

## Appendix A Data Sources and Descriptions

### A.1 Data on US Multinational Companies (Bureau of Economic Analysis, BEA)

The statistical analysis of firm-level data on US multinational companies was conducted at the Bureau of Economic Analysis, US Department of Commerce, under arrangements that maintain legal confidentiality requirements. Given legal constraints, the data must be analyzed onsite at the BEA and cannot be put on any website. Nevertheless, these data can be accessed by special sworn researchers; at the present time there are dozens of researchers with access to the data. A list of articles and working papers produced by academic researchers using BEA data is available at: [http://www.bea.gov/papers/SSE\\_papers.htm](http://www.bea.gov/papers/SSE_papers.htm).

The following is a description of the BEA special sworn employee program:

Recognizing that some research requires data at a more detailed level than that provided in its publicly disseminated tabulations, the International Economics Directorate of the Bureau of Economic Analysis maintains a program that permits outside researchers to work on site as unpaid special sworn employees of the Bureau for the purpose of conducting analytical and statistical studies using the microdata on multinational companies and international service transactions it collects under the International Investment and Trade in Services Survey Act.

This work is conducted under strict guidelines and procedures that protect the confidentiality of company-specific data, as required by law. Because the program exists for the express purpose of advancing scientific knowledge and because of legal requirements that limit the use of the data to analytical and statistical purposes, appointment to special-sworn-employee status under this program is limited to researchers. Appointments are not extended to any persons affiliated with organizations that collect taxes, enforce regulations, or make policy. Questions about BEA's program for outside researchers can be addressed to William Zeile at [william.zeile@bea.gov](mailto:william.zeile@bea.gov). [Source: [http://www.bea.gov/about/research\\_program.htm](http://www.bea.gov/about/research_program.htm)]

The ability to replicate our results is ensured because our program files and the data sets used to generate the results are available in a directory at the BEA that is accessible to all of its special sworn researchers. Once access has been arranged, all special sworn employees can obtain the data and the STATA code used to manipulate the data in the following directory: `S:\research_archive\weymouth\BacciniPintoWeymouth_IO`. The directory contains the following replication files: `BPW_IO.dta` and `BPW_IO.Tables.do`.

The data are collected by the BEA for the purpose of producing publicly available aggregate statistics on the activities of US multinational enterprises. Any US person with direct or indirect ownership of 10% or more of the voting securities of a foreign business during the benchmark fiscal year is a US parent of the foreign business, which is termed its foreign affiliate. The US multinational is the combination of the US legal entity that has established or purchased the affiliate (i.e., the US 'parent') and at least one foreign business enterprise (i.e., the foreign 'affiliate'). The International Investment and Trade in Services Survey Act requires that owners of foreign affiliates detail the balance sheets, income statements, and international transactions of their affiliates. As a result of the confidentiality assurances and the penalties for non-compliance, the coverage of the BEA data is considered nearly complete and the accuracy of the responses is high. In a typical benchmark year, the survey covers over 99% of affiliate activity by total sales, assets, and US FDI. For instance, in the 1994 Benchmark Survey, participating affiliates accounted for 99.9% of total US FDI.

The data include detailed financial and operating information at the level of the foreign affiliate and the US parent. The affiliate sales information used in this study was extracted from the BEA’s data files for each Benchmark Survey year, and then merged with the parent firm information to create a complete parent-affiliate-year panel. The sample includes all majority-owned affiliates; we exclude values: (1) that were imputed based on previous survey responses; (2) from firms in the financial sector; or (3) that correspond to a form rejected by the BEA due to inaccuracies.

The analysis relies primarily on affiliate-level sales data (disaggregated according to the destination of the buyer) from the quinquennial Benchmark Surveys. The benchmark years included in our study are 1989, 1994, 1999, 2004, and 2009. We characterize horizontal sales as those to the host country; vertical sales are sales to the United States.

## A.2 Tariff Data

Data on MFN and preferential tariffs are collected from Trade Analysis Information System (TRAINS) and come from WITS (2014). They rely on Harmonized System (HS trade categorization. US HS codes are established by the World Customs Organization (WCO), which assigns 6-digit codes for general categories; countries adopting the system then define their own codes to capture commodities at more detailed levels. In the United States, the most detailed level of disaggregation is ten digits by Pierce and Schott (2012). Since the US HS system is rooted in WCO 6-digit HS, we construct concordance between 6-digit HS combined and 4-digit NAICS from 1996 to 2009 using two steps. First, based on concordance between 10-digit US HS and 7-digit NAICS provided by Pierce and Schott (2012), we construct the concordance between 6-digit US HS and 4-digit NACIS. Second, we use WITS concordances between HS combined and other HS systems (H1, H2, and H3) to match 6-digit US HS codes over time.

The variable *PTA Tariff Cuts (US)* is built using the following steps. First, we identify for each PTA the year of ratification, in which the tariff cuts take effect. Second, we take the average value of the MFN tariff over the three years prior to the year of ratification.<sup>61</sup> This represents our baseline for calculating the tariff cuts. We use the average value over three years to mitigate the impact of missing values. Third, we take the average value of the preferential tariff for the year of ratification and subsequent years. Again, the three-year average is meant to reduce the missing values. There are a couple of exceptions. We were unable to find preferential tariff data for the United States for 1994, so we rely on two years: 1995 and 1996.<sup>62</sup> For Vietnam, the preferential tariff data come from the query “Tariff and Trade Analysis” rather than from “Find a Tariff” as for all the other PRF tariffs. This is because TRAINS does not consider tariffs resulting from the US-Vietnam PTA to be preferential tariffs, but rather the non-MFN duty rate. Table A.1 summarizes the details of the data collection related to MFN and preferential (PRF) tariffs.

