On the impact of the China–United States trade war on the US Supply Chain

Fernando Greve*

November 17, 2023

Abstract

We study how the US tariff imposed on China during 2018Q3 affected the operations of multinational US companies. We focus on 2018Q3 because it concentrates on a sharp rate increase over a brief period of time, which favors econometric evaluation. We used data between 2015 and 2019 to avoid the effect of the Covid-19 pandemic. We use transaction-level import data at the shipment level of imports to the United States. We find that companies have diversified their sources, reduced the share of imports from China, and increased the share of imports from other Asian countries, such as India and Vietnam, and North American countries, such as Canada and Mexico (similar to Alfaro and Chor, 2023). We also observe an increase in lead time in the operations of the company and a negative effect in the company's financial results. We test the causal effect of the tariff war on leadtime and diversification of sources. In both cases we find causal evidence. The increase on tariff produced an increase 1.5 more country sources, reduce the supply from the main country in a 0.3%, and finally increases the leadtime in the US supply chain importers of a 0.4%.

*Olin Business School, Washington University in St. Louis, St. Louis, Missouri 63130, USA, f.grevemunoz@wustl.edu

1 Introduction

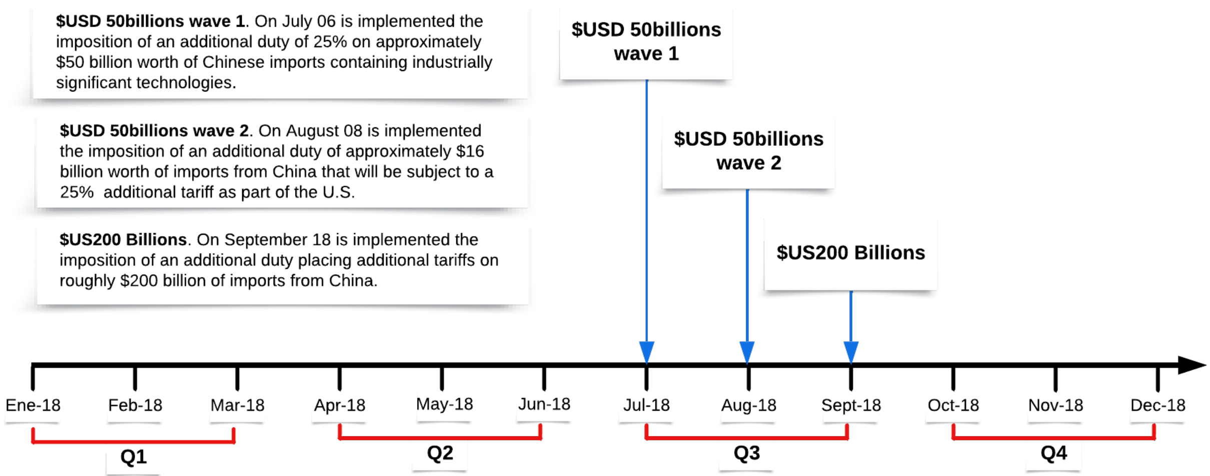
In the dynamic landscape of global commerce, the China–United States trade war has emerged as a focal point, reshaping economic paradigms and challenging established supply chain dynamics. This article attempts to dive into the intricate web of consequences that arises from this geopolitical conflict, with a particular focus on its profound impact on the US supply chain. In particular, this work analyzes how multinational companies importing to the US have restructured their supply chains after the US tariff imposed on China.

For this work, we will consider the following three tariff increases from the US to China. After Section 301 investigation in which the United States Trade Representative (USTR) accused China's acts, policies and practices related to technology transfer, intellectual property, and innovation are unreasonable and discriminatory and burden US commerce. The list of products issued today covers 1,102 separate U.S. tariff lines valued at approximately $50 billion in 2018 trade values. Due to this, an imposition of an additional 25% duty on approximately 50 billion dollars worth of Chinese imports containing industrially significant technologies. The Office of the United States Trade Representative (USTR) today released a list of approximately 16 billion dollars worth of Chinese imports that will be subject to an additional tariff 25% as part of the U.S. response to China's unfair trade practices related to the forced transfer of American technology and intellectual property.

This second tranche of additional tariffs under Section 301 follows the first tranche of tariffs on approximately $34 billion of imports from China, which went into effect on July 6. According to the specific direction of the President, the US Trade Representative (Trade Representative) has determined that China's statements and conduct indicated that action at a level of $50 billion could not be sufficient to eliminate China's unfair and harmful policies. To address this supplementary action were adopted to impose an additional 10% and 25% duty on products from China with an annual trade value of approximately $200 billion. Therefore, during the third quarter of 2018q3, the Trump administration imposed 3 waves of import tariffs on approximately $250 billion of US imports, with rates ranging between 10% and 50%. As Figure 1 shows, during the third quarter of 2018 the US tariffs were introduced in three main waves: July 6, August 8, and September 18.

Using aggregate data (no transhipment nor companies level information) we see import values falling by 25-30% after the imposition of the tariffs, implying that the imposition of the tariffs had very large relative effects on the amount of imports for affected countries and sectors. This implies a substantial shock to global supply chains, because it means that at least $136 billion of trade was redirected as a result of import tariffs (Alfaro and Chor, 2023). Therefore, the global supply chain is restructuring. Alfaro and Chor (2023) argue that Given the fixed costs associated with current supply chains, this reorganization of global value chains is likely to impose large costs on firms that have made investments in the United States and China, as they have to move their facilities to other locations or find alternative sources of import and export destinations.

Figure 1: US waves of import tariffs on US imports from China during the 2018-Q3

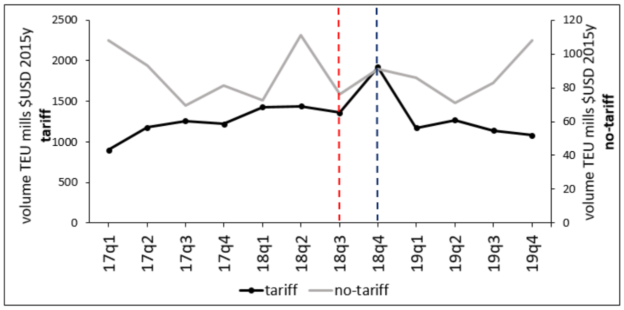


Note: Own elaboration based on information from Li (2018).

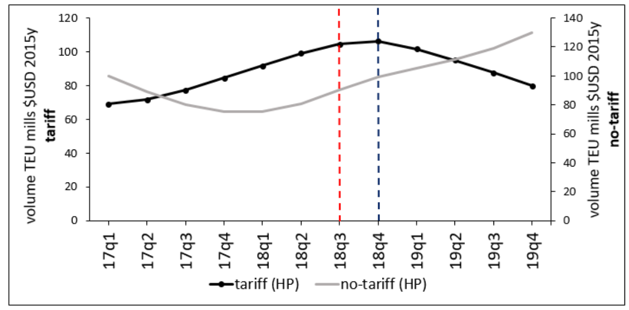
But what is the effect of this reorganization of the supply chain on the supply chain itself at the multinational company level? How does this change in source and diversification affect the operations of the company?In this work, we analyze these questions. If we use transaction-level import data at the shipment level jointly with importing prices, and we plot where US imports are going before and after 2018-Q3 (Figure 2). As we see in Figure 2a and its tendency values in Figure 2b, while no-tariff products have increased their imports from China, tariff products have decreased their imports from China.

As we see in Figure 2b and its tendency values in Figure 2c it happens the opposite way. Tariff products have increased their imports from Europe, and no-tariff products have decreased their imports from Europe. In this work, we study how the US tariff imposed on China during 2018Q3 affected the operations of multinational US companies. We focus on 2018Q3 because it concentrates on a sharp rate increase over a brief period of time, which favors econometric evaluation. We used data between 2015 and 2019 to avoid the effect of the Covid-19 pandemic. We use transaction-level import data at the shipment level of imports to the United States.

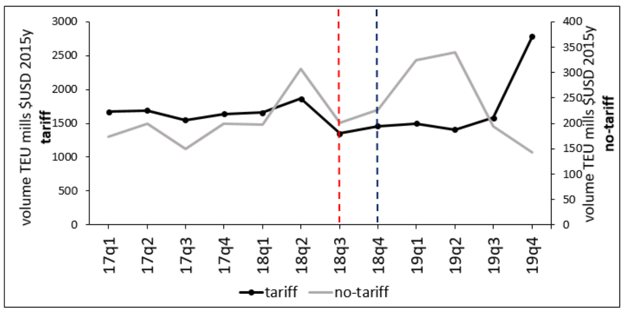
Figure 2: US Companies trans-shipment imports in $USD year 2015 ($TEU \times Price$)



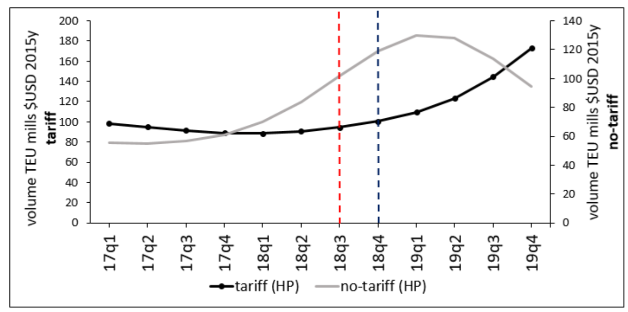
(a) **US trans-shipment imports from China**



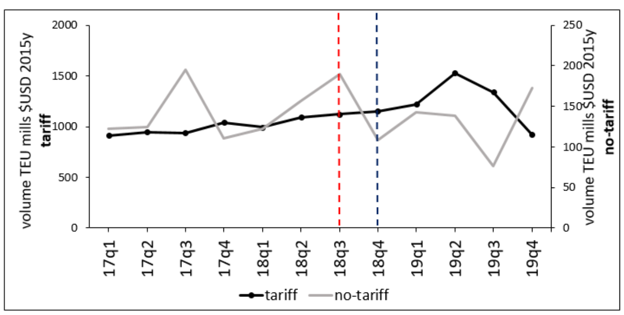
(b) **US trans-shipment imports from tendencies China**



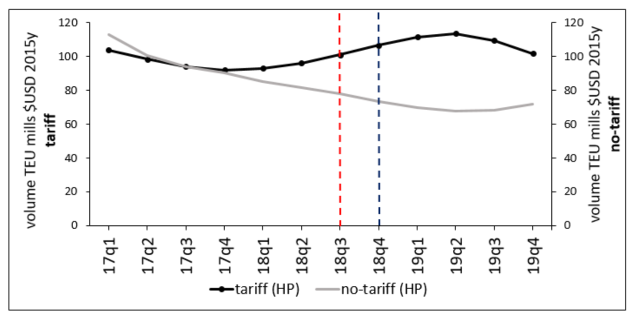
(c) **US trans-shipment imports from Europe**



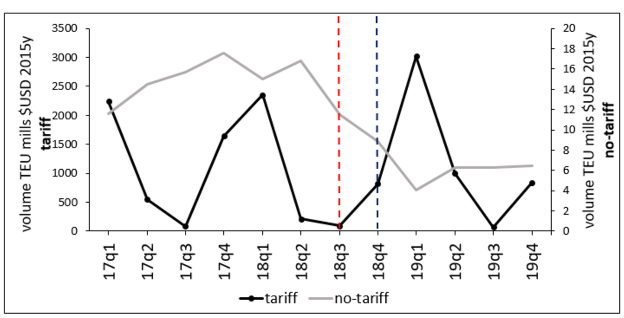
(d) **US trans-shipment tendencies from Europe**



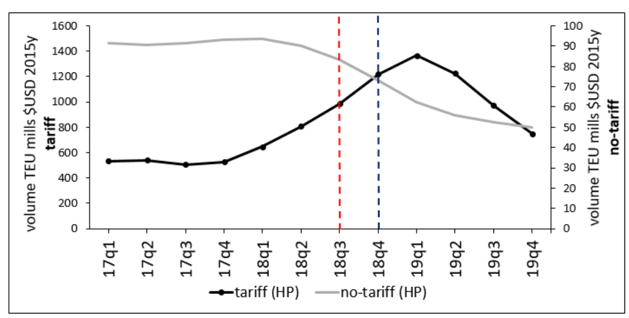
(e) **US trans-shipment from rest of Asia**



(f) **US trans-shipment tendencies from rest of Asia**



(g) **US trans-shipment from Mex/Can**



(h) **US trans-shipment tendencies from Mex/Can**

Note: Own elaboration based on Panjiva dataset and Amiti M, Redding S, Weinstein D (2019) (Replication package). Values were obtained using the twenty-foot equivalent unit TEU with the price of the 6-digit HS code product($TEU \times Price$).

We find that companies have diversified their sources, reduced the share of imports from China, and increased the share of imports from other Asian countries, such as India and Vietnam, and North American countries, such as Canada and Mexico (similar to Alfaro and Chor, 2023). We also observe an increase in lead time in the operations of the company and a negative effect in the company's financial results. We test the causal effect of the tariff war on leadtime and diversification of sources. In both cases we find causal evidence. The increase on tariff produced an increase 1.5 more country sources, reduce the supply from the main country in a 0.3%, and finally increases the leadtime in the US supply chain importers of a 0.4%.

2 Literature Review

2.1 Disruptions, resilience, and strategies for supply chains

The literature on operations management has extensively examined supply chain disruptions (e.g., Bhattacharya et al., 2012; Tang, 2006; Tomlin, 2006). The term "supply chain disruption" is used here to describe the combination of an unintentional and unexpected triggering event that happens at a specific point in the supply chain and the ensuing situation that poses a serious risk to the focal firm's regular business operations (Bode Wagner, 2015).

Generally speaking, events that have a low probability of happening but a high impact—like natural disasters like the 2011 earthquake, tsunami, and nuclear disaster in Japan [Sheffi, 2017]—man-made accidents like the US coal mining disaster [Madsen, 2009]—and pandemics like SARS [Chou et al., 2004] and Ebola [Calnan et al., 2012]—are what cause disruptions in supply chains. We research how unexpected tariffs can disrupt supply chains.

Resilience is the capacity to bounce back from a setback quickly and efficiently (Behzadi et al., 2020). Due to the fact that disruptions in the supply chain can result in large losses for businesses in terms of both money and operations (Tukamuhabwa et al., 2015), resilience is regarded as a crucial quality that supply chains must have. Moreover, according to Ali et al. (2017), it is dynamic rather than static. Kamalahmadi and Parast (2016) conducted a thorough review of related literature in order to enhance knowledge of resilience for businesses and supply chains. Furthermore, for comparable reviews, we direct the readers to Ali et al. (2017) and Golan et al. (2020).

According to Ali et al. (2017), supply chain resilience is a complicated and multifaceted research topic, and there have been significant efforts made to determine its component parts. Studies have identified a variety of factors, but the main components are as follows:

collaboration (e.g., Christopher Peck, 2004; Jüttner Maklan, 2011); information sharing (e.g., Hosseini et al., 2019); flexibility (e.g., Hosseini et al., 2019; Jüttner Maklan, 2011); agility (e.g., Christopher Peck, 2004; Hosseini et al., 2019); visibility (e.g., Hosseini et al., 2019; Jüttner Maklan, 2011); visibility (e.g., Hosseini et al., 2019; Hosseini et al., 2019).

It is possible to assess and analyze practical supply chain resilience by focusing on these elements, which are also referred to as supply chain resilience principles (Kamalahmadi Parast, 2016). As per Pettit et al. (2010), supply chain resilience is primarily influenced by two factors: the supply chains' capabilities, which can be enhanced through management control, and their vulnerabilities, which are dictated by the forces of change.

Using a focus group methodology, seven vulnerability factors and fourteen capability factors were found. Cardoso and colleagues (2015) employed a set of eleven indicators, such as network design, centralization, and operational indicators, to evaluate the resilience of the supply chain.

These factors, however, are not relevant in real life. It is difficult to compute in practice a detailed network structure with flow information, which is necessary for both network design and centralization indicators. In conclusion, no universal indicator exists to assess supply chain resilience in practical situations. The following section goes into further detail on this subject.

2.2 Analyzing supply chain resilience in practice

The literature sheds light on how supply chains and businesses can become more resilient. According to Lee (2004), supply chains that perform well should be flexible, nimble, and coordinated in order to enable them to bounce back quickly from unexpected setbacks. In particular, he stressed the value of data and cooperative connections when creating an agile supply chain. Snyder et al. (2006) reviewed and compiled a number of models for creating supply chains that can withstand disruptions. The most often mentioned strategies, based on the components of supply chain resilience, are supply chain agility enhancement, redundancy creation, collaborative supply chain relationship formation, and increased flexibility (Tukamuhabwa et al., 2015).

Theoretical and practical approaches to supply chain resilience differ significantly, though (Tarei et al., 2020; Tukamuhabwa et al., 2015). According to reports, companies most frequently use enhanced forecasting, dual or multiple sourcing, and increased safety stock to handle disruptions (Katsaliaki et al., 2021). While resilience strategies and the concept of resilience are closely related, firms' practical strategies tend to be more aligned with risk management than with resilience. Risk management includes risk sharing techniques like revenue sharing, insurance, cooperation, and public-private partnerships, as well as risk avoidance techniques like supplier evaluation, technology adoption, flexible processes, and information security (Tarei et al., 2020).

As a result, even though a large variety of supply chain resilience strategies have been identified, there aren't many empirical studies that look into the specific practical responses of businesses. A study by Lee et al. (2020), which examined the reflections of organizations during a crisis, is an exception. But rather than addressing the supply chain as a whole, it mostly concentrated on the perspectives of specific companies.

One of the biggest challenges in conducting empirical research to analyze supply chain resilience is defining resilience using firm operational data. The three primary categories of resilience metrics found in theoretical models are: recovery level (such as service level, unfulfilled demand rate), time to recover (such as out-of-service time, on-time delivery), and profit lost during recovery period (Behzadi et al., 2020). For empirical research, comparable indicators are also defined. Time-to-recover (TTR) is a risk exposure index that Simchi-Levi et al. (2014) proposed to measure the effect of a disruption on specific supply chains.

It is the amount of time needed for a specific node to fully function again following an interruption. Time-to-survive (TTS), an index akin to TTR, was introduced by Simchi-Levi et al. (2015) because reliable TTR data is frequently unavailable. It is the longest period of time that a system can operate without experiencing a decrease in performance in the event that a specific node is broken. The two risk exposure models mentioned above helped Ford Motor Company recognize and control its risks.

Baghersad and Zobel (2021) assessed resilience as an overall system performance loss following a disruption, use the theoretical notion of a resilience triangle as their foundation. Retail supply chain examples are rather difficult for this indicator, even though it shows the resilience fluctuation of supply chains with consistent demands. Moreover, the COVID-19 pandemic's protracted disruption negatively impacts prediction accuracy, which impedes the indicator's computation.

Coordination and information exchange are lacking, which creates another serious issue. Research frequently discusses the robustness of entire supply networks, yet in practice, individual supply chain nodes operate independently. In actuality, a supply chain's visibility is limited to the tiers above and below it (Scheibe Blackhurst, 2018). In this instance, the only method to comprehend the complete supply chain is to conduct interviews with participants in various supply chain nodes. Tarei et al. (2020) conducted interviews with seven supply chain managers occupying various positions in the petroleum industry of India to investigate the variations in risk management techniques and practices.

Supply chain activities under crisis scenarios in Bangladesh were investigated by Shareef et al. (2020) using representative case studies and interviews. The instances included detailed descriptions of landslides, cyclones, and floods, among other disasters. Furthermore, the factors that impact the performance of the supply chain were determined. Ivanov (2018) presented five examples of how Nissan, Toyota, Volkswagen, and ASOS plc—a British online fashion retailer—developed robust supply networks. A detailed description of the supply chain resilience measures was also provided. Nevertheless, each case's total supply chain performance is only partially described by a few key indicators, such sales and inventory level, and the supply chain performance topic was not sufficiently covered.

The practical examination of supply chain resilience remains a significant research subject in spite of the challenges outlined above (Katsaliaki et al., 2021). The few empirical research that are now accessible are mostly cross-sectional and limited to the setting of industrialized nations (Tukamuhabwa et al., 2015). Additionally, case studies and interviews are typically used to gather data. The Panjiva dataset allows it to own the whole retail supply chain and establish direct connections with upstream manufacturers, factories, and customers throughout China. As a result, data from the complete supply chain is accessible. The research adds to the body of empirical work on supply chain resilience analysis. We have conducted the first resilience research using quantitative data taken directly from a company's operating procedures. Furthermore, we minimize the distinction between resilience strategy research and practice by reporting the resilience level and tariffs outbreak tactics empirically.

2.3 Supply chain management during COVID-19

Lastly, we examine the literature on supply chain management in light of the COVID-19 pandemic and the ensuing financial downturn. The first body of work is essentially theoretical and is categorized as conventional literature on supply chain disruption. For example, Baqaee and Farhi (2020) modeled COVID-19 as a combination of exogenous shocks to the supply quantity, productivity of producers, and composition of the final demand.

