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Trade tensions and sourcing diversification: Strategic responses of Chinese MNEs in the face of geoeconomic decoupling

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Abstract: The stability and resilience of global supply chains have become critical issues in international business (IB) research, particularly amid rising geoeconomic decoupling risks. This paper investigates how multinational enterprises (MNEs) adjust their sourcing strategies in response to exogenous tariff shocks, with a focus on the 2018-2019 U.S.-China trade tensions. We find that higher U.S. import tariffs lead to two types of sourcing diversification. First, firms expanded their foreign supplier networks geographically, increasing sourcing from other high-income countries. Second, firms diversified inputs by increasing suppliers from other origins and engaging smaller suppliers. These adjustments are driven by two key mechanisms—export market reallocation and product scope expansion—highlighting the interdependence between trade policy, production structure, and supply chain design. Our findings challenge the notion of uniform decoupling by showing that tariff shocks induce strategic diversification rather than complete withdrawal.

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Abstract

The stability and resilience of global supply chains have become critical issues in international business (IB) research, particularly amid rising geoeconomic decoupling risks. This paper investigates how multinational enterprises (MNEs) adjust their sourcing strategies in response to exogenous tariff shocks, with a focus on the 2018-2019 U.S.-China trade tensions. We find that higher U.S. import tariffs lead to two types of sourcing diversification. First, firms expanded their foreign supplier networks geographically, increasing sourcing from other high-income countries. Second, firms diversified inputs by increasing suppliers from other origins and engaging smaller suppliers. These adjustments are driven by two key mechanisms—export market reallocation and product scope expansion—highlighting the interdependence between trade policy, production structure, and supply chain design. Our findings challenge the notion of uniform decoupling by showing that tariff shocks induce strategic diversification rather than complete withdrawal.

Introduction

The choice of suppliers and the pursuit of sustainability in global supply chains have long been pivotal topics in international business (IB) research (Levy, 1995). More recently, scholars have called for incorporating additional dimensions—such as power, opportunism, and negotiation—into the study of global supply networks (Marano et al., 2018). In the face of rising geopolitical tensions and the prospect of deglobalization, scholars highlight the need for multinational enterprises (MNEs) to adapt their strategies (Cui et al., 2023), navigate decoupling pressures (Witt et al., 2023), and leverage digitally enabled governance mechanisms (George & Schillebeeckx, 2022) to sustain performance and resilience. However, despite these advances, empirical evidence remains scarce, especially large-scale, firm-level analyses, which leave more space for research in this field.

Studies in management and international trade provide some empirical research in understanding how MNEs respond to major shocks such as COVID-19 (Ivanov, 2022), natural disasters (Oh and Oetzel, 2022) and economic uncertainties (Charoenwong et al., 2023). Yet, there is still a paucity of evidence on how international trade shocks—particularly fluctuations in U.S.–China tariffs—reshape their global sourcing strategies. Even less is known about the firm-level decision logic that governs supplier reconfiguration. In light of a series of recent tariff policies, it is increasingly important to understand how tariff policies influence sourcing behavior and supply chain sustainability. This paper investigates how exogenous tariff shocks affect MNEs' sourcing decisions, focusing on adjustments in supplier selection, product portfolios, and market allocations. By integrating insights from international business, international trade, and supply chain management, we provide a comprehensive analysis of how firms adapt their procurement strategies under shifting trade policies.

To empirically examine these relationships, we construct novel firm-level supply chain indicators

using a multi-source, multi-dimensional dataset. By matching firm names across seven major databases, we compile a panel dataset comprising 12,348 listed firm-supplier-year observations with detailed geographic and firm-level characteristics. Leveraging geolocation techniques, reverse geocoding, shift-share instrumental variable (SSIV) approaches, and text analysis, we develop proxies for cross-border procurement patterns (e.g., U.S. vs. other non-U.S. high-income vs. middle- and low-income sourcing ratio), supply chain diversifications (e.g., the number of sourcing origins and supplier size distribution), firm-specific tariff exposure, and trade policy uncertainty (TPU) index. We estimate high-dimensional fixed effects models to identify the impact of trade policy shifts on firms' sourcing structures.

Based on prior theoretical and empirical research, we hypothesize that changes in international trade conditions drive firms to change their sourcing patterns and diversify their sourcing behaviors via two primary channels: export market reallocation and product variety expansion. First, higher U.S. import tariffs are expected to reduce Chinese firms' exports to the U.S. while reallocating exports to other high-income countries. For instance, existing studies find that although U.S. tariffs substantially reduce Chinese exports to the U.S., a portion of these exports is redirected to larger or nearby countries like the EU market (Jiang et al., 2023; Jiao et al., 2024). Given the shared fixed costs of exporting and importing (Li et al., 2024), firms are likely to adjust their input sourcing strategies to align with new export destinations. Second, tariff-induced shifts often prompt firms to expand their product variety—either through entering adjacent products or creating new offerings for new markets. Existing literature suggests that a one percent increase in export tariffs results in a 0.669 percent increase in product varieties (Chen et al., 2025). This variety expansion requires additional input sourcing, encouraging firms to diversify their supplier base and restructure procurement configurations

both domestically and internationally.

Our empirical findings support these two hypotheses. Increased U.S. import tariffs led to more diversified procurement structures among Chinese MNEs, particularly in cross-border sourcing. While the tariffs had no insignificant effect on sourcing ratio from the U.S., they resulted in increased sourcing from other high-income countries. At the same time, firms expanded their sourcing origins—both domestically and internationally—while reducing the weighted average of their suppliers' scale. These consistent patterns indicate a strategic reconfiguration of global supply networks rather than full-scale decoupling, highlighting the complex interdependencies between trade policy, firm production decisions, and supply chain configurations.

This study advances several streams of literature. First, it enriches the IB literature on decoupling and MNE responses by providing large-scale, firm-level empirical evidence. Prior work has developed conceptual frameworks to explain MNE strategies under geopolitical decoupling—such as combining institutional logics and risk management to explain how geopolitical decoupling pressures create a "new vulnerability" in globalization (Cui et al., 2023) and proposing a preliminary framework to explain variation in decoupling across industries (Witt et al., 2023). Building on the frameworks, we employ granular firm-supplier data to identify the impact of one kinds of decoupling, increasing tariffs and show that partial decoupling can lead to strategic diversification rather than complete withdrawal. Second, it contributes to the supply chain management (SCM) literature by demonstrating how product diversification and market reallocation jointly shape firms' sourcing strategies. While tariff tensions have become increasingly frequent—particularly following the series of tariffs imposed during the Trump administration—existing studies lacked the analysis of tariff shocks (Charoenwong et al., 2023; Ivanov, 2022; Oh and Oetzel, 2022). Our paper closes the gap between supply chain

management and the realistic situation, generating insights relevant for MNEs in other national contexts. Third, it extends the international trade literature by linking tariff shocks to firm-level supplier network adjustments. Existing literature has focused on the aggregate welfare (Fajgelbaum et al., 2020) or on firms' export behaviors (Chen et al., 2025; Jiang et al., 2023; Jiao et al., 2024; Sheng et al., 2025). Few studies examine downstream, indirect impacts via supply chain restructuring. We address this gap and show that such indirect effects can be substantial, expanding the trade effects traditionally emphasized in the literature.

