Online Appendix for:

From Final Goods to Inputs: the Protectionist Effect of Rules of Origin

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This online appendix is a companion to the article and it is organized as follows. In Section A we explain the procedure we use to match goods in our dataset on rules of origin (RoO) with the Input-Ouput (IO) tables provided by the BEA. In Section B we provide tables and figures to which we refer in the main text.

A   Matching the RoO dataset with Input-Output tables

In this section, we describe the procedure we use to construct disaggregated IO tables based on the HS classification. This allows us to verify whether a rule RoO_{ij} applies to vertically related goods, i.e. whether good j is an input in the production of good i.

In our empirical analysis, goods are defined at the 6-digit level of the Harmonised System (HS) product classification. This is a higher level of disaggregation than the 6-digit classification used by the BEA to construct the IO tables (the number of goods present in the IO and HS 6-digit classification are 458 and 5,112, respectively). This implies that, after using the concordance table provided by the BEA, we end up with a mapping between IO 6-digit and HS 6-digit goods that

is not one-to-one.[1] In general, IO 6-digit goods are associated to more than one HS 6-digit goods. On average, each IO 6-digit is associated to fourteen HS 6-digit goods.

To illustrate the basic idea behind our procedure, consider the case in which, based on the concordance table of the BEA, IO good "a" corresponds to HS6 goods "1" and "2", and that IO good "b" corresponds to HS-6 goods "3" and "4". Imagine that the IO good "a" uses "b" as an input (i.e. the associated direct requirement coefficient $dr_{a,b} > 0$). In this hypothetical example, imagine that the BEA concordance table looks like Table I below:

Table I

Hypothetical concordance table between IO-6 and HS-6

IO	HS92
a	1
a	2
b	3
b	4

and that the IO table looks as follows:

Table II

Hypothetical direct requirement matrix in IO classification

Input	Output	DR coefficient
a	a	0.01
a	b	0.02
b	b	0.03
b	a	0.04

Using these two tables, we can construct a direct requirement matrix in , by assuming that each HS-6 good associated to a given IO-6$_a$ in the concordance table is vertically related to all HS-6 goods associated to any other IO-6$_b$:

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[1]For the trade data, we use the 1988/1992 HS classification. For IO data, we use the direct requirement matrix provided in the BEA 1997 Benchmark Input-Output Accounts. This table is based on the BEA own product classification (which is very similar, but not exactly the same as NAICS-97), and can be converted to HS-6 by using only one conversion table.

Table III

Hypothetical direct requirement matrix in HS-6

Input	Output	DR coefficient
1	1	0.01
2	1	0.01
1	2	0.01
2	2	0.01
3	1	0.04
4	1	0.04
3	2	0.04
4	2	0.04
3	3	0.03
4	3	0.03
3	4	0.03
4	4	0.03
1	3	0.02
2	3	0.02
1	4	0.02
2	4	0.02

There are also a few instances in which a HS-6 good is associated to more than one IO product, implying that we would end up with more than one dr_{ij} coefficient for each HS-6 input-output combination. In these cases, we take the average across the coefficients, so that we can have a unique dr_{ij} for each input-output pair at the HS-6 level. The requirement coefficients derived using the procedure described above are the ones we use in some of regressions discussed in Section **??** of the main text.

There are other limitations regarding the use of the concordance table. In particular, some IO products are present in the input-output tables, but not in the concordance table (there are 458 unique values in the former, but only 352 in the latter). Some examples are "Cookie and cracker manufacturing (IO code 311821)" and "Roasted nuts and peanut butter manufacturing (IO code 311911)". This implies that our procedure would mechanically eliminate some RoO simply because the concordance table does not include all IO goods potentially associated to HS 6-digit products.

B Additional tables and figures

Table IV
Countries included in our empirical analysis

Africa	Europe	Asia	America	Oceania
Angola•	Albania•	Bahrain•	Antigua and Barbuda	Australia
Benin	Armenia•	Bangladesh	Barbados	Brunei
Botswana	Bulgaria•	Cambodia•	Belize	Fiji•
Burkina Faso	Check Republic	China•	Canada*	New Zealand
Burundi	Croatia•	Egypt	Chile*	Papua New Guinea•
Cameroon	Cyprus	Hong Kong, China•	Costa Rica	Solomon Islands•
Cape Verde•	Estonia•	India	Dominica•	Tonga•
Central African Rep.	EU (2003) countries*	Indonesia	Dominican Rep.	
Chad	Georgia•	Israel*	El Salvador	
Congo, Dem. Rep•	Hungary	Japan	Grenada•	
Congo, Rep.	Latvia•	Jordan•	Guyana	
Cote d'Ivoire	Lithuania•	Korea, Rep.	Haiti	
Djibouti•	Macedonia•	Kuwait	Honduras•	
Gabon	Malta	Kyrgyz Republic•	Jamaica	
Gambia	Moldova•	Malaysia	Netherlands Antilles•	
Ghana	Poland	Maldives	Nicaragua	
Guinea•	Romania	Mongolia•	Suriname	
Guinea-Bissau•	Slovak Republic•	Myanmar	Saint Kitts and Nevis	
Lesotho	Slovenia•	Nepal•	St. Lucia•	
Kenya	Turkey	Oman•	St. Vincent and the Grenadines•	
Macao	Tunisia	Pakistan	Trinidad and Tobago•	
Madagascar	Ukraine•	Philippines	United States*	
Malawi		Qatar•		
Mali•		Saudi Arabia		
Mauritania		Singapore		
Mauritus		Sri Lanka		
Morocco		Taiwan, China•		
Mozambique•		Thailand		
Namibia•		United Arab Emirates•		
Niger		Vietnam•		
Nigeria				
Senegal				
Sierra Leone				
South Africa				
Swaziland•				
Tanzania				
Togo				
Uganda				
Zambia				
Zimbabwe				

