Trade Shocks and Supply Chain Reconstruction

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Introduction

- In light of recent tariff shocks, it is significance to understand their impact and identify feasible strategies for multinational enterprises (MNEs). The past U.S.-China trade war provide a great example to explore this problem.
- Existing literature has quantified the economic impacts of the US-China trade war, but mainly focuses on aggregate welfare or firms' export behaviors. In contrast, the global supply chain literature—particularly in management studies—has emphasized geopolitical tensions and COVID-19 disruptions, leaving tariff-related sourcing adjustments underexplored.
- **Research Question:** How do trade shocks influence firms' sourcing strategies?
- We study this question by assembling a unique set of datasets on Chinese listed firms, which includes detailed information on their top 5 suppliers and rich characteristics of these suppliers.

Research Outline

- **Methodology:**
  - Firm-level shift-share instrumental variable (SSIV) to capture exogenous variation in tariff shocks;
  - Textual analysis to construct firm-level trade policy uncertainty (TPU) indices.

  We focus on rising U.S. import tariffs, using firm-level TPU and exposure to Chinese retaliatory tariffs as control variables to identify the impact on sourcing decisions.
- **Main Findings:** Higher export tariffs lead MNEs to increase sourcing from high-income, non-U.S. countries and to diversify their suppliers' origins domestically and internationally, to shift toward new smaller suppliers.
- **Mechanisms:**
  - Trade diversion and the complementary relationship between export and sourcing activities;
  - Expansion in product scope, which necessitates a more diversified input base.

Literature Review

It related to two strands of literature:

- Fisrt, Endogenous Factors for Supply Chain Reconstruction:
  1. Cost/benefit Calculations. Traditionally, supply chain decisions have involved balancing trade-offs between flexibility and economies of scale(Bergman and Mäler, 1982), responsiveness and efficiency(Ganga and Carpinetti, 2011), and minimizing costs while managing risks(Holweg et al., 2011). Therefore, MNE expand largely in China and Southeast Asia over the past two decades(Cui et al., 2023; Tung et al., 2023). New threats like COVID-19, trade tensions and geographical increased the risk of global supply chain, but caused the cost/benefit trade offs between potential risks and adjustment costs(MacCarthy et al., 2016; Cohen and Lee, 2020).
  2. Localization Strategy. By tailoring products and services to align with local preferences, firms can not only strengthen their competitive positioning but also establish robust networks that contribute to long-term success(**?**Tse et al., 2024; Rong et al., 2015; Low and Johnston, 2008; Usui et al., 2017).

Literature Review

- Endogenous Factors for Supply Chain Reconstruction:
  3. Supply Chain Proximity and Agglomeration Economies. Proximity to suppliers improves coordination, speeds up learning, and reduces procurement costs(Shaver and Flyer, 2000; Schmitt and Biesebroeck, 2013). It will increase the possibility of being selected(Schmitt and Biesebroeck, 2013) and help the quality improvements in the similar products(Bray et al., 2019). However, Therefore, the most productive and relevant suppliers are frequently located near key customers. However, excessive clustering may limit diversification, causing the efficiency-diversity trade-off.
  4. Institutional Theory and Risk Diversification. Institutional environments—whether formal or informal—present both opportunities and challenges for multinational enterprises (MNEs)(Kostova et al., 2008; Meyer and Peng, 2016; Witt et al., 2023; Alfaro and Chor, 2023). firms adjust sourcing differently depending on the economic policy uncertainty(Charoenwong et al., 2023).

Literature Review

It related to two strands of literature:

- Second, US-China trade war - Economic Side:
  1. Focus on its effect at the country level and quantify the aggregate economic effect of US-China trade war(Fajgelbaum et al., 2020; Amiti et al., 2019; Caliendo and Parro, 2021).
  2. How US-China trade war affect firms' behavior, but they don't take the sourcing decision into account(Benguria et al., 2022; Huang et al., 2023; Mary et al., 2020).
  3. Changes of export behaviors: the overall Chinese export volume did not change significantly, firms' exports to the US dropped considerably(Jiang, 2023; Sheng et al., 2023; Jiao et al., 2023; Ma and Meng, 2023); increase in export product scope(Chen et al., 2025).

