Supplemental Appendix

K Additional Proofs

K.1 Second Order Conditions Hold

American System The second derivative of the average cost yields

$$AC_A''(x,q) = \frac{r}{q}\frac{\left(\frac{r}{q}\right)e^{-rx/q}\frac{\bar{\theta}}{\Upsilon}\left[-2\left(1-e^{-rx/q}\right)+\left(\frac{r}{q}\right)\left[1+e^{-rx/q}\right]\left[x+\frac{f+m}{\bar{\theta}/\Upsilon}\right]\right]}{\left[1-e^{-rx/q}\right]^3}.$$

Thus the first-order condition is strictly upward sloping, $AC_A''(x,q) > 0$, if and only if

$$\left[1+e^{-rx/q}\right]\left[r\frac{x}{q}+\left(\frac{r}{q}\right)\left(\frac{f+m}{\bar{\theta}/\Upsilon}\right)\right]-2\left[1-e^{-rx/q}\right] > 0. \tag{A.9}$$

Consider the case when $f+m=0$. If the condition holds for this case, it must also hold for $f+m>0$, because (A.9) is increasing in $f+m$. Define $y \equiv rx/q$. Note that for $y=0$ and $f+m=0$ the left-hand side of equation (A.9) is equal to zero. Taking the derivative of the left-hand side of equation (A.9) with respect to y we obtain $1-e^{-y}(1-y)>0$. Thus, the left-hand side of (A.9) is strictly increasing in y for $0<y<1$. Therefore, if $0<y<1$, then $AC_A''(x,q)>0$.

Japanese System

$$\begin{aligned}AC_J''(x) = &\left[\frac{\left(\frac{r}{q}\right)^2 e^{-rx/q}\left[f+\underline{\theta}\frac{1}{\Upsilon}x+e^{(r+\rho)x/q}(\bar{\theta}-\underline{\theta})\frac{1}{\Upsilon}x\right]\left[1+e^{-rx/q}\right]}{\left[1-e^{-rx/q}\right]^3}\right.\\ &-\frac{2\left(\frac{r}{q}\right)e^{-rx/q}\left[\underline{\theta}\frac{1}{\Upsilon}+e^{(r+\rho)x/q}(\bar{\theta}-\underline{\theta})\frac{1}{\Upsilon}\left(1+\left(\frac{r+\rho}{q}\right)x\right)\right]\left[1-e^{-rx/q}\right]}{\left[1-e^{-rx/q}\right]^3}\\ &\left.+\frac{\left(\frac{r+\rho}{q}\right)e^{(r+\rho)x/q}(\bar{\theta}-\underline{\theta})\frac{1}{\Upsilon}\left[2+\left(\frac{r+\rho}{q}\right)x\right]\left[1-e^{-rx/q}\right]^2}{\left[1-e^{-rx/q}\right]^3}\right]\frac{r}{q}.\end{aligned}$$

Then $AC_J''(x)>0$ if and only if the numerator is greater than zero. Note that the numerator increases in f. Therefore, if the numerator is positive for $f=0$, it is positive for $f > 0$. Assume $f = 0$, and factor the numerator of $AC_J''(x)$ to obtain

$$\left(\frac{r}{q}\right) e^{-rx/q} \left[\underline{\theta}\tfrac{1}{\Upsilon} + e^{(r+\rho)x/q}(\bar{\theta} - \underline{\theta})\tfrac{1}{\Upsilon}\right] \left[\left(\frac{r}{q}\right) x \left(1 + e^{-rx/q}\right) - 2\left(1 - e^{-rx/q}\right)\right]$$
$$+ \left(\frac{r+\rho}{q}\right) e^{(r+\rho)x/q}(\bar{\theta} - \underline{\theta})\tfrac{1}{\Upsilon}\left[1 - e^{-rx/q}\right] \left\{\left[1 - e^{-rx/q}\right]\left[2 + \left(\tfrac{r+\rho}{q}\right) x\right] - 2\left(\frac{r}{q}\right) x e^{-rx/q}\right\}$$

Define $y \equiv rx/q$. For the first term note that $(1 + e^{-y})\, y - 2\,(1 - e^{-y}) > 0$ for $0 < y < 1$. For the second term to be positive, we require that $\left([1 - e^{-y}]\left[2 + y + \left(\frac{\rho}{q}\right) x\right] - 2ye^{-y}\right) > 0$. If $\rho = 0$, then $(\cdot) > 0$ for $0 < y < 1$. Because $(\cdot)$increases in ρ, it must be true that $(\cdot) > 0$ for $\rho > 0$ and $0 < y < 1$. Therefore, if $\rho > 0$ and $0 < y < 1$, then $AC_J''(x) > 0$.