This table lists all the countries included in our empirical analysis. These are countries (i) from which Mexico reported positive imports in 1991 and/or 2003 and (ii) with which Mexico did not have a free trade agreement (FTA) during our sample period. A few exceptions, denoted by *, are those countries with which Mexico had a FTA in force in 2003 (and for which WITS provides data on the preferential tariffs applied by Mexico to its FTA partners). These are Mexico's NAFTA partners (always included in our regressions) as well as Chile, EU countries, and Israel (included in the robustness checks of Tables XVII and XVIII in this appendix). The countries denoted by • are those that were not members of the GATT/WTO in 1991 and 2003 (excluded in the robustness checks of Tables XV and XVI in this appendix).

Table V
Descriptive statistics on NAFTA RoO

HS	Panel A: RoO$_i^1$				Panel B: RoO$_i^2$				Panel C: RoO$_i^3$			
	mean	min	max	percent.	mean	min	max	percent.	mean	min	max	percent.
01-05:	57.56	15	87	100	17.98	0	87	38.34	17.98	0	87	38.34
06-15: Vegetables	39.91	0	56	99.06	23.47	0	56	57.19	23.48	0	56	57.19
16-24: Foodstuffs	24.22	0	62	98.89	18.97	0	62	77.22	18.97	0	62	77.22
25-27: Mineral Products	54.34	0	74	98.82	13.62	0	74	27.81	13.62	0	74	27.81
28-38: Chemicals	559.04	0	751	99.73	449.84	0	751	76.89	2.02	0	296	9.30
39-40: Plastics/Rubbers	20.62	1	66	100	14.90	0	66	84.66	10.49	0	34	84.66
41-43: Raw Hides. Skins. Leathers	26.85	3	123	100	24.28	0	123	87.84	24.28	0	123	87.84
44-49: Wood Products	39.04	0	109	99.11	28.26	0	109	60	28.26	0	109	60
50-63: Textiles	278.40	3	467	100	274.85	0	467	95.43	274.85	0	467	95.43
64-67: Footwear/Headgear	34.15	1	318	100	33.64	0	318	94.55	33.64	0	318	94.55
68-71: Stone/Glass	37.33	0	57	99.47	27.55	0	57	75.53	27.55	0	57	75.53
72-83: Metals	40.11	0	155	93.79	33.35	0	155	83.45	33.13	0	155	83.45
84-85: Machinery/Electrical	8.95	0	36	99.34	5.24	0	36	63.78	4.69	0	36	62.47
86-89: Transportation	9.54	0	76	97.73	8.30	0	76	77.27	6.83	0	61	76.52
90-97: Miscellaneous	20.56	0	236	94.26	16.20	0	236	69.97	14.58	0	236	69.19
All sector categories	148.92	0	751	98.44	124.89	0	751	73.58	57.27	0	467	63.15
Total number of RoO	746,393				625,967				287,016			

The table reports descriptive statistics on the RoO that apply to final goods i. For each sector, we report the mean, minimum, and maximum of the number of RoO_i^x, as well as the percentage of final goods subject to the different types of rules. RoO_i^x is the number of intermediate goods j restricted by NAFTA RoO on final good i. When $x = 1$, the treatment includes all final goods i. When $x = 2$, the treatment excludes intermediate goods j associated to final goods i for which *Preference Margin NAFTA$_i$* = 0. When $x = 3$, the treatment further excludes final goods i associated to alternative value added rules.

Table VI

Table VI

NAFTA RoO and change in Mexican imports, triple-difference results,
collapsing the dependent variable at the product level (all rules)

	(1)	(2)	(3)
RoO_j^1	-0.051		
	(0.058)		
RoO_j^2		-0.047	
		(0.053)	
RoO_j^3			-0.155
			(0.042)
$\Delta Preferential\ Tariff_j$	-0.289	-0.279	-0.136
	(0.131)	(0.134)	(0.113)
Observations	3716	3716	3716
R-squared	0.006	0.006	0.014

This table shows the results of the estimation of equation (2). The dependent variable is $\Delta Imports_{j,NON-NAFTA} - \Delta Imports_{j,NAFTA}$, the difference between the log change in Mexican imports of good j (at the HS6 level) from non-NAFTA countries between 1991 and 2003 and the corresponding change of imports from NAFTA countries. The dependent variable includes goods for which Mexican imports were positive in 1991 and 2003. RoO_j^x is the number (in logs) of final goods i for which there is a NAFTA RoO restricting the sourcing of good j. When $x = 1$, the treatment includes all final goods i. When $x = 2$, the treatment excludes rules associated to final goods i for which *Preference Margin NAFTA$_i$* $= 0$. When $x = 3$, the treatment further excludes change of tariff classification rules that are combined with alternative value added rules. $\Delta Preferential\ Tariff_j$ is difference between the log change in the tariff applied by Mexico to imports of good j from non-NAFTA country o and the log change in the tariff applied by Mexico to imports of good j from NAFTA partners. Standard errors in parenthesis clustered by industry (at the HS2 level).