A concept for an entwined supply network, in which all of the market's supply chains are integrated, was put forth by Ivanov and Dolgui (2020). They suggested looking more closely at COVID-19's effects from this fresh angle. A mathematical production recovery strategy was presented by Paul and Chowdhury (2020) for manufacturing supply chains in the event of the COVID-19 pandemic. These studies offer insightful information about supply chain management during a particular epidemic, but their lack of actual data makes them incredibly impractical.

Our research is more in line with those that used empirical estimation to determine how the epidemic affected supply chains. A significant number of studies in this stream have concentrated on the supply chains of medical supplies and personal protective equipment (e.g., Armani et al., 2020; Gereffi, 2020; Ranney et al., 2020). These studies have also highlighted the significance of government guidance (e.g., Ranney et al., 2020) and the adoption of digital technology (e.g., Armani et al., 2020).

The agricultural and food supply chains have received additional attention (see, for example, Aday Aday, 2020; Gray, 2020; Reardon et al., 2020; Richards & Rickard, 2020). Hobbs (2020), for instance, talked about the COVID-19 shocks to the supply and demand sides and how those impacts affected Canada's food supply systems. The aforementioned studies concur that there are no significant disruptions to the food and agriculture supply chains, and that their logistical services remain efficient. For some supply chains, the situation is less favorable.

Based on expert interviews, Majumdar et al. (2020) examined the apparel supply chain functioning in South Asian nations and discovered that manufacturing, supply, and demand were all totally disjointed and disconnected in this supply chain. McMaster et al. (2020) analyzed global fashion supply networks and provided an overview of current dangers and ways to mitigate them. There have been recommendations for a variety of approaches, including social distancing in factories (Bodenstein et al., 2020), agile supply chains (McMaster et al., 2020), agile sourcing models that incorporate disruption risk sharing (Majumdar et al., 2020), and resilient supply chains (Hobbs, 2020; Singh et al., 2020).

There has been emphasis on the use of data-driven digital technologies, like digital supply chain twins (Ivanov Dolgui, 2020). Nevertheless, none of the earlier research can guarantee that the suggestions they made will be effective when COVID-19 spreads around the globe.

In general, simulations are often used to examine the effects of disruptions since realistic data are not available. For instance, Ivanov (2020) examined and forecasted the effects of COVID-19 on supply chain performance using a simulation-based methodology. He noted that facility opening and closing hours are anticipated to be important variables. Ivanov and Das (2020) examined possible recovery routes and mitigation strategies for pandemic supply risk using a simulation technique. Some studies were somewhat more narrowly focused, concentrating on specific metrics or industries.

Guan et al. (2020), for instance, examined the effects of COVID-19 lockdowns on supply chains using a global trade-modeling framework. They discovered that there would be less loss from a lengthier lockdown that is capable of eradicating the illness than from shorter ones. A simulation model for a public distribution system network was created by Singh et al. (2020) to illustrate COVID-19 interruptions in the food supply chain.

The present study is distinct from earlier ones in the following ways. Firstly, whereas simulations are frequently used to study the effects of disruptions, we use transshipment data from worldwide supply chains. Furthermore, we go beyond the analysis of the effects of a pandemic and take into account supply chain resilience and the workable resilience plans of enterprises, in contrast to earlier research related to the disruptions outbreak. Lastly, taking into account the features of this retail supply chain, we evaluate and talk about several industries, whereas earlier research focused primarily on particular sectors, such food or medical supply chains (e.g., Hobbs, 2020; Gereffi, 2020).

3 Data Description and Variable Definition

We gather information from various sources, primarily relying on import data based on the bill of lading provided by the Panjiva data set. This data set offers comprehensive details regarding US Customs bill of lading (BoL) manifests for public and private US companies. The bill of lading functions as a confirmation of goods loaded, including essential details such as the importer's and overseas supplier's names and addresses, at the 6-digit level of Harmonized Tariff Schedule (HTS6), country of origin, and volume represented in Twenty-foot Equivalent Units (TEU)). With access to this data set, we can monitor all import transactions into the United States facilitated by maritime shipping routes. For importer i, product p and period in quarter t. We define the percentage of the volume that represents the first country source $volp_{ipt}$. We define the percentage of volume from China from the total volume imported $volchina_{ipt}$. We define the number of sources country used for the company i at period t as S_{it}.

To estimate import values (in USD), we consider the prices paid by US importers. US customs data report foreign export values and import quantities by source country at the ten-digit level of the Harmonized Tariff Schedule (HTS10) data. These data break up monthly US imports from each country into approximately 16,000 narrowly defined categories. Amiti M, Redding S, Weinstein D (2019) compute unit values before tariffs are applied so that they correspond to foreign export prices. We reformulate the price obtained by Amiti M, Redding S, Weinstein D (2019) to aggregate them to a 6-digit level of the Harmonized Tariff Schedule (HTS6). We work with prices at year 2015 to avoid noise information and remain values comparable year by year.

we collect firm quarter-level financial fundamentals from the Standard & Poor's Compustat. Limiting our analysis to publicly listed firms allows our analysis to control for firm attributes. Following the existing literature (e.g., Rumyantsev, Netessine, (2007); Kesavan S, Kushwaha T, Gaur V (2022)), We define the market value ($mkvaltq_{it}$), sales ($saleq_{it}$), return on assets (ROA_{it}) and Return on Equity (ROE). Leadtime measurement is more complex. Lead time data are not publicly available and, in practice, vary both by product and by supplier. Additionally, there are lead times (or delays) both in product deliveries and in payments to suppliers, although classical inventory models only account for the former. As a proxy for a lead time, we use the average number of days of outstanding accounts payable (dap_{it}), defined by $dap_{it} = \frac{365}{4} \times \frac{ap_{it}}{cogs_{it}}$. Here, ap_{jt} stands for accounts payable. See Rumyantsev, Netessine, (2007) for a justification for this lead time proxy.

We use CARD Trade War Tariffs Database from the Center for Agricultural and Rural Development Li (2018). we define the variable tafiff_p as an indicator if the product p is affected by tariff increase as follow:

$$\text{tafiff}_p = \begin{cases} 1 & \text{if } p \text{ has tariff increase.} \\ 0 & \text{if Otherwise.} \end{cases} \tag{1}$$

We define the variable after_t as an indicator for the period starting from 2018q3:

$$\text{after}_t = \begin{cases} 1 & \text{if } t \geq \text{ 2018-Q3} \\ 0 & \text{if Otherwise.} \end{cases} \tag{2}$$

Finally, we define the indicator T_{ipt} if for the company i, the import of product p is affected by tariff and the period is after 2018q3.

$$T_{ipt} = \text{tafiff}_p \times \text{after}_t = \begin{cases} 1 & \text{if } p \text{ has tariff increase and } t \geq \text{2018-Q3} \\ 0 & \text{if Otherwise.} \end{cases} \tag{3}$$

we specify the construction of the treatment variable for the tariff. An indicator that assign 1 to each product for the time the tariff increases. That is, starting from 2018Q3 until the end of periods studied). Therefore, for each firm i, product p and period t, wedefine the following:

The first thing we have to notice is that we are working with different sector classifications, and each of these sectors was affected differently from the tariff. In Table 1 we show the different tariff increases for each sector, considering the number of products affected by these tariff wars. In Table 1 we do not consider the classification Vegetable products because only an 8% of the 6-digit HS code product were affected by tariffs. Neither consider Footwear and Headgear for only having 19% of their products with tariffs.

Table 1: Classification of Harmonized System Codes 6 (hs6) products by hs2 categories desegregating by tariff and no-tariff products

code	Classification	no-tariff		tariff		Total(hs6)
		N(hs6)	%	N(hs6)	%	
01-05	Animal Products	128	33.5	254	66.5	382
16-24	Foodstuffs	89	41.4	126	58.6	215
25-27	Mineral Products	3	2	145	98	148
28-38	Chemicals	190	21.4	696	78.6	886
39-40	Plastics	29	13.2	190	86.8	219
41-43	Raw Hides, Skins, Leather	16	23.2	53	76.8	69
44-49	Wood Products	41	14.9	234	85.1	275
50-63	Textiles	275	34	533	66	808
68-71	Stone and Glass	45	22.5	155	77.5	200
72-83	Metals	230	40.9	333	59.1	563
84-85	Machinery and Electrical	147	18.5	646	81.5	793
86-89	Transportation	16	11.1	128	88.9	144
90-97	Miscellaneous	198	54.8	163	45.2	361
	Total	1489	28.9	3669	71.1	5158

Note: We do not consider the classification 06-15 Vegetable products because only an 8% of the 6-digit HS code product were affected by tariffs. Neither consider 64-67 Footwear and Headgear for only having 19% of their products with tariffs.

In Table 3 we show descriptive statistics for the variable of performance of the company. Due to the heterogeneity of these values for each sector, in Annex 7.1 we show the same statistics for each sector. We left out of these statistics the outliers for variables ROA and ROE. Specifically, we cut out the lower values for the percentiles 1% and the larger values for the percentiles 99%. This is done in the statistics for the total sample and for each sector in Annex 7.1. In Table 3 we define our diversification variables.

Table 2: Summary Statistics for US Importer Companies

	Mean	SD	p25	p50	p75	N
Before						
log(*dap*)	4.26	1.54	3.64	4.00	4.37	650,664
log(*mkvaltq*)	8.87	2.11	7.55	8.91	10.35	587,179
log(*saleq*)	7.42	1.90	6.21	7.46	8.69	655,144
ROA	1.20	1.88	0.33	1.20	2.13	656,040
ROE	1.02	9.34	0.66	1.22	1.80	644,715
After						
log(*dap*)	4.30	1.40	3.69	4.06	4.42	262,616
log(*mkvaltq*)	8.98	2.21	7.58	8.96	10.53	236,202
log(*saleq*)	7.60	1.90	6.36	7.62	8.82	264,363
ROA	1.18	1.96	0.34	1.18	2.11	264,747
ROE	1.01	19.98	0.64	1.26	2.07	261,241

Note: We left out of this statistics the outliers for variables *ROA* and *ROE*. Specifically, we left out the lower values for percentiles 1% and larger values for percentiles 99%.

Table 3: Statistics diversification variables

	Mean	SD	min	p10	p25	p50	p75	p90	max	N
no-tariff										
volp	95.96	11.79	13	85	100	100	100	100	100	794,929
S	89.45	113.46	1	6	17	45	117	231	690	829,138
volchina	49.98	48.63	0	0	0	50	100	100	100	829,138
volindnam	5.69	21.96	0	0	0	0	0	0	100	829,138
volmexda	2.47	14.99	0	0	0	0	0	0	100	829,138
tariff										
volp	96.08	11.59	16	86	100	100	100	100	100	328,196
S	87.63	113.74	1	6	16	44	114	221	685	342,479
volchina	48.63	48.66	0	0	0	31	100	100	100	342,479
volindnam	6.35	23.14	0	0	0	0	0	0	100	342,479
volmexda	2.62	15.47	0	0	0	0	0	0	100	342,479

4 Empirical Strategy

As a first step, in Section 5.1 we estimate the effect of the average increase in tariff T_{ipt} on different diversification variables y_{ipt}. Our main specification exploits differences in diversification levels, after the tariff war, compared to times before the tariff existed, controlling for fixed effects for the observation quarter, the year, the sector, the firm. The unit of observation is the firm i, product p, period t. For diversification variable $y_{ipt} = volp_{ipt}, S_{it}, volchina_{ipt}, volindnam_{ipt}$ we define the specification on Eq. (4) we estimate the OLS:

$$y_{ipt} = \beta T_{pt} + \alpha_i + \delta_t + \sum_q \gamma_q \mathrm{I}_q(t) + \sum_p \eta_p \mathrm{I}_s(p) + \mathrm{size}_{it} + e_{ipt} \tag{4}$$

The variable T_{pt} is a dummy variable indicating the period of effect of the tariff. The variables α_i and δ_t are firm and period fixed effect, respectively. The variable $\mathrm{I}_q(t)$ is a dummy variable indicating the quarter, defined by each quarter $q = 1, 2, 3, 4$ as follows:

$$\mathrm{I}_q(t) = \begin{cases} 1 & \text{if } q = 1 \\ 0 & \text{if Otherwise.} \end{cases} \tag{5}$$

where he define an identification variable for the quarter:

$$q(t) = \begin{cases} 1 & \text{if} \quad \mathrm{month}(t) = 1, 2, 3 \\ 2 & \text{if} \quad \mathrm{month}(t) = 4, 5, 6 \\ 3 & \text{if} \quad \mathrm{month}(t) = 7, 8, 9 \\ 4 & \text{if} \quad \mathrm{month}(t) = 11, 11, 12 \end{cases} \tag{6}$$

Finally, the variable $size_{ipt}$ is a control variable defined as the the logarithm of the sales $\log(sales_{it})$. In addition, we report an alternative specification controlling for a linear rather than time trend:

$$y_{ipt} = \beta T_{pt} + \alpha_i + \delta t + \sum_q \gamma_q \mathrm{I}_q(t) + \sum_p \eta_p \mathrm{I}_s(p) + \mathrm{size}_{it} + e_{ipt} \tag{7}$$

As a second step, in Section 5.2 we estimate causal effects using the difference-in-difference (DID) method. An assumption for the DID method is that at the beginning of the implementation of the program, the control and treatment groups have similar growth paths (parallel growth). In the next to Figures we see sectors where this is acieved. This is not achievd by the rest (See Annex.) The first figure show the trend for leadtime, and next figure show the trend for sector considering S and volp.

Figure 3: Parallel before: Leadtime

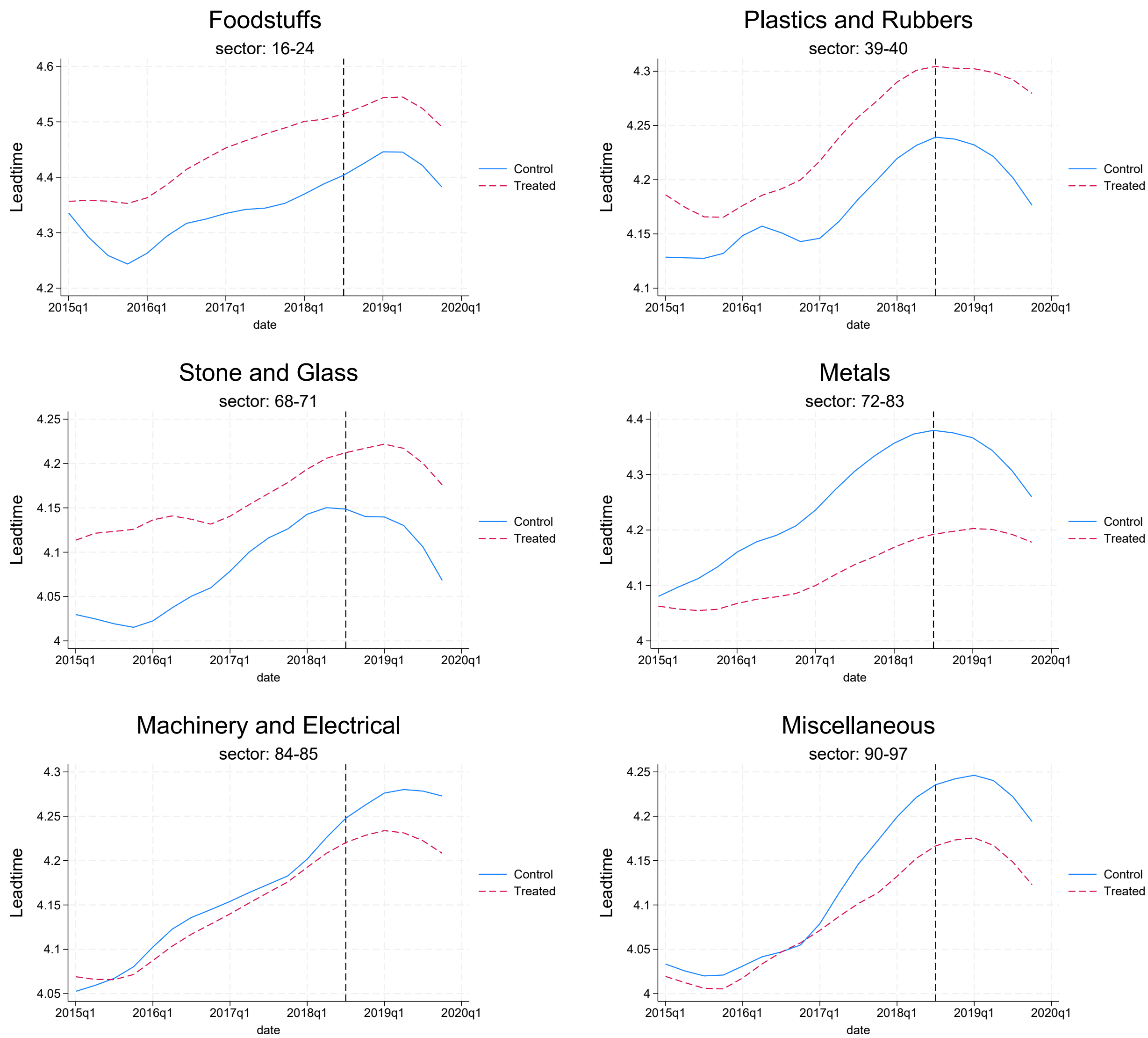
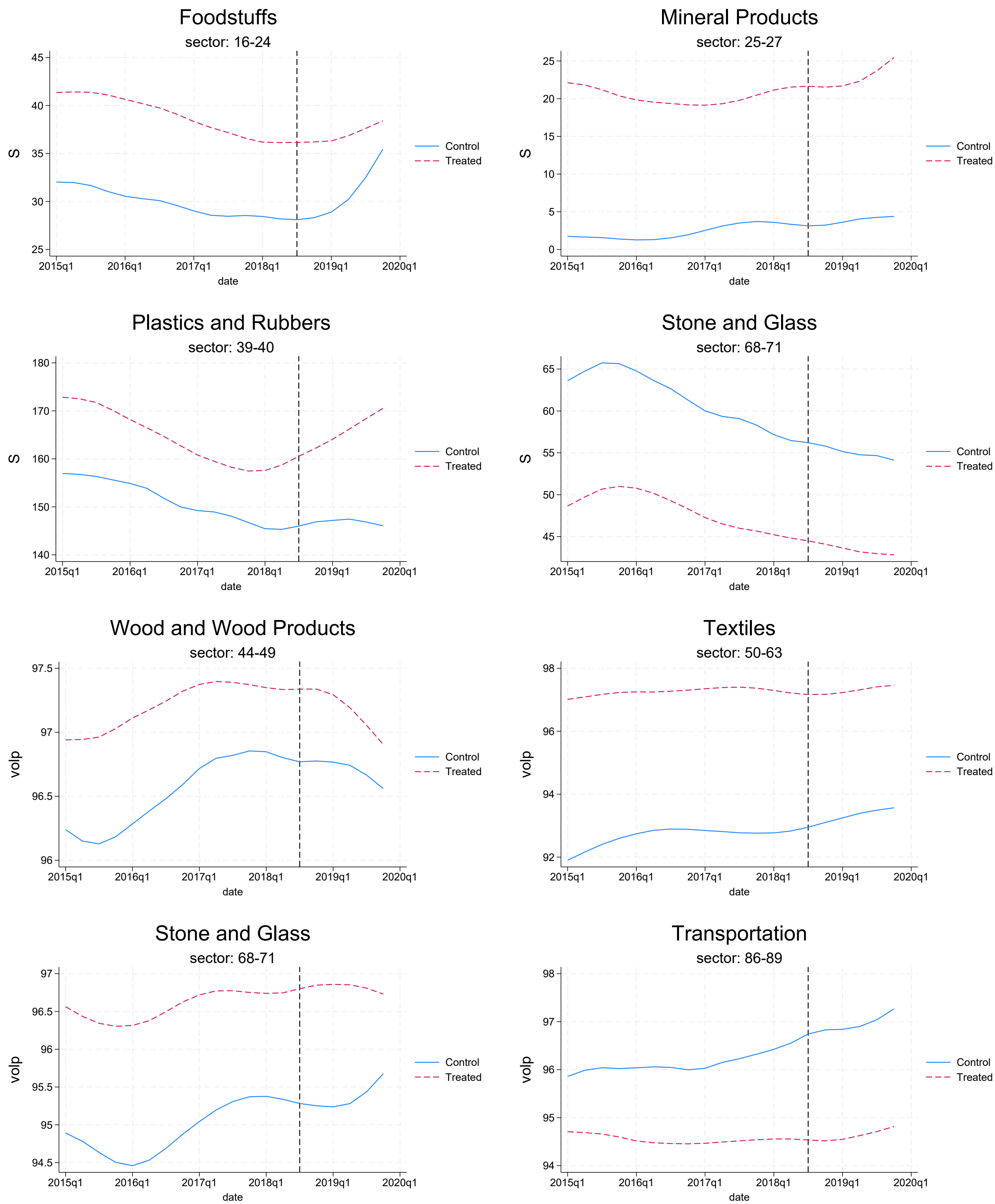


Figure 4: Parallel before: S and volp



For diversification variable $y_{ipt} = volp_{ipt}, S_{it}, volchina_{ipt}, volindnam_{ipt}$ we define the DID specification on Eq. (8) as follow:

$$y_{ipt} = \beta T_{pt} + \beta_a after + \beta_t tariff + \alpha_i + \delta_t + \sum_q \gamma_q \mathrm{I}_q(t) + \sum_p \eta_p \mathrm{I}_s(p) + \sum_i \mathrm{I}_{size(i)} + e_{ipt} \quad (8)$$

Where the variable $Dsize(i) = 1, 2, 3, 4, 5, 6, 7, 8, 9, 10$ depending on the value size of the firm.