K.2 Continued Proof of Lemma 5.2: Average cost curves are convex and reach a limit

Part 1: Average cost curves are convex.

American System Using (A.3) in Appendix A, the second derivative of average costs is

$$AC''(q) = \frac{2\frac{f+m}{q^3}}{1 - exp(-\frac{rx}{q})} - \frac{\left(\frac{rx}{q^2}\right) exp(-\frac{rx}{q}) \left(\frac{f+m}{q^2}\right)}{\left[1 - exp(-\frac{rx}{q})\right]^2} + \frac{\left(\frac{rx'(q)}{q}\right) exp(-\frac{rx}{q}) \left(\frac{f+m}{q^2}\right)}{\left[1 - exp(-\frac{rx}{q})\right]^2}.$$

The last term is positive since $x'(q) > 0$. Therefore, to prove that the average cost function is convex, we only need to show that the first two terms together are positive. These terms can be re-written as

$$\frac{2\left[1 - exp(-\frac{rx}{q})\right]\left(\frac{f+m}{q^3}\right) - \left(\frac{rx}{q}\right) exp(-\frac{rx}{q}) \left(\frac{f+m}{q^3}\right)}{\left[1 - exp(-\frac{rx}{q})\right]^2},$$

which is positive if

$$2\left[1 - exp(-\frac{rx}{q})\right] > \left(\frac{rx}{q}\right) exp(-\frac{rx}{q}).$$

This expression holds if

$$2\left[exp(\frac{rx}{q}) - 1\right] > \left(\frac{rx}{q}\right),$$

which is true. Therefore, average costs are convex, for any m and f.

Japanese System Equation (A.4) in Appendix A gives the slope of the average cost curve in the "Japanese" system. By the same arguments as in the "American" system $AC''(q) > 0$.

Part 2: Average cost curves reach a limit

Asymptote for both systems We first show $(x(q)/q) \to 0$ as $q \to \infty$.

From the Monotone Convergence Theorem, since $(x(q)/q)$ is strictly decreasing and bounded from below by zero, it must converge to a limit. Call this limit $\psi^* \geq 0$. To show that $\psi^* = 0$, assume for contradiction that $\psi^* = K > 0$. Then, it must be the case that there exists no combination of $\psi = x(q)/q < K$ and q that solves the first-order condition of the cost minimization problem. Thus, if we can find a q solving the first-order condition for a $\psi < K$, then K cannot have been the limit since ψ is strictly decreasing.

For the "American" system, pick any $0 \leq \psi_A < K$. The first-order condition of the cost minimization problem under the American system is

$$\bar{\theta}\frac{w_z}{\Upsilon}\left[1 - e^{-r\psi_A}\right] = \left(\frac{r}{q}\right) e^{-r\psi_A}\left[f + mw_b + \bar{\theta}\frac{w_z}{\Upsilon} q\psi_A\right].$$

Re-arranging this expression, we can solve for q as a function of ψ_A and find that

$$q = \frac{[f + mw_b]\, re^{-r\psi_A}}{\bar{\theta}\frac{w_z}{\Upsilon}\left[1 - e^{-r\psi_A}\left[1 + r\psi_A\right]\right]}. \tag{A.10}$$

This expression gives the q that solves the first-order condition for a given pick of $\psi_A = x_A/q$. If we can show that for any pick $\psi_A \geq 0$ there exists a $q \geq 0$ solving the equation, then it cannot be the case that $K > 0$ is the limit. For this result to hold, we need to show that the denominator is non-negative. To see that it is non-negative, note that

$$\begin{aligned} &1 - e^{-r\psi_A}\left[1 + r\psi_A\right] \geq 0 \\ &\qquad \Leftrightarrow \quad e^{r\psi_A} \geq 1 + r\psi_A, \end{aligned}$$

which holds. Thus, for any $\psi_A \geq 0$ there exists a $q \geq 0$ solving the equation. In particular, such a q exists for any $\psi_A < K$. Therefore, $(x(q)/q)$ must converge to zero. Indeed, from the equation we can see that for $\psi_A = 0$, q must be infinite.

