Internet Appendix to "Firm Finances and Responses to Trade Liberalization: Evidence from U.S. Tariffs on China"

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November 14, 2018

Appendix A. Data Appendix

Variable Definitions

Table A1: **Variable Construction**

Compustat Variables: Compustat variable names in italics.

Variable	Definition	Note
Net Book Leverage	$\frac{dltt+dlc-che}{at}$	
Net Market Leverage	$\frac{dltt+dlc-che}{at+prcc\_f*csho-ceq}$	
Cash to Assets	$\frac{che}{at}$	
ln(emp)	ln(emp)	
ln($sale$)	ln($sale$)	Annual segment sales, replaced with firm sales for companies not in the Compustat segment files. Values are deflated by industry price indices from Becker et al. (2013).
ROA	$\frac{oibdp}{at}$	
NPM	$\frac{oibdp}{sale}$	
Tangiblity	$\frac{ppent}{at}$	
ln($CapitalIntense$)	ln($\frac{ppent}{emp}$)	
Market-to-Book	$\frac{prcc\_f*csho+at-ceq}{at}$	
MNC Flag	Flag $\in \{0, 1\}$	$= 1$ if the company reports multiple geographic segments.
Foreign Income Flag	Flag $\in \{0, 1\}$	$= 1$ if the company reports $pifo > 0$ in any pre-PNTR year.
$INVEST$	$capx$	
OCF	$fopt + \Delta invt + recch + apalch$	Δ indicates 1-year difference. When missing, $fopt$ is replaced with $ibc + dpc + txdc + esubs + sppiv + fopo$.
TFP		Data from İmrohoroğlu and Tüzel (2014)

Census Variables

Variable	Definition	Note
$\ln(emp)$	$\ln(E)$	Employment data E are the March 12 headcount snapshots provided in the LBD.
TFP		Log of deflated revenue minus the log of inputs, weighted by the average cost share (β_i) for each input i across industries. Data are from CMF. Normalized by industry to $\mu = 0$, $\sigma = 1$.
$LaborProd$	$\frac{VA}{E}$	Value-add VA and employment E data are obtained from the CMF. VA is deflated by industry price indices from Becker et al. (2013). Normalized by industry to $\mu = 0$, $\sigma = 1$.
$\ln(CapitalIntense)$	$\ln(K/E)$	Capital K and employment E data are obtained from the CMF.
$MatCost$	$\ln(Q/P)$	Material quantity Q and cost P data are obtained from the CMF material trailer files. Cost is deflated by materials cost indices from Becker et al. (2013).
$MachCapex$	$\ln(M)$	Machinery expenditures M are obtained form the CMF. Values are deflated by investment cost indices from Becker et al. (2013).

Other Variables

Variable	Note
AR[Day Of]	Stock return net of CRSP value-weighted index.
CAR[-1,10]	Stock return net of CRSP value-weighted index - summed over $t-1$ to $t+10$.
$\ln(Val)$	Customs value of imports obtained from U.S. Census Bureau.

Construction of Materials Costs

The quinquennial CMF includes surveys on productions materials purchased by each establishment. Each (reported) purchased input is assigned an industry code - 4-digit SIC in earlier vintages of the CMF and 6-digit NAICS in latter vintages - as well trailing digits to identify individual products. The CMF also contains the total cost of said input and to a lesser degree, the quantity purchased. To generate a dataset of firm-level input cost indices I proceed in the following way. First I drop all inputs for which a quantity is unavailable. Next I aggregate all costs and quantities at the firm-industry level. I then map each input industry to its constant manufacturing family

based on concordances in Pierce and Schott (2016). Finally, I construct the firm's input cost index for a given industry by dividing aggregated costs by aggregate quantities.

One complication in this process is certain products do not map to official SIC or NAICS industries. These instances often occur when establishments self-report production inputs that are not on the set of pre-specified products in the Census survey form. I allocate these products to their respective industries by iteratively matching on coarser (e.g. 3-digit SIC or 5-digit NAICS) codes using the available inputs as weights.