The variable T_{pt} is a dummy variable indicating the period of effect of the tariff. The variables α_i and δ_t are firm and period fixed effect, respectively. The variable $\mathrm{I}_q(t)$ is a dummy variable indicating the quarter, defined by each quarter $q = 1, 2, 3, 4$ as follows:

$$\mathrm{I}_q(t) = \begin{cases} 1 & \text{if } q = 1 \\ 0 & \text{if Otherwise.} \end{cases} \quad (9)$$

To identify the impact of a program on its beneficiary population, it is necessary to identify the cause-and-effect relationships between the components produced by the program and the expected results or the variables of interest on which its objectives are defined. Furthermore, it is essential to isolate from the observed benefits all those effects that derive from factors external to the program (state of the economy and national and global political situation, exchange rate, international prices, climatic phenomena, natural disasters, tax rates/tariffs, commercial agreements, etc.), as well as the individual characteristics of each individual, which are available in secondary sources.

The Difference in Differences (DD) Method is a quasi-experimental design that uses series data of time of the treatment and control groups to obtain an appropriate counterfactual to estimate a causal effect. Without a doubt, this analysis methodology constitutes the best tool to achieve an ex post evaluation of a CO. In this study, we will use the DID method to estimate the effect of a merger in the shipping industry on freight prices, comparing changes in prices over time between companies that participated in a merger (the intervention group) and companies to which they did not participate (the control group). For a general explanation of the DID approach, see Angrist and Pischke (2010). For an explanation more linked to its use in ex post evaluations of a CO, see Greenfield in Kwoka (2015).

This method considers that many unobservable characteristics of individuals are more or less constant over time. Thus, by subtracting the situation of the results before from the situation after, the effect of all characteristics that are unique to that individual and that do not change over time is nullified weather. In reality, you are canceling (or controlling) not only the effect of observable characteristics time-invariant, but also the effect of time-invariant unobservable characteristics (Gertler et al, 2011).

The DID method requires data before and after the intervention. The method consists of comparing the difference of the treatment group, with a counterfactual group of equal characteristics, A, with the difference between the counterfactual group and a comparison group, B. Hence the name of the difference-in-differences method, or double differences. This approach eliminates bias in comparisons after the intervention period, between the treatment group and the control group. Likewise, biases are eliminated from comparisons. over time in the treatment group. In this context, the DID can be used to estimate the effect of tariffs on lead time.

As we noted above, the parallel trend assumption is critical to ensure the validity of the DID models, being also the most difficult to comply with. Requires that in the absence of treatment (the merger), the difference between the "treatment" group (companies that merged) and the "control" group (companies that did not merge) is constant over time. Although there are no proof statistics for this assumption, visual inspection is useful when you have many observations in a time. Violation of the parallel trend assumption will lead to a biased estimate of the causal effect.

Our econometric estimation strategy considers a difference-in-differences estimator conditional, implemented by a fixed-effects panel data regression. In particular, we consider a model of the following type:

To analyze the impact of the change in import source on supply uncertainty, we consider only the series firm i and product p that experienced a sudden change in import source and, also, we only consider data during consistency periods t. The specification is the following:

5 Results

In Table 61 we present the estimation results for the Model. We report the estimation results for the average treatment effect on the treated (ATET) and also the coefficient estimation for the control variables. Column 2 in Table **??** provides results for the estimation considering the aggregate data. Columns 3-9 provides estimation results for the model split by product category. The results are heterogeneous. First, we find a negative estimated value of ATET for the case of the aggregate sample. This support the idea that U.S. companies shifting away from China show a reduction on their supply uncertainty. Second, at the disaggregate by categories we find a diverse behaviour. While for electronics and apparel we find a negative estimated value of ATET, we find a negative estimated value for textiles. Results are not statistically significant for the other categories.

5.1 Average tariff Effect

In light of the results we can define a series of hypothesis. We see that shifting away from China is happening differently depending on the sector. This is in line with the idea that the restructuring plans vary by industry, where some apparel manufacturing companies are moving out of China to Southeast Asia. High-tech industries are maintaining some manufacturing in China, but also bringing capacity closer to market demand by moving to Brazil, Mexico, and Eastern Europe.

Also, while certain sectors are showing signals of reestructuring, in others is difficult to define a massive behavior. This is in line with China having a sophisticated network of suppliers of many parts. Where clothing manufacturers who have left China are still buying Chinese textiles. In fact, while China's share of clothing manufacturing has fallen over the last five years, its export of raw textiles, which are made with sophisticated large machinery, has gone up. Even if sewing and parts of some other industries leave, big industries invested decades in building up a whole ecosystem in China. Finally, an interesting idea for future research is studying the diversification occurring both inside China and outside China. Which can solve much of the problems

Table 4: Estimation Results

	volp	volp	S	S	volchina	volchina	volindnam	volindnam
T	-0.14**	-0.08**	13.22***	10.43***	-3.94***	-2.23***	0.87***	0.75***
	(0.05)	(0.04)	(0.46)	(0.35)	(0.18)	(0.14)	(0.09)	(0.07)
size	-0.07	-0.09	-0.98**	-1.03**	0.31	0.35*	-0.01	-0.01
	(0.06)	(0.06)	(0.50)	(0.50)	(0.20)	(0.20)	(0.10)	(0.10)
period		0.02***		-0.85***		0.04***		0.04***
		(0.00)		(0.03)		(0.01)		(0.01)
r2	0.063	0.063	0.170	0.170	0.297	0.296	0.118	0.118
N	894,763	894,763	937,433	937,433	937,433	937,433	937,433	937,433
FE Firm	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FE Quarter	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FE Period	Yes	No	Yes	No	Yes	No	Yes	No
FE Sector	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Standard errors in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

5.2 Diff-in-Diff Results

Table 5: Diff-in-Diff Results

	S	S	volp	volp	leadtime	leadtime
T	1.4394***	1.2119**	-0.2998***	-0.3447***	0.0044***	0.0037***
	(0.47)	(0.54)	(0.05)	(0.06)	(0.00)	(0.00)
after	0.0000	0.0000	0.2815***	0.0000	0.0000	0.0000
	(.)	(.)	(0.05)	(.)	(.)	(.)
tariff	15.9282***	21.9301***	0.2946***	0.4572***	-0.0020**	-0.0013
	(0.29)	(0.31)	(0.03)	(0.03)	(0.00)	(0.00)
N	1,143,775	959,214	1,096,361	915,563	914,882	935,693
r2	0.183	0.075	0.066	0.059	0.962	0.964
FE firm	Yes	Yes	Yes	Yes	Yes	Yes
FE quarter	Yes	Yes	Yes	Yes	Yes	Yes
FE sector	Yes	No	Yes	No	Yes	No
FE size	No	Yes	No	Yes	No	Yes
FE Period	Yes	Yes	Yes	Yes	Yes	Yes

Standard errors in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

6 Conclusion

We study how the US tariff imposed on China during 2018Q3 affected the operations of multinational US companies. We focus on 2018Q3 because it concentrates on a sharp rate increase over a brief period of time, which favors econometric evaluation. We used data between 2015 and 2019 to avoid the effect of the Covid-19 pandemic. We use transaction-level import data at the shipment level of imports to the United States. We find that companies have diversified their sources, reduced the share of imports from China, and increased the share of imports from other Asian countries, such as India and Vietnam, and North American countries, such as Canada and Mexico (similar to Alfaro and Chor, 2023). We also observe an increase in lead time in the operations of the company and a negative effect in the company's financial results. We test the causal effect of the tariff war on leadtime and diversification of sources. In both cases we find causal evidence. The increase on tariff produced an increase 1.5 more country sources, reduce the supply from the main country in a 0.3%, and finally increases the leadtime in the US supply chain importers of a 0.4%.

References

Accenture (2014) How leading manufacturers thrive in a world of ongoing volatility and uncertainty. Accenture Global Manufacturing Study.

Amiti M, Redding S, Weinstein D (2019) The impact of the 2018 trade war on U.S. prices and welfare. *Journal of Economic Perspectives* 33(4):187-210.

Amiti, Mary, Stephen J. Redding, and David E. Weinstein. 2019. Replication package for: The Impact of the 2018 Tariffs on Prices and Welfare. American Economic Association [publisher]. Accessed at https://www.aeaweb.org/journals/dataset?id=10.1257/jep.33.4.187 on 2023-11-13.

Alfaro L, Chor D, Antras P, Conconi P (2019) Internalizing global value chains: A firm-level analysis. *Journal of Political Economy* 127(2):508–559.

Autor D, Dorn D, Hanson G (2016) The China syndrome: Local labor market effects of import competition in the United States. *American Economic Review* 106(12):3741-3776.

Autor D, Dorn D, Hanson G (2020) The impact of trade protection on manufacturing: Evidence from the 2018 Trump tariffs. *Journal of Economic Perspectives* 34(4):187-210.

Boute RN, Van Mieghem JA (2015) Global dual sourcing and order smoothing: The impact of capacity and lead times. *Management Science* 61(9):2080–2099.

Bray RL, Serpa JC, Colak A (2019) Supply chain proximity and product quality. *Management Science* 65(9).

Charoenwong B, Han M, Wu J (2022) Trade and foreign economic policy uncertainty in supply chain networks: Who comes home? *Manufacturing and Service Operations Management* 25(1):126-147.

Dong L, Kouvelis P (2020) Impact of tariffs on global supply chain network configuration: models, predictions, and future research. *Manufacturing and Service Operations Management* 22(1):25–35.

Graves SC, Tomlin BT, Willems SP (2022) Supply chain challenges in the post–covid era. *Production and Operations Management*

International Economic Development Council (2015). Defining the reshoring discussion.

Jain N, Girotra K, Netessine S (2014) Managing global sourcing: Inventory performance. *Management Science* 60(5):1202–1222.

Jain N, Girotra K, Netessine S (2022) Recovering global supply chains from sourcing interruptions: The role of sourcing strategy. *Manufacturing & Service Operations Management* 24(2):846–863.

Saravanan Kesavan, Tarun Kushwaha, Vishal Gaur (2016) Do High and Low Inventory Turnover Retailers Respond Differently to Demand Shocks?. *Manufacturing and Service Operations Management* 18(2):198-215.

Li, M. (2018) CARD Trade War Tariffs Database. https://www.card.iastate.edu/china/trade-war-data/ (Accessed 09-18-2023)

Lynch, David. "U.S. companies are buying less from China as relations remain tense." The Washington Post, August 6, 2023. https://www.washingtonpost.com/business/2023/08/06/us-china-economy-trade-mexico/

Morris A. Cohen, Hau L. Lee (2020) Designing the Right Global Supply Chain Network. *Manufacturing and Service Operations Management* 22(1):15-24.

Morris A. Cohen, Shiliang Cui, Ricardo Ernst, Arnd Huchzermeier, Panos Kouvelis, Hau L. Lee, Hirofumi Matsuo, Marc Steuber, Andy A. Tsay (2018) OM Forum-Benchmarking Global Production Sourcing Decisions: Where and Why Firms Offshore and Reshore. *Manufacturing & Service Operations Management* 20(3):389-402.

Sergey Rumyantsev, Serguei Netessine, (2007) What Can Be Learned from Classical Inventory Models? A Cross-Industry Exploratory Investigation. *Manufacturing and Service Operations Management* 9(4):409-429.

Sheffi Y (2005) The Resilient Enterprise: Overcoming Vulnerability for Competitive Advantage, vol. 1 (The MIT Press, Cambridge, MA).

Simchi-Levi D, Schmidt W, Wei Y (2014) From superstorms to factory fires: Managing unpredictable supply chain disruptions. *Harvard Bus. Rev.* 92(1–2):96–101.

Sirkin H, Zinser M, Rose J (2014) The Shifting Economics of Global Manufacturing: How Cost Competitiveness Is Shifting Worldwide. (Boston Consulting Group, Boston).

Sirkin H, Rose J, Zinser M (2012) The US Manufacturing Renaissance: How Shifting Global Economics Are Creating an American Comeback. (Knowledge@Wharton, Philadelphia).

Wang Y, Gilland W, Tomlin B (2010) Mitigating supply risk: Dual sourcing or process improvement? *Manufacturing Service Oper. Management* 12(3):489–510.

Xu X, Sethi S, Chung S, Choi T (2023) Reforming global supply chain management under pandemics: The great-3rs framework. *Production and Operations Management* 32(2):524–546.

7 Annexes

7.1 Summary Statistics for Firms

Table 6: Summary Statistics for US Importer Companies

	Mean	SD	p25	p50	p75	N
Total Sample						
log(dap)	4.27	1.50	3.65	4.02	4.39	913,280
log($mkvaltq$)	8.90	2.14	7.56	8.92	10.41	823,381
log($saleq$)	7.47	1.90	6.25	7.50	8.74	919,507
ROA	1.19	1.90	0.33	1.19	2.13	920,787
ROE	1.02	13.31	0.66	1.23	1.87	905,956
Before						
log(dap)	4.26	1.54	3.64	4.00	4.37	650,664
log($mkvaltq$)	8.87	2.11	7.55	8.91	10.35	587,179
log($saleq$)	7.42	1.90	6.21	7.46	8.69	655,144
ROA	1.20	1.88	0.33	1.20	2.13	656,040
ROE	1.02	9.34	0.66	1.22	1.80	644,715
After						
log(dap)	4.30	1.40	3.69	4.06	4.42	262,616
log($mkvaltq$)	8.98	2.21	7.58	8.96	10.53	236,202
log($saleq$)	7.60	1.90	6.36	7.62	8.82	264,363
ROA	1.18	1.96	0.34	1.18	2.11	264,747
ROE	1.01	19.98	0.64	1.26	2.07	261,241

Animal and Animal Products

Table 7: Summary Statistics US Importer Companies, classification Animal and Animal Products

	Mean	SD	p25	p50	p75	N
Total Sample						
log(*dap*)	5.36	2.90	3.47	4.07	5.74	6,672
log(*mkvaltq*)	9.58	2.09	8.10	9.78	11.13	6,234
log(*saleq*)	7.86	1.95	6.48	7.91	9.51	6,777
ROA	1.03	1.54	0.25	0.80	1.86	6,797
ROE	1.20	2.62	0.78	1.36	2.10	6,675
Before						
log(*dap*)	5.30	2.94	3.42	4.02	5.11	4,793
log(*mkvaltq*)	9.50	2.06	8.07	9.71	11.02	4,470
log(*saleq*)	7.77	1.93	6.42	7.81	9.39	4,870
ROA	0.98	1.74	0.23	0.84	1.81	4,877
ROE	1.03	3.36	0.76	1.34	1.97	4,768
After						
log(*dap*)	5.46	2.77	3.52	4.12	9.47	1,952
log(*mkvaltq*)	9.69	2.24	8.10	9.89	11.52	1,833
log(*saleq*)	8.00	2.07	6.54	8.11	9.64	1,981
ROA	0.96	1.94	0.29	0.75	2.00	1,994
ROE	0.95	4.53	0.81	1.45	2.35	1,977

Table 8: Summary Statistics US Importer Companies, classification Foodstuffs

	Mean	SD	p25	p50	p75	N
Total Sample						
log(*dap*)	4.47	2.00	3.46	3.93	4.43	27,943
log(*mkvaltq*)	9.43	2.10	7.86	9.61	11.02	25,507
log(*saleq*)	7.93	1.88	6.69	7.96	9.35	28,272
ROA	1.39	1.68	0.39	1.25	2.23	28,321
ROE	1.23	2.74	0.81	1.28	1.95	27,667
Before						
log(*dap*)	4.46	2.04	3.45	3.91	4.42	20,016
log(*mkvaltq*)	9.36	2.09	7.84	9.57	10.89	18,384
log(*saleq*)	7.85	1.89	6.64	7.87	9.24	20,281
ROA	1.37	1.83	0.38	1.26	2.26	20,305
ROE	1.14	3.17	0.80	1.26	1.89	19,838
After						
log(*dap*)	4.49	1.88	3.49	3.97	4.46	8,146
log(*mkvaltq*)	9.51	2.19	7.88	9.63	11.20	7,340
log(*saleq*)	8.07	1.92	6.80	8.16	9.60	8,215
ROA	1.23	1.99	0.35	1.18	2.13	8,246
ROE	0.79	5.00	0.77	1.28	2.12	8,050

Table 9: **Summary Statistics US Importer Companies, classification Mineral Products**

	Mean	SD	p25	p50	p75	N
Total Sample						
log(*dap*)	4.35	1.58	3.64	4.04	4.42	7,964
log(*mkvaltq*)	9.16	2.04	7.76	9.19	10.65	6,541
log(*saleq*)	7.92	1.88	6.60	7.99	9.41	8,082
ROA	1.03	1.71	0.27	0.98	1.87	8,140
ROE	1.16	6.68	0.68	1.33	2.10	8,019
Before						
log(*dap*)	4.37	1.64	3.63	4.04	4.43	5,675
log(*mkvaltq*)	9.18	2.04	7.80	9.22	10.66	4,658
log(*saleq*)	7.89	1.88	6.59	7.97	9.36	5,749
ROA	1.01	1.94	0.26	0.99	1.91	5,792
ROE	0.93	3.62	0.68	1.31	2.04	5,679
After						
log(*dap*)	4.29	1.40	3.66	4.04	4.39	2,366
log(*mkvaltq*)	9.05	2.10	7.53	9.10	10.60	1,955
log(*saleq*)	7.93	1.93	6.53	7.98	9.45	2,411
ROA	0.88	2.02	0.27	0.92	1.72	2,426
ROE	1.03	11.90	0.59	1.37	2.25	2,415

Table 10: **Summary Statistics US Importer Companies, classification Chemicals and Allied Industries**

	Mean	SD	p25	p50	p75	N
Total Sample						
log(*dap*)	4.49	1.57	3.79	4.12	4.54	74,015
log(*mkvaltq*)	9.45	1.99	8.11	9.52	10.95	63,234
log(*saleq*)	7.80	1.73	6.64	7.94	9.07	74,629
ROA	1.25	1.67	0.33	1.15	2.09	74,694
ROE	1.14	5.20	0.71	1.22	1.87	73,040
Before						
log(*dap*)	4.49	1.62	3.76	4.11	4.54	52,795
log(*mkvaltq*)	9.40	2.02	8.06	9.47	10.93	45,099
log(*saleq*)	7.75	1.76	6.62	7.90	9.04	53,277
ROA	1.24	1.87	0.33	1.18	2.12	53,318
ROE	1.05	9.44	0.72	1.23	1.82	52,050
After						
log(*dap*)	4.48	1.41	3.83	4.15	4.54	21,980
log(*mkvaltq*)	9.48	2.01	8.16	9.53	11.04	18,823
log(*saleq*)	7.87	1.72	6.67	8.01	9.11	22,150
ROA	1.08	1.96	0.32	1.04	1.98	22,175
ROE	0.86	7.13	0.64	1.20	1.99	21,768

Table 11: Summary Statistics US Importer Companies, classification Plastics and Rubbers

	Mean	SD	p25	p50	p75	N
Total Sample						
log(*dap*)	4.28	1.43	3.67	4.04	4.41	93,102
log(*mkvaltq*)	8.91	2.09	7.60	8.93	10.38	83,231
log(*saleq*)	7.45	1.88	6.27	7.53	8.65	93,802
ROA	1.19	1.91	0.35	1.20	2.11	93,909
ROE	1.13	10.59	0.66	1.23	1.85	92,395
Before						
log(*dap*)	4.28	1.48	3.66	4.02	4.40	66,418
log(*mkvaltq*)	8.87	2.08	7.57	8.91	10.33	59,308
log(*saleq*)	7.40	1.89	6.22	7.49	8.63	66,885
ROA	1.19	2.00	0.35	1.21	2.13	66,963
ROE	1.03	11.09	0.68	1.23	1.81	65,802
After						
log(*dap*)	4.29	1.32	3.70	4.06	4.43	27,316
log(*mkvaltq*)	8.94	2.17	7.60	8.95	10.49	24,505
log(*saleq*)	7.53	1.87	6.35	7.62	8.69	27,554
ROA	1.11	2.13	0.32	1.16	2.07	27,583
ROE	0.83	10.37	0.58	1.23	2.00	27,222

Table 12: Summary Statistics US Importer Companies, classification Raw Hides, Skins, Leather, and Furs

