

The 2018 US-China Trade War and Trade Diversion: Evidence from Thai Customs Data*

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Abstract

The 2018 U.S.–China trade war significantly reshaped global trade, yet its impact on third-country exporters remains incompletely understood. Using 2013–2023 transaction-level customs data and exploiting cross-product variations in the magnitude of tariff changes, we find that U.S. tariffs on Chinese products spurred a substantial increase in Thai exports to the U.S., consistent with trade diversion. The effects emerged with a three-to-four-year delay and were most pronounced for capital goods within the machinery, electrical and transportation sectors. Notably, products displacing Chinese goods in the U.S. market tend to be those with existing supply chain links to China. Our firm-level analysis further reveals evidence of both the transshipment of Chinese goods and increased regional supply chain integration with China, the latter evidenced by a surge in Chinese input imports. When controlling for these channels, we still observe positive trade-diversion effects on Thai exports to the U.S., suggesting domestic value-added gains. Conversely, Chinese retaliatory tariffs are shown to have minimal spillover effects. These findings highlight how trade diversion in bystander countries is strongly mediated by regional value chain dependencies, which in turn contributes meaningfully to the domestic activity.

Keywords: Trade War, Trade Diversion, Tariffs, Supply Chains, Transshipment, Thailand, US, China

JEL Classifications: F13, F14

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1 Introduction

As the world's two largest economies imposed retaliatory tariffs on hundreds of billions of dollars in bilateral trade, the resulting escalation reshaped supply chains, altered market access, and created substantial uncertainty for exporters worldwide. Although much of the existing literature has focused on the direct effects of these tariffs on the United States and China ([Amiti et al., 2019](#); [Fajgelbaum et al., 2020](#)), relatively little is known about how third-party countries responded to these shocks. Understanding how firms in third-party countries adjusted to the reconfiguration of global trade flows is essential to assess the broader welfare consequences of trade wars and to inform policy responses in open economies facing similar disruptions.

This paper examines the case of Thailand, a trade-dependent emerging economy in Southeast Asia, with trade-to-GDP ratios of over 100 percent. Thailand offers a valuable lens on third-country effects because of its strong trade ties with both China and the U.S., diversified manufacturing base, and strategic location within ASEAN. Although Thailand was not a direct participant in the trade dispute, the conflict posed both risks and opportunities. On the one hand, Thai exporters could benefit from trade diversion if they could substitute for U.S. or Chinese suppliers in global markets. However, as a supplier of intermediate goods to both countries, Thailand was vulnerable to upstream supply chain disruptions. For instance, if Chinese firms lost access to U.S. markets, their demand for Thai inputs may have declined.

This paper investigates the extent to which Thai exporters benefited from trade diversion resulting from the U.S.–China trade war. Using transaction-level customs data from 2013 to 2023 and exploiting variations in the magnitude of tariff changes across products at the HS 6-digit level, we estimate the impact of U.S. and Chinese tariffs on Thai exports across destination markets. Our paper contributes to the literature on third-country spillovers from trade policy shocks, which mostly emphasizes trade diversion and supply chain reallocation as a result of the trade war ([Fajgelbaum et al., 2024](#); [Alfaro and Chor, 2023](#)). Along the same line as [Freund et al. \(2024\)](#), we highlight and empirically identify how Thailand's export responses are linked with the greater regional supply chain integration with China as well as the potential transshipment of Chinese goods. The main contribution of this paper lies in the fact that we study both channels within the same empirical setting, enabling us to assess their relative quantitative significance while pinpointing different sectors exposed to these channels. Furthermore, the granularity of our dataset, which includes trade data at the firm level, allows to quantify net benefits on Thai exporters, after accounting for supply chain and transshipment channels. This will shed light on the extent to which the trade diversion actually contributes domestic value-added gains to the economy of the trade war beneficiaries, which remains an underexplored area in the literature. The findings of this paper yield important implications for export-promotion and supply-chain-restructuring policies

The preview of our empirical results is as follows. Applying a difference-in-differences framework, we document evidence consistent with trade diversion towards Thailand. Specifically, Thai exports to the U.S. increase in product categories more exposed to the U.S. tariffs on Chinese

goods, implying that Thai exports substitute for Chinese goods in the U.S. market. The U.S. tariffs also lead to higher Thai exports to ASEAN countries, which potentially reflect greater regional value chain integration. Meanwhile, the China's retaliatory tariffs show limited spillover effects onto Thai exports, with some negative impact on exports to China. Exploring the timing of these effects, we show that Thai exports to the U.S. did not respond immediately to the U.S. tariffs. Instead, the positive effect only appears in the third and fourth years after the tariffs were introduced, consistent with a gradual restructuring of U.S. supply chains. This delayed response suggests that trade diversion gained momentum over time as U.S. importers searched for and established new sourcing relationships.

To better understand which products drive the aggregate and destination-specific export responses to U.S.–China tariff shocks, we examine heterogeneity in the trade-war impact across different product groups. Our results reveal that larger exports to the U.S. in responses to the U.S. tariffs are mainly driven by capital goods in the machinery, electrical and transportation sectors, whereas increased exports to ASEAN are mainly raw material and intermediate inputs in the chemical, plastic and rubber sectors. The sectoral results for Chinese retaliation are more mixed. In addition, Thai products that displace China in the U.S. market tend to be those with existing supply chain link to China, and to a lesser extent, those with comparative advantage in the U.S. market.

Last, given rising Chinese imports that occur alongside Thai export expansion, we then analyze firm-level export and import responses using differential firm exposure to the U.S.-China tariffs. We demonstrate the significant evidence of both the transshipment of Chinese goods to the U.S. and increased supply chain integration with China, the latter evidenced by a surge in Chinese input imports. Such evidence is found in several manufacturing industries including petrochemical, metal, electrical appliances, electronic, machinery and automotive sectors. When controlling for these channels, we still observe the large, positive trade-diversion effects on Thai exports to the U.S.. In addition, the U.S. tariffs on Chinese goods also raise firm employment, with impact being widespread across many sectors. These results suggest that despite administrative rerouting and increased foreign-input intensity, the observed trade diversion still contributes meaningfully to domestic value-added expansion.

This paper mainly contributes to the growing literature on third-country spillovers from trade policy shocks. [Fajgelbaum et al. \(2024\)](#) show that many bystander countries increased exports to the U.S. and to the rest of the world in response to the tariffs. Countries that operate along downward-sloping supplies whose exports substitute U.S. and China, e.g., Vietnam, Thailand, Korea and Mexico, are among the larger beneficiaries of the trade war. Similarly, [Alfaro and Chor \(2023\)](#) and [Alfaro et al. \(2025\)](#) point to a great reallocation of global supply chains, as U.S. sourcing has been reallocated away from China and toward other locations, notably Mexico and Vietnam. In

addition, U.S. imports have become more upstream, which indicates some production reshoring.¹

However, the trade war may not reduce U.S. dependence on supply chain links to China, since imports from China also improve for those countries with larger exports to the U.S. (Alfaro and Chor, 2023; Goldberg and Reed, 2023; Freund et al., 2024; Alfaro et al., 2025; Gopinath et al., 2025). This potentially reflects transshipment or increased supply chain integration with China. Among papers that emphasize this issue, Iyoha et al. (2024) show evidence of trade rerouting in the context of Vietnam, driven by new establishments and Chinese-owned enterprises. Other papers highlight supply chain relocation. Hayakawa (2024), for example, identifies input-output linkages for the general and electric machinery industries and shows that, among Southeast Asian nations, Thailand increased imports of upstream products from China to produce the downstream. For Mexico, Utar et al. (2025) show that GVC participant firms, particularly foreign MNEs, increased exports to the U.S. as well as imports from the U.S. and Asia, while Wang and Hannan (2023) find a positive impact on input demand due to higher tariffs imposed on Chinese downstream industries. Beason et al. (2025) and Wu (2025) similarly attribute Vietnam's export gains largely to increased foreign investment in manufacturing from China. Meanwhile, Elhan-Kayalar et al. (2024) show that foreign affiliates of East Asian and US multinationals played a central role in reshaping Vietnam's trade flows after the US–China trade dispute, with affected industries importing more from East Asia, including China. Our paper mainly contributes to this country-specific research by examining how the U.S.–China trade war has reshaped global trade flows and supply chains in the context of Thailand, which has for long been a strategic partner of China for both trade and production network. Our firm-level assessments help identify both the role of transshipment of Chinese products and supply chain integration with China, and eventually measure country gains in terms of domestic value-added.

Last, this paper relates to the broader literature that studies the impact of 2018–19 US-China trade war on the U.S. and Chinese economies. Fajgelbaum et al. (2020), for example, document a significant decline in U.S. imports. Several studies report that U.S. importers, producers and consumers face a large passthrough of tariff rates onto product prices (Amiti et al., 2020; Cavallo et al., 2021; Fajgelbaum et al., 2020). Handley et al. (2020) further show that U.S. exports also decline because U.S. firms faced higher import costs, while Huang et al. (2023) observe the decline in firm value for the U.S. firms with large supply chain linkages with China. On the impact on Chinese exporters, Jiao et al. (2024) find that their exports to the EU moderately increased to compensate for the decline in U.S. sales, but exports to other markets are barely affected.²

The rest of the paper proceeds as follows. Section 2 provides an overview of the 2018 U.S.–China trade war. Section 3 describes the data sources and the construction of the main variables. Section 4

¹Flaen et al. (2020) show that antidumping duties imposed by the U.S. against South Korea and China, that occurred in a few years leading up to the trade war were accompanied by production relocation to other export platform countries. Meanwhile, based on the empirical framework of Fajgelbaum et al. (2024), Khandelwal (2023) shows that India fails to reap any export opportunities from the trade war.

²Fajgelbaum and Khandelwal (2022) and Caliendo and Parro (2022) both offer a survey of research on the economic impacts of the trade war.

presents estimation results, including average treatment effects and dynamic responses over time. Section 5 investigates heterogeneous effects across different product groups. Section 6 examines the possibility of transshipment of imports from China as well as potential shifts in the sourcing patterns toward Chinese inputs. Finally, Section 7 concludes.

2 Background: The 2018 U.S.–China Trade War

The U.S.–China trade war began in 2018 as a series of escalating tariff actions between the world’s two largest economies. The first tariff increases began in February 2018, when the U.S. imposed safeguard tariffs on 8 billion dollar of solar panel and washing machine imports. This was followed by additional tariffs in March 2018 that targeted aluminum, iron and steel products, amounting around 48 billion dollar of imports. These tariffs targeted many countries, not only China. China and other trade partners, such as Canada, Mexico and the EU, imposed retaliatory tariffs in response.

Subsequent rounds of tariffs by the U.S. mainly targeted China. Citing unfair trade practices and intellectual property violations by China, under the Trade Act of 1974, Section 301 investigations, the U.S. imposed five rounds of tariff hikes. The first wave of tariffs was imposed in July 2018, targeting 34 billion dollar of Chinese imports at a 25-percent rate. In August 2018, another 16 billion dollar worth of commodities faced tariff rate increases of 25 percent. China responded immediately with retaliatory tariffs of an equivalent value on U.S. goods, primarily agricultural products. By September 2018, the U.S. imposed tariffs on an additional 200 billion dollar of Chinese goods at a 10-percent rate, and in response, China levied duties on 60 billion dollar of U.S. imports.

The trade war intensified in 2019, due to the U.S. announcement of 15-percent tariffs on additional 100 billion dollar worth of Chinese products, which broadens the coverage of products subjected to tariffs to nearly all sectors, including many consumer goods. In addition, the products targeted in the third-wave list also faced higher tariffs at 25 percent. By the end of 2019, over 360 billion dollar of Chinese exports to the U.S. and around 110 billion dollar of U.S. exports to China were subject to elevated tariff rates, which account for around two-thirds of total U.S. imports from China and over 50 percent of total China imports from the U.S., respectively. As shown in [Bown \(2021\)](#), during these periods, the weighted average tariff rates facing Chinese products exported to the U.S. and the U.S. products exported to China have been raised from 3.1 and 8.0 percent to around 20 percent, respectively.³

In January 2020, the two countries signed the “Phase One” agreement, which paused further escalation and led to modest reductions in tariff rates on some products. However, most tariffs remained in place. The onset of the COVID-19 pandemic in early 2020 diverted global attention

³The waves of U.S. and Chinese tariffs targeted different mixes of products. More than 80 percent of U.S. imports from China of intermediate inputs faced new tariffs of 25 percent. But, several consumer products, such as clothes, toys and sports equipment faced lower or no tariffs. In contrast, China’s tariff retaliation disproportionately focused on agricultural and seafood products. China avoided imposing tariffs on key inputs such as semiconductors and semiconductor manufacturing equipments, as well as autos ([Bown, 2021](#)).

and disrupted trade volumes, but the underlying tariff regime persisted. Despite changing administrations in the U.S., the core structure of the trade barriers remained largely unchanged until 2024, with limited liberalization.

Overall, the 2018–2020 period featured sustained trade policy uncertainty, prolonged tariff exposure, and significant reconfiguration of global supply chains. For third countries like Thailand, these developments created both risks and opportunities, as firms and consumers in the U.S., China, and elsewhere adjusted sourcing strategies in response to altered tariffs and increased geopolitical tensions.

3 Data

The empirical analysis in this paper mainly relies on comprehensive administrative data from Thailand’s Customs Department, over the period 2013 to 2023. The dataset includes records of both Thai exports and imports at the transaction level. Each observation contains information on trade values, physical quantities, destination or origin country, and product classification based on the Harmonized System (HS) code at the 11-digit level. Given the raw data, we initially exclude gold exports and imports; exclude transactions with values less than 1,500 baht; keep only transactions with reporting units in kilograms or pieces; and, focus only on trade with Thailand’s major trading partners.⁴ All trade values are recorded in both Thai baht and U.S. dollar; in this analysis, we use trade values in baht.

To harmonize the Thai customs data with international trade policy databases and ensure comparability across countries, we aggregate all trade flows to the HS-6 digit level, which represents the international standard for product-level analyses in trade policy research. We further collapse the data to the annual frequency to reduce volatility and zero trade flows, and further clean the data by focusing on products with existing transactions in every year prior to the trade war. We are, as a result, left with around 3,765 products at the HS-6 level.⁵

We construct four mutually exclusive export categories based on export destinations: exports to the U.S., exports to China, exports to ASEAN and exports to the rest of the world (ROW). This categorization enables us to assess various channels of the trade-war impact on Thai exports, especially the trade diversion effects arising from changes in relative market access conditions.

Based on Thai exports in 2022 and 2023, Table A.1 in the Appendix shows some facts regarding the sectoral distribution of Thai exports in overall and to three major export destinations, i.e., the

⁴51 countries in total including Argentina, Australia, Austria, Bangladesh, Belgium, Brazil, Cambodia, Canada, Chile, China, Colombia, Czech Republic, Denmark, Ecuador, Finland, France, Germany, Hong Kong, Hungary, India, Indonesia, Israel, Italy, Japan, Korea, Kuwait, Lao PDR, Malaysia, Mexico, Myanmar, Netherlands, New Zealand, Norway, Pakistan, Peru, Philippines, Poland, Qatar, Russian Federation, Saudi Arabia, Singapore, South Africa, Spain, Sri Lanka, Sweden, Switzerland, Turkey, UAE, United Kingdom, United States, Vietnam.

⁵Summary statistics of the variables used in product-level regression are reported in Table A.3 in the Appendix.

U.S., China and ASEAN. Over 40 percent of Thai exports belong to ‘machinery’ and ‘electrical equipment’ sectors, where the U.S. and ASEAN are their major export destinations. In particular, they account for around 60 percent of total Thai exports in the U.S. market. Thailand also exports a great deal of ‘agricultural’ and ‘plastics & rubbers’ products, mainly to China. Additionally, a large share of goods from the ‘transportation’ sector, including autos and auto parts, are exported to neighboring countries in ASEAN, as confirmed by Table A.2.

Figure A.1 in the Appendix shows trend of Thai exports over time. Exports to all three major export destinations exhibit growth during the sample periods. This comes despite the trade war in 2018–19 and the occurrence of COVID-19 pandemic, the latter causing a temporary drop in trade with ASEAN and China. Exports to the U.S., however, show a strong expansion, suggestive of trade diversion, resulting in an increase in the share of U.S. exports from around 10 percent to almost 20 percent of total Thai exports. On the flipped side of the coin, imports from China materially rise, especially after 2021. This may indicate the flooding of Chinese products into the Thai economy or the potential transshipment of Chinese goods to the U.S.. We will examine this issue in Section 6.