TAA Petitions

I obtain information on offshoring-induced layoffs from the petitions filed with the Trade Adjustment Assistance (TAA) program. The TAA is a Department of Labor (DOL) managed initiative created by the Trade Act of 1974. Under the program's mandate, workers who suffer trade-induced layoffs are eligible for benefits including job training, extended unemployment insurance (UI), and relocation and job search allowances. Petitions for these benefits are made at the establishment level and can be filed by workers, unions, their (previous) employer, or a state agency. The TAA data represent perhaps the most comprehensive source of explicit firm-level offshoring activities, but since parties are under no obligation to file TAA petitions, they likely underestimate offshoring activities.[1]

Each petition is assigned a DOL investigator in charge of certifying that the layoff was indeed trade related. The investigator makes the determination after conducting interviews with employees, customers, and upstream/downstream plants, so that the certification is likely precise. All petitions include certification status, the date of the event, and the estimated number of affected workers. Petitions filed after the 2002 Trade Act also include the reason for the lay off and the countries to which production or customer demand has switched.

The data are made public by Public Citizen, a non-profit consumer advocacy group which receives monthly updates of TAA petitions from the DOL and compiles them into a raw dataset.[2] Following Monarch et al. (2017), I define all layoffs categorized as either *company imports* or *shift in production* as offshoring. This approach leads to just under 11,000 petitions totaling an estimated

[1] Per Autor et al. (2013), per-capita spending on the TAA program in 2007 amounted to just $2.

[2] The data were downloaded from `https://tinyurl.com/ycc7z7jx` accessed 11/21/17.

1.1 million workers laid off between 1994 and 2016. Mapping the TAA to firm financial data is difficult since the raw company names from the petitions are ill-suited for algorithmic matching. For example, Fortune Brands is a holding company that owns a variety of brands such as Masterlock locks, Moen faucets, and Jim Beam bourbon whiskey and the petitions often reference the product name rather than the holding company. A further complication is that Fortune split into two companies in 2011 and the legacy financial data is listed in Compustat under Beam, Inc. In order to manage this complicated matching process without discarding too much data, I limit the TAA data to petition names that have at least one year where the estimated number of affected workers is greater than or equal to 100. This filter reduces the amount of unique petition company names to 2,651 (roughly 6,000 petitions), and these petitions account for an estimated 1 million affected workers. I map the petitions to Compustat identifiers using a combination of algorithmic and manual matching. I am able to find Compustat matches for almost 5,000 of the petitions covering an estimated 700,000 affected workers. Consistent with the matching strategy, I define firms as offshorers in a given year if they lay off at least 100 workers in that year. Of the 2,510 active manufacturing firms in 1999, 294 are classified as offshorers between 2003-2016. Of those 294 firms, 80 list China as one of the offshoring destinations.

Appendix B. Additional Supporting Material

This Appendix provides additional evidence in support of the hypotheses laid out in the main text. I begin by presenting a set of anecdotes that suggest firms supported PNTR since the reduction in uncertainty facilitates offshoring investment. Next, I turn to the TAA offshoring data (see Appendix A for a description of the data) for additional evidence regarding offshoring to China and PNTR. Finally, I present several pieces of supporting analysis referenced in the main body of the text.

Anecdotes

The strong support for and warm corporate reception of PNTR's passage is incongruent with the notion that firms viewed the policy as facilitating more intense competition. A multitude of individual corporations and industry groups lobbied for and hailed the bill's passage (Phillips (2000b)). For example, the Business Roundtable, a coalition of over 200 large corporations, spent over $9 million promoting PNTR (Phillips (2000a)). Additional anecdotes depicting the strong support of (opposition to) PNTR's passage by corporate (labor) interests are below:

St. Maxens (2000):

> The fact that the United States does not accord China permanent NTR status creates uncertainty for America's toy companies and exposes them to unwelcome risk. While the risk that the United States would withdraw NTR status from China may be small, if it did occur the consequences would be catastrophic for U.S. toy companies given the 70 percent non-MFN U.S. rate of duty applicable to toys. As a result, Mattel strongly supports congressional approval of legislation granting permanent NTR status to China upon its WTO accession.

Congress Daily (2000):

> High tech industry representatives Tuesday told House Republican leaders during a closed meeting that gaining permanent normal trade relations status for China is their top priority–and pledged to help garner congressional support for passage...

Business Wire (2000):

> Michael R. Bonsignore, Chief Executive Officer of Honeywell (NYSE: HON), today urged members of the U.S. House of Representatives Ways and Means Committee to grant Permanent Normal Trade Relations (PNTR) status to China this year. Bonsignore said doing so will enable U.S. companies and China to begin working toward realizing the broad, mutual benefits of the recent U.S.-China WTO (World Trade Organization) agreement.

Vita (2000):

> With the AFL-CIO leading the way, organized labor has made defeating the China trade legislation its number one priority this year, and it is waging an aggressive effort to persuade Democrats not to abandon their annual vote on China's trade status.