	Mean	SD	p25	p50	p75	N
Total Sample						
log(*dap*)	4.24	1.54	3.59	3.95	4.35	12,805
log(*mkvaltq*)	8.54	2.18	7.16	8.56	9.96	12,037
log(*saleq*)	7.12	1.92	5.98	7.05	8.32	12,906
ROA	1.20	2.31	0.26	1.27	2.42	12,936
ROE	0.80	11.03	0.50	1.22	1.92	12,626
Before						
log(*dap*)	4.24	1.60	3.58	3.94	4.34	9,204
log(*mkvaltq*)	8.54	2.14	7.19	8.53	9.95	8,640
log(*saleq*)	7.08	1.92	5.92	7.02	8.31	9,258
ROA	1.25	2.20	0.26	1.29	2.42	9,278
ROE	0.83	10.78	0.51	1.20	1.85	9,056
After						
log(*dap*)	4.24	1.37	3.62	4.00	4.37	3,603
log(*mkvaltq*)	8.55	2.25	7.07	8.63	10.00	3,399
log(*saleq*)	7.23	1.87	6.10	7.18	8.35	3,646
ROA	1.18	2.25	0.27	1.25	2.45	3,656
ROE	0.66	11.95	0.48	1.28	2.20	3,572

Table 13: Summary Statistics US Importer Companies, classification Wood and Wood Products

	Mean	SD	p25	p50	p75	N
Total Sample						
log(dap)	4.25	1.60	3.54	3.96	4.38	41,240
log($mkvaltq$)	8.80	2.24	7.29	8.81	10.42	37,969
log($saleq$)	7.44	1.88	6.24	7.43	8.58	41,643
ROA	1.24	2.00	0.29	1.18	2.25	41,691
ROE	0.99	11.85	0.59	1.24	1.91	41,112
Before						
log(dap)	4.25	1.64	3.53	3.94	4.37	29,121
log($mkvaltq$)	8.77	2.20	7.31	8.80	10.35	26,821
log($saleq$)	7.38	1.89	6.17	7.39	8.57	29,403
ROA	1.23	2.04	0.28	1.19	2.26	29,437
ROE	0.88	11.52	0.59	1.23	1.81	29,016
After						
log(dap)	4.27	1.50	3.57	4.00	4.39	12,202
log($mkvaltq$)	8.83	2.36	7.23	8.80	10.53	11,228
log($saleq$)	7.55	1.88	6.35	7.48	8.62	12,324
ROA	1.13	2.22	0.31	1.13	2.17	12,338
ROE	0.92	12.97	0.57	1.28	2.14	12,177

Table 14: Summary Statistics US Importer Companies, classification Textiles

	Mean	SD	p25	p50	p75	N
Total Sample						
log(dap)	4.36	1.79	3.61	3.94	4.35	91,878
log($mkvaltq$)	8.75	2.17	7.43	8.80	10.16	86,949
log($saleq$)	7.38	1.82	6.19	7.36	8.43	92,448
ROA	1.19	2.13	0.26	1.21	2.35	92,671
ROE	0.66	12.45	0.58	1.24	1.92	90,245
Before						
log(dap)	4.34	1.82	3.58	3.92	4.33	65,993
log($mkvaltq$)	8.73	2.12	7.47	8.84	10.10	62,444
log($saleq$)	7.32	1.82	6.11	7.34	8.40	66,435
ROA	1.23	2.13	0.25	1.23	2.39	66,594
ROE	0.88	13.61	0.58	1.22	1.81	64,821
After						
log(dap)	4.41	1.69	3.65	3.99	4.40	25,983
log($mkvaltq$)	8.81	2.30	7.33	8.77	10.43	24,589
log($saleq$)	7.52	1.83	6.31	7.43	8.48	26,110
ROA	1.17	2.13	0.29	1.18	2.26	26,174
ROE	0.39	7.75	0.60	1.31	2.25	25,512

Table 15: **Summary Statistics US Importer Companies, classification Stone and Glass**

	Mean	SD	p25	p50	p75	N
Total Sample						
log(dap)	4.19	1.51	3.55	3.95	4.39	32,222
log($mkvaltq$)	8.88	2.13	7.49	8.87	10.42	29,930
log($saleq$)	7.37	1.91	6.03	7.36	8.63	32,425
ROA	1.34	1.92	0.36	1.29	2.32	32,466
ROE	0.99	6.34	0.65	1.23	1.84	31,957
Before						
log(dap)	4.19	1.56	3.53	3.94	4.38	23,244
log($mkvaltq$)	8.85	2.11	7.49	8.85	10.38	21,531
log($saleq$)	7.31	1.91	5.97	7.33	8.61	23,346
ROA	1.33	2.01	0.35	1.31	2.32	23,374
ROE	0.92	5.90	0.66	1.22	1.77	22,966
After						
log(dap)	4.19	1.39	3.59	3.97	4.38	9,151
log($mkvaltq$)	8.90	2.22	7.46	8.87	10.48	8,560
log($saleq$)	7.47	1.90	6.16	7.42	8.64	9,254
ROA	1.20	2.17	0.34	1.24	2.27	9,267
ROE	0.61	8.76	0.59	1.22	1.98	9,159

Table 16: **Summary Statistics US Importer Companies, classification Metals**

	Mean	SD	p25	p50	p75	N
Total Sample						
log(dap)	4.22	1.42	3.63	4.00	4.35	101,594
log($mkvaltq$)	8.81	2.11	7.51	8.78	10.20	90,879
log($saleq$)	7.44	1.89	6.23	7.43	8.68	102,257
ROA	1.20	1.84	0.37	1.19	2.10	102,597
ROE	1.00	5.66	0.71	1.26	1.90	101,301
Before						
log(dap)	4.21	1.45	3.61	3.98	4.33	72,867
log($mkvaltq$)	8.76	2.10	7.48	8.75	10.16	65,242
log($saleq$)	7.38	1.90	6.18	7.38	8.63	73,353
ROA	1.17	1.99	0.35	1.17	2.10	73,611
ROE	0.88	5.56	0.70	1.25	1.82	72,589
After						
log(dap)	4.24	1.33	3.67	4.04	4.39	29,473
log($mkvaltq$)	8.87	2.18	7.55	8.82	10.31	26,308
log($saleq$)	7.55	1.91	6.32	7.54	8.74	29,657
ROA	1.17	2.08	0.37	1.21	2.11	29,739
ROE	0.77	7.78	0.69	1.29	2.11	29,452

Table 17: **Summary Statistics US Importer Companies, classification Machinery and Electrical**

	Mean	SD	p25	p50	p75	N
Total Sample						
log(dap)	4.20	1.22	3.72	4.06	4.38	259,889
log($mkvaltq$)	8.85	2.12	7.55	8.89	10.29	230,069
log($saleq$)	7.43	1.90	6.23	7.49	8.72	261,369
ROA	1.14	1.86	0.40	1.20	2.07	261,493
ROE	0.98	13.97	0.65	1.22	1.82	258,770
Before						
log(dap)	4.19	1.25	3.70	4.05	4.36	186,082
log($mkvaltq$)	8.80	2.11	7.51	8.87	10.23	165,006
log($saleq$)	7.37	1.91	6.19	7.44	8.66	187,209
ROA	1.10	2.02	0.37	1.18	2.04	187,291
ROE	0.83	8.32	0.63	1.21	1.75	185,090
After						
log(dap)	4.23	1.14	3.75	4.11	4.42	75,827
log($mkvaltq$)	8.92	2.18	7.59	8.93	10.39	66,816
log($saleq$)	7.54	1.91	6.33	7.63	8.78	76,192
ROA	1.15	2.06	0.42	1.22	2.12	76,234
ROE	0.81	22.93	0.64	1.24	1.97	75,701

Table 18: **Summary Statistics US Importer Companies, classification Transportation**

	Mean	SD	p25	p50	p75	N
Total Sample						
log(dap)	4.20	1.33	3.67	4.04	4.35	33,650
log($mkvaltq$)	8.83	2.04	7.49	8.87	10.28	29,566
log($saleq$)	7.58	1.93	6.28	7.64	8.96	33,803
ROA	1.19	1.63	0.43	1.17	2.00	33,823
ROE	1.19	4.47	0.75	1.33	2.07	33,404
Before						
log(dap)	4.18	1.35	3.65	4.02	4.34	23,865
log($mkvaltq$)	8.78	2.03	7.43	8.86	10.23	21,100
log($saleq$)	7.50	1.95	6.21	7.57	8.93	23,983
ROA	1.17	1.88	0.43	1.18	2.04	23,996
ROE	1.07	3.90	0.76	1.31	2.01	23,644
After						
log(dap)	4.22	1.25	3.69	4.08	4.38	10,160
log($mkvaltq$)	8.86	2.12	7.56	8.84	10.38	8,828
log($saleq$)	7.69	1.95	6.38	7.76	9.09	10,200
ROA	1.07	1.88	0.40	1.13	1.97	10,207
ROE	0.77	7.53	0.68	1.36	2.24	10,136

Table 19: Summary Statistics US Importer Companies, classification Miscellaneous

	Mean	SD	p25	p50	p75	N
Total Sample						
log(dap)	4.15	1.39	3.58	3.96	4.36	91,760
log($mkvaltq$)	8.70	2.26	7.33	8.73	10.29	85,281
log($saleq$)	7.27	2.00	6.03	7.26	8.58	92,252
ROA	1.13	2.21	0.31	1.21	2.20	92,294
ROE	0.92	27.10	0.52	1.16	1.76	90,668
Before						
log(dap)	4.13	1.43	3.56	3.94	4.34	66,008
log($mkvaltq$)	8.67	2.21	7.31	8.68	10.20	61,326
log($saleq$)	7.21	1.99	5.97	7.17	8.54	66,333
ROA	1.14	2.18	0.30	1.22	2.21	66,361
ROE	0.84	13.39	0.52	1.16	1.69	65,147
After						
log(dap)	4.19	1.31	3.62	4.02	4.39	25,752
log($mkvaltq$)	8.79	2.37	7.36	8.83	10.51	23,955
log($saleq$)	7.43	2.00	6.21	7.43	8.69	25,919
ROA	1.10	2.27	0.32	1.19	2.19	25,933
ROE	1.12	46.38	0.51	1.18	1.96	25,521

7.2 Summary Statistics diversification variables

Table 20: Statistics diversification variables

	Mean	SD	min	p10	p25	p50	p75	p90	max	N
Total Sample										
volp	96.00	11.73	13	85	100	100	100	100	100	1,123,125
S	88.92	113.54	1	6	16	45	116	228	690	1,171,617
volchina	49.59	48.64	0	0	0	47	100	100	100	1,171,617
volindnam	5.88	22.32	0	0	0	0	0	0	100	1,171,617
volmexda	2.52	15.13	0	0	0	0	0	0	100	1,171,617
Before										
volp	95.96	11.79	13	85	100	100	100	100	100	794,929
S	89.45	113.46	1	6	17	45	117	231	690	829,138
volchina	49.98	48.63	0	0	0	50	100	100	100	829,138
volindnam	5.69	21.96	0	0	0	0	0	0	100	829,138
volmexda	2.47	14.99	0	0	0	0	0	0	100	829,138
After										
volp	96.08	11.59	16	86	100	100	100	100	100	328,196
S	87.63	113.74	1	6	16	44	114	221	685	342,479
volchina	48.63	48.66	0	0	0	31	100	100	100	342,479
volindnam	6.35	23.14	0	0	0	0	0	0	100	342,479
volmexda	2.62	15.47	0	0	0	0	0	0	100	342,479

Table 21: Statistics diversification variables, Animal and Animal Products

	Mean	SD	min	p10	p25	p50	p75	p90	max	N
Total Sample										
volp	94.61	14.01	25	73	100	100	100	100	100	9,345
S	13.72	11.96	1	2	4	10	22	32	46	9,472
volchina	24.18	41.82	0	0	0	0	34	100	100	9,472
volindnam	9.74	28.32	0	0	0	0	0	50	100	9,472
volmexda	8.66	27.61	0	0	0	0	0	0	100	9,472
Before										
volp	94.55	14.18	25	72	100	100	100	100	100	6,533
S	13.86	12.08	1	2	4	10	22	32	46	6,624
volchina	25.85	42.81	0	0	0	0	64	100	100	6,624
volindnam	9.21	27.63	0	0	0	0	0	33	100	6,624
volmexda	8.20	26.97	0	0	0	0	0	0	100	6,624
After										
volp	94.74	13.62	25	74	100	100	100	100	100	2,812
S	13.40	11.66	1	2	3	9	22	32	44	2,848
volchina	20.32	39.17	0	0	0	0	0	100	100	2,848
volindnam	10.98	29.83	0	0	0	0	0	67	100	2,848
volmexda	9.73	29.00	0	0	0	0	0	33	100	2,848

Table 22: **Statistics diversification variables, Foodstuffs**

	Mean	SD	min	p10	p25	p50	p75	p90	max	N
Total Sample										
volp	94.25	14.40	16	70	100	100	100	100	100	36,440
S	36.02	35.64	1	5	10	25	47	95	149	37,622
volchina	20.27	39.42	0	0	0	0	0	100	100	37,622
volindnam	3.24	17.10	0	0	0	0	0	0	100	37,622
volmexda	5.84	22.69	0	0	0	0	0	0	100	37,622
Before										
volp	94.05	14.70	18	68	100	100	100	100	100	25,566
S	36.44	36.37	1	5	10	25	47	95	149	26,400
volchina	20.96	39.90	0	0	0	0	0	100	100	26,400
volindnam	3.08	16.67	0	0	0	0	0	0	100	26,400
volmexda	5.83	22.67	0	0	0	0	0	0	100	26,400
After										
volp	94.72	13.66	16	75	100	100	100	100	100	10,874
S	35.04	33.84	1	5	10	24	45	96	129	11,222
volchina	18.65	38.22	0	0	0	0	0	100	100	11,222
volindnam	3.61	18.07	0	0	0	0	0	0	100	11,222
volmexda	5.87	22.73	0	0	0	0	0	0	100	11,222

Table 23: **Statistics diversification variables, Mineral Products**

	Mean	SD	min	p10	p25	p50	p75	p90	max	N
Total Sample										
volp	97.06	10.23	26	98	100	100	100	100	100	6,967
S	20.94	22.98	1	2	4	10	30	65	91	9,933
volchina	10.65	30.52	0	0	0	0	0	100	100	9,933
volindnam	4.36	20.27	0	0	0	0	0	0	100	9,933
volmexda	6.91	24.92	0	0	0	0	0	0	100	9,933
Before										
volp	97.04	10.24	26	97	100	100	100	100	100	4,947
S	20.29	21.84	1	2	4	10	30	59	82	7,012
volchina	10.66	30.51	0	0	0	0	0	100	100	7,012
volindnam	4.89	21.40	0	0	0	0	0	0	100	7,012
volmexda	6.78	24.67	0	0	0	0	0	0	100	7,012
After										
volp	97.12	10.19	33	98	100	100	100	100	100	2,020
S	22.51	25.43	1	2	4	11	31	76	91	2,921
volchina	10.62	30.55	0	0	0	0	0	100	100	2,921
volindnam	3.09	17.20	0	0	0	0	0	0	100	2,921
volmexda	7.22	25.52	0	0	0	0	0	0	100	2,921

Table 24: **Statistics diversification variables, Chemicals and Allied Industries**

	Mean	SD	min	p10	p25	p50	p75	p90	max	N
Total Sample										
volp	95.56	12.48	16	80	100	100	100	100	100	88,748
S	23.21	26.84	1	3	7	14	28	48	182	93,204
volchina	26.23	42.96	0	0	0	0	74	100	100	93,204
volindnam	6.19	23.22	0	0	0	0	0	0	100	93,204
volmexda	5.25	21.63	0	0	0	0	0	0	100	93,204
Before										
volp	95.55	12.54	16	80	100	100	100	100	100	62,500
S	23.20	26.65	1	4	7	14	28	47	153	65,634
volchina	27.00	43.38	0	0	0	0	88	100	100	65,634
volindnam	5.97	22.81	0	0	0	0	0	0	100	65,634
volmexda	5.27	21.67	0	0	0	0	0	0	100	65,634
After										
volp	95.58	12.35	17	80	100	100	100	100	100	26,248
S	23.23	27.28	1	3	7	14	27	51	182	27,570
volchina	24.39	41.87	0	0	0	0	36	100	100	27,570
volindnam	6.73	24.17	0	0	0	0	0	0	100	27,570
volmexda	5.22	21.55	0	0	0	0	0	0	100	27,570

Table 25: **Statistics diversification variables, Plastics and Rubbers**

	Mean	SD	min	p10	p25	p50	p75	p90	max	N
Total Sample										
volp	96.24	11.21	16	86	100	100	100	100	100	116,471
S	162.89	191.49	1	12	34	87	204	623	690	118,948
volchina	47.68	48.68	0	0	0	17	100	100	100	118,948
volindnam	3.63	18.00	0	0	0	0	0	0	100	118,948
volmexda	2.95	16.26	0	0	0	0	0	0	100	118,948
Before										
volp	96.25	11.17	16	87	100	100	100	100	100	81,876
S	162.64	190.21	1	12	34	85	206	623	690	83,608
volchina	47.90	48.70	0	0	0	20	100	100	100	83,608
volindnam	3.49	17.67	0	0	0	0	0	0	100	83,608
volmexda	2.90	16.14	0	0	0	0	0	0	100	83,608
After										
volp	96.20	11.30	21	86	100	100	100	100	100	34,595
S	163.48	194.49	1	12	34	88	200	642	685	35,340
volchina	47.15	48.64	0	0	0	11	100	100	100	35,340
volindnam	3.95	18.76	0	0	0	0	0	0	100	35,340
volmexda	3.06	16.54	0	0	0	0	0	0	100	35,340

Table 26: Statistics diversification variables, Raw Hides, Skins, Leather, and Furs

	Mean	SD	min	p10	p25	p50	p75	p90	max	N
Total Sample										
volp	95.58	12.19	20	80	100	100	100	100	100	17,205
S	135.38	112.28	1	14	28	115	280	295	326	17,446
volchina	68.91	43.93	0	0	0	100	100	100	100	17,446
volindnam	9.98	27.91	0	0	0	0	0	42	100	17,446
volmexda	0.67	7.44	0	0	0	0	0	0	100	17,446
Before										
volp	95.84	11.71	24	83	100	100	100	100	100	12,186
S	135.54	112.72	1	13	29	116	280	294	326	12,360
volchina	70.34	43.31	0	0	8	100	100	100	100	12,360
volindnam	8.90	26.54	0	0	0	0	0	27	100	12,360
volmexda	0.67	7.32	0	0	0	0	0	0	100	12,360
After										
volp	94.93	13.26	20	78	100	100	100	100	100	5,019
S	134.98	111.21	1	14	28	114	273	297	300	5,086
volchina	65.44	45.20	0	0	0	100	100	100	100	5,086
volindnam	12.61	30.84	0	0	0	0	0	81	100	5,086
volmexda	0.68	7.72	0	0	0	0	0	0	100	5,086

Table 27: Statistics diversification variables, Wood and Wood Products

	Mean	SD	min	p10	p25	p50	p75	p90	max	N
Total Sample										
volp	97.05	10.06	20	95	100	100	100	100	100	52,169
S	43.90	37.92	1	6	16	31	55	115	152	54,289
volchina	50.21	48.97	0	0	0	58	100	100	100	54,289
volindnam	4.76	20.42	0	0	0	0	0	0	100	54,289
volmexda	4.01	19.40	0	0	0	0	0	0	100	54,289
Before										
volp	97.03	10.12	20	95	100	100	100	100	100	36,426
S	43.83	37.45	1	6	17	31	55	113	152	37,938
volchina	50.99	48.95	0	0	0	69	100	100	100	37,938
volindnam	4.57	20.03	0	0	0	0	0	0	100	37,938
volmexda	3.97	19.29	0	0	0	0	0	0	100	37,938
After										
volp	97.09	9.92	20	95	100	100	100	100	100	15,743
S	44.05	39.00	1	7	16	31	55	119	150	16,351
volchina	48.41	48.97	0	0	0	21	100	100	100	16,351
volindnam	5.20	21.29	0	0	0	0	0	0	100	16,351
volmexda	4.09	19.65	0	0	0	0	0	0	100	16,351

Table 28: **Statistics diversification variables, Textiles**

	Mean	SD	min	p10	p25	p50	p75	p90	max	N
Total Sample										
volp	93.63	14.95	17	68	100	100	100	100	100	120,111
S	74.11	83.39	1	6	16	38	97	214	361	121,858
volchina	49.37	47.75	0	0	0	44	100	100	100	121,858
volindnam	15.47	33.68	0	0	0	0	0	100	100	121,858
volmexda	1.11	9.95	0	0	0	0	0	0	100	121,858
Before										
volp	93.47	15.17	18	67	100	100	100	100	100	85,674
S	75.69	85.03	1	6	16	39	100	219	361	86,907
volchina	49.78	47.69	0	0	0	48	100	100	100	86,907
volindnam	14.96	33.19	0	0	0	0	0	100	100	86,907
volmexda	1.13	9.97	0	0	0	0	0	0	100	86,907
After										
volp	94.03	14.39	17	71	100	100	100	100	100	34,437
S	70.19	79.01	1	6	16	37	91	201	321	34,951
volchina	48.34	47.90	0	0	0	33	100	100	100	34,951
volindnam	16.72	34.82	0	0	0	0	0	100	100	34,951
volmexda	1.08	9.89	0	0	0	0	0	0	100	34,951