Table VII

**NAFTA RoO and change in Mexican imports, triple-difference results,
collapsing the dependent variable at the product level
(excluding rules for which $dr_{i,j} = 0$)**

	(1)	(2)	(3)
RoO_j^1	-0.057		
	(0.050)		
RoO_j^2		-0.055	
		(0.048)	
RoO_j^3			-0.163
			(0.035)
$\Delta Preferential\ Tariff_j$	-0.287	-0.277	-0.140
	(0.131)	(0.134)	(0.114)
Observations	3716	3716	3716
R-squared	0.007	0.007	0.016

This table shows the results of the estimation of equation (2). The dependent variable is $\Delta Imports_{j,NON-NAFTA} - \Delta Imports_{j,NAFTA}$, the difference between the log change in Mexican imports of good j (at the HS6 level) from non-NAFTA countries between 1991 and 2003 and the corresponding change of imports from NAFTA countries. The dependent variable includes goods for which Mexican imports were positive in 1991 and 2003. The variable RoO_j^x is the number (in logs) of rules $RoO_{i,j}$, excluding those for which $dr_{i,j} = 0$. When $x = 1$, the treatment includes all final goods i. When $x = 2$, the treatment excludes rules associated to final goods i for which *Preference Margin NAFTA$_i$* = 0. When $x = 3$, the treatment further excludes change of tariff classification rules that are combined with alternative value added rules. $\Delta Preferential\ Tariff_j$ is difference between the log change in the tariff applied by Mexico to imports of good j from non-NAFTA country o and the log change in the tariff applied by Mexico to imports of good j from NAFTA partners. Standard errors in parenthesis clustered by industry (at the HS2 level).

Table VIII

Table VIII

NAFTA RoO and change in Mexican imports, triple-difference results, excluding zero imports in the construction of the dependent variable (all rules)

	(1)	(2)	(3)
RoO_j^1	-0.235		
	(0.038)		
RoO_j^2		-0.224	
		(0.036)	
RoO_j^3			-0.234
			(0.040)
$\Delta Preferential\ Tariff_j$	-0.326	-0.288	-0.179
	(0.095)	(0.094)	(0.093)
Country of origin FE	Yes	Yes	Yes
N	6,968	6,968	6,968
R-squared	0.190	0.190	0.188

This table shows the results of the estimation of equation (2). The dependent variable is $\Delta Imports_{j,non-NAFTAo} - \Delta Imports_{j,NAFTA}$, the difference between the log change in Mexican imports of good j (at the HS6 level) from non-NAFTA country o between 1991 and 2003 and the corresponding change of imports from NAFTA partners. It includes goods for which Mexican imports were positive in 1991 and 2003. RoO_j^x is the number (in logs) of final goods i for which there is a NAFTA RoO restricting the sourcing of good j. RoO_j^x is the number (in logs) of final goods i for which there is a NAFTA RoO restricting the sourcing of good j. When $x = 1$, the treatment includes all final goods i. When $x = 2$, the treatment excludes rules associated to final goods i for which $Preference\ Margin$ $NAFTA_i = 0$. When $x = 3$, the treatment further excludes change of tariff classification rules that are combined with alternative value added rules. $\Delta Preferential\ Tariff_j$ is difference between the log change in the tariff applied by Mexico to imports of good j from non-NAFTA countries and the log change in the tariff applied by Mexico to imports of good j from NAFTA partners. Standard errors in parenthesis clustered by industry (at the HS2 level).

Table IX

NAFTA RoO and change in Mexican imports, triple-difference results, excluding zero imports in the construction of the dependent variable (excluding rules for which $dr_{i,j} = 0$)

	(1)	(2)	(3)
RoO_j^1	-0.224		
	(0.052)		
RoO_j^2		-0.217	
		(0.049)	
RoO_j^3			-0.246
			(0.050)
$\Delta Preferential\ Tariff_j$	-0.329	-0.302	-0.188
	(0.113)	(0.111)	(0.106)
Country of origin FE	Yes	Yes	Yes
N	6,968	6,968	6,968
R-squared	0.191	0.191	0.191

This table shows the results of the estimation of equation (2). The dependent variable is $\Delta Imports_{j,non-NAFTAo} - \Delta Imports_{j,NAFTA}$, the difference between the log change in Mexican imports of good j (at the HS6 level) from non-NAFTA country o between 1991 and 2003 and the corresponding change of imports from NAFTA partners. It includes goods for which Mexican imports were positive in 1991 and 2003. RoO_j^x is the number (in logs) of final goods i for which there is a NAFTA RoO restricting the sourcing of good j. RoO_j^x is the number (in logs) of final goods i for which there is a NAFTA RoO restricting the sourcing of good j. When $x = 1$, the treatment includes all final goods i. When $x = 2$, the treatment excludes rules associated to final goods i for which *Preference Margin* $NAFTA_i = 0$. When $x = 3$, the treatment further excludes change of tariff classification rules that are combined with alternative value added rules. $\Delta Preferential\ Tariff_j$ is difference between the log change in the tariff applied by Mexico to imports of good j from non-NAFTA countries and the log change in the tariff applied by Mexico to imports of good j from NAFTA partners. Standard errors in parenthesis clustered by industry (at the HS2 level).