Literature Review

- US-China trade war - IB or SCM Side:
  1. Focus on MNEs' response in face of other exogenous shocks or uncertainties.
  2. Reconfigure their global supply networks in response to exogeneous shocks to mitigate risks while balancing cost-effectiveness(Dai et al., 2017; Mithani et al., 2022; Oh and Oetzel, 2022).
  3. However, all of these analysis are theoretical and lack the empirical evidence.

Potential Contribution

- Literature perspective: The first to examine the impact of trade war on sourcing decision at the firm level, providing valuable empirical evidence.
  1. IB literature: Offer empirical evidence on how MNEs reconfigure sourcing strategies in response to tariff shocks.
  2. SCM and management literature: Demonstrate how export behaviors (export diversion and product expansion) shape firms' sourcing decisions.
  3. International trade literature: Link tariff shocks to firm-level supplier network adjustment.
- Policy Implications: Tariff shocks have much broader impacts than just on exports. This study quantifies these effects and provides actionable insights for policymakers and firms navigating global trade tensions.

Hypothesis Development

- **Hypothesis 1.** U.S. import tariffs are expected to cause export diversion to other high-income countries, leading Chinese firms to increase their sourcing share from other high-income countries (excluding the U.S.).

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- **Hypothesis 1.** U.S. import tariffs are expected to cause export diversion to other high-income countries, leading Chinese firms to increase their sourcing share from other high-income countries (excluding the U.S.).
- **Hypothesis 2.** U.S. import tariffs are expected to expand firms' product scope, increasing input diversity and leading them to expand their sourcing bases and engage with smaller suppliers.

Data Sources

- CSMAR Database
  1. 2016-2019 yearly data with top five suppliers and other information;
  2. A supply dataset comprising 12,438 observations, involving 932 firms listed on the Shanghai and Shenzhen Stock Exchange's domestic A-share markets.
- China Customs Dataset
  1. 2013-2019 yearly data;
  2. Include import and export values at the firm-product-country-year level for all international transactions associated with China.
  3. Gather data from 2013 to 2015 to construct shift-share IV and use data from 2016 to 2019 to analyse the firms' export and import behaviors after the trade war.
- Detailed Tariff Data: US export tariffs and Chinese retaliatory tariffs.
- Orbis: Get the foreign suppliers' staff number, location and other information.

Data Sources

- Chinese State Administration of Tax(SAT)
  1. 2014-2016 yearly data;
  2. Encompasses basic information, staff numbers, income statements, and numerous other tax indicators for over 700,000 firms annually.
  3. We can add the suppliers' characteristics from it.
- Baidu Map: exact latitute and longitude of each firms and suppliers. Then we can calculate the distances and identify whether they are in the same provinces or cities.
- East Money: annual reports filed by companies listed in the Shanghai and Shenzhen Stock Exchange's domestic A share markets. We use textual analysis to extract keywords and calculate firm-level trade policy uncertainty.
- Manual Work: we diligently search for the names and corresponding websites of the foreign suppliers, which allows us to identify their nationality and ascertain whether they are multinational firms or not.

Dependent Variable: Measures of Supply Chain Reconstruction

- Measures for sourcing diversion
  1. Following Charoenwong et al. (2023), calculate domestic purchase ratio ($Dratio$ is measured by amount and Dn_ratio is measured by count).
  2. Decomposition of foreign suppliers: sourcing ratio from U.S. suppliers (US_ratio), suppliers in other high-income countries ($High\_nonUS\_ratio$) and suppliers in middle- and low-income countries ($Lowmid\_ratio$).
- Measures for inputs diversification
  3. Proximity-based diversification: the number of foreign countries ($Country\_count$) and domestic cities ($City\_count$).
  4. Scale-based diversification: the firm-level weighted geometric mean of the log-transformed employee counts ($Ln(Scale\_d\_geo)$ and $Ln(Scale\_f\_geo)$ for domestic and foreign suppliers respectively).

