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Navigating Trade Shocks: The Impact of the US-China Trade War on Japanese Exporters and MNEs

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Abstract

This study examines how external shocks spread internationally to firms in third countries through Global Value Chians, focusing on the impact of the US-China trade war on Japanese firms. Firms in Japan that heavily relied on exports to China saw a 7.6% drop in exports, with non-MNEs being hit the hardest. Japanese MNE affiliates in China experienced a 34% decrease in exports to the U.S., though the overall impact was limited, as only a few subsidiaries were involved in U.S.-bound exports. Local sales of Japanese affiliates in China fell by 28%, but many of these firms compensated by increasing exports to Japan and other Asian markets. The dispute also led to a slight reduction in procurement from parent companies in Japan, though this effect was minor. In sum, non-MNE exporters in Japan and MNE affiliates reliant on North American exports were most affected, while MNEs with diversified global investments proved more resilient and better able to mitigate the trade war's impacts.

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Abstract

This study examines how external shocks spread internationally to firms in third countries through Global Value Chians, focusing on the impact of the US-China trade war on Japanese firms. Firms in Japan that heavily relied on exports to China saw a 7.6% drop in exports, with non-MNEs being hit the hardest. Japanese MNE affiliates in China experienced a 34% decrease in exports to the U.S., though the overall impact was limited, as only a few subsidiaries were involved in U.S.-bound exports. Local sales of Japanese affiliates in China fell by 28%, but many of these firms compensated by increasing exports to Japan and other Asian markets. The dispute also led to a slight reduction in procurement from parent companies in Japan, though this effect was minor. In sum, non-MNE exporters in Japan and MNE affiliates reliant on North American exports were most affected, while MNEs with diversified global investments proved more resilient and better able to mitigate the trade war's impacts.

Keywords: Multinational Enterprises, Trade Policy, U.S.-China trade war, Firm-level data JEL classification: F12, F13, F23

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1. Introduction

In 2018 and 2019, the Trump administration implemented a series of tariff increases, mainly targeting China. In 2018, the U.S. government imposed tariffs (in July, August, and September) on imports from China worth around \$250 billion. In September 2019, the U.S. government imposed additional tariffs on items worth about \$125 billion. As a result, about 72% of imports from China in 2017 were subject to tariffs. China immediately retaliated, imposing similar tariffs on imports from the U.S., affecting about 97% of U.S. exports to China. The trade war dealt a heavy blow to trade between the two countries, and US-China relations became even more tense. These trade policies are generally referred to as a trade war, and as it will be more severe and prolonged than initially expected, understanding its impact has become a priority for policymakers around the world.

The impact of the U.S.-China trade war extends beyond the two countries directly involved. Because firms around the world are connected by global value chains (GVCs), trade disputes between two countries will also affect third countries. The United States and China are the world's first and second largest economies in terms of GDP. And countries around the world have deep economic ties with the United States and China. Consequently, the ripple effects of this trade conflict are expected to spread across the global economy. Investigating the effects of such spillovers through the supply chain is an important issue not only for researchers, but also for policy makers and business leaders.

This study examines how external shocks spread internationally to third countries through GVCs focusing on the impact of the US-China trade war on Japanese firms. Japan is likely the third-most affected country due to its geographic proximity to China and strong trade ties. According to the World Bank Integrated Trade Solutions, China was Japan's second-largest export market and its largest import partner in 2017. Trade with China accounted for 19% of Japan's total exports and 24.5% of its total imports. Additionally, Japanese firms have significant investments in China. As reported in the Basic Survey of Overseas Business by Japan's Ministry of Economy, Trade, and Industry, nearly 60% of Japanese multinational enterprises (MNEs) in manufacturing had affiliates in China in 2017. Since MNEs are thought to play an important role in the formation of GVCs, by investigating examples of Japanese firms, it is also possible to clarify the role of MNEs in the shock propagation mechanics.

In this paper, we use firm-level data on Japanese firms and their affiliates in China. Japanese firms may be indirectly affected by a reduction in exports to China, while their affiliates in China may be directly impacted by lower exports to the U.S. and decreased sales in the local market. We examine this effect by introducing the measure of interindustry linkagage and sector-level export exposure in China. Additionally, a drop in sales by MNE affiliates in China could affect Japanese firms through reduced procurement from parent companies in Japan. Some Japanese MNEs have production bases not only in China but also around the world, so we investigate the differences between MNEs and non-MNEs, and the heterogeneity across MNEs, specifically the differences according to the number of countries in which they invest.

Our findings in this paper are summarized as follows. First, Japanese firms that had a large proportion of exports to China before the US-China dispute saw a large decrease in exports to China. On average, exports to China decreased by around 7.6%. However, we also found that the impact is small for MNEs, and particularly for firms that invest in multiple countries, the negative effect on exports to China is insignificant. Second, exports to the U.S. by Japanese MNE affiliates in China have dropped significantly, with an average decrease of 34% in exports to North America. However, the proportion of MNE affiliates involved in U.S. exports is small, and the share of their total exports to the U.S. is also limited. As a result, the overall impact of this decline is relatively modest. Third, the average local sales of Japanese MNE affiliates in China have also decreased by 30% due to the decrease in sales of local firms. However, they increase exports, especially to Japan and other Asian countries. Finally, looking at the impact on procurement from the parent company of Japanese MNE affiliates in China, there is a statistically significant negative impact due to decreased exports to North America. However, the magnitude of this effect is not large. For local sales-oriented MNE affiliates, there is no decrease in procurement from the parent company, perhaps because the decrease in local sales is offset by an increase in exports.

This paper contributes to at least three strands of studies. First is the direct impact of the US-China trade war. Most existing studies analyze this impact using productlevel trade data or data from listed companies. For instance, Fajgelbaum et al. (2020), Amiti et al. (2019), and Cavallo et al. (2021) use product-level trade data to demonstrate an almost complete pass-through of tariffs. Flaaen et al. (2021) focus on U.S. trade policy shocks on washing machine imports, showing that MNEs have shifted production locations across countries. Huang et al. (2019) and Egger and Zhu (2020) explore the impact of the trade war on stock markets using stock price data. Some studies also use Chinese firm-level data, investigating the differences between foreign direct investment firms and domestic firms (Lee and Nguyen, 2022) and the changes in sales composition among Chinese listed firms (Ding et al. 2022). This study builds on previous research by examining the effects of tariff-induced negative shocks on intrafirm trade and on upstream firms through industrial linkages.

