brokers shows a similar declining trend, albeit with a slightly larger decrease.[29] In contrast, the number of offices of customs brokers with experience using the Flexible Scheme differed significantly from the overall trend, gradually increasing after 2015, peaking around October 2017, and then declining in recent years.

The results suggest that, despite an overall increase in the number of customs brokers, the number of their offices decreased, and a similar trend is observed when focusing solely on AEO customs brokers. Around the time of October 2017—specifically, the introduction of the Scheme and the concurrent abolition of operational area restrictions for customs brokers—a statistically significant change in the trend of the office reduction is observed, suggesting that this regulatory reform influenced the consolidation of customs broker offices.[30] On the other hand, when focusing solely on customs brokers that utilize the Scheme, the observed trend turns out to be an increase, rather than a decrease, in the number of offices. This suggests that customs brokers actively using the Scheme may have perceived the regulatory reform not as an opportunity for operational consolidation but as a chance for business expansion, resulting in an increase in the number of their branch offices. Furthermore, since this increase in the number of offices is observed well before October 2017, it is plausible that these customs brokers started to increase their offices by responding to an announcement of the regulatory reform.

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[25] We acknowledge that there is a possibility of reverse causality: the demand side (exporters and importers) may have adjusted the number of customs offices they used in response to the supply side's (customs brokers) adjustment in the number of their offices.

[26] The information on the establishment or invalidation of permission of customs broker offices is available on the website of Japan Customs.

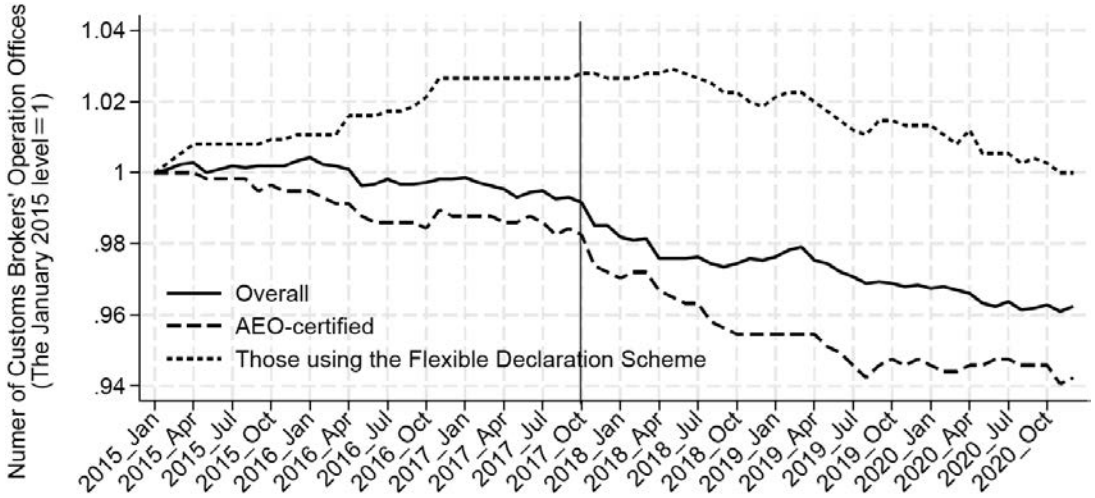
[27] In this analysis, "AEO customs brokers" are defined as customs brokers who have continuously obtained AEO status (AEO customs broker) during the analysis period from 2015 to 2020, and "customs brokers with experience using the Scheme" are defined as customs brokers who have used the Flexible Declaration at least once for either exports or imports during the same period.

[28] The number of customs brokers increased by 1.06 times over the same period.

[29] The number of AEO customs brokers remained almost unchanged over the same period, increasing by only 1.01 times.

[30] For the results of the statistical analysis on the trends in the number of customs brokers offices, see Appendix 2.

Figure 10. Number of Customs Broker Offices Before and After the Introduction of the Flexible Scheme



Source: Authors' calculation based on the export/import declaration data and data regarding the number of customs brokers' office obtained from the MOF

Note: The vertical line indicates the timing of the introduction of the Scheme (i.e., October 8, 2017).