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<sup>61</sup>The results are similar if we use 2-year or 4-year averages.

<sup>62</sup>The results are similar if we also include 1997 so that we have a 3-year average for NAFTA as well.

Table A.1: *MFN Tariffs and Preferential Tariffs (PRF)*

<b>PTA</b>	<b>Year Signature</b>	<b>Year Ratification</b>	<b>MFN</b>	<b>PRF</b>
US-Australia	2004	2005	2002, 2003, 2004	2005, 2006, 2007
US-Bahrain	2004	2006	2003, 2004, 2005	2006, 2007, 2008
US-CAFTA-DR_Costa Rica	2004	2005	2002, 2003, 2004	2005, 2006, 2007
US-CAFTA-DR_Dominican Republic	2004	2005	2002, 2003, 2004	2005, 2006, 2007
US-CAFTA-DR_El Salvador	2004	2005	2002, 2003, 2004	2005, 2006, 2007
US-CAFTA-DR_Guatemala	2004	2005	2002, 2003, 2004	2005, 2006, 2007
US-CAFTA-DR_Honduras	2004	2005	2002, 2003, 2004	2005, 2006, 2007
US-CAFTA-DR_Nicaragua	2004	2005	2002, 2003, 2004	2005, 2006, 2007
US-Canada	1988	1989	no data	no data
US-Canada*	1992	1994	1991, 1992, 1993	1995, 1996
US-Chile	2003	2004	2001, 2002, 2003	2004, 2005, 2006
US-Colombia	2006	2012	no data	no data
US-Jordan	2000	2001	1998, 1999, 2000	2001, 2002, 2002
US-Korea	2007	2012	no data	no data
US-Mexico*	1992	1994	1991, 1992, 1993	1995, 1996
US-Morocco	2004	2006	2003, 2004, 2005	2006, 2007, 2008
US-Oman	2006	2009	2006, 2007, 2008	2009, 2010, 2011
US-Panama	2007	2012	no data	no data
US-Peru	2006	2009	2006, 2007, 2008	2009, 2010, 2011
US-Singapore	2003	2004	2001, 2002, 2003	2004, 2005, 2006
US-Vietnam**	2000	2001	1998, 1999, 2000	2001, 2002, 2002

\* No data in 1994 when USA is the reporter country.

\*\* According to TRAINS Measures, Vietnam's PRF should be from Non-MFN duty rate (measurecode 3).

Note: 1989, 2011, 2010, 2013 and 2014 USA tariff original product code is 10-digit or 8-digit HS code.

Crosswalk to 6-digit HS uses different editions of the HS nomenclature:

- a) 1989-1995: HS1988/92
- b) 1996-2001, HS1996
- c) 2002-2006, HS2002
- d) 2007-2011, HS2007
- e) 2012-2014, HS2012

### A.3 Export Product Similarity

We rely on the measure of export product similarity suggested by Finger and Kreinin (1979):

$$Similarity(ab_t) = \sum_c Min[X_c(ac_t), X_c(bc_t)],$$

where  $a$  and  $b$  are two countries exporting a commodity  $c$ , and  $X_c(ac_t)$  is the share of exports in commodity  $c$  of the total exports of  $a$  in year  $t$ . The similarity of  $a$  and  $b$  is the sum of the minima of the shares of a certain commodity of the total exports of  $a$  and  $b$ , respectively. The resulting index ranges from 0 (completely dissimilar) to 1 (completely similar). Our index covers five key manufacturing commodity sectors with data taken from the World Development Indicators (World Bank, 2015). In order to minimize missing values and to cover as many countries as possible, we focus on five manufacturing sectors, which have substantively better coverage than non-manufacturing sectors.

## Appendix B Instrumental Variables Estimations

In this section we further address concerns about endogeneity with respect to preferential tariff cuts implemented by the United States. We rely on two IV analyses. Below we describe the details of each approach.

### B.1 Instrumental Variables: Host Country de jure Cuts

As explained in the main text, our first IV analysis relies on tariff commitments agreed by US trade partners and included in the annexes of the PTA treaties. We refer to them as *de jure* tariff cuts, which represent our instruments. Our data are disaggregated at the HS 6-digit level and cover more than 5,000 products for each US PTA. Importantly, we have tariff commitments for all the US PTAs. We note that these tariff concessions are *de jure*; i.e., they are not necessarily the same as the applied (*de facto*) preferential tariffs available in WITS. In line with our main explanatory variables, we operationalize *de jure* tariff cuts implemented by a partner country as the difference between the MFN tariff (pre-PTA) and preferential commitment at time zero, i.e., the year in which the PTAs come into force, divided by MFN tariffs. We label this instrument *Host Country de jure Cuts*.

Since our key variable is the interaction between tariff cuts and size, we also need to instrument this interaction term. Following Wooldridge (2012), we use the interaction between *Host Country de jure Cuts* and the number of employees to instrument for the interaction term in our main regressions. More formally, we estimate two stages. The first-stage models are:

$$\begin{aligned} PTA\ Tariff\ Cuts\ (US)_{ij,t-1} &= \beta_1 Host\ Country\ de\ jure\ Cuts_{ij,t-1} + \beta_2 Size_{aij,t} \\ &+ \beta_3 Host\ Country\ de\ jure\ Cuts_{ij,t-1} \times Size_{aij,t} \\ &+ \beta_4 C_{j,t-1} + \varphi_j + \varsigma_i + \tau_t + \eta_{ij,t} \end{aligned} \quad (1)$$

$$\begin{aligned}
PTA\ Tariff\ Cuts\ (US)_{ij,t-1} \times Size_{aij,t} &= \beta_1 Host\ Country\ de\ jure\ Cuts_{ij,t-1} + \beta_2 Size_{aij,t} \\
&+ \beta_3 Host\ Country\ de\ jure\ Cuts_{ij,t-1} \times Size_{aij,t} \quad (2) \\
&+ \beta_4 C_{j,t-1} + \varphi_j + \varsigma_i + \tau_t + \zeta_{aij,t}
\end{aligned}$$