To measure exposure of Thai exports to trade war shocks, we merge the Thai customs data with the dataset provided by Fajgelbaum et al. (2024), which systematically records the universe of retaliatory tariff actions taken by the U.S. and China between 2018 and 2019, including applied ad valorem rates at the HS-10 level. For each of the HS-6 products, we compute two measures of trade-war exposure: one for U.S. tariffs on Chinese imports ($\Delta\tau_i^{US\rightarrow CN}$) and the other for China tariffs on U.S. imports ($\Delta\tau_i^{CN\rightarrow US}$). They are computed as weighted-average changes in the HS-10 digit tariff rates at the end of 2019 relative to the pre-war period:

$$\Delta\tau_i^{US\rightarrow CN} = \sum_{j \in i} w_{j,1317}^{US\leftarrow CN} \Delta\tau_j^{US\rightarrow CN}, \quad (1)$$

$$\Delta\tau_i^{CN\rightarrow US} = \sum_{j \in i} w_{j,1317}^{CN\leftarrow US} \Delta\tau_j^{CN\rightarrow US}, \quad (2)$$

where $w_{j,1317}^{US\leftarrow CN}$ is the share of U.S. imports of Chinese HS-10 products j within the corresponding HS-6 product category i during 2013-2017, and $w_{j,1317}^{CN\leftarrow US}$ denotes the share of China’s imports of U.S. HS-10 products during the same period. We obtain these weights from Fajgelbaum et al. (2024) and Bown (2021), respectively. These two measures of trade war exposure capture tariff shocks that may create reallocation opportunities for Thai exporters. As a robustness check, we also compute the unweighted version of HS-6 tariff rate changes, i.e. based on simple averaging.

Figure 1 shows, for each sector, the variations in the weighted-average U.S. tariffs imposed on China, and weighted-average China tariffs imposed on the U.S. at the HS-6 level. Panel (a) suggests that the majority of Chinese HS-6 products face tariff exposure of 25 percent due to the U.S. tariffs, which is also the maximum tariff increases in almost every sector. The relatively lower tariff adjustments can be observed in the ‘agricultural’ sector, with the median tariff increase of around 15 percent. Despite the observations above, there remain significant variations of tariff increases

within each sector and for the entire economy, that can help with the identification of the trade-war impact of interest. In Panel (b), given the smaller coverage of China tariffs on U.S. products, the median tariff increases are lower than those imposed by the U.S. in all sectors. The lowest is in the ‘transportation’ sector, as China decided to suspend retaliation tariffs on imports of U.S. autos and parts at the beginning of 2019. This rather limited coverage of products facing tariff hikes creates significant variations in tariff exposures within and across industries.

Aside from the datasets above, we also use tariff and trade data from the WITS and UN Comtrade database to compute the tariff rates imposed by the destination country on each of Thailand’s HS-6 products, which will be used as a controlled variable in the regression. They are mainly based on Most-Favored-Nation (MFN) tariff rates. The only exception is U.S. tariffs on Thai products, some of which faced increased tariffs during early 2018. Hence, we obtain the data on U.S. tariffs directly from [Fajgelbaum et al. \(2024\)](#).

4 Export Responses to the U.S.–China Trade War

This section describes the empirical framework used to estimate the impact of the U.S.–China trade war on Thailand’s export performance. The identification strategy mainly leverages differences in product-level exposure to tariff increases resulting from the bilateral escalation of trade tensions between the U.S. and China as evident in [Figure 1](#). These variations allow us to compare changes in Thai exports across products with differing degrees of exposure to the trade war after the imposition of tariffs.

Importantly, Thai exports were not subject to any major, exclusive changes in tariff treatment by either the U.S. or China during the trade war period. This institutional feature enables us to isolate the indirect, general-equilibrium effects of the trade war—such as trade diversion and demand reallocation—from direct effects driven by changes in Thailand’s market access.

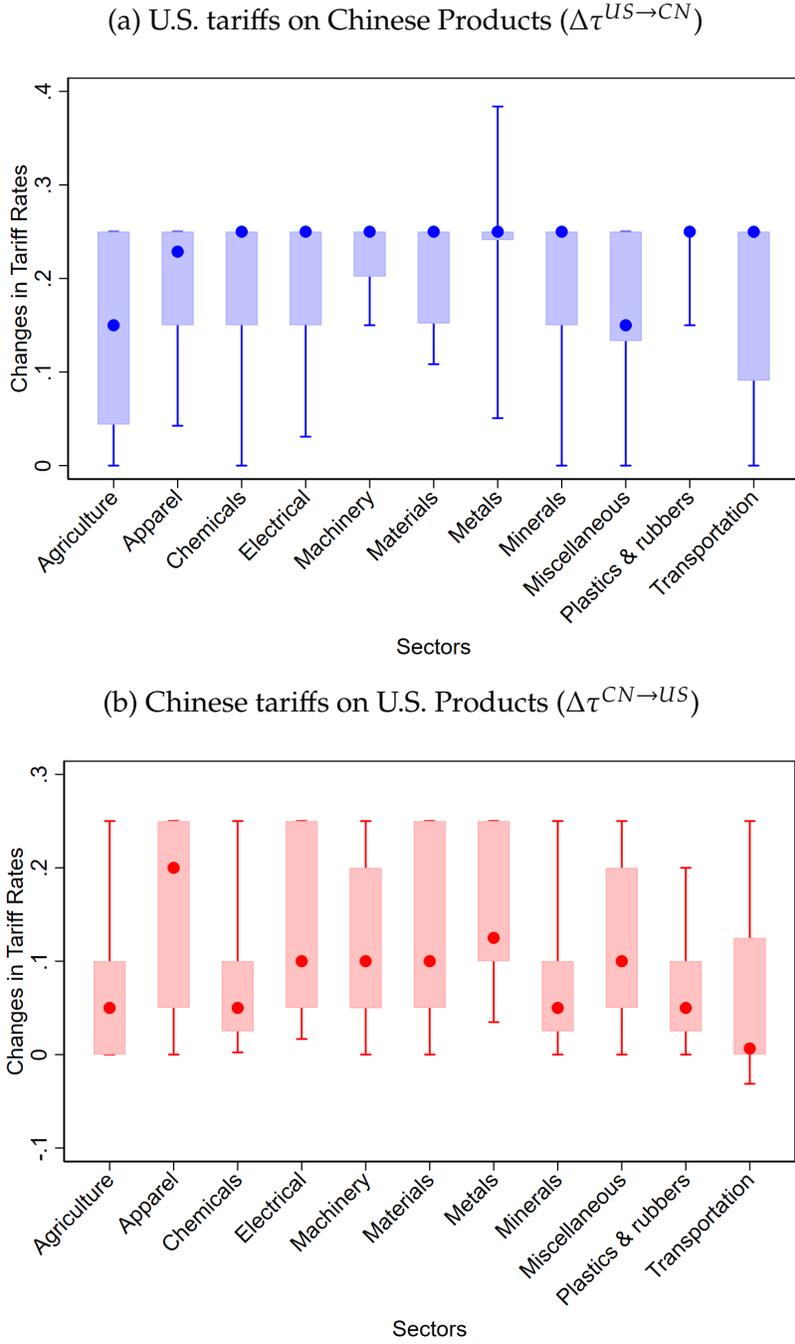
4.1 Baseline Specification

Our baseline panel specification is estimated at the HS-6 product-by-year level, separately for each export destination d . We estimate the following regression:

$$EX_{it}^d = \beta_1^d (\text{Post}_{it} \times \Delta\tau_i^{US \rightarrow CN}) + \beta_2^d (\text{Post}_{it} \times \Delta\tau_i^{CN \rightarrow US}) + \beta^d \cdot \mathbf{X}_{it}^d + \epsilon_{it}^d, \quad (3)$$

where EX_{it}^d denotes the logarithm of export value to destination d for HS-6 product i at time t . To deal with potential zero trade values, we follow the literature by applying the inverse of the hyperbolic sine transformation (i.e., $\ln[x + (x^2 + 1)^{0.5}]$). The variable Post_{it} is a binary indicator that equals one for periods the product i faces tariff increases due to the trade war, and zero otherwise. As shown earlier, the variables $\Delta\tau_i^{US \rightarrow CN}$ and $\Delta\tau_i^{CN \rightarrow US}$ represent for each product i the increase

Figure 1: Additional Tariffs from the 2018 U.S.–China Trade War



Note: This Figure reports the set of tariff changes imposed by the U.S. (Panel A) and China (Panel B), by sectors. The solid dots indicate the median tariff increase, the boxes denote the 25th and 75th percentiles, and whiskers show the 10th and 90th percentiles based on tariff changes at the end of 2019 relative to the pre-war period at HS-6 product levels. Sectors are classified according to two-digit HS codes: Agriculture (1-24), Minerals (25-27), Chemicals (28-38), Plastics & rubbers (39-40), Materials (41-49, 68-71), Apparel (50-67), Metals (72-83), Machinery (84), Electrical (85), Transportation (86-89), Miscellaneous (90-97).

in tariffs imposed by the U.S. on imports from China and by China on imports from the U.S., respectively.

The vector \mathbf{X}_{it}^d includes time-varying controls for the applied tariff rates imposed by the destination country on Thai exports. The specification also incorporates time fixed effects to capture common macroeconomic shocks and product fixed effects to control for time-invariant factors that influence product-level trade flows. The variable ϵ_{it}^d is the error term. We estimate the model for total exports as well as separately for four export destinations: the U.S., China, ASEAN, and the rest of the world.

The coefficients of interest, β_1^d and β_2^d , identify the differential change in Thai exports of products more exposed to the bilateral US–China tariff shocks relative to less exposed products. In the regression for total exports, these coefficients summarize the net effect of bilateral tariff shocks on Thailand’s overall export performance, aggregating substitution as well as other spillover channels across all destinations. A positive coefficient suggests that Thai exports expanded in response to rising geopolitical tensions, either by capturing displaced demand or by benefiting from global reallocation.

In the equation for exports to the U.S., β_1^d reflects the extent to which Thai goods substitute for Chinese products in the U.S. market. A positive estimate indicates that Thai exporters gained market share as U.S. tariffs displaced Chinese competitors—consistent with substitution effects highlighted by [Fajgelbaum et al. \(2024\)](#) and [Khandelwal \(2023\)](#). The same logic applies for β_2^d in the equation for exports to China. However, both coefficients may also be negative if Thai exports are complements to U.S. or Chinese goods. In this case, reduced bilateral trade between the U.S. and China may weaken Thai exports through joint demand or supply chain linkages.

In regressions for other destinations—ASEAN, and the rest of the world— β_1^d and β_2^d may capture different trade channels, such as spillover effects associated with export supply curve. These channels include economies of scale, whereby expanded production for U.S. or Chinese markets lowers firm marginal costs and facilitates exports elsewhere. Alternatively, foreign buyers may respond to the trade war by diversifying their sourcing portfolios. Supply chain effects are also plausible: if declining exports from China or the U.S. reduce global demand for Thai intermediate goods, the coefficients may be negative. Under the same logic, β_1^d in the regression for exports to China may capture reduced demand for inputs previously re-exported to the U.S., while β_2^d in the regression for exports to the U.S. may reflect disruptions in Thai-sourced components embedded in U.S. goods to be sold in China.

Table 1 presents the baseline estimates of the impact of the U.S.–China trade war on Thailand’s exports, where Columns (1) through (5) report results for total exports, the U.S, China, ASEAN, and the rest of the world, respectively. We report the results based on weighted tariffs in the top panel and unweighted tariffs in the bottom panel. Standard errors are clustered at the HS-6 product level.

Column (1) presents the results for Thailand’s total exports. Only the tariff interaction terms for the U.S. tariff actions are positive and statistically significant at the 90-percent level. The coefficient

Table 1: The Effect of U.S.–China Trade War on Thai Exports by Destination.

Dep. Var.: Log Thai Export Value	Total (1)	USA (2)	China (3)	ASEAN (4)	ROW (5)
A. Weighted tariff rates					
$\text{Post}_{it} \times \Delta\tau_i^{US \rightarrow CN}$	0.400* (0.207)	0.628* (0.354)	0.629 (0.457)	0.387* (0.224)	0.544* (0.278)
$\text{Post}_{it} \times \Delta\tau_i^{CN \rightarrow US}$	-0.119 (0.227)	-0.467 (0.377)	-1.115** (0.434)	-0.049 (0.262)	0.077 (0.311)
Observations	33,990	15,235	13,299	29,601	22,770
Adjusted R^2	0.854	0.795	0.772	0.804	0.806
HS6 FEs	Yes	Yes	Yes	Yes	Yes
Time FEs	Yes	Yes	Yes	Yes	Yes
Dep. Var.: Log Thai Export Value	Total (1)	USA (2)	China (3)	ASEAN (4)	ROW (5)
B. Unweighted tariff rates					
$\text{Post}_{it} \times \Delta\tau_i^{US \rightarrow CN}$	0.396* (0.220)	0.744* (0.386)	0.454 (0.462)	0.367 (0.238)	0.515* (0.303)
$\text{Post}_{it} \times \Delta\tau_i^{CN \rightarrow US}$	0.284 (0.258)	0.043 (0.402)	-0.564 (0.526)	0.231 (0.302)	0.125 (0.351)
Observations	33,990	15,235	13,299	29,601	22,770
Adjusted R^2	0.854	0.795	0.772	0.804	0.806
HS6 FEs	Yes	Yes	Yes	Yes	Yes
Time FEs	Yes	Yes	Yes	Yes	Yes

Note: Standard errors in parentheses are clustered at the HS-6 product level. All regressions control for tariffs the destination country imposes on Thai exports. *, **, and *** indicate the significance level of 0.10, 0.05, and 0.01, respectively.

on U.S. tariffs on Chinese goods is 0.4 for both weighted and unweighted tariff measures. To get a sense of magnitude, for products that the U.S. imposes a 25-percent tariff rate on Chinese products, total Thai exports expanded by around 10.5 percentage points greater than growth of non-tariffed products. This finding suggests that Thailand increased exports in product categories where Chinese firms faced heightened trade barriers. One plausible explanation is that U.S. importers sought to diversify their sourcing in response to tariff-induced uncertainty, reallocating demand toward alternative suppliers such as Thailand. The coefficient on Chinese retaliation, however, is statistically insignificant.

Thai exports to the US potentially explain increased exports to the world in response to U.S. tariffs on Chinese goods. In Column (2), the coefficient of weighted U.S. tariffs on Chinese goods is large and statistically significant at 0.63, despite being weakly significant. This result is consistent with the interpretation that Thai firms expanded market share in the U.S. in product lines where Chinese suppliers faced tariff-induced disadvantages, and therefore points to some evidence of trade diversion. The finding is in line with [Fajgelbaum et al. \(2024\)](#), who earlier show that Thailand is among the countries that reaped export opportunities amid the trade war. Whereas their paper

considers merely the contemporaneous impact, our results are based on the post-event periods of five years, suggestive of longer-term implications that the trade war may have on global trade patterns. Nevertheless, we still do not find any significant impact from Chinese retaliation on Thai exports to the U.S., in line with the finding with respect to total exports.

Despite significant positive responses of Thai exports to the U.S., Column (3) suggests that exports to China react negatively to U.S.-China tariff actions. In particular, the coefficient on weighted China tariffs is negative and significant. This suggests that Thailand did not experience measurable trade diversion into the Chinese market. However, the negative response may reflect the complementarity between Thai and U.S. products for those U.S. goods that become exposed to China tariffs. Alternatively, it may indicate that Chinese producers may be able to expand production of the affected goods and become less reliant on imports. Nevertheless, this result is not robust, as the coefficient turns insignificant in the case of unweighted tariff rates.

Meanwhile, Thai exports to ASEAN and the rest of the world appear to respond positively to U.S. tariffs on Chinese goods. For example, as shown in Column (4), the coefficient of weighted U.S. tariffs on Thai exports to ASEAN is at 0.39, while that for exports to the rest of the world is even larger at 0.54 (Column (5)). Both are weakly significant. As emphasized in [Fajgelbaum et al. \(2024\)](#), Thai exports may benefit from downward supply curve, as firms expand export opportunities not only in the U.S., but also the ASEAN markets given geographical proximity. In addition, these results are also in line with greater regional value chain integration that could facilitate substitutions of Chinese products in the U.S. market. However, all coefficients for Chinese tariffs on U.S. goods are found to be insignificant, pointing to the rather limited impact from Chinese retaliation in overall.

4.2 Dynamic Effects

Next, we examine how the impact of the U.S.-China trade war on Thai exports evolved over time. To do so, we extend the baseline specification by replacing the post-treatment indicator with a set of year-specific indicators. This event-study approach allows us to trace the dynamic adjustments of Thai exports relative to a pre-treatment baseline.