VII. Conclusions

The Flexible Scheme is one of major policy reforms in recent customs administration, conditionally relaxing the long-standing principle that "export and import declarations must be filed at stored customs." This paper conducts a quantitative analysis from three perspectives—its prevalence, determinants and consequences—in an effort to elucidate the dynamics underlying the Scheme's utilization.

The analysis yielded several key findings. First, regarding the prevalence of the Flexible Scheme since its introduction in 2017, its utilization rate has increased for both exports and imports, indicating that a considerable number of trade-related operators choose to separate declared and stored customs through Flexible Declarations. Moreover, the utilization rate was found to vary significantly depending on the characteristics and timing of export/import declarations. Second, with respect to determinants, our analysis revealed that customs brokers play a significant role in deciding the use of the Scheme, whereas trading partners and products explained only a small portion of the variation in the utilization rate. This suggests that the increase and fluctuation in the utilization rate can largely be attributed to differences in customs brokers and changes in their behaviour. Finally, regarding outcomes of the Scheme's introduction, the analysis showed that exporters and importers using the Scheme reduced by more than half the number of customs offices they use, particularly by consolidating their declared customs. Furthermore, customs brokers were also found to have reduced the number of their branch offices following the introduction of the Scheme, confirming its role in consolidating customs clearance related operations.

One of the key challenges for future analysis lies in addressing endogeneity. We believe that most sources of bias are controlled for by introducing fixed effects, as in the analysis presented in Table 5, for example. Nevertheless, it remains unclear whether the observed relationship reflects a tendency for exporters/importers with a strong motivation to consolidate customs offices for reasons such as operational efficiency to use the Scheme, or whether the exogenous introduction of the Scheme itself has driven such consolidation. To identify causality, analyses that control for the characteristics of exporters/importers, such as the propensity score matching method, will likely be necessary.

We hope that the insights from this study contribute to the academic literature and future policy discussions by policymakers and practitioners. Furthermore, the results suggest that the Scheme contributes to the streamlining of customs procedures, highlighting the trade facilitation effects of the Scheme. Going forward, it will be important to conduct an analysis to elucidate the mechanisms behind trade-related operators' decisions to use the Flexible Scheme and to assess its impact on trade.

References

Cargo News (2020), "Three Years Since the Introduction of the Flexible Declaration Scheme: Changes in the Customs Brokerage Industry" (*"Shinkoku Kansho Jiyūka kara San-nen, Tsūkan-gyō no Henka wa. . .", in Japanese*) https://cargo-news.co.jp/cargo-news-main/2537 (accessed on September 30, 2025)

Coşar, A. Kerem and Banu Demir (2018), "Shipping Inside the Box: Containerization and Trade." *Journal of International Economics*, 114(September): 331-345.

European Union (2025), "Centralised Clearance" https://taxation-customs.ec.europa.eu/customs/customs-procedures-import-and-export/customs-operations/centralised-clearance_en (accessed on September 30, 2025)

FedEx (2018), "FedEx Begins Customs Declarations Utilizing the Flexible Declaration Scheme" (*"Fedekkusu, yushutsu nyū shinkoku kansho no jiyūka seido o riyō shita shinkoku tetsuzuki o kaishi", in Japanese*) https://newsroom.fedex.com/newsroom/asia-pacific/fedex-express-leverages-japans-liberalized-customs-declaration-policy-for-its-customs-clearance-operations_jp (accessed on September 30, 2025)

Fernandes, Ana M. Russell Hillberry, and Claudia Berg (2016), "Expediting Trade Impact Evaluation of an In-House Clearance Program." Policy Research Working Paper 7708.

Ito, Keiko, Masahiro Endoh, Naoto Jinji, Toshiyuki Matsuura, Toshihiro Okubo and Akira Sasahara (2025), "Margins, concentration, and the performance of firms in international trade: Evidence from Japanese customs data" *Journal of the Japanese and International Economies*, 75: 101340.