Second is the third country effect of the US-China trade war. Previous studies, such as Freund, et al. (2024), Alfaro and Chor (2023), Rutonto et al.(2023) reports that U.S. imports from China have been replaced by imports from neighboring countries or developing countries such as Canada, Mexico, or Vietnam. On the other hand, imports from distant developed countries such as Japan have not increased. Furthermore, firms in third countries that export intermediate goods to China may be indirectly affected by the decline in exports from China to US. Hayakawa et al. (2023) examine the impact of the decline in US imports from China due to the Trump tariffs on China's imports of machinery parts from Japan, South Korea, and Taiwan. Their empirical analysis shows that China's imports have declined in trade with Taiwan, where their MNEs use China as an export base.¹ Benguria (2023) examines the impact of the U.S.-China trade war on firms in 40 countries, finding that firms with high export exposure to the U.S. benefit while those with exposure to China suffer. Asian firms, particularly, face declines in revenues and profits due to their high exposure to China.² Differentiating our work from the above studies, this study utilizes the comprehensive, detailed firm-level data and examines how and to what extent firms in Japan and their affiliates in China suffer from the shock of the US-China trade war.

Third, our study is related to the literature assessing the vulnerability or robustness of MNEs to short-term external shocks. There are various views on whether MNEs are vulnerable or robust in the face of external shocks. For example, Görg and Strobl (2003) found that MNE affiliates' exit probability in Ireland is higher than that of local companies and concluded that MNEs are vulnerable to shocks. On the other hand, Alfaro and Chen (2012) analyzed the response to the global financial crisis in 2011 and showed that MNE affiliates are more robust to the shock. In a recent study, Matsuura et al. (2024) use Japanese firm-level trade transaction data and show that MNEs

¹ Hayakawa et al. (2024) focus on the supply chain within the machinery industry and examine the impact of US tariffs on Chinese final goods on imports of parts and components from Japan, South Korea, and Taiwan to China. In contrast, our research uses an indicator of inter-industry linkages to take into account the impact of downstream industries.

² There are a few papers that utilize data from Japan and examine the third country effect. Ito (2022) examines the impact of the U.S.-China trade war on Japan-China trade, finding no increase in Chinese exports of Trump-targeted goods to Japan. However, Japanese industries upstream of affected Chinese industries increased their exports to China, likely because China redirected its exports to non-U.S. markets. Liang and Matsuura (2023) further show that ASEAN affiliates with vertically integrated Chinese siblings increased exports to North America and grew in total sales due to the trade war, while also increasing local procurement. These studies highlight the complex ripple effects of the U.S.-China trade dispute on global trade patterns.

experienced smaller sales declines in response to the COVID-19 pandemic. Still, it is attributable to the fact that they have many export and import partners.³ This study focuses on the trade friction between the United States and China and presents new evidence by exploring the differences between MNE and non-MNE and the heterogeneous effects within MNEs and examining the effects on intra-firm trade with the parent company.

The rest of this paper is organized as follows. The next section explain the data source and presents its overview. And Section 3 provides the empirical framework. The estimation results are reported in Section 4. Section 5 concludes this study.

2. Data and its overview

2.1. Data source

This section describes the firm-level data we used in this study. The first is the Basic Survey of Japanese Business Structure and Activities (hereafter, BSJBSA) administered by the Ministry of Economy, Trade and Industry (METI), Japan. This data covers all firms operating within the target industries with over 50 employees and capital exceeding 30 million yen. The target industries include Mining, Manufacturing, Wholesale and Retail, and some service sectors. It contains sales, costs, debt, assets, profits, employment, exports and imports, outsourcing, and R&D activities. Since the value of exports and imports can be disaggregated at the regional level (e.g. North America, Europe, Asia, China, etc), we can obtain the value of exports and imports to/from China at the firm level. Our sample covers the period from 2016 to 2019, and we construct the balance panel data set for manufacturing firms by excluding entrying and exiting firms.

The second data set is the Basic Survey on Overseas Business Activities (hereafter BSOBA), which is conducted annually by Japan's Ministry of Economy, Trade, and Industry (METI). BSOBA is based on questionnaires distributed to all Japanese firms with affiliates abroad and contains basic information, including the location, sales, procurement, and employment of each offshore affiliate. Sales and exports of each affiliate are disaggregated into (i) sales in the host country (local sales), (ii) sales (exports) to Japan, (iii) sales (exports) to the parent company in Japan, and (iv) sales (exports) by

³ As another example, Sun et al. (2019) utilizes the quarterly survey of Japanese MNE affiliates and investigates the impact of US-China trade war on the performance of Japanese MNE affiliates in China from 1st quarter of 2016 to 3rd quarter of 2018, finding that the trade war negatively impacted MNE affiliates with higher reliance on export to North America. We complement their research by providing a broad-ranging analysis of the impact of US-China trade war on Japanse firms.

region (North America, Europe, Asia, etc).⁴ As affiliate purchases/imports in the BSOBA are broken down in exactly the same categories as sales/exports, respectively, we use each affiliate's imports from the parent in Japan as intrafirm trade. Our data focus on the period from 2016 to 2019 and manufacturing sectors (where both parent and affiliates are classified as manufacturers). We construct the balanced panel data set by excluding entering and exiting firms. BSOBA is also used to identify the companies within the BSJBSA that have invested in China. Since BSJBSA and BSOBA use the same company code, the two data sets can be easily matched.

2.2. Data overview

2.2.1. Firms in Japan

First, we examine Japan's exports to China and US. Figure 1 shows the growth rates of Japan's exports to China and to the U.S. Both increased from 2016 to 2018, but declined from 2018 to 2019, during the period of the US-China trade dispute. The drop in exports to China was particularly large, at -7.6%. Figure 2 shows the growth rate of the value of exports and imports to/from China for the sample firms in BSJBSA. Our data cover manufacturing firms with at least 50 employees, including their direct exports and imports. The figure shows that both imports and exports increased from 2016 to 2018, but declined in 2019, with exports falling 8% and imports 6%.

== Figure 1 and Figure 2 ==

Next, we use firm-level data from BSJBSA and BSOBA to examine the extent to which Japanese firms are involved in trade with China and foreign direct investment (FDI) in China. Table 1 shows the number of firms engaged in imports and exports in 2016. Of the 9,086 firms in our sample, 3,702 are exporters, 3,209 are importers, of which 2614 are exporters to China and 2,035 are importers from China. In other words, 70% (=614/3720) of the exporting firms export products to China, and 63% (=2035/3009) of the importing firms engage in imports from China, implying the majority of firms involved in international trade are doing business with China.