Firm-Level Tariff Exposure Measures

Following existing literature, We combine tariff rate and firm-level customs data to create SSIV as follows(Bartik, 1991; Goldsmith-Pinkham et al., 2020; Topalova and Khandelwal, 2011):

$$\text{Tariff Exposure}_{it} = \sum_{n \in N_i^{E,2015}} \sum_{\omega \in \Omega_i^{E,2015}} \left[\frac{X_{i\omega n,2015} \cdot \tau_{n\omega,t}^{Exp}}{\sum_{m \in N_i^{E,2015}} \sum_{s \in \Omega_i^{E,2015}} \left(X_{ims,2015} \right)} \right],$$

where $\tau_{n\omega,t}^{Exp}$ is good ω's ad valorem tariff imposed by country at time t. If country n is the US, then it's the MFN tariff plus trade war tariff. In other cases, we just use MFN tariff to simplify this problem. $X_{i\omega n,2015}$ is firm i's export value of good ω to country n in 2015 according to the China Custom Dataset. $N_i^{E,2015}$ and $\Omega_i^{E,2015}$ are two different sets, including all the countries and all the products firm i exported in 2015.

Control Variables

1. The import tariff exposure at time t of firm i is constructed as follows:

$$\text{Tariff Exposure}_{it}^{\text{IMP}} = \sum_{n \in N_i^{I,2015}} \sum_{\omega \in \Omega_i^{I,2015}} \left[\frac{X_{i\omega n,2015} \cdot \tau_{n\omega,t}^{Imp}}{\sum_{m \in N_i^{I,2015}} \sum_{s \in \Omega_i^{I,2015}} \left(X_{ims,2015} \right)} \right],$$

In this case, firm i imports product ω from country n and $\tau_{n\omega,t}^{Imp}$ is good ω's ad valorem tariff imposed by China to country n's import at time t. If country n is the US, then it's the MFN tariff plus trade China's extra tariff. In other cases, we just use Chinese MFN import tariff. $M_{i\omega n,2015}$ is firm i's import value of good ω from country n in 2015 according to the China Custom Dataset. $N_i^{I,2015}$ and $J_i^{I,2015}$ are two different sets, including all the countries firm i imported from in 2015 and all the products firm i imported in 2015.

Control Variables

2. Firm-level TPU index: We employ Caldara et al. (2020)'s method and follow Benguria et al. (2022), derive firm-level trade policy uncertainty (TPU) through textual analysis.
The firm-level TPU are calculated in the following formula.

$$\text{TPU}_{it} = \frac{1}{R_{it}} \sum_{w=1}^{R_{it}} [\mathbb{I}(w \in \text{Keywords}^{\text{Trade Policy}}) \mathbb{I}(|w - r| \leq \text{Oneline})]$$