We can construct a similar proof for the "Japanese" system. The first-order condition under the "Japanese" system is

$$\frac{e^{(r+\rho)\psi_J}\bar{\theta}\frac{w}{\Upsilon}\left[1+(r+\rho)\psi_J\right]}{1-e^{-r\psi_J}} = \frac{\left(\frac{r}{q}\right)e^{-r\psi_J}\left[f+e^{(r+\rho)\psi_J}\bar{\theta}\frac{w}{\Upsilon}q\psi_J\right]}{\left[1-e^{-r\psi_J}\right]^2}.$$

We can re-arrange this expression to solve for q and find that

$$q = \frac{fre^{-r\psi_J}}{\bar{\theta}\frac{w_z}{\Upsilon}e^{(r+\rho)\psi_J}\left[(r+\rho)\psi_J\left[1-e^{-r\psi_J}\right]+1-e^{-r\psi_J}\left[1+r\psi_J\right]\right]}. \tag{A.11}$$

By the same argument as before, the term in the denominator is non-negative and therefore for any $\psi_J \geq 0$ there exists a $q \geq 0$ solving the equation. Therefore, $(x(q)/q)$ must converge to zero. Indeed, from the equation we can see that for $\psi_J = 0$, q must be infinite.

Convergence in the "American" System Consider average costs $C(x,q)/q$. Under the "American" system, we have that

$$\frac{C(x,q)}{q} = \frac{\theta\frac{x}{q}}{1-exp(-\frac{rx}{q})} + \frac{\frac{f}{q}+\frac{m}{q}}{1-exp(-\frac{rx}{q})}.$$

We want to show the limit of this expression goes to a positive number as $q \to \infty$. For the second term we have that

$$\lim_{q\to\infty}\frac{(f+m)\frac{x^*(q)}{q}\frac{1}{x^*(q)}}{1-exp(-r\frac{x^*(q)}{q})} = \lim_{q\to\infty}\frac{(f+m)\frac{x^*(q)}{q}}{1-exp(-r\frac{x^*(q)}{q})}\cdot\lim_{q\to\infty}\frac{1}{x^*(q)} = \lim_{\psi_A\to 0}\frac{(f+m)\psi_A}{1-exp(-r\psi_A)}\cdot 0 = \frac{f+m}{r}\cdot 0,$$

by the multiplication rule of limits, where the first term converges to $(f+m)/r$ by L'Hopital's rule since $\psi_A \to 0$ as $q \to \infty$, and the second term converges to zero because $x^*(q) \to \infty$ as $q \to \infty$. Therefore, the overall term converges to 0.

For the first term we have that

$$\lim_{q\to\infty} \frac{\theta \frac{x}{q}}{1 - exp(-\frac{rx}{q})} = \lim_{\psi_A \to 0} \frac{\theta \psi_A}{1 - exp(-r\psi_A)} = \frac{\theta}{r},$$

where we again applied L'Hopital's rule. Therefore, overall, the average cost function under the "American" system converges to (θ/r), which is positive.

Convergence in the "Japanese" System Next consider the "Japanese" system. We have that average costs are

$$\frac{C(x,q)}{q} = \frac{\theta e^{(r+\rho)(x/q)} \frac{x}{q}}{1 - exp(-\frac{rx}{q})} + \frac{\frac{f}{q}}{1 - exp(-\frac{rx}{q})}.$$

The second term converges to zero by the same argument as before. For the first term we find

$$\lim_{\psi_J \to 0} \frac{\theta e^{(r+\rho)\psi_J} \psi_J}{1 - exp(-r\psi_J)} = \lim_{\psi_J \to 0} e^{(r+\rho)\psi_J} \cdot \lim_{\psi_J \to 0} \frac{\theta \psi_J}{1 - exp(-r\psi_J)} = 1 \cdot \frac{\theta}{r},$$

and hence average costs under the "Japanese" system asymptote to exactly the same positive limit as under the "American" system.

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L Additional A vs J Classification Regressions

In this section, we perform two additional robustness exercises for the A vs J classification regressions of Section 3.2.

