CIRJE-F-1266

Tax-Motivated Transfer Pricing and Country-by-Country Reporting: Evidence from Japanese Customs Data

Makoto Hasegawa
Kyoto University and CIRJE

Takafumi Kawakubo
The University of Osaka

Takafumi Suzuki
Aichi Shukutoku University

Masayoshi Hayashi
The University of Tokyo

January 2026

Tax-Motivated Transfer Pricing and Country-by-Country Reporting: Evidence from Japanese Customs Data*

Makoto Hasegawa† Takafumi Kawakubo‡ Takafumi Suzuki§
Masayoshi Hayashi¶

January 2026

Abstract

Using Japanese firm-level customs data from 2014 to 2019, we investigate profit shifting through transfer pricing by Japanese multinational corporations. We find that Japanese firms reduce related-party export prices relative to arm's-length prices as the tax differentials between Japan and destination countries widen, indicating tax-motivated transfer pricing. The responsiveness of related-party prices to these tax differentials is, on average, smaller than that reported in previous studies but varies depending on transaction characteristics. Specifically, transfer mispricing is more pronounced in transactions involving larger parent-affiliate pairs and products that are exported less frequently. We also examine the impact of the country-by-country reporting (CbCR) system, introduced in Japan in 2016, and find no evidence that it reduced transfer mispricing by Japanese multinationals subject to CbCR.

Keywords: Transfer pricing; Profit shifting; Multinational corporations; International taxation; Country-by-country reporting
JEL classification: H25; H26; F23

*This study is an outcome of the research conducted jointly with the Policy Research Institute (PRI) after submitting a request for the use of customs import and export declaration data to the Ministry of Finance (MOF) based on the "Guideline on the utilization of customs' import and export declaration data in joint research with the Policy Research Institute," and receiving approval in February 2023. The views expressed in this paper are those of the authors' personal responsibility and do not represent the official views of MOF or PRI.

†Corresponding author: Makoto Hasegawa, Graduate School of Economics, Kyoto University, Yoshida-Honmachi, Sakyo-ku, Kyoto 606-8501, Japan. E-mail: mhasegawa@econ.kyoto-u.ac.jp.
‡The University of Osaka, RIETI, and the University of Tokyo. E-mail: tkawakubo.osipp@osaka-u.ac.jp
§Aichi Shukutoku University. E-mail: tsuzuki@asu.aasa.ac.jp
¶The University of Tokyo. E-mail: hayashim@e.u-tokyo.ac.jp.

1 Introduction

Multinational corporations operate affiliates in various countries with different corporate income tax rates, which creates incentives to shift profits from high- to low-tax jurisdictions through related-party transactions, thereby reducing the overall tax liabilities of the multinational group. One common method of profit shifting is the manipulation of transfer prices, that is, the prices set in related-party transactions. For example, if a parent firm in a high-tax country engages in transactions with its affiliate in a low-tax country, the parent can shift profits to the low-tax affiliate by setting lower prices for exported goods and services or higher prices for imported ones.[1]

Policymakers around the world are concerned that profit shifting, along with excessive tax avoidance, could erode the tax base for corporate income taxes and reduce tax revenue. In response to these concerns, the Organisation for Economic Co-operation and Development (OECD) launched the Base Erosion and Profit Shifting (BEPS) project, which outlined action plans to combat BEPS in its final report. Following the recommendations in the BEPS final report (OECD, 2015), participating countries began implementing country-by-country reporting (CbCR) systems from 2016 onward. As of 2024, over 115 jurisdictions had implemented the CbCR system (OECD, 2024).

Under the CbCR system, the ultimate parent entity of a large multinational group (with annual consolidated revenue equal to or greater than 750 million euros) is required to report to the tax authorities of its country of residence detailed information on its business activities in each country, including revenue, profit before income tax, income tax paid, the number of employees, stated capital, retained earnings, and tangible assets. The reported information is then shared with the tax authorities of other participating countries in which the multinational group has subsidiaries, and is used to assess transfer pricing risks. This system aims to improve the transparency of information on multinationals' activities and support the enforcement of appropriate transfer pricing regulations.[2] Existing studies examine the effects of the CbCR system on multinationals' tax avoidance and profit shifting (Joshi, 2020; Doeleman et al., 2024; Hugger, 2025; Tuinsma et al., 2025). However, no studies have investigated the impact of CbCR on transfer pricing.

[1]Other methods of profit shifting include intercompany loans from low-tax to high-tax parties (Huizinga et al., 2008; Buettner et al., 2012) and the relocation of intangible assets to low-tax countries (Dischinger and Riedel, 2011).

[2]To prevent corporate income from being shifted overseas for tax avoidance purposes, transfer pricing rules require transfer prices to be comparable to arm's-length prices (i.e., the prices set in transactions with unrelated parties). If a transfer price is deemed to deviate from the arm's-length price, the transfer pricing rules recalculate taxable income and impose corporate income tax on the assumption that the transaction was conducted at the arm's-length price.

Using Japanese firm-level customs data from 2014 to 2019, we examine tax-motivated transfer pricing by Japanese multinational corporations and assess the impact of the CbCR system, which was introduced in Japan in 2016, on transfer prices. Our dataset includes detailed information on export transactions at the firm-product-country-year level, similar to the data used in previous studies examining profit shifting through transfer pricing using customs data from other countries (Cristea and Nguyen, 2016; Davies et al., 2018; Liu et al., 2020; Wier, 2020; Knoll et al., 2023). Following previous studies, we assume that export transactions involve related parties if the parent firm owns affiliates in the destination country. We then examine how export prices set by Japanese firms with affiliates in the destination country (i.e., related-party prices) respond to the difference in the corporate income tax rates between Japan and the destination country, compared to the response of export prices set by firms without such affiliates (i.e., arm's-length prices).

In the first part of our analysis, we investigate profit shifting through transfer pricing using the full sample of Japanese multinational firms in our data. We find that Japanese firms reduce related-party export prices relative to arm's-length prices as the tax differentials between Japan and destination countries widen, suggesting tax-motivated transfer pricing. The responsiveness of related-party prices to these tax differentials is, on average, smaller than that reported in previous studies but varies depending on transaction characteristics. Specifically, transfer mispricing is more pronounced in transactions involving larger parent-affiliate pairs and products that are less frequently exported.

In the second part of the analysis, we restrict the sample to Japanese multinational firms for which consolidated financial information is available. For this restricted sample, we can identify which firms became subject to CbCR starting in 2016, based on their annual consolidated revenues. We examine whether the sensitivity of related-party prices to tax differentials changed for firms subject to CbCR, compared to other firms. Our findings show that transfer mispricing by the Japanese firms subject to CbCR did not decrease and may have increased after 2016. This suggests that there is no evidence that the introduction of the CbCR system reduced transfer mispricing in export transactions by Japanese firms.

The contribution of this study is twofold. First of all, our study is the first to provide evidence on the impact of the CbCR system on transfer pricing. Several studies examine the effect of CbCR on profit shifting using financial data on multinational firms collected from the Orbis database, and their results are mixed.[3] Joshi (2020) and Tuinsma et al. (2025) show that the consolidated effective tax rates of EU multinationals with consolidated revenues exceeding 750 million euros increased after the implementation of CbCR. However,

[3]De Simone and Olbert (2022) investigate the effects of CbCR on multinational firms' investment, employment, and organizational structure.

by analyzing changes in the sensitivity of reported profits to host-country tax rates following the implementation of CbCR, Joshi (2020) finds no clear evidence that CbCR reduced profit shifting, whereas Hugger (2025), using data that include non-EU multinationals, shows that it did. Doeleman et al. (2024) show that firms in high-tax countries increased profit shifting after becoming subject to CbCR. To the best of our knowledge, however, no existing study has examined the impact of CbCR on transfer pricing, a more direct channel of profit shifting. We fill this gap in the literature.

