The Impact of U.S. Tariffs on Chinese Exports

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Abstract

This thesis studies how Chinese exporters, in response to the 2018 U.S.–China tariff escalation, reallocated their sales across non-U.S. markets over the short (2017–2018), medium (2017–2019), and long run (2017–2020). Using monthly HS8 export data disaggregated by destination and product, I first document that aggregate export-price and quantity elasticities rise from near zero in the first year to 0.17–0.25% and 0.4%, respectively, while total export-value elasticities exceed 2.25% in the long run. Focusing on the manufacturing sector (SIC 20–39), I find even higher medium- and long-run elasticities, reflecting rapid supply-chain reconfiguration. Regionally, Southeast Asia emerges as the most dynamic alternative market, absorbing a large share of diverted exports—new-entry products there surge by nearly 6 percent in the short run—followed closely by Africa. Europe and the Americas record solid medium-term gains, while Oceania remains largely unaffected. By combining intensive-margin and extensive-margin measures, this study provides the first dynamic, product-level quantification of China's export diversion in the 2018 trade war, with implications for global value-chain resilience and trade-policy design.

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1 Introduction

In 2018, the U.S. government announced bilateral tariff increases on a number of Chinese goods. As shown in Figure 1, Chinese exports to the U.S. declined sharply after the mid-2018 tariff hikes. China also took corresponding retaliatory measures, imposing retaliatory tariffs on about \$180 billion worth of imports from the United States, ranging from "equal-scale retaliation" to "equal-proportion retaliation." Such round of trade tariff increases, in terms of both the magnitude of tariff hikes and the scope of trade involved, far exceeded the Smoot-Hawley Tariff Act of the 1930s(Fajgelbaum and Khandelwal (2022b)), and has had a significant impact on trade and welfare for both countries and the world as a whole, causing distortions that exceed many other public policies(Finkelstein and Hendren (2020)).

During the 2017-2019 China-US tariff hike period, the US imposed tariffs on a total of 11,047 HS-8 digit products imported from China, covering an amount of \$475.3 billion, which accounted for 22.8% of the total U.S. global imports in 2017. This included high-end manufacturing industries (such as machinery, aerospace, precision instruments, and rail transportation), medium and low-end manufacturing (such as cotton, paperboard, and wood products), as well as final consumer goods industries (such as food, textiles, and furniture). The U.S. tariffs on China increased the average tariff rate on China's exports to the U.S. from 2.8% to 26%. China's retaliatory tariffs covered a total of 11,434 products, worth \$192.3 billion, which accounted for 15.7% of China's total global imports in 2017. China's retaliatory tariffs started with agricultural products and gradually expanded to high, medium, and low-end manufacturing industries. China's retaliatory tariffs on imports from the U.S. increased the average tariff rate from 7.8% to 25.9%.[1]

Against this backdrop, this paper investigates how Chinese exporters reallocated their shipments toward non-U.S. markets in response to the 2018 tariff shocks, and which re-

[1]For the scope and magnitude of the three rounds of tariff increases in China-US trade, please refer to the attached file at https://ciejournal.ajcass.com/Magazine/Show?id=89727

gions ultimately absorbed the diverted trade over three horizons: 2017–2018 (short run), 2017–2019 (medium run), and 2017–2020 (long run). Drawing on monthly HS8 $\times$ destination–product data, I first quantify the aggregate adjustments in export prices, quantities, and total values. I then explore two margins of heterogeneity: the manufacturing sector (SIC 20–39), where supply-chain reconfiguration may differ, and seven destination regions—Asia, Southeast Asia, North America (ex-U.S.), Europe, Africa, Oceania, and South America—to pinpoint the principal beneficiaries of trade diversion. By combining intensive-margin (price and quantity) and extensive-margin (new-entry products and markets) analyses, my study provides the first dynamic, product-level measurement of China's export diversion in response to the 2018 trade war.

2 Literature Review

There are a number of research papers exploring the effects of China–US trade wars both theoretically and empirically. Li et al. (2018) introduced an endogenous trade imbalance structure to explore both tariff and non-tariff trade war effects, and found that China would be significantly hurt by the China–US trade war, but negative impacts would be affordable. Evans (2019) concluded that the trade war would be devastating not just for the US and China, but for the whole world economy.

Many researchers have focus on the trade diversion effect and its impact on consumer welfare. Mayr-Dorn et al. (2023) found that Chinese exporters successfully divert their products to the South along the quality ladders. Pertaining to total welfare loss, some researchers found that China suffered a bigger loss. Dang et al. (2023) reported that the conflict reduces the gross domestic product (GDP) by approximately -1.41% in China and -1.35% in the United States. Li et al. (2020) found that tariff increases as of March 2020 after the phase one trade deal decrease welfare in China by 1.7% and welfare in the United

States by 0.2%. While Hongfu et al. (2018) reported that the welfare loss of the American residents is generally greater than that of Chinese residents. Caliendo and Parro (2022) found that the trade war led to a decrease in real wages of about 0.13 percent in the United States and 0.11 percent in China. Using micro-level prices data, some researchers evaluated the impact of tariff on consumer welfare. Liu and Dai (2022) found that the reduction of tariffs on consumption goods has substantially improved consumer welfare in China. TIAN Wei (2023) showed that China's retaliatory tariffs have had a relatively small impact on Chinese consumer welfare, while US tariffs on China have resulted in significant losses for Chinese consumers.

In terms of the extent to which the cost of tariffs is transferred to consumers, many studies on the China-US trade tariffs find that the pass-through of import tariffs from the two countries to import prices is close to complete pass-through. Amiti et al. (2019), Amiti et al. (2020) , Fajgelbaum et al. (2020), Cavallo et al. (2021) have estimated the import tariffs on US economy using micro-level data and verified the existence of complete pass-through based on US micro-data. Fajgelbaum et al. (2020) found that in the wake of the increase in trade protection, the United States experienced substantial increases in the prices of intermediates and final goods, the costs of the US tariffs continue to be almost entirely borne by US firms and consumers, and the complete pass-through of the tariffs into domestic prices of imported goods. Cavallo et al. (2021) documented that the tariffs were almost fully passed through to total prices paid by importers suggesting that incidence has fallen largely on the United States. Fajgelbaum and Khandelwal (2022a) found that US consumers of imported goods have borne the brunt of the tariffs through higher prices, and that the trade war has lowered aggregate real income in both the United States and China, although not by large magnitudes relative to GDP. Flaaen et al. (2020), Ma et al. (2021) also find that China's retaliatory tariffs on the US have a similarly near-complete pass-through to import prices.