Alternative Definition of Relationship Length: We first analyze the robustness of our measure of relationship length. If firms treat relationships with the same supplier across different products or modes of transportation as different relationships, then relationship length should not be defined using the time passed since the first ever transaction with the supplier overall but instead using the duration of the quintuple. We therefore construct an alternative relationship duration variable. First, for each $mxhcz$ quintuple, we compute the total number of weeks passed between the first and the last transaction. Second, for each $mhcz$ buyer quadruple, we take the average over the length of the $mxhcz$ quintuples within it. We refer to this variable as $Qlength_{mhcz}$ to indicate that it is based on the duration of the quintuple, rather than the overall length of the relationship between the importer and the exporter.

We run the same specification outlined in equation (7) using $Qlength_{mhcz}$ as the dependent variable. The results, reported in Table A.25, are similar to those in Table 4 in the main text, with coefficients that are about twice as large. The first column of the table shows that increasing sellers per shipment by one standard deviation from its mean is associated with a 61 log point decline in average relationship length. The second column shows that the average relationship length for quadruples in the fourth quartile is about 235 log points lower than the average relationship length for quadruples in the first quartile.

Importer Fixed Effects: We next re-run our baseline regression (7) with additional importer fixed effects. Results in Table A.26 show that adding importer fixed effects increases R-squared increases modestly while the estimated coefficients are similar to before.

Table A.25: SPS_{mhcz} and Alternative Relationship Length

	(1)	(2)
Dep. var.	$\log(Qlength_{mhcz})$	$\log(Qlength_{mhcz})$
$\log(SPS_{mhcz})$	-1.126^{***}	
	0.039	
$(SPS_{mhcz} = Q2)$		-0.653^{***}
		0.013
$(SPS_{mhcz} = Q3)$		-1.230^{***}
		0.024
$(SPS_{mhcz} = Q4)$		-2.348^{***}
		0.046
$\log(QPW_{mhcz})$	-0.164^{***}	-0.137^{***}
	0.008	0.006
Observations	$2,966,000$	$2,966,000$
R-squared	0.619	0.613
Fixed effects	hcz	hcz
Controls	beg, end	beg, end

Source: LFTTD and authors' calculations. Table reports the results of regressing the average quintuple relationship length within each quadruple ($Qlength_{mhcz}$) quadruples' sellers per shipment (SPS_{mhcz}), sellers per shipment quartile dummies and total quantity shipped per week (QPW_{mhcz}). The regressions include product by country by mode of transport (hcz) fixed effects. All regressions control for the beginning and end week of the quadruple, and exclude quadruples with less than five shipments. Standard errors, adjusted for clustering by country (c) and product (h) bins are reported below coefficient estimates. ***, **, and * represent statistical significance at the 1, 5 and 10 percent levels.

Table A.26: A vs J Classification Regression With Importer Fixed Effects

	(1)	(2)	(3)	(4)
Dep. var.	$\log(QPS_{mhcz})$	$\log(WBS_{mhcz})$	$\log(UV_{mhcz})$	$\log(Length_{mhcz})$
$\log(SPS_{mh})$	0.466^{***}	0.502^{***}	-0.167^{***}	-0.498^{***}
	0.015	0.015	0.014	0.017
$\log(QPW_{mhcz})$	0.681^{***}	-0.327^{***}	-0.265^{***}	-0.124^{***}
	0.019	0.019	0.018	0.006
Observations	$2,825,000$	$2,825,000$	$2,825,000$	$2,825,000$
R-squared	0.961	0.769	0.892	0.599
Fixed effects	hcz, m	hcz, m	hcz, m	hcz, m
Controls	beg, end	beg, end	beg, end	beg, end

Source: LFTTD and authors' calculations. Table reports the results of regressing noted attribute of importer by product by country by mode of transport ($mhcz$) bins on sellers per shipment defined for $mhcz$ bins (SPS_{mh}) and total quantity shipped per week (QPW_{mhcz}). QPS_{mhcz}, WBS_{mhcz}, UV_{mhcz}, and $length_{mhcz}$ are average quantity per shipment, average weeks between shipment, average unit value, and average relationship length. All regressions include product by country by mode of transport (hcz) and importer (m) fixed effects, control for the beginning and end week of the quadruple, and exclude quadruples with less than five shipments. Standard errors, adjusted for clustering by country (c) and product (h) are reported below coefficient estimates. ***, **, and * represent statistical significance at the 1, 5 and 10 percent levels.