Theory and hypothesis

Endogenous factors for supply chain construction

Supply chain construction is very important to IB and SCM research, conceptualized as integrated processes that convert raw materials into finished products for customer delivery (Beamon, 1998; Levy, 1995). While management research often highlights trends through case studies (Cox, 1999; Mentzer et al., 2001), engineering studies leverage simulations and machine learning for complex challenges (Ivanov, 2022; Wu et al., 2021). Drawing upon comprehensive literature, we identify four endogenous factors which is related to our analysis: cost/benefit calculations, localization strategies, proximity and agglomeration economies, institutional factor.

Cost–benefit analysis has long served as a foundational lens through which firms make sourcing and supply chain decisions, traditionally involving trade-offs among cost, flexibility, efficiency, and risk (Bergman & Mäler, 1982; Ganga & Carpinetti, 2011; Holweg et al., 2011). Over recent decades, MNEs primarily pursued cost minimization strategies by leveraging manufacturing capabilities in China and Southeast Asia. Both empirical and theoretical research support the ongoing focus on cost efficiency. Cohen and Lee (1989) create a model emphasized maximizing after-tax profits through

optimized global supply chains, a view reinforced by subsequent research (Arntzen et al., 1995; Kouvelis et al., 2004; Holweg et al., 2011). Empirical studies confirm that, despite higher inventory and coordination costs, firms continued to favor global sourcing due to its net financial benefits (Jain et al., 2014). However, recent geopolitical shocks, rising protectionism, and systemic disruptions—most notably COVID-19—have challenged this model, prompting firms to reassess their sourcing decisions under new conditions (Cui et al., 2023; Tung et al., 2023). Rather than breaking the model, this shift has led to a more complex cost–benefit calculus: companies must now weigh the risks of global supply chain and the substantial fixed and transition costs involved in reshoring or redirecting supply chains. For instance, Cohen and Lee (2020) document significant fixed costs associated with reshoring—such as severance payments and contract termination penalties—while MacCarthy et al. (2016) emphasize lengthy transition horizons and financial losses from building new supplier networks and qualifying new partners. In summary, despite significant recent disruptions, cost/benefit analyses remain essential, now incorporating dimensions of risk management and resilience within a volatile global landscape.

Localization strategies have emerged as a second critical determinant of MNEs' supply chain decisions, particularly in the context of market expansion and stakeholder engagement. By adapting products and services to meet local preferences, firms can enhance their competitive positioning and build robust networks that foster long-term success. Empirical evidence highlights that well-executed localization enhances market share, customer loyalty, and brand recognition (Verbeke, 2020). Moreover, integration into local business ecosystems—communities of interdependent stakeholders including competitors, customers, industry players, and governmental agencies—fosters collaborative environments that enhance firms' legitimacy and market performance (Low & Johnston, 2008; Rong et

al., 2015; Tse et al., 2024). These collaborative ecosystems not only reduce information asymmetries and regulatory friction but also create localized synergies that enhance supply chain responsiveness. A compelling example is Uniqlo's successful partnership with Chinese suppliers, leveraging core competencies in design and marketing to effectively integrate into the local market (Usui et al., 2017). Taken together, these insights suggest that localization is not merely a marketing tactic but a strategic consideration that shapes sourcing configurations, supplier selection, and inter-firm coordination in global supply chains.

Geographic proximity and agglomeration economies represent a third critical factor influencing firms' supply chain configurations. Agglomeration economies refer to the positive externalities arising from the geographic concentration of industries, offering benefits such as technology and knowledge spillovers, reduced production and procurement costs, and lower search costs (Shaver & Flyer, 2000). Locating near production or consumption centers allows suppliers to interact more efficiently with buyers, reduce the transportation costs, shorten learning cycles, and adapt operations more flexibly (Helpman et al., 2004). Empirical studies underscore the role of proximity in supply chain performance. Schmitt and Van Biesebroeck (2013) find that in the European automotive industry, geographical, cultural, and relational proximity each significantly increase the probability of a supplier being selected by an original equipment manufacturer (OEM). Similarly, Bray et al. (2019) show that dispersed supply networks are associated with slower quality improvements, reinforcing the value of localized sourcing networks. While proximity enables lower transaction and inventory costs and enhances network coordination, excessive geographic clustering may also limit supplier diversity. Overall, the tension between efficiency and diversity reveals that proximity is neither uniformly beneficial nor detrimental, but rather a strategic variable in shaping sourcing configurations.

Institutional environments—comprising both formal rules and informal norms—constitute a fourth critical determinant of global supply chain decisions. Drawing on institutional theory, existing research emphasizes that MNEs must behave heterogeneously in different institutional environment, particularly under uncertainty (Kostova et al., 2008; Meyer & Peng, 2016). In face of rising economic policy uncertainty and growing political pressures, MNEs can navigate these diverse institutional landscapes, diversify supplier locations and mitigate risks (Chen et al., 2013; Van Hoorn & Maseland, 2016). Empirical evidence supports this trend. Charoenwong et al. (2023) find that firms with predominantly domestic sales tend to reduce reliance on foreign suppliers under economic policy uncertainty, whereas export-oriented firms are more likely to expand their international sourcing portfolios, suggesting the importance of institutional factors. In parallel, politically motivated initiatives—particularly in the United States—have accelerated efforts to reconfigure global value chains through "reshoring" and "friend-shoring" strategies in response to tensions with China (Alfaro & Chor, 2023; Witt et al., 2023). These developments highlight that supply chain decisions are not solely market-driven, but increasingly shaped by geopolitical alignments, national security concerns, and economic diversification.

While several foundational theories in IB or SCM offer valuable insights, they fall outside the core scope of this study. Internalization theory, rooted in transaction cost economics, explains why MNEs internalize cross-border activities to protect firm-specific advantages under uncertainty (Narula et al., 2019; Rugman & Verbeke, 2008). Likewise, the organizational capability perspective—including the resource-based and knowledge-based views—emphasizes how firms leverage unique capabilities to respond to environmental shocks (Barney, 1991; Mahoney & Pandian, 1992). Although both perspectives are theoretically significant, our analysis does not focus on firm boundaries or

capability recombination, and thus we consider these frameworks relevant but tangential to our empirical inquiry.

U.S.-China trade tensions and its impact on entrepreneurs

Since 2018, the Trump administration's approach to trade significantly departed from the previous U.S. stance on free trade, and initiated various actions imposing new tariffs on specific trading partners. The overall process of U.S.-China trade tensions can be summed in Table 1.

These tariffs have affected a wide array of products, significantly impacting not only the U.S. and China but also third-party countries. This has spurred a growing body of research, which can be broadly categorized into two strands. Economists tend to concentrate on welfare analysis and its economic implications, while IB and management scholars often treat trade tensions as exogenous shocks that trigger firm-level strategic adjustments.

Many economists quantified the economic effects of U.S.-China trade tensions using both structural estimation and reduced-form regressions. Early studies primarily employ general equilibrium models, showing that U.S. tariffs were fully passed on to U.S. firms and consumers, resulting in substantial welfare losses in the U.S. (Amiti et al., 2019; Fajgelbaum et al., 2020). Subsequent empirical analyses use firm- and product-level data to investigate behavioral responses to tariff shocks, uncovering patterns of tariff pass-through (Amiti et al., 2020; Ma & Meng, 2023), reductions in Chinese exports to the U.S., and export diversion to alternative destinations (Jiang et al., 2023; Jiao et al., 2024; Sheng et al., 2025). A smaller body of work also documents firms' tendency to redirect efforts toward domestic markets in response to rising export costs (Chen et al., 2025). Meanwhile, other studies have used the trade war context to explore broader implications such as rising trade policy uncertainty (Benguria et al., 2022) and financial market responses (Huang et al.,

2023).