The second-stage model is:

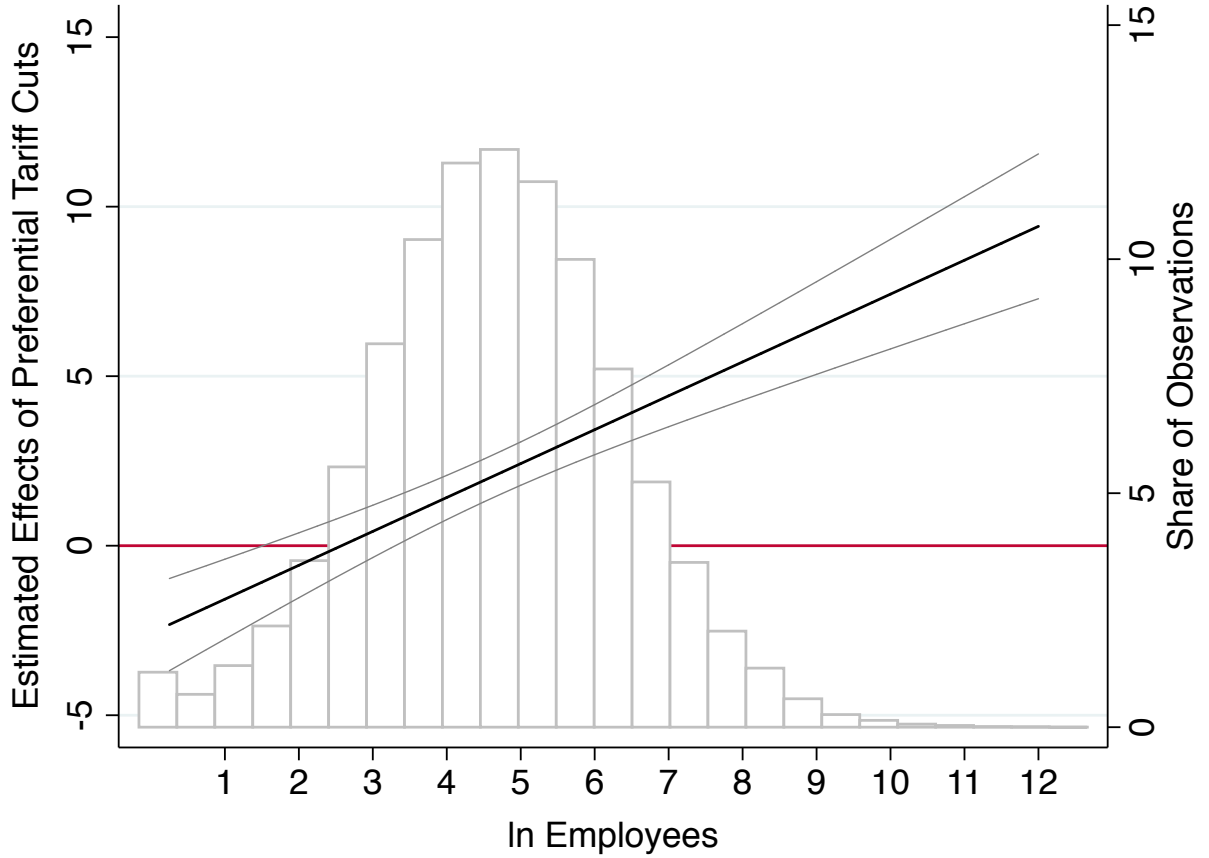
$$\begin{aligned}
Sales_{aij,t} &= \beta_1 \widehat{PTA\ Tariff\ Cuts\ (US)}_{ij,t-1} + \beta_2 Size_{ij,t} \\
&+ \beta_3 \widehat{PTA\ Tariff\ Cuts\ (US)} \times Size_{ij,t} \quad (3) \\
&+ \beta_4 C_{j,t-1} + \varphi_j + \varsigma_i + \tau_t + \epsilon_{aij,t}
\end{aligned}$$

The instrument is valid if it meets two criteria. First, host country de jure cuts should be correlated with US PTA cuts. The intuition behind this assumption boils down to *reciprocity*. The United States is more likely to lower PTA tariffs in industries in which partner countries have also agreed to grant preferential concessions. Indeed, we find our instruments are always statistically significant in the first stage (see Table 4) and the F-statistic is always larger than 10. Second, *Host Country de jure Cuts* should not be correlated with sales to the US except through their effects on US tariff cuts. The distinction between *de jure* and applied tariffs should increase confidence in the exclusion restriction, since it is unlikely that tariff cuts agreed by *host countries* during the PTA negotiations affect exports *to the United States* (except through tariff cuts implemented by the United States).<sup>63</sup> Further details about the IV model specification and a discussion of the identifying assumptions are available in Appendix B.1.

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<sup>63</sup>The complexity of MNC activities present a potential challenge to this assumption. In particular, Jensen et al. (2015) note that MNCs often use their global affiliates as operating options, expanding production in particular countries when the policy environment changes in ways that reduce the costs of production. If host country de jure tariff cuts lower the costs of importing inputs used in the production of exports shipped to the US, there may be an indirect effect of host country tariffs on exports to the United States. To account for this, in unreported models we include as a control variable the value of affiliate intermediate inputs imported from the US (as well as the interaction of this variable and firm size), and our results are unchanged. These results are available upon request.