Second, we contribute to the literature examining profit shifting through transfer pricing using customs data. Recent studies have employed customs data containing firm-level transaction information provided by the relevant authorities in countries such as Chile (Bustos et al., 2025), Denmark (Cristea and Nguyen, 2016; Knoll et al., 2023), France (Davies et al., 2018), South Africa (Wier, 2020; Laudage-Teles et al., 2024), and the U.K. (Liu et al., 2020) to analyze tax-motivated transfer pricing.[4] Another strand of the profit-shifting literature shows that the extent of profit shifting varies depending on the nationality of multinational headquarters (Hasegawa, 2023; Tørsløv et al., 2023; Bratta et al., 2024). Therefore, it is worthwhile to investigate the transfer pricing behavior of multinationals headquartered in Asia, including Japan.

This study is the first to examine tax-motivated transfer pricing using Japanese customs data and shows that the responsiveness of related-party prices set by Japanese multinationals to corporate income tax rates differs from that of multinationals in other countries. Furthermore, leveraging our database constructed from Japanese customs records and detailed information on parent firms and their foreign affiliates, we investigate heterogeneity in transfer mispricing based on the size of parent firms and affiliates, as well as transaction frequency—dimensions that have not been explored in the prior literature.

The remainder of the paper is organized as follows. Section 2 describes the Japanese firm-level customs data and other data sources used in our analysis. Section 3 explains the estimation methodology. Section 4 presents the baseline results and investigates heterogeneous transfer pricing behavior depending on transaction characteristics. Section 5 examines the response of transfer pricing to the introduction of the CbCR system. Section 6 concludes.

2 Data

The primary data source for this study is transaction-level customs data derived from export declarations submitted to Japan Customs, Ministry of Finance, Japan. These data record all

[4]The seminal work in this literature is Clausing (2003), which examines tax-motivated transfer pricing using the product-level import and export data obtained from the U.S. Bureau of Labor Statistics.

export transactions with a declared value exceeding 200 thousand yen, reported by Japanese exporters on a daily basis from January 1, 2014 to March 31, 2020. We restrict the sample to transactions conducted by corporate entities, excluding those by individuals. The following data items are used in our analysis: the name and corporate identification number (i.e., Japan's corporate number) of the exporter, the date of export declaration, the names and 9-digit codes of exported products as defined by the Harmonized Commodity Description and Coding System (hereafter HS codes), the value and quantity of each exported product, and the destination country.

Since the customs data do not contain financial information on Japanese multinationals, we supplement our dataset with firm-level financial data on Japanese parent firms and their foreign affiliates, collected from two annual micro-level surveys conducted by the Ministry of Economy, Trade and Industry of Japan: the *Basic Survey of Japanese Business Structure and Activities* (BSJBSA) and the *Basic Survey on Overseas Business Activities* (BSOBA). The BSJBSA covers all Japanese firms with 50 or more employees and with paid-in capital or investment funds of at least 30 million yen. This survey provides panel data on Japanese parent firms' unconsolidated financial information, covering fiscal years 2014 to 2019.

The BSOBA targets all Japanese firms (excluding those in the finance, insurance, and real estate industries) that own foreign affiliates at the end of the fiscal year (March 31). A foreign affiliate of a Japanese firm is defined as a subsidiary located in a foreign country in which the Japanese firm holds a capital stake of 10% or more. The survey provides unconsolidated financial information for Japanese-owned foreign affiliates for fiscal years 2014 to 2019. Its coverage includes up to second-tier affiliates (i.e., foreign sub-subsidiaries).[5] To expand the coverage of foreign affiliates, we collect additional information on Japanese-owned foreign subsidiaries from the Orbis database, provided by Moody's.

We aggregate the information on these foreign affiliates by host country for each Japanese parent firm and year, and merge it with the parent firm data collected from the BSJBSA. This allows us to construct panel data on Japanese firms for fiscal years 2014 to 2019, which include details on their foreign affiliates in each country (e.g., the number of foreign affiliates and total sales of foreign affiliates). We restrict our sample to Japanese firms with foreign affiliates observed in either the BSOBA or Orbis database, given our interest in analyzing profit shifting through transfer pricing by Japanese multinationals. We then merge the customs data with the parent firm data using the corporate identification number as the key.

Finally, we aggregate information on daily transactions in the customs data by exporter (parent firm), 9-digit HS code, destination country, and fiscal year, resulting in a firm-

[5]The survey defines a sub-subsidiary as a firm in which a subsidiary that is more than 50% owned by a Japanese firm holds more than 50% of the capital.

product-country-level panel dataset of export transactions from 2014 to 2019.[6] Using this dataset, we define the unit price as the export value divided by quantity, and denote it as p_{ikct}, where the subscripts i, k, c, and t represent the firm (i.e., exporter), the exported product, the destination country, and the fiscal year, respectively. For our empirical analysis, we define the dummy variable $\mathit{Affiliate}_{ict}$, which takes the value of one if firm i owns at least one affiliate in country c in year t, and zero otherwise. Let $\Delta\tau_{ct}$ denote the tax differential between Japan and country c in year t, that is, the Japanese corporate income tax rate minus the corporate income tax rate of country c. Information on statutory tax rates is obtained from KPMG's Corporate Tax Rates Table.

To construct the final dataset for our analysis, we apply the following sample restrictions. First, since some HS code classifications were revised during the study period, we exclude all products with HS codes affected by these revisions to maintain the panel structure of the data.[7] Second, we remove observations for which the unit of quantity for a product varies within a year or across years, as this prevents the unit price from being accurately calculated and compared over time. Third, we restrict the sample to observations for which both related-party and arm's-length prices are observed within the same product-country-year cell, since comparisons within the same cell are otherwise not possible. Finally, we exclude observations that appear only once during the study period (i.e., singletons), as these are absorbed by firm-product-country fixed effects and do not contribute to the estimation of our regression equations.

As a result of these sample restrictions, the final sample comprises 2,119,032 firm-product-country-year observations, involving 5,986 firms exporting 3,694 products to 108 countries. Table 1 presents summary statistics for the variables used in the empirical analysis. To mitigate the influence of outliers, we winsorize unit prices at the 1st and 99th percentiles in each year. The mean of $\mathit{Affiliate}_{ict}$ is 0.70, indicating that, for 70% of the observations, firms have at least one affiliate in the destination country. This relatively high share reflects the fact that the firms in the sample are parent firms of Japanese multinationals. $\Delta\tau_{ct}$ is positive for 88% of the observations, with a mean value of 0.068, as Japan's corporate income tax rate was relatively high, ranging from 30.6% to 35.6% during the study period.[8]

[6]Most Japanese firms close their accounts on March 31. For these firms, fiscal year t covers export transactions from April of year t to March of year $t+1$. For firms with a fiscal year-end other than March, fiscal year t refers to the accounting year that ends immediately before March of year $t+1$. To ensure consistent aggregation of daily transaction data over the entire fiscal year, we exclude from the sample firms that changed their account-closing month during the study period.

[7]Only 6.1% of the observations are affected by the HS code changes and are removed from the sample.

[8]Japan's corporate income tax rate, including subnational taxes, was 35.64% in 2014, 33.86% in 2015, 30.86% from 2016 to 2018, and 30.62% in 2019.