More PNTR Details

Table B1 lists the ten highest and lowest NTR Gap industries. As the table shows, much of the variation in the NTR Gap derives from the non-NTR rates, which were set in the 1930s. Table B2 presents correlation of the NTR Gap with several industry and firm characteristics. Higher NTR Gap industries tend to be more labor intensive and contain lower skill contents. However, these correlations do not seem to explain the main results in the paper (see Table 4 in the main text).

PNTR & Offshoring - TAA Data

Table B3 presents summary statistics for the offshoring and non-offshoring manufacturers in the Compustat universe. "Raw differences" (columns (1)-(3)) between offshorers and non-offshores are derived from t-tests of sample means. Differences adjusting for industry fixed effects (columns (4) and (5)) are estimated from a regression of each relevant variable on an offshoring dummy and industry fixed effects. In line with the extant literature, offshoring firms tend to be larger and more profitable. These differences exist across the raw and industry-adjusted measures. This "offshoring premium," even within the sample of relatively larger and public firms, is congruent with the fixed-cost-induced selection mechanism promoted in Melitz-style models. Consistent with Monarch et al. (2017), offshorers are also more capital intense, hold a larger proportion of fixed assets, and have lower market-to-book ratios. In terms of univariate correlations between financial capacity and

(future) offshoring activity, the sample of offshorers hold lower cash balances, and higher leverage ratios. However, accounting for industry drastically reduces even this univariate disparity.

To the extent that data on offshoring to China exists, one should also expect the incidence of offshoring to positively correlate with exposure to PNTR. To test this hypothesis, I analyze whether Chinese offshoring propensity, as reported in the TAA data, is higher in industries with larger NTR Gaps. Since the TAA petitions prior to the 2002 Trade Act do not provide lay-off reasons or the responsible countries, I cannot conduct a traditional difference in difference test. However, I can examine whether NTR is more strongly assoicated with offshoring to China than to other countries. If the uncertainty reduction associated with PNTR indeed improved offshoring incentives, then we should observe a positive association between the NTR Gap and offshoring propensity to China. Furthermore, since PNTR was a China-specific policy, the NTR Gap should not be positively associated with increased offshoring to other countries. To test this claim, I use the TAA-Compustat matched sample to estimate the following regression

$$\mathbb{1}\{Offshore\}_f^x = \alpha + \theta_1 NTRGap_f + \varepsilon_f \tag{B1}$$

Where $\mathbb{1}\{Offshore\}_f^x$ is an indicator that firm f had at least one offshoring event to country x from 2003-2016. The petitions mostly mention multiple destination countries and so Chinese offshorers ($x = China$) are those who list China as one of the destination countries. Non-Chinese offshorers ($x = Ex{-}China$) are those who do not list China as a destination country. Firm-level $NTRGap_f$ is calculated as the weighted average of industry NTR Gaps across all of the firm's operating segments, with segment sales as the weights. I estimate (B1) for each $x \in \{China, Ex-China\}$ jointly within a SUR system to allow for comparison of coefficients across specifications. The sample includes all manufacturing firms with Compustat employment data in 1999. Table B4 displays the results of the analysis. The NTR Gap is positively, yet statistically insignificantly, related with offshoring to China (column (1)). However, it is significantly negatively associated with offshoring to other countries (column (2)), which suggests firms shifted focus to Chinese offshoring. A χ^2 test strongly rejects equality of θ_1 across the two specifications.

Monarch et al. (2017) argue that the reduction in uncertainty should matter more for the largest employers, as they are the most likely to be able to absorb the fixed costs of offshoring. To capture

this differential response, I estimate the following regression

$$\mathbb{1}\{Offshore\}_f^x = \theta_1 NTRGap_f \times \ln(Emp)_f + \theta_2 NTRGap_f + \theta_3 \ln(Emp)_f + \delta_i + \varepsilon_f \qquad \text{(B2)}$$

$\ln(Emp)$ is measured as of 1999. I estimate (B2) both without (columns (3) and (4)) and with (columns (5) and (6)) industry fixed effects. The coefficient of interest is again θ_1 which now measures whether larger firms are more likely to be offshorers in higher NTR Gap industries. Consistent with the hypothesis that PNTR is a uniquely Chinese offshoring shock, θ_1 is positive and significant when $x = China$ (columns (3) and (5)) and negative when $x = Ex - China$ (columns (4) and (6)). Equality of θ_1 is again strongly rejected. It should be noted that this analysis is subject to several caveats. The first is that offshoring activity is self-reported. Additionally, since the data starts in 2003, I cannot test whether PNTR leads to a shift in offshoring propensity from the pre-period. While this evidence should be taken with a grain of salt it nonetheless comports with the anecdotes referenced above.