Table 29: **Statistics diversification variables, Stone and Glass**

	Mean	SD	min	p10	p25	p50	p75	p90	max	N
Total Sample										
volp	96.09	11.56	23	85	100	100	100	100	100	40,440
S	51.31	41.97	1	7	14	39	79	123	155	41,713
volchina	51.98	48.56	0	0	0	76	100	100	100	41,713
volindnam	6.93	24.31	0	0	0	0	0	0	100	41,713
volmexda	2.39	14.73	0	0	0	0	0	0	100	41,713
Before										
volp	95.98	11.74	23	84	100	100	100	100	100	28,863
S	52.81	43.24	1	7	14	40	81	129	155	29,737
volchina	52.32	48.49	0	0	0	79	100	100	100	29,737
volindnam	6.82	24.07	0	0	0	0	0	0	100	29,737
volmexda	2.27	14.33	0	0	0	0	0	0	100	29,737
After										
volp	96.36	11.10	25	88	100	100	100	100	100	11,577
S	47.57	38.38	1	7	14	38	72	111	133	11,976
volchina	51.13	48.73	0	0	0	69	100	100	100	11,976
volindnam	7.23	24.88	0	0	0	0	0	0	100	11,976
volmexda	2.69	15.68	0	0	0	0	0	0	100	11,976

Table 30: **Statistics diversification variables, Metals**

	Mean	SD	min	p10	p25	p50	p75	p90	max	N
Total Sample										
volp	97.04	9.96	16	94	100	100	100	100	100	121,002
S	74.32	97.08	1	6	14	36	86	203	419	128,966
volchina	51.54	48.91	0	0	0	78	100	100	100	128,966
volindnam	6.80	24.28	0	0	0	0	0	0	100	128,966
volmexda	1.76	12.78	0	0	0	0	0	0	100	128,966
Before										
volp	97.02	9.96	18	94	100	100	100	100	100	85,755
S	74.36	96.58	1	6	15	35	86	204	419	91,516
volchina	51.49	48.90	0	0	0	76	100	100	100	91,516
volindnam	6.72	24.14	0	0	0	0	0	0	100	91,516
volmexda	1.76	12.79	0	0	0	0	0	0	100	91,516
After										
volp	97.08	9.97	16	95	100	100	100	100	100	35,247
S	74.24	98.30	1	6	14	37	83	198	417	37,450
volchina	51.66	48.95	0	0	0	81	100	100	100	37,450
volindnam	7.01	24.63	0	0	0	0	0	0	100	37,450
volmexda	1.76	12.77	0	0	0	0	0	0	100	37,450

Table 31: **Statistics diversification variables, Machinery and Electrical**

	Mean	SD	min	p10	p25	p50	p75	p90	max	N
Total Sample										
volp	96.69	10.48	17	91	100	100	100	100	100	308,124
S	94.38	90.48	1	10	26	65	128	240	405	323,883
volchina	54.30	48.53	0	0	0	97	100	100	100	323,883
volindnam	3.26	16.86	0	0	0	0	0	0	100	323,883
volmexda	1.83	12.87	0	0	0	0	0	0	100	323,883
Before										
volp	96.69	10.47	17	91	100	100	100	100	100	217,889
S	95.27	91.46	1	11	26	65	129	245	405	229,021
volchina	54.45	48.51	0	0	0	98	100	100	100	229,021
volindnam	3.11	16.50	0	0	0	0	0	0	100	229,021
volmexda	1.75	12.59	0	0	0	0	0	0	100	229,021
After										
volp	96.70	10.49	20	91	100	100	100	100	100	90,235
S	92.23	88.04	1	10	26	64	126	231	358	94,862
volchina	53.94	48.58	0	0	0	96	100	100	100	94,862
volindnam	3.62	17.69	0	0	0	0	0	0	100	94,862
volmexda	2.02	13.52	0	0	0	0	0	0	100	94,862

Table 32: **Statistics diversification variables, Transportation**

	Mean	SD	min	p10	p25	p50	p75	p90	max	N
Total Sample										
volp	94.72	13.63	13	77	100	100	100	100	100	38,837
S	140.81	147.51	1	8	30	79	178	413	437	42,092
volchina	49.13	48.36	0	0	0	38	100	100	100	42,092
volindnam	4.57	19.39	0	0	0	0	0	0	100	42,092
volmexda	3.26	16.77	0	0	0	0	0	0	100	42,092
Before										
volp	94.68	13.69	13	77	100	100	100	100	100	27,190
S	140.32	145.31	1	8	30	81	179	411	437	29,360
volchina	49.79	48.36	0	0	0	48	100	100	100	29,360
volindnam	4.26	18.77	0	0	0	0	0	0	100	29,360
volmexda	3.21	16.68	0	0	0	0	0	0	100	29,360
After										
volp	94.79	13.48	18	76	100	100	100	100	100	11,647
S	141.94	152.46	1	7	29	76	173	433	436	12,732
volchina	47.59	48.34	0	0	0	21	100	100	100	12,732
volindnam	5.30	20.74	0	0	0	0	0	0	100	12,732
volmexda	3.35	16.97	0	0	0	0	0	0	100	12,732

Table 33: **Statistics diversification variables, Miscellaneous**

	Mean	SD	min	p10	p25	p50	p75	p90	max	N
Total Sample										
volp	96.47	10.70	21	88	100	100	100	100	100	118,803
S	140.09	141.28	1	10	26	96	208	385	515	121,538
volchina	68.79	44.43	0	0	0	100	100	100	100	121,538
volindnam	4.03	18.09	0	0	0	0	0	0	100	121,538
volmexda	1.01	9.56	0	0	0	0	0	0	100	121,538
Before										
volp	96.47	10.72	21	88	100	100	100	100	100	84,598
S	140.79	141.49	1	10	26	96	208	389	515	86,533
volchina	69.23	44.23	0	0	0	100	100	100	100	86,533
volindnam	3.88	17.74	0	0	0	0	0	0	100	86,533
volmexda	1.00	9.51	0	0	0	0	0	0	100	86,533
After										
volp	96.49	10.65	22	88	100	100	100	100	100	34,205
S	138.36	140.75	1	9	26	96	206	383	496	35,005
volchina	67.69	44.90	0	0	0	100	100	100	100	35,005
volindnam	4.40	18.90	0	0	0	0	0	0	100	35,005
volmexda	1.03	9.67	0	0	0	0	0	0	100	35,005

7.3 Results diversification estimation

Table 34: Estimation Results

	volp	volp	S	S	volchina	volchina	volindnam	volindnam
T	-0.14**	-0.08**	13.22***	10.43***	-3.94***	-2.23***	0.87***	0.75***
	(0.05)	(0.04)	(0.46)	(0.35)	(0.18)	(0.14)	(0.09)	(0.07)
size	-0.07	-0.09	-0.98**	-1.03**	0.31	0.35*	-0.01	-0.01
	(0.06)	(0.06)	(0.50)	(0.50)	(0.20)	(0.20)	(0.10)	(0.10)
period		0.02***		-0.85***		0.04***		0.04***
		(0.00)		(0.03)		(0.01)		(0.01)
r2	0.063	0.063	0.170	0.170	0.297	0.296	0.118	0.118
N	894,763	894,763	937,433	937,433	937,433	937,433	937,433	937,433
FE Firm	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FE Quarter	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FE Period	Yes	No	Yes	No	Yes	No	Yes	No
FE Sector	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Standard errors in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 35: Estimation Results, Animal and Animal Products

	volp	volp	S	S	volchina	volchina	volindnam	volindnam
T	1.08	0.82	-2.36***	-1.56***	4.90***	1.37	5.05***	3.57***
	(0.71)	(0.57)	(0.55)	(0.44)	(1.63)	(1.31)	(1.14)	(0.92)
size	0.49	0.46	1.59**	1.74**	-0.79	-0.80	3.02**	2.99**
	(0.92)	(0.92)	(0.72)	(0.72)	(2.13)	(2.13)	(1.49)	(1.48)
period		0.06		-0.07**		-0.19**		0.02
		(0.04)		(0.03)		(0.09)		(0.07)
r2	0.155	0.155	0.311	0.307	0.487	0.485	0.465	0.464
N	6,695	6,695	6,813	6,813	6,813	6,813	6,813	6,813
FE Firm	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FE Quarter	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FE Period	Yes	No	Yes	No	Yes	No	Yes	No

Standard errors in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 36: Estimation Results, Foodstuffs

	volp	volp	S	S	volchina	volchina	volindnam	volindnam
T	-1.36***	-0.65**	5.58***	4.43***	2.75***	1.37**	0.77**	0.53*
	(0.35)	(0.28)	(0.77)	(0.61)	(0.73)	(0.58)	(0.37)	(0.29)
size	0.24	0.29	-1.85*	-1.85*	2.25**	2.28**	0.19	0.22
	(0.44)	(0.44)	(0.97)	(0.97)	(0.91)	(0.91)	(0.47)	(0.46)
period		0.10***		-0.38***		-0.10**		0.01
		(0.02)		(0.04)		(0.04)		(0.02)
r2	0.155	0.154	0.242	0.240	0.430	0.430	0.243	0.243
N	28,193	28,193	29,285	29,285	29,285	29,285	29,285	29,285
FE Firm	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FE Quarter	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FE Period	Yes	No	Yes	No	Yes	No	Yes	No

Standard errors in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 37: Estimation Results, Mineral Products

	volp	volp	S	S	volchina	volchina	volindnam	volindnam
T	-9.28	-0.03	31.73***	3.47***	1.11	0.79	-0.32	-0.59
	(9.50)	(0.48)	(3.75)	(0.74)	(4.68)	(0.92)	(3.03)	(0.59)
size	0.12	0.06	0.13	0.37	0.51	0.40	0.75	0.79
	(0.54)	(0.54)	(0.88)	(0.88)	(1.11)	(1.09)	(0.71)	(0.71)
period		-0.01		-0.17***		-0.04		-0.02
		(0.04)		(0.06)		(0.07)		(0.05)
r2	0.223	0.221	0.478	0.468	0.492	0.491	0.524	0.523
N	5,612	5,612	8,110	8,110	8,110	8,110	8,110	8,110
FE Firm	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FE Quarter	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FE Period	Yes	No	Yes	No	Yes	No	Yes	No

Standard errors in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 38: Estimation Results, Chemicals and Allied Industries

	volp	volp	S	S	volchina	volchina	volindnam	volindnam
T	1.33***	0.53***	-15.55***	-5.77***	-2.59***	-0.91**	-1.07***	-0.31
	(0.22)	(0.15)	(0.44)	(0.30)	(0.63)	(0.43)	(0.37)	(0.26)
size	-0.16	-0.18	-0.24	-0.33	1.05*	1.05*	-0.87**	-0.84**
	(0.21)	(0.21)	(0.41)	(0.41)	(0.59)	(0.59)	(0.35)	(0.35)
period		-0.00		0.21***		-0.02		0.08***
		(0.01)		(0.02)		(0.03)		(0.02)
r2	0.092	0.092	0.148	0.135	0.293	0.293	0.168	0.168
N	73,902	73,902	77,900	77,900	77,900	77,900	77,900	77,900
FE Firm	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FE Quarter	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FE Period	Yes	No	Yes	No	Yes	No	Yes	No

Standard errors in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 39: **Estimation Results, Plastics and Rubbers**

	volp	volp	S	S	volchina	volchina	volindnam	volindnam
T	-0.37*	-0.33***	40.71***	24.94***	-13.30***	-4.87***	0.96***	0.65***
	(0.21)	(0.12)	(3.17)	(1.91)	(0.70)	(0.42)	(0.30)	(0.18)
size	-0.02	-0.04	-3.30	-3.57	-0.18	-0.10	-0.21	-0.17
	(0.16)	(0.16)	(2.52)	(2.51)	(0.56)	(0.56)	(0.24)	(0.24)
period		0.03***		-1.65***		0.28***		0.02*
		(0.01)		(0.15)		(0.03)		(0.01)
r2	0.098	0.098	0.172	0.172	0.381	0.380	0.172	0.172
N	95,487	95,487	97,765	97,765	97,765	97,765	97,765	97,765
FE Firm	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FE Quarter	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FE Period	Yes	No	Yes	No	Yes	No	Yes	No

Standard errors in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 40: **Estimation Results, Raw Hides, Skins, Leather, and Furs**

	volp	volp	S	S	volchina	volchina	volindnam	volindnam
T	-3.90	-0.30	80.71***	9.27***	11.37	-2.01*	4.75	2.57***
	(2.88)	(0.39)	(24.01)	(3.23)	(8.91)	(1.20)	(6.19)	(0.83)
size	-0.37	-0.43	0.36	0.34	-1.41	-1.31	1.16	1.09
	(0.44)	(0.44)	(3.64)	(3.63)	(1.35)	(1.34)	(0.94)	(0.93)
period		-0.05*		-1.24***		-0.29***		0.08
		(0.03)		(0.26)		(0.09)		(0.07)
r2	0.250	0.249	0.311	0.310	0.408	0.406	0.316	0.314
N	13,023	13,023	13,239	13,239	13,239	13,239	13,239	13,239
FE Firm	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FE Quarter	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FE Period	Yes	No	Yes	No	Yes	No	Yes	No

Standard errors in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 41: **Estimation Results, Wood and Wood Products**

	volp	volp	S	S	volchina	volchina	volindnam	volindnam
T	0.75***	0.29*	-9.80***	-3.24***	-4.69***	-2.53***	0.95**	0.64**
	(0.23)	(0.17)	(0.77)	(0.55)	(0.85)	(0.61)	(0.42)	(0.30)
size	-0.27	-0.32	0.20	0.48	-2.46***	-2.41***	0.73*	0.70
	(0.24)	(0.24)	(0.81)	(0.81)	(0.90)	(0.90)	(0.44)	(0.44)
period		0.02		-0.04		-0.00		0.04
		(0.01)		(0.04)		(0.05)		(0.02)
r2	0.142	0.142	0.225	0.220	0.429	0.429	0.239	0.238
N	41,123	41,123	43,048	43,048	43,048	43,048	43,048	43,048
FE Firm	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FE Quarter	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FE Period	Yes	No	Yes	No	Yes	No	Yes	No

Standard errors in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 42: Estimation Results, Textiles

	volp	volp	S	S	volchina	volchina	volindnam	volindnam
T	0.75***	0.29*	-9.80***	-3.24***	-4.69***	-2.53***	0.95**	0.64**
	(0.23)	(0.17)	(0.77)	(0.55)	(0.85)	(0.61)	(0.42)	(0.30)
size	-0.27	-0.32	0.20	0.48	-2.46***	-2.41***	0.73*	0.70
	(0.24)	(0.24)	(0.81)	(0.81)	(0.90)	(0.90)	(0.44)	(0.44)
period		0.02		-0.04		-0.00		0.04
		(0.01)		(0.04)		(0.05)		(0.02)
r2	0.142	0.142	0.225	0.220	0.429	0.429	0.239	0.238
N	41,123	41,123	43,048	43,048	43,048	43,048	43,048	43,048
FE Firm	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FE Quarter	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FE Period	Yes	No	Yes	No	Yes	No	Yes	No

Standard errors in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 43: Estimation Results, Stone and Glass

	volp	volp	S	S	volchina	volchina	volindnam	volindnam
T	1.70***	1.12***	-4.81***	-2.99***	-10.02***	-5.91***	6.23***	4.07***
	(0.28)	(0.22)	(0.87)	(0.68)	(0.92)	(0.72)	(0.50)	(0.40)
size	0.42	0.42	-0.36	-0.43	1.72*	1.75*	-0.01	-0.08
	(0.30)	(0.30)	(0.94)	(0.94)	(0.99)	(0.99)	(0.55)	(0.54)
period		-0.02		-0.37***		0.22***		-0.09***
		(0.02)		(0.05)		(0.05)		(0.03)
r2	0.167	0.166	0.272	0.271	0.395	0.394	0.262	0.261
N	32,481	32,481	33,589	33,589	33,589	33,589	33,589	33,589
FE Firm	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FE Quarter	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FE Period	Yes	No	Yes	No	Yes	No	Yes	No

Standard errors in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 44: Estimation Results, Metals

	volp	volp	S	S	volchina	volchina	volindnam	volindnam
T	-0.81***	-0.55***	44.10***	29.23***	2.94***	2.79***	2.05***	1.47***
	(0.13)	(0.10)	(1.13)	(0.92)	(0.49)	(0.40)	(0.28)	(0.23)
size	-0.18	-0.19	-0.07	-0.99	0.56	0.50	-0.09	-0.07
	(0.16)	(0.15)	(1.36)	(1.36)	(0.59)	(0.59)	(0.34)	(0.34)
period		0.03***		-1.34***		-0.10***		-0.02
		(0.01)		(0.07)		(0.03)		(0.02)
r2	0.069	0.069	0.138	0.133	0.374	0.374	0.169	0.169
N	99,368	99,368	106,377	106,377	106,377	106,377	106,377	106,377
FE Firm	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FE Quarter	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FE Period	Yes	No	Yes	No	Yes	No	Yes	No

Standard errors in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 45: Estimation Results, Machinery and Electrical

	volp	volp	S	S	volchina	volchina	volindnam	volindnam
T	-0.98***	-0.30***	44.95***	18.98***	-6.26***	-2.04***	1.11***	0.56***
	(0.12)	(0.07)	(0.96)	(0.57)	(0.45)	(0.26)	(0.18)	(0.10)
size	-0.07	-0.08	-0.25	-0.48	0.93**	1.02***	0.01	0.02
	(0.10)	(0.10)	(0.84)	(0.84)	(0.39)	(0.39)	(0.15)	(0.15)
period		0.03***		-1.51***		0.13***		0.02**
		(0.01)		(0.04)		(0.02)		(0.01)
r2	0.081	0.081	0.082	0.078	0.321	0.320	0.117	0.117
N	257,068	257,068	271,417	271,417	271,417	271,417	271,417	271,417
FE Firm	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FE Quarter	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FE Period	Yes	No	Yes	No	Yes	No	Yes	No

Standard errors in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 46: Estimation Results, Transportation

	volp	volp	S	S	volchina	volchina	volindnam	volindnam
T	-2.06***	-0.47*	99.90***	29.24***	0.16	-0.41	0.63	0.16
	(0.53)	(0.26)	(5.12)	(2.51)	(1.42)	(0.69)	(0.67)	(0.33)
size	0.11	0.16	-1.73	-2.22	1.09	0.84	-0.30	-0.34
	(0.39)	(0.38)	(3.79)	(3.77)	(1.05)	(1.04)	(0.50)	(0.49)
period		0.04*		-2.02***		-0.08		0.11***
		(0.02)		(0.20)		(0.06)		(0.03)
r2	0.181	0.180	0.217	0.210	0.455	0.454	0.249	0.249
N	31,879	31,879	34,731	34,731	34,731	34,731	34,731	34,731
FE Firm	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FE Quarter	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FE Period	Yes	No	Yes	No	Yes	No	Yes	No

Standard errors in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 47: Estimation Results, Miscellaneous

	volp	volp	S	S	volchina	volchina	volindnam	volindnam
T	-0.77***	-0.51***	4.14**	5.14***	-5.04***	-4.03***	1.82***	1.57***
	(0.14)	(0.11)	(1.67)	(1.41)	(0.48)	(0.41)	(0.21)	(0.18)
size	0.02	0.03	-2.19	-2.28	-0.06	-0.06	-0.10	-0.10
	(0.15)	(0.15)	(1.84)	(1.84)	(0.53)	(0.53)	(0.23)	(0.23)
period		0.02**		-0.74***		0.07***		0.02
		(0.01)		(0.10)		(0.03)		(0.01)
r2	0.128	0.127	0.169	0.169	0.329	0.329	0.203	0.202
N	93,426	93,426	95,988	95,988	95,988	95,988	95,988	95,988
FE Firm	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FE Quarter	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FE Period	Yes	No	Yes	No	Yes	No	Yes	No

Standard errors in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

7.4 Results Diff-in-Diff estimation

Table 48: Estimation Results

	S	S	volp	volp	leadtime	leadtime
T	1.4394***	1.2119**	-0.2998***	-0.3447***	0.0044***	0.0037***
	(0.47)	(0.54)	(0.05)	(0.06)	(0.00)	(0.00)
after	0.0000	0.0000	0.2815***	0.0000	0.0000	0.0000
	(.)	(.)	(0.05)	(.)	(.)	(.)
tariff	15.9282***	21.9301***	0.2946***	0.4572***	-0.0020**	-0.0013
	(0.29)	(0.31)	(0.03)	(0.03)	(0.00)	(0.00)
N	1,143,775	959,214	1,096,361	915,563	914,882	935,693
r2	0.183	0.075	0.066	0.059	0.962	0.964
FE firm	Yes	Yes	Yes	Yes	Yes	Yes
FE quarter	Yes	Yes	Yes	Yes	Yes	Yes
FE sector	Yes	No	Yes	No	Yes	No
FE size	No	Yes	No	Yes	No	Yes
FE Period	Yes	Yes	Yes	Yes	Yes	Yes