Table X

NAFTA RoO and change in Mexican imports, triple-difference results, alternative methodology to construct the dependent variable (all rules)

	(1)	(2)	(3)
RoO_j^1	-0.114		
	(0.051)		
RoO_j^2		-0.113	
		(0.047)	
RoO_j^3			-0.149
			(0.042)
$\Delta Preferential\ Tariff_j$	-0.270	-0.246	-0.159
	(0.129)	(0.126)	(0.119)
Country of origin FE	Yes	Yes	Yes
N	28,053	28,053	28,053
R-squared	0.162	0.162	0.165

This table shows the results of the estimation of equation (2). The dependent variable is $\Delta Imports_{j,non-NAFTAo} - \Delta Imports_{j,NAFTA}$ is the difference between the growth rate of Mexican imports of good j (at the HS6 level) from non-NAFTA country o between 1991 and 2003 and the corresponding growth rates of imports from NAFTA partners. The growth rates are constructed using the inverse hyperbolic sine transformation. The dependent variable includes goods for which Mexican imports were positive in 1991 and/or 2003. RoO_j^x is the number (in logs) of final goods i for which there is a NAFTA RoO restricting the sourcing of good j. RoO_j^x is the number (in logs) of final goods i for which there is a NAFTA RoO restricting the sourcing of good j. When $x = 1$, the treatment includes all final goods i. When $x = 2$, the treatment excludes rules associated to final goods i for which *Preference Margin NAFTA*$_i$ = 0. When $x = 3$, the treatment further excludes change of tariff classification rules that are combined with alternative value added rules. $\Delta Preferential$ *Tariff*$_j$ is difference between the log change in the tariff applied by Mexico to imports of good j from non-NAFTA countries and the log change in the tariff applied by Mexico to imports of good j from NAFTA partners. Standard errors in parenthesis clustered by industry (at the HS2 level).

Table XI

NAFTA RoO and change in Mexican imports, triple-difference results, alternative methodology to construct the dependent variable (excluding rules for which $dr_{i,j} = 0$)

	(1)	(2)	(3)
RoO_j^1	-0.112		
	(0.046)		
RoO_j^2		-0.113	
		(0.043)	
RoO_j^3			-0.156
			(0.038)
$\Delta Preferential\ Tariff_j$	-0.268	-0.248	-0.161
	(0.130)	(0.127)	(0.120)
Country of origin FE	Yes	Yes	Yes
N	28,053	28,053	28,053
R-squared	0.162	0.163	0.166

This table shows the results of the estimation of equation (2). The dependent variable is $\Delta Imports_{j,non-NAFTAo} - \Delta Imports_{j,NAFTA}$ is the difference between the growth rate of Mexican imports of good j (at the HS6 level) from non-NAFTA country o between 1991 and 2003 and the corresponding growth rates of imports from NAFTA partners. The growth rates are constructed using the inverse hyperbolic sine transformation. The dependent variable includes goods for which Mexican imports were positive in 1991 and/or 2003. RoO_j^x is the number (in logs) of final goods i for which there is a NAFTA RoO restricting the sourcing of good j. RoO_j^x is the number (in logs) of final goods i for which there is a NAFTA RoO restricting the sourcing of good j. When $x = 1$, the treatment includes all final goods i. When $x = 2$, the treatment excludes rules associated to final goods i for which *Preference Margin NAFTA$_i$ = 0*. When $x = 3$, the treatment further excludes change of tariff classification rules that are combined with alternative value added rules. $\Delta Preferential$ *Tariff$_j$* is difference between the log change in the tariff applied by Mexico to imports of good j from non-NAFTA countries and the log change in the tariff applied by Mexico to imports of good j from NAFTA partners. Standard errors in parenthesis clustered by industry (at the HS2 level).

Table XII

NAFTA RoO and change in Mexican imports, triple-difference results
(weighting rules by $dr_{i,j}$)

	(1)	(2)	(3)
RoO_j^1	-0.116		
	(0.051)		
RoO_j^2		-0.156	
		(0.093)	
RoO_j^3			-0.262
			(0.085)
$\Delta Preferential\ Tariff_j$	-0.276	-0.293	-0.210
	(0.152)	(0.150)	(0.134)
Country of origin FE	Yes	Yes	Yes
N	28,053	28,053	28,053
R-squared	0.151	0.150	0.154

This table shows the results of the estimation of equation (2). The dependent variable is $\Delta Imports_{j,non-NAFTAo} - \Delta Imports_{j,NAFTA}$, the difference between the log change in Mexican imports of good j (at the HS6 level) from non-NAFTA country o between 1991 and 2003 and the corresponding change of imports from NAFTA partners. It includes goods for which Mexican imports were positive in 1991 and/or 2003. The variable RoO_j^x is the number (in logs) of rules $RoO_{i,j}$, weighted by the $dr_{i,j}$ coefficients. When $x = 1$, the treatment includes all final goods i. When $x = 2$, the treatment excludes rules associated to final goods i for which *Preference Margin NAFTA$_i$* = 0. When $x = 3$, the treatment further excludes change of tariff classification rules that are combined with alternative value added rules. $\Delta Preferential\ Tariff_j$ is difference between the log change in the tariff applied by Mexico to imports of good j from non-NAFTA countries and the log change in the tariff applied by Mexico to imports of good j from NAFTA partners. Standard errors in parenthesis clustered by industry (at the HS2 level).

Table XIII

Table XIII

NAFTA RoO and change in Mexican imports, triple-difference results, including Mexico's FTA partners (all rules)

	(1)	(2)	(3)
RoO_j^1	-0.066		
	(0.051)		
RoO_j^2		-0.072	
		(0.051)	
RoO_j^3			-0.148
			(0.042)
$\Delta Preferential\ Tariff_{j,o}$	-0.171	-0.153	-0.036
	(0.149)	(0.144)	(0.143)
Country of origin FE	Yes	Yes	Yes
N	50,216	50,216	50,216
R-squared	0.118	0.118	0.122

This table shows the results of the estimation of equation (2). The dependent variable is $\Delta Imports_{j,non-NAFTAo} - \Delta Imports_{j,NAFTA}$, the difference between the log change in Mexican imports of good j (at the HS6 level) from non-NAFTA country o between 1991 and 2003 and the corresponding change of imports from NAFTA partners. It includes goods for which Mexican imports were positive in 1991 and/or 2003. RoO_j^x is the number (in logs) of final goods i for which there is a NAFTA RoO restricting the sourcing of good j. RoO_j^x is the number (in logs) of final goods i for which there is a NAFTA RoO restricting the sourcing of good j. When $x = 1$, the treatment includes all final goods i. When $x = 2$, the treatment excludes rules associated to final goods i for which *Preference Margin*$_{i,NAFTA} = 0$. When $x = 3$, the treatment further excludes change of tariff classification rules that are combined with alternative value added rules. $\Delta Preferential\ Tariff_{j,o}$ is difference between the log change in the tariff applied by Mexico to imports of good j from non-NAFTA country o and the log change in the tariff applied by Mexico to imports of good j from NAFTA partners. Standard errors in parenthesis clustered by industry (at the HS2 level).