3 Estimation Methodology

Our baseline estimation methodology follows that of previous studies (Cristea and Nguyen, 2016; Liu et al., 2020; Wier, 2020; Knoll et al., 2023). Assuming that transactions involve related parties if a Japanese firm owns foreign affiliates in the destination country, we regard the unit price (p_{ikct}) as a related-party price (i.e., transfer price) if firm i owns affiliates in country c (i.e., $\mathit{Affiliate}_{ict} = 1$), and as an arm's-length price otherwise (i.e., $\mathit{Affiliate}_{ict} = 0$).[9] We then examine how related-party prices respond to the tax differential between Japan and the destination country ($\Delta\tau_{ct}$), relative to arm's-length prices.

We hypothesize that, to shift profits to low-tax jurisdictions, Japanese firms reduce related-party export prices relative to arm's-length prices as the tax differential between Japan and the destination country widens. To test this hypothesis, we estimate the following regression equation using ordinary least squares (OLS):

$$\log p_{ikct} = \beta_0 \mathit{Affiliate}_{ict} + \beta_1 \mathit{Affiliate}_{ict} \times \Delta\tau_{ct} + \eta_{ikc} + \lambda_{kct} + \mu_{ikt} + \epsilon_{ikct}, \tag{1}$$

where the dependent variable is the natural logarithm of the unit price (p_{ikct}) set by firm i for product k exported to country c in fiscal year t.

The coefficient of interest is that on $\mathit{Affiliate}_{ict} \times \Delta\tau_{ct}$, which captures the extent to which related-party and arm's-length transactions differ in their sensitivity of unit prices to tax differentials. If the hypothesis holds, this coefficient is expected to be negative (i.e., $\beta_1 < 0$), indicating tax-motivated transfer mispricing. The absolute value of β_1 represents the semi-elasticity of transfer prices with respect to corporate tax rates, implying that a one-percentage-point increase in the tax differential leads to a $|\beta_1|\%$ decrease in related-party export prices relative to arm's-length prices.

To control for confounding factors specific to the firm, product, destination country, and year, we include a full set of high-dimensional (three-way) fixed effects in the regression equation. Specifically, η_{ikc} denotes firm-product-country fixed effects, which account for time-invariant characteristics at the unit level (i.e., firm-product-country triples). λ_{kct} and μ_{ikt} represent product-country-year and firm-product-year fixed effects, respectively.[10] These fixed effects capture time-varying influences on unit prices at the corresponding levels. For instance, macroeconomic shocks in the destination country that affect specific products are absorbed by λ_{kct}, while the effects of a firm's financial conditions on its products are captured

[9] More precisely, when $\mathit{Affiliate}_{ict} = 1$, the unit price reflects a weighted average of related-party and arm's-length prices, with weights based on export values (Cristea and Nguyen, 2016).

[10] Firm-country-year fixed effects cannot be included in the equation because they would absorb the key variable of interest, $\mathit{Affiliate}_{ict} \times \Delta\tau_{ct}$.

by μ_{ikt}.[11] Finally, ϵ_{ikct} denotes the error term.

4 Estimation Results

4.1 Results from the Baseline Model

Table 2 presents the results from estimating the baseline regression equation (1). Column (2) includes the full set of three-way fixed effects described above, whereas column (1) includes only firm-product-country and country-year fixed effects to examine how the choice of fixed effects affects the estimation results. Standard errors are clustered at the destination-country level to account for potential correlation in the error term within each country.

The coefficient on $\mathit{Affiliate}_{ict} \times \Delta\tau_{ct}$ is negative and statistically significant at the 10% level in both columns (1) and (2). The magnitude of the coefficient is similar across the two columns. In our preferred specification in column (2), which includes the full set of three-way fixed effects, the estimated coefficient of -0.13 implies that a one percentage point increase in the tax differential between Japan and the destination country is associated with a 0.13% decrease in the related-party price. These results are in line with our hypothesis and suggestive of tax-motivated transfer pricing. However, the estimated tax semi-elasticity of 0.13 is smaller than the estimates reported in previous studies (Cristea and Nguyen, 2016; Davies et al., 2018; Liu et al., 2020; Wier, 2020).

As reviewed in Table 9 of Wier (2020), most studies report average tax semi-elasticities ranging from 0.22 to 0.65. For example, using Danish customs data, Cristea and Nguyen (2016) estimate a tax semi-elasticity of 0.57 for exports to countries with lower corporate tax rates than Denmark's, while Wier (2020) finds a semi-elasticity of 0.51 using South African customs import data. The difference between our estimate and those in previous studies may reflect variation in the characteristics of taxpayers and their home countries, including the degree of tax aggressiveness among their multinationals and the strictness of transfer pricing regulations.

4.2 Heterogeneous Responses to Tax Differentials

Recent studies using firm-level financial data of multinational enterprises show that larger firms engage more extensively in profit shifting (Hasegawa, 2023; Wier and Erasmus, 2023; Bratta et al., 2024). This may be because profit shifting entails fixed costs—such as those associated with establishing international tax-planning divisions—that larger firms can more

[11] The main effect of the tax differential variable $\Delta\tau_{ct}$ is absorbed by product-country-year fixed effects and therefore does not appear as a separate regressor in equation (1).

easily bear than smaller ones. Motivated by these studies, we examine how the tax semi-elasticity of related-party prices varies by firm size. Since our data capture transactions between parent firms and their affiliates, we take into account the size of both parties.

We measure the size of a parent firm by the mean of its total assets over the study period. Firms whose size (i.e., mean total assets) exceeds the median across all observations are classified as large firms. The size of foreign affiliates owned by a firm in each country and year is measured using their total sales. If the total sales of foreign affiliates in country c owned by firm i in year t (denoted as *Affiliate Sales*$_{ict}$ in Table 1) exceed the median among all observations with *Affiliate*$_{ict} = 1$ in the same year, they are classified as large affiliates.

We then define a dummy variable, *Large*$_{ict}$, which takes the value of one if both the parent firm and its affiliates are classified as large, and zero otherwise. This variable captures transactions between large Japanese parent firms and their large foreign affiliates. The complementary dummy variable, *Small*$_{ict}$, is defined as $1 -$ *Large*$_{ict}$ and captures all other transactions. As shown in Table 1, 30% of the observations are classified as transactions between large parent-affiliate pairs (*Large*$_{ict} = 1$), while the remaining 70% corresponds to small ones (*Small*$_{ict} = 1$).

To examine the difference in the tax sensitivity of related-party prices between the two groups, we modify equation (1) by replacing *Affiliate*$_{ict}$ and *Affiliate*$_{ict} \times \Delta\tau_{ct}$ with the following four interaction terms: *Small*$_{ict} \times$ *Affiliate*$_{ict}$, *Large*$_{ict} \times$ *Affiliate*$_{ict}$, *Small*$_{ict} \times$ *Affiliate*$_{ict} \times \Delta\tau_{ct}$, and *Large*$_{ict} \times$ *Affiliate*$_{ict} \times \Delta\tau_{ct}$. We then estimate a modified version of the baseline model using these terms. Columns (1) and (2) of Table 3 present the results. Column (1) includes only firm-product-country and country-year fixed effects, while column (2) includes the full set of three-way fixed effects.[12]

In both columns (1) and (2) of Table 3, while the coefficient on *Large*$_{ict} \times$ *Affiliate*$_{ict} \times \Delta\tau_{ct}$ is negative and statistically significant, that on *Small*$_{ict} \times$ *Affiliate*$_{ict} \times \Delta\tau_{ct}$ is smaller in magnitude and statistically insignificant.[13] The coefficients in column (2) indicate that the tax semi-elasticity for the large group is 0.19, compared to 0.11 for the small group. These results suggest that related-party prices set by large parent-affiliate pairs are more responsive to tax differentials between Japan and destination countries than those set by smaller ones.