The extended regression is as follows:

$$EX_{it}^d = \sum_{k=-3}^4 \beta_{1,k}^d \left(\text{Dur}_{it}^{US \rightarrow CN,k} \times \Delta \tau_i^{US \rightarrow CN} \right) + \sum_{k=-3}^4 \beta_{2,k}^d \left(\text{Dur}_{it}^{CN \rightarrow US,k} \times \Delta \tau_i^{CN \rightarrow US} \right) + \beta^d \cdot \mathbf{X}_{it}^d + \varepsilon_{it}^d, \quad (4)$$

where $\text{Dur}_{it}^{US \rightarrow CN,k}$ and $\text{Dur}_{it}^{CN \rightarrow US,k}$ is a set of dummy variables indicating the number of years k relative to the U.S. and China tariff announcement for product i , respectively, with binning at the end-points. To be precise, for products that the U.S. began imposing tariffs in 2018, $\text{Dur}_{it}^{US \rightarrow CN,0} = 1$

if year t is 2018, $\text{Dur}_{it}^{US \rightarrow CN,1} = 1$ if year t is 2019, and $\text{Dur}_{it}^{US \rightarrow CN,2} = 1$ if year t is 2020, and so on. The coefficients $\beta_{1,k}^d$ and $\beta_{2,k}^d$ measure the differential impact of U.S. and Chinese tariff changes on Thai exports in duration k , relative to the pre-treatment baseline. Moreover, this event-study specification also allows for the pre-trend test.

This specification allows us to assess both the timing and persistence of trade diversion effects. A gradual rise in the coefficients after the trade war would suggest adjustment frictions or delayed reallocation of trade flows. In contrast, an immediate and sustained increase would be consistent with rapid substitution away from U.S. and Chinese suppliers. The absence of significant pre-trends would support the identifying assumption that, conditional on controls, Thai exports would have evolved similarly across products with different levels of tariff exposure in the absence of the trade war.

Figure 2 sheds light on the dynamic export response by destination. In the case of total exports, the adjustment is delayed. In Panel (a), a positive effect in response to the U.S. tariffs imposed on Chinese products emerges in the third year after the introduction of U.S. tariffs on China. The estimated impact four years after tariff shocks is weakly significant, but remains large. The results, thus, imply rather delayed impact of the trade war. In contrast, no discernible pattern is observed in response to Chinese retaliatory tariffs (Panel (b)).

Thai exports to the U.S. also exhibit a delayed but pronounced response to U.S. tariffs on China (Panel (c)). A positive effect arises from the second year, suggesting that trade diversion gained momentum as U.S. importers restructured their supply chains. However, the effect only turns significant four years after the tariff shock. Once again, we do not observe any significant impact from China tariffs to the U.S., as shown in Panel (d).

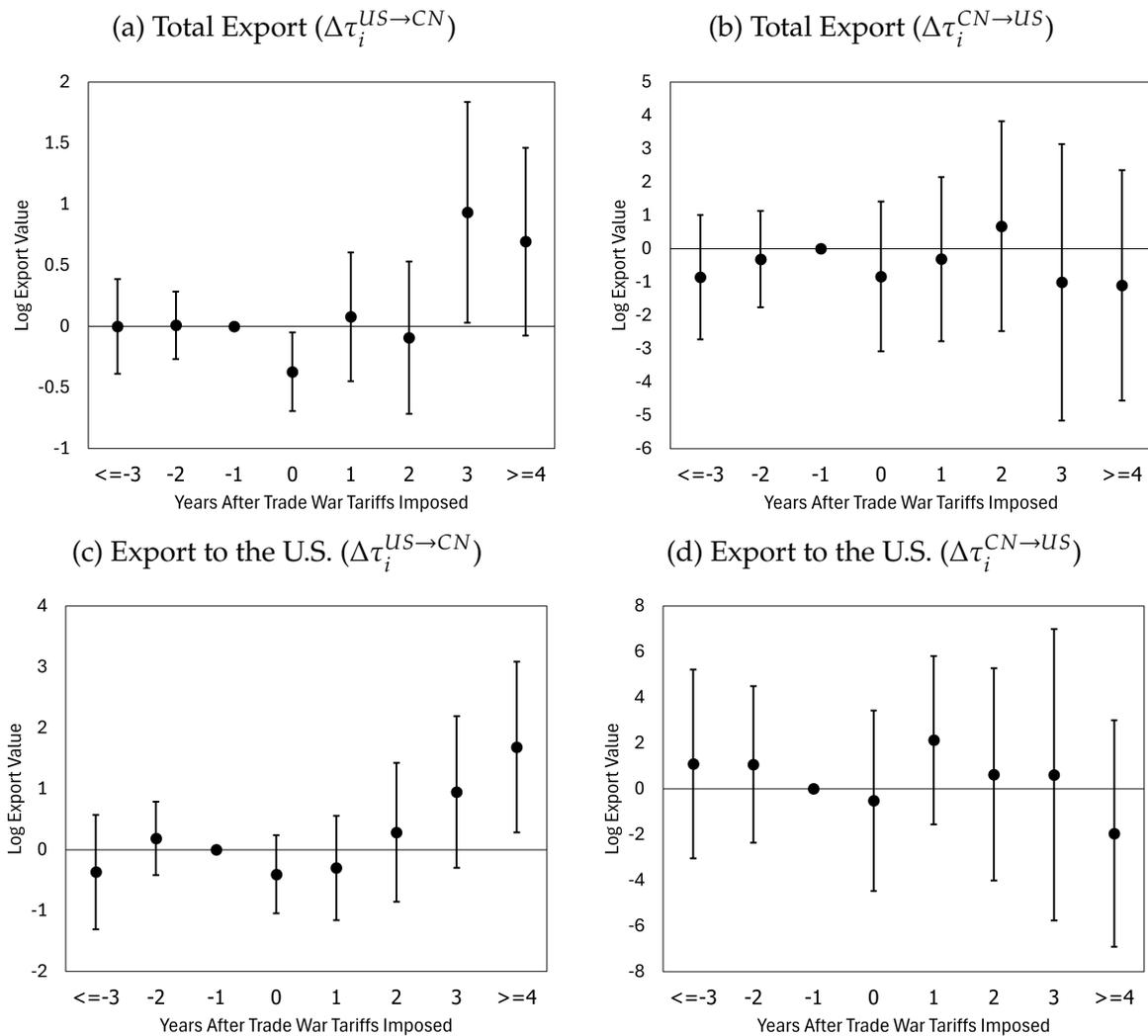
For exports to China, a different pattern emerges. While Table 1 reports a significant average effect from Chinese retaliatory tariffs, we do not observe any significant impact in the dynamic specification (Panel (f)). Meanwhile, similarly to the responses of Thai exports to the U.S., exports to ASEAN respond with some delay to the U.S. tariffs on Chinese products (Panel (g)). All in all, the results point to delayed responses of Thai exports to tariff shocks, but the significant effect can be observed for only the U.S. tariffs, not the Chinese retaliation.

5 Product-Level Heterogeneity

In this section, we examine heterogeneity in the product-level responses to US-China tariff adjustments to gain added insights into which products drive the aggregate and destination-level trade responses to tariff shocks. As before, we focus on three export destinations, including the U.S., China and ASEAN, and consider heterogeneous responses along two dimensions.

First, export responses may differ between manufacturing and agricultural sectors. For manufacturing products, we further classify them into three broad categories: (1) chemicals, plastics and rubbers (2) machinery, electrical and transportation (3) other. Second, in an era of global value

Figure 2: Dynamic Effects of the 2018 U.S.–China Trade War on Thai Exports



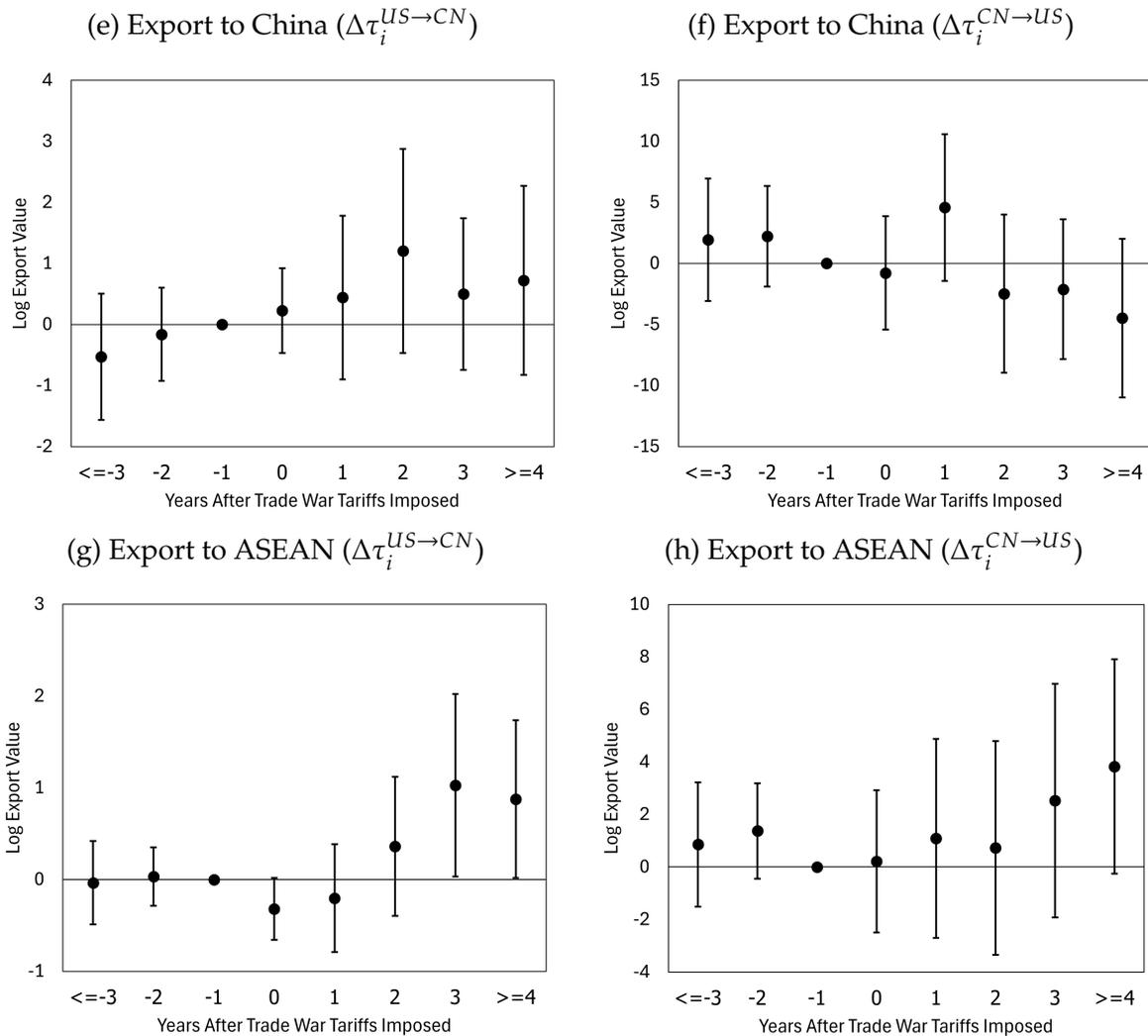
Note: Each panel plots the event-study coefficients based on estimating the dynamic impact of weighted tariff rates on Thai exports using Equation (4). The bands represent 95-percent confidence intervals.

chains, we differentiate products into ‘raw material and intermediate inputs’, ‘consumer goods’ and ‘capital goods’. We explore these two dimensions by interacting tariff exposure with a dummy variable indicating whether a product falls within certain categories.

Figure 3 shows heterogeneous export responses to the weighted U.S. tariffs on Chinese products.⁶ Focusing first on Thai exports to U.S. (panel (b)), whose response in aggregate is weakly significant, we find the responses are heterogeneous across products and are significant only for products within the machinery, electrical and transportation sectors, with the coefficient estimate close to 2.0. Since most products within these sectors are classified by the U.S. government as high-technology products that the U.S. aims to reduce its exports and imports with China, the result implies that

⁶Full regression estimates can be found in Tables A.5 in the Appendix

Figure 2: Dynamic Effects of the U.S.–China Trade War on Thai Exports (continued)



Note: Each panel plots the event-study coefficients based on estimating the dynamic impact of weighted tariff rates on Thai exports using Equation (4). The bands represent 95-percent confidence intervals.

trade diversion effects take place and so the U.S. still imports these products from elsewhere. The estimated impact for the chemical, plastic and rubber products is also large but only weakly significant. However, we barely find any impact of U.S. tariffs on agricultural products. Classifying products according to their production stages, we find the effect to be largest for capital goods despite being weakly significant. In panel (c), the U.S. tariffs also have a significant impact on exports of capital goods to China.

On the impact of exports to ASEAN, although we similarly find relocation towards manufacturing products, they are mainly raw material and intermediate inputs within the chemical, plastic and rubber sectors (panel (d)). This finding is not consistent with the conjecture put forth by [Fajgelbaum et al. \(2024\)](#) that firms may benefit from economies of scale as they expand their production and

exports to the U.S., allowing them to extend their exports to other destinations as well. Instead, it may reflect strengthened regional supply chain integration, as Thai firms export more of inputs to ASEAN nations, whose firms may use these inputs for producing goods destined for the U.S. More research is, however, needed to verify this hypothesis. In panel (a), sectoral results for overall export responses are mostly in line with those found for exports to major destinations. However, a puzzle also emerges as the responses of consumer goods and agricultural products appear to be the large and significant.

The results for Chinese retaliation are more mixed across sectors, as shown in Figure 4. While most estimates appear to be insignificant, the responses of exports to China tend to be negative for capital goods within other manufacturing sectors (panel (c)). On the other hand, in panel (d), we find positive responses of exports to ASEAN but only for the chemical, plastic and rubber products.

These results highlight meaningful sectoral heterogeneity in Thailand’s export responses to the U.S.–China trade war. Thai manufacturing firms appear to have gained from the imposition of U.S. tariffs on Chinese goods. In contrast, trade realignments triggered by Chinese retaliation have a rather limited as well as mixed impact on manufacturing sectors.