Japan Customs (2024), "Basic Notification on Statistics Related to Foreign Trade, Annex 1: Statistical Country Code Table" ("*Gaikoku Bōeki-tō ni Kansuru Tōkei Kihon Tsūtatsu Besshi Dai-ichi Tōkei Kunimei Fugōhyō*", *in Japanese*) https://www.customs.go.jp/toukei/sankou/dgorder/a1.htm (accessed on September 30, 2025)

Japan Customs (2025a), "Authorized Economic Operator" ("*AEO Seido", in Japanese*) https://www.customs.go.jp/zeikan/seido/kaizen.htm (accessed on September 30, 2025)

Japan Customs (2025b), "On the Revision of the Import Declaration Items and the Attorney for Customs Procedures System" (*"Yunyū Shinkoku Kōmoku・Zeikan Jimu Kanrinin Seido no Minaoshi ni Tsuite", in Japanese*) https://www.customs.go.jp/shiryo/20230707.htm (accessed on September 30, 2025)

Japan Customs Brokers Association (2020), "Survey Results on the Implementation Status of the Customs Brokerage Act" (*"Tsūkan Gyōhō no Jisshi Jōkyō-tō ni Kansuru Ankēto Chōsa Kekka ni Tsuite", in Japanese*). https://www.tsukangyo.or.jp//files/libs/577//20220325113953 8028.pdf (accessed on September 30, 2025)

Japan External Trade Organization (JETRO) (2024), "EU Customs Policy Related Laws and Regulations" (*"EU Kanzei Seido Kanrenhō", in Japanese*) https://www.jetro.go.jp/ext_images/jfile/country/eu/trade_03/pdfs/eu_p15_3I010.pdf (accessed on September 30, 2025)

Matsumoto, Takashi and Jitsuya Hasegawa (2022), "Utilization and Effects of the AEO Program" (*"AEO Seido no Katsuyō to Kōka", in Japanese*) *Japan Society for International Trade Studies Research Papers*, 11: 133-148.

Medin, Hege (2021),"Customs Brokers as Intermediaries in International Trade." *Review of World Economics*, 157: 295-322.

Ministry of Finance Japan (2020a), "SMART Customs Initiative 2020" https://www.customs.go.jp/english/smart_e/honbun.pdf (accessed on September 30, 2025)

Ministry of Finance Japan (2020b), "Recent Developments in Tariff Policy and Customs Administration" ("*Saikin no Kanzei Seisaku to Zekan Gyōsei o Meguru Jōkyō*", *in Japanese*) https://warp.ndl.go.jp/info:ndljp/pid/11657372/www.mof.go.jp/about_mof/councils/customs_foreign_exchange/sub-of_customs/proceedings_customs/material/20201023/kana20201023siryo1.pdf (accessed on September 30, 2025)

Ministry of Finance Japan (2020c), "Flexible Declaration Scheme [Q&A]" ("*Yushutsu-nyū Shinkoku Kansho no Jiyūka [Q&A]", in Japanese*) https://www.customs.go.jp/zeikan/seido/useful/03_jiyuka_qa.pdf (accessed on September 30, 2025)

Ministry of Finance Japan (2021), "1st Expert Meeting on Joint Research on Import/Export Declaration Data" ("*Dai 1-kai Yushutsu-nyū Shinkoku Dēta o Katsuyō shita Kyōdō Kenkyū ni Kansuru Yūshikisha Kaigi", in Japanese*) https://www.mof.go.jp/about_mof/councils/kyoudou/haifu/20210915/shiryou_01_02.pdf (accessed on September 30, 2025)

Ministry of Finance Japan (2024a), "Japan Customs Report, Annexes" https://www.customs.go.jp/zeikan/pamphlet/report/pdf/report_008e.pdf (accessed on September 30, 2025)

Ministry of Finance Japan (2024b), "Call for Joint Research on Import/Export Declaration Data (4th Term)" (*"Yushutsu-nyū Shinkoku Dēta o Katsuyō Shita Kyōdō Kenkyū no Kōbo ni Tsuite (Dai 4-ki)", in Japanese*) https://www.mof.go.jp/about_mof/councils/kyoudou/public/index.html (accessed on September 30, 2025)

Wilson, John S. Catherine L. Mann and Tsunehiro Otsuki (2003), "Trade Facilitation and

Economic Development: A New Approach to Quantifying the Impact." *World Bank Economic Review*, 17(3): 367-389.