Figure B.1: *PTAs and US MNC Affiliate Sales to the United States, 1989–2009. Instrumental Variables*



Marginal effects (and 95% confidence intervals) of US PTA cuts (instrumented) based on results from Column 3 of Table 4.

## B.2 Alternative IV Strategy: Other PTA Country Cuts

Our second IV strategy follows Cheng (2012). In particular, to instrument for US PTA cuts, we use tariff cuts implemented by other countries that form PTAs with the same US PTA partner. For instance, we use tariff cuts implemented by Canada as a result of its PTA with Costa Rica to instrument for tariff cuts implemented by the United States in its PTA with Costa Rica. The intuition is that the United States tries to negotiate the same (preferential) tariff deal agreed by other countries that compete in the same markets in order to level the playing field with potential competitors. We include PTAs negotiated either concurrently with or prior to the US PTAs.<sup>64</sup> We label the instrument *Competitor Cut*. To further strengthen our identification strategy, and in line with our first IV analysis, we interact *Competitor Cut* with a measure of export product similarity between the United States and the partner countries in some estimates.

We are able to instrument only a subsample of the PTAs formed by the United States for three reasons. First, we are unable to instrument the PTAs that had been signed but were not in force by 2009, the last benchmark year in the BEA data. Second, we are unable to instrument Canada and Mexico, since we do not have data on PTAs formed before the North American Free Trade Agreement.<sup>65</sup> Third, we are unable to instrument tariff cuts for some PTAs, since data for some developing countries are not available (or are only very sparsely available) from WITS. We are left with seven instrumented PTAs: Australia, Chile, Costa Rica, Jordan, Morocco, Peru, and Singapore. For the full list of instrumented PTAs and their instruments, see Table C.7.

Since our key variable is the interaction between tariff cuts and productivity, we also need to instrument this interaction term. Following Wooldridge (2012), we use the interaction between *Competitor Cut* and *Size* to instrument for the interaction term in our main regressions. More formally, we estimate two stages. The first-stage models are:

$$\begin{aligned}
 PTA\ Tariff\ Cuts\ (US)_{ij,t-1} &= \beta_1 Comp\ Cut_{ij,t-1} \\
 &+ \beta_2 Size_{aij,t} + \beta_3 Comp\ Cut_{ij,t-1} \times Size_{aij,t} \\
 &+ \beta_4 C_{j,t-1} + \varphi_j + \varsigma_i + \tau_t + \eta_{ij,t}
 \end{aligned} \tag{4}$$

$$\begin{aligned}
 PTA\ Tariff\ Cuts\ (US)_{ij,t-1} \times Size_{aij,t} &= \beta_1 Comp\ Cut_{ij,t-1} + \beta_2 Size_{aij,t} \\
 &+ \beta_3 Comp\ Cut_{ij,t-1} \times Size_{aij,t} + \\
 &+ \beta_4 C_{j,t-1} + \varphi_j + \varsigma_i + \tau_t + \zeta_{aij,t}
 \end{aligned} \tag{5}$$

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<sup>64</sup>Before starting negotiations, trade partners establish a joint study group composed of high-level officials and experts from both sides. This group assesses the potential for enhanced trade relations and suggests tariff reductions in specific industries. When the joint study group ends its work, formal negotiations begin. In all the PTAs used as instruments, the establishment of joint study groups and informal and formal negotiations overlap with those of the PTAs instrumented. Also note that treaties can be amended between signature and ratification.

<sup>65</sup>Canada formed PTAs with Portugal and Spain in 1954, with Australia in 1960, and with New Zealand in 1980. None of these has been ratified by the WTO, and they are all inactive except the PTA with Australia. Mexico formed several PTAs with other Latin American countries in the 1980s, none of which has been ratified by the WTO; they are now all inactive.

The second-stage model is:

$$\begin{aligned}
Sales_{aij,t} = & \beta_1 \widehat{PTA\ Tariff\ Cuts\ (US)}_{ij,t-1} + \beta_2 Size_{aij,t} \\
& + \beta_3 \widehat{PTA\ Tariff\ Cuts\ (US)} \times Size_{aij,t} \\
& + \beta_4 C_{j,t-1} + \varphi_j + \varsigma_i + \tau_t + \epsilon_{aij,t}
\end{aligned} \tag{6}$$

Armed with our instruments, our identification strategy is sound if three conditions are satisfied. First, tariff cuts implemented by competitors should not impact affiliate sales to the United States. Since vertical FDI is affected almost exclusively by the level of tariffs with the home country, such a possibility seems remote. However, it might be the case that PTAs formed by US competitors increase the economic activities of the affiliates of firms from those competitors, which in turn raises the demand for labor and other inputs in the partner countries. Such increases in wages and input costs may also affect the sales of US affiliates operating in these host countries by increasing the costs of production. To mitigate this concern, we select countries that negotiated PTAs at about the same time the United States did, so that any effects on the labor market have no time to materialize. Table C.7 reports which PTAs we use to instrument *Competitor Cut*.

Second, our instruments have to be strong predictors of *PTA Tariff Cuts (US)*. The correlation between our instrument and *PTA Tariff Cuts (US)* is 0.7. All the diagnostics (reported in Table B.1) show that our instrument is strong, and that there are no concerns about under-identification.

Third, our instruments should not be correlated with (time-varying) industry characteristics. This might be the case if US MFN tariffs (pre-PTA) are correlated with the MFN tariffs of US competitors that form agreements with the same host markets. Indeed, the level of tariffs before the formation of a PTA may be a proxy for industry characteristics, which are in turn correlated with our outcome variable. Formally,  $Cov(MFN_{US}, MFN_{USCompetitor}) = 0$ . The correlation between US MFN and US competitors' MFN is very low:  $\rho = 0.1$ , as expected.