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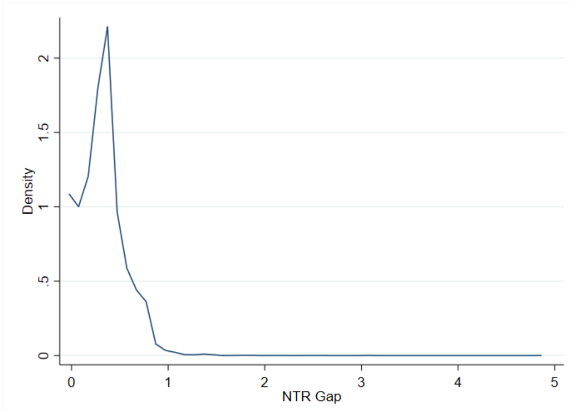
M Description of PNTR

This section provides more detail on the US granting permanent normal trade relations (PNTR) to China. US imports from non-market economies such as China are generally subject to relatively high "column two" tariff rates originally set under the Smoot-Hawley Tariff Act of 1930, as opposed to the generally low Normal Trade Relations (NTR) tariff rates the United States offers to trading partners that are members of the World Trade Organization (WTO). A provision of US trade law, however, allows imports from non-market economies to enter the United States under NTR tariffs subject to *annual* approval by both the President and Congress. Chinese imports first began entering the United States under this provision in 1980 after the warming of bilateral relations. Annual approval became controversial and less certain after the Tiananmen Square incident in 1989, and this uncertainty continued throughout the 1990s. During this time, firms engaged in or considering US-China trade faced the possibility, each year, of substantial tariff increases if China's NTR status was not re-approved. The magnitude of these potential tariff increases—32 percentage points for the average product—make clear that some buyer-seller relationships that were profitable under NTR tariff rates would not be profitable under a shift to "column two" tariffs. Indeed, Pierce and Schott (2016) document extensive discussion by US firms of the trade-dampening effects of this uncertainty in the 1990s, and Handley and Limão (2017) provide a theoretical basis for these effects that operates via suppressed entry by Chinese exporters.[65] Alessandria et al. (2024) show that uncertainty regarding the annual renewal of China's NTR status each summer reduced US imports from China, while also driving intra-year seasonal patterns in imports. When the United States granted PNTR to China in 2001, it locked in NTR rates, eliminating the need for annual renewals and the potential for relationship-severing tariff increases. This plausibly exogenous policy change provides a useful opportunity for testing Proposition 2.1, i.e., whether a decrease in the probability of a trade war leads to the adoption of more "Japanese" sourcing.[66] Our strategy follows Pierce and Schott (2016) in defining a product's exposure to PNTR as the difference

[65]Handley and Limão (2017) also estimate that the reduction in uncertainty associated with PNTR's ultimate approval was equivalent to a 13 percentage point permanent reduction in tariff rates.

[66]See also Blanchard et al. (2016), who examine how the presence of global value chains can affect the longer-term endogenous determination of tariff rates as part of multilateral trade negotiations.

Figure A.4: Distribution of the $NTR\ Gap$



Source: Feenstra et al., 2002 and authors' calculations. Figure displays the distribution of the $NTR\ Gap_h$, the difference between the relatively low NTR tariff rate that was locked in by PNTR and the higher rate to which US tariffs on Chinese goods might have risen absent the change in policy.

between the non-NTR rate to which its tariff could have risen before PNTR and the lower NTR rate that was locked in by the policy change,

$$NTR\ Gap_h = Non\ NTR\ Rate_h - NTR\ Rate_h. \tag{A.12}$$

We compute these gaps as of 1999, the year before the change in policy, using *ad valorem* equivalent tariff rates provided by Feenstra et al. (2002). As indicated in Figure A.4, these gaps vary widely across products, and have a mean and standard deviation of 0.32 and 0.23, respectively.