Standard errors in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 49: Estimation Results, Animal and Animal Products

	S	S	volp	volp	leadtime	leadtime
T	-1.3016**	-1.5638**	0.4732	1.2234	-0.1207***	-0.1156***
	(0.52)	(0.62)	(0.69)	(0.80)	(0.02)	(0.02)
after	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	(.)	(.)	(.)	(.)	(.)	(.)
tariff	-0.6364*	-1.2379***	0.0708	-0.0774	0.0277**	0.0208*
	(0.36)	(0.40)	(0.48)	(0.53)	(0.01)	(0.01)
N	9,150	6,813	9,029	6,695	6,614	6,613
r2	0.301	0.313	0.161	0.157	0.989	0.991
FE firm	Yes	Yes	Yes	Yes	Yes	Yes
FE quarter	Yes	Yes	Yes	Yes	Yes	Yes
FE size	No	Yes	No	Yes	No	Yes
FE Period	Yes	Yes	Yes	Yes	Yes	Yes

Standard errors in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 50: Estimation Results, Foodstuffs

	S	S	volp	volp	leadtime	leadtime
T	-2.3728***	-2.0431**	-0.6508*	-0.6900*	-0.0157*	-0.0094
	(0.79)	(0.90)	(0.35)	(0.41)	(0.01)	(0.01)
after	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	(.)	(.)	(.)	(.)	(.)	(.)
tariff	9.1397***	8.3863***	-0.6124***	-0.7489***	0.0076	0.0054
	(0.46)	(0.51)	(0.20)	(0.23)	(0.01)	(0.00)
N	37,101	29,285	35,922	28,193	28,299	28,287
r2	0.261	0.249	0.162	0.155	0.977	0.979
FE firm	Yes	Yes	Yes	Yes	Yes	Yes
FE quarter	Yes	Yes	Yes	Yes	Yes	Yes
FE size	No	Yes	No	Yes	No	Yes
FE Period	Yes	Yes	Yes	Yes	Yes	Yes

Standard errors in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 51: Estimation Results, Mineral Products

	S	S	volp	volp	leadtime	leadtime
T	-0.2532	2.3996	-8.7657	-9.6049	0.0079	-0.0345
	(4.11)	(4.78)	(10.84)	(10.60)	(0.07)	(0.07)
after	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	(.)	(.)	(.)	(.)	(.)	(.)
tariff	29.7237***	30.8621***	-0.0377	0.3233	-0.0004	0.0194
	(2.75)	(3.07)	(4.47)	(4.72)	(0.05)	(0.05)
N	9,555	8,110	6,613	5,612	7,902	7,901
r2	0.505	0.485	0.227	0.225	0.975	0.977
FE firm	Yes	Yes	Yes	Yes	Yes	Yes
FE quarter	Yes	Yes	Yes	Yes	Yes	Yes
FE size	No	Yes	No	Yes	No	Yes
FE Period	Yes	Yes	Yes	Yes	Yes	Yes

Standard errors in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 52: Estimation Results, Chemicals and Allied Industries

	S	S	volp	volp	leadtime	leadtime
T	2.0179***	1.9939***	-0.1519	-0.2605	0.0123**	0.0225***
	(0.44)	(0.49)	(0.23)	(0.26)	(0.01)	(0.01)
after	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	(.)	(.)	(.)	(.)	(.)	(.)
tariff	-20.2644***	-20.3606***	1.7113***	1.8619***	0.0005	-0.0037
	(0.26)	(0.28)	(0.13)	(0.15)	(0.00)	(0.00)
N	92,606	77,900	88,160	73,902	75,411	75,386
r2	0.218	0.203	0.097	0.094	0.968	0.970
FE firm	Yes	Yes	Yes	Yes	Yes	Yes
FE quarter	Yes	Yes	Yes	Yes	Yes	Yes
FE size	No	Yes	No	Yes	No	Yes
FE Period	Yes	Yes	Yes	Yes	Yes	Yes

Standard errors in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 53: Estimation Results, Plastics and Rubbers

	S	S	volp	volp	leadtime	leadtime
T	7.3397**	7.6983**	0.0623	0.1328	0.0075	0.0040
	(3.30)	(3.67)	(0.21)	(0.24)	(0.01)	(0.01)
after	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	(.)	(.)	(.)	(.)	(.)	(.)
tariff	39.2673***	36.0783***	-0.4279***	-0.5532***	0.0014	0.0014
	(1.86)	(2.04)	(0.12)	(0.13)	(0.00)	(0.00)
N	118,269	97,765	115,785	95,487	95,091	95,030
r2	0.193	0.175	0.107	0.099	0.959	0.961
FE firm	Yes	Yes	Yes	Yes	Yes	Yes
FE quarter	Yes	Yes	Yes	Yes	Yes	Yes
FE size	No	Yes	No	Yes	No	Yes
FE Period	Yes	Yes	Yes	Yes	Yes	Yes

Standard errors in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 54: Estimation Results, Raw Hides, Skins, Leather, and Furs

	S	S	volp	volp	leadtime	leadtime
T	16.0271	16.5479	-1.7435	-2.2424	-0.0078	-0.0339
	(21.98)	(25.41)	(2.60)	(3.05)	(0.08)	(0.08)
after	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	(.)	(.)	(.)	(.)	(.)	(.)
tariff	90.8690***	88.6182***	-1.6882	-2.0471	-0.0333	-0.0271
	(10.71)	(11.60)	(1.25)	(1.40)	(0.04)	(0.04)
N	16,981	13,239	16,741	13,023	12,820	12,820
r2	0.326	0.315	0.249	0.251	0.963	0.965
FE firm	Yes	Yes	Yes	Yes	Yes	Yes
FE quarter	Yes	Yes	Yes	Yes	Yes	Yes
FE size	No	Yes	No	Yes	No	Yes
FE Period	Yes	Yes	Yes	Yes	Yes	Yes

Standard errors in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 55: Estimation Results, Wood and Wood Products

	S	S	volp	volp	leadtime	leadtime
T	3.1359***	2.8123***	-0.2282	-0.1619	0.0148**	0.0118*
	(0.78)	(0.88)	(0.23)	(0.27)	(0.01)	(0.01)
after	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	(.)	(.)	(.)	(.)	(.)	(.)
tariff	-13.1773***	-14.0120***	0.8057***	1.0402***	-0.0094**	-0.0079*
	(0.45)	(0.50)	(0.13)	(0.15)	(0.00)	(0.00)
N	53,577	43,048	51,458	41,123	41,852	41,840
r2	0.259	0.239	0.144	0.144	0.970	0.972
FE firm	Yes	Yes	Yes	Yes	Yes	Yes
FE quarter	Yes	Yes	Yes	Yes	Yes	Yes
FE size	No	Yes	No	Yes	No	Yes
FE Period	Yes	Yes	Yes	Yes	Yes	Yes

Standard errors in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 56: Estimation Results, Textiles

	S	S	volp	volp	leadtime	leadtime
T	6.8776***	6.7223***	-0.6166***	-0.7381***	-0.0381***	-0.0458***
	(1.24)	(1.35)	(0.24)	(0.27)	(0.01)	(0.01)
after	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	(.)	(.)	(.)	(.)	(.)	(.)
tariff	-79.9635***	-79.1156***	2.6268***	2.8672***	0.0124***	0.0145***
	(0.76)	(0.82)	(0.15)	(0.17)	(0.00)	(0.00)
N	121,268	95,710	119,527	94,118	93,718	93,696
r2	0.246	0.245	0.147	0.149	0.975	0.976
FE firm	Yes	Yes	Yes	Yes	Yes	Yes
FE quarter	Yes	Yes	Yes	Yes	Yes	Yes
FE size	No	Yes	No	Yes	No	Yes
FE Period	Yes	Yes	Yes	Yes	Yes	Yes

Standard errors in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 57: Estimation Results, Stone and Glass

	S	S	volp	volp	leadtime	leadtime
T	1.6075*	2.2322**	-0.1459	-0.1630	0.0028	0.0056
	(0.87)	(0.98)	(0.26)	(0.31)	(0.01)	(0.01)
after	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	(.)	(.)	(.)	(.)	(.)	(.)
tariff	-8.3440***	-8.9877***	2.1322***	2.4059***	-0.0041	-0.0051
	(0.52)	(0.58)	(0.16)	(0.18)	(0.00)	(0.00)
N	41,094	33,589	39,837	32,481	32,663	32,643
r2	0.287	0.278	0.173	0.171	0.965	0.966
FE firm	Yes	Yes	Yes	Yes	Yes	Yes
FE quarter	Yes	Yes	Yes	Yes	Yes	Yes
FE size	No	Yes	No	Yes	No	Yes
FE Period	Yes	Yes	Yes	Yes	Yes	Yes

Standard errors in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 58: Estimation Results, Metals

	S	S	volp	volp	leadtime	leadtime
T	-0.6337	-1.0481	-0.0879	-0.1076	0.0140***	0.0132***
	(1.17)	(1.28)	(0.14)	(0.15)	(0.00)	(0.00)
after	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	(.)	(.)	(.)	(.)	(.)	(.)
tariff	50.7535***	50.0038***	-0.6885***	-0.7583***	-0.0062***	-0.0058***
	(0.66)	(0.72)	(0.08)	(0.08)	(0.00)	(0.00)
N	128,349	106,377	120,389	99,368	103,789	103,723
r2	0.192	0.176	0.076	0.070	0.964	0.965
FE firm	Yes	Yes	Yes	Yes	Yes	Yes
FE quarter	Yes	Yes	Yes	Yes	Yes	Yes
FE size	No	Yes	No	Yes	No	Yes
FE Period	Yes	Yes	Yes	Yes	Yes	Yes

Standard errors in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 59: Estimation Results, Machinery and Electrical

	S	S	volp	volp	leadtime	leadtime
T	-1.3177	-1.6681	-0.3574***	-0.3911***	0.0014	0.0039
	(1.01)	(1.11)	(0.12)	(0.14)	(0.00)	(0.00)
after	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	(.)	(.)	(.)	(.)	(.)	(.)
tariff	49.6446***	49.2536***	-0.5621***	-0.6213***	-0.0014	-0.0020
	(0.56)	(0.61)	(0.07)	(0.08)	(0.00)	(0.00)
N	323,081	271,417	307,313	257,068	265,977	265,909
r2	0.115	0.104	0.085	0.081	0.950	0.953
FE firm	Yes	Yes	Yes	Yes	Yes	Yes
FE quarter	Yes	Yes	Yes	Yes	Yes	Yes
FE size	No	Yes	No	Yes	No	Yes
FE Period	Yes	Yes	Yes	Yes	Yes	Yes

Standard errors in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 60: Estimation Results, Transportation

	S	S	volp	volp	leadtime	leadtime
T	-2.3660	-4.8104	-1.3798**	-1.7178***	-0.0001	-0.0040
	(5.42)	(5.81)	(0.55)	(0.61)	(0.01)	(0.01)
after	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	(.)	(.)	(.)	(.)	(.)	(.)
tariff	121.3021***	119.8970***	-0.2183	-0.3912	0.0012	0.0020
	(3.14)	(3.34)	(0.32)	(0.35)	(0.01)	(0.01)
N	41,446	34,731	38,215	31,879	34,114	34,106
r2	0.263	0.246	0.197	0.181	0.958	0.960
FE firm	Yes	Yes	Yes	Yes	Yes	Yes
FE quarter	Yes	Yes	Yes	Yes	Yes	Yes
FE size	No	Yes	No	Yes	No	Yes
FE Period	Yes	Yes	Yes	Yes	Yes	Yes

Standard errors in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 61: Estimation Results, Miscellaneous

	S	S	volp	volp	leadtime	leadtime
T	-4.4891***	-4.4954**	-0.3360**	-0.3836**	-0.0008	-0.0015
	(1.70)	(1.92)	(0.14)	(0.16)	(0.00)	(0.00)
after	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	(.)	(.)	(.)	(.)	(.)	(.)
tariff	10.2633***	9.8806***	-0.2959***	-0.4482***	-0.0040	-0.0039
	(0.99)	(1.10)	(0.08)	(0.09)	(0.00)	(0.00)
N	120,779	95,988	118,042	93,426	93,656	93,638
r2	0.184	0.170	0.130	0.128	0.948	0.950
FE firm	Yes	Yes	Yes	Yes	Yes	Yes
FE quarter	Yes	Yes	Yes	Yes	Yes	Yes
FE size	No	Yes	No	Yes	No	Yes
FE Period	Yes	Yes	Yes	Yes	Yes	Yes

Standard errors in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

7.5 Boxplot Leadtime

Figure 5: Boxplot Leadtime

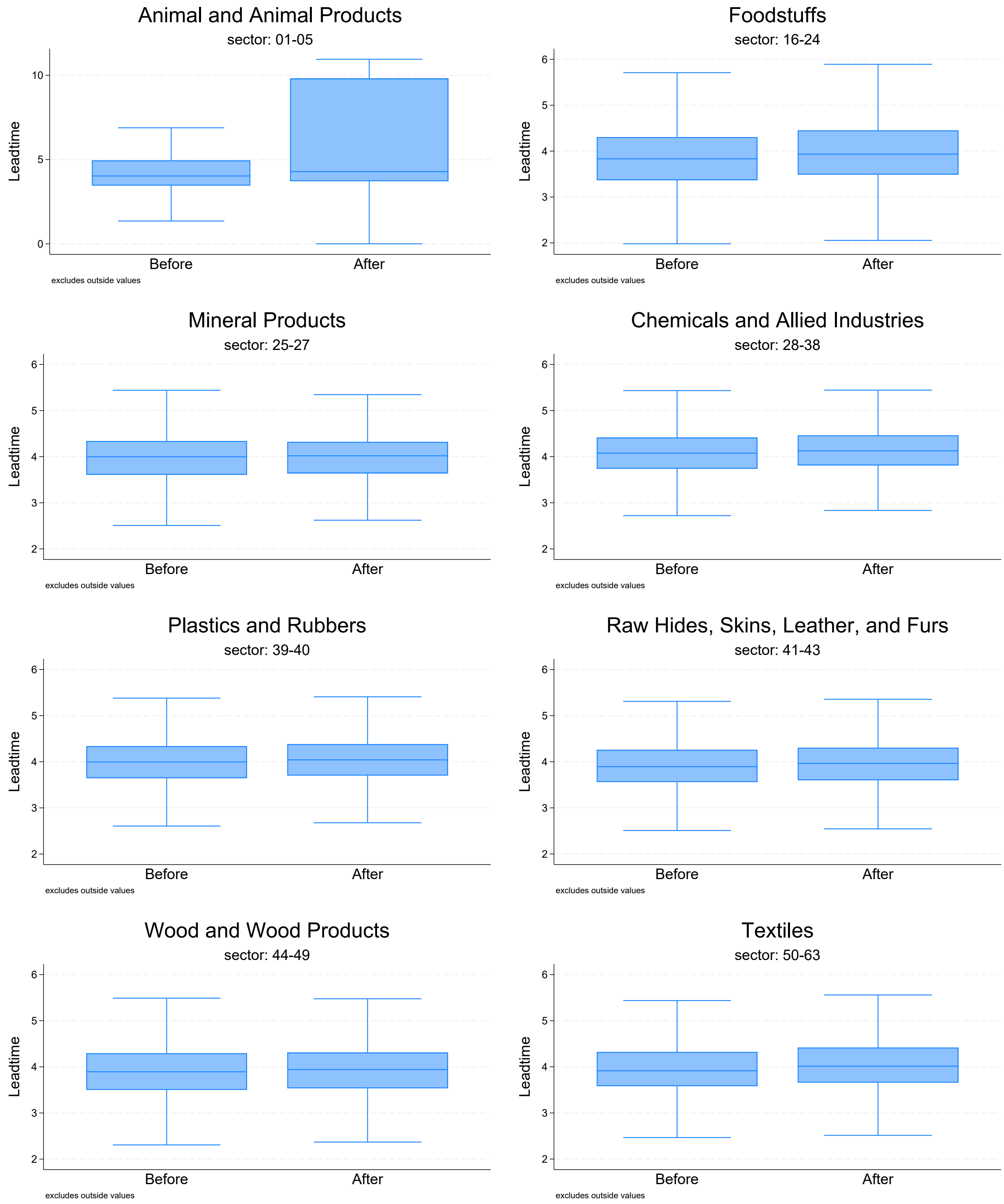
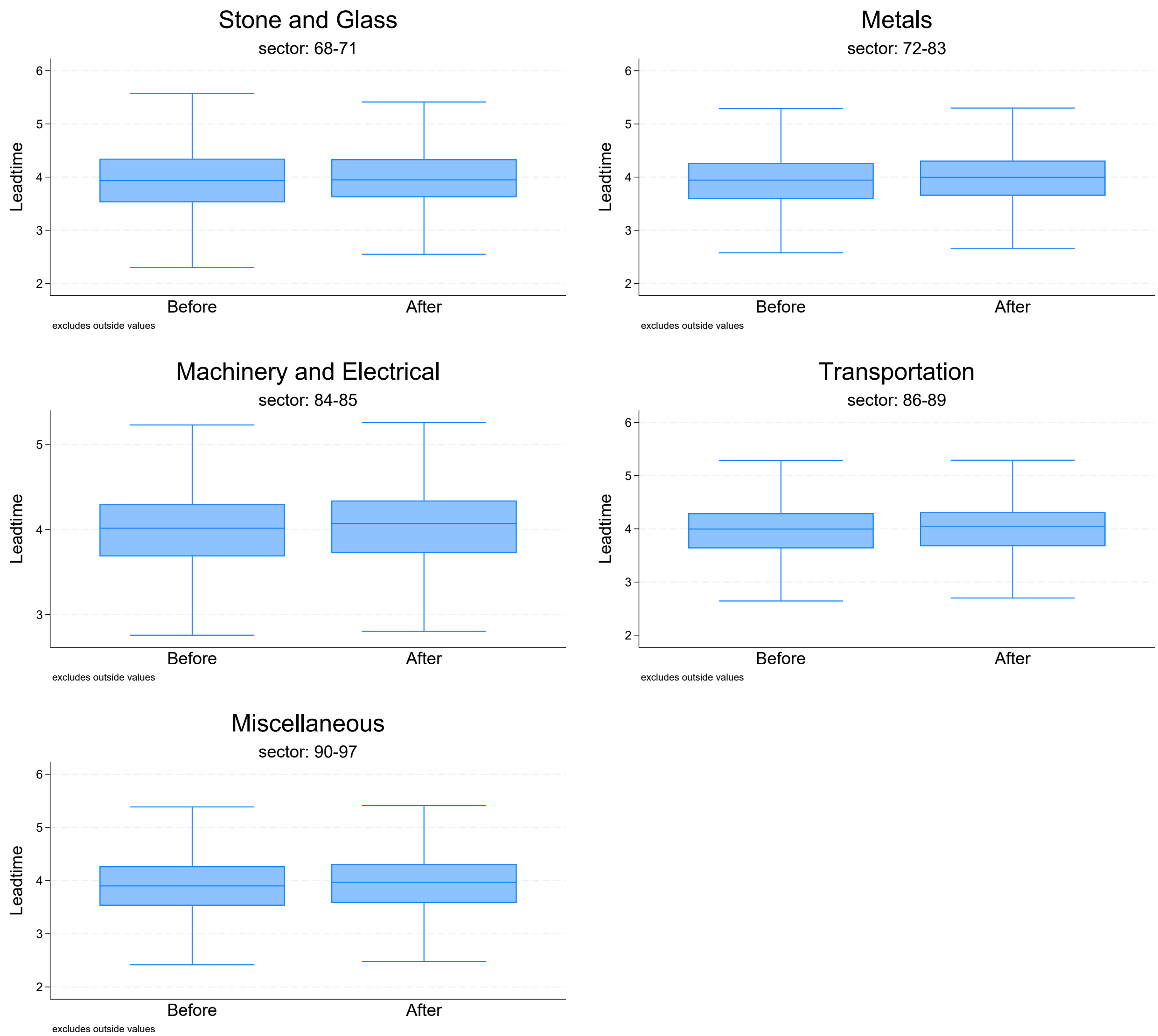