== Table 1 ==

Table 2 shows the number of firms engaged in FDI and trade with China. Of the 9,086 firms in the sample, 1,482 (778+704) are two-way trading firms that export and import to China. This is more than the 1,132 firms (898+234) that export only and 553 (462+91) that import only. On the other hand, there are 1,216 firms with manufacturing affiliates in

⁴ North America in BSOBA is composed of US and Canada and Mexico is not included.

Unfortunately, export and import to/from North America are not disaggregated into the ones to/from US.

China, of which 1,029 (704+91+234) are engaged in either exporting or importing, and 704 are engaged in both exporting and importing. This table suggests that most firms investing in China also trade with China.

== Table 2 ==

Table 3 shows the firm-level shares of exports to China and imports from China in total sales, procurements, exports, and imports as of 2016. The share of exports to and imports from China in total sales and procurements is 1.7% and 3.1%, respectively, but when restricted to exporters and importers, the shares become 4.3% and 5.9%, respectively. As a percentage of total exports and imports, exports to China account for 27.2% and imports from China for 39.3%. Furthermore, when restricted to MNEs with manufacturing affiliates in China, the share of exports to and imports from China account for a higher percentage. For example, MNEs' imports from China account for 56.1% of total imports. As we have seen above, firms engaged in international trade are highly dependent on China, especially for firms investing in China. Table 2 and Table 3 jointly suggest that there is large heterogeneity in the degree of dependence on the Chinese economy among firms in Japan, and China is an important trading partner for firms engaged in export/import and FDI.

== Table 3 ==

2.2.2. Japanese MNE affiliates

Next, we turn to the characteristic of Japanese MNE affiliates in China and examine trends in sales and export/import of Japanese subsidiaries in China. Figure 3 shows the growth rate of sales and the number of employees of the 1,802 Japanese manufacturing affiliates in China in our sample. Similar to Japan's trade with China, both total sales and number of employees increased from 2016 to 2018, but decreased in 2019. The decline in employees is 0.5%, but the decline in sales reaches 7.2%.

== Figure 3 ==

Table 4 shows Japanese MNE affiliates' export/import status in China. Out of 1,802, there are 1,319 firms engaged in exports to Japan, of which 1,195 are exporting to the parent company. The same pattern is found in imports, with 1,170 firms importing from Japan, of which 1,104 are engaged in procurement from the parent company. Furthermore, looking at imports and exports in total sales and procurement, exports to/from Japan account for 28.2% and 20.5%, respectively, of which 25.1% and 17.8% are transactions with the parent company, indicating that most transactions with Japan in terms of value are with the parent company. In contrast, the presence of exports to North America is small. The number of MNE affiliates engaged in export and import to/from North America is 296 and 114, respectively. The ratio of exports to and imports from North

America is 7.7% of total exports and 5.3% of total imports, and when looking at the ratio in sales and procurement, they are 1.2% and 0.3% respectively, which is quite small.

== Table 4 ==

In sum, the above chart and table show that both firms in Japan and Japanese MNE affiliates in China are actively engaged in export and import. And export and import to/from Japan, sales and employment at Japanese MNE affiliates decreased during the period of the US-China trade dispute, from 2018 to 2019.

3. Analytical framework

3.1. Empirical specification

To examine the impact of US-China trade war on firms in Japan, we follow the specification of Benguria (2023) and estimate the following baseline regression equation;

$$Y_{ist}^{J} = \beta_1 Post_t * Exposure_i^{CHN} + \eta X_{it-1} + \lambda_{st} + \mu_i + \epsilon_{ist}$$
(1)
where Y_{ist}^{J} indicates the performance indicator for firm *i* in sector *s* in year *t*.

*Exposure*ⁱ_i^{CHN} are the measure of exposure of export to China. It is defined as the share of exports to China in total sales at the firm level in the initial period, namely 2016. *Post*_t is a dummy variable that indicates whether it is during the US-China trade war (year in 2018 or 2019). X_{it-1} is the variables for firm characteristics and we include lagged number of employment. λ_{st} is three digit industry-year fixed effect and μ_i is firm-fixed effect. ϵ_{ist} is an error term. As for the variables of firm performance, we use the logged export to China, logged sales, return on assets (ROA) and logged the number of employees. For export values, we take the natural logarithm after adding 1.⁵

To take into account the industry heterogeneity, we interacted the measure of firmlevel export exposure with the downstream sectors' export exposure to the U.S. in China $(DownEX_s^{US})$ and downstream tariff exposure $(T_{st}^{US} * DownEX^{US})$, which is calculated with an international input-output table and sector-level average U.S. tariff on Chinese products $(T_s^{US} = \ln (1 + \tau_s^{US}))$.

$$Y_{ist}^{J} = \beta_1 Post_t * DownEX_s^{US} * Exposure_i^{CHN} + \eta X_{it-1} + \lambda_{st} + \mu_i + \epsilon_{ist}$$
(2)

(3)

$$Y_{ist}^{J} = \beta_1 T_{st}^{US} * DownEX_s^{US} * Exposure_i^{CHN} + \eta X_{it-1} + \lambda_{st} + \mu_i + \epsilon_{ist}$$

For Japanese MNE affiliates in China, to assess the direct impact of the U.S.-China trade war, we use the export exposure to North America($Exposure_i^{NA}$), which is the share of exports to North America in total sales in 2016. We interacted it with $Post_t$ dummy

⁵ One may wonder why not examine the impact on export to U.S. The decrease in exports from

China to the US may increase export opportunities from Japan to US. However, according to Figure 1, the rate of change in Japan's exports to the US in 2019 is negative, and previous studies have also shown that exports from Japan to US have not increased. Therefore, this study focuses on the impact of the US-China trade dispute on Japanese firms through their supply chains with China.

or the U.S. tariff on Chinese products, T_{st}^{US} .

 $Y_{ist}^{A} = \beta Post_{t} * Exposure_{i}^{NA} + \eta X_{it-1} + \lambda_{st} + \mu_{i} + \epsilon_{ist}$ $\tag{4}$

$$\chi_{ist}^{A} = \beta T_{st}^{US} * Exposure_{i}^{NA} + \eta X_{it-1} + \lambda_{st} + \mu_{i} + \epsilon_{ist}$$
(5)

where Y_{ist}^{A} is the measure of the performance indicator for MNE affiliates.