Additional Supporting Analyses

Figure B1 shows annual coefficients (with 1992 as the reference year) from the following regression

$$Matcost_{i,t} = \sum_{k=1993}^{2007} \Big[\theta_k 1\{t = k\} \times UpstreamNTRGap_i\Big] + \delta_i + \delta_t + \varepsilon_{i,t}$$

Where $Matcost_{i,t}$ is the annual price index for material costs for each industry i as compiled by the NBER-CES dataset from Becker et al. (2013). As in Pierce and Schott (2016), $UpstreamNTRGap_i$ is the weighted average NTR Gap across all industries used to produce i, using the coefficients from the BEA's industry-by-industry total requirements input-output matrix as weights. δ_i and δ_t are industry and year fixed effects respectively. Declines in material costs for higher upstream NTR Gap industries accelerate rapidly in the post-PNTR period starting in 2003.

Figure B2 shows annual coefficients (with 1992 as the reference year) from the following regres-

sion

$$LaborProd_{i,t} = \sum_{k=1993}^{2007} \Big[\theta_k 1\{t = k\} \times NTRGap_i\Big] + \delta_i + \delta_t + \varepsilon_{i,t}$$

Where $LaborProd_{i,t}$ is the value add per employee in industry i as compiled by the NBER-CES dataset from Becker et al. (2013). $NTRGap_i$ is the average NTR Gap across all products in industry i. δ_i and δ_t are industry and year fixed effects respectively. The figure shows an increase, albeit not a significant one, in value add per employee for higher NTR Gap industries.

Table B5 lists examples of FDI projects categorized as either encouraged or restricted by the 2002 Chinese Ministry of Commerce's Guidance Catalog for Foreign Direct Investment. The listed projects are indicative of China encouraging investment in higher grade and higher technology manufacturing while restricting investment in lower grade lower technology manufacturing. These findings comport with the claim that restricted projects more closely align with China's natural competitive advantages and further validate the notion that foreign investment was critical to PNTR-induced Chinese import growth.

Table B6 repeats the analysis from Table **??** using firm rather than industry segment sales. The main results are qualitatively unchanged - no significant relationship exists between firm finances, PNTR, and sales growth.

Figure B1: **PNTR and Materials Cost**

This figure graphs the θ_k coefficients from the following regression:

$$Matcost_{i,t} = \sum_{k=1993}^{2007} \left[\theta_k 1\{t = k\} \times UpstreamNTRGap_i\right] + \delta_i + \delta_t + \varepsilon_{i,t}$$

Where i indexes industry and t indexes year. The solid lines represent the point estimates (relative to 1992) and the dashed lines are 95% confidence intervals based on standard errors clustered by industry. Data are from the NBER-CES dataset.