Factors that typically cause incomplete price pass-through include market power and competition, search costs, firm-level pricing-to-market, changes in intermediate input import costs, etc. Several studies have estimated import demand and export supply elasticities that can be used to inform tariff pass-through. Jiao et al. (2022) pointed out that price stickiness may be one reason for the incomplete pass-through of tariffs. Alessandria and Mix (2021) suggested that pre-existing expectations could also contribute to the incomplete pass-through. Romalis (2007) uses NAFTA tariff cuts and finds evidence of incomplete pass-through.

3 Analytical Framework

Specifically, I use observations from Harmonized System (HS) data on 8-digit products exporting to each country in each month for the period from January 2017 to December 2020. I estimate the following regression specification:

$$\Delta \ln(z_{ijt}^{CN}) = \mu_j + \gamma_t + \beta \Delta \ln(1 + \text{Tariff}_{ijt}) + u_{ijt} \tag{1}$$

where i indicates foreign countries, j denotes products and t corresponds to time; μ_j is a product fixed effect; γ_t is a time fixed effect; and u_{ijt} is a stochastic error.

Then the left-hand side ($\Delta \ln(z_{ijt}^{CN})$) can be decomposed into:

1. the log change in China's export prices ($\Delta \ln(p_{ijt}^{CN})$);
2. the log change in China's export quantities ($\Delta \ln(x_{ijt}^{CN})$);
3. the log change in China's export values ($\Delta \ln(p_{ijt}^{CN} \times x_{ijt}^{CN})$).

All variables correspond to 12-month log differences. I use Equation (1) to estimate both the short-term and the long-term effects of tariffs from the United States. In the following analysis, I consider the tariffs that the United States implemented against China as exogenous. As emphasized by Amiti et al. (2019), Trump's election came as a surprise to most observers, suggesting that these tariffs were hardly anticipated in most sectors of the economy.

4 Data Description

For the empirical analysis, I construct a panel dataset at the HS8-country-month level using detailed Chinese customs data covering the period from January 2017 to December 2020. The dataset includes monthly export information at the product-country level, capturing export values (in USD), quantities, and destination countries. These data allow us to observe not only the overall export performance but also product-level heterogeneity in response to policy shocks.

To capture trade policy variation, I merge these export records with U.S. import tariff data from January 2017 to December 2018, which provide product-level tariff rates by country of origin. Since the available tariff data only cover a two-year window, I extend the tariff rates beyond 2018 by holding them constant at their end-2018 levels. This approach reflects the persistence of trade policy uncertainty and is consistent with the idea that exporters continued to face similar tariff barriers in the immediate post-escalation period. The combined dataset enables us to examine how changes in U.S. tariffs affected Chinese export behavior across products and destinations.

5 Empirical Results

5.1 Aggregate Effects of U.S. Tariffs on Chinese Exports

In Table 1 to 3, I utilize monthly HS8-country-product level data on Chinese exports to non-U.S. destinations to estimate the short-run (2017–2018), medium-run (2017–2019), and long-run (2017–2020) effects of the U.S. tariff increases imposed on China in 2018. As these tariffs remained unchanged after their initial imposition, the medium- and long-run analyses reflect sustained responses and long-term adjustments to the original tariff shock.

Table 1: Short-run Aggregate Effects of U.S. Tariffs on Chinese Exports (2017–2018)

	log change export prices	log change export quantities	log change export quantities IHS	log change export quantities New-entry Products	log change export values	log change export values IHS	log change export values New-entry Products
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	$\Delta\ln(p^{CN}_{ijt})$	$\Delta\ln(x^{CN}_{ijt})$	$\Delta\ln(x^{CN}_{ijt})$	$\Delta\ln(x^{CN}_{ijt})$	$\Delta\ln(p^{CN}_{ijt}\times x^{CN}_{ijt})$	$\Delta\ln(p^{CN}_{ijt}\times x^{CN}_{ijt})$	$\Delta\ln(p^{CN}_{ijt}\times x^{CN}_{ijt})$
log change tariff	-0.060	-0.019	-0.192	1.746***	-0.130	3.070***	2.686***
$\Delta\ln(1+\text{Tariff})$	(0.047)	(0.158)	(0.224)	(0.313)	(0.175)	(0.244)	(0.288)
N	382,826	382,826	976,168	593,258	460,239	1,058,195	597,874
R^2	0.027	0.036	0.683	0.527	0.034	0.739	0.299
adj. R^2	0.021	0.030	0.682	0.525	0.029	0.739	0.296

Note: Observations are at the HS8-country-month level from January 2017 to December 2018. All variables are expressed in twelve-month log changes. The dependent variable in column (1) is the log change in prices charged by Chinese exporters. Columns (2) and (3) use the log change and the inverse hyperbolic sine (IHS) transformation of China's export quantities, respectively. Columns (5) and (6) apply the same transformations to China's export values. The IHS transformation, defined as $\log\left[x+\sqrt{x^2+1}\right]$, allows for the inclusion of observations with zero export quantities or values in t or $t-12$. Columns (3) and (6) use the IHS transformation for this reason. Columns (1)–(3) exclude observations where the ratio of unit values in t to $t-12$ exceeds 3 or is less than 1/3. Columns (4) and (7) restrict the sample to new-entry products, defined as products absent in year 1 but present in year 2.
*, **, and *** indicate significance levels of $p < 0.10$, $p < 0.05$, and $p < 0.01$, respectively.

In the short run (2017–2018), the regression results indicate limited immediate responses of Chinese export prices and quantities to the tariff shock. Specifically, the estimated tariff elasticity for export prices is -0.06 (standard error 0.047), and for export quantities is -0.019 (standard error 0.158); both coefficients are statistically insignificant. These results imply that initially, a 1 percent increase in tariffs did not lead to any statistically meaningful changes in either export prices or export quantities. However, I observe a significant positive elasticity for export quantities of new-entry products—defined as products that absented in the first year but presented in the subsequent year—of 1.746 (significant at the 1 percent level). This elasticity indicates that for new-entry products, a 1 percent increase in U.S. tariffs is associated with approximately a 1.746 percent increase in Chinese exports to other countries within the first year. Moreover, the total export value elasticity (using the inverse hyperbolic sine transformation, IHS) is significantly positive at 3.07 (1 percent significance level), suggesting that a 1 percent tariff increase corresponds to roughly a 3 percent increase in the total value of exports to alternative markets, indicating that exporters swiftly explored and expanded new export destinations.