Table XIV

NAFTA RoO and change in Mexican imports, triple-difference results, including Mexico's FTA partners (excluding rules for which $dr_{i,j} = 0$)

	(1)	(2)	(3)
RoO_j^1	-0.082		
	(0.045)		
RoO_j^2		-0.089	
		(0.045)	
RoO_j^3			-0.157
			(0.039)
$\Delta Preferential\ Tariff_{j,o}$	-0.164	-0.145	-0.038
	(0.153)	(0.148)	(0.147)
Country of origin FE	Yes	Yes	Yes
N	50,216	50,216	50,216
R-squared	0.119	0.120	0.124

This table shows the results of the estimation of equation (2). The dependent variable is $\Delta Imports_{j,non-NAFTAo} - \Delta Imports_{j,NAFTA}$, the difference between the log change in Mexican imports of good j (at the HS6 level) from non-NAFTA country o between 1991 and 2003 and the corresponding change of imports from NAFTA partners. It includes goods for which Mexican imports were positive in 1991 and/or 2003. RoO_j^x is the number (in logs) of final goods i for which there is a NAFTA RoO restricting the sourcing of good j. RoO_j^x is the number (in logs) of final goods i for which there is a NAFTA RoO restricting the sourcing of good j. When $x = 1$, the treatment includes all final goods i. When $x = 2$, the treatment excludes rules associated to final goods i for which *Preference Margin* $NAFTA_i = 0$. When $x = 3$, the treatment further excludes change of tariff classification rules that are combined with alternative value added rules. $\Delta Preferential\ Tariff_{j,o}$ is difference between the log change in the tariff applied by Mexico to imports of good j from non-NAFTA country o and the log change in the tariff applied by Mexico to imports of good j from NAFTA partners. Standard errors in parenthesis clustered by industry (at the HS2 level).

Table XV

NAFTA RoO and change in Mexican imports, triple-difference results, including GATT/WTO members only (all rules)

	(1)	(2)	(3)
RoO_j^1	-0.104		
	(0.058)		
RoO_j^2		-0.109	
		(0.055)	
RoO_j^3			-0.153
			(0.053)
$\Delta Preferential\ Tariff_j$	-0.220	-0.195	-0.100
	(0.160)	(0.158)	(0.153)
Country of origin FE	Yes	Yes	Yes
N	18,824	18,824	18,824
R-squared	0.091	0.091	0.094

This table shows the results of the estimation of equation (2). The dependent variable is $\Delta Imports_{j,non-NAFTAo} - \Delta Imports_{j,NAFTA}$, the difference between the log change in Mexican imports of good j (at the HS6 level) from non-NAFTA country o between 1991 and 2003 and the corresponding change of imports from NAFTA partners. It includes goods for which Mexican imports were positive in 1991 and/or 2003. RoO_j^x is the number (in logs) of final goods i for which there is a NAFTA RoO restricting the sourcing of good j. RoO_j^x is the number (in logs) of final goods i for which there is a NAFTA RoO restricting the sourcing of good j. When $x = 1$, the treatment includes all final goods i. When $x = 2$, the treatment excludes rules associated to final goods i for which *Preference Margin* $NAFTA_i = 0$. When $x = 3$, the treatment further excludes change of tariff classification rules that are combined with alternative value added rules. $\Delta Preferential\ Tariff_j$ is difference between the log change in the tariff applied by Mexico to imports of good j from non-NAFTA countries and the log change in the tariff applied by Mexico to imports of good j from NAFTA partners. Standard errors in parenthesis clustered by industry (at the HS2 level).

Table XVI

NAFTA RoO and change in Mexican imports, triple-difference results, including GATT/WTO members only (excluding rules for which $dr_{i,j} = 0$)

	(1)	(2)	(3)
RoO_j^1	-0.109		
	(0.055)		
RoO_j^2		-0.113	
		(0.053)	
RoO_j^3			-0.158
			(0.052)
$\Delta Preferential\ Tariff_j$	-0.216	-0.195	-0.105
	(0.162)	(0.159)	(0.154)
Country of origin FE	Yes	Yes	Yes
N	18,824	18,824	18,824
R-squared	0.092	0.092	0.095

This table shows the results of the estimation of equation (2). The dependent variable is $\Delta Imports_{j,non-NAFTAo} - \Delta Imports_{j,NAFTA}$, the difference between the log change in Mexican imports of good j (at the HS6 level) from non-NAFTA country o between 1991 and 2003 and the corresponding change of imports from NAFTA partners. It includes goods for which Mexican imports were positive in 1991 and/or 2003. RoO_j^x is the number (in logs) of final goods i for which there is a NAFTA RoO restricting the sourcing of good j. RoO_j^x is the number (in logs) of final goods i for which there is a NAFTA RoO restricting the sourcing of good j. When $x = 1$, the treatment includes all final goods i. When $x = 2$, the treatment excludes rules associated to final goods i for which *Preference Margin* $NAFTA_i = 0$. When $x = 3$, the treatment further excludes change of tariff classification rules that are combined with alternative value added rules. $\Delta Preferential\ Tariff_j$ is difference between the log change in the tariff applied by Mexico to imports of good j from non-NAFTA countries and the log change in the tariff applied by Mexico to imports of good j from NAFTA partners. Standard errors in parenthesis clustered by industry (at the HS2 level).