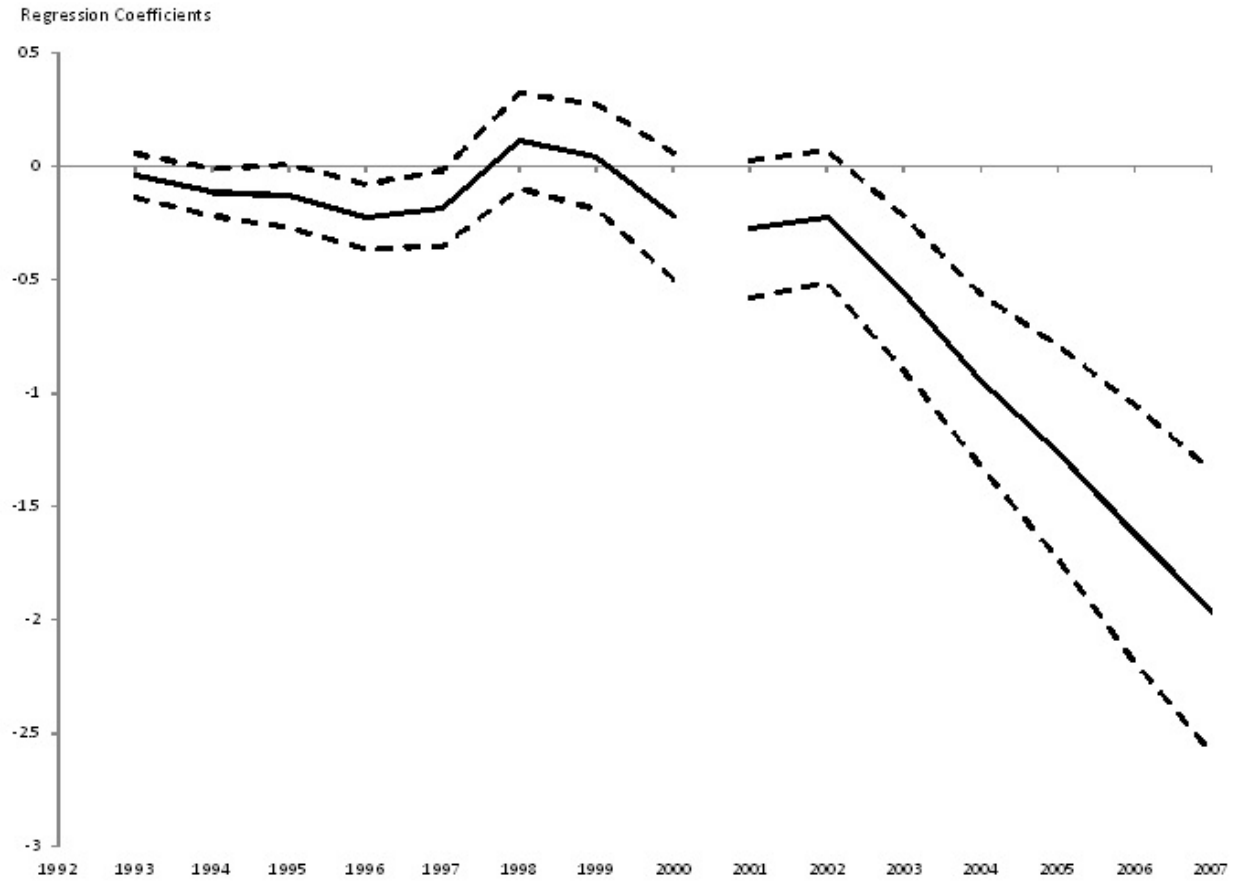

Figure B2: **PNTR and Domestic Productivity**

This figure graphs the θ_k coefficients from the following regression:

$$LaborProd_{i,t} = \sum_{k=1993}^{2007} \left[\theta_k 1\{t = k\} \times NTRGap_i\right] + \delta_i + \delta_t + \varepsilon_{i,t}$$

Where i indexes industry and t indexes year. The solid lines represent the point estimates (relative to 1992) and the dashed lines are 95% confidence intervals based on standard errors clustered by industry. The regression is weighted by industry employment in 1992. Data are from the NBER-CES dataset.