Table B.1 reports the results of the IV estimations. Instrumenting tariff cuts implemented under a PTA signed with the United States by the cuts implemented by the partner with third countries yields results in line with those presented in Table 2: as reflected in Column 2, reciprocal liberalization through PTAs leads to lower vertical sales by smaller affiliates and higher sales by larger ones. Importantly, both instruments are positive and statistically significant in the first stage (as reported in Table B.1). Regarding the diagnostics, (1) the Kleibergen-Paap Wald rk F statistic shows that our models are not weakly identified; (2) the Kleibergen-Paap rk LM statistic shows that our models are not under-identified; and (3) the Anderson-Rubin Wald test shows that the orthogonality conditions are valid. In sum, the results from our IV estimations (paired with the other analyses using panel techniques) support our main findings: large productive firms are the main beneficiaries of preferential liberalization.



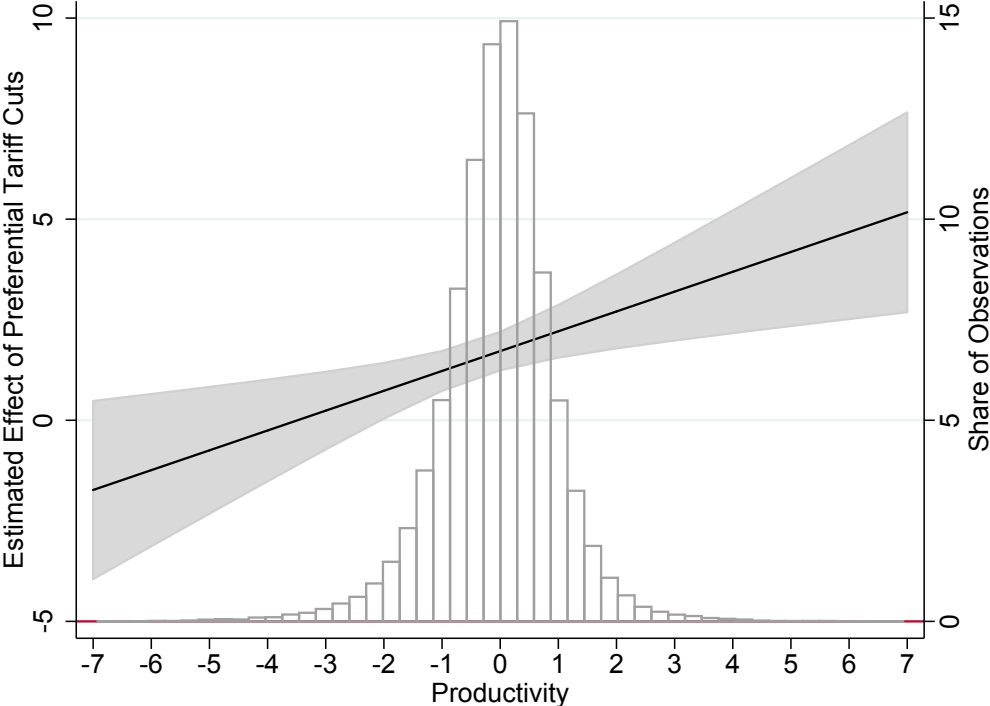
Table B.1: *Preferential Cuts and US MNC Affiliate Vertical Sales: Alternative IV Strategy*

	(1)	(2)	(3)
	First Stage	First Stage	Second Stage
<i>Dependent variable:</i>	US PTA Cuts	PTA Cuts (US) x ln Employment	ln Sales to US
LN GDP/CAPITA	0.055*** (0.012)	0.260*** (0.059)	0.323* (0.188)
GATT	-0.023*** (0.006)	-0.108*** (0.030)	0.278** (0.141)
WTO	-0.059*** (0.011)	-0.285*** (0.056)	0.126 (0.186)
BIT WITH US	-0.022*** (0.004)	-0.110*** (0.020)	0.144 (0.222)
CUMULATIVE PTA DEPTH	0.047*** (0.007)	0.232*** (0.034)	0.112* (0.061)
LN EMPLOYEES (AFFILIATE)	-0.001*** (0.000)	-0.004*** (0.001)	0.593*** (0.046)
<i>Instruments</i>			
COMPETITOR CUT	0.350*** (0.068)	0.244 (0.379)	
COMPETITOR CUT X LN EMPLOYEES	-0.010 (0.013)	0.245*** (0.086)	
<i>Instrumented</i>			
PTA TARIFF CUTS (US)			-10.698*** (2.821)
PTA TARIFF CUTS (US) X LN EMPLOYEES			2.100*** (0.646)
Observations	58716	58716	58716
Countries	150	150	150
R-squared			0.0676
Anderson-Rubin Wald test		15.49	
Kleibergen-Paap Wald rk F statistic		59.18	
Kleibergen-Paap rk LM statistic		39.30	

US competitors' tariff cuts instrument for US preferential cuts. Robust standard errors adjusted for clustering. All models include country, year, and industry fixed effects. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