Table XVII

NAFTA RoO and change in Mexican imports, triple-difference results, instrumenting NAFTA rules with CUSFTA rules (all rules)

	(1)	(2)	(3)
$RoO\ NAFTA_j^1$	-0.110		
	(0.059)		
$RoO\ NAFTA_j^2$		-0.107	
		(0.055)	
$RoO\ NAFTA_j^3$			-0.174
			(0.050)
$\Delta Preferential\ Tariff_j$	-0.281	-0.261	-0.136
	(0.149)	(0.145)	(0.133)
Country of origin FE	Yes	Yes	Yes
N	28,053	28,053	28,053
R-squared	0.150	0.150	0.153

This table shows the results of the estimation of equation (2). The dependent variable is $\Delta Imports_{j,non-NAFTAo} - \Delta Imports_{j,NAFTA}$, the difference between the log change in Mexican imports of good j (at the HS6 level) from non-NAFTA country o between 1991 and 2003 and the corresponding change of imports from NAFTA partners. It includes goods for which Mexican imports were positive in 1991 and/or 2003. RoO_j^x is the number (in logs) of final goods i for which there is a NAFTA RoO restricting the sourcing of good j, instrumented using CUSFTA RoO. RoO_j^x is the number (in logs) of final goods i for which there is a NAFTA RoO restricting the sourcing of good j. When $x = 1$, the treatment includes all final goods i. When $x = 2$, the treatment excludes rules associated to final goods i for which *Preference Margin NAFTA$_i$* = 0. When $x = 3$, the treatment further excludes change of tariff classification rules that are combined with alternative value added rules. $\Delta Preferential\ Tariff_j$ is difference between the log change in the tariff applied by Mexico to imports of good j from non-NAFTA countries and the log change in the tariff applied by Mexico to imports of good j from NAFTA partners. Standard errors in parenthesis clustered by industry (at the HS2 level).

Table XVIII

NAFTA RoO and change in Mexican imports, triple-difference results, instrumenting NAFTA rules with CUSFTA rules
(excluding rules for which $dr_{i,j} = 0$)

	(1)	(2)	(3)
$RoO\ NAFTA_j^1$	-0.109		
	(0.055)		
$RoO\ NAFTA_j^2$		-0.107	
		(0.051)	
$RoO\ NAFTA_j^3$			-0.172
			(0.047)
$\Delta Preferential\ Tariff_j$	-0.280	-0.263	-0.149
	(0.150)	(0.147)	(0.136)
Country of origin FE	Yes	Yes	Yes
N	28,053	28,053	28,053
R-squared	0.151	0.151	0.154

This table shows the results of the estimation of equation (2). The dependent variable is $\Delta Imports_{j,non-NAFTA\,o} - \Delta Imports_{j,NAFTA}$, the difference between the log change in Mexican imports of good j (at the HS6 level) from non-NAFTA country o between 1991 and 2003 and the corresponding change of imports from NAFTA partners. It includes goods for which Mexican imports were positive in 1991 and/or 2003. RoO_j^x is the number (in logs) of final goods i for which there is a NAFTA RoO restricting the sourcing of good j, instrumented using CUSFTA RoO. RoO_j^x is the number (in logs) of final goods i for which there is a NAFTA RoO restricting the sourcing of good j. When $x = 1$, the treatment includes all final goods i. When $x = 2$, the treatment excludes rules associated to final goods i for which $Preference\ Margin\ NAFTA_i = 0$. When $x = 3$, the treatment further excludes change of tariff classification rules that are combined with alternative value added rules. $\Delta Preferential\ Tariff_j$ is difference between the log change in the tariff applied by Mexico to imports of good j from non-NAFTA countries and the log change in the tariff applied by Mexico to imports of good j from NAFTA partners. Standard errors in parenthesis clustered by industry (at the HS2 level).

Figure I
NAFTA Certificate of Origin

DEPARTMENT OF HOMELAND SECURITY
U.S. Customs and Border Protection

OMB No. 1651-0098
Exp. 03-31-2012
See back of form for Paper-
work Reduction Act Notice.

**NORTH AMERICAN FREE TRADE AGREEMENT
CERTIFICATE OF ORIGIN**
19 CFR 181.11, 181.22

Please print or type

1. EXPORTER NAME AND ADDRESS	2. BLANKET PERIOD
	FROM
	TO
TAX IDENTIFICATION NUMBER:	
3. PRODUCER NAME AND ADDRESS	4. IMPORTER NAME AND ADDRESS
TAX IDENTIFICATION NUMBER:	TAX IDENTIFICATION NUMBER:

5. DESCRIPTION OF GOOD(S)	6. HS TARIFF CLASSIFICATION NUMBER	7. PREFERENCE CRITERION	8. PRODUCER	9. NET COST	10. COUNTRY OF ORIGIN