While these studies provide important insights into the aggregate effects of trade tensions and firms' export behaviors, few directly examine how U.S.–China tariff shocks have influenced the structure of firms' global supply chains. In particular, there is limited empirical evidence on how firms reconfigure their sourcing strategies—such as changes in supplier locations, diversification patterns, and proximity preferences—in response to elevated trade costs and geopolitical uncertainty. Addressing this gap, we investigate how Chinese MNEs adjust their sourcing networks in response to exogenous tariff shocks, with a focus on sourcing diversification.

IB scholars are also interested in this problem and they mainly focus on MNEs' response in face of other exogenous shocks or uncertainties. Global supply chains were mainly designed for efficiency and cost savings, leveraging international comparative advantages. However, the trade tensions between China and the U.S. introduced significant uncertainties, forcing companies to reassess their supply chain models. MNEs had to reconfigure their global supply networks to mitigate risks while balancing cost-effectiveness in face of those exogeneous shocks (Dai et al., 2017; Mithani et al., 2022; Oh and Oetzel, 2022). For example, MNEs may withdraw from specific markets to avoid location-specific liabilities or utilize FSAs to reallocate resources from other locations in response to country-specific shocks (Dai et al., 2017). When the disruption threatens global survival, withdrawal may not be viable, necessitating dynamic capabilities for resilience and adaptation across locations (Teece et al., 1997; Verbeke, 2020).

Building on this literature, our study contributes novel empirical evidence on how MNEs restructure supply chains under tariff shocks, with a particular focus on sourcing decisions. Specifically, we show that Chinese MNEs respond to tariff shocks not only by diversifying their

sourcing destinations (e.g., away from the U.S. toward alternative high-income markets), but also by expanding the scope of intermediate inputs. This dual diversification—across both geography and product scope—reveals the underlying logic of risk mitigation and supply chain flexibility embedded in firms' strategic responses to trade policy tensions.

Hypotheses development

While aggregate Chinese exports remained relatively stable during the U.S.–China trade conflict, exports to the United States declined sharply, suggesting that firms actively reallocated shipments toward alternative destinations such as the European Union and other high-income markets (Jiang et al., 2023; Jiao et al., 2024; Ma & Meng, 2023; Sheng et al., 2025). This export diversion raises an important question regarding the interdependence between firms' export and import decisions—specifically, whether shifts in export destinations accompany corresponding changes in sourcing structures.

Several theoretical mechanisms justify the exports and imports correlation. First, according to common knowledge theory, every market has certain market knowledge and exporting and importing from the same country may incur some common costs (Li et al., 2024), such as those associated with culture, customs, and transactions. To penetrate these markets and reallocate their export, they may source more from this market at the same time (Campbell, 2024; Erbahar, 2019). Second, localization theory posits that firms engaged in import relationships with local suppliers gain access to embedded knowledge, resources, and stakeholder networks that facilitate market penetration and improve performance (Low & Johnston, 2008; Tse et al., 2024). Third, the round-trip theory suggests that carriers, such as container ships and aircraft, often operate on fixed round-trip routes (Wong, 2022). Importing and exporting from the same origin can help firms reduce iceberg costs, affecting their

sourcing volume from this origin. Finally, local sourcing relationship can work like FDI and firms with well-executed localization strategies experience increased market share and greater brand recognition (Verbeke, 2020).

Collectively, these insights imply that firms responding to U.S. tariff shocks may not only reallocate their exports geographically but also adjust their sourcing strategies accordingly—particularly by increasing sourcing from new export destinations that offer institutional familiarity, logistic efficiency, and market proximity. We therefore propose the following hypothesis.

Hypothesis 1 U.S. import tariffs will lead Chinese firms to increase their sourcing share from other high-income countries (excluding the U.S.).

Beyond geographic reallocation, tariff shocks may also alter firms' product strategies, with significant implications for input sourcing structures. A well-established body of literature has examined how trade liberalization affects firms' export product scope through several mechanisms. Firstly, the competition effect suggests that trade liberalization leads to intensified competition, which strengthens self-cannibalization, resulting in a less diverse array of export products (Bernard et al., 2011; Eckel and Neary, 2010). Second, the demand effect implies that trade liberalization influences foreign demand, which in turn impacts domestic firms' export product scope (Eckel and Neary, 2010). Third, the cost effect highlights that expanding product scope entails more inputs, more complex production requirements and higher marginal costs, particularly due to the need for distinct technologies and R&D inputs. As a result, more productive firms expand product varieties while others may focus on core products (Nocke & Yeaple, 2014; Qiu & Zhou, 2013).

Building on these literature, the U.S.-China trade tensions, which have significantly raised U.S. import tariffs, are expected to exert the opposite effect of trade liberalization. Supporting this view,

Chen et al. (2025) show that a one percentage point increase in export tariffs leads to a 0.669 percent rise in product variety. Greater product scope, however, typically demands a more diverse array of intermediate inputs, causing the consequences for supply chain configuration. Firms previously sourced within localized supplier clusters because of knowledge spillovers, lower search costs, and production efficiency (Helpman et al., 2004; Shaver & Flyer, 2000). However, the growing need for specialized inputs increasingly compels firms to expand their sourcing origins. This reconfiguration may widen their sourcing ranges and reduces suppliers' weighted size, reflecting a trade-off between input variety and agglomeration benefits.

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.

Methodology

Sample construction

We obtain data from seven different datasets to construct a comprehensive dataset on Chinese firms' export and sourcing behaviors. First, we use the China Stock Market & Accounting Research (CSMAR) Database, which provides yearly data from 2016 to 2019, including information on the top five suppliers for each firm. We exclude all observations where the suppliers' names are unclear, such as "Supplier A" or "Company 1," to ensure data accuracy. Second, we draw on the China Customs Dataset, which includes export and import values, quantities, and prices at the firm–product–country–year level. We use data from 2013 to 2015 to construct the SSIV and data from 2016 to 2019 to analyze firms' export and import behaviors. Third, we incorporate detailed tariff data, including both U.S. import tariffs on Chinese exports, China's retaliatory tariffs and Most Favored Nation (MFN) tariff rates. These data allow us to calculate firm-level tariff exposure and examine the impact of trade

policy changes on firm-level sourcing and export behavior. Fourth, we use the Chinese State Administration of Tax (SAT) dataset, which provides annual data from 2014 to 2016, including basic firm information, staff numbers, income statements, and various tax indicators for over 700,000 firms. From this data, we extract supplier characteristics such as scale and industry classification. Fifth, we also use Baidu Map API to obtain the exact latitude and longitude of each firm and its suppliers. This allows us to identify their address and corresponding city location. Sixth, we collect the listed firms' annual reports from East Money and conduct textual analysis on these reports to calculate firm-level trade policy uncertainty. Finally, we obtain data from Orbis to gather information on foreign suppliers, including their staff numbers and locations. We further search for the names and corresponding websites of foreign suppliers, allowing us to identify their nationality.

The final dataset comprises 12,438 buyer-seller-year observations from 932 listed firms on the Shanghai and Shenzhen Stock Exchanges between 2016 and 2019. We plot the locations of these listed firms and their suppliers on a map of China in Figure 1, revealing that, while not a complete sample, the dataset is relatively representative.