Table 2: Medium-run Aggregate Effects of U.S. Tariffs on Chinese Exports (2017–2019)

	log change export prices	log change export quantities	log change export quantities IHS	log change export quantities New-entry Products	log change export values	log change export values IHS	log change export values New-entry Products
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	$\Delta\ln(p_{ijt}^{CN})$	$\Delta\ln(x_{ijt}^{CN})$	$\Delta\ln(x_{ijt}^{CN})$	$\Delta\ln(x_{ijt}^{CN})$	$\Delta\ln(p_{ijt}^{CN}\times x_{ijt}^{CN})$	$\Delta\ln(p_{ijt}^{CN}\times x_{ijt}^{CN})$	$\Delta\ln(p_{ijt}^{CN}\times x_{ijt}^{CN})$
log change tariff	0.171***	0.402***	0.641***	1.260***	0.459***	2.290***	2.025***
$\Delta\ln(1+\text{Tariff})$	(0.036)	(0.121)	(0.215)	(0.308)	(0.135)	(0.242)	(0.285)
N	748,554	748,554	1,424,406	675,768	909,567	1,592,354	682,707
R^2	0.017	0.026	0.650	0.539	0.023	0.690	0.335
adj. R^2	0.014	0.023	0.649	0.537	0.020	0.690	0.332

Note: Observations are at the HS8-country-month level from January 2017 to December 2019. All variables are expressed in twelve-month log changes. The dependent variable in column (1) is the log change in prices charged by Chinese exporters. Columns (2) and (3) use the log change and the inverse hyperbolic sine (IHS) transformation of China's export quantities, respectively. Columns (5) and (6) apply the same transformations to China's export values. The IHS transformation, defined as $\log\left[x+\sqrt{x^2+1}\right]$, allows for the inclusion of observations with zero export quantities or values in t or $t-12$. Columns (3) and (6) use the IHS transformation for this reason. Columns (1)–(3) exclude observations where the ratio of unit values in t to $t-12$ exceeds 3 or is less than 1/3. Columns (4) and (7) restrict the sample to new-entry products, defined as products absent in year 1 but present in year 2.
*, **, and *** indicate significance levels of $p < 0.10$, $p < 0.05$, and $p < 0.01$, respectively.

In the medium run (2017–2019), the adjustments made by exporters become more pronounced and statistically significant. The elasticity of export prices with respect to tariffs is 0.171 (significant at the 1 percent level), indicating that a 1 percent tariff increase results in approximately a 0.17 percent rise in export prices. The elasticity for export quantities rises to 0.402 (significant at the 1 percent level), meaning a 1 percent tariff increase corresponds to roughly a 0.4 percent increase in quantities exported to other countries. Notably, the elasticity for export quantities of new-entry products substantially increases to 1.26 (significant at the 1 percent level), reflecting a robust market adjustment whereby a 1 percent increase in tariffs translates into around a 1.26 percent expansion in these new markets. The total export value elasticity also significantly increases to 2.29 (1 percent significance level), indicating that a 1 percent increase in tariffs leads to a 2.29 percent increase in total export values, providing strong evidence that Chinese exporters actively adjusted their prices and quantities and successfully redirected exports to alternative international markets.

Table 3: Long-run Aggregate Effects of U.S. Tariffs on Chinese Exports (2017–2020)

	log change export prices	log change export quantities	log change export quantities IHS	log change export quantities New-entry Products	log change export values	log change export values IHS	log change export values New-entry Products
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	$\Delta\ln(p_{ijt}^{CN})$	$\Delta\ln(x_{ijt}^{CN})$	$\Delta\ln(x_{ijt}^{CN})$	$\Delta\ln(x_{ijt}^{CN})$	$\Delta\ln(p_{ijt}^{CN}\times x_{ijt}^{CN})$	$\Delta\ln(p_{ijt}^{CN}\times x_{ijt}^{CN})$	$\Delta\ln(p_{ijt}^{CN}\times x_{ijt}^{CN})$
log change tariff	0.249***	0.402***	0.890***	1.289***	0.596***	2.276***	2.008***
$\Delta\ln(1+\text{Tariff})$	(0.036)	(0.119)	(0.213)	(0.307)	(0.134)	(0.243)	(0.285)
N	984,242	984,242	1,712,634	728,313	1,204,123	1,940,960	736,764
R^2	0.017	0.023	0.630	0.540	0.020	0.663	0.340
adj. R^2	0.014	0.021	0.629	0.538	0.018	0.663	0.337

Note: Observations are at the HS8-country-month level from January 2017 to December 2020. All variables are expressed in twelve-month log changes. The dependent variable in column (1) is the log change in prices charged by Chinese exporters. Columns (2) and (3) use the log change and the inverse hyperbolic sine (IHS) transformation of China's export quantities, respectively. Columns (5) and (6) apply the same transformations to China's export values. The IHS transformation, defined as $\log\left[x+\sqrt{x^2+1}\right]$, allows for the inclusion of observations with zero export quantities or values in t or $t-12$. Columns (3) and (6) use the IHS transformation for this reason. Columns (1)–(3) exclude observations where the ratio of unit values in t to $t-12$ exceeds 3 or is less than 1/3. Columns (4) and (7) restrict the sample to new-entry products, defined as products absent in year 1 but present in year 2.
*, **, and *** indicate significance levels of $p < 0.10$, $p < 0.05$, and $p < 0.01$, respectively.

In the long run (2017–2020), exporters' adaptations are even more evident and consolidated. The elasticity of export prices increases to 0.249 (1 percent significance level), suggesting that a 1 percent tariff increase is associated with a roughly 0.25 percent rise in export prices. Export quantities elasticity remains robust at 0.402 (1 percent significance level), indicating that a 1 percent increase in tariffs results in approximately a 0.4 percent increase in quantities exported. The elasticity for export quantities using the IHS transformation is higher at 0.89 (significant at the 1 percent level), meaning a 1 percent increase in tariffs is associated with around a 0.89 percent increase in adjusted quantities. Critically, the elasticity for total export values using IHS remains high at 2.276 (significant at the 1 percent level), demonstrating that a 1 percent tariff increase corresponds to approximately a 2.27 percent increase in overall export values. These findings underscore that, over sufficient time, Chinese exporters not only successfully diversified their export destinations to mitigate the impact of U.S. tariffs but also substantially boosted their total export values through adjustments in both prices and quantities.

Collectively, these statistical results highlight that while the initial response to the U.S. tariff shock was muted due to relationship stickiness in international trade, in the medium and long term, Chinese exporters effectively adapted by shifting their markets and adjusting trade strategies. Specifically, these adjustments involved significant expansions in export quantities, prices, and total values, ultimately reducing the negative impact of external tariff shocks and demonstrating robust long-term export resilience.

5.2 Sectoral Heterogeneity: Evidence from China's Manufacturing Industries

In this section, I utilize monthly HS8-country-product level data to analyze the short-run (2017–2018), medium-run (2017–2019), and long-run (2017–2020) effects of the 2018 U.S. tariffs specifically within the Chinese manufacturing sector (SIC2: 20–39). As the tariffs remained unchanged after their initial implementation, the medium- and long-term analyses capture sustained responses and long-term market adjustments.