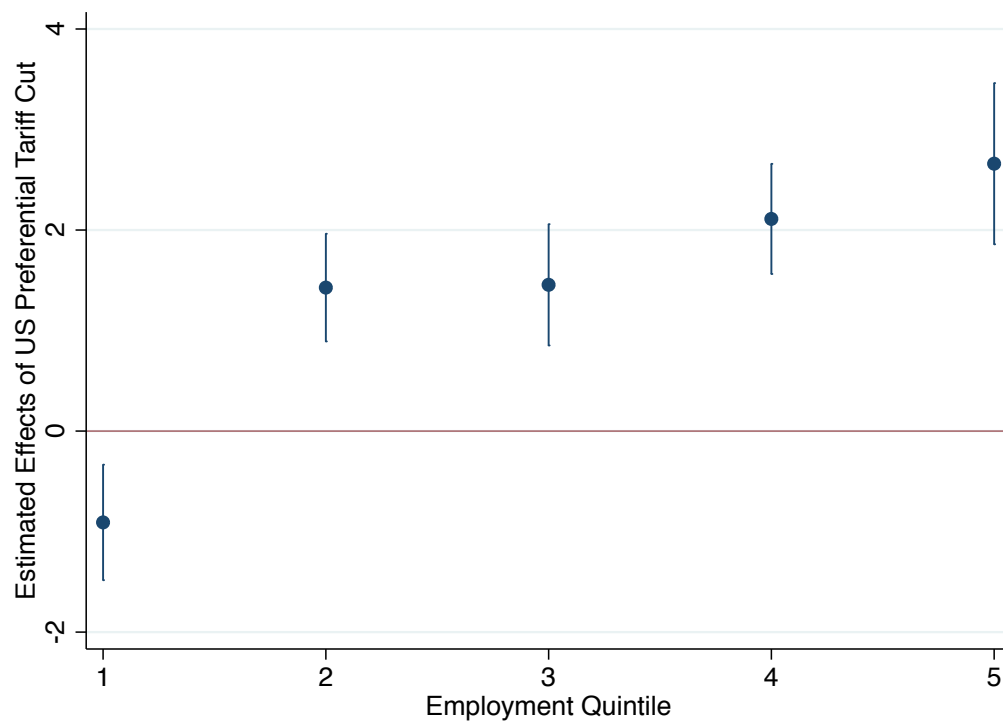
# Appendix C Additional Tables and Figures

Figure C.1: *PTAs and US MNC Affiliate Sales to the US (by productivity), 1989–2009*



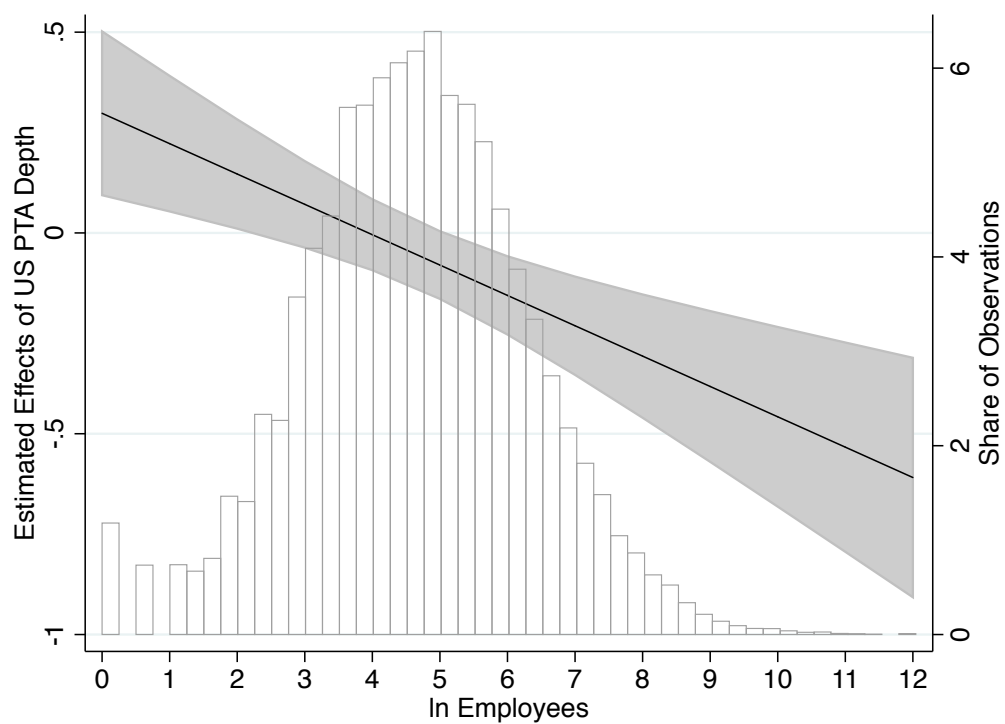
Marginal effects (and 95% confidence intervals) of US PTA cuts based on results from Column 4 in Table 2.

Figure C.2: *PTAs and US MNC Affiliate Sales to the US (by employment), 1989–2009*



Marginal effects (and 95% confidence intervals) of US PTA cuts. Interactions terms are between tariff cuts and dummy variables corresponding to employment quintiles.

Figure C.3: *PTA Depth and Sales to the US (affiliates in Industries with zero tariff cuts), 1989–2009*



Marginal effects (and 95% confidence intervals) of US PTA *Depth*. The sample is constrained to affiliates in industries without US preferential tariff cuts.

Table C.1: *Summary Statistics*

<i>Variable</i>	<i>Obs</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>Min</i>	<i>Max</i>
LN SALES TO U.S.	70561	2.3925	3.8448	-	-
LN LOCAL SALES	70561	9.2876	3.0964	-	-
LN EMPLOYEES	70561	4.7047	1.6593	-	-
PRODUCTIVITY	64699	-0.0503	0.9938	-	-
PTA TARIFF CUTS (U.S.)	18439	0.029	0.155	0	1
HOST COUNTRY DE JURE PTA CUTS FOR U.S.	17752	0.029	0.153	0	1
COMPETITOR TARIFF CUT	15917	0.034	0.171	0	1
LN GDP/CAPITA	677	8.206	1.594	4.451	11.851
GATT	677	0.254	0.436	0	1
WTO	677	0.505	0.500	0	1
BIT WITH U.S.	677	0.198	0.399	0	1
CUMULATIVE PTA DEPTH	677	1.461	0.927	0	3.204
PTA WITH U.S.	677	0.046	0.209	0	1
PTA DEPTH	677	0.135	0.620	0	3.400
GROWTH	674	3.536	4.371	-31.997	35.590
LN POPULATION	677	15.673	2.043	9.649	20.999
DEMOCRACY	574	2.693	6.874	-10	10
POLITICAL INSTABILITY	646	0.550	1.151	0	12.200
TRADE	648	85.674	51.452	12.816	416.246

Note: The minimum and maximum values of the firm-level variables are suppressed to avoid disclosure of confidential information.