Main variables

Measures of supply chain reconstruction.

To comprehensively analyze the impacts of trade shocks on supply chain decisions, we select a range of dependent variables, which can be broadly categorized into two main parts.

First, we calculate firm-year-level domestic purchase ratios following the methodology of Charoenwong et al. (2023). Hypothesis 1 shows that export destinations may shift toward other high-income countries and that export and sourcing behavior are positively correlated. Therefore, we classify foreign suppliers into three groups and calculate the purchase ratios from U.S. suppliers,

suppliers in other high-income countries and suppliers in middle- and low-income countries, respectively.

Second, we focus on proximity-based diversification and scale-based diversification and develop a series of measures to test hypothesis 2, input diversification following existing literature (Charoenwong et al., 2023; Laursen and Salter, 2006). In terms of geographic diversification, we calculate the number of foreign countries and domestic cities represented in a firm's supplier base. In terms of supplier scale diversification, we gather data on the number of employees for each supplier and compute the firm-level weighted geometric mean of the log-transformed employee counts.

Measures of firm-level U.S.-China trade tensions.

We combine tariff rate and firm-level customs data to create time-varying measures of the listed firm exposure to the U.S. import tariff as follows.

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

where $\tau_{n\omega,t}$ denotes the total ad valorem import tariff rate (including MFN and, if applicable, any additional tariffs) imposed by country n on good ω at time t. Because the Chinese government adjusted certain products' MFN tariffs in response to the U.S.-China trade tensions , using only the U.S.-China exports in the original period to construct the weights could misrepresent the exogenous variation. Therefore, we include all country-product observations in the original period to capture the full set of tariff changes affecting Chinese firms' sourcing incentives.[1] For U.S., $\tau_{n\omega,t}$ equals the MFN tariff plus any additional tariff.[2] For other countries, we use the MFN tariff rate only,

[1] However, this choice doesn't affect our results. As shown in Panel B of Table A1, results remain consistent when the SSIV is constructed using only the U.S. export pattern from the baseline period.

[2] The original MFN and additional tariffs are defined at the HS 8-digit level. We aggregate them to the HS 6-digit level by

abstracting from possible bilateral tariff changes for tractability. $X_{i\omega n,2015}$ 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. Following existing literature, we hold export value weights for each good-country pairs fixed at the initial period value to avoid potential reverse causality in firm's exports with respect to U.S. tariffs (Bartik, 1991; Goldsmith-Pinkham et al., 2020; Rodriguez-Lopez and Yu, 2024; Topalova and Khandelwal, 2011).

Control variables.

First, Chinese retaliatory tariffs occurred at the same time and it may also affect the listed firms' sourcing behaviors. Therefore, we follow Broad Economic Categories (BEC) to identify the intermediate inputs and calculate firm-level intermediate input import tariff exposure using the same methodology as follows and include it as the first control variable.

Additionally, prior research has demonstrated that economic policy uncertainty and trade policy uncertainty, driven by U.S.-China trade tensions, can significantly impact firms' supply chains (Charoenwong et al., 2023). To control for this effect, we apply Caldara et al.'s (2020) approach and follow Benguria et al. (2022) to derive firm-level trade policy uncertainty (TPU) through textual analysis.

The construction method involves four steps. (1) Load annual reports, treating each line of the transcript as a separate data point. (2) Scan each line for keywords related to uncertainty or potential risks. (3) Identify and isolate terms explicitly linked to trade policy, such as "import tariff," "import duty," "export tariff," "protectionism," "unilateralism," "trade barriers," and "anti-dumping." (4) Counts the number of cases in which we find uncertainty-related words and trade policy-related words

calculating simple averages across subheadings, and construct the final tariff measures as shown in the following equation.

in the same line or one line above or below.

The length of each annual report, denoted as R_{it} and the firm-level TPU index is calculated as follows.

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

The calculated firm-level TPU index remains relatively low and stable from 2008 and 2017. It rises substantially in 2018 in response to escalating U.S.–China trade tensions and decreases slightly in 2019, although it remains elevated compared to the pre-2018 period. In 2020, it jumps further due to the unexpected outbreak of COVID-19. These observed trends support the validity of this measurement.

Research design

We use the following specification to estimate the impact of increasing U.S. import tariff,

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

where Y_{it} represents a series of firm-level measures of supply chain diversification, while Tariff Exposure_{it} captures firm-specific exposure to increasing U.S. import tariff in each year. Following Benguria et al. (2022), we treat this exposure as plausibly exogenous and regress it directly. The vector X_{it} includes control variables such as firm-level exposure to Chinese intermediate input import tariff and firm-level TPU index. To mitigate confounding effects, we include firm fixed effects (ϕ_i), province-by-year fixed effects (ϕ_{pt}), and industry-by-year fixed effects (ϕ_{jt}), thereby accounting for unobserved heterogeneity across firms, regional macroeconomic conditions, and industry-specific shocks that may influence sourcing decisions.[3]

[3] The figures of $Tariff\ Exposure_{it}$ and two control variables are shown in appendix 1.

To test Hypothesis 1, the dependent variables Y_{it} include sourcing ratios from domestic suppliers, U.S. suppliers, suppliers in other high-income countries and suppliers in middle- and low-income countries. To test Hypothesis 2, we replace outcome variables with the number of origin countries and cities for foreign and domestic suppliers, as well as the weighted average size of domestic and foreign suppliers. We cluster the standard errors at the year-industry and year-province levels.

Results

Summary statistics

Following the methodology outlined above, we incorporate the supplier-firm pairs' characteristics into the firm-year level. From the original sample of 12,438, we obtain 2,583 firm-year observations. The summary statistics of main variables is shown in Table 2.

Panel A shows the descriptive statistics for original supplier-firm pairs, revealing that, despite only including the top five suppliers, the sample covers a wide range of procurement. The purchase amounts vary from 0.008 billion yuan to 38,608.29 billion yuan, while the purchase ratio to total procurement for the year ranges from 0.07% to 96.49%, with an average value of 8.13% for all top five suppliers. Our sample covers more than 40% of the firms' overall sourcing amounts, making it the most representative and comprehensive dataset available in China. Additionally, we incorporate the suppliers' staff numbers from the Chinese State Administration of Tax (SAT) dataset for domestic suppliers and the Orbis dataset for foreign suppliers. However, only about 50% of the suppliers can be matched by name, making some missing values in Panel A.

We then aggregate these supplier characteristics at the firm level and construct the relevant measures accordingly. Panel B shows the summary statistics at the listed firm level, providing a

comprehensive overview of key variables, which offers insights into procurement behaviors and supplier characteristics. This aggregation helps mitigate the issue of missing values and ensures a robust analysis of the relationship between tariff shocks and firms' sourcing decisions.

Main results in firms' sourcing destination choices

Firstly, we examine the impact of these exogenous shocks on firms' sourcing destination choices. Specifically, we classify total procurement into domestic and international based on suppliers' location (within or outside China). Two domestic purchase ratios are constructed: the share of domestic purchases by value and the share by the number of suppliers. The former is defined as the total procurement value from domestic suppliers divided by the total procurement value from all retained suppliers; the latter is calculated as the number of domestic suppliers divided by the total number of retained suppliers for each firm-year observation.