For our next exercise, we shed light on underlying factors or mechanisms that may help explain the positive responses of Thai exports to the U.S. due to the U.S. tariffs imposed on Chinese products. We examine three potential factors. The first one relates to the comparative advantage of Thai products, as the most competitive alternative suppliers may be able to gain the U.S. market share. Therefore, for each HS-6 product, we calculate two indices of revealed comparative advantage: one for the U.S. market (RCA_i^{US}) and the other for the global market (RCA_i^{Global}):

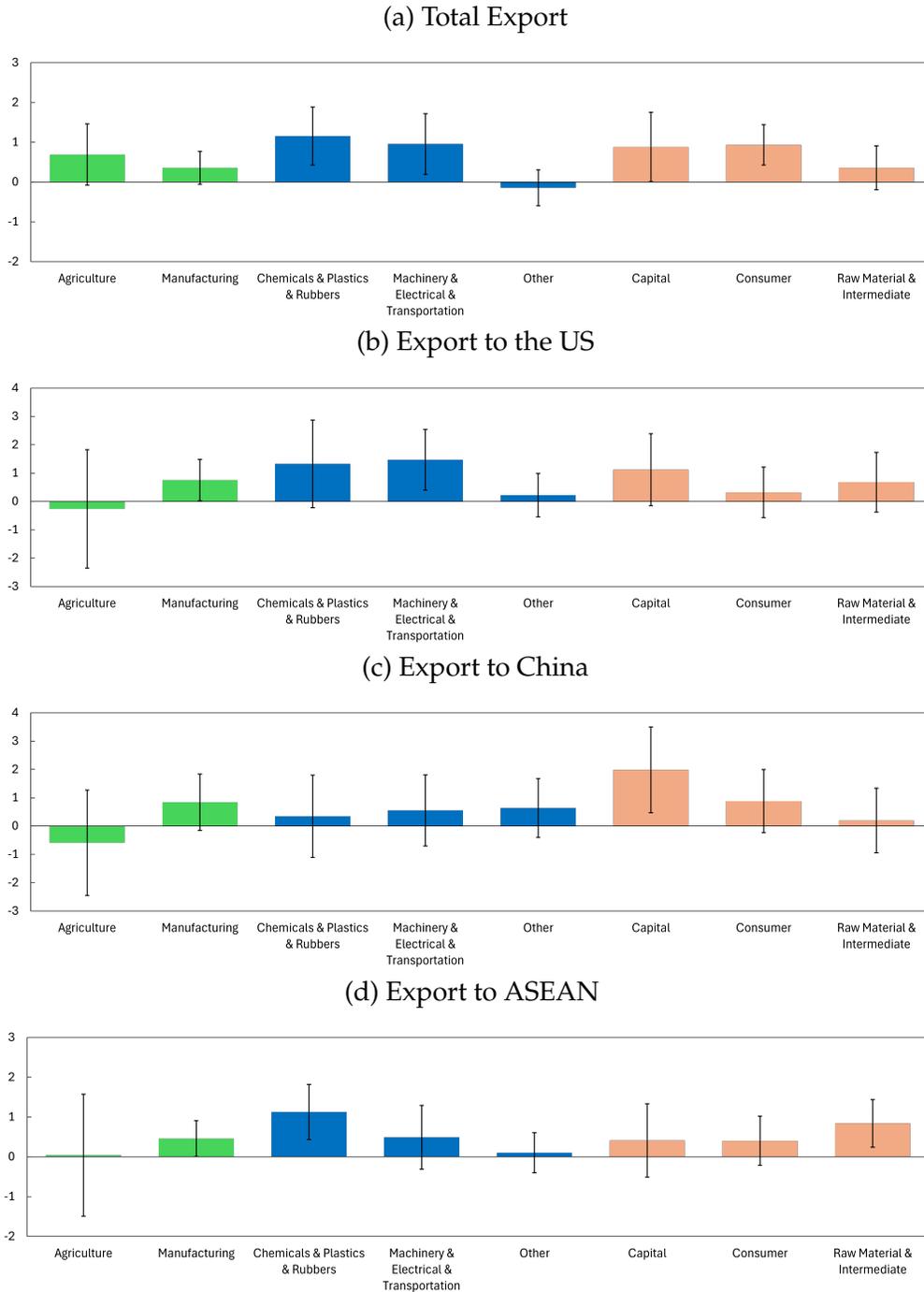
$$RCA_i^{US} = \frac{EX_{TH,i}^{US} / \sum_i EX_{TH,i}^{US}}{\sum_{j \neq TH} EX_{j,i}^{US} / \sum_{j \neq TH} \sum_i EX_{j,i}^{US}}$$

$$RCA_i^{Global} = \frac{EX_{TH,i} / \sum_i EX_{TH,i}}{\sum_{j \neq TH} EX_{j,i} / \sum_{j \neq TH} \sum_i EX_{j,i}}$$

where $EX_{j,i}^{US}$ denotes exports of product i from country j to the U.S., while $EX_{j,i}$ is product i -exports from country j to all countries. We compute these two indices using trade data from the UN Comtrade database during the period 2013–2017. We then convert the index into the dummy variable that equals to one if the RCA index exceeds one, and zero otherwise.

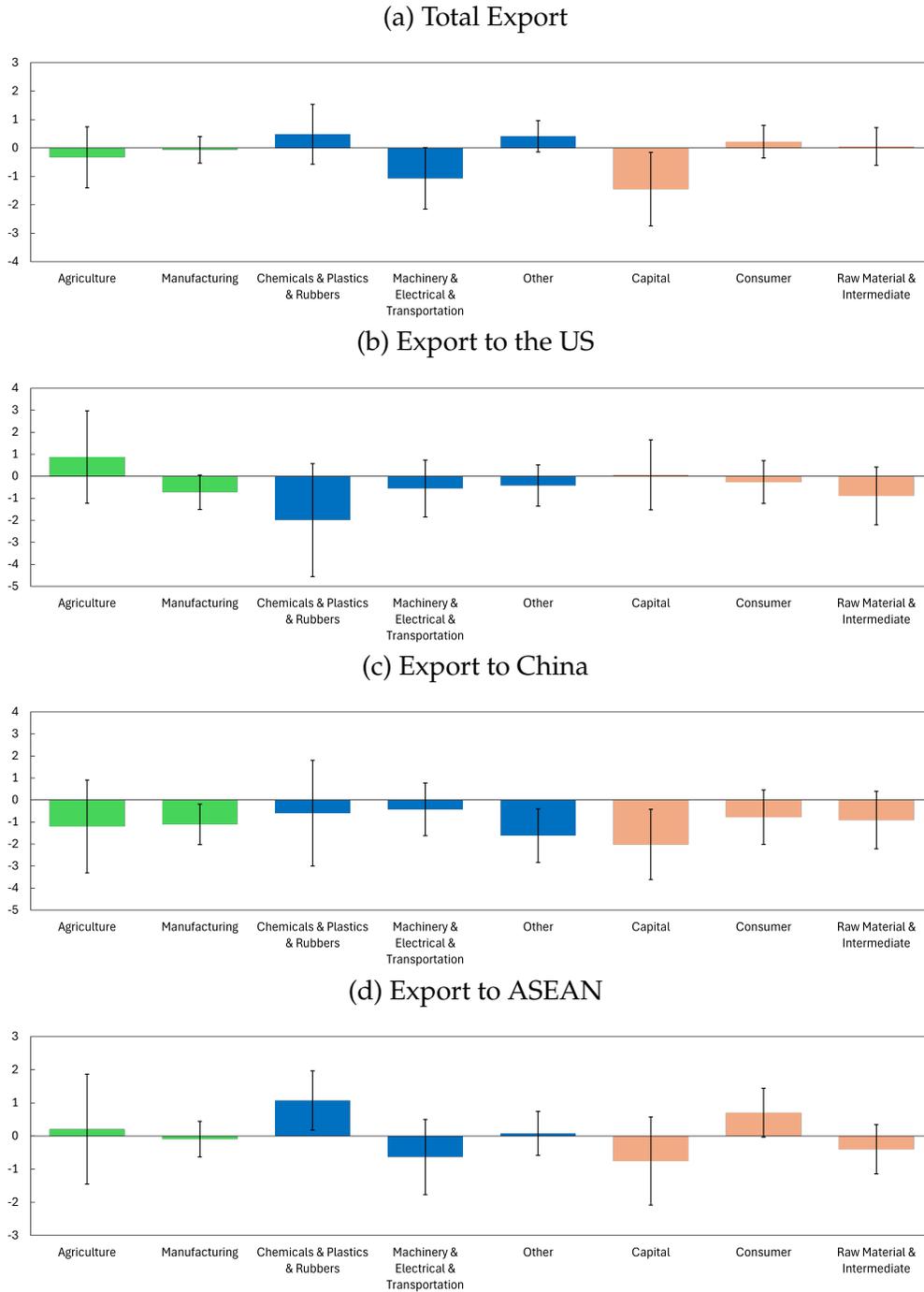
Second, Thai exporters may take advantage of products that Chinese firms lost their U.S. market share the most. We therefore introduce the dummy variable for each HS-6 product indicating whether China’s lost market share in the U.S. between 2017 and 2023 exceeds the average U.S. market share loss. Third, we hypothesize that products that gain from the trade war may be those with supply chain linkages with China or regional countries. These linkages can help facilitate production relocation toward Thailand. Following Freund et al. (2024), we use the intra-industry

Figure 3: Heterogeneous Effects of U.S. tariffs on Chinese Products ($\Delta\tau_i^{US \rightarrow CN}$) on Thai Exports across Different Product Groups



Note: This Figure reports the effects of U.S. tariff changes on Thai exports of each product group. 95-percent confidence intervals are computed based on standard errors, which are clustered at the HS-6 product level. Details of coefficient estimates are shown in Tables A.5.

Figure 4: Heterogeneous Effects of China tariffs on U.S. Products ($\Delta\tau_i^{CN \rightarrow US}$) on Thai Exports across Different Product Groups



Note: This Figure reports the effects of China tariff changes on Thai exports of each product group. 95-percent confidence intervals are computed based on standard errors, which are clustered at the HS-6 product level. Details of coefficient estimates are shown in Tables A.5.

trade index as a proxy for supply chain integration (Grubel and Lloyd, 1975):

$$GLI_j^k = 1 - \frac{|EX_{TH,j}^k - IM_{TH,j}^k|}{EX_{TH,j}^k + IM_{TH,j}^k},$$

where $EX_{TH,j}^k$ ($IM_{TH,j}^k$) represents Thai exports (imports) of product j to (from) country k . $GLI_j^k \in [0, 1]$ reflects trade back and forth between Thailand and country k within industry j . We compute the index at the HS 4-digit level, which allows the index to capture vertical or supply chain integration between two countries. For example, firms in Thailand may import inputs (e.g., HS854190: parts of diodes) from China to produce output (e.g., HS854140: LED), part of which is exported back to China. However, we acknowledge the imperfect nature of GLI index, as it may also reflect horizontal integration, i.e. trade in different varieties.

Table 2: The Effect of U.S. Tariffs on Thai Exports to the U.S. by Product Characteristics.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
$Post_{it} \times \Delta\tau_i^{US \rightarrow CN}$	0.362 (0.388)	0.631 (0.401)	0.500 (0.544)	0.243 (0.409)	0.064 (0.467)	-0.108 (0.449)	-0.171 (0.496)
$Post_{it} \times \Delta\tau_i^{US \rightarrow CN} \times RCA_i^{US}$	0.618* (0.325)					0.792** (0.398)	0.658* (0.387)
$Post_{it} \times \Delta\tau_i^{US \rightarrow CN} \times RCA_i^{Global}$		-0.005 (0.323)					
$Post_{it} \times \Delta\tau_i^{US \rightarrow CN} \times CN\ Loss_i$			0.297 (0.339)			-0.110 (0.406)	-0.092 (0.404)
$Post_{it} \times \Delta\tau_i^{US \rightarrow CN} \times GLI_i^{China}$				1.371** (0.629)		1.571** (0.643)	
$Post_{it} \times \Delta\tau_i^{US \rightarrow CN} \times GLI_i^{ASEAN}$					1.144* (0.607)		1.127* (0.605)
$Post_{it} \times \Delta\tau_i^{CN \rightarrow US}$	-0.507 (0.376)	-0.467 (0.377)	-0.489 (0.377)	-0.483 (0.378)	-0.457 (0.376)	-0.528 (0.376)	-0.493 (0.374)
Observations	15,235	15,235	15,235	15,224	15,235	15,224	15,235
Adjusted R^2	0.795	0.795	0.795	0.795	0.795	0.796	0.795
HS6 FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note: Standard errors in parentheses are clustered at the HS-6 product level. All regressions control for U.S. tariffs on Thai exports. *, **, and *** indicate the significance level of 0.10, 0.05, and 0.01, respectively.

Table 2 reports results from including the interaction terms between each of the above characteristics and tariff exposure into the baseline specification with Thai exports to the U.S. as the dependent variable. First, we find revealed comparative advantage of the Thai products in the U.S. market to be important, though its estimate shown in Column (1) is weakly significant. Second, Thai products that show positive export responses are not necessarily those that China lost its market share the most. This aligns with the findings in Freund et al. (2024) that Thailand is not among the top countries that gained the most market share in the U.S., which for example include Vietnam, Mexico and Taiwan. In addition, the production relocation that took place after the trade

war is consistent with the China +1 strategy, since only one alternative supplier picked up the lion’s share of exports in most products. Third, we find the supply chain linkages with China to be a significant factor (Column (4)). That is, the products with large supply chain integration with China enjoy higher growth of exports to the U.S.. When all of these factors are simultaneously included in the specification, the product’s comparative advantage in the U.S. and depth in supply chain link with China remain a significant driver (Column (6)). We explore the latter factor further over the next section.

6 Evidence of Transshipment and Supply Chain Integration with China

While the previous section shows higher exports to the U.S. among tariffed products, this may reflect potential transshipment of imports from China or increased supply chain integration with China (Alfaro and Chor, 2023; Freund et al., 2024). Both can serve as means to circumvent tariffs or other trade restrictions, with the former contributing to fewer or no value-added towards the Thai economy. For the latter, multinational companies may for example relocate their production from China to Thailand and continue to use Chinese inputs in their production for the purpose of exporting to the U.S.. Figure A.2 plots the shares of Thai exports to the U.S. and Thai imports from China, both of which exhibit a rising trend after the 2018 trade war. In particular, imports from China as a share of Thailand’s total imports rose from just under 20 percent during the pre-war periods to around 25 percent in the recent periods. One potential explanation is the flooding of Chinese goods into Thailand and other countries, as they become less competitive in the U.S. market. However, in the context of other emerging economies, earlier research has documented both the potential role for transshipment of Chinese goods (Iyoha et al., 2024) as well as changes in the sourcing patterns toward Chinese inputs (Utar et al., 2025).

To better identify the evidence of transshipment and increased supply chain integration with China, we switch from product-level to firm-level analyses⁷ We, first, construct each firm’s exposure to the trade war, in particular the U.S. tariffs on Chinese products:

$$\Delta\tau_f^{US\rightarrow CN} = \frac{\sum_i EX_{i,1317}^f \Delta\tau_i^{US\rightarrow CN}}{\sum_i EX_{i,1317}^f}, \quad (5)$$

which is computed as weighted-average changes in product-level tariff rates using a firm’s share of exports of product i to its total exports during the pre-war period as weights. Since we are interested in firms that export to the U.S. market, we compute as a controlled variable each firm’s

⁷Summary statistics of the variables used in firm-level regression are reported in Table A.4 in the Appendix.

exposure to U.S. tariffs that are directly imposed on Thai products:

$$\tau_{ft}^{US \rightarrow TH} = \frac{\sum_i EX_{i,1317}^{f \rightarrow US} \tau_{it}^{US \rightarrow TH}}{\sum_i EX_{i,1317}^{f \rightarrow US}}, \quad (6)$$

where $EX_{i,1317}^{f \rightarrow US}$ denotes firm f 's exports of product i to the U.S. from 2013–2017.

We estimate the following regression specification,

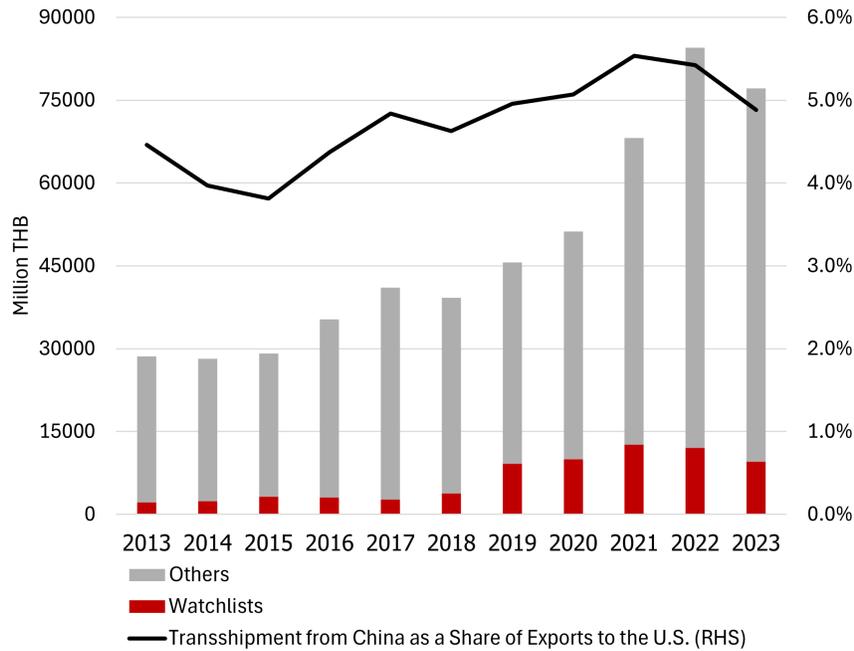
$$y_{ft} = \beta_1 Post_{ft} \Delta \tau_f^{US \rightarrow CN} + \boldsymbol{\beta} \cdot \mathbf{X}_{ft} + \gamma_f + \delta_{jt} + \epsilon_{ft}, \quad (7)$$

where $Post_{ft}$ is a binary indicator that equals one for periods firm f is exposed to U.S. tariff hike, and zero otherwise. Firm and industry-time fixed effects are included in the specification.