In the short run, tariff elasticities for export prices (-0.066, standard error 0.049) and quantities (-0.010, standard error 0.162) in manufacturing are statistically insignificant. This indicates that initially, a 1% tariff increase did not significantly affect either the export prices

Table 4: Short-run Effects of U.S. Tariffs on China's Manufacturing Exports(2017–2018)

	log change export prices	log change export quantities	log change export quantities IHS	log change New-entry Products	log change export values	log change IHS	log change New-entry Products
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	$\Delta \ln(p_{ijt}^{CN})$	$\Delta \ln(x_{ijt}^{CN})$	$\Delta \ln(x_{ijt}^{CN})$	$\Delta \ln(x_{ijt}^{CN})$	$\Delta \ln(p_{ijt}^{CN} \times x_{ijt}^{CN})$	$\Delta \ln(p_{ijt}^{CN} \times x_{ijt}^{CN})$	$\Delta \ln(p_{ijt}^{CN} \times x_{ijt}^{CN})$
log change tariff	-0.066	-0.010	0.185	1.765***	-0.141	3.361***	2.732***
$\Delta \ln(1 + \text{Tariff})$	(0.049)	(0.162)	(0.229)	(0.318)	(0.180)	(0.248)	(0.293)
N	354,430	354,430	911,312	556,829	426,087	986,961	560,819
R^2	0.025	0.036	0.685	0.528	0.033	0.744	0.293
adj. R^2	0.019	0.030	0.684	0.526	0.029	0.743	0.290

Note: Observations are at the HS8-country-month level from January 2017 to December 2018. All variables are expressed in twelve-month log changes. The dependent variable in column (1) is the log change in prices charged by foreign exporters. Columns (2) and (3) use the log change and the inverse hyperbolic sine (IHS) transformation of China's export quantities, respectively. Columns (5) and (6) apply the same transformations to China's export values. The IHS transformation, defined as $\log\left[x + \sqrt{x^2+1}\right]$, allows for the inclusion of observations with zero export quantities or values in t or $t-12$. Columns (3) and (6) use the IHS transformation for this reason. Columns (1)–(3) exclude observations where the ratio of unit values in t to $t-12$ exceeds 3 or is less than 1/3. Columns (4) and (7) restrict the sample to new-entry products, defined as products present in year 1 but absent in year 2.
*, **, and *** indicate significance levels of $p < 0.10$, $p < 0.05$, and $p < 0.01$, respectively.

or quantities for manufacturing products exported to non-U.S. destinations. However, the export quantities for new-entry products—products that absented in the first year but presented in the subsequent year—show a strongly significant positive elasticity of 1.765 (1% significance level), indicating that a 1% tariff increase leads to approximately a 1.77% increase in exports of these products. Moreover, total export value (using IHS transformation) demonstrates a significant elasticity of 3.361 (1% significance level), suggesting that a 1% tariff increase raises total manufacturing exports by approximately 3.36%, reflecting rapid market entry and channel expansion despite minimal short-term adjustments in prices and quantities.

In the medium run, tariff elasticities become considerably more pronounced and statistically significant. Export prices exhibit an elasticity of 0.163 (1% significance), implying that a 1% increase in tariffs corresponds to a 0.16% rise in export prices. Export quantities demonstrate a robust elasticity of 0.430 (1% significance), indicating a 0.43% quantity increase per 1% tariff increment. This elasticity is even higher (0.939, significant at the

Table 5: Medium-run Effects of U.S. Tariffs on China's Manufacturing Exports(2017–2019)

	log change export prices	log change export quantities	log change export quantities IHS	log change New-entry Products	log change export values	log change IHS	log change New-entry Products
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	$\Delta\ln(p_{ijt}^{CN})$	$\Delta\ln(x_{ijt}^{CN})$	$\Delta\ln(x_{ijt}^{CN})$	$\Delta\ln(x_{ijt}^{CN})$	$\Delta\ln(p_{ijt}^{CN}\times x_{ijt}^{CN})$	$\Delta\ln(p_{ijt}^{CN}\times x_{ijt}^{CN})$	$\Delta\ln(p_{ijt}^{CN}\times x_{ijt}^{CN})$
log change tariff	0.163***	0.430***	0.939***	1.232***	0.460***	2.486***	2.008***
$\Delta\ln(1+\text{Tariff})$	(0.037)	(0.125)	(0.220)	(0.313)	(0.139)	(0.247)	(0.290)
N	693,859	693,859	1,324,705	630,787	842,729	1,479,542	636,755
R^2	0.016	0.026	0.654	0.539	0.023	0.696	0.330
adj. R^2	0.013	0.023	0.653	0.538	0.020	0.696	0.327

Note: Observations are at the HS8-country-month level from January 2017 to December 2019. All variables are expressed in twelve-month log changes. The dependent variable in column (1) is the log change in prices charged by foreign exporters. Columns (2) and (3) use the log change and the inverse hyperbolic sine (IHS) transformation of China's export quantities, respectively. Columns (5) and (6) apply the same transformations to China's export values. The IHS transformation, defined as $\log\left[x+\sqrt{x^2+1}\right]$, allows for the inclusion of observations with zero export quantities or values in t or $t-12$. Columns (3) and (6) use the IHS transformation for this reason. Columns (1)–(3) exclude observations where the ratio of unit values in t to $t-12$ exceeds 3 or is less than 1/3. Columns (4) and (7) restrict the sample to new-entry products, defined as products present in year 1 but absent in year 2.
*, **, and *** indicate significance levels of $p<0.10$, $p<0.05$, and $p<0.01$, respectively.

1% level) when measured using IHS transformation, indicating a nearly 0.94% increase in adjusted quantities per 1% tariff rise. The new-entry product export quantities maintain a strong elasticity at 1.232 (1% significance), signifying that a 1% tariff rise results in approximately a 1.23% increase in these new-entry product exports. Total export values (IHS) have an elasticity of 2.486 (1% significance), meaning a 1% tariff increase is associated with about a 2.49% rise in manufacturing export values, clearly highlighting that firms adjusted both prices and quantities actively, significantly diversifying export markets and enhancing export performance.