Figure 6: Boxplot Leadtime



7.6 Boxplot S

Figure 7: Boxplot S

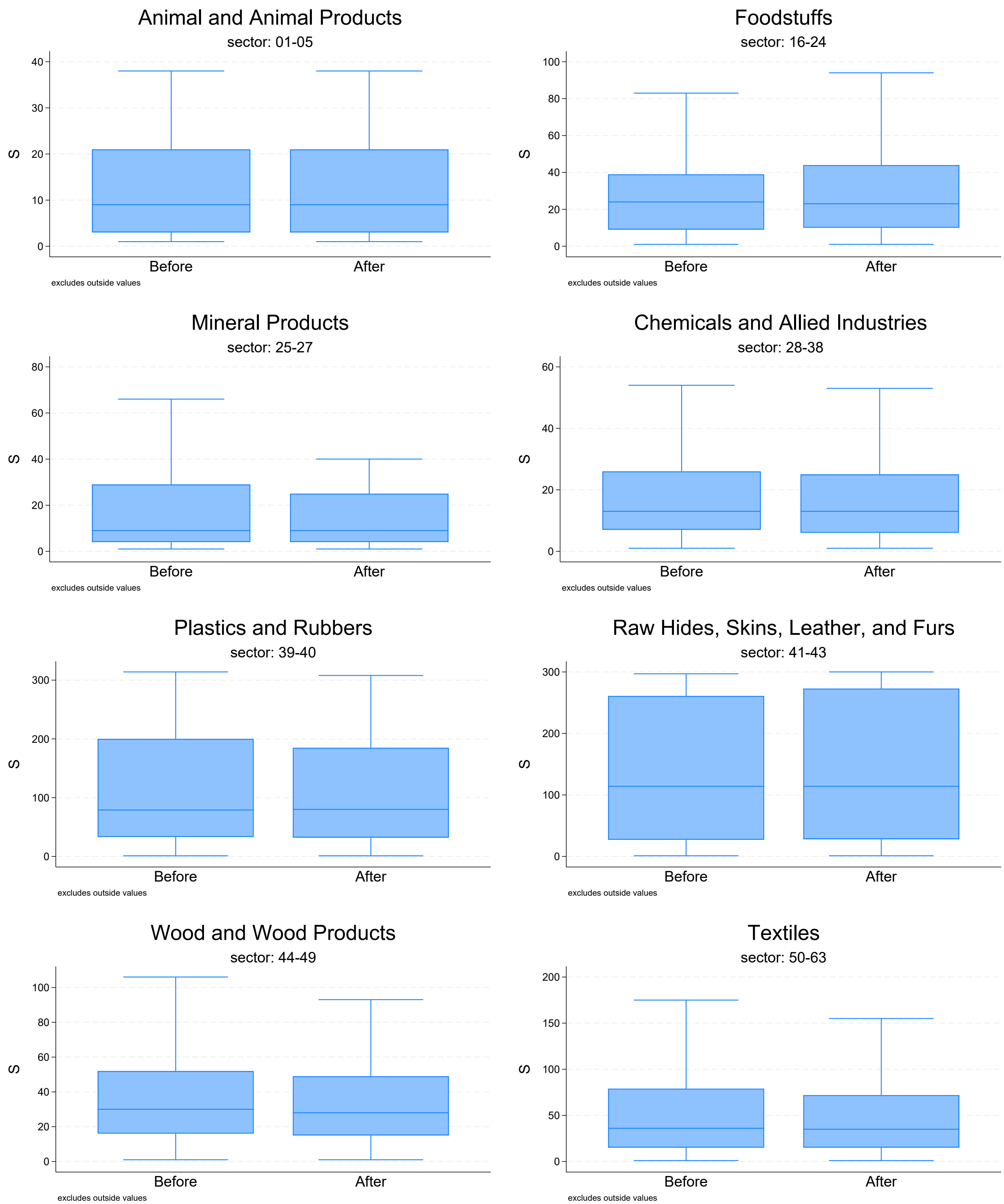
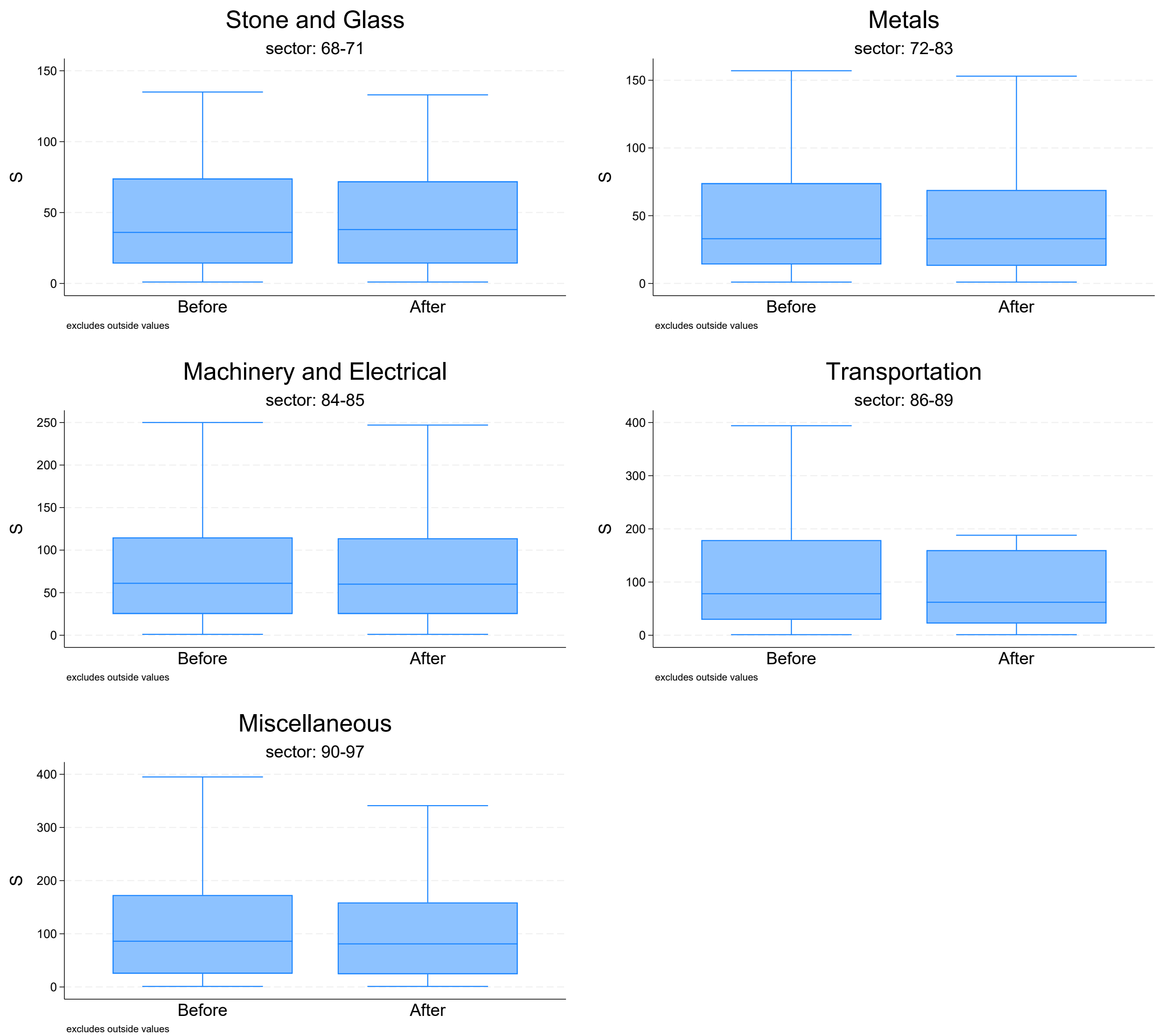


Figure 8: Boxplot S



7.7 Boxplot volchina

Figure 9: Boxplot volchina

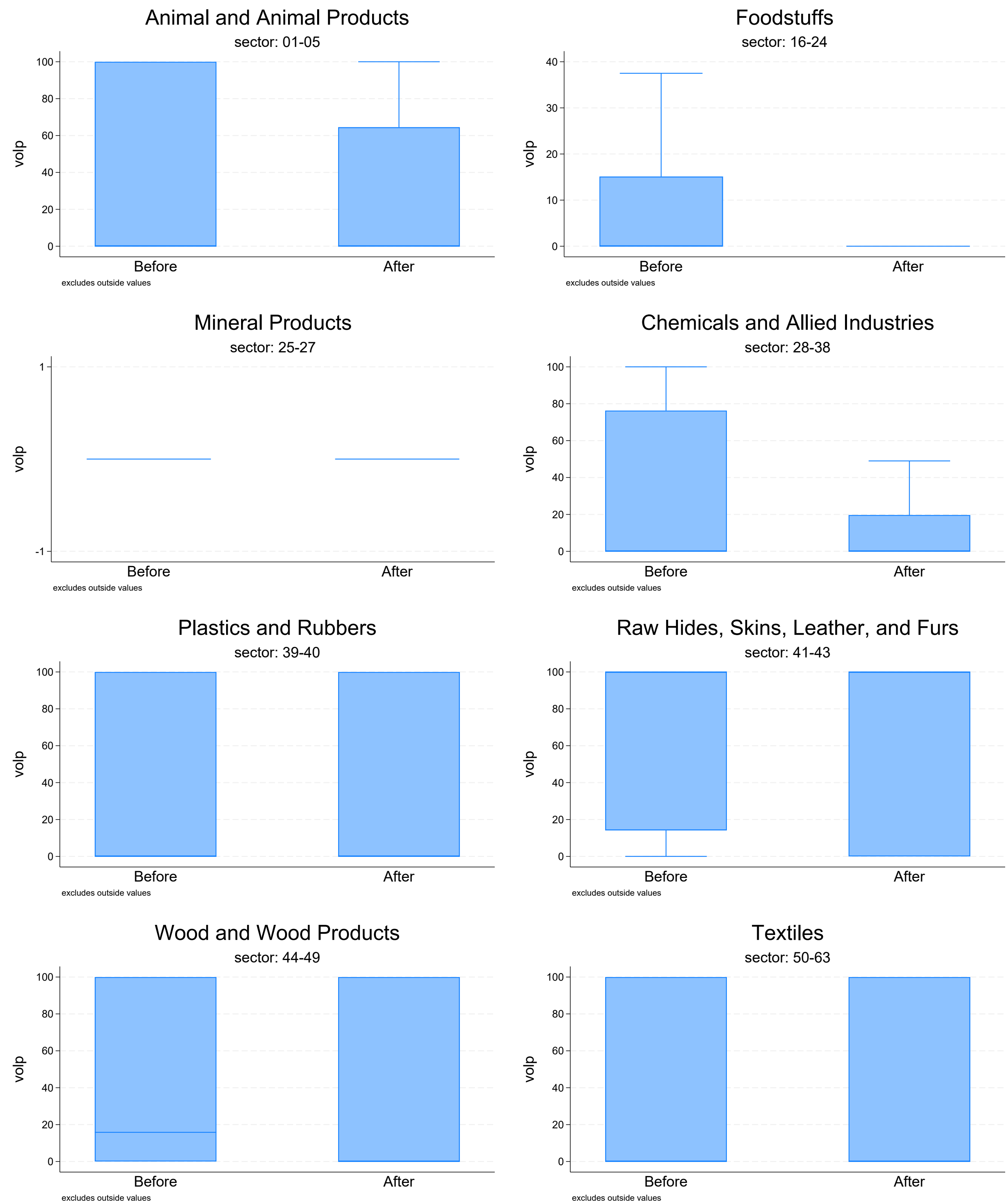
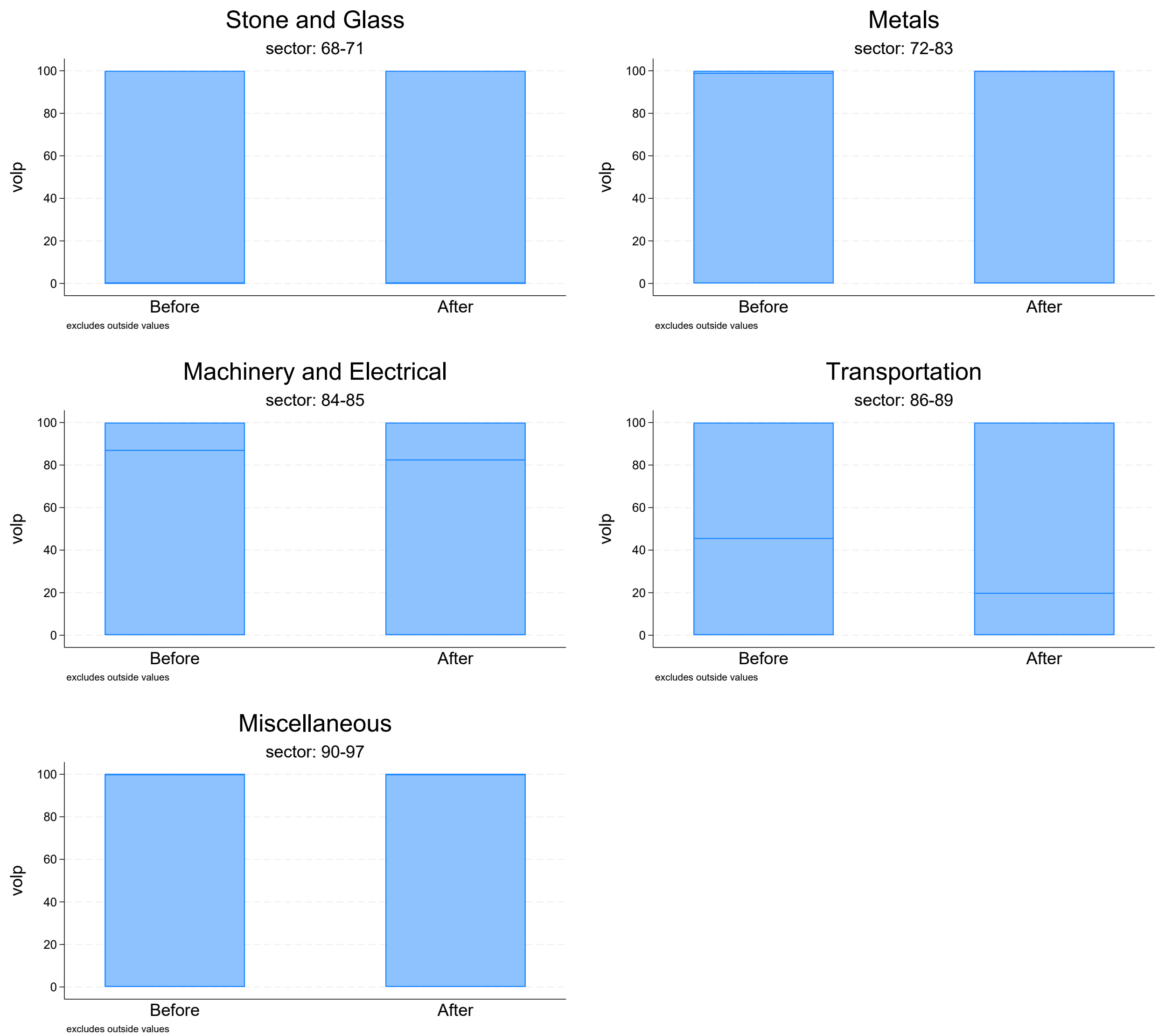


Figure 10: Boxplot volchina



7.8 Parallel Plots Leadtime

Figure 11: Parallel Leadtime

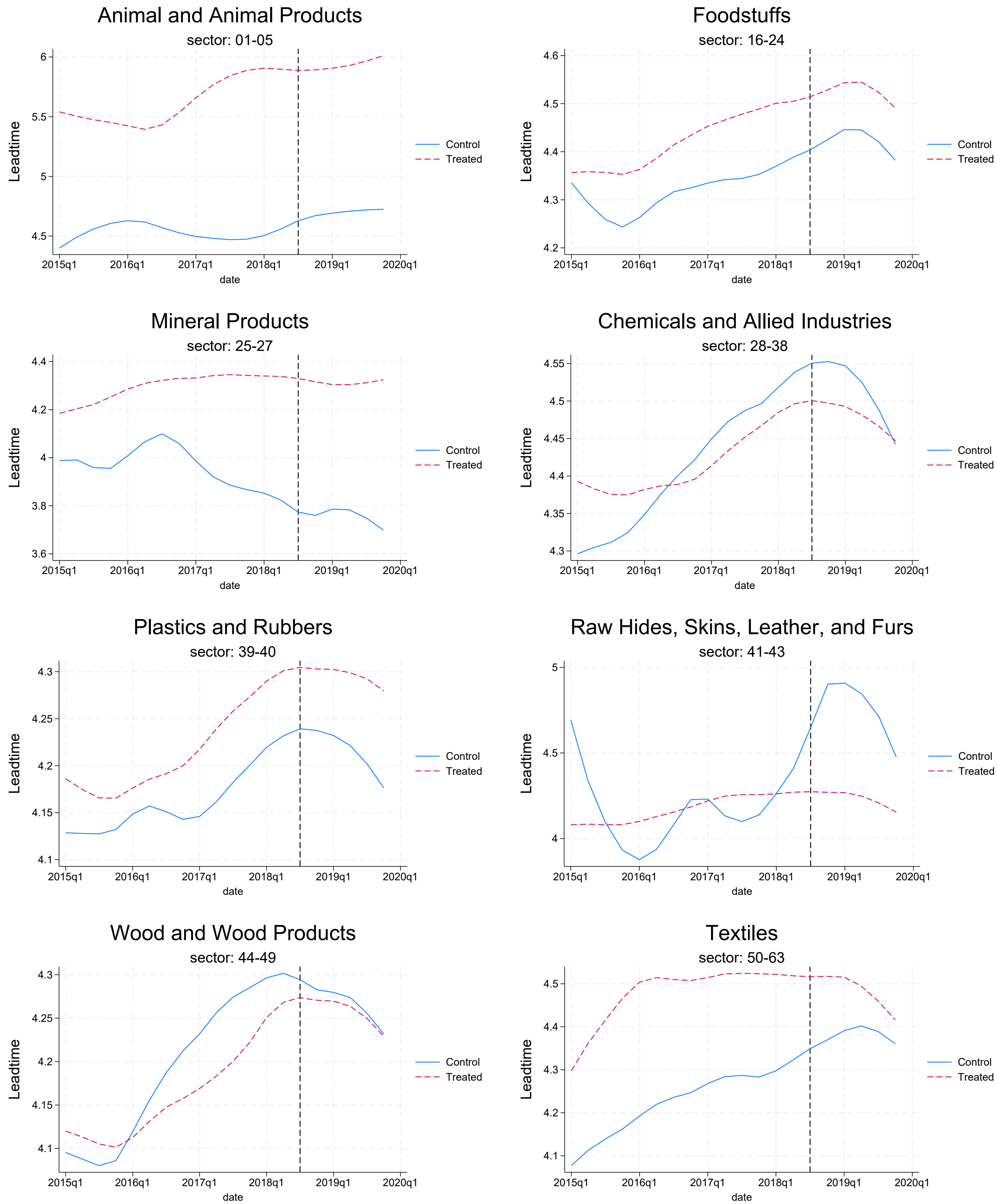
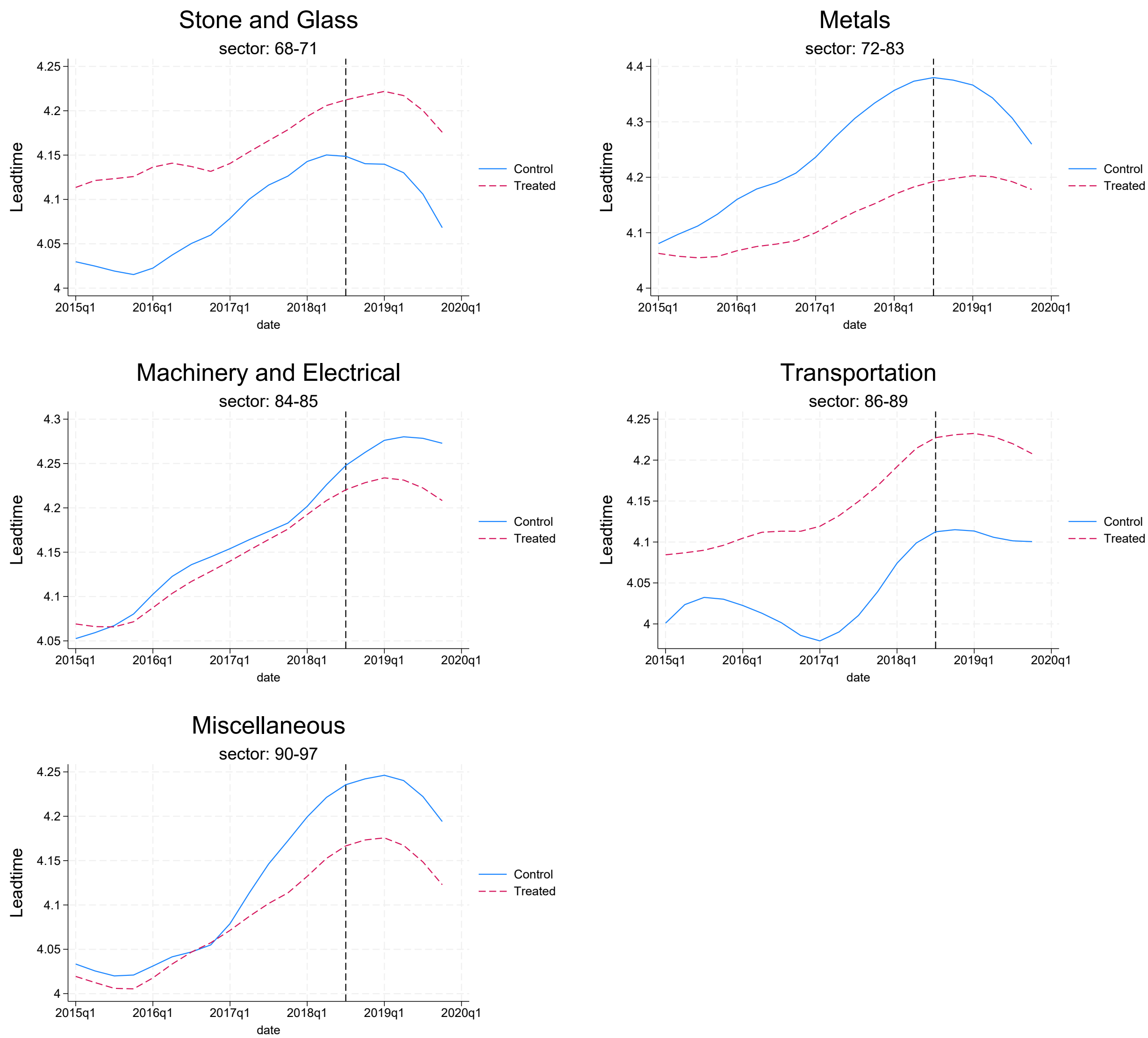