We explore three sets of dependent variables. The first one is the logarithm of a firm's exports to the U.S., $EX_{f,t}^{US}$. Second, we examine whether a firm's transshipment of Chinese products to the U.S. exists. To measure each firm's transshipment of a particular product i from China, we follow [Iyoha et al. \(2024\)](#) by taking the minimum value of imports of such good from China ($IM_{i,t}^{f \leftarrow CN}$) and exports that are destined for the U.S. in the same year ($EX_{i,t}^{f \rightarrow US}$). One caveat of the firm-level measure is that it may underestimate the actual amount of transshipment, since the latter may take place through different firms in Thailand. That is, one firm is responsible for importing products from China and then pass them onto the other firm, who will then export those products to the U.S.. [Iyoha et al. \(2024\)](#) additionally compute this rerouting measure at the provincial level, which should provide a more accurate estimate if the two firms reside within the same province. However, our firm-level measure should give a conservative estimate of potential transshipment. Based on this firm-level measure, [Figure 5](#) shows that the total transshipment of Chinese products to the U.S. increased over time, and stands at around 5 percent of Thai exports to the U.S. during 2022–2023, which is comparable to the transshipment ratios found in Vietnam by [Iyoha et al. \(2024\)](#). Third, to shed light on whether the trade war leads to increased supply chain integration with China, we investigate how a firm's imports of Chinese inputs, $\sum_k IM_{k,t}^{f \leftarrow CN}$, respond to tariff shocks. We assume that product k must be either raw material, intermediate input or capital good and is not the same product that firm f exports to the U.S..

Results, as reported in the top panel of [Table 3](#), show that firms that are highly exposed to the U.S. tariffs on Chinese goods tend to export more to the U.S. market when compared against those that are less exposed. This finding confirms our baseline result based on the product-level estimation. However, we find strong evidence that increased exports to the U.S. are in part associated with both the transshipment of products from China and the increased supply chain integration with China. Regarding the potential role of transshipment, as shown in [Column \(2\)](#), we find that the U.S. tariffs on Chinese goods significantly raise the amount of transshipped products from China. As we express a firm's transshipment value as a ratio to its total exports to the U.S., the effect of U.S. tariffs remains statistically significant ([Column \(3\)](#)). This significant evidence of transshipment

Figure 5: Transshipment from China



Note: This Figure reports the value of transshipment of Chinese products exported to the U.S. via Thailand over the period 2013–2023. The bars in red show the transshipment of products under the watchlist of the Department of Foreign Trade.

or re-routing means that the Thai export sector may not reap gains from trade diversion as much, despite the significant expansion of exports to the U.S.. Additionally, from Columns (4) to (6), firm imports of Chinese inputs increase among those firms that are more exposed to the U.S. tariffs. Since imports of Chinese inputs may be used not only for producing output sold in the U.S., we express them as a ratio to a firm’s total exports or total revenue. These ratios are informative about whether Thai firms have shifted their sourcing patterns towards Chinese inputs. Our results uncover a significant impact of U.S. tariffs on Chinese input imports when expressed as a ratio to a firm’s total revenue, implying that the trade war may induce firms to be more reliant on Chinese inputs, an evidence supporting increased supply chain integration with China. This result aligns with [Hayakawa \(2024\)](#), who documents greater demand for upstream products from China, in the context of machinery industries. We also note that these effects are economically important. For average firms, which are exposed to a 10-percentage-point change in U.S. tariffs, their exports, transshipment amount and imports of Chinese inputs increase by 120, 30 and 65 percent, respectively, when compared against non-exposed firms.

The rise in exports to the U.S. in response to the U.S. tariffs can be found in most sectors (Column (1) of Table 4). Among these sectors, the coefficient estimate is largest for the electronics sector, followed by the metal industries. For these sectors, the estimates imply that firms that expose to 10-percentage-point increases in U.S. tariffs, on average, raise their exports to the U.S. by more than

Table 3: Evidence of Transshipment and Supply Chain Effects

	(1) EX^{US}	(2) Transshipment	(3) Ratio to EX^{US}	(4)	(5) Import of Chinese Inputs	(6)
	Value	Value	Ratio to EX^{US}	Value	Ratio to EX^{Total}	Ratio to Revenue
Full:						
$Post_{f,t} \times \Delta \tau_f^{US \rightarrow CN}$	7.879*** (1.159)	2.614*** (0.560)	0.066*** (0.023)	5.018*** (0.884)	0.074 (0.059)	0.027** (0.013)
Observations	62,975	62,975	62,975	62,975	62,975	54,339
Adjusted R-squared	0.442	0.632	0.452	0.630	0.466	0.604
Intensive Margins:						
$Post_{f,t} \times \Delta \tau_f^{US \rightarrow CN}$	1.002*** (0.261)	1.922** (0.754)	0.035 (0.028)	2.051*** (0.755)	-0.013 (0.066)	-0.002 (0.014)
Observations	34,162	34,162	34,162	34,162	34,162	32,307
Adjusted R-squared	0.815	0.737	0.650	0.831	0.720	0.761
Firm FEs	Yes	Yes	Yes	Yes	Yes	Yes
Industry x Time FEs	Yes	Yes	Yes	Yes	Yes	Yes

Note: This Table reports the effects of U.S. tariff changes on Thai exports to the U.S. (Column 1), exports to the U.S. identified as being transshipment of Chinese products (Column 2–3) and imports of Chinese inputs (Column 4–6). For intensive margins, the sample only includes firms that export to the U.S. for more than six years and omits observations with zero export values. The dependent variables in Column 5 and 6 are winsorized at their 97.5 percentiles. Standard errors in parentheses are clustered at the HS-6 product level. All regressions control for a firm’s exposure to U.S. tariffs on Thai exports. Industry \times Time FEs are specified separately for non-manufacturing and manufacturing industries. *, **, and *** indicate the significance level of 0.10, 0.05, and 0.01, respectively.

600 and 300 percent, respectively. However, evidence of transshipment and increased supply chain integration with China becomes more limited to some sectors. Sectors that see increases in the value and ratios of both transshipment and imports of Chinese inputs include the petrochemical, metal, machinery as well as automotive sectors. Moreover, greater Chinese input content is also evident in the electronics and electrical appliances sectors. For non-manufacturing sectors, however, we find that while the value of transshipment and Chinese input imports significantly improve in certain sectors, such as automotive and retail trade, the evidence is less clear cut when their ratios to total exports or revenue are considered. These results, therefore, highlight specific manufacturing sectors that experience with transshipment and supply chain relocation, which potentially drive the positive responses of Thai exports to the U.S.. Table A.10 in the Appendix further shows that in response to the U.S. tariff action, firms also increase imports of inputs from other regions, including the U.S., ASEAN and East Asia. However, the effects are not significant when they are expressed as a ratio to a firm’s total exports.

The estimated coefficients for the full sample shown in Table 3 are large. This may potentially be driven by the extensive margin, as firms that initially export to non-U.S. markets, with no or little exports to the U.S., start selling their goods in the U.S. markets. We are, therefore, interested in whether the full-sample results still hold if only intensive margins are considered, i.e., for firms that

had already registered their presence in the U.S. market before the U.S.-China trade war took place. To ensure that a firm exports to the U.S. both before and after the trade war and to identify the trade-war impact owing to intensive margins, we limit our sample to firms that export to the U.S. for no less than seven years and omit non-zero trade observations.

As shown in the lower panel of Table 3, we still find the significant effects of U.S. tariffs on a firm's exports to the U.S., but the estimated coefficient becomes much smaller. In particular, firms exposed to a 10-percentage-point tariff rise increased their exports by 10 percent. This clearly shows that the large full-sample estimate could be attributed to the extensive margins. Meanwhile, rises in transshipment and Chinese input imports are also evident in this intensive-margin sample, however we find no significant effects of U.S. tariffs on their ratios to total exports and revenue. Table A.9 in the Appendix further shows that most sectoral estimates for the response of firm exports to the U.S. still hold, especially for the manufacturing sectors. The exception is electrical appliances, whose coefficient turn insignificant. The strongest impact is still found in the electronics and metal sectors, where their coefficient estimates imply an increase in exports by 36 and 20 percent in response to 10-percentage-point tariff rises. However, evidence of transshipment and Chinese input imports almost dissipates for the intensive margins.⁸

6.1 Domestic value-added

Given the significant evidence of transshipment and increased supply chain integration with China, an interesting question is whether the trade diversion contributes to the domestic value-added gains for the Thai economy. In Figure 6, we first attempt to decompose each firm's exports to the U.S. into sources of input content, to see how the domestic value-added of exports have changed over time for firms in different industries. For each firm f at time t , we compute the value of country- j input used in production of exports to the U.S. in a given period as follow:

$$INPUT_{f,t}^{US \leftarrow f \leftarrow j} = \left(\frac{IM_t^{f \leftarrow j}}{REV_{f,t}} \right) (EX_t^{f \rightarrow US} - TRSM_t^{US \leftarrow f \leftarrow CN}),$$

where $IM_t^{f \leftarrow j}$ is firm f 's total imports of raw material, intermediate goods and capital goods from country j , excluding imports of items that are among the exporting products of firm f . $REV_{f,t}$ denotes a firm's total revenue. $\frac{IM_t^{f \leftarrow j}}{REV_{f,t}}$, therefore, represents country- j input content share for firm f 's production. The last term in the formula is a firm's total exports to the U.S. net of transshipment of Chinese products.⁹ Domestic content of firm f 's exports to the U.S. ($DOMCON_{f,t}^{f \rightarrow US}$) can then

⁸We find significant effects on the amount of transshipment for the electronics and metal sectors. Imports of Chinese inputs rose significantly only in the petrochemical, machinery and automotive sectors.

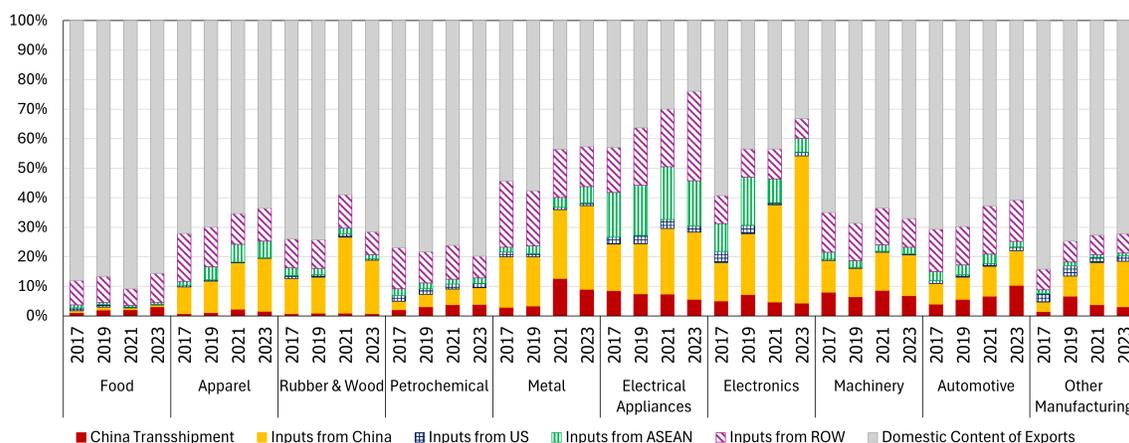
⁹Since firms' imports and revenue come from different data sources, we hasten to add that the sum of inputs imported from all countries may exceed a firm's revenue. In that case, the denominator is replaced by total input imports of a firm, implying no domestic value-added generated from exports. This may lead to an underestimation of domestic content of exports for that firm and in overall.

be calculated as its total exports to the U.S. net of imported input content from all source countries and the transshipment of Chinese products.

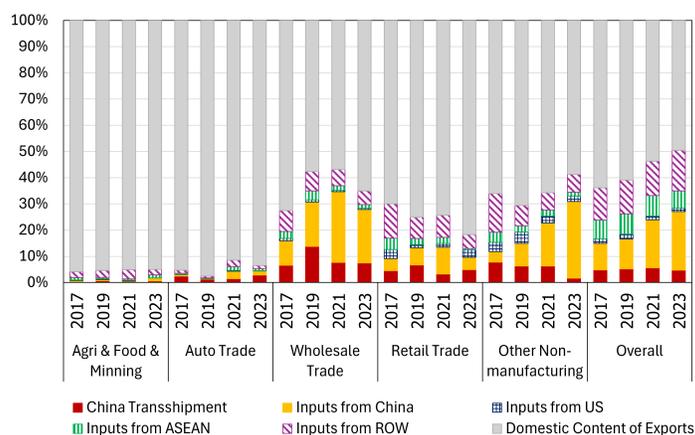
$$DOMCON_{f,t}^{f \rightarrow US} = EX_t^{f \rightarrow US} - \sum_j INPUT_{f,t}^{US \leftarrow f \leftarrow j} - TRSM_t^{US \leftarrow f \leftarrow CN}. \quad (8)$$

Figure 6: The Decomposition of Thai Exports to the U.S. by Sources of Inputs

(a) Manufacturing



(b) Non-manufacturing and Overall



Note: This Figure reports, across economic sectors, the decomposition of Thai exports to the U.S. based on sources of input content. Transshipped products from China are separated and shown in red.

Figure 6 shows the decline in domestic value-added of Thai exports to the U.S. over the period 2017–2023. The domestic content share in overall decreases from around 65 percent prior to the trade war to under 50 percent in 2023, i.e., 15-percentage-point difference. This is mainly attributed to a rise in inputs imported from China (shown in yellow bars), with Chinese imported content share standing at around 22.3 percent in 2023. Variations in the domestic content share can also be observed across sectors, being unsurprisingly high in the food manufacturing and

non-manufacturing sectors (85 and 95 percent in 2023, respectively). In contrast, the domestic content share is low in the metal, electrical appliances and electronics sectors with shares of less than half of gross export value. We can see a clear, declining trend of domestic value-added of exports in various sectors. Notably, the electronics sector sees a significantly rising share of Chinese inputs from 13 percent in 2017 to almost 50 percent in 2023. This is consistent with regression results shown in Table 4, where we observe the largest coefficient for the China input shares in the electronics sector.

To assess whether an increase in Thai exports to the U.S. contributes to domestic value-added, we look at how a firm's domestic content of exports to U.S., i.e. exports net of imported inputs and transshipment, respond to a U.S. tariff shock. In particular, we use $DOMCON_{f,t}^{f \rightarrow US}$ as the main dependent variable in Eq.7. In addition, another three variables are examined, including a firm's net exports, the domestic content of a firm's total exports and the number of employed workers. We obtain the employment data from the Social Security Office, which are matched with the Custom Department's trade data using firm ID. In an extreme case where an increase in exports to the U.S. is explained almost by transshipment, we would expect all measures of domestic value-added, including employment, not to respond to the tariff shocks.

As shown in the first Column Table 5, after taking into account the transshipment and increases in imports of Chinese inputs, we find that a firm's net exports to the U.S. significantly respond to the U.S. tariffs. Moreover, for those sectors whose gross exports significantly react to the U.S. tariffs (Table 4), the coefficient estimates for the domestic content of exports to the U.S. shown in Table 6 are comparable to those estimates for gross exports or only exhibit a slight decline. To get a sense of magnitude, for firms in the electronics and metal sectors experiencing a 10-percentage-point U.S. tariff hike, their net exports would increase by 500 and 390 percent, respectively. (compared against the increase in gross exports of 660 and 340 percent). The result implies that despite the observed rise in Chinese input content share over time, domestic value-added from the U.S. export expansion remains substantial. In Columns 2 and 3 of Table 6, results for total net exports in almost every sector are similar to those of net exports to the U.S. The exception is for firms in the non-manufacturing sectors and electrical appliances sector, where coefficient estimates become less significant or insignificant. The results indicate that for most sectors, the trade war has resulted in firm exports expansion, not just substitution of exports across destination markets.

Meanwhile, the last column finds a rather widespread positive effects on employment across many sectors, potentially to support firm growth. The estimated effects on employment are strongest in the food manufacturing sector and are as high as 8 percent in the electronics and metal sectors (conditional on 10-percentage-point tariff exposure). Firms producing electrical appliances and petrochemicals also experience a rather similar impact. The employment results hence point to another channel that the trade diversion and supply chain restructuring can generate domestic gains for the Thai economy.¹⁰ The finding is in line with [Mayr-Dorn et al. \(2026\)](#), who show that

¹⁰Table A.11 in the Appendix show results for the intensive margins.

greater exposure to the trade war is associated with higher employment in traded industries at both the individual and district levels. [Rotunno et al. \(2024\)](#) also document that the US-China tariffs increased job creation in Vietnam at the firm level. A similar pattern emerges for Mexico, where [Utar \(2026\)](#) finds that higher US tariffs on China significantly increased manufacturing output and employment, driven by multinationals and their domestic affiliates operating under Mexico's export platform.

7 Conclusion

This research provides a comprehensive assessment of how the 2018 U.S.-China trade war reshaped trade flows for Thailand, a key third-party exporter. Leveraging detailed Thai customs data from 2013 to 2023, the empirical evidence demonstrates that U.S. tariffs on Chinese products spurred a significant increase in Thai exports to the U.S., a result consistent with the trade-diversion hypothesis. However, this response was not immediate; a three-to-four-year delay occurred before these effects fully materialized, suggesting that the restructuring of global supply chains and the establishment of new sourcing relationships by U.S. importers is a gradual process. The gains from trade diversion were highly heterogeneous across sectors and product types, where the surge in exports to the U.S. was primarily driven by capital goods within the machinery, electrical, and transportation sectors. Crucially, the products that successfully displaced Chinese goods in the U.S. market were those with pre-existing supply chain links to China. In contrast, Chinese retaliatory tariffs on U.S. goods had minimal spillover effects on Thai exports, with only a slight negative impact on certain exports to China.