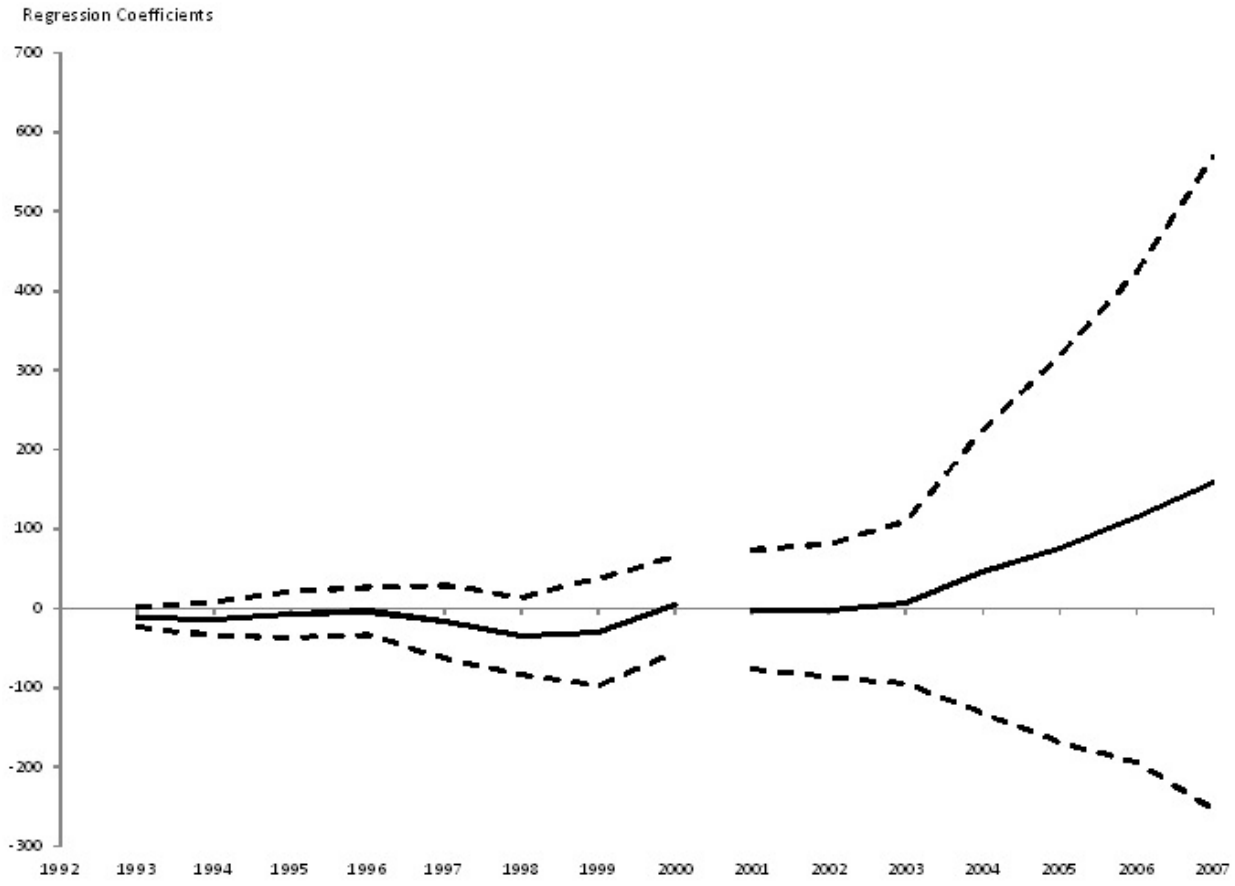

Table B1: **Highest and Lowest NTR Gap Industries**

Highest NTR Gap Industries			
Industry	NTR	Non-NTR	NTR Gap
Blank Magnetic and Optical Recording Media Manufacturing	0.000	0.800	0.800
Plastics Bottle Manufacturing	0.030	0.800	0.770
Toilet Preparation Manufacturing	0.015	0.748	0.732
Other Knit Fabric and Lace Mills	0.105	0.834	0.729
Cigarette Manufacturing	0.074	0.745	0.671
Other Hosiery and Sock Mills	0.145	0.803	0.658
Doll and Stuffed Toy Manufacturing	0.002	0.638	0.637
Game, Toy, and Children's Vehicle Manufacturing	0.002	0.638	0.637
Totalizing Fluid Meter and Counting Device Manufacturing	0.026	0.653	0.626
Schiffli Machine Embroidery	0.056	0.672	0.616

Lowest NTR Gap Industries			
Industry	NTR	Non-NTR	NTR Gap
Phosphatic Fertilizer Manufacturing	0.001	0.004	0.003
Malt Manufacturing	0.010	0.025	0.015
Pulp Mills	0.002	0.020	0.019
Cement Manufacturing	0.000	0.026	0.026
Farm Machinery and Equipment Manufacturing	0.001	0.034	0.033
Petroleum Refineries	0.012	0.048	0.036
Wood Preservation	0.003	0.048	0.045
Bottled Water Manufacturing	0.003	0.049	0.046
Ice Manufacturing	0.003	0.049	0.046
Soft Drink Manufacturing	0.003	0.049	0.046

Table B2: **NTR Gap Correlations**

This table presents correlations of the NTR gap with industry and firm characteristics. Industry characteristics are from the NBER-CES dataset. Import data are from the UTO. Firm financial variables are measured in 1999, the year prior to the PNTR vote. Variable definitions are included in the appendix. *** indicates significance at 1% level, ** indicates 5%, and * indicates 10%.