If a firm exports to multiple destination countries, related-party exports to the coun-

[12]For the sake of readability, Table 3 reports only the estimated coefficients on the interaction terms that capture heterogeneous responses of related-party prices to tax differentials. These terms are constructed by interacting *Affiliate*$_{ict} \times \Delta\tau_{ct}$ with the relevant dummy variables.

[13]The total affiliate sales in each country (*Affiliate Sales*$_{ict}$) are based on affiliate information from the BSOBA data. Therefore, for firms whose affiliate information is available only in the Orbis data and not in the BSOBA data, we cannot define the large and small dummy variables. As a result, the number of observations in the specifications using these dummy variables in columns (1)–(4) of Table 3 is smaller than in the other specifications.

try with the widest tax differential may create particularly strong incentives to manipulate transfer prices for profit-shifting purposes. This is because the potential tax savings from manipulating prices for exports to that country are greater than for exports to other destinations, all else being equal. To examine this issue, we define a dummy variable, $Widest_{ict}$, which equals one if the absolute value of the tax differential is the largest among the destination countries for firm i in year t, and zero otherwise. We then interact this variable with all explanatory variables used in the specifications for columns (1) and (2) of Table 3 and include the resulting interaction terms in the regression equation.

Columns (3) and (4) in Table 3 report the estimation results for this specification. The coefficient on $Large_{ict} \times Affiliate_{ict} \times \Delta\tau_{ct}$ is negative, with a magnitude similar to that in columns (1) and (2). Furthermore, the coefficient on $Large_{ict} \times Affiliate_{ict} \times \Delta\tau_{ct} \times Widest_{ict}$ is also negative in both columns (3) and (4) and statistically significant at the 10% level in column (3).[14] This suggests that related-party prices for the large group are more sensitive to the tax differential when affiliates are located in the destination country with the widest tax differential for their respective multinational groups. Summing the coefficients on these two interaction terms, such transactions exhibit a tax semi-elasticity of 0.29 to 0.38.

In the process of aggregating daily individual-transaction data for each year at the firm-product-country level, we obtain information on the number of transactions per year. We examine how transfer pricing behavior varies depending on the frequency of transactions (denoted as $Trans_{ikct}$). To do so, we define four dummy variables, denoted as $Trans\,n_{ikct}$ ($n = 1, 2, 3, 4$). $Trans\,1_{ikct}$ equals one if $Trans_{ikct}$ is less than the 25th percentile (i.e., $Trans_{ikct} < 2$). $Trans\,2_{ikct}$ equals one if $Trans_{ikct}$ is greater than or equal to the 25th percentile and less than the median (i.e., $2 \leq Trans_{ikct} < 4$). Similarly, $Trans\,3_{ikct}$ equals one if $Trans_{ikct}$ is between the median and the 75th percentile (i.e., $4 \leq Trans_{ikct} < 13$). $Trans\,4_{ikct}$ equals one if $Trans_{ikct}$ is greater than or equal to the 75th percentile (i.e., $Trans_{ikct} \geq 13$).

We then include in the regression equation these four dummy variables and the interaction terms of each dummy variable with $\Delta\tau_{ct}$, $Affiliate_{ict}$, and $Affiliate_{ict} \times \Delta\tau_{ct}$. Columns (5) and (6) in Table 3 present the estimation results from this specification.[15] Both columns show that the tax semi-elasticity of related-party prices is larger and statistically significant for products exported less frequently per year. In particular, the -0.29 coefficient on $Affiliate_{ict} \times \Delta\tau_{ct} \times Trans\,1_{ikct}$ in column (6) indicates a tax semi-elasticity of 0.29 for products exported only once per year.

[14] The coefficient is statistically insignificant in column (4), possibly due to limited variation in the quadruple interaction term: only 0.7% of the observations have both $Large_{ict} = 1$ and $Widest_{ict} = 1$.

[15] The coefficients on $Trans\,4_{ikct}$ and $Trans\,4_{ikct} \times \Delta\tau_{ct}$ are omitted due to collinearity and the inclusion of fixed effects.

One possible explanation for this result is that products exported more frequently would typically be used in the routine operations of foreign affiliates, thus making such transactions less likely to be motivated by tax considerations. In contrast, less frequently traded products would tend to be more firm-specific or highly differentiated, thereby providing greater opportunities for transfer pricing manipulation, as such products are less comparable to those traded at arm's length and thus allow for greater discretion in setting intra-firm prices.

In summary, the tax semi-elasticity of related-party prices for Japanese multinationals is, on average, lower than that reported in studies using customs data from other countries. However, it varies depending on transaction characteristics. In particular, transfer pricing manipulation is more pronounced in transactions involving larger parent-affiliate pairs and products that are exported less frequently.

5 Responses to the Introduction of the CbCR System

Following the recommendation of Action 13 of the BEPS Action Plan in OECD (2015), Japan revised its transfer pricing documentation requirements in fiscal year 2016 to introduce the CbCR system. The Japanese CbCR applies to Japanese ultimate parent entities for fiscal years beginning on or after April 1, 2016, if their consolidated total revenue in the preceding fiscal year is greater than or equal to 100 billion yen (approximately equivalent to 750 million euros). This implies that CbCR became effective in fiscal year 2016 for Japanese firms whose fiscal years end in March, as their 2016 fiscal year began on April 1, 2016.[16] In contrast, CbCR became effective in fiscal year 2017 for Japanese firms whose fiscal years end in other months, as their 2016 fiscal years started before April 1, 2016.[17]

To analyze the response of transfer pricing to CbCR, we collect consolidated account information for Japanese multinational firms—Japanese-resident global ultimate owners (GUOs) of foreign subsidiaries—from the Orbis database provided by Moody's. We then calculate each firm's consolidated total revenue by summing operating revenue, financial revenue, and extraordinary revenue. In this section, we restrict the sample to Japanese GUO firms for which information on consolidated total revenue is available for all years during the study period, as it determines their CbCR obligation. Table A1 in the Appendix presents summary statistics for this restricted sample. The sample includes 1,065,303 firm-product-country-year observations, covering 1,233 firms that export 3,393 products to 108 countries. The sample size is nearly half that of the original sample, as consolidated account information is

[16] In Japan, the government's fiscal year runs from April 1 to March 31 of the following year. Thus, for most publicly listed firms, the accounting year also runs from April to March.

[17] For example, for a firm whose fiscal year ends in December, the 2016 fiscal year runs from January 1 to December 31, 2016.

primarily available for publicly listed firms.