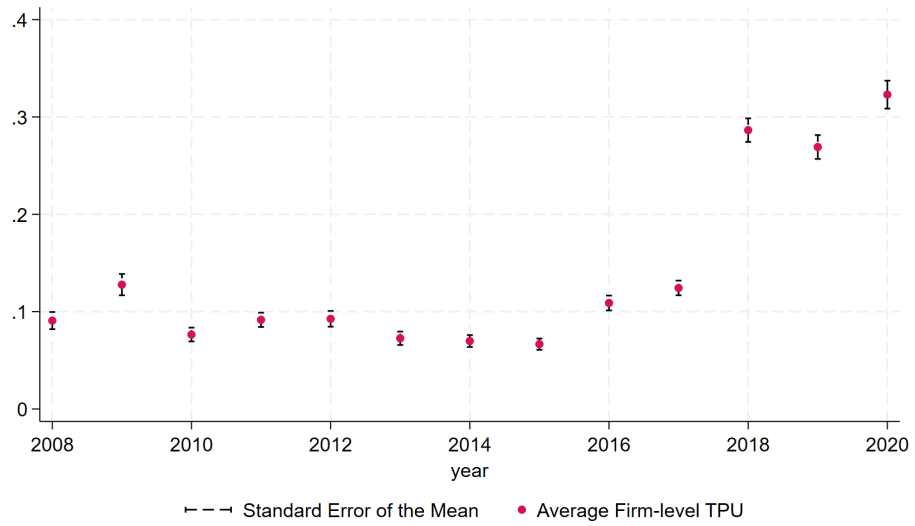
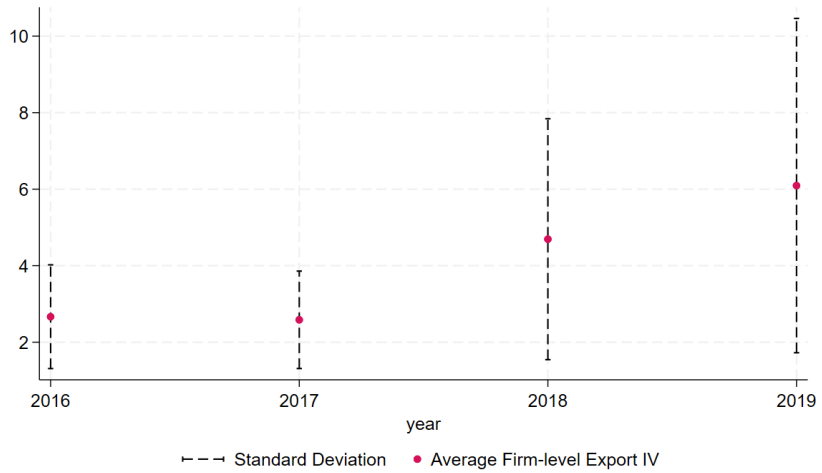


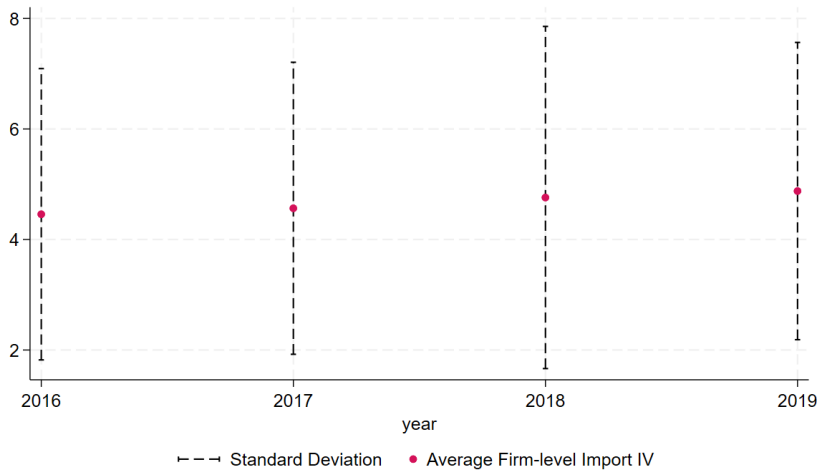
Figure 1: Average of Firm-level TPU from 2008 to 2020

Firm-Level Tariff Exposure Measures

The changes of these two tariff shocks are shown in Figure 2. The mean value of export and import tariffs increase significantly after the US-China trade war while the export tariffs increase more significantly to the listed firms.



(a) U.S. Tariff on Chinese Goods



(b) Chinese Tariff on U.S. Goods

Figure 2: The Distribution of Tariff Shocks in Each Year

Summary statistics

After completing the matching process and excluding observations with unclear supplier names, the final dataset comprises 12,438 supplier-firm-year pairs. The summary statistics for these variables are presented below.

Table 1: Summary Statistics Result of the Supplier-firm Level Variables

Variable	Obs	Mean	Std. Dev.	Min	Max
Purchase Amount(Billion Yuan)	12438	244.921	1094.959	0.008	38608.29
Purchase Ratio(%)	12438	8.126	9.851	0.07	96.49
Dummy Variable: Foreign Supplier	12438	0.089	0.285	0	1
Dummy Variable: US	12438	0.017	0.128	0	1
Dummy Variable: High income	12438	0.08	0.272	0	1
Distance(Domestic Suppliers)	11528	788.844	711.818	0	3985.593
Ln(Staff Number-Domestic)	5665	6.066	3.204	0	18.831
Ln(Staff Number-Foreign)	513	12.955	2.463	5.188	18.974