MNE affiliates in China may be indirectly affected by the decline in sales of local companies due to the US-China trade dispute through the domestic supply chain. To examine such an indirect impact, we use the exposure to domestic sales (*Exposure*_i^L) and downstream sectors' export exposure to the U.S. (*DownEX*_s^{CHNUS} and $T_s^{US} * DownEX^{US}$).

$$Y_{ist}^{A} = \beta Down E X_{s}^{US} * Exposure_{i}^{L} + \eta X_{it-1} + \lambda_{st} + \mu_{i} + \epsilon_{ist}$$
(6)

$$Y_{ist}^{A} = \beta T_{st}^{US} * DownEX^{US} * Exposure_{i}^{L} + \eta X_{it-1} + \lambda_{st} + \mu_{i} + \epsilon_{ist}$$
(7)

Variables for MNE affiliates' performance include logged sales, profit margin (sales profit ratio), logged number of employees, and export and import by region. We take the natural logarithm after adding 1 for export and import values.

3.2. Variable construction

We follow Benguria (2023) for the sector-level average U.S. tariffs on Chinese products. To obtain tariff data, we use Li (2018) 's dataset on trade war tariffs and the World Trade Organization Tariff Download Facility. We use HS6-level tariffs and calculate the industry-level tariff, τ_{it}^{US} as follows;

$$\tau_{st}^{US} = \sum\nolimits_{p \in s} \eta_p \, \tau_{pt}^{US}$$

where $\eta_p = \frac{v_p}{\sum_{p \in s} v_p}$ is a share of import value from China to the U.S. for product *p* at HS6-level in the initial period, namely 2016. τ_{pt}^{US} is the product-level tariff imposed by the U.S., which is the sum of MFN tariffs and additional trade war tariffs.

The downstream export exposure at the industry-level are constructed with the Wold Input-Output Table Database (WIOD 2016) provided by Groningen University, as in the following eqaution.

$$DownEX_{s}^{US} = \sum_{k \text{ if } k \neq s} \sigma_{sk} EX^{US} ratio_{k}$$

where σ_{sk} is the proportion of Chinese domestic supply from sector *s* to sector *k* and $EX^{US} ratio_s$ is the ratio of the value of export to U.S. in total output of *s* in China. We use the information as of 2014, the latest year of WIOD2016. We also construct The downstream trade war tariff exposures as follows.

$$T_{st}^{US} * DownEX^{US} = \ln(1 + \tau_{st}^{US}) * \sum_{k \text{ if } k \neq s} \sigma_{sk} EX^{US} \text{ ratio}_k$$

Basic statistics and correlation matrix of variables used in this paper are presented in Appendix Tables A1 and A2.

4. Estimation Results

4.1. Impact on firms in Japan

Table 5 presents the estimation results of equations from (1) through (3). It shows that when the initial export exposure to China and the U.S. export ratio in downstream Chinese industries is high, Japanese firms' exports to China decrease. Based on the results in Column (2), where export exposure of the downstream sector in China is taken into account, we calculate the magnitude of the impact of the trade war on export to China for firms exporting to China in the initial period, namely 2016. For these firms, the mean values of $DownEX_s^{US}$ and $Ex_Exposure_i^{CHN}$ are 0.028 and 6, respectively. Given that the coefficient is -0.44, the decreases in exports to China is approximately 7.5%. As seen in Table 2, 29% (2,614/9,086) of the firms in this dataset are engaged in exports to China, suggesting a non-negiligible negative impact on Japanese manufacturing firms. We use various other outcome variables; the results are presented in Panel (b) of Table 5. There is also a significant negative impact in terms of sales and employment. However, when calculating the magnitude of these effects, the impact appears limited—for instance, in the case of total sales, it is 0.8% (0.028*6*-0.048) for firms that engaged in exports to China in 2016.

To examine the characteristics of MNEs, we introduce the cross terms with the number of investing countires in Table 6. Column (1) shows the estimation results, introducing a dummy variable for firms that invest only in China (China only), while columns (2) and (3) introduce dummies for firms that invest in more than one country, i.e., in China and in countries other than China. The coefficient on the cross term is positive and it becomes larger as the number of investing countries increases. Furthermore, it is statistically significant in column (3), although at the 10% level of significance. This result suggests that MNEs are more flexible in responding to shocks, even for the same export exposure to China.

== Table 5 and Table 6 ==

4.2. Impact on Japanese MNE affiliates in China

Next, we examine the impact on the performance indicators for Japanese MNE affiliates in China. In Table 7, we examine the impact on exports to North America by estimating Equations (4) and (5). In colum (1) and (2), it is found that export to North America significantly decreased among firms with a higher ratio of exports to North

America. However, calculating the magnitude of the impact based on Column (1) focusing on firms engaged in export to North America in 2016, since the average ratio of exports to North American in total sales is around 7.67%, the decline in exports is approximately 34%.

== Table 7 ==

From column (3) to (12) of Table 7, we examine the impact on other outcome variables, including total sales, profit margins, employment, and import from Japan. We found while the coefficients for total sales and profit margin have negative but insignificant, imports from Japan and from the parent companies in Japan have negative and significant coefficients. However, the magunitude of the impact is not as large. Given that the coefficient for imports from Japan is -0.012, the decline in imports was 9% for firms engaged in North American exports at the initial period.

Does this effect vary by MNE attributes? We introduce the cross term with a dummy for majority-owned subsidiaries (*MJ*) and one for firms investing in China and two or more countries other than China (*Country3*) in Table 8. When including a dummy for majority-owned subsidiaries, while the trade war variable itself become insignificant, the coefficient of the cross term is negative and significant, indicating that the negative impact on the export North America mainly comes from majority-owned subsidiaries. The result may be that minority-owned subsidiaries are more likely to find alternative sales channels thanks to local partners. For the cross term with *Country3*, the coefficient is positive but insignificant.

== Table 8 ==

To summarize the above, the direct effect of the US-China trade war on Japanese affiliates in China, in terms of the impact on exports to North America, is negative, significant, and of a large magnitude. However, the impact on other corporate performance indicators is small because the share of exports to North America is not that large. In addition, since the share of Japanese MNE affiliates exporting to North America is only 16% (296/1878), we can conclude that the direct impact is not large.⁶

Next, in Table 9, we estimate Equations (6) and (7) to examine the impact on local sales. In column (1) and (2), the coefficients for Trade war variables are negative in Table 9 and it imply when the initial local sales ratio and the downstream sectors' U.S. export ratio are high, local sales tend to decrease. We calculate the magnitude of the

⁶ In fact, exports to North America by Japanese MNEs in China have been on a long-term downward trend; according to data compiled by BSOBA, exports to North America accounted for about 5.1% of total sales of Japanese MNEs in China in 2000 but had fallen to 0.8% in 2017, indicating a shift toward a stronger local market orientation This indicates a shift toward a stronger local market orientation.

impact based on Column (1). With a mean value of $DownEX_s^{US} * Exposure_i^L$ being 1.404 and the coefficient -0.202, the decrease in local sales is -28%.