We examine how the tax semi-elasticity of related-party prices for large Japanese multinationals changed following the introduction of the CbCR system, by extending the baseline equation (1) as follows:

$$\begin{aligned}\log p_{ikct} = {} & \beta_0 \mathit{Affiliate}_{ict} + \beta_1 CbCR_{it} \times \mathit{Affiliate}_{ict} + \beta_2 \mathit{Affiliate}_{ict} \times \Delta\tau_{ct} \\ & + \beta_3 CbCR_{it} \times \mathit{Affiliate}_{ict} \times \Delta\tau_{ct} + \eta_{ikc} + \lambda_{kct} + \mu_{ikt} + \epsilon_{ikct}, \end{aligned} \tag{2}$$

where $CbCR_{it}$ is a dummy variable that equals one if firm i is subject to the CbCR obligation in fiscal year t, and zero otherwise. More specifically, $CbCR_{it}$ equals one if the following two conditions are satisfied: (i) the consolidated total revenue of firm i in fiscal year $t-1$ is at least 100 billion yen, and (ii) fiscal year t begins on or after April 1, 2016. In our dataset, 70% of firm-product-country-year observations fall under the CbCR obligation (i.e., $CbCR_{it} = 1$) between 2016 and 2019. At the firm-year level, this share is 38%. The notation for the other variables is the same as in equation (1).

The coefficient of interest is that on $CbCR_{it} \times \mathit{Affiliate}_{ict} \times \Delta\tau_{ct}$ (β_3), which represents the additional sensitivity to tax differentials among firms subject to CbCR, relative to those that are not. If the CbCR system reduces profit shifting through transfer pricing, we expect the tax semi-elasticity of related-party prices to be lower when firms are subject to CbCR, and thus $\beta_3 > 0$.

Table 4 presents the estimation results using the restricted sample with consolidated account information, where all columns include the full set of three-way fixed effects. Columns (1) and (2) employ the same specifications as in the previous section, and we find that the results are qualitatively unchanged in the new sample. Column (1) shows that the tax semi-elasticity of related-party prices is 0.13, while column (2) reports that it is 0.27 for large parent-affiliate pairs. Although these estimates are not statistically significant, the semi-elasticity for large pairs is higher than that for small ones.[18]

Column (3) of Table 4 presents the results from estimating equation (2). The coefficient on $\mathit{Affiliate}_{ict} \times \Delta\tau_{ct}$ is -0.14, while that on $CbCR_{it} \times \mathit{Affiliate}_{ict} \times \Delta\tau_{ct}$ is also negative (-0.17) and statistically significant at the 5% level. This result is contrary to our expectation and suggests that the tax semi-elasticity of related-party prices increased by 0.17 after firms became subject to CbCR.

Column (4) presents the results based on the classification of parent-affiliate pairs into the large and small groups. The coefficients on $\mathit{Large}_{ict} \times \mathit{Affiliate}_{ict} \times \Delta\tau_{ct}$ and $CbCR_{it} \times \mathit{Large}_{ict} \times \mathit{Affiliate}_{ict} \times \Delta\tau_{ct}$ are negative, statistically significant, and larger in absolute value than the

[18] In this section, we redefine the Small_{ict} and Large_{ict} dummy variables based on the new sample.

corresponding coefficients for $Small_{ict}$. These results suggest that the tax semi-elasticity for large parent-affiliate pairs was 0.26 before the introduction of CbCR and increased by 0.24 after firms became subject to CbCR. For the small group, the tax semi-elasticity also increased, although to a lesser extent (by 0.17), after firms became subject to CbCR.[19]

These results suggest that, rather than reducing transfer mispricing in response to the introduction of the CbCR system, Japanese multinationals intensified it. This may seem counterintuitive at first glance. However, Doeleman et al. (2024) theoretically show that firms in high-tax countries may increase profit shifting in response to CbCR and provide empirical evidence consistent with this prediction. In their model, a multinational incurs audit costs to handle tax examinations. Once CbCR is implemented, profits shifted from each country to tax havens become more visible, thereby increasing audit costs. These costs then depend on the total amount of profits shifted by all affiliates across different countries to tax havens. Under such circumstances, it becomes more cost-effective for multinationals to intensify the shifting of profits out of high-tax countries such as Japan. This mechanism may also help explain our findings.

The transfer pricing response to CbCR may vary over time. To explore this possibility, we examine the response of related-party prices for firms subject to CbCR in each year from 2016 to 2019. To mitigate concerns that delays or changes in CbCR status might affect the estimates, we restrict the sample to firms whose fiscal years end in March and exclude firms whose consolidated total revenue fluctuates around the reporting threshold of 100 billion yen during the study period, exceeding the threshold in some years and falling below it in others.[20] As a result, all firms subject to CbCR in the sample were continuously subject to the obligation in all years from 2016 to 2019.

In column (1) of Table 5, we extend equation (2) by interacting $CbCR_{it} \times Affiliate_{ict} \times \Delta\tau_{ct}$ with year dummies for 2016 through 2019. To examine potential differential pre-trends in the tax semi-elasticity between firms that became subject to CbCR from 2016 onward and those that did not, we also include an interaction term of $CbCR_{i(t+2)} \times Affiliate_{ict} \times \Delta\tau_{ct}$ with the year dummy for 2014.[21] The coefficient on this interaction term is close to zero and not statistically significant, suggesting no differential pre-trend in the tax semi-elasticity in 2014 for firms that became subject to CbCR from 2016 onward, relative to the base year,

[19]The large and small groups are defined based on the unconsolidated accounts of Japanese firms and their foreign affiliates, whereas the CbCR obligation is determined by the total revenue reported in the consolidated accounts of the Japanese firms. Thus, both groups include firms that are subject to CbCR.

[20]Only 4.5% of the observations correspond to firms whose total revenue fluctuates around the threshold during the study period. The estimation results remain qualitatively unchanged when these sample restrictions are not applied.

[21]As in Table 3, for readability, Table 5 reports only the estimated coefficients related to tax semi-elasticities, specifically the interaction terms of $Affiliate_{ict} \times \Delta\tau_{ct}$ with the relevant dummy variables.

2015.

In contrast, all the coefficients on the interaction terms with year dummies for 2016 through 2019 are statistically significantly negative and become larger in absolute value in the later years. This suggests that the tax semi-elasticity of related-party prices for firms subject to CbCR increased over time relative to the base year, 2015: it rose by 0.21 in 2016, 0.18 in 2017, 0.25 in 2018, and 0.46 in 2019.[22]

Column (2) of Table 5 divides parent-affiliate pairs into the large and small groups. Similar to column (1), we find no evidence of differential pre-trends in the tax semi-elasticity for either group before 2016. After becoming subject to CbCR, large parent-affiliate pairs exhibit an increase in the tax semi-elasticity of 0.28 in 2016 and 0.51 in 2019, relative to 2015. Small parent-affiliate pairs were less responsive to CbCR than their larger counterparts. These results suggest that the upward trend in the tax semi-elasticity for firms subject to CbCR, as shown in column (1), is mainly driven by large parent-affiliate pairs. In summary, we find no evidence that the introduction of CbCR restrained profit shifting by these firms in any year during the post-CbCR period.

6 Conclusion

Using Japanese firm-level customs export data, we examine tax-motivated transfer pricing by Japanese multinationals. We find that firms reduce related-party export prices relative to arm's-length prices as the tax differentials between Japan and destination countries widen. On average, the tax semi-elasticity of related-party prices is smaller than that reported in previous studies, but it varies across transaction characteristics. Specifically, transfer pricing manipulation is more pronounced in transactions involving large parent-affiliate pairs and products exported less frequently.

We also examine the impact of the CbCR system, introduced in Japan in 2016, and find no evidence that it reduced transfer mispricing on exported goods by Japanese multinationals subject to the CbCR obligation. In fact, the tax semi-elasticity of related-party prices increased after these firms became subject to CbCR, particularly in the later years of the study period. This may indicate the limited effectiveness of the CbCR system in constraining profit shifting through transfer mispricing by large Japanese multinationals.