Summary Statistics

Table 2: Summary Statistics Result of the Listed Firms' Variables

Variable	Obs	Mean	Std. Dev.	Min	Max
Tariff Exposure	2583	1.314	3.791	0	74.87
Tariff Exposure (Retaliatory)	2583	1.325	3.591	0	64.612
TPU Index	2060	0.142	0.521	0	9
Dratio (Amount)	2583	90.601	21.010	0	100
Dn_ratio (Count)	2583	91.421	18.040	0	100
US_ratio	2583	1.753	8.061	0	91.23
High_nonUS_ratio	2583	6.820	17.442	0	100
Lowmid_ratio	2583	0.827	5.686	0	100
Country_count	2583	0.366	0.745	0	5
City_count	2556	3.530	1.247	0	5
Ln(Scale_d_geo)	1997	5.683	2.672	0	15.928
Ln(Scale_f_geo)	391	10.316	4.193	0	18.278

Empirical Specification: FE

The baseline regression models are presented as follows.

$$Y_{it} = \beta_0 + \beta_1 \text{Tariff Exposure}_{it} + \beta_j X_{it} + \phi_i + \phi_{pt} + \phi_{jt} + \epsilon_{it}$$

- i: Listed firm. j: Listed firm's industry. p: Listed firms' province. t: Year.
- To test Hypothesis 1, Y_{it} is measures for sourcing diversion.
- To test Hypothesis 2, Y_{it} is measures for inputs diversification.
- X_{it} : Control variables including $\text{Tariff Exposure}_{it}^{\text{IMP}}$ and TPU_{it}.
- ϕ_i: Firm fixed effect. ϕ_{pt}: Province-year fixed effect. ϕ_{jt}: Industry-year fixed effect.
- Cluster the standard errors at the year-industry and year-province levels.

Domestic and Foreign Sourcing Decomposition

Table 3: Chinese MNEs increase sourcing from other high-income countries in response to U.S. tariffs

	(1) Domestic Part		(2) Foreign Part		
	Dratio	Dn_ratio	US_ratio	High_nonUS_ratio	Lowmid_ratio
Tariff Exposure	-0.343**	-0.214**	0.076	0.314***	-0.047
	(0.133)	(0.097)	(0.102)	(0.110)	(0.036)
	[0.011]	[0.029]	[0.459]	[0.005]	[0.192]
Controls	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes
Province × Year FE	Yes	Yes	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes	Yes	Yes
Observations	1,846	1,846	1,846	1,846	1,846
R-squared	0.855	0.832	0.794	0.849	0.702

Supply Chain Proximity and Suppliers' Scale

Table 4: U.S. import tariffs widen firms' sourcing range and shrink suppliers' scale

	Proximity-based Diversification		**Scale-based Diversification**	
	Country_count	City_count	Ln(Scale_f_geo)	Ln(Scale_d_geo)
Tariff Exposure	0.008**	0.014	-0.848***	-0.042*
	(0.004)	(0.013)	(0.283)	(0.023)
	[0.020]	[0.253]	[0.006]	[0.074]
Controls	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Province × Year FE	Yes	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes	Yes
Observations	1,846	1,816	108	1,311
R-squared	0.828	0.778	0.948	0.780

Robustness 1: Pre-trend Test

We evaluate its ex ante parallel trends and ex post dynamic effects using the following event-study setting:

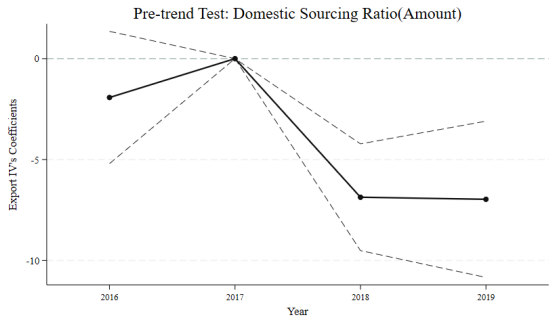
$$
\begin{aligned}
Y_{it} =& \alpha + \sum_{s=1}^{T_{\text{Exp}}-2} \beta^{pre}_{\text{Exp,s}}(\text{EXP}_i \times T_t^s) + \sum_{s=T_{\text{Exp}}}^{T} \beta^{post}_{\text{Exp,s}}(\text{EXP}_i \times T_t^s) + \\
& \sum_{s=1}^{T_{\text{Imp}}-2} \beta^{pre}_{\text{Imp,s}}(\text{IMP}_i \times T_t^s) + \sum_{s=T_{\text{Imp}}}^{T} \beta^{post}_{\text{Imp,s}}(\text{IMP}_i \times T_t^s) + \theta \text{TPU}_{i,t} \\
& + \phi_i + \phi_{pt} + \phi_{jt} + \epsilon_{it} \qquad i \in \{\text{All Sample}\}
\end{aligned}
$$

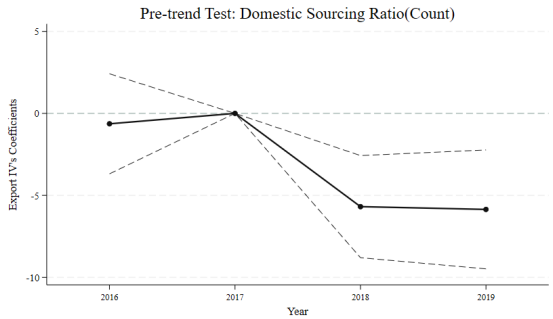
- Y_{it}: All the significant dependent variables in baseline regressions.
- T_{Exp} and T_{Imp}: 2018 (the years when tariff shocks first heart the firms)
- EXP_i: The dummy variable for export tariff shocks. IMP_i: The dummy variable for import tariff shocks.
- T_t^s: Year dummy variable for time s.

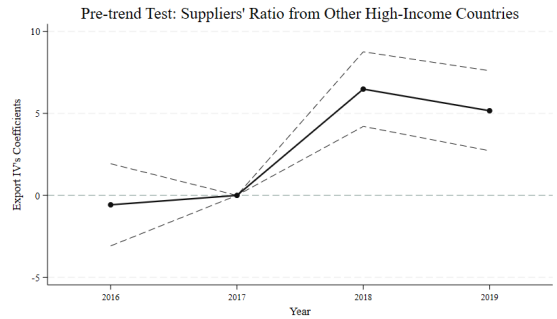
Robustness 1: Pre-trend Test

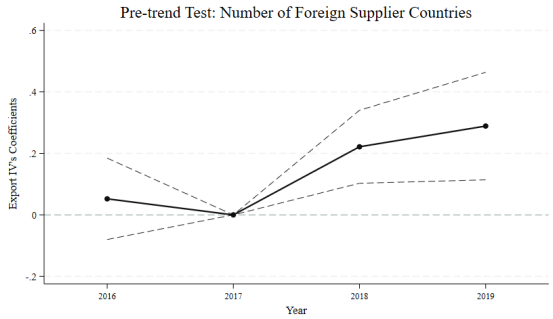
From the following figures, we can get two main results:

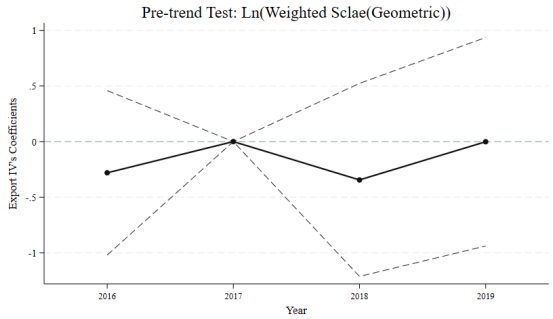
1. No pre-trend effects for the dependent variables.
2. Most post-treatment coefficients align with our baseline regressions and are statistically significant, except those related to supplier scale.