Figure 12: Parallel Plot Leadtime



7.9 Parallel Plots S

Figure 13: Parallel S

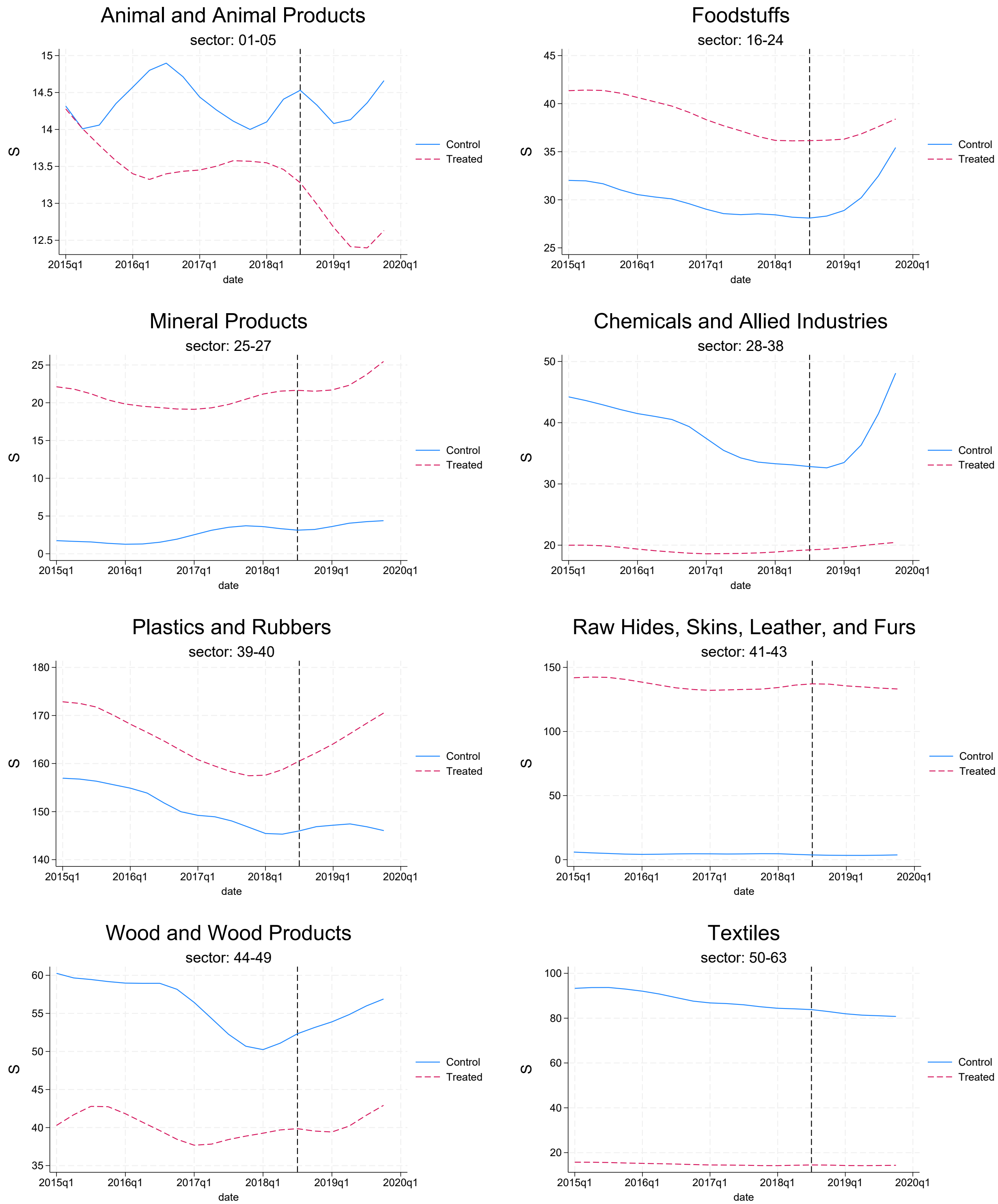
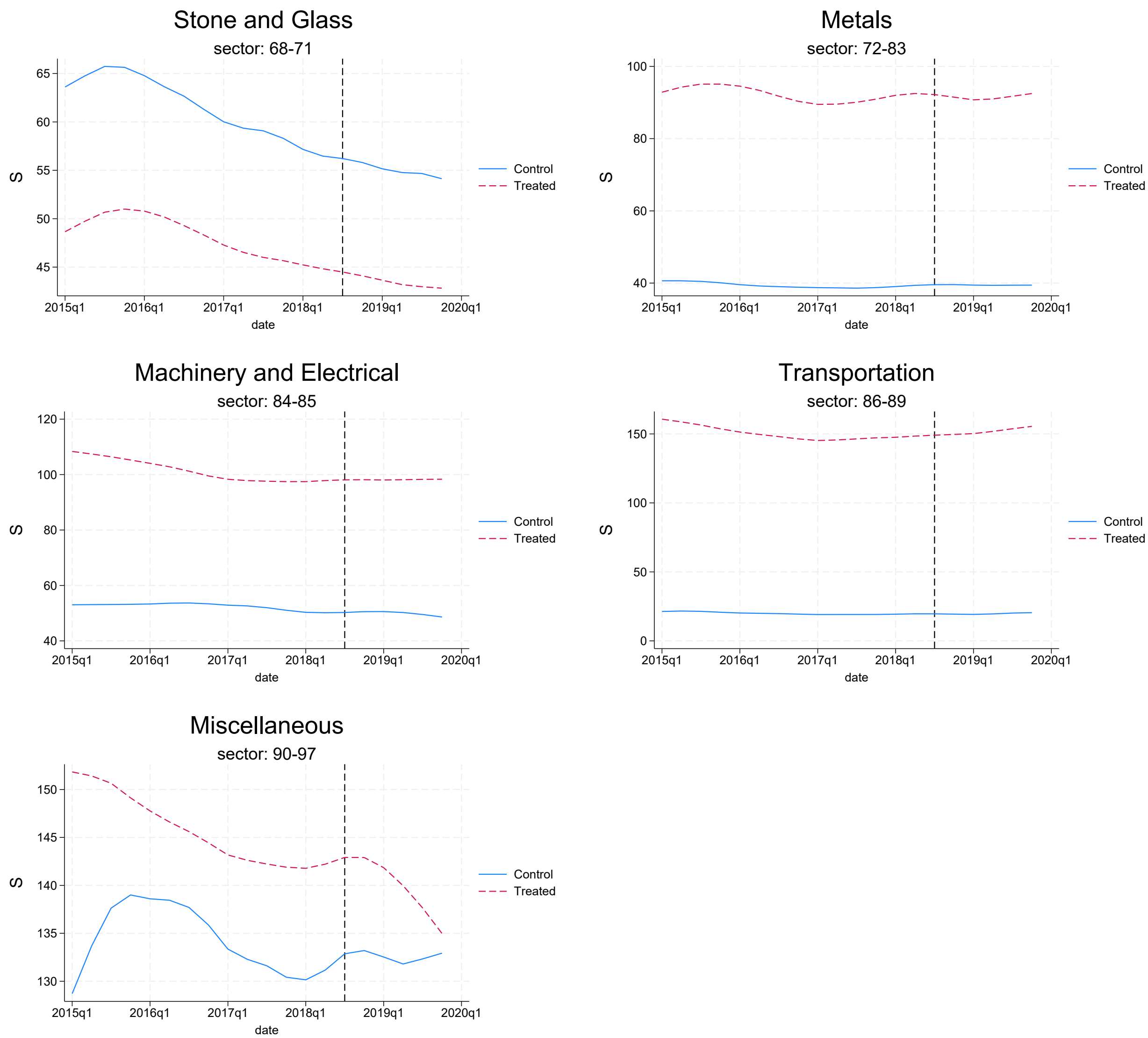


Figure 14: Parallel Plot S



7.10 Parallel Plots volp

Figure 15: Parallel volp

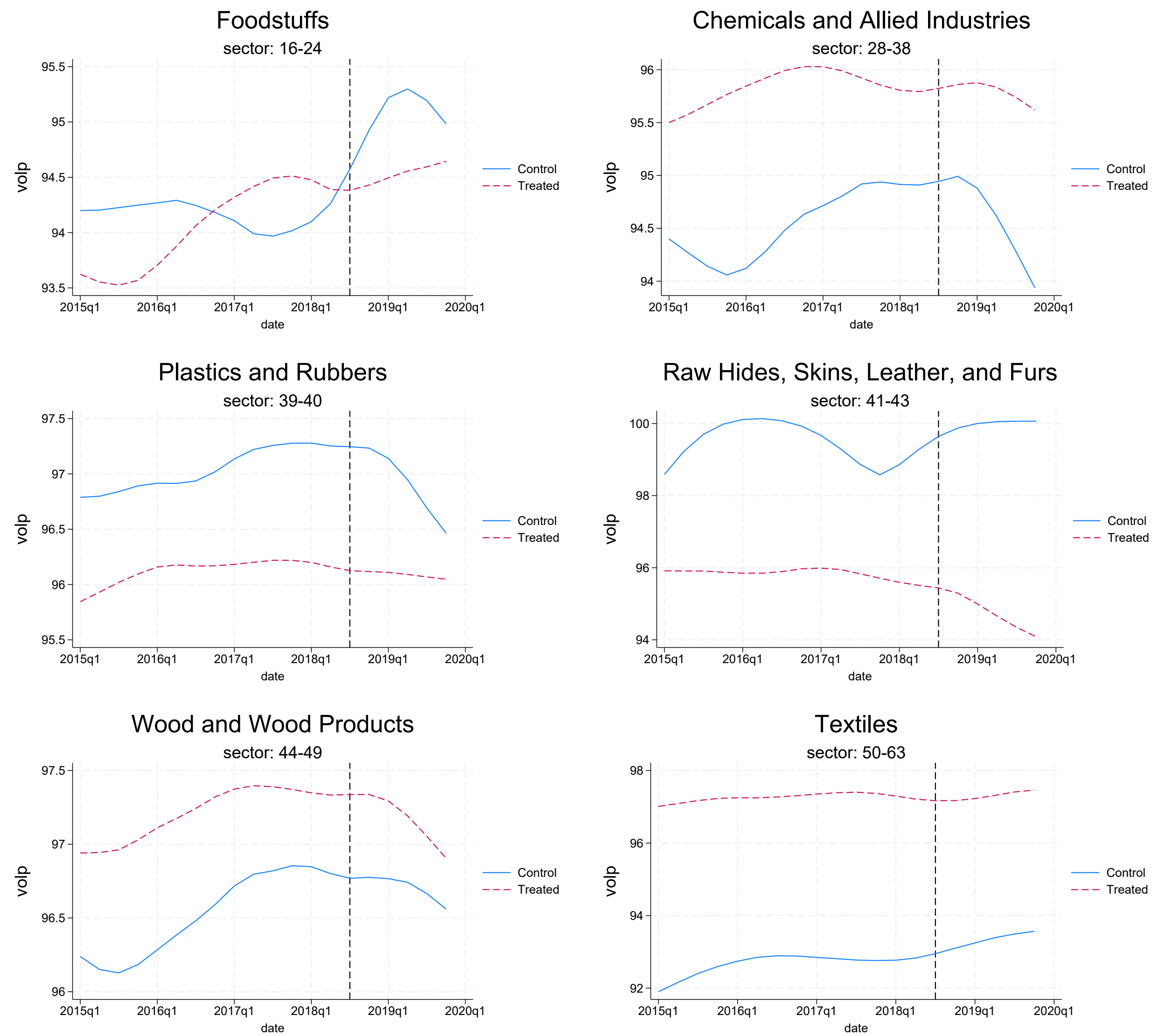
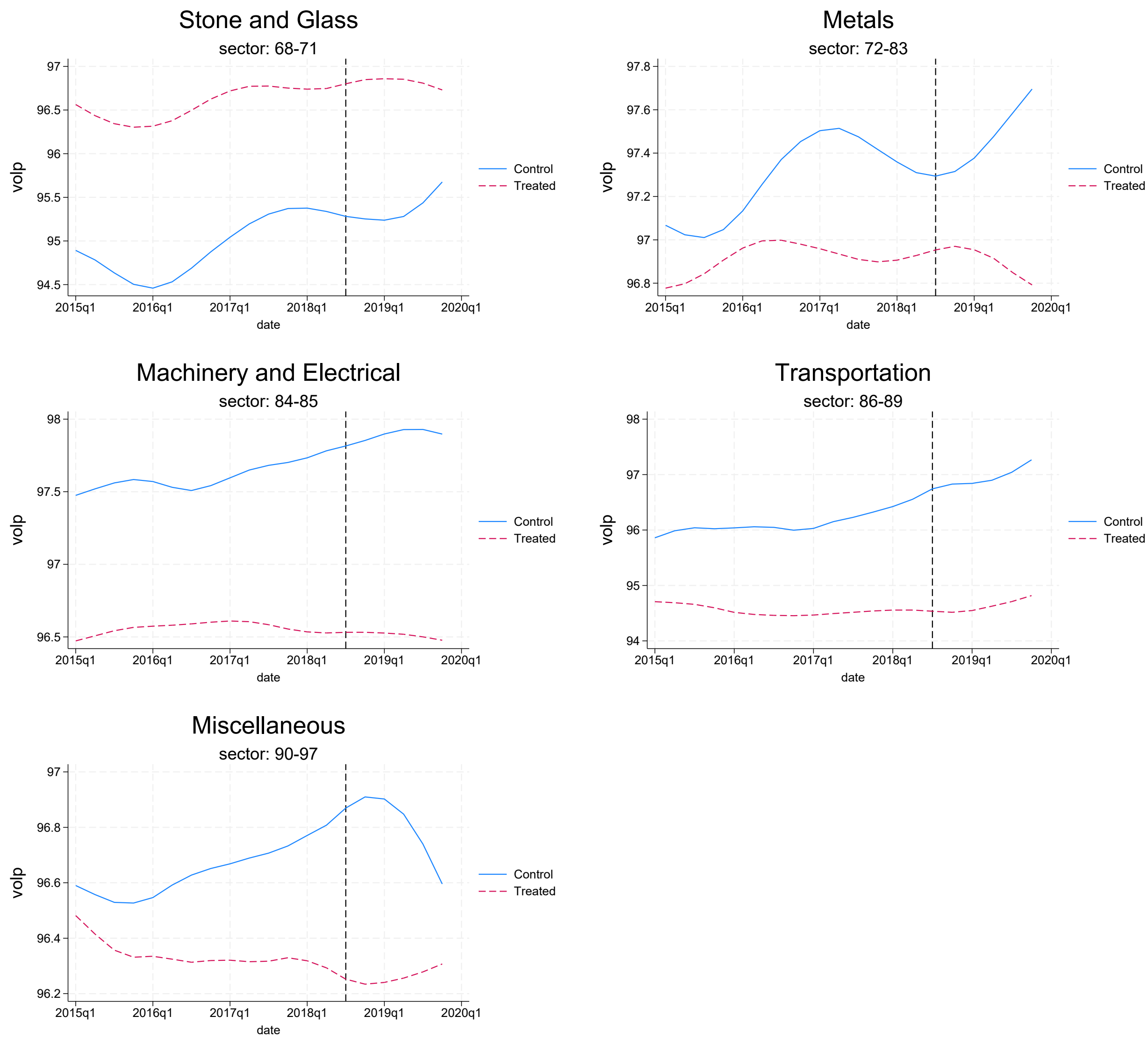


Figure 16: Parallel Plot volp



7.11 Parallel Plots volchina

Figure 17: Parallel volchina

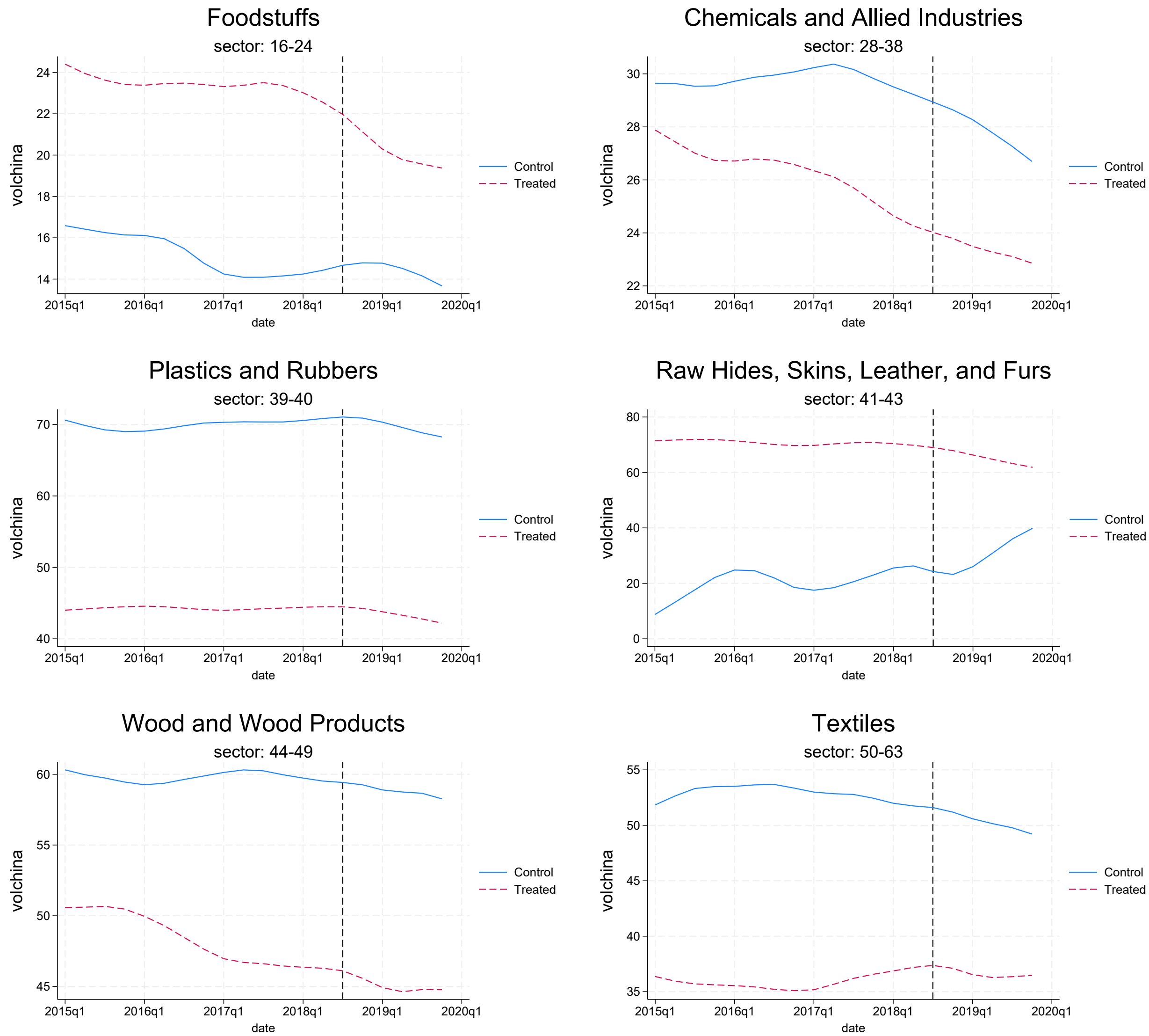


Figure 18: Parallel Plot volchina