Wilson, John S. Catherine L. Mann and Tsunehiro Otsuki (2005), "Assessing the Benefits of Trade Facilitation: A Global Perspective." *The World Economy*, 28(6): 841-871.

Appendix for 'The "Flexible Declaration Scheme" of Japan Customs: Prevalence, Determinants, and Consequences'

Appendix 1: Additional Analysis on the Determinants of the Utilization of the Flexible Scheme

In this part, we conduct additional analyses to examine whether the results substantially change when redefining the variables used in the analysis examining the factors explaining the Scheme's utilization rate in Section V. Specifically, we perform the following analyses: (1) analysis based on variables constructed by redefining trade product categories from declared unit prices to HS codes (representative 4-digit tariff codes); (2) analysis based on variables constructed by redefining customs offices from declared customs to stored customs; (3) analysis based on variables constructed by changing the analysis period from 2019 to 2021; and (4) analysis based on variables constructed by restricting the sample to eligible declarations.

Table A1 presents the results. The overall trends regarding the factors influencing the use of the Scheme do not substantially change from the results in Section V. On the other hand, in analysis (2) (redefining customs offices), a newly observed positive "synergistic effect" (approximately 14%) of customs brokers and stored customs is identified for imports, confirming the high explanatory power of the customs broker–stored customs pair. Furthermore, in analysis (3) (changing the analysis period from 2019 to 2021), a notable increase in explanatory power is observed for four variables other than customs offices. This suggests that, as time passed since the introduction of the Scheme, its use became more widespread, resulting in an increase in the utilization rate in many customs offices. Consistently, as suggested in Figure 5, there was a convergence in the utilization rates across customs offices.

Appendix 2: Structural Changes in the Time-Series Variation of the Number of Customs Broker Offices

This part statistically examines whether the time-series trend in the number of customs broker offices, as shown in Figure 10, changed following the introduction of the Flexible Scheme. Specifically, we analyse changes in the logarithmic value of the number of customs broker offices, $\ln y_t$, before and after the structural change point, T_B, using the regression model specified in the following equation:

$$\ln y_t = \alpha + \beta_1 t + \beta_2 (t \times D_t) + \varepsilon_t \quad (7)$$

where D_t is a dummy variable that takes the value of 0 when $1 \leq t \leq T_B$ and 1 when $t > T_B$. The variable t represents the trend variable, and ε_t denotes the error term. The structural change point is estimated using the sup-Wald test.

Table A2 presents the results of the sup-Wald test examining whether the immediate post-introduction period of the Scheme, November 2017, constitutes a structural change point.[31] The results indicate that the null hypothesis of "no structural change occurred" is re-

Table A1. Additional Analysis on Variables' Explanatory Power for the Scheme's Utilization Rate