N Additional Quadruple Level DID Regressions

In this section, we examine whether the shift from A to J procurement in response to PNTR also altered the shipping patterns at the $mhcz$ quadruple level. Compared to the regressions of continuing relationships at the $mxhcz$ level, this regression aggregates across the supplier dimension, and computes shipping attributes of the quadruple using transactions with all suppliers. It also allows for an additional margin of extensive margin adjustment, namely the formation of relationships with new suppliers that did not sell to the United States prior to PNTR. We use the following $mhczt$-level DID regression,

$$\begin{aligned}\ln(Y_{mhczt}) = &\beta_1 1\{t = Post\} * 1\{c = China\} * NTRGap_h + \beta_2 ln(QPW)_{mhczt} + \\ &\beta_3 \chi_{mhczt} + \lambda_{mhcz} + \lambda_t + \epsilon_{mhczt}. \end{aligned} \tag{A.13}$$

As before, Y_{mhczt} represents one of the three procurement attributes: average quantity per shipment (QPS_{mhczt}), average weeks between shipments (WBS_{mhczt}), and average unit value (i.e. value divided by quantity) (UV_{mhczt}).

Results, displayed in Table A.27, show a significant decline in the average shipping size and weeks between shipments, consistent with a shift towards J procurement. The increase in unit values, while positive, is statistically insignificant at conventional levels. One potential explanation for this outcome is the entry of new Chinese exporters during this period (Pierce and Schott, 2016; Amiti et al., 2020), including privately owned firms that tend to have lower prices than state-owned incumbents (Khandelwal et al., 2013). New suppliers might also charge low, introductory prices to gain market share, further dampening unit values.

Table A.27: Within *mhcz* Quadruple PNTR DID Regression

	(1)	(2)	(3)
Dep. var.	$\ln(QPS_{mhczt})$	$\ln(WBS_{mhczt})$	$\ln(UV_{mhczt})$
$Post_t * China_c * NTRGap_h$	-0.043***	-0.058***	0.018
	0.014	0.013	0.024
$ln(QPW_{mhczt})$	0.436***	-0.584***	-0.207***
	0.018	0.018	0.026
Observations	738,000	738,000	738,000
R-squared	0.978	0.887	0.974
Fixed effects	$mhcz, t$	$mhcz, t$	$mhcz, t$
Controls	Yes	Yes	Yes

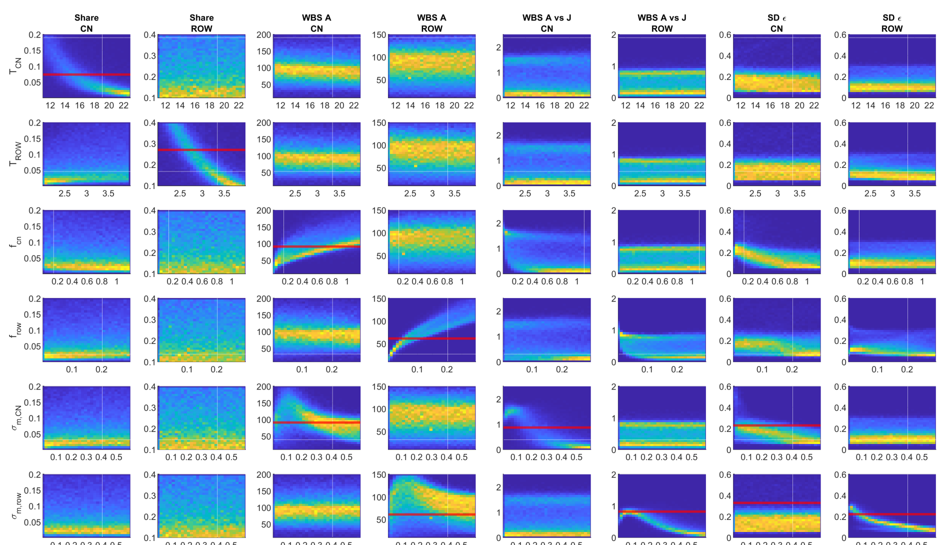
Source: LFTTD and authors' calculations. Table reports the results of regressing noted attribute of US importer by product by country by mode of transport (*mhcz*) bins on the difference-in-differences term of interest and quantity shipped per week. Pre-and post periods are 1995 to 2000 and 2002 to 2007. (QPS_{mhczt}), (WBS_{mhczt}), and (UV_{mhczt}) are average quantity per shipment, average weeks between shipments, and average unit value (i.e. value divided by quantity) in period t. All regressions include *mhcz* and period t fixed effects, control for the beginning and end week of the quadruple as well as all variables needed to identify the DID term of interest. Standard errors, adjusted for clustering by country (c) and product (h), are reported below coefficient estimates. ***, **, and * represent statistical significance at the 1, 5 and 10 percent levels.