Long-term estimates confirm robust and persistent market adjustments. The elasticity of export prices rises to 0.245 (1% significance), implying a 1% tariff increase corresponds to a 0.25% price increase. Export quantity elasticities remain significantly positive at 0.427 (1% significance level), indicating approximately a 0.43% increase per 1% tariff increment, while the IHS-transformed quantity elasticity significantly reaches 1.179 (1% significance), equivalent to a 1.18% increase. New-entry product exports remain strongly responsive with an

Table 6: Long-run Effects of U.S. Tariffs on China's Manufacturing Exports(2017–2020)

	log change export prices	log change export quantities	log change export quantities IHS	log change New-entry Products	log change export values	log change IHS	log change New-entry Products
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	$\Delta\ln(p^{CN}_{ijt})$	$\Delta\ln(x^{CN}_{ijt})$	$\Delta\ln(x^{CN}_{ijt})$	$\Delta\ln(x^{CN}_{ijt})$	$\Delta\ln(p^{CN}_{ijt}\times x^{CN}_{ijt})$	$\Delta\ln(p^{CN}_{ijt}\times x^{CN}_{ijt})$	$\Delta\ln(p^{CN}_{ijt}\times x^{CN}_{ijt})$
log change tariff	0.245***	0.427***	1.179***	1.250***	0.599***	2.444***	1.968***
$\Delta\ln(1+\text{Tariff})$	(0.037)	(0.123)	(0.217)	(0.312)	(0.137)	(0.247)	(0.290)
N	915,817	915,817	1,591,878	676,006	1,119,130	1,802,371	683,186
R^2	0.016	0.023	0.634	0.541	0.019	0.669	0.335
adj. R^2	0.014	0.021	0.634	0.539	0.017	0.669	0.333

Note: Observations are at the HS8-country-month level from January 2017 to December 2019. All variables are expressed in twelve-month log changes. The dependent variable in column (1) is the log change in prices charged by foreign exporters. Columns (2) and (3) use the log change and the inverse hyperbolic sine (IHS) transformation of China's export quantities, respectively. Columns (5) and (6) apply the same transformations to China's export values. The IHS transformation, defined as $\log\left[x + \sqrt{x^2+1}\right]$, allows for the inclusion of observations with zero export quantities or values in t or $t-12$. Columns (3) and (6) use the IHS transformation for this reason. Columns (1)–(3) exclude observations where the ratio of unit values in t to $t-12$ exceeds 3 or is less than 1/3. Columns (4) and (7) restrict the sample to new-entry products, defined as products present in year 1 but absent in year 2.
*, **, and *** indicate significance levels of $p < 0.10$, $p < 0.05$, and $p < 0.01$, respectively.

elasticity of 1.250 (1% significance), consistently highlighting manufacturing firms' ongoing market diversification. Crucially, the total export value elasticity (IHS) remains significantly high at 2.444 (1% significance), implying that each 1% increase in tariffs corresponds to a 2.44% increase in total manufacturing exports to non-U.S. markets.

In summary, the tariff elasticities for the manufacturing sector are notably higher in the medium- and long-run compared to the aggregate analysis. This indicates stronger and more effective adaptability among manufacturing exporters, reflecting their capacity for rapid market adjustment and supply chain reconfiguration. Such adjustments significantly mitigated the negative impacts of tariffs through increases in both export quantities and prices, leading to sustained export growth over time.

5.3 Regional Diversion: Differential Export Responses Across Continents

As shown in Table 7, in the short run Asian markets exhibited only muted responses to the U.S. tariff shock: export prices and quantities barely moved, and only new-entry products rose significantly by about 2.92 percent. In the medium and long run, however, export price elasticities climbed to 0.25 percent and 0.33 percent, respectively, while quantity elasticities reached roughly 0.73 percent and 0.67 percent. Total export value elasticities stayed robust at around 2.9 percent, indicating that over time Chinese firms were able to reposition and diversify effectively within Asia.

By contrast, Table 8 shows that Southeast Asia experienced a sharper initial adjustment: new-entry product quantities jumped by 5.9 percent in the first year. In the subsequent periods, quantity elasticities rose further to about 1.24 percent (medium run) and 1.21 percent (long run), and export value elasticities climbed from 1.47 percent to 1.51 percent, underscoring Southeast Asia's key role as a rapidly growing alternative market despite early frictions.

North America (ex-US), reported in Table 9, displayed no statistically significant short-run reactions, yet new-entry products still expanded by 4.49 percent in year one. Over medium and long horizons, total value elasticities increased to approximately 1.94 percent, reflecting steady reorientation of exports toward Canada and Mexico.

Table 10 reveals that Europe's short-run reaction was actually negative: export quantities fell by 0.77 percent and prices edged down by 0.16 percent. Nevertheless, by the medium and long run new-entry product exports recovered to around 1.7 percent growth, and total value elasticities stabilized near 3 percent, highlighting Europe's strong medium-term potential.

In Africa (Table 11), new-entry product elasticities peaked at 5.41 percent initially and remained high (around 3.84 percent) thereafter. Total export value elasticities started near

4.21 percent and held around 4 percent, pointing to rapid market penetration.

Oceania's results in Table 12 were largely insignificant except for a sharp -20 percent decline in new-entry products, suggesting high barriers to entry and logistical constraints.

Finally, South America (Table 13) showed no significant short-run price or quantity shifts, but IHS-adjusted quantity elasticities held steady between 2.8 and 3.0 percent, implying a stable long-run growth trajectory as an alternative destination.

6 Export Reallocation and Price Transmission: Empirical Discussion

In this section, I synthesize the empirical evidence on how Chinese exporters reallocated their exports and adjusted prices (i.e., price transmission) in response to the U.S. tariff shock, comparing short-run, medium-run, and long-run outcomes. I focus on the estimated elasticities of export prices, quantities, and values, as well as the role of new product entries (extensive margin) in facilitating export diversion.

6.1 Short-run effects (2017 – 2018)

The regression results indicate limited immediate responses of Chinese export prices and quantities to the U.S. tariffs in the first year. The estimated tariff elasticity of Chinese export prices was essentially zero $\hat{\beta} \approx -0.06$ (standard error 0.047) and statistically insignificant, suggesting no measurable price reduction in other markets despite the loss of the U.S. market. Similarly, the quantity response of continuing products was negligible $\hat{\beta} \approx -0.019$ (s.e. 0.158, not significant). In other words, a 1% increase in the U.S. tariff did not cause any significant change in Chinese exporters' pricing or shipment volumes to the rest of the world in the short run. This lack of price transmission implies Chinese firms did not immediately cut export prices to attract non-U.S. buyers, possibly due to cost pressures or hopes that the dispute would be temporary. This aligns with the consensus that U.S. tariffs in 2018 were almost fully passed through to U.S. import prices, with Chinese exporters not cutting export prices (Amiti et al., 2019; Cavallo et al., 2021; Fajgelbaum et al., 2020).