[22] When we include an interaction term of $CbCR_{i(t+1)} \times Affiliate_{ict} \times \Delta\tau_{ct}$ with the year dummy for 2015 in the estimation, the coefficient is small and statistically indistinguishable from zero. Therefore, the results qualitatively remain unchanged.

Acknowledgement

This research was conducted while Hasegawa was visiting the Center for International Research on the Japanese Economy (CIRJE) at the University of Tokyo. We gratefully acknowledge financial support from the Japan Society for the Promotion of Science (JSPS KAKENHI Grant Numbers JP22H00840, JP22H00855, JP24K04910, JP24K16350, and JP25K16676), CIRJE, Zengin Foundation for Studies on Economics and Finance, and Nomura Foundation. We also appreciate the continued support of Takahiro Chiba, Masaki Fukui, Tetsushi Horie, Fumiharu Ito, Motoki Katano, Shintaro Negishi, Tasuku Sato, Kayo Takama, and Uraku Yoshimoto at the Policy Research Institute of the Ministry of Finance, Japan.

References

[1] Bratta, Barbara, Vera Santomartino, and Paolo Acciari. 2024. "Assessing Profit Shifting Using Country-by-Country Reports: A Nonlinear Response to Tax-Rate Differentials." *National Tax Journal*, 77(2): 349–380.

[2] Buettner, Thiess, Michael Overesch, Ulrich Schreiber, and Georg Wamser. 2012. "The Impact of Thin-Capitalization Rules on the Capital Structure of Multinational Firms." *Journal of Public Economics*, 96(11–12): 930–938.

[3] Bustos, Sebastián, Dina Pomeranz, Juan Carlos Suárez Serrato, José Vila-Belda, and Gabriel Zucman. 2025. "The Race between Tax Enforcement and Tax Planning: Evidence from a Natural Experiment in Chile." NBER Working Paper No. 30114.

[4] Clausing, Kimberly A. 2003. "Tax-Motivated Transfer Pricing and US Intrafirm Trade Prices." *Journal of Public Economics*, 87(9–10): 2207–2223.

[5] Cristea, Anca D., and Daniel X. Nguyen. 2016. "Transfer Pricing by Multinational Firms: New Evidence from Foreign Firm Ownerships." *American Economic Journal: Economic Policy*, 8(3): 170–202.

[6] Davies, Ronald B., Julien Martin, Mathieu Parenti, and Farid Toubal. 2018. "Knocking on Tax Haven's Door: Multinational Firms and Transfer Pricing." *Review of Economics and Statistics*, 100(1): 120–134.

[7] De Simone, Lisa, and Marcel Olbert. 2022. "Real Effects of Private Country-by-Country Disclosure." *The Accounting Review*, 97(6): 201–232.

[8] Dischinger, Matthias, and Nadine Riedel. 2011. "Corporate Taxes and the Location of Intangible Assets within Multinational Firms." *Journal of Public Economics*, 95(7): 691–707.

[9] Doeleman, Ruby, Dominika Langenmayr, and Dirk Schindler. 2024. "Could Country-by-Country Reporting Increase Profit Shifting?" CESifo Working Paper No. 11464.

[10] Hasegawa, Makoto. 2023. "Territorial Tax Reform and Profit Shifting by US and Japanese Multinationals." *National Tax Journal*, 76(4): 771–804.

[11] Hugger, Felix. 2025. "Regulatory Avoidance Responses to Private Country-by-Country Reporting." *International Tax and Public Finance*, 32: 271–309.

[12] Huizinga, Harry, Luc Laeven, and Gaetan Nicodeme. 2008. "Capital Structure and International Debt Shifting." *Journal of Financial Economics*, 88(1): 80–118.

[13] Joshi, Preetika. 2020. "Does Private Country-by-Country Reporting Deter Tax Avoidance and Income Shifting? Evidence from BEPS Action Item 13." *Journal of Accounting Research*, 58(2): 333–381.

[14] Knoll, Bodo, Sanne Kruse-Becher, and Nadine Riedel. 2023. "The Impact of Transfer Pricing Laws on Import Mis-Pricing – Evidence from Denmark." *Economics Letters*, 233: 111361.

[15] Laudage-Teles, Sabine, Nadine Riedel, and Kristina Strohmaier. 2024. "On the Effects of Anti-Profit Shifting Regulations: A Developing Country Perspective." *Journal of Public Economics*, 235: 105134.

[16] Liu, Li, Tim Schmidt-Eisenlohr, and Dongxian Guo. 2020. "International Transfer Pricing and Tax Avoidance: Evidence from Linked Trade-Tax Statistics in the UK." *Review of Economics and Statistics*, 102(4): 766–778.

[17] OECD (Organisation for Economic Co-operation and Development). 2015. *Transfer Pricing Documentation and Country-by-Country Reporting, Action 13 - 2015 Final Report*, OECD/G20 Base Erosion and Profit Shifting Project, OECD Publishing, Paris. http://dx.doi.org/10.1787/9789264241480-en

[18] OECD (Organisation for Economic Co-operation and Development). 2024. *Country-by-Country Reporting – Compilation of 2024 Peer Review Reports: Inclusive Framework on BEPS: Action 13*, OECD/G20 Base Erosion and Profit Shifting Project, OECD Publishing, Paris. https://doi.org/10.1787/f3d3f36f-en

[19] Tørsløv, Thomas, Ludvig Wier, and Gabriel Zucman. 2023. "The Missing Profits of Nations." *The Review of Economic Studies*, 90(3): 1499–1534.

[20] Tuinsma, Tijmen, Kristof De Witte, Petr Janský, Miroslav Palanský, and Vitezslav Titl. 2025. "Effects of Corporate Transparency on Tax Avoidance: Evidence from Country-by-Country Reporting." *International Tax and Public Finance*. https://doi.org/10.1007/s10797-025-09885-w

[21] Wier, Ludvig. 2020. "Tax-Motivated Transfer Mispricing in South Africa: Direct Evidence Using Transaction Data." *Journal of Public Economics*, 184: 104153.

[22] Wier, Ludvig, and Hayley Erasmus. 2023. "The Dominant Role of Large Firms in Profit Shifting." *IMF Economic Review*, 71: 791–816.

Table 1: **Summary Statistics**

	Mean	Std. Dev.	Count
Unit Price (p_{ikct})	59,252	181,442	2,119,032
Tax Differential ($\Delta\tau_{ct}$)	.0682	.0684	2,119,032
$Affiliate_{ict}$	.702	.457	2,119,032
Number of Transactions ($Trans_{ikct}$)	19.7	87.7	2,119,032
Total Assets$_{it}$	695,131	1,867,566	1,974,856
Affiliate Sales$_{ict}$	77,071	558,200	1,737,164
Large Parent-Affiliate Dummy ($Large_{ict}$)	.302	.459	1,719,808
Small Parent-Affiliate Dummy ($Small_{ict}$)	.698	.459	1,719,808
Widest Tax Differential Dummy ($Widest_{ict}$)	.0864	.281	2,119,032

Notes: The subscripts i, k, c, and t denote the firm, the exported product, the destination country, and the fiscal year, respectively. p_{ikct} represents the unit price (i.e., the export value divided by quantity), measured in Japanese yen, for product k exported by firm i to country c in year t. Unit prices are winsorized at the 1st and 99th percentiles in each year. $\Delta\tau_{ct}$ is the tax differential between Japan and country c in year t, defined as the Japanese corporate income tax rate minus the corporate income tax rate of country c. $Affiliate_{ict}$ is a dummy variable that equals one if firm i owns at least one affiliate in country c in year t, and zero otherwise. $Trans_{ikct}$ denotes the total number of transactions for product k exported by firm i to country c in year t. Total Assets$_{it}$ denotes firm i's total assets in year t, measured in million yen. Affiliate Sales$_{ict}$ refers to the total sales of firm i's affiliates in country c in year t, measured in million yen. It is defined as zero if the firm has no affiliate in that country (i.e., Affiliate Sales$_{ict} = 0$ if $Affiliate_{ict} = 0$). $Large_{ict}$ equals one if both the parent firm and its affiliates are classified as large, and zero otherwise (see Subsection 4.2 for the definitions of large parents and affiliates). $Small_{ict}$ is defined as $1 - Large_{ict}$ and refers to all other transactions. $Widest_{ict}$ equals one if the absolute value of the tax differential is the largest among the destination countries for firm i in year t, and zero otherwise.