	R-squared							
	Exports				Imports			
	(1) Changing the product classification	(2) Changing the customs office analyzed	(3) Analyzing the data from 2021	(4) Analyzing transactions with Flexible Declaration Scheme	(1) Changing the product classification	(2) Changing the customs office analyzed	(3) Analyzing the data from 2021	(4) Analyzing transactions with Flexible Declaration Scheme
Variables								
Exporters (Importers), *i*	0.204	0.327	0.432	0.330	0.220	0.273	0.368	0.327
Customs brokers, *j*	0.759	0.808	0.822	0.770	0.620	0.597	0.654	0.570
Customs offices, *k*	0.429	0.260	0.547	0.572	0.227	0.208	0.187	0.280
Trading partner countries, *l*	0.037	0.076	0.142	0.049	0.061	0.054	0.106	0.079
Products, *m*	0.041	0.012	0.036	0.008	0.060	0.007	0.026	0.008
Variable pairs								
Exporters (Importers)-Customs brokers, *ij*	0.867	0.912	0.929	0.897	0.796	0.786	0.840	0.797
Exporters (Importers)-Customs offices, *ik*	0.703	0.672	0.790	0.809	0.617	0.652	0.667	0.694
Exporters (Importers)-Trading partner countries, *il*	0.381	0.566	0.635	0.568	0.365	0.467	0.548	0.532
Exporters (Importers)-Products, *im*	0.230	0.284	0.366	0.289	0.181	0.134	0.179	0.162
Customs brokers-Customs offices, *jk*	0.840	0.940	0.872	0.852	0.684	0.939	0.716	0.642
Customs brokers-Trading partner countries, *jl*	0.789	0.840	0.859	0.809	0.641	0.631	0.718	0.608
Customs brokers-Products, *jm*	0.807	0.815	0.831	0.780	0.644	0.599	0.674	0.576
Customs offices-Trading partner countries, *kl*	0.496	0.315	0.595	0.611	0.280	0.290	0.342	0.367
Customs offices-Products, *km*	0.492	0.290	0.558	0.583	0.270	0.217	0.226	0.285
Trading partner countries-Products, *lm*	0.079	0.105	0.166	0.078	0.111	0.062	0.122	0.087
Exporters (Importers)-Customs brokers-Customs offices, *ijk*	0.937	0.968	0.952	0.948	0.872	0.963	0.866	0.849
Sample size								
Exporters (Importers), *i*	118,767	214,955	313,981	86,681	2,322,773	2,322,773	6,218,477	1,277,902
Customs brokers, *j*	1,726	1,729	1,662	1,335	1,803	1,729	1,736	1,397
Customs offices, *k*	177	177	178	163	179	181	178	167
Trading partner countries, *l*	452	458	456	454	347	347	339	326
Products, *m*	1,182	998	995	996	1,302	1,000	989	1,000

Source: Authors' calculation based on the export and import declaration data
Note 1: Manifest declarations are excluded from the analysis.
Note 2: The unit of customs brokers is branch offices. The unit of customs offices is: (1), (3), and (4)—declared customs; (2)—stored customs. The unit of trading partners is the partner country/region combined with the mode of transport (maritime or air cargo). The unit of products is: (1)—4-digit HS codes (representative tariff codes); (2) to (4)—declared unit prices (price per kilogram) category.
Note 3: The reason for the substantial difference in sample size between exports and imports is that this analysis includes declarations by parties without exporter/importer ID (including ordinary consumers who act as importers of e-commerce cargoes), and such declarations account for a large share of imports.

jected at the 1% significance level, showing that immediately after the introduction of the Scheme represents a structural change point. Subsequently, Table A3 shows the results of the regression analysis using equation (7) with the estimated T_B. The results indicate that the absolute value of the slope of the decreasing trend in the number of customs broker offices doubled after the structural change point (from a decrease of 0.03% per month before the change to a decrease of 0.06% per month after the change).

[31] The reason for using November instead of October is that the monthly data on the number of customs broker offices used in this analysis counts the number at the beginning of each month.

Table A2. Results of the Structural Breakpoint Test (sup-Wald Test)

Sample size	72 (Jan. 2015-Dec. 2020)
Structural break point	35th period (Nov. 2017)
Supremum Wald statistic	452.362
p-val.	0.000

Source: Authors' calculation based on the export and import declaration data
Note: The null hypothesis is that "no structural change occurred".

Table A3. Changes in the Trend Before and After the Structural Breakpoint

t	-0.00030***
	(0.00003)
$t \times D_t$	-0.00031***
	(0.00002)
Constant term	7.68***
	(0.00066)
Sample size	72
F-statistic	2448
R-squared	0.98

Source: Authors' calculation based on the export and import declaration data
Note: Numbers in parentheses are heteroskedasticity-robust standard errors. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.