Instead, adjustment in the short run came predominantly through the extensive margin: Chinese exporters explored new markets and introduced new products abroad. I observe a strong positive elasticity for new-entry export quantities of about 1.746 (significant at the 1% level). This indicates that for products not exported in 2017 but newly exported in 2018, a 1% tariff increase was associated with roughly a 1.75% increase in their export quantity to alternative countries. This echoes the pattern documented by Nicita (2019) that Chinese firms rapidly introduced new varieties to third-country markets. Indeed, Southeast Asia saw a surge of nearly 6% in new product entries in this period, highlighting how Chinese firms rapidly diversified their product mix in neighboring markets.

As a result, the total export value reallocated to non-U.S. destinations jumped significantly in the first year: the aggregate export-value elasticity (measured using an inverse hyperbolic sine transformation to include zero flows) is about 3.07 and highly significant. In practical terms, Chinese exporters were able to offset the lost U.S. sales by roughly 3% higher export value to the rest of the world for each 1% increase in U.S. tariffs in that initial year. These patterns suggest that, initially, China's export diversion relied on expanding into new markets with new products (extensive-margin growth) rather than adjusting prices or quantities of existing goods.

Regionally, trade diversion in the short run favored Asia and Africa: Southeast Asia emerged as the top substitute destination, closely followed by Africa. In contrast, Europe and the Americas showed little immediate increase in imports from China during 2018, and Oceania was largely unaffected. Chinese exporters' ability to find buyers in developing markets so quickly underscores a proactive search for alternatives in the face of U.S. tariffs.

6.2 Medium-run effects (2017 – 2019)

By the second year after the tariffs, the adjustments became more pronounced and statistically significant. Chinese firms began to exhibit partial price transmission of the tariff shock to other markets. The elasticity of export prices with respect to the U.S. tariff rose to 0.171 ($p < 0.01$), indicating that by 2019 a 1% U.S. tariff increase was associated with approximately a 0.17% increase in the prices Chinese exporters charged in non-U.S. markets. This positive price elasticity suggests Chinese exporters gained some pricing power or passed on a fraction of the tariff cost to other buyers—a notable change from the near-zero price effect in the short run. This delayed transmission mirrors the sectoral evidence in Amiti et al. (2020), who find steel prices fell by about half the tariff after twelve months, and supports the mechanism in Haberkorn et al. (2024) that falling Chinese wages gradually lower export prices.

At the same time, the export-quantity elasticity (for continuing products) climbed to 0.402 ($p < 0.01$). In other words, a 1% tariff increase corresponded to about a 0.4% increase in the volume of Chinese goods shipped to alternative destinations, reflecting a significant diversion of shipments that would have gone to the U.S. Notably, the extensive margin remained an important channel: the tariff elasticity of new-entry product quantities grew to 1.26 ($p < 0.01$). This implies Chinese firms continued to expand the range of products exported abroad, though the incremental effect of new entries was somewhat lower than the initial year's surge (consistent with many new products having already been introduced by 2018).

The total export-value elasticity in the medium run was 2.29 (significant at 1%), meaning a 1% increase in tariffs led to roughly a 2.3% increase in China's total export value to the rest of the world. This figure is slightly lower than the short-run value elasticity, which had exceeded 3%, but it remains substantial—Chinese exporters were still increasing their overall sales to third countries at more than double the rate of the U.S. tariff increase. The slight moderation in the value elasticity from 3.07 to 2.29 may indicate that the most easily reallocated exports (the "low-hanging fruit") were diverted in the first year, and subsequent gains, while still significant, faced gradually mounting constraints.

By 2019, trade diversion broadened geographically. Europe and the Americas began to absorb more of China's exports, recording solid growth after the initial lag. The empirical results in 5.3 show that exports to Europe and to the rest of North America (Canada and Mexico) picked up markedly in 2019, as firms redirected goods that previously went to the U.S. Meanwhile, Southeast Asia continued to be a dynamic growth region for Chinese exports, building on its early lead, and Africa also sustained its gains. This regional diversification by the medium run indicates a more balanced redistribution of China's export portfolio across multiple continents.

Chinese manufacturers, in particular, were instrumental in this phase: medium-run elasticities in the manufacturing sector were even higher than the aggregate—reflecting rapid supply-chain reconfiguration and the shifting of complex industrial exports to new markets. The appearance of a positive price elasticity alongside rising quantities suggests that by the second year, Chinese exporters managed to partially pass through costs or reduce the need for price cuts, perhaps due to successful market penetration and brand establishment in the new destinations.

6.3 Long-run effects (2017 – 2020)

Over three years, Chinese exporters' adaptations became even more evident and consolidated. The elasticity of Chinese export prices increased further to 0.249 ($p < 0.01$). Thus, in the long run a 1% U.S. tariff hike was associated with roughly a 0.25% rise in the prices charged to non-U.S. markets, confirming a stronger degree of price transmission once firms had time to adjust fully. This suggests Chinese exporters eventually raised prices in alternative markets—potentially recouping some lost margin—after initially holding prices steady.

The long-run quantity elasticity remained robust at 0.402 ($p < 0.01$), very similar to the medium-run estimate. The fact that the quantity response did not increase further between 2019 and 2020 implies that the major volume reallocation had occurred by the second year, and by the third year China sustained those volume gains rather than expanding them dramatically. However, when accounting for zero-export observations via the IHS transformation, the elasticity for export quantities was higher at 0.89, indicating that once new trade relationships had matured, the growth in adjusted export volumes (including previously zero flows) was still substantial.

The total export-value elasticity in the long run held around 2.27 ($p < 0.01$), remaining significantly above 2. This confirms that even after three years, for each 1% increase in the U.S. tariff, China's overall exports to alternative markets were about 2.3% higher than they would have been otherwise—a striking testament to trade diversion. This outcome accords with other empirical observations of the trade war. As U.S. imports from China declined, many third-party countries boosted their exports to the U.S. in the affected products, filling the gap left by China, as documented by Fajgelbaum et al. (2024).

The persistent rise in export prices (from ~ 0 to 0.17 to 0.25 elasticity) alongside maintained quantity growth signifies that Chinese firms, after securing new buyers and distribution channels, were able to recover some pricing power in foreign markets. They no longer needed to rely purely on volume expansion; by the long run they could command higher unit values, perhaps due to reduced desperation to find buyers or improved negotiating positions once relationships were established.

The role of the extensive margin remained important through 2020, though its relative contribution leveled off. Many new product–market combinations had already been created in 2018–2019; thus, the long-run new-entry elasticity (about 1.29) was only slightly above the medium-run level, indicating a plateau in the rate of new product introduction. Still, the cumulative effect of three years of extensive-margin expansion was sizable—China's export basket to non-U.S. markets became significantly broader than before the trade war.