	Industry Char.					Imports	Firm Char.											
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
$\ln(CapitalIntense)$	-0.354^{***}																	
$\ln(SkillIntense)$		-0.077																
$\frac{ValAdd}{Emp}$			-0.182^{***}															
ΔEmp_{pre}				-0.026														
$\Delta Ship_{pre}$					0.0286													
$\Delta Imports_{pre}$						-0.003												
$\ln(asset)$							-0.190^{***}											
$\ln(emp)$								0.174^{***}										
Mkt_Cap									-0.48^{**}									
age										-0.108^{***}								
$\max\{ROA, 0\}$											-0.088^{***}							
$\max\{NPM, 0\}$												-0.0634^{***}						
$Tangibility$													-0.274^{***}					
$\ln(CapitalIntense)$														-0.254^{***}				
$M2B$															0.022			
$NetBkLev$																-0.004		
$NetMktLev$																	-0.099^{***}	
$\frac{Cash}{Assets}$																		0.123^{***}

Table B3: **Offshoring Premium**

This table presents firm-level summary stats for the sample of offshoring v. non-offshoring manufacturing firms. I define firms as offshorers if, per the TAA petition data, they lay off at least 100 workers in any year from 2003-2016. Financial variables are measured in 1999, the year prior to the PNTR vote. Variable definitions are included in the appendix. The sample includes all Compustat manufacturers with employment data in 1999. *** indicates significance at 1% level, ** indicates 5%, and * indicates 10%.

	Raw Difference			Industry FE	
	(1)	(2)	(3)	(4)	(5)
Variable	Offshoring	Non-Offshoring	P-Val Diff	Offshoring Diff	P-Val Diff
$\ln(asset)$	7.057	3.974	***	2.695	***
$\ln(emp)$	1.943	−1.240	***	2.675	***
age	25.517	12.884	***	9.879	***
Mkt_Cap	8.347	0.947	***	8.681	***
$\max\{ROA, 0\}$	0.151	0.090	***	0.050	***
$\max\{NPM, 0\}$	0.146	0.084	***	0.055	***
TFP	−0.214	−0.398	***	0.170	***
$Tangibility$	0.283	0.228	***	0.020	**
$\ln(CapitalIntense)$	3.710	3.382	***	0.247	***
$M2B$	2.159	4.411	***	−1.286	
$NetBkLev$	0.230	0.145		0.002	
$NetMktLev$	0.171	0.072	***	0.028	*
$\frac{Cash}{Assets}$	0.082	0.216	***	−0.065	***
N	294	2,216			

Table B4: **NTR Gap and Offshoring Propensity**

This table presents results for the following regressions:

$$\mathbb{1}\{Offshore\}_f^x = \alpha + \theta_1 NTRGap_f + \varepsilon_f$$
$$\mathbb{1}\{Offshore\}_f^x = \theta_1 NTRGap_f \times \ln(Emp)_f + \theta_2 NTRGap_f + \theta_3 \ln(Emp)_f + \delta_i + \varepsilon_f$$

Where $\mathbb{1}\{Offshore\}_f^x$ is an indicator that firm f had at least one offshoring event to country x from 2003-2016. δ_i is an industry fixed effect. The sample includes all manufacturing firms with Compustat employment data in 1999. $\ln(Emp)$ is measured as of 1999. The regressions for $x \in \{China, Ex-China\}$ are estimated jointly in a SUR system to allow comparison of coefficients across the specifications. The last row contains a χ^2 test of $\theta_1^{China} = \theta_1^{Ex-China}$ Standard errors are included in parenthesis. *** indicates significance at 1% level, ** indicates 5%, and * indicates 10%.

	(1)	(2)	(3)	(4)	(5)	(6)
$x =$	$China$	$Ex-China$	$China$	$Ex-China$	$China$	$Ex-China$
$NTRGap_f$	0.021	-0.107^{**}	0.107^{***}	0.060	0.164	0.351^{*}
	(0.033)	(0.049)	(0.033)	(0.046)	(0.145)	(0.200)
$\ln(Emp)_f$			0.011^{**}	0.062^{***}	0.011^{*}	0.068^{***}
			(0.005)	(0.007)	(0.006)	(0.008)
$NTRGap_f \times \ln(Emp)_f$			0.030^{**}	-0.030	0.027^{*}	-0.041^{*}
			(0.014)	(0.020)	(0.016)	(0.022)
$\theta_1^{China} = \theta_1^{Ex-China}$ (χ^2)	6.77^{***}		7.80^{***}		8.09^{***}	
N	2,510	2,510	2,510	2,510	2,510	2,510
N Offshore	80	183	80	183	80	183
Industry FE					X	X

Table B5: **China FDI Guidelines: Examples of Restricted and Encouraged Projects**

Examples of Encouraged Projects
Textiles
Production of special textile products for engineering applications
Dyeing and finishing of high grade textile materials
Chemical Fiber Manufacturing
Production of high tech chemical fibers
Manufacturing of synthetic rubber