The first two columns in Table 3 reveal that the share of domestic suppliers significantly decreases in response to higher U.S. import tariff exposure, regardless of whether the measure is based on purchase value or the absolute number of suppliers ($\beta = -0.343$, p-value = 0.011; $\beta = -0.214$, p-value = 0.029, respectively). This indicates that U.S. tariffs significantly impact domestic purchase ratios, even after controlling for firm-level factors such as TPU and retaliatory tariffs. The direction of the effect is consistent with the existing literature on the overall TPU under the same policy shock (Charoenwong et al., 2023). However, the magnitude of the tariff effect is notably larger.[4] This

[4] We can get these results in two ways. First of all, previous literature suggests the domestic faction decrease 0.2 with one-unit increase in TPU. Since our tariff exposure measure is about 100 times larger than the US TPU measure, a one-unit increase in tariff exposure results in a 0.34 decrease in the domestic purchase ratio. Secondly, according to the estimated coefficients in our regression, the coefficients are -0.34 and -2.42 respectively. Since the mean value of tariff exposure and TPU are 1.31 and 0.14, US import tariff still have relatively larger impact on the firms' sourcing decision(0.45% and 0.34%

underscores the critical impact of direct tariff shocks compared to general trade policy uncertainty—something previous studies have rarely quantified.

Columns (3) to (5) explore changes in firms' foreign sourcing origins. While the sourcing ratio from U.S. suppliers remains statistically insignificant ($\beta = 0.076$, $p = 0.459$), we find a significant increase in the sourcing ratio from suppliers located in other high-income countries ($\beta = 0.314$, p-value = 0.005). These results demonstrate that higher U.S. import tariffs significantly caused a strategic reallocation toward destinations that are institutionally and economically comparable to the U.S., rather than middle- or low-income countries. Such shifts mirror the export diversion trend in prior literature and we provide further evidence in our data to test Hypothesis 1 in the following section.

Main results in firms' sourcing diversification

To further analyze internal adjustments within MNEs' supply chains, we obtain the geographic locations of domestic suppliers using Baidu Map API and that of foreign suppliers using Orbis dataset and their website. Meanwhile, supplier size is proxied by the number of employees, sourced from the SAT and the Orbis dataset. These data enable us to construct two key indicators for both domestic and foreign suppliers: (i) the number of sourcing origins—measured at the country level for foreign suppliers and the city level for domestic suppliers—and (ii) the weighted average scale of suppliers.

Based on localization strategy theory and the literature on proximity and agglomeration economies, we interpret a larger number of sourcing origins and a shift toward relative smaller suppliers as evidence of greater input diversification.

The first two columns indicate that a one-unit increase in U.S. import tariff exposure increases the number of foreign sourcing origins significantly ($\beta = 0.008$, p-value = 0.020), while the effect on

respectively).

domestic sourcing origins is consistent but statistically insignificantly (β = 0.014, p-value = 0.253). Given the mean value of dependent variable (Country_count) is 0.366, this corresponds to an average increase of more than 6.6% in foreign sourcing scope.[5] In columns (3) and (4), we shift our focus to changes in suppliers' weighted scale. The results show that a one-unit increase in U.S. import tariff exposure leads to a significant decrease in the weighted average scale of both domestic and foreign suppliers, with reductions of 4.2% and 84.8%, respectively (β = -0.042, p-value = 0.074; β = -0.848, p-value = 0.006). While statistically and economically significant, adjustments among domestic suppliers are notably smaller in magnitude compared to those on foreign suppliers, aligning with the limited response observed in sourcing origin counts in the earlier columns.

These results are consistent with our hypothesis. If listed firms strategically expand their product scope, they may simultaneously diversify their input sourcing. Given that higher-productivity and more relevant suppliers tend to be geographically proximate to buyers, such diversification is likely to expand sourcing ranges and leads to a shift toward smaller-scale suppliers. We investigate this mechanism further in section “Test of mechanism”.

Robustness

Firstly, one potential concern is that tariffs may have targeted particular industries or firms (e.g., large Chinese exporters within an industry) that also had pre-existing trends in supply chain reconstruction, meaning these firms were already diversifying their global supply chains and selecting more suppliers from various origins prior to the real tariff shocks.

[5] The one-unit increases in U.S. import tariff shock raises the scope of foreign countries by 2.2% (0.008/0.366). From Appendix, we can see the mean value of firm-level U.S. import tariff exposure increased 3 to 4 units, thus causing 6.6% to 8.8% increase.

To thoroughly test this issue, we simplify our baseline regression into an event study framework. It allows us to evaluate both the ex ante parallel trends and ex post dynamic effects at the same time. The specification is as follows.

$$Y_{it} = \alpha + \sum_{s=1}^{T_{\text{Exp}}-2} \beta_{\text{Exp,s}}^{pre}(\text{EXP}_i \times T_t^s) + \sum_{s=T_{\text{Exp}}}^{T} \beta_{\text{Exp,s}}^{post}(\text{EXP}_i \times T_t^s) + \sum_{s=1}^{T_{\text{Imp}}-2} \beta_{\text{Imp,s}}^{pre}(\text{IMP}_i \times T_t^s)$$

$$+ \sum_{s=T_{\text{Imp}}}^{T} \beta_{\text{Imp,s}}^{post}(\text{IMP}_i \times T_t^s) + \theta \text{TPU}_{i,t} + \phi_i + \phi_{pt} + \phi_{jt} + \epsilon_{it}$$

where Y_{it} denotes the significant outcome variables in the baseline regressions, T_{Exp} and T_{Imp} indicate the periods when export and import tariff shocks respectively hurt the firms, which in our analysis are mainly 2018 (period 3). EXP_i, IMP_i and T_t^s are all dummy variables. The first two are set to one if the firm experienced export or import tariff shocks, respectively and the third one is year dummy variable for time s.

The pre-treatment trends of our key dependent variables are plotted in Figure A4. As shown, all estimates before 2018 are insignificant, indicating no pre-trend effects for the dependent variables. Moreover, most post-treatment coefficients align with our baseline regressions and are statistically significant, except those related to supplier scale. We attribute this to the scale effect being more sensitive to the magnitude of tariff shocks rather than their binary occurrence. Since the event study assumes homogeneous treatment intensity within the treated group, we include these results as part of our robustness checks rather than as baseline evidence.

Additionally, we replace the control variables following Charoenwong et al. (2023). The new control variables consist of the 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. The results remain consistent, as shown in Table A1 Panel A.

Thirdly, we construct an alternative SSIV using only the U.S. export weights from the baseline period and substitute this for our original instrumented variable. As shown in Panel B of Table A1, the estimated coefficients remain similar in sign, magnitude, and significance to those in the baseline specification. This robustness tests show the validation of our main results and suggest that the additional U.S. import tariff imposed on Chinese MNEs are the main force behind the observed supply chain reconfigurations.

Fourthly, we adjust the level at which we cluster the error terms. In the baseline analysis, we cluster standard errors at the year-industry and year-province levels, assuming that firms within the same industry or province in a given year may exhibit correlated sourcing behaviors. Now we cluster standard errors at the firm level, assuming that the same firm may have similar sourcing patterns. The results are shown in Table A1 Panel C, confirming the stability and reliability of our baseline estimates.

Finally, we restrict our sample to manufacturing firms, as this sector relies heavily on suppliers throughout the production and sales processes. The results are highly robust to this subsample, as shown in Table A1 Panel D.