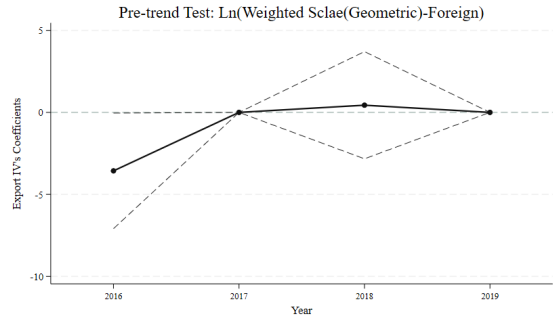












Other Robustness Checks

- Robustness 2: Change control variable following Charoenwong et al. (2023). New control variables are firm-level TPU index, the firm-level Chinese retaliatory tariff exposure, the firm's log total asset, price-to-book ratio, equity ratio and return on assets. See detailed robustness results in Appendix: Robustness 2.
- Robustness 3: Cluster the standard errors to firm level, assuming that the same firm may have similar sourcing patterns. See detailed robustness results in Appendix: Robustness 3.
- Robustness 4: Sub-sample of Manufacturing Firms. See detailed robustness results in Appendix: Robustness 4.

Existing Facts: Export Diversion

While the overall Chinese export volume did not change significantly, firms' exports to the US dropped considerably, indicating that these enterprises had to adjust their export destinations to cope with increased US import tariffs(Jiang, 2023; Sheng et al., 2023; Jiao et al., 2023; Ma and Meng, 2023).

- Jiang (2023) argue that negative trade shocks lead to export diversion toward countries that are geographically closer and have larger economies.
- Jiao et al. (2023) specifically show that exports to the US dropped significantly, exports to the EU increased moderately, and domestic exports and exports to other foreign markets were minimally affected.

Positive Correlation between Export and Import

If the export diversion exist, the positive correlation between export and sourcing can cause this results. The main literature are summed as below.

- Shared costs and market Knowledge: importing and exporting to the same destination may incur some common costs(Li et al., 2024), such as those associated with culture, customs, and transactions(Erbahar, 2019; Campbell, 2024).
- Localization theory: firms engaged in import relationships with local suppliers gain access to embedded knowledge, resources, and stakeholder networks that facilitate market penetration and improve performance(Tse et al., 2024; Low and Johnston, 2008). It can even work like FDI and help firms to increase their market share and have greater brand recognition(Verbeke, 2020).
- Decrease Transportation Cost: carriers, such as container ships and aircraft, often operate on fixed round-trip routes(Wong, 2022).

Empirical Results: Export Diversion

Table 5: Tariff exposures and export diversion

	(1) Export Ratio to U.S.	(2) Export Ratio to High-income Countries (excluding U.S.)	(3) Export Ratio to Non-high-income Countries
Tariff Exposure	-0.548	1.269***	-0.720
	(0.320)	(0.351)	(0.453)
	[0.091]	[0.001]	[0.116]
Controls	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Province × Year FE	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes
Observations	536	536	536
R-squared	0.922	0.828	0.857

Existing Facts: Tariff and Export Product Scope

- Trade liberalization shrinks export products' scope.
  1. Competition effect: Trade liberalization leads to intensified competition among products, which strengthens self-cannibalization, resulting in a less diverse array of export products(Bernard et al., 2011; Eckel and Neary, 2010).
  2. Demand effect: Trade liberalization influence foreign demand, thus affecting domestic firms' product scope(Eckel and Neary, 2010).
  3. Cost effect: Trade liberalization expand product scope needs more inputs and higher costs. Thus, the effect may be heterogeneous. More productive firms expand product varieties while others shrink(Nocke and Yeaple, 2014; Qiu and Zhou, 2013).
- Rising tariff should have the opposite results. Chen et al. (2025) show that a one percentage point increase in export tariffs leads to a 0.669 percent rise in product variety.

Thus, firms needs more diversified inputs to expand their product scope.