Table 2: **Tax Sensitivity of Related-Party Prices**

	Dependent Variable: $\log p_{ikct}$	
	(1)	(2)
$Affiliate_{ict}$	-0.0110**	-0.0014
	(0.0046)	(0.0101)
$Affiliate_{ict} \times \Delta\tau_{ct}$	-0.1032*	-0.1304*
	(0.0539)	(0.0673)
Firm-Product-Country Fixed Effects	Yes	Yes
Country-Year Fixed Effects	Yes	No
Product-Country-Year Fixed Effects	No	Yes
Firm-Product-Year Fixed Effects	No	Yes
Observations	2,119,024	1,476,138
R-Squared	0.9234	0.9493

Notes: The dependent variable is the natural logarithm of the unit price (p_{ikct}) set by firm i for product k exported to country c in fiscal year t. $Affiliate_{ict}$ is a dummy variable that equals one if firm i owns at least one affiliate in country c in year t, and zero otherwise. $\Delta\tau_{ct}$ is the tax differential between Japan and country c in year t, defined as the Japanese corporate income tax rate minus the corporate income tax rate of country c. Standard errors clustered by destination country are in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Table 3: **Heterogeneous Tax Sensitivity of Related-Party Prices**

	Dependent Variable: $\log p_{ikct}$					
	(1)	(2)	(3)	(4)	(5)	(6)
$Small_{ict} \times Affiliate_{ict} \times \Delta\tau_{ct}$	-0.1027*	-0.1122	-0.0942	-0.0926		
	(0.0591)	(0.0774)	(0.0601)	(0.0773)		
$Large_{ict} \times Affiliate_{ict} \times \Delta\tau_{ct}$	-0.1707**	-0.1991*	-0.1685**	-0.1795*		
	(0.0732)	(0.1033)	(0.0718)	(0.1019)		
$Small_{ict} \times Affiliate_{ict} \times \Delta\tau_{ct} \times Widest_{ict}$			-0.0712	-0.1358		
			(0.0645)	(0.1228)		
$Large_{ict} \times Affiliate_{ict} \times \Delta\tau_{ct} \times Widest_{ict}$			-0.1223*	-0.2045		
			(0.0646)	(0.1274)		
$Trans\,1_{ikct} \times Affiliate_{ict} \times \Delta\tau_{ct}$					-0.2232**	-0.2921**
					(0.1040)	(0.1174)
$Trans\,2_{ikct} \times Affiliate_{ict} \times \Delta\tau_{ct}$					-0.1809*	-0.2298***
					(0.0982)	(0.0840)
$Trans\,3_{ikct} \times Affiliate_{ict} \times \Delta\tau_{ct}$					-0.1004*	-0.1884**
					(0.0584)	(0.0758)
$Trans\,4_{ikct} \times Affiliate_{ict} \times \Delta\tau_{ct}$					-0.0030	-0.0238
					(0.0362)	(0.0638)
Firm-Product-Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Country-Year Fixed Effects	Yes	No	Yes	No	Yes	No
Product-Country-Year Fixed Effects	No	Yes	No	Yes	No	Yes
Firm-Product-Year Fixed Effects	No	Yes	No	Yes	No	Yes
Observations	1,690,373	1,181,760	1,690,373	1,181,760	2,119,024	1,476,138
R-Squared	0.9230	0.9489	0.9230	0.9489	0.9239	0.9497

Notes: The dependent variable is the natural logarithm of the unit price (p_{ikct}) set by firm i for product k exported to country c in fiscal year t. $Affiliate_{ict}$ is a dummy variable that equals one if firm i owns at least one affiliate in country c in year t, and zero otherwise. $\Delta\tau_{ct}$ is the tax differential between Japan and country c in year t, defined as the Japanese corporate income tax rate minus the corporate income tax rate of country c. $Large_{ict}$ equals one if both the parent firm and its affiliates are classified as large, and zero otherwise (see Subsection 4.2 for the definitions of large parents and affiliates). $Small_{ict}$ is defined as $1 - Large_{ict}$ and refers to all other transactions. $Widest_{ict}$ equals one if the absolute value of the tax differential is the largest among the destination countries for firm i in year t, and zero otherwise. $Trans\,n_{ikct}$ is a dummy variable that equals one if the number of transactions falls into the nth quartile ($n = 1, \ldots, 4$), and zero otherwise. Standard errors clustered by destination country are in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Table 4: **Response to the CbCR System**

	Dependent Variable: $\log p_{ikct}$			
	(1)	(2)	(3)	(4)
$Affiliate_{ict}$	-0.0153		-0.0068	
	(0.0175)		(0.0170)	
$CbCR_{it} \times Affiliate_{ict}$			-0.0113	
			(0.0090)	
$CbCR_{it} \times \Delta\tau_{ct}$			0.1432	0.2134*
			(0.0921)	(0.1176)
$Affiliate_{ict} \times \Delta\tau_{ct}$	-0.1258		-0.1446	
	(0.1165)		(0.1060)	
$CbCR_{it} \times Affiliate_{ict} \times \Delta\tau_{ct}$			-0.1672**	
			(0.0713)	
$Small_{ict} \times Affiliate_{ict}$		-0.0139		-0.0144
		(0.0204)		(0.0196)
$Large_{ict} \times Affiliate_{ict}$		-0.0204		-0.0081
		(0.0308)		(0.0293)
$CbCR_{it} \times Small_{ict} \times Affiliate_{ict}$				0.0046
				(0.0125)
$CbCR_{it} \times Large_{ict} \times Affiliate_{ict}$				-0.0097
				(0.0138)
$Small_{ict} \times Affiliate_{ict} \times \Delta\tau_{ct}$		-0.1722		-0.1479
		(0.1279)		(0.1205)
$Large_{ict} \times Affiliate_{ict} \times \Delta\tau_{ct}$		-0.2719		-0.2594*
		(0.1652)		(0.1538)
$CbCR_{it} \times Small_{ict} \times Affiliate_{ict} \times \Delta\tau_{ct}$				-0.1697**
				(0.0833)
$CbCR_{it} \times Large_{ict} \times Affiliate_{ict} \times \Delta\tau_{ct}$				-0.2422**
				(0.0948)
Firm-Product-Country Fixed Effects	Yes	Yes	Yes	Yes
Product-Country-Year Fixed Effects	Yes	Yes	Yes	Yes
Firm-Product-Year Fixed Effects	Yes	Yes	Yes	Yes
Observations	782,864	681,922	782,864	681,922
R-Squared	0.9464	0.9459	0.9464	0.9459