MNEs may have easier access to foreign markets than local firms, so when local demand decreases, they may shift their sales to foreign markets. Column (3) and (4) of Table 9 shows the estimation results using export value as alternative outcome variables. The coefficient is positive and significant. And its size is almost the same as in column (1) or (2), so we can interpret this as a decrease in local sales being diverted to exports.

We also examine whether the impact varies across different destinations of exports from column (5) through (10) of Table 9 and find that exports to Japan and other Asian countries are increasing. These results suggest that MNEs that invest in multiple countries are more flexible in responding to demand shocks by shifting their sales channels. From column (11) through (20) of Table 9, we use other outcome variables; sales, and profit-margin. The coefficients is positive and significant but the size of coefficient is small. Finally, we checked whether exports and imports to/from the parent company and imports from Japan have increased or decreased due to the US-China trade war. While exports to the parent company increased as with other export measures, the coefficients of import from Japan and import from the parent company are insignificant. The latter result suggests that the decrease in local sales was offset by an increase in exports, and that there was no impact on procurement from Japan.

==Table 9==

We also check the heterogeneity of the impact with respect to firms' or affiliates' characteristics in Table 10. As in Table 6 and 8, we introduce the cross term of a dummy variable for majority-owned subsidiary and one for firms investing in China and two or more countries other than China. As in Table 8, the coefficient of the cross term with *Country3* is insignificant and there seems no systematic effect related to status of majority-owned subsidiary or the size of MNEs.

==Table 10==

4.3. Robustness check and additional estimations

Finally, we conducted two robustness checks and two additional exercises. First, regarding the impact of the US-China trade war on exports by firms in Japan and Japanese MNE affiliates in China, the treatment group consists of companies that were exporting to China or North America, and the control group includes all other firms. However, non-exporters tend to be small and have low productivity, so firms that sell only in the local market may not be an appropriate control group. Therefore, in Table

11, we limited the analysis to those firms exporting in 2016 and estimated Equations (2) and (4). Overall, there are no significant differences in the size of the coefficients compared to the results in Tables 5 and 7.

Second, for the analysis of Japanese MNE affiliates in China, we use the alternative definition of the control group. In the current estimation, all Japanese MNE affiliates may be subjective to the increase in U.S. tariffs. Therefore, we also conducted a robustness check by including Japanese MNE affiliates in ASEAN and other East Asian countries as well as China in the control group⁷. The results shown in Table 12 indicate no changes in the main results.

Third, we examine the exit rate of Japanese MNE affiliates in China. Since this study uses a balanced panel data set, it is impossible to examine whether the U.S.-China trade dispute increased exits of MNE affiliates or not. Unfortunately, BSOBA is not able to identify whether the firms that stopped responding to the survey withdrew or not. Therefore, we use Toyo Keizai's Oversea Company Data as alternative data. This data is based on a survey of Japanese MNE affiliates and contains the location, industry, year of establishment, sales, and number of employees. Besides, this data set also provides a list of exiting MNE affiliates, allowing us to distinguish between mere suspension of responses to the survey and withdrawal from the market. Since there are many missing values for sales and profits, this paper examines the withdrawal rate of Japanese MNE affiliates by region. In Table 13, we use this data to calculate the rate of withdrawal of Japanese MNE affiliates in the manufacturing industry in China, ASEAN, and other East Asian countries. This result suggests that exits of Japanese MNE affiliates in China have not increased during the US-China trade dispute.

Lastly, we checked the consistency with previous studies. Our result seems to contradict the results of Hayakawa et al. (2023), who used product-level trade data of the machinery manufacturing industry and found that trade between Japan and China is not affected by the trade dispute between the U.S. and China. To examine this point, we calculated the share of exports to China in 2016 by the number of countries where MNEs invest (Table 14). This table shows that the share of non-MNEs in exports to China is only around 25%, while the share of MNEs that invest in three or more countries reaches 70%. As we can see in Panel (b) of Table 6, when we restrict the analysis to MNEs, the coefficient of exposure to China becomes smaller, and in particular, the coefficient becomes non-significant for firms that invest in three or more countries, including China. In other words, 70% of firms in Japan were not affected by

⁷ Control group is consists of Japanese MNE affiliates in 10 ASENA member countries, South Korea and Taiwan.

the US-China trade friction, so the impact was not significant at the aggregate level. This result is consistent with the results of Hayakawa et al. (2023).

5. Concluding remarks

This study examines how external shocks spread internationally to firms in third countries through Global Value Chians, focusing on the impact of the US-China trade war on Japanese firms. We use two firm-level data sets; One is Japanese firm-level data, and the other is the survey of Japanese MNE affiliates. Specifically, we examine (1) the impact of the US-China trade war on exports to China for firms in Japan and (2) the impact of exports, local sales, and procurement for Japanese MNE affiliates in China.

We found that Japanese firms highly dependent on exports to China experienced a significant decrease in exports—around 7.6% on average—due to the U.S.-China trade dispute. However, the impact for MNEs was smaller, especially for those investing in multiple countries, where the negative effects on exports to China were minimal. As for the performance of Japanaese MNE affiliates in China, exports to the U.S. saw a sharp 34% drop, but the impact was limited because only a small number of MNE affiliates in China are engaged in U.S. exports. Additionally, local sales of Japanese MNE affiliates in China fell by 28%, although these firms compensated by increasing exports to Japan and other Asian countries. A statistically significant reduction in procurement from parent companies in Japan was observed due to the decline in exports to North America, but this effect was small. Overall, the impact of the trade dispute varied widely, with non-MNEs and firms reliant on North American exports most affected, while MNEs, especially those with a broader global presence, demonstrated resilience and flexible in mitigating the negative effects of the trade war.

Two issues is to be considered in the future. First, although this study examines changes in sales destinations in response to the US-China trade war, our only available data is export by region. It is difficult to consider the differences in products or destination countries. Using firm-level trade transaction data that has become available in recent years, we should explore the background using more detailed data. Second, it is necessary to clarify the source of MNEs' robustness to external shocks. With more detailed data sets, we should investigate whether it is attributable to the high productivity of MNEs or their diverse range of export destinations and procurement sources.