Firm-level analysis clarifies the mechanisms behind this export growth, revealing significant evidence of both the transshipment of Chinese goods through Thailand and increased regional supply chain integration. This integration is marked by a corresponding surge in imports of Chinese inputs, particularly in manufacturing industries such as petrochemicals, metal, electrical appliances, electronics, machinery, and automotive sectors. Notably, even when controlling for these channels—administrative rerouting and increased foreign-input intensity—large and positive trade-diversion effects on Thai exports to the U.S. persist.

Ultimately, these findings suggest that Thailand's role as a bystander in the trade war has resulted in meaningful economic contributions. The observed trade diversion is not merely a hollow expansion of gross flows; rather, it has contributed to domestic value-added expansion and a widespread increase in firm employment across various sectors. The results highlight that while trade diversion is strongly mediated by regional value chain dependencies, it remains a significant driver of domestic economic activity in the face of shifting global trade regimes.

Table 4: Evidence of Transshipment and Supply Chain Effects across Sectors

	(1)	(2)	(3)	(4)	(5)	(6)
	EX^{US}	Transshipment		Import of Chinese Inputs		
	Value	Value	Ratio to EX^{US}	Value	Ratio to EX^{Total}	Ratio to Revenue
$Post_{ft} \times \Delta \tau_f^{US \rightarrow CN} \times Sector_j$						
Manufacturing:						
Food	7.741*** (2.222)	-0.007 (1.009)	0.045 (0.033)	4.565*** (1.577)	0.053 (0.074)	0.007 (0.016)
Apparel	-5.056* (2.651)	0.639 (1.223)	0.004 (0.047)	-5.206** (2.389)	-0.031 (0.148)	0.042* (0.025)
Rubber&Wood	8.499*** (2.499)	2.702** (1.212)	0.040 (0.033)	3.391 (2.073)	-0.028 (0.115)	-0.001 (0.022)
Petrochemical	10.970*** (2.103)	3.367*** (1.162)	0.115*** (0.044)	7.984*** (1.821)	0.201* (0.105)	0.045** (0.018)
Metal	14.761*** (2.234)	6.034*** (1.390)	0.136*** (0.051)	10.223*** (2.137)	0.316** (0.156)	0.088*** (0.026)
Electrical Appliances	11.745*** (2.667)	1.930 (1.862)	-0.070 (0.073)	7.751*** (2.606)	0.372** (0.182)	0.136** (0.058)
Electronics	20.227*** (3.329)	8.920*** (2.462)	0.072 (0.085)	14.328*** (3.431)	0.460** (0.193)	0.203*** (0.048)
Machinery	11.542*** (2.345)	4.520*** (1.369)	0.144** (0.063)	8.793*** (2.072)	0.440*** (0.146)	0.067*** (0.024)
Automotive	9.573*** (2.199)	3.099** (1.447)	0.126** (0.064)	5.879*** (1.926)	0.107 (0.116)	0.034* (0.020)
Other Manufacturing	0.711 (2.274)	1.254 (1.163)	-0.008 (0.043)	2.153 (1.930)	0.089 (0.111)	0.037* (0.020)
Non-manufacturing:						
Agri&Food&Mining	2.610 (2.328)	0.627 (0.716)	0.008 (0.032)	1.973* (1.145)	-0.126* (0.075)	-0.013 (0.018)
Automotive Trade	12.095*** (3.637)	5.799** (2.301)	0.162 (0.105)	6.249** (3.119)	-0.219 (0.250)	0.019 (0.031)
Wholesale Trade	5.505*** (1.978)	1.158 (0.986)	0.030 (0.048)	2.862** (1.418)	-0.042 (0.137)	-0.016 (0.022)
Retail Trade	8.482*** (2.737)	3.420** (1.434)	0.073 (0.063)	4.023** (1.872)	-0.083 (0.217)	-0.042 (0.050)
Other Trade	-2.010 (2.306)	0.903 (0.959)	0.028 (0.040)	-1.138 (1.573)	-0.110 (0.125)	-0.025 (0.026)
Observations	62,975	62,975	62,975	62,975	62,975	54,339
Adjusted R^2	0.447	0.633	0.453	0.632	0.467	0.606
Firm FEs	Yes	Yes	Yes	Yes	Yes	Yes
Industry x Time FEs	Yes	Yes	Yes	Yes	Yes	Yes

Note: This Table reports the effects of U.S. tariff changes on Thai exports to the U.S. (Column 1), exports to the U.S. identified as being transshipment of Chinese products (Column 2–3) and imports of Chinese inputs (Column 4–6), across sectors. The dependent variables in Column 5 and 6 are winsorized at their 97.5 percentiles. Standard errors in parentheses are clustered at the HS-6 product level. All regressions control for a firm’s exposure to U.S. tariffs on Thai exports. Firms are classified into 13 sectors based on the International Standard Industrial Classification of All Economic Activities (ISIC) Revision 4 at 2 or 3 digits as shown in parentheses. Manufacturing sectors consist of 8 industries: food (10-12), apparel (13-15), rubber&wood (16-17, 221), petrochemical (19-21, 222), metal (24-25), electrical appliances (26), electronics (27), machinery (28), automotive (29-30), and other. For non-manufacturing sectors, they are 5 industries: agri&food&mining (01-03, 05-09, 462-463, 473-472), automotive trade (45), wholesale trade (46), retail trade (47), and other. Industry \times Time FEs are specified separately for non-manufacturing and manufacturing industries. *, **, and *** indicate the significance level of 0.10, 0.05, and 0.01, respectively.

Table 5: Domestic Value Added of Exports

	(1) Domestic Content of EX^{US}	(2) $EX^{Total} - IM^{Total}$	(3) Domestic Content of EX^{Total}	(4) Employment
Full:				
$Post_{f,t} \times \Delta\tau_f^{US \rightarrow CN}$	7.322*** (1.120)	8.204*** (1.505)	5.363*** (1.027)	0.542*** (0.091)
Observations	62,975	62,975	62,975	48,816
Adjusted R-squared	0.463	0.712	0.514	0.950
Intensive Margins:				
$Post_{f,t} \times \Delta\tau_f^{US \rightarrow CN}$	1.206*** (0.311)	3.103* (1.587)	0.913*** (0.253)	0.605*** (0.098)
Observations	32,757	36,034	36,034	28,367
Adjusted R-squared	0.727	0.755	0.794	0.968
Firm FEs	Yes	Yes	Yes	Yes
Industry x Time FEs	Yes	Yes	Yes	Yes

Note: This Table reports the effects of U.S. tariff changes on firms' domestic content of exports to the U.S. (Column 1) and of total exports (Column 3), total exports net of total imports (Column 2) and employment (Column 4). For intensive margins, the sample only includes firms that export to the U.S. for more than six years and omits observations with zero export values. Standard errors in parentheses are clustered at the HS-6 product level. All regressions control for a firm's exposure to U.S. tariffs on Thai exports. Industry \times Time FEs are specified separately for non-manufacturing and manufacturing industries. *, **, and *** indicate the significance level of 0.10, 0.05, and 0.01, respectively.

Table 6: Domestic Value Added of Exports across Sectors

	(1) Domestic Content of EX^{US}	(2) $EX^{Total} - IM^{Total}$	(3) Domestic Content of EX^{Total}	(4) Employment
Manufacturing:				
Food	7.281*** (2.206)	5.997** (2.749)	5.615*** (1.732)	0.824*** (0.172)
Apparel	-4.988* (2.637)	-1.845 (3.688)	-3.311 (2.062)	-0.329 (0.210)
Rubber&Wood	8.008*** (2.475)	7.057** (3.547)	6.412*** (2.108)	0.716*** (0.210)
Petrochemical	10.018*** (2.069)	15.556*** (2.991)	8.714*** (1.679)	0.760*** (0.141)
Metal	13.591*** (2.207)	16.581*** (3.441)	9.001*** (1.602)	0.755*** (0.153)
Electrical Appliances	10.182*** (2.655)	5.685 (3.780)	5.449** (2.256)	0.742*** (0.185)
Electronics	17.959*** (2.900)	14.412*** (4.486)	11.359*** (2.011)	0.766*** (0.223)
Machinery	9.812*** (2.362)	10.380*** (3.417)	7.624*** (1.845)	0.614*** (0.165)
Automotive	8.987*** (2.185)	17.204*** (3.443)	8.015*** (1.758)	0.269* (0.150)
Other Manufacturing	0.949 (2.236)	2.249 (3.166)	-0.540 (1.946)	-0.109 (0.212)
Non-manufacturing:				
Agri&Food&Mining	2.495 (2.281)	1.359 (2.393)	2.585 (2.065)	0.434** (0.214)
Automotive Trade	11.891*** (3.359)	13.686*** (5.060)	8.133** (3.346)	0.846** (0.370)
Wholesale Trade	5.465*** (1.863)	2.757 (2.275)	3.598* (1.878)	0.234 (0.161)
Retail Trade	7.912*** (2.617)	6.593* (3.605)	6.158** (2.474)	0.704*** (0.224)
Other Trade	-1.506 (2.233)	1.648 (2.693)	-2.955 (2.222)	0.032 (0.240)
Observations	62,975	62,975	62,975	48,816
Adjusted R^2	0.467	0.713	0.517	0.950
Firm FEs	Yes	Yes	Yes	Yes
Industry x Time FEs	Yes	Yes	Yes	Yes

Note: This Table reports the effects of U.S. tariff changes on firms' domestic content of exports to the U.S. (Column 1) and of total exports (Column 3), total exports net of total imports (Column 2) and employment (Column 4). Standard errors in parentheses are clustered at the HS-6 product level. All regressions control for a firm's exposure to U.S. tariffs on Thai exports. Firms are classified into 13 sectors based on the International Standard Industrial Classification of All Economic Activities (ISIC) Revision 4 at 2 or 3 digits as shown in parentheses. Manufacturing sectors consist of 8 industries: food (10-12), apparel (13-15), rubber&wood (16-17, 221), petrochemical (19-21, 222), metal (24-25), electrical appliances (26), electronics (27), machinery (28), automotive (29-30), and other. For non-manufacturing sectors, they are 5 industries: agri&food&mining (01-03, 05-09, 462-463, 473-472), automotive trade (45), wholesale trade (46), retail trade (47), and other. Industry \times Time FEs are specified separately for non-manufacturing and manufacturing industries. *, **, and *** indicate the significance level of 0.10, 0.05, and 0.01, respectively.

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Appendix

Appendix A More Figures and Tables

Table A.1: Thai Exports by Sectors

Sector	Total		U.S.		China		ASEAN	
	Value	Share	Value	Share	Value	Share	Value	Share
Agriculture	1204	17.6%	140	9.7%	336	33.6%	287	18.3%
Apparel	189	2.8%	40	2.8%	12	1.2%	50	3.2%
Chemicals	389	5.7%	23	1.6%	63	6.3%	154	9.8%
Electrical	1508	22.0%	511	35.5%	104	10.4%	268	17.1%
Machinery	1298	19.0%	346	24.0%	116	11.6%	251	16.0%
Materials	502	7.3%	47	3.3%	26	2.6%	166	10.6%
Metals	429	6.3%	84	5.83%	48	4.8%	104	6.6%
Minerals	73	1.1%	1	0.0%	8	0.8%	46	3.0%
Miscellaneous	275	4.0%	72	5.0%	25	2.5%	38	2.4%
Plastics & rubbers	976	14.3%	175	12.2%	260	26.0%	202	12.9%
Transportation	1006	14.7%	67	4.6%	29	2.9%	303	19.4%
All sectors	6845	100%	1439	100%	999	100%	1566	100%

Note: The table reports average values (in billions of Thai baht) and the share of Thai exports to the world, the U.S., China and ASEAN between 2022 and 2023 across sectors. Sectors are classified according to two-digit HS codes: Agriculture (1-24), Minerals (25-27), Chemicals (28-38), Plastics & rubbers (39-40), Materials (41-49, 68-71), Apparel (50-67), Metals (72-83), Machinery (84), Electrical (85), Transportation (86-89), Miscellaneous (90-97).

Table A.2: Thai Sectoral Exports by Destination Countries

Sector	U.S.	China	ASEAN	ROW	Total
Agriculture	11.6%	27.9%	23.8%	36.6%	100%
Apparel	21.2%	6.4%	26.3%	46.0%	100%
Chemicals	5.9%	16.3%	39.6%	38.3%	100%
Electrical	33.9%	6.9%	17.8%	41.4%	100%
Machinery	26.7%	8.9%	19.3%	45.1%	100%
Materials	9.4%	5.2%	33.1%	52.4%	100%
Metals	19.5%	11.3%	24.2%	45.0%	100%
Minerals	0.7%	10.3%	63.1%	25.9%	100%
Miscellaneous	26.3%	9.2%	13.7%	50.8%	100%
Plastics & rubbers	17.9%	26.6%	20.7%	34.7%	100%
Transportation	6.6%	2.9%	30.1%	60.3%	100%

Note: The table reports the average share of Thai sectoral exports to the U.S., China and ASEAN between 2022 and 2023 across destination countries. Sectors are classified according to two-digit HS codes: Agriculture (1-24), Minerals (25-27), Chemicals (28-38), Plastics & rubbers (39-40), Materials (41-49, 68-71), Apparel (50-67), Metals (72-83), Machinery (84), Electrical (85), Transportation (86-89), Miscellaneous (90-97).

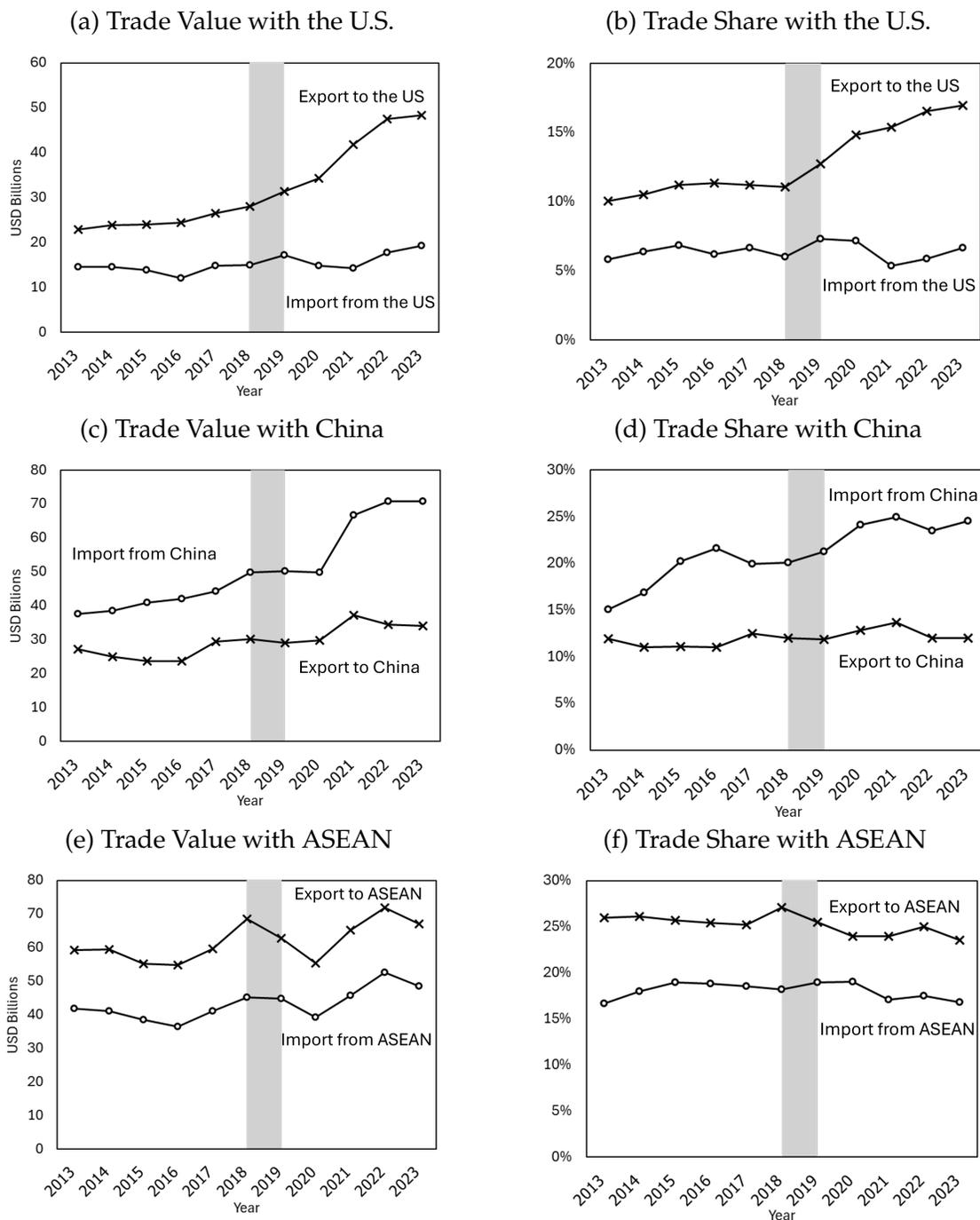
Table A.3: Product-level Summary Statistics