I CERTIFY THAT:
- THE INFORMATION ON THIS DOCUMENT IS TRUE AND ACCURATE AND I ASSUME THE RESPONSIBILITY FOR PROVING SUCH REPRESENTATIONS. I UNDERSTAND THAT I AM LIABLE FOR ANY FALSE STATEMENTS OR MATERIAL OMISSIONS MADE ON OR IN CONNECTION WITH THIS DOCUMENT;
- I AGREE TO MAINTAIN AND PRESENT UPON REQUEST, DOCUMENTATION NECESSARY TO SUPPORT THIS CERTIFICATE, AND TO INFORM, IN WRITING, ALL PERSONS TO WHOM THE CERTIFICATE WAS GIVEN OF ANY CHANGES THAT COULD AFFECT THE ACCURACY OR VALIDITY OF THIS CERTIFICATE;
- THE GOODS ORIGINATED IN THE TERRITORY OF ONE OR MORE OF THE PARTIES, AND COMPLY WITH THE ORIGIN REQUIREMENTS SPECIFIED FOR THOSE GOODS IN THE NORTH AMERICAN FREE TRADE AGREEMENT AND UNLESS SPECIFICALLY EXEMPTED IN ARTICLE 411 OR ANNEX 401, THERE HAS BEEN NO FURTHER PRODUCTION OR ANY OTHER OPERATION OUTSIDE THE TERRITORIES OF THE PARTIES; AND
- THIS CERTIFICATE CONSISTS OF [   ] PAGES, INCLUDING ALL ATTACHMENTS.

11a. AUTHORIZED SIGNATURE	11b. COMPANY
11c. NAME *(Print or Type)*	11d. TITLE
11e. DATE *(MM/DD/YYYY)*	11f. TELEPHONE NUMBER ▶ *(Voice)* / *(Facsimile)*

CBP Form 434 (04/97)

NORTH AMERICAN FREE TRADE AGREEMENT CERTIFICATE OF ORIGIN INSTRUCTIONS

For purposes of obtaining preferential tariff treatment, this document must be completed legibly and in full by the exporter and be in the possession of the importer at the time the declaration is made. This document may also be completed voluntarily by the producer for use by the exporter. Please print or type:

FIELD 1: State the full legal name, address (including country) and legal tax identification number of the exporter. Legal taxation number is: in Canada, employer number or importer/exporter number assigned by Revenue Canada; in Mexico, federal taxpayer's registry number (RFC); and in the United States, employer's identification number or Social Security Number.

FIELD 2: Complete field if the Certificate covers multiple shipments of identical goods as described in Field #5 that are imported into a NAFTA country for a specified period of up to one year (the blanket period). "FROM" is the date upon which Certificate becomes applicable to the good covered by the blanket Certificate (it may be prior to the date of signing this Certificate). "TO" is the date upon which the blanket period expires. The importation of a good for which preferential treatment is claimed based on this Certificate must occur between these dates.

FIELD 3: State the full legal name, address (including country) and legal tax identification number, as defined in Field #1, of the producer. If more than one producer's good is included on the Certificate, attach a list of additional producers, including the legal name, address (including country) and legal tax identification number, cross-referenced to the good described in Field #5. If you wish this information to be confidential, it is acceptable to state "Available to CBP upon request". If the producer and the exporter are the same, complete field with "SAME". If the producer is unknown, it is acceptable to state "UNKNOWN".

FIELD 4: State the full legal name, address (including country) and legal tax identification number, as defined in Field #1, of the importer. If the importer is not known, state "UNKNOWN"; if multiple importers, state "VARIOUS".

FIELD 5: Provide a full description of each good. The description should be sufficient to relate it to the invoice description and to the Harmonized System (H.S.) description of the good. If the Certificate covers a single shipment of a good, include the invoice number as shown on the commercial invoice. If not known, indicate another unique reference number, such as the shipping order number.

FIELD 6: For each good described in Field #5, identify the H.S. tariff classification to six digits. If the good is subject to a specific rule of origin in Annex 401 that requires eight digits, identify to eight digits, using the H.S. tariff classification of the country into whose territory the good is imported.

FIELD 7: For each good described in Field #5, state which criterion (A through F) is applicable. The rules of origin are contained in Chapter Four and Annex 401. Additional rules are described in Annex 703.2 (certain agricultural goods), Annex 300-B, Appendix 6 (certain textile goods) and Annex 308.1 (certain automatic data processing goods and their parts). **NOTE: In order to be entitled to preferential tariff treatment, each good must meet at least one of the criteria below.**

Preference Criteria

A   The good is "wholly obtained or produced entirely" in the territory of one or more of the NAFTA countries as referenced in Article 415. **Note: The purchase of a good in the territory does not necessarily render it "wholly obtained or produced".** If the good is an agricultural good, see also criterion F and Annex 703.2. *(Reference: Article 401(a) and 415)*

B   The good is produced entirely in the territory of one or more of the NAFTA countries and satisfies the specific rule of origin, set out in Annex 401, that applies to its tariff classification. The rule may include a tariff classification change, regional value-content requirement, or a combination thereof. The good must also satisfy all other applicable requirements of Chapter Four. If the good is an agricultural good, see also criterion F and Annex 703.2. *(Reference: Article 401(b))*

C   The good is produced entirely in the territory of one or more of the NAFTA countries exclusively from originating materials. Under this criterion, one or more of the materials may not fall within the definition of "wholly produced or obtained", as set out in article 415. All materials used in the production of the good must qualify as "originating" by meeting the rules of Article 401(a) through (d). If the good is an agricultural good, see also criterion F and Annex 703.2. *Reference: Article 401(c).*

D   Goods are produced in the territory of one or more of the NAFTA countries but do not meet the applicable rule of origin, set out in Annex 401, because certain non-originating materials do not undergo the required change in tariff classification. The goods do nonetheless meet the regional value-content requirement specified in Article 401(d). This criterion is limited to the following two circumstances:

1.   The good was imported into the territory of a NAFTA country in an unassembled or disassembled form but was classified as an assembled good, pursuant to H.S. General Rule of Interpretation 2(a), or

2.   The good incorporated one or more non-originating materials, provided for as parts under the H.S., which could not undergo a change in tariff classification because the heading provided for both the good and its parts and was not further subdivided into subheadings, or the subheading provided for both the good and its parts and was not further subdivided.