O Additional Identification and Robustness

O.1 Identification when All Parameters Vary Jointly

In this section, we perform an additional identification exercise to the one depicted in Figure A.2. We vary all six parameters from the estimation jointly by drawing 100,000 different combinations of parameter values. We then simulate the model for each combination, obtain the simulated moments, and plot the resulting relationships between parameters and moments as a binscatter in Figure A.5. This exercise differs from Figure A.2, where we only varied one parameter at a time. The values of the six parameters are obtained as quasi random numbers drawn from a Sobol sequence. The figure shows similar relationships as Figure A.2, although the associations are noisier since all parameters vary jointly. In particular, there are strong and monotone relationships between the first four parameters and their targeted moments, and more hump-shaped relationships for the final two parameters.

Figure A.5: Joint Identification of Parameters

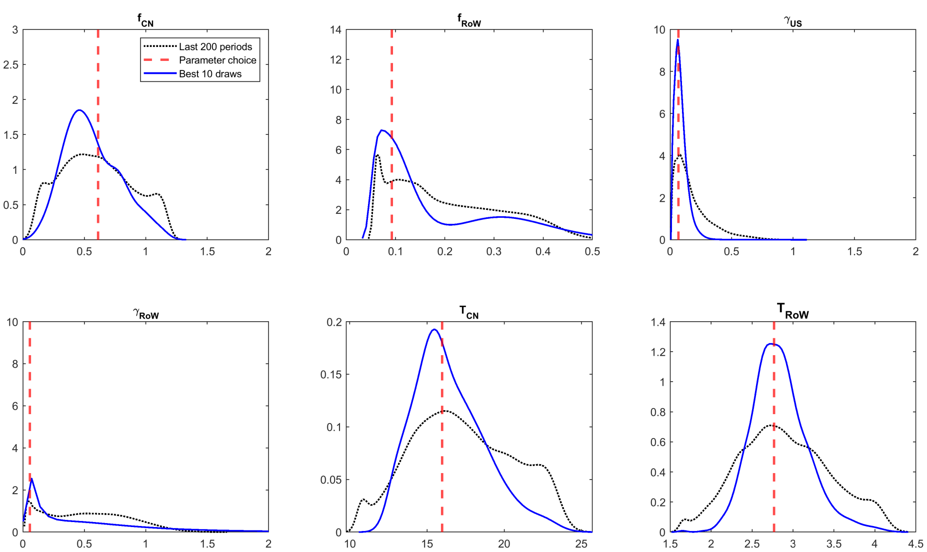


Source: Authors' calculations, based on the estimation procedure described. Each panel plots different values of the parameter indicated on the row against the moment indicated on the column, where all parameters vary jointly based on 100,000 random parameter draws from a Sobol sequence. Lighter colors indicate more frequently observed combinations of parameter values and moment values. The red horizontal lines represent the value of the moment in the data. We add these only for the main panels used to identify a given parameter in the data.

O.2 Estimation of the Model with Fréchet Distribution

This section provides additional analysis of the quality of the estimated parameters under the assumption of a Fréchet distribution for inspection costs. Figure A.6 presents our estimated parameter values analogously to Figure A.1. As before, the black dotted line shows the density function of the parameter values associated with the last 200 iterations of our 100 simulated strings. The optimal parameters (red dashed lines) are chosen as the average across the 100 best outcomes across all the draws. The blue density function shows the density of the 10 best outcomes of each string, computed across all strings. This density provides an alternative way to select the best parameter values. We find that all the densities are less tightly estimated than in the Pareto case. Our chosen parameter values are close to the peak of the densities.

Figure A.6: Estimation Outcomes with Fréchet Distribution



Source: Authors' calculations, based on the estimation procedure described, using a Fréchet distribution for inspection costs. Each panel shows the estimated parameter values for the parameter indicated in the title. The black dotted line shows the density function of the parameter values associated with the last 200 iterations of our 100 strings. The red dashed line shows the average parameter values across the 100 best outcomes from all the draws. The blue density functions shows the density of the 10 best outcomes of each string, computed across all strings.