	N	Mean	S.D.	Min	Median	Max
$\Delta\tau^{US \rightarrow CN}$	33990	0.088	0.108	0	0	0.467
$\Delta\tau^{CN \rightarrow US}$	33990	0.073	0.094	-0.25	0	0.25
$\text{Log}(EX^{Total})$	33990	19.071	3.05	0	19.303	27.439
$\text{Log}(EX^{US})$	15235	17.743	3.112	0	18.036	26.635
$\text{Log}(EX^{CN})$	13299	17.444	3.164	0	17.648	25.934
$\text{Log}(EX^{ASEAN})$	29601	18.099	2.9	0	18.316	26.274
$\text{Log}(EX^{ROW})$	22770	18.019	3.112	0	18.23	27.061
EX^{Total}	33990	2.04E+09	1.11E+10	0	1.21E+08	4.13E+11
EX^{US}	15235	6.57E+08	4.45E+09	0	3.40E+07	1.85E+11
EX^{CN}	13299	6.05E+08	3.37E+09	0	2.31E+07	9.16E+10
EX^{ASEAN}	29601	5.92E+08	2.89E+09	0	4.50E+07	1.29E+11
EX^{ROW}	22770	8.23E+08	5.65E+09	0	4.13E+07	2.83E+11
RCA^{US}	33990	0.44	0.496	0	0	1
RCA^{Global}	33990	0.325	0.468	0	0	1
RCA^{CN}	33990	0.213	0.409	0	0	1
CN Loss	33990	0.297	0.457	0	0	1
GLI^{China}	33935	0.24	0.247	0	0.149	0.938
GLI^{ASEAN}	33990	0.454	0.279	0	0.47	0.995

Table A.4: Firm-level Summary Statistics

	N	Mean	S.D.	Min	Median	Max
Full:						
$\Delta\tau^{US \rightarrow CN}$	62975	0.181	0.074	0	0.197	0.648
$\text{Log}(EX^{US})$	62975	11.543	7.939	0	14.898	25.997
$\text{Log}(\text{TRSM})$	62975	2.866	5.875	0	0	23.878
TRSM Ratio to EX^{US}	62975	0.059	0.208	0	0	1
$\text{Log}(\text{Chinese Inputs})$	62975	6.824	8.463	0	0	25.351
Chinese Inputs Ratio to EX^{Total}	62975	0.172	0.575	0	0	3.176
Chinese Inputs Ratio to Revenue	62975	0.034	0.099	0	0	1.21
$\text{Log}(\text{Domestic Content of } EX^{US})$	62975	10.811	8.07	0	14.45	25.174
$EX^{Total} - IM^{Total}$ (log level)	62975	6.944	16.138	-27.471	16.29	26.241
$\text{Log}(\text{Domestic Content of } EX^{Total})$	62975	15.195	7.482	-22.657	17.632	26.261
$\text{Log}(\text{Employment})$	48880	4.651	1.647	1.609	4.682	10.593
EX^{US}	62975	1.51E+08	1.45E+09	0	1.48E+06	9.76E+10
TRSM	62975	7.35E+06	1.30E+08	0	0	1.17E+10
Chinese Inputs	62975	1.03E+08	9.62E+08	0	0	5.11E+10
Domestic Content of EX^{US}	62975	8.90E+07	6.97E+08	0	9.43E+05	4.28E+10
$EX^{Total} - IM^{Total}$	62975	2.39E+08	5.24E+09	-4.26E+11	5.94E+06	1.24E+11
Domestic Content of EX^{Total}	62975	5.93E+08	3.68E+09	-3.46E+09	2.27E+07	1.27E+11
Employment	48880	383.394	1031.228	5	108	39860.83
Intensive margins:						
$\Delta\tau^{US \rightarrow CN}$	38247	0.181	0.074	0	0.201	0.648
$\text{Log}(EX^{US})$	34162	16.327	2.658	7.344	16.388	25.304
$\text{Log}(\text{TRSM})$	34162	4.464	6.895	0	0	23.878
TRSM Ratio to EX^{US}	34162	0.077	0.229	0	0	1
$\text{Log}(\text{Chinese Inputs})$	34162	10.111	8.627	0	13.943	25.351
Chinese Inputs Ratio to EX^{Total}	34162	0.203	0.588	0	0.005	3.176
Chinese Inputs Ratio to Revenue	34162	0.045	0.113	0	0.003	1.21
$\text{Log}(\text{Domestic Content of } EX^{US})$	32771	16.059	2.863	-9.714	16.243	24.481
$\text{Log}(EX^{Total} - IM^{Total})$	36038	11.07	15.391	-27.471	17.992	26.241
$\text{Log}(\text{Domestic Content of } EX^{Total})$	36038	17.916	2.778	-3.991	18.148	25.567
$\text{Log}(\text{Employment})$	28411	4.925	1.672	1.609	5.024	10.593
EX^{US}	34162	2.67E+08	1.96E+09	1547	1.31E+07	9.76E+10
TRSM	34162	1.29E+07	1.73E+08	0	0	1.17E+10
Chinese Inputs	34162	1.71E+08	1.28E+09	0	5.68E+05	5.11E+10
Domestic Content of EX^{US}	32771	1.64E+08	9.54E+08	0	1.13E+07	4.28E+10
$EX^{Total} - IM^{Total}$	36038	5.13E+08	6.18E+09	-4.26E+11	3.26E+07	1.24E+11
Domestic Content of EX^{Total}	36038	9.43E+08	4.81E+09	0.018	7.61E+07	1.27E+11
Employment	28411	498.788	1275.181	5	152	39860.83

Figure A.1: Values and Shares of Thai Exports and Imports by Destination and Source Countries



Note: The left-hand panels show the annual values of Thai exports in US dollar terms to (imports from) certain destination (source) countries over time. The right-hand panels report their shares to the corresponding total Thai exports or imports.

Source: The Bank of Thailand

Table A.5: Heterogeneous Effects of the Weighted U.S.-China Tariffs on Thai Exports

Dep. Var.:	Total Exports			Exports to the U.S.		
	Group (1)	Sector (2)	Type (3)	Group (4)	Sector (5)	Type (6)
$Post_{it} \times \Delta\tau_i^{US \rightarrow CN}$						
... \times Manufacturing _{<i>i</i>}	0.357* (0.211)			0.752** (0.374)		
... \times Agricultural _{<i>i</i>}	0.691* (0.392)	0.783** (0.393)		-0.264 (1.066)	-0.226 (0.671)	
... \times Chemicals&Plastics&Rubbers _{<i>i</i>}		1.157*** (0.372)			1.328* (0.789)	
... \times Machinery&Electrical&Transportation _{<i>i</i>}		0.956** (0.389)			1.472*** (0.547)	
... \times Other manufacturing _{<i>i</i>}		-0.145 (0.231)			0.220 (0.391)	
... \times Capital good _{<i>i</i>}			0.881** (0.445)			1.120* (0.647)
... \times Consumer good _{<i>i</i>}			0.934*** (0.258)			0.319 (0.454)
... \times Raw material and Intermediate input _{<i>i</i>}			0.359 (0.281)			0.680 (0.537)
... \times Other _{<i>i</i>}			0.728 (0.568)			0.319 (0.913)
$Post_{it} \times \Delta\tau_i^{CN \rightarrow US}$						
... \times Manufacturing _{<i>i</i>}	-0.068 (0.240)			-0.729* (0.401)		
... \times Agricultural _{<i>i</i>}	-0.331 (0.547)	-0.260 (0.548)		0.866 (1.071)	0.929 (0.957)	
... \times Chemicals&Plastics&Rubbers _{<i>i</i>}		0.481 (0.537)			-1.991 (1.308)	
... \times Machinery&Electrical&Transportation _{<i>i</i>}		-1.071* (0.553)			-0.559 (0.661)	
... \times Other manufacturing _{<i>i</i>}		0.409 (0.282)			-0.424 (0.478)	
... \times Capital good _{<i>i</i>}			-1.453** (0.660)			0.057 (0.810)
... \times Consumer good _{<i>i</i>}			0.222 (0.293)			-0.271 (0.496)
... \times Raw material and Intermediate input _{<i>i</i>}			0.052 (0.337)			-0.898 (0.668)
... \times Other _{<i>i</i>}			-0.261 (0.721)			-0.255 (1.200)
Observations	33,990	33,990	33,990	15,235	15,235	15,235
Adjusted R^2	0.854	0.855	0.855	0.795	0.796	0.795
HS6 FEs	Yes	Yes	Yes	Yes	Yes	Yes
Time FEs	Yes	Yes	Yes	Yes	Yes	Yes

Note: Standard errors in parentheses are clustered at the HS-6 product level. All regressions include tariffs the destination country imposes on Thai exports. *, **, and *** indicate the significance level of 0.10, 0.05, and 0.01, respectively.

Table A.5: Heterogeneous Effects of the Weighted U.S.-China Tariffs on Thai Exports (continued)

Dep. Var.:	Exports to China			Exports to ASEAN		
	Group (1)	Sector (2)	Type (3)	Group (4)	Sector (5)	Type (6)
$Post_{it} \times \Delta\tau_i^{US \rightarrow CN}$						
... \times Manufacturing _{<i>i</i>}	0.839*			0.460**		
	(0.507)			(0.231)		
... \times Agricultural _{<i>i</i>}	-0.588	0.491		0.040	0.234	
	(0.949)	(0.823)		(0.782)	(0.569)	
... \times Chemicals&Plastics&Rubbers _{<i>i</i>}		0.344			1.127***	
		(0.741)			(0.352)	
... \times Machinery&Electrical&Transportation _{<i>i</i>}		0.552			0.489	
		(0.639)			(0.409)	
... \times Other manufacturing _{<i>i</i>}		0.635			0.105	
		(0.530)			(0.257)	
... \times Capital good _{<i>i</i>}			1.988**			0.412
			(0.773)			(0.470)
... \times Consumer good _{<i>i</i>}			0.881			0.403
			(0.568)			(0.315)
... \times Raw material and Intermediate input _{<i>i</i>}			0.196			0.838***
			(0.583)			(0.305)
... \times Other _{<i>i</i>}			1.130			0.631
			(1.386)			(0.678)
$Post_{it} \times \Delta\tau_i^{CN \rightarrow US}$						
... \times Manufacturing _{<i>i</i>}	-1.110**			-0.095		
	(0.470)			(0.273)		
... \times Agricultural _{<i>i</i>}	-1.206	-0.497		0.208	0.404	
	(1.075)	(0.915)		(0.845)	(0.703)	
... \times Chemicals&Plastics&Rubbers _{<i>i</i>}		-0.600			1.074**	
		(1.224)			(0.456)	
... \times Machinery&Electrical&Transportation _{<i>i</i>}		-0.427			-0.636	
		(0.611)			(0.580)	
... \times Other manufacturing _{<i>i</i>}		-1.624***			0.078	
		(0.619)			(0.339)	
... \times Capital good _{<i>i</i>}			-2.023**			-0.757
			(0.813)			(0.678)
... \times Consumer good _{<i>i</i>}			-0.782			0.702*
			(0.630)			(0.377)
... \times Raw material and Intermediate input _{<i>i</i>}			-0.912			-0.400
			(0.667)			(0.379)
... \times Other _{<i>i</i>}			-2.262			-0.493
			(1.491)			(0.865)
Observations	13,299	13,299	13,299	29,601	29,601	29,601
Adjusted R ²	0.772	0.772	0.772	0.804	0.805	0.804
HS6 FEs	Yes	Yes	Yes	Yes	Yes	Yes
Time FEs	Yes	Yes	Yes	Yes	Yes	Yes

Note: Standard errors in parentheses are clustered at the HS-6 product level. All regressions include tariffs the destination country imposes on Thai exports. *, **, and *** indicate the significance level of 0.10, 0.05, and 0.01, respectively.

Table A.6: Heterogeneous Effects of the Unweighted U.S.-China Tariffs on Thai Exports

Dep. Var.:	Total Exports			Exports to the U.S.		
	Group (1)	Sector (2)	Type (3)	Group (4)	Sector (5)	Type (6)
$Post_{it} \times \Delta\tau_i^{US \rightarrow CN}$						
... \times Manufacturing _{<i>i</i>}	0.321 (0.217)			0.822** (0.392)		
... \times Agricultural _{<i>i</i>}	0.854 (0.559)	0.934* (0.560)		0.002 (0.804)	0.008 (0.806)	
... \times Chemicals&Plastics&Rubbers _{<i>i</i>}		1.291*** (0.424)			1.345 (0.969)	
... \times Machinery&Electrical&Transportation _{<i>i</i>}		0.937* (0.479)			1.682*** (0.611)	
... \times Other manufacturing _{<i>i</i>}		-0.268 (0.237)			0.217 (0.422)	
... \times Capital good _{<i>i</i>}			0.975* (0.548)			1.181 (0.753)
... \times Consumer good _{<i>i</i>}			0.854*** (0.299)			0.428 (0.486)
... \times Raw material and Intermediate input _{<i>i</i>}			0.366 (0.305)			0.863 (0.631)
... \times Other _{<i>i</i>}			0.489 (0.622)			0.053 (0.845)
$Post_{it} \times \Delta\tau_i^{CN \rightarrow US}$						
... \times Manufacturing _{<i>i</i>}	0.341 (0.268)			-0.055 (0.419)		
... \times Agricultural _{<i>i</i>}	-0.103 (0.598)	0.013 (0.599)		0.718 (0.846)	0.753 (0.847)	
... \times Chemicals&Plastics&Rubbers _{<i>i</i>}		0.689 (0.564)			-0.860 (1.347)	
... \times Machinery&Electrical&Transportation _{<i>i</i>}		-0.339 (0.555)			-0.130 (0.645)	
... \times Other manufacturing _{<i>i</i>}		0.875*** (0.306)			0.186 (0.499)	
... \times Capital good _{<i>i</i>}			-0.895 (0.675)			0.500 (0.840)
... \times Consumer good _{<i>i</i>}			0.521 (0.336)			0.160 (0.493)
... \times Raw material and Intermediate input _{<i>i</i>}			0.382 (0.361)			-0.396 (0.683)
... \times Other _{<i>i</i>}			0.491 (0.670)			0.893 (0.984)
Observations	33,990	33,990	33,990	15,235	15,235	15,235
Adjusted R^2	0.854	0.855	0.855	0.795	0.796	0.795
HS6 FEs	Yes	Yes	Yes	Yes	Yes	Yes
Time FEs	Yes	Yes	Yes	Yes	Yes	Yes

Note: Standard errors in parentheses are clustered at the HS-6 product level. All regressions include tariffs the destination country imposes on Thai exports. *, **, and *** indicate the significance level of 0.10, 0.05, and 0.01, respectively.