Test of mechanisms

Sum the baseline results up, we find that U.S.-China trade tensions prompt Chinese listed firms to change their cross-border sourcing patterns and diversify their sourcing inputs. We attribute these changes to two factor, export destination diversification and product scope diversification.

Case studies provide some valuable insights into how MNEs operationalize these strategic adjustments. Haier Smart Home Co., Ltd. is a representative example. Before the U.S.-China trade tensions, Haier acquired GE Appliance (GEA) in the U.S. to strengthen its position in the U.S. market.

However, in response to the trade tensions, Haier redirected its focus to other high-income countries outside the U.S., increasing its plant investments in these regions. This shift was accompanied by new overseas investments, such as the acquisitions of Fisher & Paykel (New Zealand) and Candy (Italy), which enabled Haier to strengthen its localized supply chains and adapt to regional preferences. At the same time, Haier also broadened its product portfolio. It segmented its domestic product line through the "Leader" brand, aiming to establish itself as the go-to home appliance brand for the new generation of young consumers. Its product range spanned from traditional household appliances to previously less-explored areas like beauty fridges, foldable dryers, floor washers, portable air conditioners, coffee machines, barbecue grills, and aroma humidifiers. Similarly, after acquiring Candy, Haier adapted its production to meet localized European preferences, such as compact washing machines and energy-efficient air conditioners, resulting in the creation of several new product lines tailored to the EU market

While this example illustrates how firms diversified along destination and product dimensions, other possibilities including leadership vision, long-term innovation objectives, or broader responses to geopolitical risk may also reflect this pattern. To isolate the causal impact of rising U.S. import tariff exposure, we complement these case studies with firm-level regressions based on the latest custom data, controlling for other potential factors.

First, we examine changes in the composition of foreign suppliers, focusing on why firms are increasingly sourcing from other high-income countries. Prior literature suggests a positive correlation between import and export activities, often attributed to common market knowledge, network reputation, and logistical synergies (Li et al., 2024; Tse et al., 2024; Wong, 2022).

Therefore, we begin by testing whether export destination adjustments follow a similar pattern in

our sample. Table A1 reports the results. We find that firms facing severe U.S. import tariffs significantly reduce their export ratios to the U.S. (β = -0.548, p = 0.091) while significantly increased their export ratio to other high-income countries (β = 1.269, p = 0.001). Considering the mean value of firm-level U.S. import tariff exposure increased by 3 to 4 units in 2018 and 2019 respectively, we infer that the export ratio to the U.S. decreased by 1.64% to 2.19% while the export ratio to other high-income countries increased by 3.81% to 5.08% over the same period. These changes show that MNEs have redirected portions of their exports to destinations similar to the U.S. Thus, we prove our hypothesis 1.

Second, we examine whether U.S.-China trade tensions prompt firms to expand their product scope and, in turn, diversify their sourcing needs. Prior literature suggests that U.S.-China trade tensions incentivized firms to broaden their product scope (Chen et al., 2025). Such product diversification is often accompanied by a broader range of input needs, especially when firms shift toward new markets or adapt to demand heterogeneity.

To test this mechanism in our datasets, we analyze changes in the number of exported products, the range of import countries and the scope of imported products. Column (1) of Table 6 shows that a one-unit increase in the U.S. import-weighted tariff leads to a significant increase of nearly 0.5 in the total number of exported products (β = 0.508, p = 0.020), which is consistent with the results in Chen et al.(2025) and indicates the presence of the diversification in sourcing countries. Column (2) and column (3) illustrate the results of foreign inputs diversification. While the number of foreign sourcing countries increases significantly (β = 0.119, p = 0.036), the number of imported products increases only modestly and insignificantly (β = 0.138, p = 0.488). The results suggest that foreign input diversification lies more on the expansion of sourcing countries. What's more, if we assume the same

HS product from different countries as sufficiently differentiated—due to variations in quality, design, or compatibility—then the increase in sourcing country scope implies a broader functional diversification of inputs. Combined with earlier evidence on expanded sourcing ranges and reduced supplier scale, these results provide empirical support for Hypothesis 2.

Discussion and conclusion

Our findings reveal that higher U.S. import tariffs prompt firms to diversify their sourcing strategies by expanding their foreign supplier networks, increasing the geographic dispersion of their supply chain, and sourcing from relatively smaller suppliers. These sourcing adjustments are not made in isolation but closely tied to changes in firms' export behaviors. As firms reallocate exports from the U.S. to other high-income economies, they simultaneously strengthen their supplier networks in these new markets. Meanwhile, since firms expanded their product scope in face of U.S.-China trade tensions, they need more different inputs, leading firms to source from a wider range of suppliers—both in terms of geographic spread and firm scale. These patterns highlight the interconnected nature of trade policy, export behavior shifts, and supply chain restructuring.

This study, however, is subject to two potential limitations that open up promising directions for future research. First, although our firm-to-firm supply chain data provides rich insights into the procurement structures of listed Chinese firms, it only covers each firm's top five suppliers. This data limitation restricts our ability to analyze the full scope of supply chain restructuring, including changes in suppliers count, sourcing concentration, and overall supply chain complexity, thereby highlighting valuable avenues for future research. Second, while our empirical analysis provides strong evidence of supply chain adjustments, we are unable to assess the economic costs associated with these adjustments. Future research may incorporate theoretical models and firm-level cost measures to

evaluate the trade-offs firms face when adapting to external shocks.

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. By documenting how U.S. import tariffs reshape geography and configuration of corporate supply chains, we contribute to a growing body of research on the strategic behavior of MNEs and the resilience of global supply networks. Our findings yield two main takeaways. First, rising tariff shocks didn't entirely reverse the globalization. Instead, it may incentivize MNEs to diversify their export and sourcing strategies as a form of adaptive response. Second, trade policy interventions influence more than just trade volumes—they also induce structural adjustments in firms' procurement decisions and global production configurations. For IB scholars, these findings provide empirical evidence for theoretical frameworks and highlight the need to link sourcing behavior with broader shifts in investment, production and market engagement.

In a time of frequent trade disruptions and geopolitical uncertainties, neither firms nor governments can fully shield supply chains from external shocks. Therefore, building adaptive capacity and minimizing adjustment costs are critical for ensuring resilience and sustaining competitiveness. Diversification serves as the primary strategy for achieving both goals. While trade frictions may constrain bilateral exchanges, they can also accelerate diversification in supply and demand networks. These dynamics hold important implications for IB practice and policymaking, as they shape the evolving architecture of global value chains and influence the strategic positioning of firms within them.