Regionally, the long-run data show a sustained realignment of export destinations. Southeast Asia and Africa maintained their expanded import volumes from China, with Southeast Asia solidifying its role as the primary absorber of diverted exports, a trend echoed by Sheng et al. (2025), who report that China's trade diversion was focused on developing economies ("Global South") rather than advanced Western markets. Europe and the Americas, which had caught up in 2019, continued to record higher imports from China in 2020, further closing the gap with Asia. By contrast, Oceania remained a minor player in China's trade diversion, experiencing little change throughout.

These findings across three years underscore a clear trajectory: what began as a modest, intensive-margin response grew into a broad-based reallocation of China's export geography, accompanied by gradually increasing export prices once the new trade flows became entrenched. The evidence is especially pronounced for manufactured goods—medium- and long-run elasticities in manufacturing sectors exceeded those of the aggregate, reflecting how industries restructured supply chains and found new outlets. In effect, the longer the tariffs persisted, the more Chinese exporters adapted through a combination of intensive-margin adjustments (raising prices and redirecting quantities of existing products) and extensive-margin expansion (adding new product lines and destinations). Together, these adjustments enabled China to mitigate the impact of U.S. tariffs on its overall exports over the 2018–2020 period.

7 Conclusion

This study shows that the 2018 U.S. tariff shock had a limited short-term effect on aggregate Chinese exports: incumbent prices and quantities remained stable, but new-entry products and total export values rose by roughly 1.7% and 3% per 1% tariff increase, respectively. Over the medium (2017–2019) and long run (2017–2020), Chinese exporters adapted systematically: price elasticities rose to 0.17–0.25, and export-value elasticities exceeded 2.2. Manufacturing firms displayed especially strong responsiveness, while Africa and Southeast Asia emerged as key alternative markets. However, the analysis focuses on tariffs and does not explicitly account for non-tariff barriers, exchange rates, or logistics costs, which could also explain part of the observed reallocation.

In broader perspective, Chinese exporters transitioned from short-run price rigidity and passive absorption, to medium-run flexible reallocation, and ultimately to long-run strategic transformation. Despite the trade war, China's total exports rose by about 24% between 2018 and 2023, possibly driven by diversification, supply chain restructuring, and new business models.

Looking ahead to 2025, a new round of trade tensions between the U.S. and China has already emerged. While this thesis focuses on export adjustments through 2020, the evidence suggests that earlier adaptations—such as market diversification and supply chain restructuring—have provided Chinese exporters with some resilience. However, with tariffs now targeting China's rerouted supply chains and affecting third countries, exporters face renewed challenges amid rising global trade barriers. These developments point toward a "new normal" of high tariffs, fragmented supply chains, and lasting structural shifts in global trade patterns, though further research is needed to fully understand the impacts of the latest escalation.

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Appendix

Figure 1: Chinese Exports to the U.S. by Month (2017–2020)

Table 7: Asia: Short-, Medium-, Long-run Estimates

		log change of tariff		
Variable name	**Variable description**	**2017–2018**	**2017–2019**	**2017–2020**
$\Delta \ln(p_{ijt}^{CN})$	log change of price	0.067	0.254***	0.331***
$\Delta \ln(x_{ijt}^{CN})$	log change of quantity	0.480*	0.734***	0.672***
$\Delta \ln(x_{ijt}^{CN})$	log change of quantity using IHS	-0.051	0.731*	0.857**
$\Delta \ln(x_{ijt}^{CN})$	log change of quantity for New Entry Products	2.918***	1.876***	1.970***
$\Delta \ln(p_{ijt}^{CN} \times x_{ijt}^{CN})$	log change of total value	0.521*	1.032***	1.076***
$\Delta \ln(p_{ijt}^{CN} \times x_{ijt}^{CN})$	log change of total value using IHS	3.534***	2.980***	2.891***
$\Delta \ln(p_{ijt}^{CN} \times x_{ijt}^{CN})$	log change of total value for New Entry Products	4.248***	3.158***	3.160***

Note: Each column reports the coefficient on $\Delta \ln(1 + \text{Tariff})$ for the indicated horizon. Regressions are estimated at the HS8–month level using Chinese exports to Asian countries. Dependent-variable definitions, IHS transformations, and the "New-Entry Products" restriction follow Table 1.
*, **, and *** indicate significance levels of $p < 0.10$, $p < 0.05$, and $p < 0.01$, respectively.

Table 8: Southeast Asia: Short-, Medium-, Long-run Estimates

Variable name	**Variable description**	**log change of tariff**		
		2017–2018	**2017–2019**	**2017–2020**
$\Delta \ln(p_{ijt}^{CN})$	log change of price	-0.128	0.189**	0.210**
$\Delta \ln(x_{ijt}^{CN})$	log change of quantity	0.249	1.241***	1.211***
$\Delta \ln(x_{ijt}^{CN})$	log change of quantity using IHS	-5.263***	-1.829***	-1.060**
$\Delta \ln(x_{ijt}^{CN})$	log change of quantity for New Entry Products	5.912***	4.610***	4.601***
$\Delta \ln(p_{ijt}^{CN} \times x_{ijt}^{CN})$	log change of total value	0.145	1.473***	1.507***
$\Delta \ln(p_{ijt}^{CN} \times x_{ijt}^{CN})$	log change of total value using IHS	-1.591***	0.133	0.714
$\Delta \ln(p_{ijt}^{CN} \times x_{ijt}^{CN})$	log change of total value for New Entry Products	6.422***	4.832***	4.608***

Note: Each column reports the coefficient on $\Delta \ln(1 + \text{Tariff})$ for the indicated horizon. Regressions are estimated at the HS8–month level using Chinese exports to Southeast Asian destinations. Dependent-variable definitions, IHS transformations, and the "New-Entry Products" restriction follow Table 1.
*, **, and *** indicate significance levels of $p < 0.10$, $p < 0.05$, and $p < 0.01$, respectively.

Table 9: North America (ex-US): Short-, Medium-, Long-run Estimates

Variable name	Variable description	log change of tariff		
		2017–2018	**2017–2019**	**2017–2020**
$\Delta \ln(p_{ijt}^{CN})$	log change of price	0.003	0.117	0.212*
$\Delta \ln(x_{ijt}^{CN})$	log change of quantity	-0.655	0.631	0.604
$\Delta \ln(x_{ijt}^{CN})$	log change of quantity using IHS	-1.735**	-0.607	-0.266
$\Delta \ln(x_{ijt}^{CN})$	log change of quantity for New Entry Products	4.493***	3.009***	2.911***
$\Delta \ln(p_{ijt}^{CN} \times x_{ijt}^{CN})$	log change of total value	-1.005*	0.519	0.587
$\Delta \ln(p_{ijt}^{CN} \times x_{ijt}^{CN})$	log change of total value using IHS	2.458***	1.723**	1.937**
$\Delta \ln(p_{ijt}^{CN} \times x_{ijt}^{CN})$	log change of total value for New Entry Products	5.031***	3.406***	3.299***

Note: Each column reports the coefficient on $\Delta \ln(1 + \text{Tariff})$ for the indicated horizon. Regressions are estimated at the HS8–month level using Chinese exports to North American destinations. Dependent-variable definitions, IHS transformations, and the "New-Entry Products" restriction follow Table 1.
*, **, and *** indicate significance levels of $p < 0.10$, $p < 0.05$, and $p < 0.01$, respectively.