Examples of Restricted Projects
Textiles
Wool and cotton textile. Silk
Chemical Fiber Manufacturing
Production of conventional textile chemical fiber drawing
Rubber Products Manufacturing
Production of lower performance industrial rubber components

Table B6: **PNTR, Firm Finances, & Sales**

Panel A of this table presents results for the following regression:

$$\begin{aligned}\ln(Sales)_{f,t}=&\theta_1 PostPNTR_t \times NTRGap_f \times FC_f + \theta_2 PostPNTR_t \times NTRGap_f \\ &+\theta_3 PostPNTR_t \times FC_f + \beta_1' X_f \times PostPNTR_t \times NTRGap_f \\ &+\beta_2' X_f \times PostPNTR_t + \delta_f + \delta_{i,t} + \varepsilon_{f,t}\end{aligned}$$

Where f indexes firm, i indexes industry, and t indexes year. $NTRGap_f$ is a weighted average of the NTR Gap of each firm's operating segment, using segment sales as the weights. FC_f is either net book leverage, net market leverage, or cash-to-assets ratio, X_f includes controls for pre-PNTR firm size, age, and employment growth, δ_f is a firm fixed effect and $\delta_{i,t}$ is an industry-by-year fixed effect. All other variable construction is detailed in the Appendix. Standard errors clustered by firm included in parentheses. *** indicates significance at 1% level, ** indicates 5%, and * indicates 10%.

	(1) DiD	(2) NBL	(3) NML	(4) Cash
$PostPNTR_t \times NTRGap_f$	-0.473**			
	(0.205)			
$PostPNTR_t \times NTRGap_f \times FC_f$		-0.234	0.590	1.950
		(0.717)	(0.424)	(1.405)
$PostPNTR_t \times FC_f$		-0.113	-0.266	-0.426
		(0.268)	(0.175)	(0.529)
N	19,330	19,330	19,330	19,330
adj. R^2	0.929	0.934	0.934	0.934
Controls		X	X	X
Year FE	X			
Year x Ind FE		X	X	X
Firm FE	X	X	X	X

Appendix C. Event Study Analysis

The event study analysis considers two events that relaxed trade barriers between the U.S. and China. The first event is the November 15, 1999 signing of a bilateral trade agreement between China and the U.S.

> The U.S. and China signed a breakthrough agreement Monday that open the world's most populous nation to more foreign investment and trade and clears the biggest hurdle to China's entry into the World Trade Organization.
>
> U.S. Trade Representative Charlene Barshefsky described the agreement as "absolutely comprehensive," while White House economics adviser Gene Sperling said the two countries had put "a 21st-century vision of a freer world economy over old outdated 20th century visions."
>
> Among the concessions hammered out during six and a half days of painstaking negotiations, China agreed to open its banking, insurance and telecommunications sectors to greater foreign investment, abolish export subsidies and cut overall tariffs to an average of 17% from the existing 22.1%, with even lower rates for some agricultural products.
>
> *Dow Jones Business News* (1999)

To understand the unexpected nature of the agreement, one should consider that previous talks in April of that year had stalled and there was no indication of a restart until the trade delegation was dispatched rather suddenly to China on November 9 (*Associated Press* (1999b)). Examination of press articles around the agreement indicates that the first mention of the signing occurred at 1:03 AM on November 15, 1999. Reports from after the close of the market on November 14 suggest that no previous information leakage regarding deal closure existed prior to its signing (*Associated Press* (1999a)). In fact, the agreement was signed only after the U.S. trade representative had agreed to stop at the Chinese Trade Ministry on her way out of the country (Devereaux and Lawrence (2004)). Therefore, I use November 15 as the event day for the agreement.

While the deal served as the first material step towards liberalizing Sino-U.S. trade it would go into effect only upon China's entry into the WTO, and the Chinese had made clear their intention

to link that step to the passage of PNTR (*Dow Jones Business News* (1999)). President Clinton spear-headed the push to pass PNTR, but faced strong resistance from labor groups and many Democrats in the U.S. House of Representatives. Since support for PNTR was widespread in the Senate, the House vote, which took place after market close on May 24, 2000, was the largest obstacle to the policy's passage. Although ultimately the House voted 237-197 in favor of PNTR, the outcome of the vote was seen as uncertain as recently as May 23rd (Keto (2000)). Therefore, I use May 25 as the event day for PNTR.

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