References

Alfaro, L., and Chor, D., 2023, Global Supply Chains: The Looming "Great Reallocation", NBER Working Paper, No.31661.

- Alfaro, L., & Chen, M. X. (2012). Surviving the global financial crisis: Foreign ownership and establishment performance. American Economic Journal: Economic Policy, 4(3), 30-55.
- Benguria, F. (2022). The global impact of the us-china trade war: firm-level evidence. Review of World Economics, pages 1–25.
- Cavallo, A., Gopinath, G., Neiman, B., & Tang, J. (2021). Tariff pass-through at the border and at the store: Evidence from U.S. trade policy. American Economic Review: Insights, 3(1), 19-34.
- Ding, H., Koedijk, K. G., Qi, T., & Shen, Y. (2022). U.S.-China trade war and corporate reallocation: Evidence from Chinese listed companiesThe World Economy, 45(12), 3907-39321.
- Egger, P. H., & Zhu, J. (2020). The U.S.–China' trade war': An event study of stock-market responses. Economic Policy, 35(103), 519–559.
- Fajgelbaum, P. D., Goldberg, P. K., Kennedy, P. J., & Khandelwal, A. K. (2020). The return to protectionism. Quarterly Journal of Economics, 135(1), 1–55.
- Flaaen, A., Hortaçsu, A., & Tintelnot, F. (2020). The production relocation and price effects of U.S. trade policy: The case of washing machines. American Economic Review, 110(7), 2103–2127.
- Freund, C., Matto, A., Mulabdic, A., and Ruta, M., 2024, Is US trade policy reshaping global supply chains? Journal of International Economics, 152, 104011.
- Görg, H., & Strobl, E. (2003). Footloose multinationals? Manchester School, 71(1), 1-19.
- Handley, K., Kamal, F., & Monarch, R. (2025). Rising import tariffs, falling export growth: When modern supply chains meet old-style protectionism. American Economic Journal: Applied Economics, 17 (1): 208–38.
- Hayakawa, K., Pyun, J-H., Yamashita, N., & Yang, C-H. (2023). Ripple effects in regional value chains: Evidence from an episode of the US-China trade war. The World Economy, 47(3), 880-897
- Ito, T. (2022). The effects of Trump's trade war with China on Japan's trade. RIETI Discussion Paper, 22-E-019.
- Lee, H., & Nguyen, T. (2022). The impact of the US-China trade war on domestic and multinational companies in China. The World Economy, 45(12), 3933-39521.
- Liang, L., & Matsuura, T., 2023, Adjustments of Multinational's Production Activities in Response to the US-Sino Trade War: Evidence from Japanese affiliate-level data, IER Discussion Paper, A745.
- Matsuura, T., Ito, K., & Jinji, N. (2024). Diversification in trade and foreign investment and resilience to the COVID-19 shock: Firm-level evidence using Japanese

customs data. TCER Working Papers, E-174.

Sun, C., Tao, Z., Yuan, H., & Zhang, H. (2019). The Impact of the U.S.-China Trade War on Japanese Multinational Corporations, RIETI Discussion Paper, 19-E-050.



Figure 1 The growth rate of Japan's Export to China and U.S.

Source: Trade Statistics of Japan (Ministry of Finance)



Figure 2 The growth rate of Export and Import to/from China by manufacturing firms

Source: Author's calculation based on BSJBSA



Figure 3 The Growth rate of Sales and the number of employment of Japanese MNE subsidiaries in China

Source: Author's calculation based on BSOBA

Total Number of firms	9,086	100.0%
Number of Exporters	3,720	40.9%
Number of exporting firms to China	2,614	28.8%
Number of Importers	3,209	35.3%
Number of importer from China	2,035	22.4%

Table 1 Number of exporters and importers among firms in Japan in 2016

Source: Author's calculation based on BSJBSA

Table 2 Number of firms that engaged in export, import, and FDI to China in 2016

	No investment in China			F	Firms investing in China		
Export	Improt from China				Improt fro	om China	
to China	No	Yes	Subtotal	No	Yes	Subtotal	Total
No	5,732	462	6,194	187	91	278	6,472
Yes	898	778	1,676	234	704	938	2,614
Total	6,630	1,240	7,870	421	795	1,216	9,086

Source: Author's calculation based on BSJBSA and BSOBA

	All firms	MNE
Share of Export to China in total sales	1.7%	5.0%
Share of Import from China in total procurement	3.1%	10.4%
Share of Export to China in total sales (Exporters)	4.3%	6.0%
Share of Import from China in total procurement (Importers)	5.9%	10.8%
Share of Export to China in total exports	27.2%	36.4%
Share of Import from China in total imports	39.3%	56.1%

Table 3 Firm-level Share of Export and Import to/from China in 2016

Source: Author's calculation based on BSJBSA

	Number of firms Share in sales or		Share in total
	by trading status	procurement	export or import
Total of firms	1,802		
Export to North America	296	1.2%	7.7%
Export to Japan	1,319	28.2%	40.0%
Export to Japanese parent company	1,195	25.1%	39.3%
Import from North America	114	0.3%	5.3%
Import from Japan	1,170	20.5%	33.0%
Import from Japanese parent company	1,104	17.8%	30.4%

Table 4 Number of Japanese MNE affiliates in China and their share of import and export by destination in 2016

Source: Author's calculation based on BSOBA

Panel (a) Impact on Japanese IIIII s ex	port to China	a		_
	(1)	(2)	(3)	
$Post_t * Exposure_i^{CNH}$	-0.020***			-
	(0.002)			
$Post_t * DownEX_s^{US} * Exposure_i^{CNH}$		-0.440***		
		(0.063)		
$T_s^{US} * DownEX_s^{US} * Exposure_i^{CHN}$			-3.806***	
			(0.578)	
$\ln (Emp_{t-1})$	0.280***	0.271***	0.273***	
	(0.099)	(0.098)	(0.098)	
Observations	35,974	35,974	35,974	
R-squared	0.948	0.947	0.947	_
Panel (b) Impact on other outcome van	riables			
	(1)	(2)	(3)	(4)
	ln(Sa	ln(Sales) RO		
$Post_t * DownEX_s^{US} * Exposure_i^{CNH}$	-0.048***		-0.003	
	(0.015)		(0.003)	
$T_s^{US} * DownEX_s^{US} * Exposure_i^{CHN}$		-0.405***		-0.027
		(0.130)		(0.033)
$\ln (Emp_{t-1})$	0.371***	0.371***	-0.021***	-0.021***
	(0.033)	(0.033)	(0.004)	(0.004)
Observations	35,974	35,974	35,965	35,965
R-squared	0.994	0.994	0.722	0.722