Empirical Results: Changes in Product Scope

Table 6: Mechanism of Product Scope diversification

	(1) Export Product Numbers	(2) Import Country Numbers	(3) Import Product Numbers
Tariff Exposure	0.508**	0.119**	0.138
	(0.213)	(0.055)	(0.198)
	[0.020]	[0.036]	[0.488]
Controls	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Province × Year FE	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes
Observations	536	448	448
R-squared	0.955	0.949	0.948

Conclusions and Limitations

- Main Conclusions:
  1. Firms reallocate their export and sourcing from U.S. to other high-income economies at the same time.
  2. They also diversify their product scope and inputs at the same time, expanding their suppliers' base and choosing some new smaller suppliers.
- Potential limitations and promising directions for future research:
  1. Only covers each firm's top five suppliers. If data is available, future work can analyze the changes in suppliers count, sourcing concentration, and overall supply chain complexity.
  2. Unable to assess the economic costs associated with these adjustments due to data limitation. Future research can do more in this part.

Summary and Main Takeaways

- Despite these limitations, our paper is still among the first to systematically examine how MNEs adjust their sourcing behavior in response to rising tariff shocks in the current era of deglobalization. Two main takeaways:
  1. Rising tariff shocks didn't entirely reverse the globalization. Instead, it incentivize the diversification.
  2. Trade policy interventions influence more than just trade volumes—they also induce structural adjustments in firms' procurement decisions and global production configurations.

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Robustness 2 – Part 1: Domestic and Foreign Structure

	Dratio	US_ratio	High_nonUS	Lowmid
Tariff Exposure	-0.292***	0.072	0.274***	-0.054
	(0.100)	(0.101)	(0.107)	(0.036)
	[0.004]	[0.480]	[0.012]	[0.133]
Controls	Yes	Yes	Yes	Yes
Other Controls	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Province × Year FE	Yes	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes	Yes
Observations	1,742	1,742	1,742	1,742
R-squared	0.873	0.818	0.869	0.698

Robustness 2 – Part 2: Diversification Measures

	Country_count	City_count	Ln(Scale_f_geo)	Ln(Scale_d_geo)
Tariff Exposure	0.007**	0.013	-1.324***	-0.043**
	(0.004)	(0.013)	(0.356)	(0.023)
	[0.058]	[0.282]	[0.001]	[0.058]
Controls	Yes	Yes	Yes	Yes
Other Controls	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Province × Year FE	Yes	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes	Yes
Observations	1,742	1,715	107	1,245
R-squared	0.838	0.792	0.958	0.786

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Robustness 3 – Part 1: Domestic and Foreign Structure

	Dratio	US_ratio	High_nonUS	Lowmid
Tariff Exposure	-0.343*	0.076	0.314**	-0.047
	(0.177)	(0.129)	(0.139)	(0.035)
	[0.053]	[0.557]	[0.025]	[0.172]
Controls	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Province × Year FE	Yes	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes	Yes
Observations	1,846	1,846	1,846	1,846
R-squared	0.855	0.794	0.849	0.702

Robustness 3 – Part 2: Diversification Measures

	Country_count	City_count	Ln(Scale_f_geo)	Ln(Scale_d_geo)
Tariff Exposure	0.008	0.014	-0.848***	-0.042
	(0.005)	(0.013)	(0.214)	(0.041)
	[0.129]	[0.270]	[0.000]	[0.304]
Controls	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Province × Year FE	Yes	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes	Yes
Observations	1,846	1,816	108	1,311
R-squared	0.828	0.778	0.948	0.780

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Robustness 4 – Part 1: Domestic and Foreign Structure

	Dratio	US_ratio	High_nonUS	Lowmid
Tariff Exposure	-0.305**	0.078	0.277***	-0.051*
	(0.143)	(0.111)	(0.106)	(0.029)
	[0.036]	[0.482]	[0.010]	[0.078]
Controls	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Province × Year FE	Yes	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes	Yes
Observations	1,315	1,315	1,315	1,315
R-squared	0.862	0.824	0.841	0.717

Robustness 4 – Part 2: Diversification Measures

	Country_count	City_count	Ln(Scale_f_geo)	Ln(Scale_d_geo)
Tariff Exposure	0.007**	0.013	-1.281**	-0.034
	(0.003)	(0.012)	(0.609)	(0.024)
	[0.041]	[0.269]	[0.049]	[0.155]
Controls	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Province × Year FE	Yes	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes	Yes
Observations	1,315	1,289	68	940
R-squared	0.814	0.789	0.911	0.783

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