Notes: The dependent variable is the natural logarithm of the unit price (p_{ikct}) set by firm i for product k exported to country c in fiscal year t. $Affiliate_{ict}$ is a dummy variable that equals one if firm i owns at least one affiliate in country c in year t, and zero otherwise. $CbCR_{it}$ is a dummy variable equal to one if firm i is subject to the CbCR obligation in fiscal year t, and zero otherwise. $\Delta\tau_{ct}$ is the tax differential between Japan and country c in year t, defined as the Japanese corporate income tax rate minus the corporate income tax rate of country c. $Large_{ict}$ equals one if both the parent firm and its affiliates are classified as large, and zero otherwise (see Subsection 4.2 for the definitions of large parents and affiliates). $Small_{ict}$ is defined as $1 - Large_{ict}$ and refers to all other transactions. Standard errors clustered by destination country are in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Table 5: **Response to the CbCR System by Year, 2016–2019**

	Dependent Variable: $\log p_{ikct}$	
	(1)	(2)
$Affiliate_{ict} \times \Delta\tau_{ct}$	-0.0851	
	(0.1293)	
$CbCR_{i(t+2)} \times Affiliate_{ict} \times \Delta\tau_{ct} \times$ *Year 2014*	0.0027	
	(0.0898)	
$CbCR_{it} \times Affiliate_{ict} \times \Delta\tau_{ct} \times$ *Year 2016*	-0.2128*	
	(0.1081)	
$CbCR_{it} \times Affiliate_{ict} \times \Delta\tau_{ct} \times$ *Year 2017*	-0.1839*	
	(0.1032)	
$CbCR_{it} \times Affiliate_{ict} \times \Delta\tau_{ct} \times$ *Year 2018*	-0.2485**	
	(0.1244)	
$CbCR_{it} \times Affiliate_{ict} \times \Delta\tau_{ct} \times$ *Year 2019*	-0.4573***	
	(0.1435)	
$Small_{ict} \times Affiliate_{ict} \times \Delta\tau_{ct}$		-0.1430
		(0.1666)
$Large_{ict} \times Affiliate_{ict} \times \Delta\tau_{ct}$		-0.2483
		(0.2020)
$CbCR_{i(t+2)} \times Small_{ict} \times Affiliate_{ict} \times \Delta\tau_{ct} \times$ *Year 2014*		0.0359
		(0.1112)
$CbCR_{it} \times Small_{ict} \times Affiliate_{ict} \times \Delta\tau_{ct} \times$ *Year 2016*		-0.1405
		(0.1045)
$CbCR_{it} \times Small_{ict} \times Affiliate_{ict} \times \Delta\tau_{ct} \times$ *Year 2017*		-0.1751
		(0.1294)
$CbCR_{it} \times Small_{ict} \times Affiliate_{ict} \times \Delta\tau_{ct} \times$ *Year 2018*		-0.1120
		(0.1676)
$CbCR_{it} \times Small_{ict} \times Affiliate_{ict} \times \Delta\tau_{ct} \times$ *Year 2019*		-0.4318**
		(0.1694)
$CbCR_{i(t+2)} \times Large_{ict} \times Affiliate_{ict} \times \Delta\tau_{ct} \times$ *Year 2014*		-0.0324
		(0.1447)
$CbCR_{it} \times Large_{ict} \times Affiliate_{ict} \times \Delta\tau_{ct} \times$ *Year 2016*		-0.2805*
		(0.1583)
$CbCR_{it} \times Large_{ict} \times Affiliate_{ict} \times \Delta\tau_{ct} \times$ *Year 2017*		-0.2160
		(0.1475)
$CbCR_{it} \times Large_{ict} \times Affiliate_{ict} \times \Delta\tau_{ct} \times$ *Year 2018*		-0.3276
		(0.2041)
$CbCR_{it} \times Large_{ict} \times Affiliate_{ict} \times \Delta\tau_{ct} \times$ *Year 2019*		-0.5142**
		(0.1970)
Observations	626,754	553,681
R-Squared	0.9453	0.9448

Notes: Both columns control for the full set of three-way fixed effects as specified in equation (2). The dependent variable is the natural logarithm of the unit price (p_{ikct}) set by firm i for product k exported to country c in fiscal year t. $Affiliate_{ict}$ is a dummy variable that equals one if firm i owns at least one affiliate in country c in year t, and zero otherwise. $CbCR_{it}$ is a dummy variable equal to one if firm i is subject to the CbCR obligation in fiscal year t, and zero otherwise. $\Delta\tau_{ct}$ is the tax differential between Japan and country c in year t, defined as the Japanese corporate income tax rate minus the corporate income tax rate of country c. $Large_{ict}$ equals one if both the parent firm and its affiliates are classified as large, and zero otherwise (see Subsection 4.2 for the definitions of large parents and affiliates). $Small_{ict}$ is defined as $1 - Large_{ict}$ and refers to all other transactions. *Year 2014* and *Year 2016*–*Year 2019* are year dummies. Standard errors clustered by destination country are in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Appendix

Confidentiality Requirement

In accordance with the "Guideline on the Utilization of Customs' Import and Export Declaration Data in Joint Research with the Policy Research Institute," statistics and estimation results based on customs declaration data must be computed using information from at least ten reporting firms. All statistics and estimation results reported in this paper satisfy this confidentiality requirement.

Table A1: **Summary Statistics for the Sample Used in the Analysis of the Response to the CbCR System**

	Mean	Std. Dev.	Count
Unit Price (p_{ikct})	65,833	196,648	1,065,303
Tax Differential ($\Delta\tau_{ct}$)	.0656	.0714	1,065,303
$Affiliate_{ict}$	.827	.378	1,065,303
Total Assets$_{it}$	1,204,011	2,437,504	1,046,223
Affiliate Sales$_{ict}$	134,842	752,683	941,213
Large Parent-Affiliate Dummy ($Large_{ict}$)	.327	.469	941,213
Small Parent-Affiliate Dummy ($Small_{ict}$)	.673	.469	941,213
Consolidated Revenue$_{i(t-1)}$	2,025,979	4,300,653	1,064,704
CbCR Obligation Dummy ($CbCR_{it}$)	.481	.5	1,065,303

Notes: The subscripts i, k, c, and t denote the firm, the exported product, the destination country, and the fiscal year, respectively. p_{ikct} represents the unit price (i.e., the export value divided by quantity), measured in Japanese yen, for product k exported by firm i to country c in year t. Unit prices are winsorized at the 1st and 99th percentiles in each year. $\Delta\tau_{ct}$ is the tax differential between Japan and country c in year t, defined as the Japanese corporate income tax rate minus the corporate income tax rate of country c. $Affiliate_{ict}$ is a dummy variable that equals one if firm i owns at least one affiliate in country c in year t, and zero otherwise. Total Assets$_{it}$ denotes firm i's total assets in year t, measured in million yen. Affiliate Sales$_{ict}$ refers to the total sales of firm i's affiliates in country c in year t, measured in million yen. It is defined as zero if the firm has no affiliate in that country (i.e., Affiliate Sales$_{ict} = 0$ if $Affiliate_{ict} = 0$). $Large_{ict}$ equals one if both the parent firm and its affiliates are classified as large, and zero otherwise (see Subsection 4.2 for the definitions of large parents and affiliates). $Small_{ict}$ is defined as $1 - Large_{ict}$ and refers to all other transactions. Consolidated Revenue$_{i(t-1)}$ denotes the consolidated total revenue of firm i in year $(t-1)$, measured in million yen. $CbCR_{it}$ is a dummy variable equal to one if firm i is subject to the CbCR obligation in fiscal year t, and zero otherwise.