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Tables

Table 1 Timeline of U.S.-China Trade tenson and affected products

U.S. Tariffs (Effective Date)	Number of Products (HS 8-digit)	Total Import Value in 2017 (million U.S.D)	(%)	Tariff Rate (%) Before	After
2018-07-06	818	33794	7.2	1.2	26.2
2018-08-23	274	14010	13.6	2.3	27.3
2018-09-24	5738	166999	19.6	3.3	13.3
2019-05-10	5738	166999	19.6	13.3	28.3
2019-09-01	3253	104528	25.7	4.8	19.8
2019-12-15 (Not yet in force)	555	155303	86.0	6.3	21.3
Products Not Involved	1989	51554	13.0	0.5	
Total Effective Products	11047	475394	22.8	2.8	26.0
Chinese Retaliatory Tariffs (Effective Date)	Number of Products (HS 8-digit)	Total Import Value in 2017 (million U.S.D)	(%)	Tariff Rate (%) Before	After
2018-07-06	544	30104	33.8	2.2	27.3
2018-08-23	333	14162	8.3	7.2	32.3
2018-09-24	5140	57490	6.9	9.3	17.9
2019-06-01	5140	57490	6.9	17.9	28.2
2019-09-01	1717	28480	8.5	7.6	16.0
2019-12-15 (Not yet in force)	3361	44883	12.9	10.1	16.5
Products Not Involved	957	42616	8.6	3.8	
Total Effective Products	11434	192342	15.7	7.8	25.9

Table 2 Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Panel A: Supplier-firm Pairs					
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: U.S.	12438	0.017	0.128	0	1
Dummy Variable: High income	12438	0.08	0.272	0	1
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
Panel B: Main Variables in Regression					
Tariff Exposure	2583	1.314	3.791	0	74.87
Tariff Exposure (Retaliatory Tariffs)	2583	1.325	3.591	0	64.612
TPU Index	2060	0.142	0.521	0	9
Domestic Suppliers Ratio (by amount): Dratio	2583	90.601	21.01	0	100
Domestic Suppliers Ratio (by count): Dn_ratio[1]	2583	91.421	18.04	0	100
U.S. Suppliers Ratio: US_ratio	2583	1.753	8.061	0	91.23
Other High-income Supplier Ratio: High_nonUS_ratio	2583	6.82	17.442	0	100
Middle- and Low-income Supplier Ratio: Lowmid_ratio	2583	0.827	5.686	0	100
Number of Foreign Suppliers Countries: Country_count	2583	0.366	0.745	0	5
Number of Domestic Suppliers Cities: City_count	2556	3.53	1.247	0	5
LnScale(Geometric Mean): Ln(Scale_d_geo)	1997	5.683	2.672	0	15.928
LnScale(Geometric Mean-Foreign): Ln(Scale_f_geo)	391	10.316	4.193	0	18.278

[1] Domestic Suppliers' Ratio (dratio): This variable measures the share of domestic sourcing in the total procurement value from a firm's top five suppliers. Domestic Suppliers' Ratio (by count, dn_ratio): This variable measures the proportion of domestic suppliers among the firm's top five suppliers.

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

	(1) Domestic Part		(2)Foregin 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

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

	Poximity-based Dversification		Scale-based Dversification	
	(1) Foreign Suppliers: Country_count	(2) Domestic Supplier City_count	(3) Ln(Scale_f_geo)	(4) 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

Table 5 U.S. import tariffs reduce exports to the U.S. and increase exports to other high-income countries

	(1) Export Ratio to U.S.	(2) Export Ratio to High-income Country (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

Table 6 U.S. import tariffs lead to expanded export product scope and diversified foreign inputs

	(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

Figures

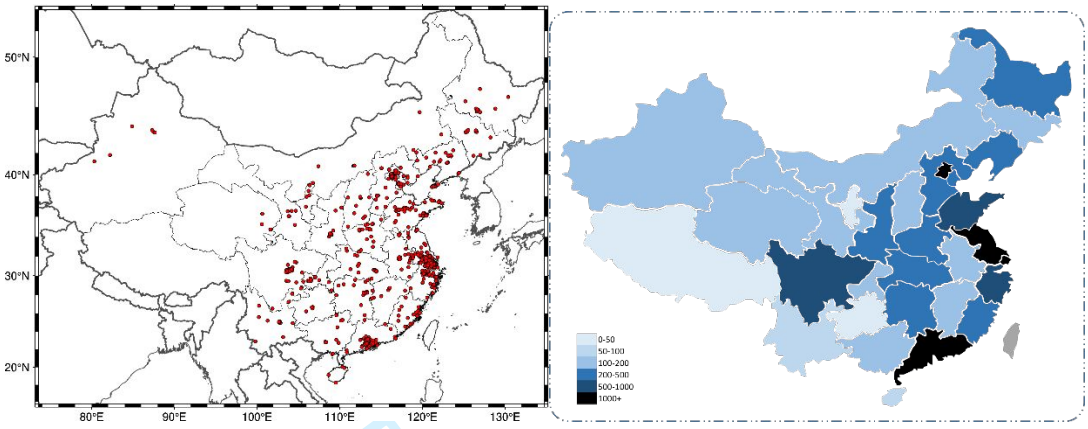

Fig. 1 Listed firms and their suppliers' location distribution.[1]

[1] The left figure shows the listed firms' exact location with each red point represent a listed firm. The right figure shows the suppliers' provinces' distribution with each color represent different suppliers' scope.

Appendix 1: Figures of independent and control variables

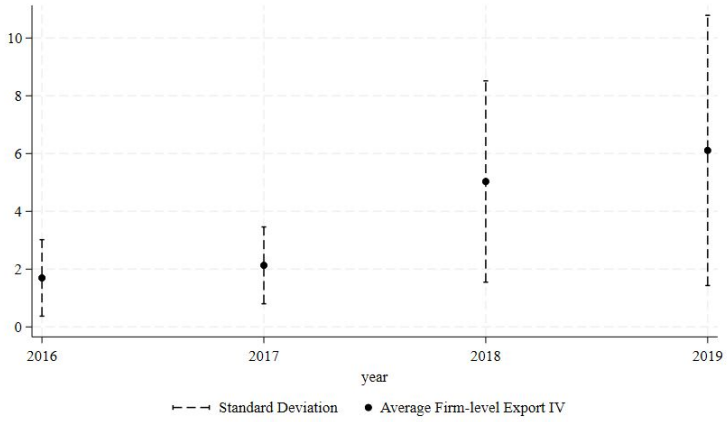

Fig. A1. Average firm-level export tariff shocks for Chinese MNEs, 2016–2019

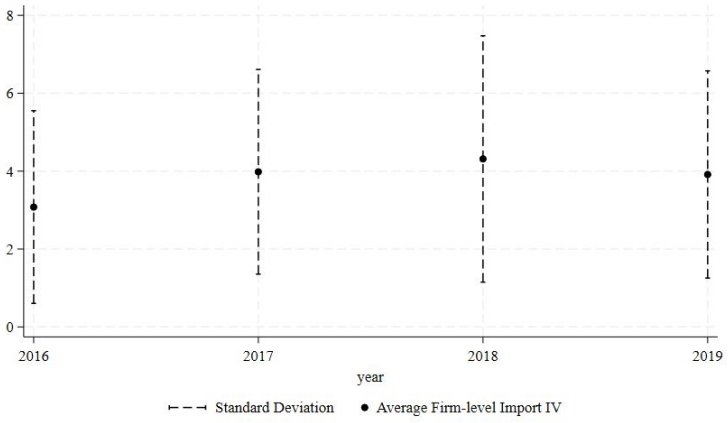

Fig. A2. Average firm-level imported input tariff shocks for Chinese MNEs, 2016–2019