NOTE: This criterion does not apply to Chapters 61 through 63 of H.S. *(Reference: Article 401(d))*

E   Certain automatic data processing goods and their parts, specified in Annex 308.1, that do not originate in the territory are considered originating upon importation into the territory of a NAFTA country from the territory of another NAFTA country when the most-favored-nation tariff rate of the good conforms to the rate established in Annex 308.1 and is common to all NAFTA countries. *(Reference: Annex 308.1)*

F   The good is an originating agricultural good under preference criterion A, B, or C above and is not subject to a quantitative restriction in the importing NAFTA country because it is a "qualifying good" as defined in Annex 703.2, Section A or B (please specify). A good listed in Appendix 703.2B.7 is also exempt from quantitative restrictions and is eligible for NAFTA preferential tariff treatment if it meets the definition of "qualifying good" in Section A of Annex 703.2. **NOTE 1: This criterion does not apply to goods that wholly originate in Canada or the United States and are imported into either country. NOTE 2: A tariff rate quota is not a quantitative restriction.**

FIELD 8: For each good described in Field #5, state "YES" if you are the producer of the good. If you are not the producer of the good, state "NO" followed by (1), (2), or (3), depending on whether this certificate was based upon: (1) your knowledge of whether the good qualifies as an originating good; (2) your reliance on the producer's written representation (other than a Certificate of Origin) that the good qualifies as an originating good; or (3) a completed and signed Certificate for the good, voluntarily provided to the exporter by the producer.

FIELD 9: For each good described in field #5, where the good is subject to a regional value content (RVC) requirement, indicate "NC" if the RVC is calculated according to the net cost method; otherwise, indicate "NO". If the RVC is calculated over a period of time, further identify the beginning and ending dates (MM/DD/YYYY) of that period. *(Reference: Article 402.1, 402.5)*

FIELD 10: Identify the name of the country ("MX" or "US" for agricultural and textile goods exported to Canada; "US" or "CA" for all goods exported to Mexico; or "CA" or "MX" for all goods exported to the United States) to which the preferential rate of CBP duty applies, as set out in Annex 302.2, in accordance with the Marking Rules or in each party's schedule of tariff elimination.

For all other originating goods exported to Canada, indicate appropriately "MX" or "US" if the goods originate in that NAFTA country, within the meaning of the NAFTA Rules of Origin Regulations, and any subsequent processing in the other NAFTA country does not increase the transaction value of the goods by more than seven percent; otherwise indicate "JNT" for joint production. *(Reference: Annex 302.2)*

FIELD 11: This field must be completed, signed, and dated by the exporter. When the Certificate is completed by the producer for use by the exporter, it must be completed, signed, and dated by the producer. The date must be the date the Certificate was completed and signed.

CBP Form 434 (04/97)(Back)

Figure II

Correlation between U.S. and Mexican imports pre-CUSFTA

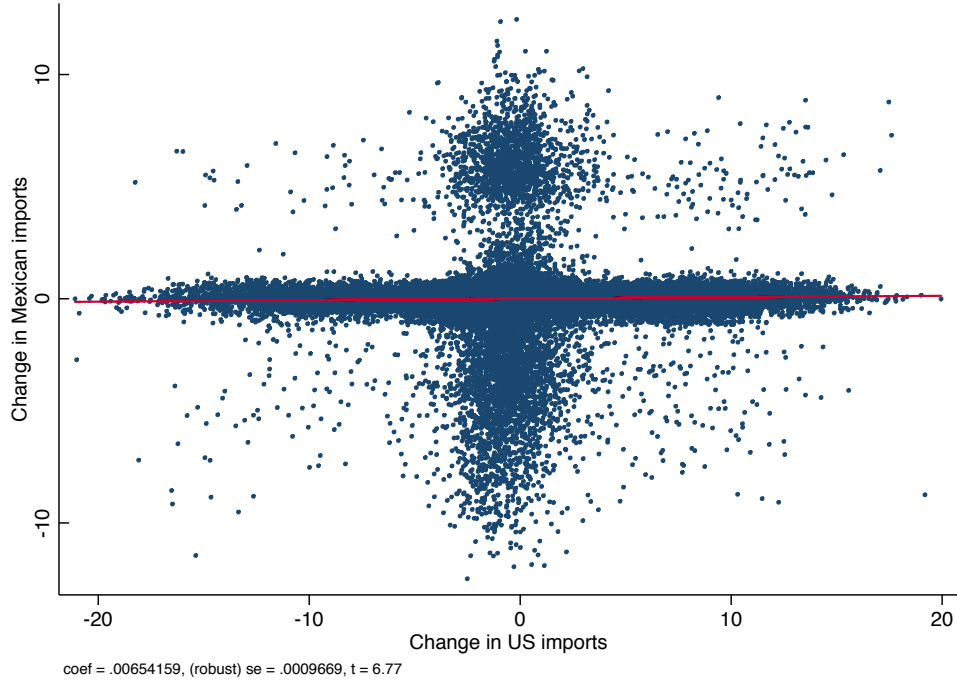coef = .00654159, (robust) se = .0009669, t = 6.77

Figure II shows the partial correlation between $\Delta Imports_j^{US}$ and $\Delta Imports_j^{Mex}$ from between 1987 and 1980 for a given country-sector (after controlling for country-of-origin and industry fixed effects). We have computed changes in imports as $log(1 + Imports_{1987}) - log(1 + Imports_{1980})$.