performance Panel (a) Impact on Japanese firm's export to China

Table 5 Estimation results: Impact of U.S.-China trade war on Japanese firm's

	(1)	(2)	(3)
$T_s^{US} * DownEX_s^{US} * Exposure_i^{CHN}$	-3.911***	-4.301***	-4.292***
	(0.632)	(0.694)	(0.661)
$T_s^{US} * DownEX_s^{US} * Exposure_i^{CHN}$	0.947		
× only China	(1.274)		
$T_s^{US} * DownEX_s^{US} * Exposure_i^{CHN}$		1.480	
imes China plus one		(1.125)	
$T_s^{US} * DownEX_s^{US} * Exposure_i^{CHN}$			2.011*
imes China plus two or more			(1.131)
$\ln (Emp_{t-1})$	0.272***	0.275***	0.277***
	(0.098)	(0.099)	(0.100)
Observations	35,974	35,974	35,974
R-squared	0.947	0.947	0.947

Table 6 Heterogeity of the impact on exports to China

	(1)	(2)	(3)	(4)	(5)	(6)
	ln(Expor	rt to NA)	ln(Sales)		lnI(Loca	al Sales)
$Post_t * Exposure_i^{NA}$	-0.045***		-0.002		0.002	
	(0.012)		(0.001)		(0.004)	
$T_{st}^{US} * Exposure_i^{NA}$		-0.266***		-0.012		-0.000
		(0.084)		(0.009)		(0.024)
Observations	7,317	7,317	7,317	7,317	7,317	7,317
R-squared	0.863	0.862	0.981	0.981	0.941	0.941
	(7)	(8)	(9)	(10)	(11)	(12)
	Profit]	Margin	ln(Import from Japan)		ln(Import from parent	
$Post_t * Exposure_i^{NA}$	-0.001		-0.012**		-0.013**	
	(0.001)		(0.006)		(0.006)	
$T_{st}^{US} * Exposure_i^{NA}$		-0.006		-0.044		-0.054
		(0.004)		(0.036)		(0.038)
Observations	7,197	7,197	7,317	7,317	7,317	7,317
R-squared	0.546	0.546	0.899	0.898	0.894	0.894

Table 7 Impact of U.S.-China trade war on the performance of Japanese MNE affiliates in China

	(1)	(2)
$T_{st}^{US} * Exposure_i^{NA}$	0.041	-0.375**
	(0.163)	(0.152)
$T_{st}^{US} * MJ_i$	0.420	
	(0.278)	
$T_{st}^{US} * Exposure_i^{NA} * MJ_i$	-0.331*	
	(0.187)	
$T_{st}^{US} * Country3_i$		0.263
		(0.282)
$T_{st}^{US} * Exposure_i^{NA} * Country3_i$		0.187
		(0.166)
Observations	7,317	7,317
R-squared	0.862	0.862

Table 8 Impact of U.S.-China trade war on the performance of Japanese MNE affiliates in China

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	ln(loca	l sales)	ln(Ex	kport)	ln(Export to Japan)		ln(Expo	ort Asia)	ln(Export Europe)	
$Post_t * DownEX_s^{US}$	-0.202***		0.239***		0.148***		0.094**		0.005	
$* Exposure_i^L$	(0.032)		(0.037)		(0.033)		(0.037)		(0.023)	
$T_{st}^{US} * DownEX_s^{US}$		-1.867***		2.143***		1.328***		0.964**		0.071
$* Exposure_i^L$		(0.310)		(0.353)		(0.312)		(0.388)		(0.231)
Observations	7,317	7,317	7,315	7,315	7,317	7,317	7,317	7,317	7,317	7,317
R-squared	0.942	0.942	0.926	0.926	0.931	0.930	0.893	0.893	0.872	0.872
	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
	ln(S	ales)	Profit margin		ln(Sales to parent)		ln(Import from Japan)		ln(Import from parent)	
$Post_t * DownEX_s^{US}$	0.027***		0.010		0.150***		0.034		0.015	
$* Exposure_i^L$	(0.009)		(0.006)		(0.032)		(0.032)		(0.035)	
$T_{st}^{US} * DownEX_s^{US}$		0.246***		0.100		1.248***		0.277		0.103
$* Exposure_i^L$		(0.083)		(0.064)		(0.310)		(0.306)		(0.347)
Observations	7,317	7,317	7,197	7,197	7,317	7,317	7,317	7,317	7,317	7,317
R-squared	0.981	0.981	0.547	0.547	0.927	0.926	0.898	0.898	0.894	0.894

Table 9 Impact of U.S.-China trade war on the local sales of Japanese MNE affiliates in China

	(1)	(2)	(3)	(4)
	ln(Local sales)	ln(Export)	ln(Local sales)	ln(Export)
$T_{st}^{US} * DownEX_s^{US} * Exposure_i^L$	-1.654***	1.452**	-1.841***	2.150***
	(0.366)	(0.726)	(0.286)	(0.379)
$T_{st}^{US} * DownEX_s^{US} * Exposure_i^L * MJ_i$	-0.233	0.759		
	(0.282)	(0.741)		
$T_{st}^{US} * DownEX_s^{US} * Exposure_i^L * Country3_i$			-0.042	-0.012
			(0.263)	(0.433)
Observations	7,317	7,315	7,317	7,315
R-squared	0.942	0.926	0.942	0.926

Table 10 Heterogeneity of Impact of U.S.-China trade war on the local sales of Japanese MNE affiliates in China

Table 11 Robustness checks: Only exporters

Panel (a) Impact on export to China by firms in Japan

	(1)	(2)	(3)	(4)	(5)	(6)
	ln(Export	ln(Export to China)		ln(Sales)		<i>OA</i>
$Post_t * Exposure_i^{NA}$	-0.423***		-0.050***		-0.004	
	(0.068)		(0.016)		(0.004)	
$T_{st}^{US} * DownEX_s^{US} * Exposure_i^{NA}$		-3.471***		-0.388***		-0.032
		(0.600)		(0.139)		(0.038)
Observations	14,686	14,686	14,686	14,686	14,684	14,684
R-squared	0.922	0.922	0.995	0.995	0.758	0.758
Panel (b) Impact on Japanese MNE at	filiates in Chir	na				
	(9)	(10)	(11)	(12)	(13)	(14)
	ln(Expo	rt to NA)	ln(Sales)		Profit margin	
$Post_t * Exposure_i^{NA}$	-0.045***		-0.002		-0.001	
	(0.012)		(0.001)		(0.001)	
$T_{st}^{US} * DownEX_s^{US} * Exposure_i^{NA}$		-0.266***		-0.012		-0.006
		(0.084)		(0.009)		(0.004)
Observations	7,317	7,317	7,317	7,317	7,197	7,197
R-squared	0.865	0.863	0.980	0.980	0.716	0.716