Table A.6: Heterogeneous Effects of the Unweighted U.S.-China Tariffs on Thai Exports (continued)

Dep. Var.:	Exports to China			Exports to ASEAN		
	Group (1)	Sector (2)	Type (3)	Group (4)	Sector (5)	Type (6)
$Post_{it} \times \Delta \tau_i^{US \rightarrow CN}$						
... × Manufacturing _i	0.515 (0.486)			0.422* (0.242)		
... × Agricultural _i	0.271 (0.965)	0.206 (0.967)		0.027 (0.703)	0.110 (0.704)	
... × Chemicals&Plastics&Rubbers _i		0.191 (0.827)			1.085*** (0.406)	
... × Machinery&Electrical&Transportation _i		0.114 (0.737)			0.673 (0.502)	
... × Other manufacturing _i		0.566 (0.582)			-0.019 (0.271)	
... × Capital _i			2.231** (0.895)			0.743 (0.583)
... × Consumer _i			0.844 (0.610)			0.227 (0.344)
... × Raw material and Intermediate input _i			0.135 (0.674)			0.842** (0.354)
... × Other _i			-0.954 (1.958)			0.173 (0.751)
$Post_{it} \times \Delta \tau_i^{CN \rightarrow US}$						
... × Manufacturing _i	-0.692 (0.541)			0.190 (0.310)		
... × Agricultural _i	0.196 (1.037)	0.111 (1.044)		0.566 (0.679)	0.723 (0.681)	
... × Chemicals&Plastics&Rubbers _i		-0.252 (1.269)			1.490*** (0.506)	
... × Machinery&Electrical&Transportation _i		0.229 (0.724)			-0.352 (0.580)	
... × Other manufacturing _i		-1.253* (0.702)			0.617 (0.377)	
... × Capital _i			-1.710* (0.928)			-0.781 (0.708)
... × Consumer _i			-0.453 (0.752)			0.980** (0.432)
... × Raw material and Intermediate input _i			-0.640 (0.705)			0.019 (0.402)
... × Other _i			0.533 (1.910)			0.505 (0.814)
Observations	13,299	13,299	13,299	29,601	29,601	29,601
Adjusted R ²	0.772	0.772	0.772	0.804	0.805	0.804
HS6 FEs	Yes	Yes	Yes	Yes	Yes	Yes
Time FEs	Yes	Yes	Yes	Yes	Yes	Yes

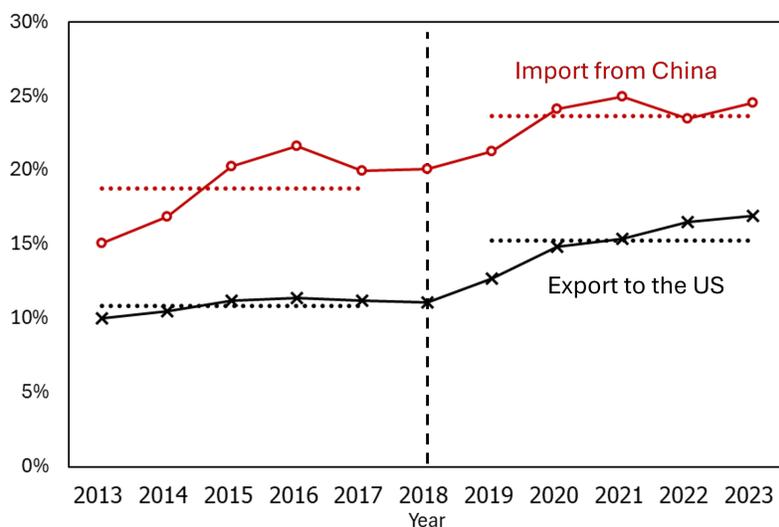
Note: Standard errors in parentheses are clustered at the HS-6 product level. All regressions include tariffs the destination country imposes on Thai exports. *, **, and *** indicate the significance level of 0.10, 0.05, and 0.01, respectively.

Table A.7: The Effect of Unweighted U.S. Tariffs ($\Delta\tau_i^{US\rightarrow CN}$) on Thai Exports to the U.S. by Product Characteristics.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$Post_{it} \times \Delta\tau_i^{US\rightarrow CN}$	0.483 (0.420)	0.755* (0.435)	0.594 (0.409)	0.515 (0.577)	0.334 (0.441)	0.139 (0.497)	-0.034 (0.482)	-0.098 (0.526)
$Post_{it} \times \Delta\tau_i^{US\rightarrow CN} \times RCA_i^{US}$		0.605* (0.327)					0.759* (0.402)	0.609 (0.389)
$Post_{it} \times \Delta\tau_i^{US\rightarrow CN} \times RCA_i^{Global}$		-0.021 (0.326)						
$Post_{it} \times \Delta\tau_i^{US\rightarrow CN} \times CN\ Loss_i$			0.335 (0.342)				-0.044 (0.410)	-0.032 (0.408)
$Post_{it} \times \Delta\tau_i^{US\rightarrow CN} \times GLI_i^{Global}$				0.377 (0.640)				
$Post_{it} \times \Delta\tau_i^{US\rightarrow CN} \times GLI_i^{China}$					1.422** (0.635)		1.636** (0.650)	
$Post_{it} \times \Delta\tau_i^{US\rightarrow CN} \times GLI_i^{ASEAN}$						1.221** (0.615)		1.199* (0.613)
$Post_{it} \times \Delta\tau_i^{CN\rightarrow US}$	0.013 (0.403)	0.043 (0.403)	0.014 (0.406)	0.044 (0.402)	0.040 (0.403)	0.043 (0.402)	0.007 (0.405)	0.015 (0.404)
Observations	15,235	15,235	15,235	15,235	15,224	15,235	15,224	15,235
Adjusted R^2	0.795	0.795	0.795	0.795	0.795	0.795	0.796	0.795
HS6 FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note: Standard errors in parentheses are clustered at the HS-6 product level. All regressions control for U.S. tariffs on Thai exports. *, **, and *** indicate the significance level of 0.10, 0.05, and 0.01, respectively.

Figure A.2: Thai Export Share to the U.S. versus Thai Import Share from China



Note: This Figure reports the annual shares of Thai exports to the U.S. (Thai imports from China) as a ratio of total Thai exports (imports).

Source: The Bank of Thailand

Table A.8: Evidence on Regional Supply Chain Effects

Import of U.S. Inputs:	Value	Ratio to EX^{Total}	Ratio to Revenue
$Post_{ft} \times \Delta\tau_f^{US \rightarrow CN}$	1.393** (0.542)	-0.014 (0.040)	-0.003 (0.006)
Observations	78,672	78,672	64,756
Adjusted R^2	0.614	0.490	0.532
Import of ASEAN Inputs:	Value	Ratio to EX^{Total}	Ratio to Revenue
$Post_{ft} \times \Delta\tau_f^{US \rightarrow CN}$	1.893*** (0.586)	0.018 (0.015)	0.005 (0.005)
Observations	78,672	78,672	64,756
Adjusted R^2	0.644	0.475	0.541
Import of East Asia Inputs:	Value	Ratio to EX^{Total}	Ratio to Revenue
$Post_{ft} \times \Delta\tau_f^{US \rightarrow CN}$	3.602*** (0.709)	0.057 (0.047)	0.010 (0.009)
Observations	78,672	78,672	64,756
Adjusted R^2	0.659	0.448	0.590
Firm FEs	Yes	Yes	Yes
Industry x Time FEs	Yes	Yes	Yes

Note: Standard errors in parentheses are clustered at the HS-6 product level. All regressions control for a firm's exposure to U.S. tariffs on Thai exports. East Asia includes Japan, Korea and Taiwan. Industry x Time FEs are specified separately for non-manufacturing and manufacturing industries. *, **, and *** indicate the significance level of 0.10, 0.05, and 0.01, respectively.

Table A.9: Evidence of Transshipment and Supply Chain Effects across Sectors (Intensive Margins)

	(1) EX^{US}	(2) Transshipment		(4)	(5) Import of Chinese Inputs		(6)
	Value	Value	Ratio to EX^{US}	Value	Ratio to EX^{Total}	Ratio to Revenue	
$Post_{ft} \times \Delta \tau_f^{US \rightarrow CN} \times Sector_j$							
Manufacturing:							
Food	0.974** (0.446)	-0.900 (1.195)	0.002 (0.039)	2.294 (1.459)	-0.055 (0.076)	-0.022 (0.015)	
Apparel	-1.312** (0.582)	2.100 (1.577)	0.027 (0.064)	0.930 (1.354)	0.245 (0.155)	0.060** (0.030)	
Rubber&Wood	1.274** (0.518)	2.499 (1.535)	0.031 (0.041)	-0.069 (1.541)	-0.096 (0.144)	-0.034 (0.022)	
Petrochemical	1.487*** (0.472)	2.485 (1.573)	0.079 (0.058)	3.626*** (1.327)	-0.143 (0.120)	0.001 (0.017)	
Metal	1.813*** (0.525)	4.186** (1.655)	-0.003 (0.060)	2.359 (1.674)	0.059 (0.147)	0.001 (0.030)	
Electrical Appliances	0.837 (0.643)	0.973 (1.796)	-0.050 (0.090)	2.033 (1.360)	0.232 (0.181)	0.068 (0.050)	
Electronics	3.094*** (0.976)	6.480*** (2.502)	0.047 (0.072)	0.945 (1.376)	-0.008 (0.178)	0.084** (0.033)	
Machinery	1.213** (0.489)	2.812* (1.573)	0.059 (0.079)	3.209** (1.380)	0.371** (0.170)	0.040 (0.029)	
Automotive	1.324** (0.626)	2.684 (1.642)	0.087 (0.079)	3.491*** (1.332)	0.026 (0.120)	0.030 (0.023)	
Other Manufacturing	0.436 (0.502)	2.765** (1.387)	0.041 (0.050)	2.099 (1.605)	0.111 (0.113)	0.023 (0.022)	
Non-manufacturing:							
Agri&Food&Mining	0.529 (0.449)	-0.146 (1.048)	-0.029 (0.035)	0.979 (1.269)	-0.135 (0.089)	-0.015 (0.021)	
Automotive Trade	0.789 (1.206)	5.253** (2.182)	0.127 (0.111)	3.320 (2.439)	-0.007 (0.153)	0.030 (0.061)	
Wholesale Trade	0.352 (0.506)	1.625 (1.406)	0.065 (0.055)	2.455* (1.428)	0.046 (0.160)	-0.020 (0.025)	
Retail Trade	0.753 (0.743)	1.528 (2.014)	-0.017 (0.062)	-0.462 (1.862)	-0.623** (0.316)	-0.134 (0.101)	
Other Trade	-0.364 (0.593)	0.959 (1.628)	0.072 (0.056)	-0.570 (1.620)	0.036 (0.170)	-0.060 (0.039)	
Observations	34,162	34,162	34,162	34,162	34,162	32,307	
Adjusted R^2	0.816	0.737	0.651	0.831	0.720	0.762	
Firm FEs	Yes	Yes	Yes	Yes	Yes	Yes	
Industry x Time FEs	Yes	Yes	Yes	Yes	Yes	Yes	

Note: This Table reports the effects of U.S. tariff changes on Thai exports to the U.S. (Column 1), exports to the U.S. identified as being transshipped Chinese products (Column 2–3) and imports of Chinese inputs (Column 4–6), across sectors. Standard errors in parentheses are clustered at the HS-6 product level. All regressions control for a firm’s exposure to U.S. tariffs on Thai exports. Firms are classified into 13 sectors based on the International Standard Industrial Classification of All Economic Activities (ISIC) Revision 4 at 2 or 3 digits as shown in parentheses. Manufacturing sectors consist of 8 industries: food (10-12), apparel (13-15), rubber&wood (16-17, 221), petrochemical (19-21, 222), metal (24-25), electrical appliances (26), electronics (27), machinery (28), automotive (29-30), and other. For non-manufacturing sectors, they are 5 industries: agri&food&mining (01-03, 05-09, 462-463, 473-472), automotive trade (45), wholesale trade (46), retail trade (47), and other. Industry \times Time FEs are specified separately for non-manufacturing and manufacturing industries. *, **, and *** indicate the significance level of 0.10, 0.05, and 0.01, respectively. For intensive margins, the sample only includes firms that export to the US for more than six years and omits observations with zero export values.

Table A.10: Evidence on Regional Supply Chain Effects

	Full			Intensive Margins		
	Value	Ratio to EX^{Total}	Ratio to Revenue	Value	Ratio to EX^{Total}	Ratio to Revenue
Import of U.S. Inputs:						
$Post_{f,t} \times \Delta \tau_f^{US \rightarrow CN}$	1.743***	-0.011	-0.002	0.608	0.004	0.000
Observations	62,975	62,975	54,339	34,162	34,162	32,307
Adjusted R-squared	0.635	0.550	0.560	0.797	0.823	0.692
Import of ASEAN Inputs:						
$Post_{f,t} \times \Delta \tau_f^{US \rightarrow CN}$	2.369***	0.031*	0.006	0.293	-0.003	-0.004
Observations	62,975	62,975	54,339	34,162	34,162	32,307
Adjusted R-squared	0.659	0.520	0.571	0.820	0.753	0.703
Import of East Asia Inputs:						
$Post_{f,t} \times \Delta \tau_f^{US \rightarrow CN}$	4.318***	0.037	0.008	0.481	-0.197***	-0.032**
Observations	62,975	62,975	54,339	34,162	34,162	32,307
Adjusted R-squared	0.675	0.501	0.614	0.877	0.750	0.752
Firm FEs	Yes	Yes	Yes	Yes	Yes	Yes
Industry x Time FEs	Yes	Yes	Yes	Yes	Yes	Yes

Note: This Table reports the effects of U.S. tariff changes on firm imports of inputs from certain sources. Standard errors in parentheses are clustered at the HS-6 product level. All regressions control for a firm's exposure to U.S. tariffs on Thai exports. East Asia includes Japan, Korea and Taiwan. Industry \times Time FEs are specified separately for non-manufacturing and manufacturing industries. *, **, and *** indicate the significance level of 0.10, 0.05, and 0.01, respectively. For intensive margins, the sample only includes firms that export to the US for more than six years and omits observations with zero export values.

Table A.11: Evidence of Domestic Value Added from US Exports across Sectors (Intensive Margins)

	(1) Domestic Content of EX^{US}	(2) $EX^{Total} - IM^{Total}$	(3) Domestic Content of EX^{Total}	(4) Employment
Manufacturing:				
Food	1.208** (0.497)	0.465 (2.332)	1.020*** (0.358)	1.018*** (0.166)
Apparel	-1.141 (0.713)	-4.042 (3.653)	-1.210** (0.555)	0.211 (0.200)
Rubber&Wood	1.278** (0.545)	2.095 (3.287)	0.691* (0.388)	0.736*** (0.184)
Petrochemical	1.795*** (0.538)	6.796** (2.944)	1.720*** (0.410)	0.841*** (0.151)
Metal	2.146*** (0.690)	10.993*** (3.854)	1.034** (0.521)	0.667*** (0.178)
Electrical Appliances	-0.307 (1.131)	-1.735 (4.423)	-0.160 (0.948)	0.611*** (0.193)
Electronics	2.741*** (0.997)	8.279* (4.251)	0.988* (0.565)	0.756*** (0.189)
Machinery	1.788*** (0.557)	0.983 (3.875)	1.082** (0.449)	0.603*** (0.140)
Automotive	1.604** (0.687)	9.373** (3.950)	0.999** (0.426)	0.421*** (0.148)
Other Manufacturing	-0.014 (0.688)	-0.750 (3.074)	-1.109** (0.529)	0.057 (0.219)
Non-manufacturing:				
Agri&Food&Mining	0.788 (0.513)	-0.285 (1.902)	0.762 (0.479)	0.691*** (0.235)
Automotive Trade	-0.319 (1.179)	1.051 (6.610)	0.655 (0.824)	0.154 (0.319)
Wholesale Trade	0.666 (0.580)	-2.049 (2.803)	0.553 (0.477)	0.266 (0.200)
Retail Trade	1.036 (0.969)	4.119 (5.568)	1.647* (1.001)	0.364 (0.272)
Other Trade	0.895 (1.015)	0.926 (3.258)	0.743 (0.920)	-0.263 (0.290)
Observations	32,757	36,034	36,034	28,367
Adjusted R^2	0.728	0.755	0.795	0.968
Firm FEs	Yes	Yes	Yes	Yes
Industry x Time FEs	Yes	Yes	Yes	Yes

Note: This Table reports the effects of U.S. tariff changes on firms' domestic content of exports to the U.S. (Column 1) and of total exports (Column 3), total exports net of total imports (Column 2) and employment (Column 4). For intensive margins, the sample only includes firms that export to the U.S. for more than six years and omits observations with zero export values. Standard errors in parentheses are clustered at the HS-6 product level. All regressions control for a firm's exposure to U.S. tariffs on Thai exports. Firms are classified into 13 sectors based on the International Standard Industrial Classification of All Economic Activities (ISIC) Revision 4 at 2 or 3 digits as shown in parentheses. Manufacturing sectors consist of 8 industries: food (10-12), apparel (13-15), rubber&wood (16-17, 221), petrochemical (19-21, 222), metal (24-25), electrical appliances (26), electronics (27), machinery (28), automotive (29-30), and other. For non-manufacturing sectors, they are 5 industries: agri&food&mining (01-03, 05-09, 462-463, 473-472), automotive trade (45), wholesale trade (46), retail trade (47), and other. Industry \times Time FEs are specified separately for non-manufacturing and manufacturing industries. *, **, and *** indicate the significance level of 0.10, 0.05, and 0.01, respectively.