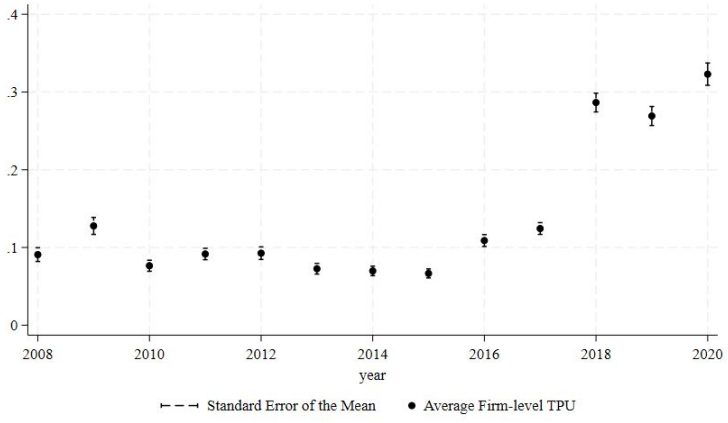

Fig. A3. Average trade policy uncertainty (TPU) index for Chinese MNEs, 2008–2020

Appendix 2: Robustness tests

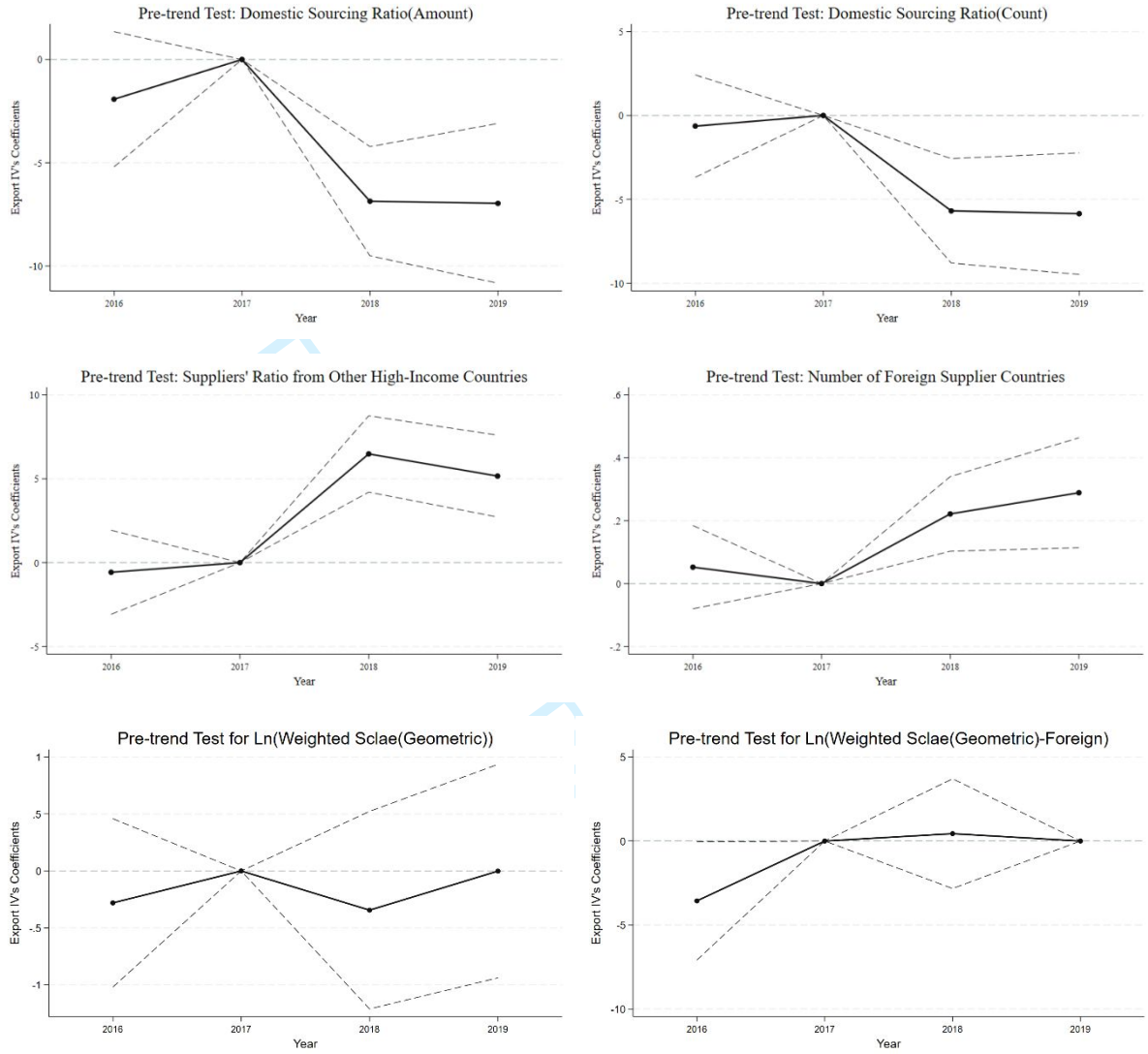

Fig. A4. Pre-trend test for all the significant dependent variables

Table A1. Robustness tests

	Domestic Part		Foregin Part		Poximity-based Dversification		Scale-based Dversification	
	(1) Dratio	(2) US_ratio	(3) High_nonUS_ratio	(4) Lowmid_ratio	(5) Country_count	(6) City_count	(7) Ln(Scale_f_geo)	(8) Ln(Scale_d_geo)
	Panel A Change control variables							
Tariff Exposure	-0.292	0.072	0.274	-0.054	0.007	0.013	-1.324	-0.043
	(0.100)	(0.101)	(0.107)	(0.036)	(0.004)	(0.012)	(0.356)	(0.023)
	[0.004]	[0.480]	[0.012]	[0.133]	[0.058]	[0.282]	[0.001]	[0.058]
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Other Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Province×Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry×Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,742	1,742	1,742	1,742	1,742	1,715	107	1,245
R-squared	0.873	0.818	0.869	0.698	0.838	0.792	0.958	0.786
	Panel B Use alternative SSIV							
Tariff Exposure	-0.140	0.030	0.166	-0.056	0.005	-0.002	-0.121	-0.013
	(0.075)	(0.042)	(0.058)	(0.039)	(0.003)	(0.006)	(0.051)	(0.016)
	[0.063]	[0.481]	[0.005]	[0.152]	[0.087]	[0.690]	[0.025]	[0.403]
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Other Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Province×Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry×Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,846	1,846	1,846	1,846	1,846	1,816	108	1,311
R-squared	0.855	0.793	0.849	0.703	0.828	0.777	0.943	0.781
	Panel C Change cluster level							
Tariff Exposure	-0.343	0.076	0.314	-0.047	0.008	0.014	-0.848	-0.042
	(0.177)	(0.129)	(0.139)	(0.035)	(0.005)	(0.013)	(0.214)	(0.041)
	[0.053]	[0.557]	[0.025]	[0.172]	[0.129]	[0.270]	[0.000]	[0.304]
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Province×Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry×Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,846	1,846	1,846	1,846	1,846	1,816	108	1,311
R-squared	0.855	0.794	0.849	0.702	0.828	0.778	0.948	0.780
	Panle D Sub-sample of manufacture enterprises							
Tariff Exposure	-0.305	0.078	0.277	-0.051	0.007	0.013	-1.281	-0.034
	(0.143)	(0.111)	(0.106)	(0.029)	(0.003)	(0.012)	(0.609)	(0.024)
	[0.036]	[0.482]	[0.010]	[0.078]	[0.041]	[0.269]	[0.049]	[0.155]
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Province×Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry×Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Observations	1,315	1,315	1,315	1,315	1,315	1,289	68	940
R-squared	0.862	0.824	0.841	0.717	0.814	0.789	0.911	0.783