	(1)	(2)	(3)	(4)
	ln(Expor	rt to NA)	ln(Loca	al Sales)
$China * Post_t * Exposure_i^{NA}$	-0.045***			
	(0.012)			
China $T_{st}^{US} * Exposure_i^{NA}$		-0.267***		
		(0.087)		
$China * Post_t * Exposure_i^L$			-0.005***	
			(0.001)	
China $T_{st}^{US} * Exposure_i^L$				-0.031***
				(0.006)
Observations	15,183	15,183	15,183	15,183
R-squared	0.897	0.896	0.948	0.948

Table 12 Robustness Check: Including Japanese MNE affiliates in ASEAN and other East Asian countries as comparison group

	-		-	
	2016	2017	2018	2019
South Korea	3.2%	2.7%	2.4%	1.5%
China	4.2%	3.4%	2.5%	1.5%
Taiwan	3.1%	2.6%	1.9%	1.2%
Hong Kong	3.3%	3.2%	2.8%	2.8%
Viet num	0.6%	0.6%	0.6%	0.3%
Thailand	1.6%	1.4%	1.2%	0.8%
Singapore	3.3%	2.8%	2.0%	2.4%
Malaysia	2.6%	2.2%	1.1%	0.9%
Philippines	3.6%	2.2%	1.8%	0.7%
Indonesia	2.0%	1.5%	1.2%	0.7%

Table 13 Exit ratio of Japanese MNE affiliates by countries

Source: Authors' calculation based on Japanse Oversea Company Data by Toyokeizai.

Table 14 Value of exports and its share by type of MNEs in total exports to China									
non-MNE	25,257	24.3%							
MNE investing only in China	3,123	3.0%							
MNE investing in China plus one	3,585	3.5%							
MNE investing in China and two or more countries	71,830	69.2%							
Total	103,796								

o Chir Table 14 Val r d ita ah 1. f MIE a in ta1

Source: BSJBSA, Unit: million yen

Panel (a) Firms in Japan										
Variable	Ν	Mean	SD	p10	p90					
ln(Sales)	35974	8.563	1.370	7.079	10.395					
ROA	35965	0.049	0.063	0.000	0.119					
ln(Ex-China+1)	35974	1.560	2.743	0.000	6.261					
T_{st}^{US}	35974	0.140	0.081	0.048	0.256					
$Exposure_i^{CHN}$	35974	1.741	5.914	0.000	4.572					
$DownEX_s^{US}$	35974	0.117	0.072	0.031	0.212					
ln(Emp _{t-1})	35974	5.226	1.006	4.190	6.597					

Appendix Table A1 Basic Statistics

Panel (b) Japanese MNE affiliates in China

Variable	Ν	Mean	SD	p10	p90
ln(Sales)	7317	7.477	1.734	5.308	9.789
Profit-margin	7198	0.043	0.308	-0.059	0.164
ln(Ex-Na)	7317	0.740	1.856	0.000	3.989
ln(Export)	7315	4.791	3.129	0.000	8.400
ln(Ex-asia)	7317	1.934	2.879	0.000	6.601
ln(Ex-Japan)	7317	3.864	3.087	0.000	7.666
ln(Im-Japan)	7317	3.184	3.014	0.000	7.272
In(Im-parent)	7317	2.893	2.938	0.000	6.977
T_{st}^{US}	7317	0.146	0.079	0.051	0.248
$Exposure_i^{NA}$	7317	1.201	5.558	0.000	1.465
$Exposure_i^L$	7317	60.345	38.780	0.000	100.000
DownEX ^{US}	7317	0.023	0.013	0.013	0.040
$ln(Emp_{t-1})$	7317	4.890	1.473	3.045	6.807

Appendix Table A2 Correlation Matrics

Panel (a) Firms in Japan

		[1]	[2]	[3]	[4]	[5]	[6]	[7]
[1]	ln(Sales)	1.000						
[2]	ROA	0.146	1.000					
[3]	ln(Ex-China)	0.478	0.081	1.000				
[4]	T_{st}^{US}	-0.018	-0.013	-0.005	1.000			
[5]	$Exposure_i^{CHN}$	0.168	0.022	0.588	-0.019	1.000		
[6]	$DownEX_s^{US}$	-0.002	-0.029	-0.048	0.641	-0.075	1.000	
[7]	ln(Emp t-1)	0.886	0.065	0.475	-0.026	0.154	-0.017	1.000

Panel (b) Japanese MNE affiliates in China

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
[1]	ln(Sales)	1.000							· · · · · ·				_	
[2]	Profit-margin	0.124	1.000											
[3]	ln(Ex-Na)	0.307	0.025	1.000										
[4]	ln(Export)	0.379	0.055	0.358	1.000									
[5]	ln(Ex-asia)	0.417	0.049	0.376	0.562	1.000								
[6]	ln(Ex-Japan)	0.211	0.037	0.272	0.788	0.173	1.000							
[7]	ln(Im-Japan)	0.359	0.063	0.205	0.220	0.133	0.266	1.000						
[8]	In(Im-parent)	0.309	0.058	0.174	0.182	0.093	0.240	0.895	1.000					
[9]	T_{st}^{US}	0.003	-0.002	0.023	-0.023	-0.003	-0.024	-0.035	-0.038	1.000				
[10]	$Exposure_i^{NA}$	0.039	-0.006	0.493	0.149	0.143	0.105	0.058	0.055	0.026	1.000			
[11]	$Exposure_i^L$	0.076	-0.010	-0.072	-0.611	-0.214	-0.536	0.077	0.088	0.024	-0.136	1.000		
[12]	DownEX _s ^{US}	0.036	0.004	0.050	0.265	0.165	0.241	0.075	0.033	-0.132	-0.007	-0.261	1.000	
[13]	ln(Emp _{t-1})	0.807	0.052	0.318	0.481	0.404	0.336	0.272	0.231	0.010	0.078	-0.102	0.141	1.000