Table 10: Europe: Short-, Medium-, Long-run Estimates

		log change of tariff		
Variable name	**Variable description**	**2017–2018**	**2017–2019**	**2017–2020**
$\Delta\ln(p_{ijt}^{CN})$	log change of price	-0.162*	0.129*	0.234***
$\Delta\ln(x_{ijt}^{CN})$	log change of quantity	-0.772**	-0.314	-0.157
$\Delta\ln(x_{ijt}^{CN})$	log change of quantity using IHS	2.445***	2.354***	2.486***
$\Delta\ln(x_{ijt}^{CN})$	log change of quantity for New Entry Products	2.041***	1.701***	1.729***
$\Delta\ln(p_{ijt}^{CN} \times x_{ijt}^{CN})$	log change of total value	-1.235***	-0.606**	-0.189
$\Delta\ln(p_{ijt}^{CN} \times x_{ijt}^{CN})$	log change of total value using IHS	5.092***	3.085***	2.903***
$\Delta\ln(p_{ijt}^{CN} \times x_{ijt}^{CN})$	log change of total value for New Entry Products	2.450***	1.883***	1.848***

Note: Each column reports the coefficient on $\Delta\ln(1 + \text{Tariff})$ for the indicated horizon. Regressions are estimated at the HS8–month level using Chinese exports to European destinations. Dependent-variable definitions, IHS transformations, and the "New-Entry Products" restriction follow Table 1.

*, **, and *** indicate significance levels of $p < 0.10$, $p < 0.05$, and $p < 0.01$, respectively.

Table 11: Africa: Short-, Medium-, Long-run Estimates

Variable name	Variable description	log change of tariff 2017–2018	2017–2019	2017–2020
$\Delta \ln(p_{ijt}^{CN})$	log change of price	-0.103	0.150	0.270
$\Delta \ln(x_{ijt}^{CN})$	log change of quantity	-0.610	0.425	0.382
$\Delta \ln(x_{ijt}^{CN})$	log change of quantity using IHS	1.795*	2.545***	2.952***
$\Delta \ln(x_{ijt}^{CN})$	log change of quantity for New Entry Products	5.409***	4.109***	3.838***
$\Delta \ln(p_{ijt}^{CN} \times x_{ijt}^{CN})$	log change of total value	-0.680	1.070	1.037
$\Delta \ln(p_{ijt}^{CN} \times x_{ijt}^{CN})$	log change of total value using IHS	4.206***	3.631***	3.905***
$\Delta \ln(p_{ijt}^{CN} \times x_{ijt}^{CN})$	log change of total value for New Entry Products	5.746***	4.127***	3.866***

Note: Each column reports the coefficient on $\Delta \ln(1 + \text{Tariff})$ for the indicated horizon. Regressions are estimated at the HS8–month level using Chinese exports to African destinations. Dependent-variable definitions, IHS transformations, and the "New-Entry Products" restriction follow Table 1.
*, **, and *** indicate significance levels of $p < 0.10$, $p < 0.05$, and $p < 0.01$, respectively.

Table 12: Oceania: Short-, Medium-, Long-run Estimates

Variable name	Variable description	log change of tariff		
		2017–2018	**2017–2019**	**2017–2020**
$\Delta\ln(p_{ijt}^{CN})$	log change of price	0.088	0.257	0.283
$\Delta\ln(x_{ijt}^{CN})$	log change of quantity	-1.701	-1.094	-1.056
$\Delta\ln(x_{ijt}^{CN})$	log change of quantity using IHS	2.884	2.186	2.168
$\Delta\ln(x_{ijt}^{CN})$	log change of quantity for New Entry Products	-21.729***	-18.792***	-17.677***
$\Delta\ln(p_{ijt}^{CN} \times x_{ijt}^{CN})$	log change of total value	-1.268	-0.485	-0.533
$\Delta\ln(p_{ijt}^{CN} \times x_{ijt}^{CN})$	log change of total value using IHS	2.325	1.746	1.597
$\Delta\ln(p_{ijt}^{CN} \times x_{ijt}^{CN})$	log change of total value for New Entry Products	-21.507***	-19.280***	-18.396***

Note: Each column reports the coefficient on $\Delta\ln(1 + \text{Tariff})$ for the indicated horizon. Regressions are estimated at the HS8–month level using Chinese exports to Oceanian destinations. Dependent-variable definitions, IHS transformations, and the "New-Entry Products" restriction follow Table 1.
*, **, and *** indicate significance levels of $p < 0.10$, $p < 0.05$, and $p < 0.01$, respectively.

Table 13: South America: Short-, Medium-, Long-run Estimates

		log change of tariff		
Variable name	**Variable description**	**2017–2018**	**2017–2019**	**2017–2020**
$\Delta\ln(p_{ijt}^{CN})$	log change of price	-0.020	0.270	0.313
$\Delta\ln(x_{ijt}^{CN})$	log change of quantity	0.544	0.040	-0.268
$\Delta\ln(x_{ijt}^{CN})$	log change of quantity using IHS	2.719**	2.939**	3.005**
$\Delta\ln(x_{ijt}^{CN})$	log change of quantity for New Entry Products	-3.033*	-2.110	-2.032
$\Delta\ln(p_{ijt}^{CN} \times x_{ijt}^{CN})$	log change of total value	1.037	0.527	0.260
$\Delta\ln(p_{ijt}^{CN} \times x_{ijt}^{CN})$	log change of total value using IHS	2.585*	2.767**	2.503*
$\Delta\ln(p_{ijt}^{CN} \times x_{ijt}^{CN})$	log change of total value for New Entry Products	-1.183	-0.566	-0.653

Note: Each column reports the coefficient on $\Delta\ln(1 + \text{Tariff})$ for the indicated horizon. Regressions are estimated at the HS8–month level using Chinese exports to South American countries. Dependent-variable definitions, IHS transformations, and the "New-Entry Products" restriction follow Table 1.
*, **, and *** indicate significance levels of $p < 0.10$, $p < 0.05$, and $p < 0.01$, respectively.