Table C.2: *PTAs and Sales to the US (Additional Controls), 1989–2009*

	(1)	(2)	(3)	(4)	(5)	(6)
LN GDP/CAPITA	0.211 (0.174)	0.243 (0.167)	0.214 (0.174)	0.245 (0.167)	0.272 (0.179)	0.305* (0.178)
GROWTH	-0.009 (0.011)	-0.010 (0.011)	-0.009 (0.011)	-0.010 (0.011)	-0.011 (0.008)	-0.012 (0.009)
LN POPULATION	0.409 (0.539)	0.338 (0.502)	0.414 (0.540)	0.344 (0.504)	-0.297 (0.356)	-0.271 (0.355)
DEMOCRACY	-0.011 (0.015)	-0.013 (0.014)	-0.011 (0.015)	-0.013 (0.014)	-0.022* (0.012)	-0.029** (0.012)
POLITICAL INSTABILITY	-0.004 (0.015)	-0.008 (0.014)	-0.005 (0.014)	-0.009 (0.014)	-0.022 (0.018)	-0.026 (0.018)
TRADE	0.004 (0.002)	0.004 (0.002)	0.004 (0.002)	0.004 (0.002)	0.004** (0.002)	0.004** (0.002)
GATT	0.222 (0.169)	0.252 (0.158)	0.223 (0.169)	0.251 (0.158)	0.380** (0.177)	0.391** (0.177)
WTO	0.196 (0.176)	0.196 (0.179)	0.196 (0.176)	0.196 (0.179)	0.321 (0.202)	0.317 (0.203)
BIT WITH US	0.153 (0.132)	0.167 (0.136)	0.154 (0.132)	0.168 (0.136)	0.269 (0.171)	0.272 (0.172)
CUMULATIVE PTA DEPTH	0.150*** (0.053)	0.156*** (0.054)	0.151*** (0.053)	0.156*** (0.054)	0.005 (0.043)	0.010 (0.043)
LN EMPLOYEES (AFFILIATE)	0.619*** (0.024)	0.579*** (0.033)	0.619*** (0.024)	0.580*** (0.032)	0.620*** (0.048)	0.588*** (0.047)
PTA	-0.229** (0.098)	-1.307*** (0.247)				
PTA X LN EMPLOYEES		0.210*** (0.039)				
PTA DEPTH			-0.076** (0.031)	-0.450*** (0.096)		
PTA DEPTH X LN EMPLOYEES				0.073*** (0.016)		
PTA TARIFF CUTS (US)					2.143*** (0.235)	-1.819*** (0.552)
PTA TARIFF CUTS (US) X LN EMPLOYEES						0.715*** (0.103)
Constant	-10.296 (8.615)	-9.356 (8.124)	-10.394 (8.638)	-9.464 (8.152)	-0.241 (5.464)	-0.706 (5.471)
Observations	65405	65405	65405	65405	65405	65405
Countries	133	133	133	133	133	133
R-squared	0.120	0.122	0.120	0.122	0.128	0.131
Log-likelihood	-170589.3	-170537.8	-170589.2	-170540.6	-170326.5	-170205.6

The dependent variable is the log of total affiliate sales to the US based on affiliate-level data from the BEA. Robust standard errors adjusted for clustering. All models include country, year, and industry fixed effects. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ .

Table C.3: *PTAs and Total Affiliates with Sales to the US, 1989–2009*

	(1)	(2)	(3)
LN GDP/CAPITA	0.921*** (0.336)	0.921*** (0.336)	0.899** (0.360)
GATT	0.608*** (0.213)	0.608*** (0.213)	0.625*** (0.225)
WTO	0.212 (0.231)	0.212 (0.231)	0.252 (0.244)
BIT WITH US	0.239* (0.139)	0.239* (0.139)	0.255 (0.157)
CUMULATIVE PTA DEPTH	0.130** (0.058)	0.130** (0.057)	0.041 (0.071)
PTA WITH US	-0.137 (0.118)		
PTA DEPTH		-0.044 (0.037)	
PTA TARIFF CUTS (US)			1.277* (0.730)
Constant	-7.364*** (2.542)	-7.365*** (2.543)	-7.159*** (2.715)
Observations	19377	19377	19377
Countries	165	165	165
R-squared	0.238	0.238	0.241

The dependent variable is the total number of affiliates with sales to the US based on affiliate-level data from the BEA. Robust standard errors adjusted for clustering. All models include country, year, and industry fixed effects. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ .

Table C.4: *PTAs and Sales to the US (MNC Level), 1989–2009*

	(1)	(2)
LN GDP/CAPITA	0.231 (0.225)	0.271 (0.320)
GATT	0.329** (0.163)	0.405* (0.216)
WTO	0.294 (0.220)	0.320 (0.257)
BIT WITH US	0.428* (0.220)	0.170 (0.241)
CUMULATIVE PTA DEPTH	-0.067 (0.049)	-0.042 (0.058)
PTA TARIFF CUTS (US)	-1.172** (0.508)	2.558*** (0.238)
LN EMPLOYEES	0.908*** (0.044)	
PTA TARIFF CUTS (US) x LN EMPLOYEES	0.615*** (0.101)	
AVG. PRODUCTIVITY		0.549*** (0.053)
PTA TARIFF CUTS (US) x AVG. PRODUCTIVITY		0.479*** (0.171)
Constant	-4.204** (2.104)	-1.121 (3.058)
Observations	49342	46459
R-squared	0.260	0.151

The dependent variable is total affiliate sales to the US for each MNC-country-year observation, based affiliate-level data from the BEA. Employees are summed to the MNC-country-year level. Productivity is the average of affiliate productivity for each MNC-country-year. Robust standard errors adjusted for clustering. All models include country, year, and industry fixed effects. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ .



Table C.5: *PTAs and US MNC Affiliate Sales to the Host Market, 1989-2009*

	(1)	(2)	(3)	(4)	(5)
LN GDP/CAPITA	0.668*** (0.184)	0.670*** (0.184)	0.869*** (0.175)	0.869*** (0.174)	0.829*** (0.167)
GATT	0.353*** (0.146)	0.352*** (0.146)	0.360*** (0.146)	0.360*** (0.145)	0.352*** (0.141)
WTO	0.156 (0.182)	0.151 (0.183)	0.086 (0.192)	0.086 (0.192)	0.092 (0.192)
BIT WITH US	0.053 (0.183)	0.051 (0.183)	0.137 (0.185)	0.137 (0.185)	0.116 (0.185)
CUMULATIVE PTA DEPTH	-0.073** (0.036)	-0.066* (0.037)	-0.081** (0.036)	-0.082** (0.036)	-0.061* (0.036)
LN EMPLOYEES (AFFILIATE)	0.654*** (0.027)	0.654*** (0.027)	0.670*** (0.026)	0.670*** (0.027)	0.670*** (0.026)
PTA WITH US	0.356*** (0.129)				
PTA DEPTH		0.106*** (0.040)			
PTA TARIFF CUTS (HOST COUNTRY)			-0.024 (0.190)	-0.078 (0.830)	1.288 (0.833)
PTA TARIFF CUTS (HOST COUNTRY) X LN EMPLOYEES				0.010 (0.172)	
PTA TARIFF CUTS (US)					-1.221 (0.800)
Constant	-1.786 (3.001)	-1.808 (2.999)	-3.389 (2.834)	-3.391 (2.825)	-3.051 (2.691)
Observations	70561	70561	63899	63899	63899
Countries	164	164	164	164	164
R-squared	0.178	0.178	0.184	0.184	0.184
Log-likelihood	-168473.0	-168474.9	-152011.1	-152011.1	-151997.6

The dependent variable is the log of total affiliate sales to the host country based on affiliate-level data from the BEA. Robust standard errors adjusted for clustering. All models include country, year, and industry fixed effects. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ .

Table C.6: *Design of US PTAs*

<b>PTA</b>	<b>Year</b>	<b>Services</b>	<b>Investment</b>	<b>IPRs</b>	<b>Competition</b>	<b>Government Procurement</b>	<b>Depth</b>	<b>Enforcement</b>
US-Australia	2004	Yes	Yes	Yes	Yes	Yes	3.19	4.25
US-Bahrain	2004	Yes	Yes	Yes	No	Yes	3.01	4.50
US-CAFTA-DR	2004	Yes	Yes	Yes	No	Yes	3.13	4.50
US-Canada	1988	Yes	Yes	No	No	Yes	1.90	4.00
US-Canada	1992	Yes	Yes	Yes	Yes	Yes	2.74	4.25
US-Chile	2003	Yes	Yes	Yes	No	Yes	2.90	4.50
US-Colombia	2006	Yes	Yes	Yes	Yes	Yes	3.40	4.50
US-Jordan	2000	Yes	Yes	Yes	No	Yes	2.59	4.50
US-Korea	2007	Yes	Yes	Yes	Yes	Yes	3.26	4.25
US-Mexico	1992	Yes	Yes	Yes	Yes	Yes	2.74	4.25
US-Morocco	2004	Yes	Yes	Yes	No	Yes	3.19	4.50
US-Oman	2006	Yes	Yes	Yes	No	Yes	3.19	4.50
US-Panama	2007	Yes	Yes	Yes	No	Yes	3.19	4.50
US-Peru	2006	Yes	Yes	Yes	Yes	Yes	3.33	4.50
US-Singapore	2003	Yes	Yes	Yes	Yes	Yes	3.01	4.25
US-Vietnam	2000	Yes	Yes	Yes	No	No	2.69	0.50

Note: “Yes” means that a specific section regulating each trade-related issue is included in the treaty. Depth is built using a latent trait analysis of 48 dummy variables related to trade-related issues (Dür, Baccini, and Elsig, 2014). Data on enforcement come from Allee and Elsig (2015).

Table C.7: *PTAs Used to Build our Alternative Instrument*

PTA Instrumented	Signature	Ratification	PTA used as instrument	Signature	Ratification
US-Australia	18 May 2004	1 January 2005	Thailand-Australia	5 July 2004	1 January 2005
US-Chile	6 June 2003	1 January 2004	South Korea-Chile	15 February 2003	1 April 2004
US-Costa Rica	5 August 2004	1 January 2009	Canada-Costa Rica	23 April 2001	1 November 2002
US-Jordan	24 October 2000	17 December 2001	EU-Jordan	24 November 1997	1 May 2002
US-Morocco	15 June 2004	1 January 2006	EU-Morocco	26 February 1996	1 March 2000
US-Peru	12 April 2006**	1 February 2009	Canada-Peru	29 May 2008	1 August 2009
US-Singapore	6 May 2003	1 January 2004	Japan-Singapore	13 January 2002	30 November 2002

\* Amended on December 3, 2010.

\*\* Ratified with amendments on February 1, 2009.